CALIFORNIA COASTAL COMMISSION
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F15b-e

	5-97-371	5-98-020	5-98-064	5-98-178
Filed	12/30/97	1/20/98	4/6/98	7/15/98
49th Day	2/17/98	3/10/98	5/25/98	9/2/98
180th Day	6/28/98	7/19/98	10/3/98	1/11/99
270th Day	9/26/98	10/17/98	N/A	N/A

Staff: John T. Auyong
Staff Report: October 16, 1998
Hearing on Findings: **November 6, 1998**
Commission Action on Findings:

COMBINED STAFF REPORT: REVISED FINDINGS

APPLICATION NOS.: **5-97-371, 5-98-020, 5-98-064,** and **5-98-178**

	5-97-371	5-98-020	5-98-064	5-98-178
Applicant	Jim **Conrad**	Jim **Conrad**	Troy and Celeste **Barnes**	Tim **McMullen**
Project Location	**23, 25, 27, 29, and 31 Bay Drive**, Three Arch Bay, Laguna Beach, Orange County	**23 Bay Drive**, Three Arch Bay, Laguna Beach, Orange County	**25 Bay Drive**, Three Arch Bay, Laguna Beach, Orange County	**31 Bay Drive**, Three Arch Bay, Laguna Beach, Orange County

COMMISSION ACTION: Approval with Conditions

DATE OF COMMISSION ACTION: August 13, 1998

COMMISSIONERS ON PREVAILING SIDE: Brothers, Dettloff, Flemming, Herron, Johnson, Nava, Potter, Reilly, Tuttle, Wan, Chairman Areias (same vote for all for permits)

PROJECT DESCRIPTIONS:

5-97-371 Rebuild a failed slope. Construct a shoring system across five lots to stabilize Bay Drive. The shoring system and slope repair includes the installation of: 1) a shoring wall comprised of shoring piles and shotcrete adjacent to Bay Drive and the adjacent homes at 21 and 33 Bay Drive, 2) overexcavation and recompaction of slide debris (44,000 cubic yards of grading--22,000 cubic yards of cut and 22,000 cubic yards of fill) to create a buttress fill, 3) a buried toe protection wall near the toe of the slope, and 4) installation of drainage devices. No

homes are proposed to be constructed as part of this project. Merge three of the five lots into two (resulting in a new total of 4 lots, with the 27 Bay Drive address eliminated as a result).

5-98-020 Construction of a 3,720 square foot, 5-level, single-family home with an attached two-car garage and two uncovered parking spaces, 997 square feet of deck area, an 840 square foot swimming pool terrace with swimming pool and hardscape. The proposed home would step down a repaired coastal bluff and be 57'6" from its lowest level to the highest point of the roof. The top of the proposed home would extend ten feet above the centerline of Bay Drive. Also proposed is 9,984 cubic yards of grading (4,992 cubic yards of cut and 4,992 cubic yards of fill).

5-98-064 Construction of a 3,719 square foot, 5-level, single-family residence with a 662 square foot two-car garage, 812 square feet of decks, a covered, open-air pool terrace and game room, swimming pool and patio area, and 7,662 cubic yards of grading (3,831 cubic yards of cut and 3,831 cubic yards of fill). The proposed home would terrace down a rebuilt coastal bluff and be 61 feet high from the pool terrace level to the top of the roof of the garage, with the top of the home extending 11' above Bay Drive.

5-98-178 Construction of a 5,099 square foot, 5-level, single-family residence with attached 742 square foot three car garage, 1,935 square feet of deck area, swimming pool, spa, landscaping, and 12,900 cubic yards of grading (6,450 cubic yards of cut and 6,450 cubic yards of fill). The proposed home would terrace down a repaired coastal bluff and be 62 feet tall from the pool level to the top of the roof of the garage. The proposed home would only extend 11' above the centerline of Bay Drive.

LOCAL APPROVALS RECEIVED: See Appendix A

SUBSTANTIVE FILE DOCUMENTS: See Appendix A

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends that the Commission adopt the following revised findings in support of the Commission's approval with conditions of coastal development permit application 5-97-371 (the proposed shoring system) on August 13, 1998. The adopted special conditions concern: 1) an assumption-of-risk deed restriction, including requirements that no seawalls shall be built on the site and that the applicant shall be solely responsible for removal of debris resulting from hazards on the property, 2) conformance with geotechnical recommendations of the applicant's geotechnical consultants as well as the consultant's of the applicant's neighbors, including that deviations to the plans such as proposed changes identified after completion of additional slope stability analysis require a permit amendment, 3) modification of the design of the side wall adjacent to 33 Bay Drive to achieve a factor of safety of at least 1.5 and acceptable pile

deflections, 4) requirements concerning how any future homes must be built on the approved lots, including compliance with structure and deck stringlines, 5) the use of drought-tolerant landscaping to reduce the amount of water added to groundwater levels on-site to minimize slope instability, 6) prohibition on the placement of construction materials and equipment on the beach to minimize water quality impacts, 7) disposal of construction debris, 8) the installation of inclinometers to monitor earth movement/bluff instability, and 9) the applicant's legal ability to undertake the development proposed.

Staff is separately recommending that the Commission adopt the following revised findings in support of the Commission's separate actions on August 13, 1998, approving with special conditions the coastal development permit applications for the homes currently before the Commission (permit applications 5-98-020, 5-98-064, and 5-98-178). The adopted special conditions concern: 1) an assumption-of-risk deed restriction, including requirements that no seawalls shall be built on the site and that the applicant shall be solely responsible for removal of debris resulting from hazards on the property, 2) conformance with geotechnical recommendations , 3) the use of drought-tolerant landscaping, 4) prohibition on the placement of construction materials and equipment on the beach, 5) disposal of construction debris, and 6) mitigation measures to minimize leaks from proposed swimming pools and spas which would result bluff erosion and instability. These conditions would apply to all three applications for proposed homes.

SUMMARY OF RECOMMENDED SPECIAL CONDITIONS				
	Permit Application			
Special Conditions	**5-97-371** Shoring System/Lot Merger	**5-98-020** Conrad House	**5-98-064** Barnes House	**5-98-178** McMullen House
Assumption of Risk	X	X	X	X
Comply w/Geotechnical Recommendations.	X	X	X	X
Revised side wall design	X			
Requirements for Future Homes	X			
Landscaping	X	X	X	X
Staging and Construction	X	X	X	X
Disposal	X	X	X	X
Inclinometers	X			
Pool/Spa mitigation	X	X	X	X
Legal Ability	X			

The revised findings essentially take the July 24, 1998 staff report for these permits and include the modifications in the August 11, 1998 addendum and provide findings for the changes to the assumption-of-risk conditions verbally made by staff at the hearing.

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STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution **separately for each permit application**:

I. APPROVAL WITH CONDITIONS.

The Commission hereby **GRANTS** a permit, subject to the conditions below, for the proposed development on the grounds that the development, located between the nearest public roadway and the shoreline, would be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, including the public access and recreation policies of Chapter 3, would 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, and would not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. STANDARD CONDITIONS. (Applicable to all permits)

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 permittee 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 would expire two years from the date this permit is reported to the Commission. 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. **Compliance**. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

4. **Interpretation**. Any questions of intent or interpretation of any condition would be resolved by the Executive Director or the Commission.

5. **Inspections**. The Commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.

6. **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.

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

III. SPECIAL CONDITIONS.

Special Conditions for the Proposed Shoring System and Lot Merger; Coastal Development Permit 5-97-371

1. **Assumption-of-Risk**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant and all landowners shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant and all landowners understand that the entire site may be subject to extraordinary hazards from landslides/slope failure and wave attack, and the applicant assumes the liability from such hazards; (b) that the applicant and all landowners unconditionally waive any claim of liability on the part of the Commission and agree to indemnify and hold harmless the Commission, its officers, agents, and employees relative to the Commission's approval of the project for any damage due to the natural hazards, and (c) that the applicant agrees that no shoreline protective devices shall be constructed on the parcel; and (d) the applicant accepts sole responsibility for the removal of any structural debris resulting from landslides, slope failures or erosion on this site. The document 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 Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. **Geotechnical Recommendations**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, two sets of final revised grading, drainage, foundation, and engineering plans for the proposed shoring system slope stabilization to be built on all lots on the subject site. The final revised plans shall be consistent with the preliminary plans received by the Commission on July 14, 1998, as generally depicted in the exhibits to the staff report for the August 1998 hearing for this report except that the final revised plans shall incorporate the recommendations contained in: 1) the "Preliminary Geotechnical Investigation", Proposed Four Lot Residential Development, Lots 26, 27, 28, and 29 of Tract 970, Three Arch Bay, South Laguna Beach, California, dated April 11, 1997, prepared for James Conrad by Hetherington Engineering, Inc. (Job No. 1800.2) excluding the requirements for benching and subdrains, 2) the "Supplemental Geotechnical Investigation", Proposed Residential Development, Lots 26, 27, 28, 29, and 30 of Tract 970, Three Arch Bay, South Laguna Beach, California, dated January 26, 1998, prepared for James Conrad by Hetherington Engineering, Inc. (Project No. 1800.3) excluding the

requirements for benching and subdrains, 3) the letter from Ninyo & Moore to Ms. Shirley Frahm dated July 15, 1998 (Project No. 201351-01), 4) the letter from Josephson Werdowatz & Associates, Inc. to George B. Piggott, Esq. dated July 15, 1998, 5) the letter from Post, Buckley, Schuh & Jernigan, Inc. to George B. Piggott dated July 15, 1998, 6) the letter from Sid Danenhauer to Coastal Commission staff dated July 15, 1998, and 7) the August 11, 1998 letter from Osman Pekin of Leighton and Associates, Inc. to Three Arch Bay (Leighton and Associates, Inc. Project No. 1971218-001). Prior to issuance of the coastal development permit, the applicant shall submit, for the Executive Director's review and approval, evidence that the appropriate licensed professional has reviewed and approved all final design and construction plans and certified that each of those final plans incorporates all of the recommendations specified in the above referenced documents.

The approved development shall be constructed in accordance with the final revised plans as approved by the Executive Director. Any deviations from said plans including any proposed changes which are identified after the additional slope stability analysis shall require a Coastal Commission-approved amendment to this permit unless the Executive Director determines a permit amendment is not needed.

3. **Revised Side Wall Design**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, revised plans which demonstrate that: 1) the design of the side wall section of the proposed shoring wall adjacent to the property at 33 Bay Drive achieves a minimum 1.5 factor of safety for the slope, 2) the side wall piles shall be designed to accommodate both construction loads and final project loads with acceptable bending and deflection, and 3) the side wall shall be modified using some combination of tiebacks, increased embedment depth of piles, increased pile strength, lagging, and/or more piles. The applicant shall undertake development consistent with the plans approved by the Executive Director.

4. **Requirements for Homes Which May be Built on the Lots**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant and all landowners shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide that:

(a) any proposed homes, accessory structures, and hardscape (such as patios and swimming pools) to be built on the subject site shall be designed and constructed in a manner which maintains the factor of safety established by the proposed shoring system approved by this permit (with a minimum factor of safety of 1.5),

(b) any swimming pools, spas, or water features proposed shall include measures to mitigate against leakage from the swimming pools, spas, water features or associated plumbing,

(c) any proposed homes shall comply with the structure stringline and any proposed accessory structures, including pools, and all hardscape shall comply with the deck stringline, and

(d) the entire portion of the sites seaward of any proposed homes shall be fully vegetated with drought tolerant, primarily native non-invasive vegetation, and no pathways, whether paved or unpaved, are allowed between the homes or hardscape area seaward of the homes and the beach.

The document 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 Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

5. **Landscaping**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, revised landscaping plans. The revised landscaping plans shall: 1) be consistent with the preliminary landscaping plans dated September 12, 1997 prepared by Lawson's Landscape Services, 2) be prepared by a licensed landscaped architect, and 3) incorporate the following criteria: (a) planting shall be of drought tolerant plants (native, non-invasive drought tolerant plants are preferred); (b) the turf grass areas depicted seaward of the proposed homes shall be deleted, (c) Only temporary irrigation to help establish the landscaping shall be allowed; and (d) The plantings established shall provide 90% cover in 90 days. The applicant shall comply with the plans approved by the Executive Director.

6. **Staging and Storage of Construction Materials and Equipment**. Construction material and equipment shall not be staged or stored on the beach. Any accidental spills of construction equipment fluids shall be immediately contained on-site and disposed of in an environmentally safe manner as soon as possible.

7. **Disposal of Landslide and Construction Debris**. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall identify in writing, for the review and approval of the Executive Director, the location of the disposal site of the exported excavated soil resulting from the proposed project. If the disposal site is located in the coastal zone, a coastal development permit must be obtained before disposal occurs. Disposal shall occur at the approved disposal site.

8. **Installation of Inclinometers/Remedial measures**. The applicant shall monitor on-site ground movement which may cause distress on immediately adjacent off-site properties. The applicant shall install inclinometers to monitor ground movement. The inclinometers shall be installed on-site along the perimeter of the site, adjacent to the Bay Drive roadway and the adjacent homes at 21 and 33 Bay Drive. Should the inclinometers indicate that severe ground

movement is imminent which would jeopardize the stability and structural integrity of Bay Drive and the adjacent properties at 21 and 33 Bay Drive, the neighbors at 21 and 33 Bay Drive, the Three Arch Bay Homeowner's Association or the operator of Bay Drive, and the Executive Director shall be immediately notified of the situation. An application to amend permit 5-97-371 shall be submitted for any emergency remedial measures which may be necessary.

9. **Legal Ability to Undertake Development**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, written evidence demonstrating that the applicant has the legal ability to: 1) carry out the approved project, including those portions of the project located on land not owned by the applicant nor which the applicant has a fee interest in nor legal right to use, and 2) carry out all conditions of approval of this permit.

Special Conditions for the Proposed Homes; Applicable to Coastal Development Permits 5-98-020, 5-98-064, and 5-98-178

1. **Assumption-of-Risk**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant and all landowners shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant and all landowners understand that the entire site may be subject to extraordinary hazards from landslides/slope failure and wave attack, and the applicant assumes the liability from such hazards; (b) that the applicant and all landowners unconditionally waive any claim of liability on the part of the Commission and agree to indemnify and hold harmless the Commission, its officers, agents, and employees relative to the Commission's approval of the project for any damage due to the natural hazards, and (c) that the applicant agrees that no shoreline protective devices shall be constructed on the parcel; and (d) the applicant accepts sole responsibility for the removal of any structural debris resulting from landslides, slope failures or erosion on the site. The document 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 Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. **Geotechnical Recommendations**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, two sets of final revised site plans, floor plans, elevations, grading, drainage, foundation, and engineering plans for the proposed home and related accessory development (e.g., swimming pools, patios, etc.) approved by this permit. These plans shall show all cut and fill slope profiles extending the entire length of the site from the existing beach/toe of existing slope interface through the seaward edge of Bay Drive. These plans shall be consistent with the preliminary plans received by the Commission on July 14, as generally depicted in the exhibits to

the staff report for the August 1998 hearing for this permit except that these plans shall incorporate the recommendations pertaining to the homes and accessory development contained in both; 1) the "Preliminary Geotechnical Investigation", Proposed Four Lot Residential Development, Lots 26, 27, 28, and 29 of Tract 970, Three Arch Bay, South Laguna Beach, California, dated April 11, 1997, prepared for James Conrad by Hetherington Engineering, Inc. (Job No. 1800.2), 2) the "Supplemental Geotechnical Investigation", Proposed Residential Development, Lots 26, 27, 28, 29, and 30 of Tract 970, Three Arch Bay, South Laguna Beach, California, dated January 26, 1998, prepared for James Conrad by Hetherington Engineering, Inc. (Project No. 1800.3), and 3) the August 11, 1998 letter from Osman Pekin of Leighton and Associates, Inc. to Three Arch Bay (Leighton and Associates, Inc. Project No. 1971218-001).

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the Executive Director's review and approval, evidence that the appropriate licensed professional has reviewed and approval all final design and construction plans and certified that each of those final plans incorporates all of the recommendations specified in the above referenced documents.

The approved development shall be constructed in accordance with the final revised plans as approved by the Executive Director. Any proposed deviations from said plans shall require a Coastal Commission-approved amendment to this permit, unless the Executive Director determines a permit amendment is not needed.

3. **Landscaping**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, revised landscaping plans. The revised landscaping plans shall: 1) be consistent with the preliminary landscaping plans dated September 12, 1997 prepared by Lawson's Landscape Services, 2) be prepared by a licensed landscaped architect, and 3) incorporate the following criteria: (a) planting shall be of drought tolerant plants (native, non-invasive drought tolerant plants are preferred); (b) the turf grass areas depicted seaward of the proposed homes shall be deleted, (c) the stone paths leading from the pool terraces of each home to the beach shall be eliminated and replaced with drought tolerant plants, and (d) only temporary irrigation to help establish the landscaping shall be allowed. The applicant shall comply with the plans approved by the Executive Director.

4. **Staging and Storage of Construction Materials and Equipment**. Construction material and equipment shall not be staged or stored on the beach. Any accidental spills of construction equipment fluids shall be immediately contained on-site and disposed of in an environmentally safe manner as soon as possible.

5. **Disposal of Landslide and Construction Debris**. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall identify in writing, for the

review and approval of the Executive Director, the location of the disposal site of the exported excavated soil resulting from the proposed project. A coastal development permit shall be obtained for the disposal site prior to disposal occurring. Disposal shall occur at the approved disposal site.

6. **Minimizing Swimming Pool Impacts**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, a written plan to mitigate for the potential for leakage from the proposed swimming pools and spas. The plan shall include, at a minimum: 1) installing separate water meters for each pool and spa which are separate from the water meters for the houses to allow for the monitoring of water usage for the pools and spas, and 2) identification of the materials, such as plastic linings or specially treated cement, to be used to waterproof the undersides of the pools and spas to prevent leakage, and information regarding the past success rates of these materials. The applicant shall comply with the mitigation plan approved by the Executive Director.

IV. FINDINGS AND DECLARATIONS

A. Detailed Project Description and Location

The applicant is proposing to repair a failed slope located on five beachfront lots in Three Arch Bay in the City of Laguna Beach, as well as merge two of the lots into one and construct a home on each of the resultant lots. The lot numbers for the legal descriptions and the site addresses correspond as follows:

Lot Number (Tract 970)	Corresponding Street Address
26	23 Bay Drive; 5-98-020 (Conrad)
27	25 Bay Drive; 5-98-064 (Barnes
28	27 Bay Drive (To be eliminated after proposed lot merger)
29	29 Bay Drive (Home not before the Commission)
30	31 Bay Drive; 5-98-178 (McMullen)

1. Bluff Repair/Shoring System (Permit Application 5-97-371)

The applicant is proposing to repair a failed bluff. The top of the subject site is approximately 90 feet above sea level. The proposed project consists of: 1) a shoring wall, 2) buttress fill, 3) toe protection for the buttress fill, and 4) a drainage system. (see Exhibit 8)

a. Shoring Wall

Part of the proposal includes the construction of a shoring wall to stabilize Bay Drive and adjacent homes. The shoring wall is intended both to provide temporary shoring while the existing bluff material is recompacted and the buttress fill installed, as well as serving as part of the permanent overall shoring system. The shoring wall would be "U" shaped, with the bottom of the "U" adjacent to and parallel with Bay Drive, with the legs of the "U" running about halfway towards the sea down the side property lines between the subject site and adjacent properties. (see Exhibit 8, Page 3) The tunnel located deep under Bay Drive landward of the proposed shoring wall, as shown on the plans, is an existing tunnel built in the early part of this century which directs off-site drainage to Aliso Creek a few miles upcoast. (see Exhibit 8, Page 5)

The proposed shoring wall would be comprised of fifty-one (51) thirty inch (30") concrete with reinforced steel cage diameter piles spaced at eight foot (8') intervals along the length of the wall with a system of gunnite and steel bridging between the piles. The proposed piles are to be founded ten feet (10') into bedrock below the projected failure plane (clay seam). The height of the piles would range from slightly less than forty feet to about fifty-five feet. Approximately ten feet of the wall would protrude above grade. The remainder would be buried. To withstand the presence of groundwater within the site area, the wall would be waterproofed with a bentonite system, in addition to a proposed drainage system described further below.

A system of tiebacks is proposed to anchor the shoring wall in place. (see Exhibit 8, Page 1) The proposed tiebacks would be between forty and fifty feet long. The proposed tiebacks would be installed at a 30 degree angle below horizontal and extend approximately thirty-five feet into bedrock beyond the identified failure plane. The proposed tiebacks would be designed so that they would run under Bay Drive but would not extend landward of Bay Drive. The proposed tiebacks would also extend across the property line onto the adjacent property at the downcoast end, but not the property at the upcoast end.

b. Buttress Fill

Once the proposed shoring wall is completed, the existing landslide material is proposed to be overexcavated and recompacted (22,000 cubic yards of cut and 22,000 cubic yards of fill for 44,000 cubic yards of total grading) for the construction of a buttress fill. The proposed buttress fill would constitute the primary method of shoring Bay Drive and the adjacent properties.

The proposed buttress fill would extend to the current interface between the beach/sand and the existing toe of the landslide debris. The landslide debris on-site would be excavated down below the identified clay seam/failure plane in the San Onofre Breccia (bedrock) identified by the consulting geologist. The proposed buttress fill includes a thirty foot(30') wide key way cut into the bedrock near the seaward edge of the buttress fill. The proposed buttress fill would be stabilized by the construction of the soil key way

Approximately six thousand (6,000) cubic yards of the excavated landslide debris would be removed from the site because it is unsuitable for recompaction due to high levels of moisture and organic material. The 6,000 cubic yards of exported material would be replaced with a like amount of imported material. The imported material and the remaining 16,000 cubic yards of non-exported excavated material would be recompacted on-site to construct the proposed buttress fill.

c. Toe Protection for the Buttress Fill

The applicant is also proposing a buried wall near the toe of the buttress fill to protect the toe of the buttress fill from eroding. The toe protection wall would protect the soil key way described above which stabilizes the buttress fill. The proposed toe protection wall would be located roughly along the 27 foot contour line (in plan view). The proposed toe protection wall is to be founded in bedrock below the failure plane and would extend up to 25 feet above sea level, so it would be buried about two feet below the surface of the buttress fill.

d. Drainage System

The proposed drainage system would be comprised of a mira-drain barrier, located behind the proposed shoring wall (i.e., on the landward side of the shoring wall, between the wall and Bay Drive, parallel to the wall and Bay Drive), which would channel groundwater to french drains located at the bottom of the shoring wall. The french drains would be situated perpendicular to Bay Drive at the center of each lot. From this point, groundwater would be conveyed to the beach via non-erosive drain lines. Where the proposed drain lines meet the beach, seepage pits are proposed to be installed to promote seepage of the ground water into the ground rather than having the water run across the sand to the ocean and causing beach erosion.

2. Lot Merger

The subject site is zoned for Village Low Density residential use, which allows a density of 3-7 dwelling units per acre. The applicant is also proposing to merge three of the existing lots into two. (see Exhibit 7) The three lots to be merged are Lots 28, 29 and 30. The 27 Bay Drive address would be eliminated as a result of the proposed lot merger. As a result, there would be a new total of four single-family residential lots on the site. The proposed lot at 23 Bay Drive would be 14,337 square feet in size. The proposed lot at 25 Bay Drive would be 13,282 square feet in size. The proposed lot at 29 Bay Drive would be 18,520 square feet in size. The proposed lot at 31 Bay drive would be 17,441 square feet in size.

3. Proposed Homes

The applicant is also proposing to build four homes; one of each of the four proposed lots. At the present time, the proposed home at 29 Bay Drive has received approval from the City of

Laguna Beach Design Review Board, but the appeal period to the City Council has not yet expired. Therefore, there is no permit application for this home before the Commission, but the applicant has included drawings of it for reference. (see Exhibit 5)

The proposed homes would be consistent with a stringline drawn between the two nearest adjacent existing residences (see Exhibit 2) and would be setback more than one hundred feet from the current slope/sand interface. The proposed homes would be situated between 45'-50' above mean high tide line and would be built on caisson/grade beam/structural slab foundations which would be tied into the proposed shoring wall. The proposed homes would be multi-level, with the garages at street level and the living area of the proposed homes stepped down the hillside below street level. Therefore, only the garages would be visible at the level of Bay Drive. The two immediately adjacent homes at 21 and 33 Bay Drive are similarly situated, with garages at street level and the living areas cascading down the hillside below. The subject site and two immediately adjacent homes have very little level land on which to build. The other blufftop lots in Three Arch Bay are more typical of blufftop lots, with a large flat area on the top on which to build a home, a relatively defined bluff edge and a sharp drop-off to the beach below.

a. Proposed Home at 23 Bay Drive; Permit Application 5-98-020 (Conrad)

The applicant is proposing to construct a 3,720 square foot, 5-level, single-family home with an attached two-car garage and two uncovered parking spaces, 997 square feet of deck area and an 840 square foot swimming pool terrace. The proposed home would be 57'6" from its lowest level to the highest point of the roof. The highest point of the structure would extend ten feet above the centerline of Bay Drive. (see Exhibit 3) Also proposed is 9,984 cubic yards of grading (4,992 cubic yards of cut and 4,992 cubic yards of fill).

b. Proposed Home at 25 Bay Drive; Permit Application 5-98-064 (Barnes)

The applicant is proposing to construct a 3,719 square foot, 5-level, single-family residence with a 662 square foot two-car garage, 812 square feet of decks, a covered, open-air pool terrace and game room, swimming pool and patio area, and 7,662 cubic yards of grading (3,831 cubic yards of cut and 3,831 cubic yards of fill). The proposed home would be 61 feet high from the pool terrace level to the top of the roof of the garage. The top of the roof of the garage would extend eleven feet above the centerline of Bay Drive. (see Exhibit 4)

c. Proposed Home at 31 Bay Drive; Permit Application 5-98-178 (McMullen)

The applicant is proposing to construct a 5,099 square foot, 5-level, single-family residence with attached 742 square foot three car garage, 1,935 square feet of deck area, swimming pool, spa, landscaping, and 12,900 cubic yards of grading (6,450 cubic yards of cut and 6,450 cubic yards of fill). The proposed

home would be 62 feet tall from the pool level to the top of the roof of the garage. The top of the garage would extend eleven feet above the centerline of Bay Drive. (see Exhibit 6)

d. Proposed home at 29 Bay Drive

A coastal development permit application has not been submitted to the Coastal Commission for the proposed home at 29 Bay Drive because the local appeal period has not run out. The local appeal period is expected to end before the August Coastal Commission hearing, provided no appeals are filed at the local level. (see Exhibit 5)

B. History of Landslide Activity/Development on the Subject Site

The subject site has had a history of landslides in the past. A geology report prepared in 1992 for the property at 21 Bay Drive adjacent to the subject site provides some history of the landslides on the subject site, as does the applicant and the applicant's geology report. A home was built on Lot 26 (23 Bay Drive) in the 1920's, and a home was built in the 1930's which straddled Lots 30 and 31 (31 and 33 Bay Drive). Only a portion of this house was on the subject site (33 Bay Drive is not part of the subject site). Landslide activity on the subject site typically occurred during years when rainfall was unusually heavy. A clay seam/failure plane underlying the site is lubricated by excessive rainfall which causes the land above the seam to slide. In addition, the toe of the previously existing slope was also subject to instability due to wave attack.

In 1952, when rainfall was more than 25 inches (the fourth wettest year between 1926 and 1992), stability of the site was at issue. Lot 28 (27 Bay Drive) had a small accessory structure near the beach which was demolished in the 1950's due to high surf and landslide activity. In 1978-79, 24+ inches of rain fell, and slide movement occurred. This landslide activity caused the destruction of the home on Lots 30 and 31. Subsequently, a home was rebuilt on Lot 31 only. This home, which currently exists immediately adjacent to the upcoast end of the subject site, was built on caissons. During the 1982-83 El Nino winter season, when rainfall was 23.53 inches, the home at 23 Bay Drive was damaged. This house was demolished in 1992. Also in 1992, the Three Arch Bay Homeowner's Association constructed a wall parallel to Bay Drive to provide shoring. That wall, however, is being undermined by further movement of the slide material on-site.

C. Chapter 3 Policy Analysis

1. Geologic Hazards

Section 30253 of the Coastal Act states, in relevant part:

New development shall:

(l) 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.

The proposed project involves the repair of a landslide on five residential blufftop lots. Three of the lots would be merged into two for a new total of four lots. The subject site is currently vacant, although homes or accessory structures previously existed on three of the existing lots. A home is proposed to be built on each of the proposed lots. The previously existing homes were destroyed by landslides or demolished because of landslide damage. The geotechnical reports provided by the applicant address both the proposed shoring system and the proposed homes. In addition, neighbors of the subject site also had geotechnical consultants review the plans for the proposed project.

The geotechnical reports submitted by the applicant's geotechnical consultant are: 1) the "Preliminary Geotechnical Investigation, Proposed Four Lot Residential Development, Lots 26, 27, 28, and 29 of Tract 970, Three Arch Bay, South Laguna Beach, California", dated April 11, 1997, prepared for James Conrad by Hetherington Engineering, Inc. (Job No. 1800.2)., 2) the "Supplemental Geotechnical Investigation, Proposed Residential Development, Lots 26, 27, 28, 29 and 30 of Tract 970, Three Arch Bay, South Laguna Beach", dated January 26, 1998, prepared for James Conrad by Hetherington Engineering, Inc., (Job No. 1800.3, Log No. 4376), and 3) the "Preliminary Geotechnical Parameters for Structural Design of Toe Wall" prepared by Hetherington Engineering, Inc. on June 19, 1998 (Project No. 1800.3, Log No. 4561). In addition, George Piggott, the attorney for the neighbor at 33 Bay Drive, submitted the following comments geotechnical and structural engineering consultants on the proposed shoring system: 1) Ninyo & Moore report dated July 15, 1998 (Project No. 201351-01), 2) a July 15, 1998 letter from Josephson Werdowatz to George Piggott, and 3) a July 15, 1998 letter from Post, Buckley, Schuh & Jernigan, Inc. to George Piggott. (see Exhibits 11, 12, and 13) Sid Danenhauer, who owns a home on the inland side of Bay Drive adjacent to the subject site also provided a summary of his geotechnical consultant's comments. (see Exhibit 14) Also submitted is an August 11, 1998 letter from Leighton and Associates to Three Arch Bay. (see Exhibit 39)

a. Stabilization of Site and Adjacent Properties (Application 5-97-371)

The applicant's geotechnical report indicates that the subject site has slid several times in the past; in 1952, the late 1970's/early 1980's, and the late 1980's/early 1990's. The report indicates that the slides coincided with periods of heavy rainfall, and that groundwater seepage at the site is a problem. In 1992, the Three Arch Bay Association (which serves as a homeowners group)

placed tiebacks, caissons, and shotcrete to protect the slope immediately bounded by Bay Drive, according to the report. The report indicates, however, that the slope still shows signs of movement in some areas.

The primary goal of the proposed shoring system is to provide support for Bay Drive and the homes at 21 and 33 Bay Drive adjacent to the subject site, as well as having the buttress fill recreate the slope in approximately the same landform that previously existed prior to the landslide. Due to the landslide, Bay Drive and adjacent properties seaward of Bay Drive to the east and west of the subject site have lost lateral structural support.

The proposed bluff repair needs to be carried out in a manner which meets the minimum factor of safety of 1.5 which is required by the City of Laguna Beach and Orange County, regardless of what types of homes, if any, are built on the site. The geotechnical consultant has determined that the proposed project is feasible from a geotechnical standpoint and is able to achieve a minimum factor of safety of 1.5. The proposed project is beneficial since it reduces slide potential and stabilizes Bay Drive and the adjacent residences.

The applicant indicates that other alternatives to the slope repair, including crib block, buttress walls located at the sand line, soil nailing, chemical grouting, buttress fills without a shoring wall, chemical grouting, and a seawall at the toe of the slope were considered. The proposed shoring system alternative was selected in part because it is similar to a method of construction that has been used elsewhere by the applicant in Laguna Beach.

Furthermore, a shoring wall, similar to the proposed shoring wall, was installed in the Wyland Gallery project in downtown Laguna Beach. The applicant's neighbors indicated at the April 7, 1998 Coastal Commission meeting that the bluff seaward of the Wyland Gallery eroded this past winter. The applicant's geologist indicated that the bluff at the Wyland Gallery eroded because it was not protected by a seawall, not because of defects with the shoring wall, and shoreline erosion was anticipated. (see Exhibit 16) For the proposed Bay Drive shoring project, the applicant proposes to install a toe protection wall near the base of the proposed buttress fill to prevent the type of erosion of the buttress fill that occurred at the Wyland Gallery.

While the other alternatives may provide site stability, they do not all provide for the proper drainage of the site. Thus, the alternatives which did not provide for proper drainage were rejected. Although the rejected soil nailing alternative would allow for the installation of necessary drainage improvements, this alternative would not achieve an acceptable level of safety without similar excavation and recompaction (landform alteration) and a shoring wall similar to what is being proposed under the proposed project.

The proposed project is an acceptable method to achieve long-term stability of the site, adjacent road (Bay Drive), and adjacent properties. Drainage would be collected on-site to minimize

off-site adverse impacts from erosion and would be discharged in a manner that minimizes beach erosion. The repaired bluff would mimic the original bluff profile and tie in to the slope profile of the adjacent properties in a manner that does not result in significant differences at the interface between the subject site and adjacent properties. The geotechnical consultant has indicated that the proposed project would not result in adverse impacts to adjacent off-site properties. (see Exhibit 10) The minimum factor of safety of 1.5 would be met.

Further, the proposed project would provide a level of stability not achieved before on the subject site, and would minimize further occurrences of landslides on the site. This is because the proposed project: 1) is a comprehensive slope stability project, 2) would remove the major identified slide plane by excavating below the identified clay seam/failure plane, 3) provides drainage controls which address the issue of reducing groundwater on the site that contributes to landslides, and 4) provide toe protection which would stabilize the slope.

The geotechnical reports indicate that the proposed development is feasible from a geotechnical standpoint. The geotechnical reports contains recommendations that, if incorporated into the proposed project design, would assure stability and structural integrity. The recommendations include: 1) removal of the active landslide debris and reconstruction as compacted fill, 2) installation of drainage systems (as proposed), 3) construction of the slope at a 2:1 (horizontal to vertical) ratio to assure gross and surficial stability, 4) construction of a buttress keyway at the toe of the identified slide plane, 5) benching, and 6) installation of a toe protection wall inland of the buttress key, founded a minimum of 3 feet into dense bedrock.

Section 30253 of the Coastal Act requires that new development minimize risks to life and property in areas of high geologic hazard. The applicant's geotechnical reports indicate that the subject site has slid several times in the past. To minimize risks to life and property, the project must achieve a minimum factor of safety of 1.5. In a letter dated August 3, 1998, Hetherington Engineering stated that the proposed slopes and shoring system will achieve a 1.5 factor of safety. (see Exhibit 35) Hetherington Engineering, Inc. clarified in a letter dated August 5, 1998 that the slope at the bottom of the fill would not exceed 5:1 (horizontal to vertical) and as a consequence benching would not be necessary to achieve the required factor of safety. (see Exhibit 36) Therefore, the Commission finds that the project is consistent with Section 30253 since benching is not necessary for purposes of minimizing risks to life and property considering that the slope at the bottom of the fill would not exceed 5:1 and the project will achieve a 1.5 factor of safety.

The applicant, by letter dated July 16, 1998, proposed to remove the proposed benches and subdrains and install in their place ". . . a series of french drain trenches that would be situated perpendicular to Bay Drive at the center of each lot." (see Exhibit 9, Page 4) In addition, by later dated July 21, 1998, the applicant stated that Mark Hetherington, the applicant's engineering geologist, had omitted the previously proposed benching because the slope of the identified

failure plane was only 2.5:1 and benching is typically required for slopes greater than 5:1. (see Exhibit 9, Page 1)

(1) Conformance with Geotechnical Recommendations/Revised Side Wall plans

The geotechnical consultants for the applicant's neighbors did not indicate that the proposed project was infeasible or that it would not provide the stability indicated. They did, however, provide written comments on the proposed project and made a number of recommendations to ensure that the proposed shoring system would perform as anticipated. The installation of inclinometers was proposed to monitor movement of the land during construction. In addition, further analysis of the expected stability of the portion of the proposed shoring wall adjacent to 33 Bay Drive was another recommendations put forth. To assure that other geotechnical evaluations are taken into consideration, a special condition is imposed to require that the applicant's geotechnical consultant incorporate the recommendations of the other geotechnical consultants except the requirement for benching. The benching requirement was deleted based on an August 3, 1998 by Hetherington Engineering, Inc. (see Exhibit 35)

Therefore, as a condition of approval, the Commission finds that it is necessary to require the applicant to submit final revised plans which include signed statements of the applicant's geotechnical consultants and which incorporate the recommendations of the neighbors geotechnical consultants certifying that the final revised plans incorporate the geotechnical recommendations. As a condition of approval, the Commission also finds that the applicant shall prepare revised side wall plans that ensure the stability of the portion of the proposed shoring wall adjacent to 33 Bay Drive for both construction conditions and final project conditions.

(2) Assumption-of-Risk Deed Restriction

Because landsliding has occurred several times on the subject site, the Commission finds that, as a condition of approval, the applicant and all landowners of the subject site must record an assumption-of-risk deed restriction to inform the applicant and all current and future owners of the subject site that the site is subject to hazards from landslides and coastal erosion/wave attack. This is especially important since homes would likely be rebuilt on the subject site.

The proposed stabilization project involves eliminating a clay seam/failure plan that was a chief cause of previous landslides and construction of a toe protection wall that would support the proposed buttress fill, which in turn supports the approved shoring wall, which in turn protects existing structures such as the Bay Drive roadway and adjacent homes. The applicant's geotechnical and coastal engineering consultants assert that the proposed stabilization project would be designed in a geotechnically safe manner, and that the proposed stabilization project would provide support for future homes on the site.

However, geologists employed by adjacent property owners and the homeowners' association indicated the need for further refinement of the design of the proposed stabilization project to ensure that it will in fact perform as intended. Further, geotechnical evaluations do not guarantee that future bluff retreat or further landslides will not affect the stability of the proposed stabilization project. There is always some risk of an unforeseen natural disaster, such as an unexpected landslide due to an unknown failure plane, erosion of the bluff seaward of the toe protection wall due to unusually large waves, etc., that would result in complete or partial destruction of the proposed stabilization project.

In case such an unexpected event occurs on the subject property, the Commission attaches Special Condition No. 1(d), which requires recordation of a deed restriction whereby the landowner assumes the risks of extraordinary erosion and geologic hazards of the property and accepts sole responsibility for the removal of any structural debris resulting from landslides, slope failures, or erosion on the site.

The Commission further finds that Special Condition No. 1(a) must be attached because recordation of the deed restriction will provide notice of potential hazards of the property and help eliminate false expectations on the part of potential buyers of the property, lending institutions, and insurance agencies that the property is safe for an indefinite period of time and for further development indefinitely in the future.

In addition, although the applicant understands that the site has the potential for future geologic hazard, no once can predict when or if there might be bluff failure that might affect the proposed development since such failure appears to be episodic in nature. The Commission thus attaches Special Condition No. 1(b), which also requires recordation of a deed restriction whereby the landowner assumes the risks of extraordinary erosion and geologic hazards of the property and waives any claim of liability on the part of the Commission or its officers, agents, and employees for any damage due to these natural hazards; in addition, the landowner accepts sole responsibility for the removal of any structural debris resulting from landslides, slope failures, or erosion on the site.

The Commission notes that the applicant specifically claims that a seawall will not be necessary and, at the August 1998 Commission hearing, agreed to the imposition of this condition.

(3) Installation of Inclinometers

To ensure structural integrity and geologic stability, the Commission finds that the applicant shall, as required by Special Condition No. 8: 1) install inclinometers along the perimeter of the subject site to monitor ground movement so that imminent movements can be better identified

and appropriate remedial measures prepared, 2) notify the neighbors and Executive Director of landslides, and 3) submit a coastal development permit application for the remedial measures.

(4) Requirements for Future Homes

The Commission finds that, because homes are proposed to be built on the subject site, parameters for the construction of future homes must be set forth. These parameters include: 1) requiring that future homes to be built on the site are designed and constructed in a manner which maintains the minimum factor of safety of 1.5 for the subject site, 2) the submittal of measures to minimize and mitigate leakage from proposed swimming pools and spas to reduce the amount of groundwater on-site, and 3) conformance with the structural and deck stringlines, and 4) that the slope seaward of the proposed homes be entirely vegetated with drought-tolerant, primarily native non-invasive vegetation. Regarding landscaping, the Commission finds that yarrow does not constitute turf and thus its use for landscaping is acceptable.

(5) Landscaping

Because groundwater levels have contributed to the landslide episodes on the subject site, the Commission finds that it is necessary to minimize irrigation on the site and require drought-tolerant landscaping. Minimizing irrigation and use of drought-tolerant landscaping would lessen the amount of water added to the groundwater supply that would cause erosion. Also, the Commission finds that it is necessary to require the elimination of the proposed paths from the proposed homes to the beach below. This is because the construction of paths, where paved or unpaved, would serve as a conduit for runoff whereby rain would collect and be funneled along the paths, causing gullying and erosion which would lead to slope instability.

(6) Conclusion (Geologic Hazards – Shoring System)

Therefore, as conditioned for: 1) recordation of an assumption-of-risk deed restriction, including requirements that no seawalls shall be built on the site and that the applicant shall be solely responsible for removal of debris resulting from hazards on the property, 2) the incorporation of geotechnical recommendations of the applicant's geologist, 3) revised side wall plans, 3) the use of drought-tolerant landscaping, 4) setting forth requirements for construction of future homes on the site including conformance with the stringline, and 5) the installation of inclinometers, the Commission finds that the proposed shoring system is consistent with Section 30253 of the Coastal Act.

b. Stability of Proposed Homes (Applications 5-98-020, 5-98-064, and 5-98-178)

Coastal development permit applications 5-98-020 (Conrad; 23 Bay Drive), 5-98-064 (Barnes; 25 Bay Drive), and 5-98-178 (McMullen; 31 Bay Drive), are for proposed homes to be built on

the buttress fill proposed under coastal development permit application 5-97-371 (Conrad). Structural integrity would be ensured in part because: 1) the proposed homes would be setback 100 feet from the seacliff toe while the proposed patio/swimming pool areas would be setback 70 feet from the seacliff toe, and 2) the proposed slope protection includes a buttress keyway and a toe protection wall would stabilize the adjacent structures and also provide protection for the proposed homes.

(1) Conformance with Geotechnical Recommendations

The proposed homes would be built on caisson-grade beam foundations which would be tied into the proposed shoring wall to provide stability. The supplemental geotechnical report dated January 26, 1998 (Hetherington Engineering, Inc. Project No. 1800.3, Log No. 4376) provided by the applicant includes recommendations that the drilled piers for the proposed foundations extend at least 10 feet into the bedrock, provide a minimum horizontal clearance of 30 feet from the face of the slope to the outer edge of the bearing surface, and that the piers be a minimum diameter of two feet. In addition, the geologist for the homeowners association also provided additional geotechnical recommendations. Therefore, the Commission finds that it is necessary for the applicant to submit plans depicting the final foundation and house designs which incorporate the recommendations contained in the geotechnical reports to further assure structural integrity.

(2) Assumption-of-Risk Deed Restrictions

As described above, the Commission finds that coastal development permit 5-97-371 (Conrad) for the stabilization of the subject site, as conditioned, is consistent with Section 30253 of the Coastal Act regarding geologic hazards. The proposed stabilization project involves eliminating a clay seam/failure plan that was a chief cause of previous landslides. The proposed stabilization project also involves the construction of a toe protection wall that would support the approved buttress fill, which in turn would support the approved shoring wall, which in turn would protect existing structures such as the Bay Drive roadway and adjacent homes. The applicant's geotechnical and coastal engineering consultants assert that the proposed stabilization project would be designed in a geotechnically safe manner, and that the stabilization project would provide support for the proposed homes.

However, geologists employed by adjacent property owners and the homeowners' association indicated the need for further refinement of the design of the proposed stabilization project to ensure that it will in fact perform as intended. Further, geotechnical evaluations do not guarantee that future bluff retreat or further landslides will not affect the stability of the proposed stabilization project, which in turn would affect the stability of the proposed homes. There is always some risk of an unforeseen natural disaster, such as an unexpected landslide due to an unknown failure plane, erosion of the bluff seaward of the toe protection wall due to unusually

large waves, etc., that would result in complete or partial destruction of the proposed houses or the proposed stabilization project.

In case such an unexpected event occurs on the subject property, the Commission attaches Special Condition No. 1(d), which requires recordation of a deed restriction whereby the landowner assumes the risks of extraordinary erosion and geologic hazards of the property and accepts sole responsibility for the removal of any structural debris resulting from landslides, slope failures, or erosion on the site.

The Commission further finds that Special Condition No. 1(a) must be attached because recordation of the deed restriction will provide notice of potential hazards of the property and help eliminate false expectations on the part of potential buyers of the property, lending institutions, and insurance agencies that the property is safe for an indefinite period of time and for further development indefinitely in the future.

In addition, although the applicant understands that the site has the potential for future geologic hazard, no once can predict when or if there might be bluff failure that might affect the proposed development since such failure appears to be episodic in nature. The Commission thus attaches Special Condition No. 1(b), which also requires recordation of a deed restriction whereby the landowner assumes the risks of extraordinary erosion and geologic hazards of the property and waives any claim of liability on the part of the Commission or its officers, agents, and employees for any damage due to these natural hazards; in addition, the landowner accepts sole responsibility for the removal of any structural debris resulting from landslides, slope failures, or erosion on the site.

The Commission notes that Jim Conrad, the applicant for permit 5-98-020 and the agent for permit applications 5-98-064 (Barnes) and 5-98-178 (McMullen), specifically claims that a seawall will not be necessary and, at the August 1998 Commission hearing, agreed to the imposition of such a condition on each of the subject permits precluding construction of future protective devices on the subject sites.

(3) Minimizing Groundwater

Because groundwater levels have contributed to the landslide episodes on the subject site, the Commission also finds that it is necessary to lessen the amount of groundwater on-site. Therefore, the Commission finds that it is necessary to: 1) require the submittal of measures to minimize and mitigate leakage from proposed swimming pools and spas to reduce the amount of groundwater on-site, 2) minimize irrigation on the site and require drought-tolerant landscaping, and 3) require conformance with the deck and structural stringlines to minimize the creation of hardscape, pools, and paths which could serve as conduits for runoff which would cause gullying and erosion leading to bluff instability.

Further because landsliding has occurred several times on the subject site, the Commission also finds that, as a condition of approval, the applicant and all landowners of the subject site must record an assumption-of-risk deed restriction to inform the applicant and all current and future owners of the subject site that the site is subject to hazards from landslides and coastal erosion/wave attack.

(4) Conclusion (Geologic Hazards – Proposed Homes)

As conditioned for: 1) an assumption-of-risk deed restriction, 2) the incorporation of the recommendations contained in the applicant's geotechnical reports, 3) the elimination of water dependent landscaping areas, 4) conformance with deck and structural stringlines, and 5) measures to mitigate swimming pool leakage, the proposed homes are consistent with Section 30253 of the Coastal Act..

2. Shoreline Protective Devices

Section 30235 of the Coastal Act states, in relevant part:

> *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.*

Section 30253 of the Coastal Act states, in relevant part:

> *New development shall:*
>
> *(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.*

The subject site is on a beach. The subject beach is a deep pocket beach approximately 1,400 feet long flanked by headlands that project seaward from either end of the crescent shaped beach by about 800 feet. Coastal development application 5-97-371 (Conrad) is for a bluff repair/stabilization project that involves construction of both a shoring wall along Bay Drive and part way along the sides of the adjacent properties, and a buried vertical wall seaward of the toe of the repaired slope. Coastal development permit applications 5-98-020 (Conrad), 5-98-064 (Barnes), and 5-98-178 (McMullen) are for the construction of homes on the stabilized slope

located landward of the proposed buried vertical toe protection wall. The firm of Noble Consultants prepared a coastal engineering assessment (dated April 2, 1998) of the subject site, local and subregional shoreline processes of the Laguna Beach Mini Cells littoral system. (see Exhibit 20) The littoral system consists of the bluffs, rocky shoreline, and cove beaches that start at the north at the Corona del Mar bluffs (just south of the Newport Harbor entrance) to Dana Point Harbor at the south adjacent to the Dana Point Headlands promontory.

a. Construction Which Alters Natural Shoreline Processes (Section 30235)

The proposed project involves the construction of a buried vertical wall and a shoring wall that would reduce or limit bluff retreat, thus reducing the amount of bluff material for natural beach replenishment. (See Exhibit C) Bluff retreat is caused in part by wave attack at the toe of a coastal bluff, which leads to bluff erosion. Bluff retreat and erosion are natural shoreline processes.

A coastal engineering assessment of the proposed bluff repair acknowledges that the proposed buried vertical wall and larger shoring wall adjacent to Bay Drive would deprive the littoral cell of upper terrace deposit sediments that would otherwise enter the littoral system through seacliff retreat and slope sloughing processes. Therefore, the proposed project involves construction which alters natural shoreline processes. Thus, the Commission must find that the proposed shoring wall and vertical wall are: 1) required to protect existing structures, and 2) are designed to mitigate adverse impacts on shoreline sand supply.

b. Protection of Existing Structures (Section 30235)

Section 30235 allows the construction of a shoreline protection device which alter natural shoreline processes if the protective device is required to protect existing structures in danger from erosion. As described above, the proposed shoring wall and toe protection would alter natural shoreline processes. The proposed toe protection wall, which the applicant's coastal engineer recommends be located approximately 25-30 feet landward of the existing slope/sand boundary line, would protect the proposed soil key way at the toe of the proposed buttress fill from erosion due to wave attack. The proposed keyway would stabilize the proposed buttress fill, which in turn provides the primary shoring support for the Bay Drive roadway, the homes on the landward side of Bay Drive (which is a relatively narrow street), and the existing adjacent homes at 21 Bay Drive and 33 Bay Drive. Therefore, it is important to ensure that the proposed keyway is protected from wave attack by a toe-protection wall.

In addition, the proposed toe protection wall is situated at the 27 foot contour line and is buried. Until such time as the beach and slope seaward of the proposed toe protection wall completely erode away, causing the proposed toe protection wall to be exposed to wave action, the toe protection wall would serve primarily as a retaining wall for the proposed buttress fill rather than

a seawall. The applicant's geologist has indicated that the toe protection wall would allow for the construction of a larger buttress fill than could be constructed without some sort of wall near the toe. The applicant's geologist further indicated that the larger the buttress fill, the greater the support for existing structures (e.g., the Bay Drive roadway and the homes at 21 and 33 Bay Drive). Thus, the toe protection wall allows for the construction of a larger buttress fill to provide additional support for existing structures.

The proposed shoring wall would provide temporary support during construction of the proposed buttress fill, as well as providing permanent support once the buttress fill is constructed. Therefore, the Commission finds that the proposed buried toe protection wall and shoring wall are needed to protect existing structures.

c. Adverse Impacts on Shoreline Sand Supply (Section 30235)

Section 30235 also allows the construction of a structure which alters natural shoreline processes only when the structure is designed to minimize adverse impacts to shoreline sand supply. The coastal engineering assessment indicates that seacliff erosion in the area is episodic and occurs sporadically rather than continuously, during times of heavy storm events coupled with high tides. The assessment notes that the presence of dense vegetation at the toe of the bluffs in Three Arch Bay implies that wave activity which would wash away the vegetation doesn't often reach the bluff toe, thus implying that bluff erosion from wave activity is low.

On an average annual basis, the assessment estimates the rate of seacliff retreat in the area to be approximately 0.1 to 0.2 feet per year. The assessment concludes that the estimated annual average volume contributed to the sediment supply of the cove beach from seacliff retreat in Three Arch Bay is less than two hundred (200) cubic yards per year. Thus, the bluffs in Three Arch Bay do not contribute a large amount of sand to the local cove beach.

In addition to the bluffs in Three Arch Bay not contributing the sand supply of the local beach itself, the bluffs only nominally contribute to the larger subregional sand supply. The assessment indicates that the major source of sand in the area is the approximately twelve thousand (12,000) cubic yards of sediment which comes down nearby Aliso Creek every year. In addition, the assessment concludes that alongshore transport of sand in the Laguna Beach Mini Cells littoral system for the most part bypasses the subject beach. The shoreline processes of the subject beach are more dominated by cross shore sand exchanges. In essence, the sand supply of the subject beach is relatively stable. The sand moves offshore and then back onshore in response to sea conditions which change with the seasons, rather than moving upcoast or downcoast to a new location, never to return. Thus, permanent loss of sand from the subject beach to the offshore littoral drift which would contribute to subregional sand supply is minimal.

Further, the proposed toe protection wall is situated at the 27 foot contour line and is buried. Until such time as the beach and slope seaward of the proposed toe protection wall completely erode away so that the wall is directly exposed to wave attack, the proposed toe protection wall would not affect the process of slope material being added to the beach sand supply. The rate of erosion due to wave attack at the toe of the slope at the subject site is fairly low, according to the coastal engineering assessment (further described below). The assessment also concludes that the two hundred (200) foot stretch of bluff would likely impact less than 0.2 percent of the overall alongshore subregional sand transport volume. It is not likely, therefore, that the proposed toe protection wall would be exposed during the lifetimes of the proposed homes, based on the low historical erosion rates identified in the coastal engineering assessment. The wall would be exposed much quicker, however, if erosion rates accelerated due to abnormally high waves resulting from unusually strong storm events.

Since the subject beach and sand supply are somewhat static and isolated from the larger subregional system, the limitation on bluff retreat would not have a significant impact on the sand supply of either the local cove beach nor on the larger subregional system. Therefore, the specific nature of the subject beach and the local and subregional shoreline processes are such that the reduction in on-site bluff material for natural sand replenishment, which is minimal, that would result from the proposed project, does not constitute an adverse impact on local shoreline sand supply.

d. No future seawalls allowed (Section 30253)

The approved vertical toe protection wall would be located seaward of the proposed home. As discussed above, the vertical toe protection wall would provide some measure of protection for the proposed home. Also, the applicant's coastal engineer indicates that seacliff erosion on the site appears to be low, and that the proposed home would likely be ". . . well over 100 years away from seacliff retreat encroachment." (Noble Consultants April 2, 1998 letter to Jim Conrad, Page 3) Thus, no additional toe protection walls should be necessary. Therefore, the Commission attaches Special Condition No. 1(c), which requires that the landowner agrees through recordation of the deed restriction that no bluff or shoreline protective devices shall be constructed on the subject site. This requirement is consistent with Section 30253 of the Coastal Act, which provides that new development shall not in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

The Commission notes that Jim Conrad, the agent for the subject permit application, specifically claims that a seawall will not be necessary and, at the August 1998 Commission hearing, agreed to the imposition of such a condition on each of the subject permits precluding construction of future protective devices on the subject sites.

e. Conclusion (Shoreline protective devices)

The Commission finds that the proposed project involves construction that would alter natural shoreline process. However, the Commission finds that: 1) the proposed project is necessary to protect existing structures (the Bay Drive roadway and the homes at 21 and 33 Bay Drive), 2) the proposed project will not result in adverse impacts to natural shoreline sand supply, and 3) no additional toe protection walls should be necessary. Thus, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30235 and 30253 of the Coastal Act.

3. Marine Resources/Water Quality

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 would sustain the biological productivity of coastal waters and that would maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act 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.*

The proposed project consists of the construction of a drainage system which would collect runoff and groundwater. The drains would direct the collected water to the beach through four outlets. Where the proposed drain lines meet the beach, seepage pits are proposed to be installed to promote seepage of the groundwater into the ground rather than having the water run across the sand to the ocean and causing beach erosion. The proposed drainage system would collect water which already seeps onto the beach from the subject site and inland areas. The California Regional Water Quality Control Board, San Diego Region ("RWQCB"), sent the applicant a letter indicating that they have no objection to the construction of the proposed drainage system. (See Exhibit D) An off-site drainage system to the east of the site also discharges onto the beach.

The applicant has indicated that no construction equipment or supplies would be placed upon the sandy beach. (See Exhibit L, Page 4) The applicant has indicated that a flat pad would be graded approximately midway on the slope for temporary storage of equipment and materials to be used in the construction of the proposed shoring wall. The applicant has indicated that contractors would be briefed as to minimizing the occurrence of and containing spills of petroleum and other toxic fluids. A health risk to marine life and swimmers would be created if toxic substances were to get on the beach and leak into the ocean. In addition, staging or storing construction equipment and material on the beach would take up beach area needed for grunion spawning, thus resulting in adverse impacts on the grunion.

In order to ensure that adverse impacts to marine resources and water quality are minimized, the Commission finds that it is necessary to require a condition which prohibits the staging or storing of construction equipment or materials on the beach and to minimize and control spillage of toxic substances. Further, the Commission finds that the construction debris must be disposed of outside the coastal zone, or at an approved site in the coastal zone, to minimize adverse impacts on marine resources. As conditioned, the proposed project is consistent with Section 30231 of the Coastal Act.

4. Public Access

Section 30212 of the Coastal Act states, in relevant part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> *(2) adequate access exists nearby . . .*

The subject site is a beachfront site located between the nearest public roadway and the shoreline in the private community of Three Arch Bay. The toe of the proposed repair slope contains an easement, between 46 to 57 feet wide, for access and recreation purposes solely for the residents of the private Three Arch Bay community. The beach is a cove beach separated from public beaches by rocky headlands. Thus, the beach is not readily accessible from nearby public beaches. A December 10, 1997 survey of the mean high tide line indicates that the mean high tide line is anywhere from approximately 275 feet to 365 feet from Bay Drive. The seaward most extent of the proposed project would be only 220 to 250 feet seaward of Bay Drive. The California State Lands Commission ("CSLC") has acknowledged the presence of the above mentioned private recreation easement on the beach. Thus, it appears the proposed project would not extend seaward of the mean high tide line onto sovereign land.

In addition, the CSLC has written the applicant regarding the issue of encroachment of the proposed development onto state lands. (see Exhibit H) The CSLC is not asserting any claim at this time that the proposed development intrudes onto state lands. However, the CSLC indicates that the decision not to assert a claim at this time does not prejudice any future assertion of state ownership or public rights.

The subject site is in a private community. The proposed development would not result in direct adverse impacts, either individually or cumulatively, on physical vertical or lateral public access, or on sovereign lands seaward of the mean high tide line. Vertical public access and public recreation opportunities are provided at nearby Salt Creek County Beach Park a mile to the southeast. Therefore, the Commission finds that no public access is necessary with the proposed development. Thus, the Commission finds that the proposed development is consistent with Section 30212 of the Coastal Act.

5. Visual Quality

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 to repair a failed slope. The proposed slope repair involves the installation of a shoring wall and caissons. Only the uppermost five feet of the wall would extend above ground. A crib wall near the base of the slope is also proposed, but it would be entirely underground. Therefore, the proposed wall would not be visible for the most part. Further, the proposed homes would obscure the upper portion of the slope repair. The lower portion of the proposed slope repair would be vegetated. The proposed homes are stepped down the hillside, with only the proposed garages located at street level. The proposed garages would only extend 10 to 11 feet above the centerline of Bay Drive. Thus, when viewed from the level of Bay Drive (a private street), only the garages would be visible. This is similar to the character of the existing adjacent homes at 21 and 33 Bay Drive, where only the garages of the homes are visible since the remainder of the homes step down the hillside.

In addition, the proposed project is located in a private community. Therefore, the proposed project would not block any public views to the shoreline. Public views along the coast from

public trust land seaward of the mean high tide line would be similar to the views which currently exist since the bluffs are altered and developed with homes which step down the bluff face. Further, since the private beach is flanked on either side by rocky headlands which extend several hundred feet into the ocean, it would be difficult for the public to access the part of the beach seaward of the mean high tide line in order to view the bluffs. Even if the public were to be able to view the private bluffs (e.g., from a boat offshore), the proposed homes would be consistent with the character of the existing adjacent homes at 21 and 33 Bay Drive which are also multi-level and step down the hillside. The proposed development would also remove weedy, non-native vegetation which has grown haphazardly on the site, creating an unattractive sight. Also, reconstructing the bluff as proposed would hide the exposed underside of Bay Drive.

However, as a condition of approval for permit 5-97-371 (Conrad) for the underlying slope repair and lot merger, a deed restriction is being required stating that any homes to be built on the repaired slope must conform to deck and structural stringlines, as described previously. The Commission finds that to allow development, such as swimming pools or paths and stairs to the beach, seaward of the stringlines would not be in character with the nature of existing development and would result in adverse visual impacts.

The City's certified local coastal program ("LCP") is not effective in Three Arch Bay because the area is not certified, but it can be used for guidance. The LCP generally requires a structural setback of 25 feet from the edge of the bluff or a setback ascertained by a stringline, whichever is more restrictive. The Commission has consistently required in Orange County that development be setback a minimum of 25 feet from the edge of a coastal bluff. The Commission has also recognized that in a developed area, where new construction is generally infilling and is otherwise consistent with the Coastal Act policies, no part of the proposed development should be built further seaward than a line drawn between the nearest adjacent corners of either decks or structures of the immediately adjacent homes.

In this case, the applicability of the 25 foot setback from the edge of a coastal bluff is moot since the proposed development is occurring on a bluff face. The use of a stringline therefore is the appropriate solution for determining the seaward extent of development considering that the proposed residential development is infill development. Normally, the stringline is applied to a new house which is being built between two existing houses. However, in this situation, because of a prior landslide which destroyed prior development, the application of the stringline must be modified to use existing residential structures and accessory structures on either side of the proposed development that were not affected by the landslide as the "anchors" for determining the stringline since this is bluff face development. Taking this approach is reasonable and equitable since it would limit new development to the seaward extent of existing development.

The applicant is proposing development seaward of the stringlines drawn between the nearest existing decks and structures on either side of the subject site. (See Exhibit B, Page 1) The

structure stringline limits the seaward extent of enclosed living areas. The deck stringline limits the seaward extent of all other accessory structures including swimming pools, spas, hardscape, decks, and at-grade patios. Though the proposed residence complies with the structural stringline, development occurring seaward of the deck stringline consists of hardscape, patios, stairs, and paths. The purpose of the stringline is to minimize the impacts of new development on both bluff stability and visual resources. The geologic instability of the project site has been detailed in preceding sections of this report. Though development is occurring on the bluff face rather than the bluff top because virtually no bluff top exists on the subject site, forcing the development to step down the hillside, the intent of the stringline and bluff top setback policies must be kept intact.

The Commission's regularly used stringline policy applies to all structures whether they are at grade or above grade since all impermeable surfaces act to accelerate and increase the amount of runoff and erosion of slope areas and may adversely impact bluff stability and visual resources. The Commission has routinely required that all non-habitable accessory structures and hardscape conform to the deck stringline.

The intent of the bluff top and stringline policies of the LCP is similar to the Commission's policy for controlling seaward encroachment of development, including hardscape. Chapter 25.50.004 of the City's Zoning Code states that "no new buildings, additions to existing buildings, or structures or improvements shall encroach beyond the applicable building stringline or be closer than twenty-five feet to the top of an ocean front bluff; the more restrictive shall apply." While the City does allow hardscape up to ten feet from the bluff edge, it does not usually allow development on the bluff face.

In the case of the subject application, the adjacent existing residences do not have beach paths or stairways to the beach or hardscape seaward of the deck stringline. To allow such development with the proposed project would result in an adverse visual impact and would not be consistent with existing development patterns. Therefore, the Commission finds it necessary to impose a special condition requiring the applicant to submit revised landscape plans which show that the hardscape and other structural development seaward of the deck stringline have been deleted. Further, this was a requirement of the approval of permit 5-97-371 for the underlying bluff stabilization and lot merger as well as the approvals of the permits for the other three homes on the stabilized slope. Thus, the Commission finds that the proposed project, as conditioned, is consistent with Section 30251 of the Coastal Act.

D. Local Coastal Program

The City of Laguna Beach local coastal program ("LCP") is effectively certified. However, several locked-gate beachfront communities are deferred, including Three Arch Bay. The subject site is located in Three Arch Bay. Therefore, the standard of review for the proposed

project is conformity with the Chapter 3 policies of the Coastal Act and not the certified LCP. However, Section 30604(a) provides that a coastal development permit should not be approved for development which would prejudice the ability of the local government to prepare an LCP consistent with the Chapter 3 policies.

The proposed project is also consistent with the certified LCP, which may be used for guidance in non-certified area. Land Use Plan Policy 10-C provides, in part, that projects located in geological hazards areas are required to be designed to void the hazards where feasible. The proposed project would eliminate the clay seam/failure plane which has been identified as a major cause of landslide activity on the site. The proposed project also complies with the stringline provisions of the certified LCP.

Further, the proposed project, as conditioned, would be consistent with the geologic hazards policies of Chapter 3 of the Coastal Act. Therefore, the Commission finds that the proposed project would not prejudice the ability of the City of Laguna Beach to prepare an LCP for the Three Arch Bay community, the location of the subject site , that is consistent with the Chapter 3 policies of the Coastal Act.

E. California Environmental Quality Act

Section 13096 of Title 14 of the California Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, 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 which the activity may have on the environment.

The applicant considered other geotechnical alternatives including soil nailing, buttress fills without a shoring wall, chemical grouting and a seawall at the toe of the slope. The primary goal of the proposed project is to recreate the slope in approximately the same landform that previously existed prior to the landslide and to return it to its previous use as residential sites as well as to stabilize the road (Bay Drive) at the top of the bluff. Due to the landslide, Bay Drive, and adjacent properties seaward of Bay Drive to the east and west of the subject site, have lost lateral structural support.

While the rejected alternatives may provide site stability, they do not all provide for the proper drainage of the site and thus were rejected. Although the rejected soil nailing alternative would allow for the installation of necessary drainage improvements, this alternative would not achieve an acceptable level of safety without similar excavation and recompaction (landform alteration)

and a shoring wall similar to what is being proposed under the proposed project. Further, the applicant could not obtain local government approval for a seawall located at the toe of the bluff.

The chosen alternative would not have significant adverse effects on the environment. The proposed project is an acceptable method to achieve long-term stability of the site, adjacent road, and adjacent properties. The proposed project would have no adverse impacts on the stability of adjacent properties. Further, the proposed development is located in an urban area. Development previously existed on the subject site. All infrastructure necessary to serve the site exist in the area.

The proposed project has been conditioned in order to be found consistent with the development policies regarding hazards, shoreline protection devices, and marine resources of Chapter Three of the Coastal Act. To assure structural stability and to minimize risks to life and property from geologic hazards, feasible mitigation measures requiring: 1) an assumption-of-risk deed restriction, 2) conformance with geotechnical recommendations, 3) landscaping requirements, 4) prohibiting the staging and storing of construction equipment and materials on the beach, and 5) identifying the disposal site; would minimize all significant adverse environmental effects.

As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A

Substantive File Documents

- ◊ "Preliminary Geotechnical Investigation", Proposed Four Lot Residential Development, Lots 26, 27, 28, and 29 of Tract 970, Three Arch Bay, South Laguna Beach, California, dated April 11, 1997, prepared for James Conrad by Hetherington Engineering, Inc. (Job No. 1800.2).
- ◊ "Supplemental Geotechnical Investigation", Proposed Residential Development, Lots 26, 27, 28, 29, and 30 of Tract 970, Three Arch Bay, South Laguna Beach, California, dated January 26, 1998, prepared for James Conrad by Hetherington Engineering, Inc. (Project No. 1800.3).
- ◊ Letter from Hetherington Engineering, Inc. to Coastal Commission staff dated March 18, 1998.
- ◊ Letter from Hetherington Engineering, Inc. to James Conrad dated June 19, 1998.
- ◊ Letter from Hetherington Engineering, Inc. to Jim Conrad dated July 6, 1998.
- ◊ Letter from Hetherington Engineering, Inc. to Coastal Commission staff dated August 3, 1998.
- ◊ Letter from Hetherington Engineering, Inc. to James Conrad dated August 5, 1998.
- ◊ Letter from Noble Consultants to James Conrad dated March 6, 1998(#823-01).
- ◊ Letter from Noble Consultants to James Conrad dated April 2, 1998.
- ◊ Letter from Noble Consultants to James Conrad dated May 12, 1998.
- ◊ Letter from Noble Consultants to James Conrad dated June 23, 1998.
- ◊ Ninyo & Moore geology report dated July 15, 1998 for Shirley Frahm (Project No. 201351-01).
- ◊ Letter from Josephson Werdowatz to George Piggott dated July 15, 1998.
- ◊ Letter from Post, Buckley, Schuh & Jernigan to George Piggott dated July 15, 1998.
- ◊ Letter from Leighton and Associates, Inc. to Three Arch Bay Homeowners Association dated August 11, 1998 (Project No. 1971218-001)
- ◊ "Engineering Geologic Investigation, 21 Bay Drive, Laguna Beach, California," dated August 8, 1992 prepared by Gerald Raymond by Coastal Geotechnical.
- ◊ December 17, 1997 letter from the California Regional Water Quality Control Board - San Diego Region to James Conrad.
- ◊ January 14, 1998 letter from the California State Lands Commission to James Conrad (File Ref: SD 97-12-15.4).
- ◊ Letter from James Conrad to Coastal Commission dated July 29, 1998.

APPENDIX A (Cont'd)

Local Approvals

5-97-371 (Conrad); Shoring System: Variance 6425; Design Review 97-039; City of Laguna Beach Lot Line Adjustment 97-07.

5-98-020 (Conrad); Home at 23 Bay Drive: Variance Application 6446; Design Review 97-206

5-98-064 (Barnes); Home at 25 Bay Drive: Variance Application 6449; Design Review 97-212.

5-98-178 (McMullen); Home at 31 Bay Drive: Variance Application 6478; Design Review 98-031.

LIST OF EXHIBITS

1. Vicinity Map

Plans

2. Site Plan (all four proposed lots, with homes)
3. Plans for proposed home at 23 Bay Drive: Permit Application 5-98-020 (Conrad)
4. Plans for proposed home at 25 Bay Drive: Permit Application 5-98-064 (Barnes)
5. Plans for proposed home at 29 Bay Drive: NOT BEFORE THE COMMISSION
6. Plans for proposed home at 31 Bay Drive: Permit Application 5-98-178 (McMullen)
7. Lot Line Adjustment 97-07: Permit Application 5-97-371 (Conrad)
8. Shoring System Plans: Permit Application 5-97-371 (Conrad)

Geotechnical Information

9. Applicant's letters regarding geology
10. Applicant's geologist's March 18, 1998 letter regarding off-site impacts

Comments from neighbors regarding geology

11. Ninyo & Moore geology report
12. Comments from Josephson Werdowatz
13. Comments from Post, Buckley, Schuh & Jernigan
14. Letter from Sid Danenhauer
15. Applicant's response to neighbors comments

Coastal Engineering Information

16. Applicant's geologist's comments on Wyland Gallery project
17. Applicant's coastal engineer's calculations for toe protection
18. Applicant's geologist's recommendations for toe protection
19. Applicant's coastal engineer's assessment of the need for toe protection
20. Applicant's coastal engineer's assessment of shoreline processes

Other Exhibits

21. Letter from the Regional Water Quality Control Board regarding drainage
22. Letter from the California State Lands Commission regarding public trust lands
23. Mean High Tide Line survey

Letters of permission from landowners

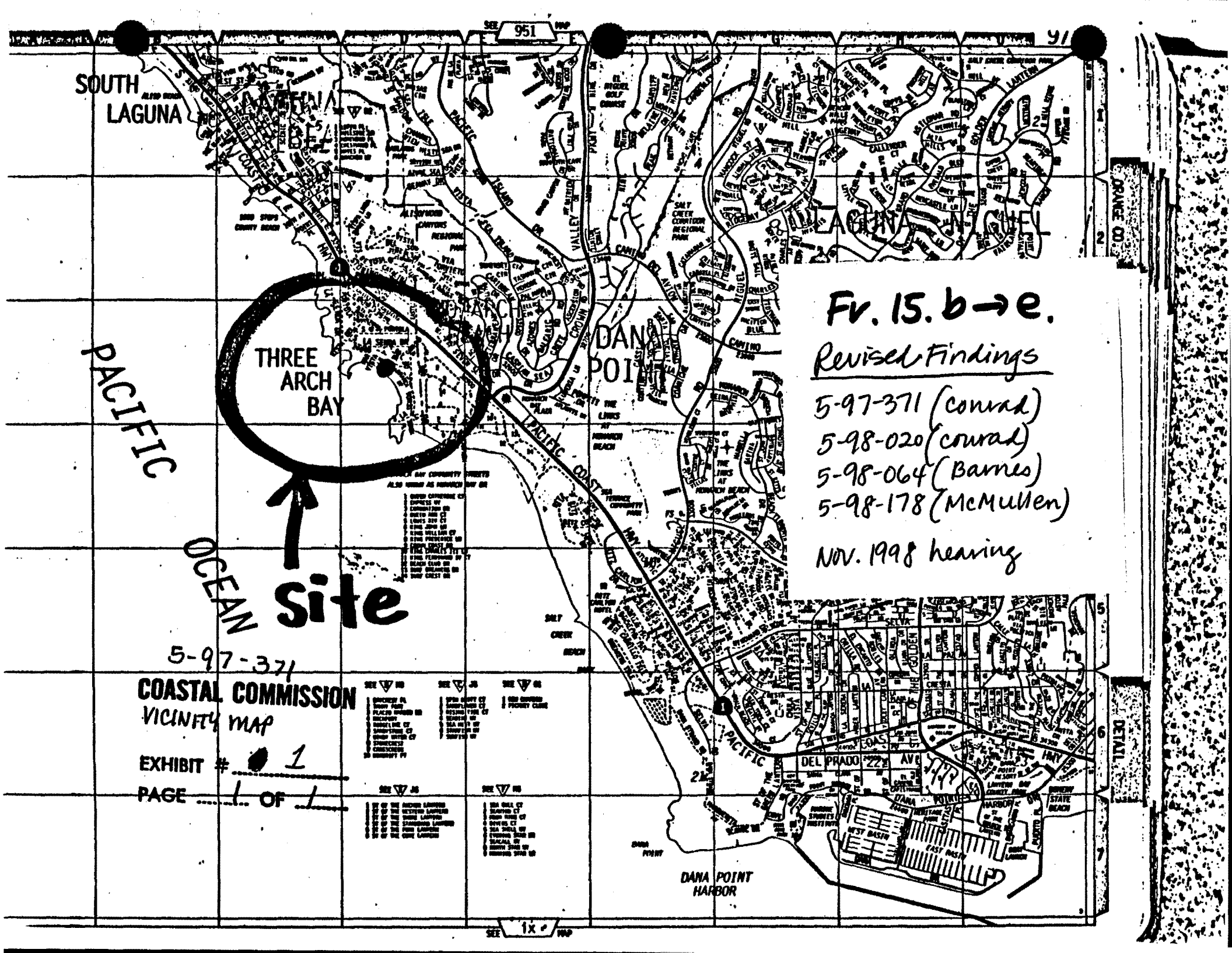
24. Three Arch Bay Homeowner's Association; owner of Bay Drive private recreation easement
25. Owner of 25 Bay Drive Barnes)
26. Owners of 29 Bay Drive (Griswold)
27. Owner of 31 Bay Drive (McMullen)
28. Owner of off-site adjacent property at 21 Bay Drive (letter of intent)

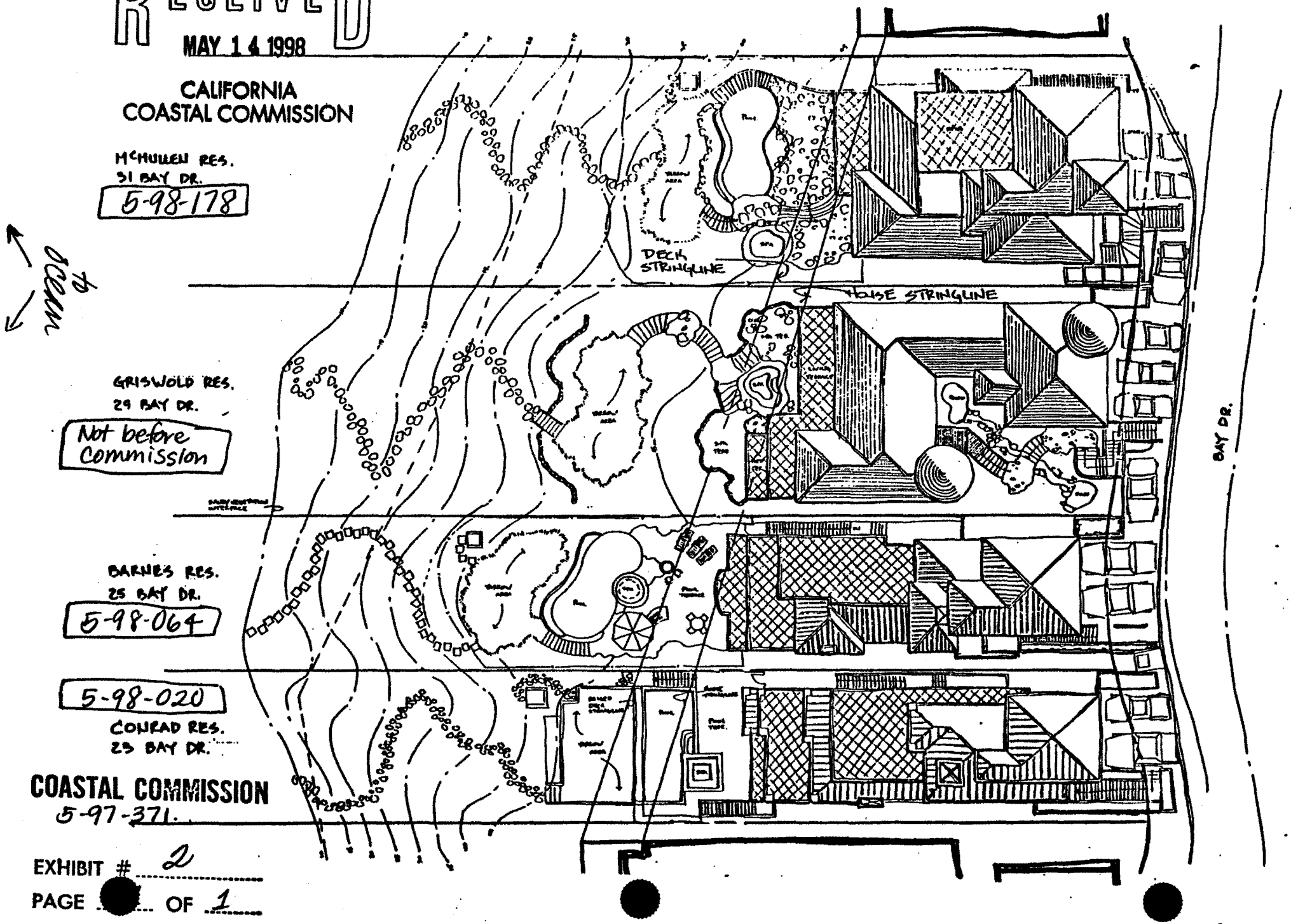
Time Extensions

29. Coastal development permit application 5-97-371 (Conrad)
30. Coastal development permit application 5-98-020 (Conrad)

{The following additional exhibits will be sent under separate cover at a later date}

31. July 23, 1998 letter from Hetherington Engineering, Inc. to the Coastal Commission
32. Plans for toe wall at base of buttress fill
33. Plans for energy dissipator for drainage system
34. July 29, 1998 letter from James Conrad to Coastal Commission staff
35. August 3, 1998 letter from Hetherington Engineering, Inc. to the Coastal Commission
36. August 5, 1998 letter from Hetherington Engineering, Inc. to James Conrad
37. August 11, 1998 letter from James Conrad to Coastal Commission staff
38. August 3, 1998 letter from Elite Pools • Spas to Coastal Commission staff
39. August 11, 1998 letter from Leighton and Associates to Three Arch Bay
40. Roll Call Vote Record

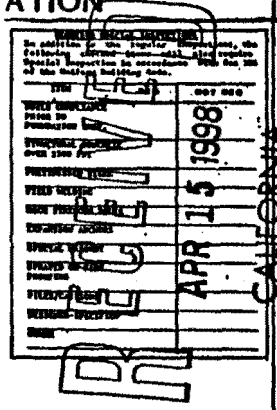

SOUTH LAGUNA
LAGUNA BEACH
LAGUNA NIGUEL
DANA POINT
THREE ARCH BAY
PACIFIC OCEAN
Site
PACIFIC COAST HWY
DEL PRADO
DANA POINT HARBOR
ORANGE CO.
DETAIL
Fr. 15. b → e.
Revised Findings
5-97-371 (Conrad)
5-98-020 (Conrad)
5-98-064 (Barnes)
5-98-178 (McMullen)
Nov. 1998 hearing
5-97-371
COASTAL COMMISSION
VICINITY MAP
EXHIBIT # 1
PAGE 1 OF 1



CONRAD RESIDENCE

23 Bay Drive

ATION



CONSULTANTS

STRUCTURAL:

MECHANICAL:

LANDSCAPING:

CIVIL:

SOILS/GEOLOGY:

SOILS/ENGINEERING:

EXHIBIT # 3
PAGE 1 OF 8

PROJECT DATA

OWNER: JIM & KATHY CONRAD
791 BARRACUDA WAY
LAGUNA BCH. CA.

LEGAL DESCRIPTION:
LOT 26, TRACT 970 TAB
AP# 056-180-29

PARKING DATA:
REQUIRED : 4 SPACES
PROVIDED : 4 SPACES

SITE SUMMARY

BUILDING AREA:
LIVING AREA: 3,720 ft²
GARAGE AREA 576 ft²
DECKS 997 ft²
LOT AREA (GROSS) 10,380 ft²
(U.I.C. BEACH AREA) 8,540 ft²
AVERAGE SLOPE CALCULATION.
AVG LOT DEPTH (TO MHTL) 259.5'
AVG ELEV. CHANGE 93.25'
A.S.L. 93.25' ÷ 259.5' = 35.9%
B.S.C. = LOT 8540 ft² x 36% = 2,989 ft²
MAXIMUM GARAGE AREA = 1.5 x B.S.C. = 4,483 ft²

VICINITY MAP

COASTAL COMMISSION
5-98-020
Plans
3

SHEET INDEX

T-1	TITLE SHEET
A-1	SITE PLAN
A-2	FLOOR PLANS
A-3	FLOOR PLANS
A-4	FLOOR PLANS
A-5	ELEVATIONS
A-6	ELEVATIONS
A-7	ELEVATIONS

T-1

DATE 6-25-97 | REV. DATE: 8-11-97
TITLE: TITLE SHEET
SCALE: NONE | APPROVED:

Conrad Residence
23 Bay Drive
South Laguna Beach, Ca

James Conrad Architect
1000 S. COAST HWY. STE. 17
LAGUNA BEACH CA. 92651
TEL NO. (714) 497-0888
FAX NO. (714) 497-0889

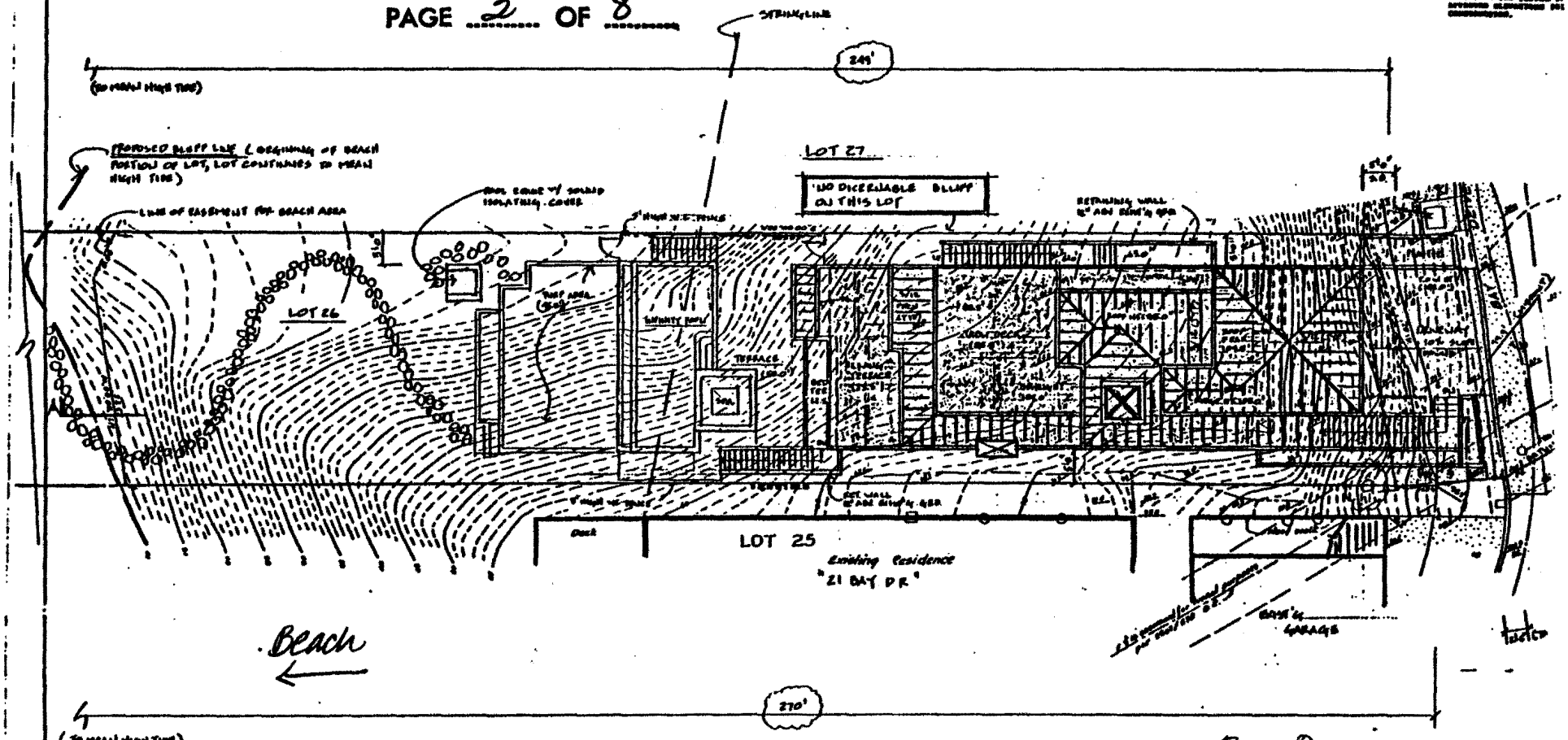
(Conrad) 23 Bay Drive

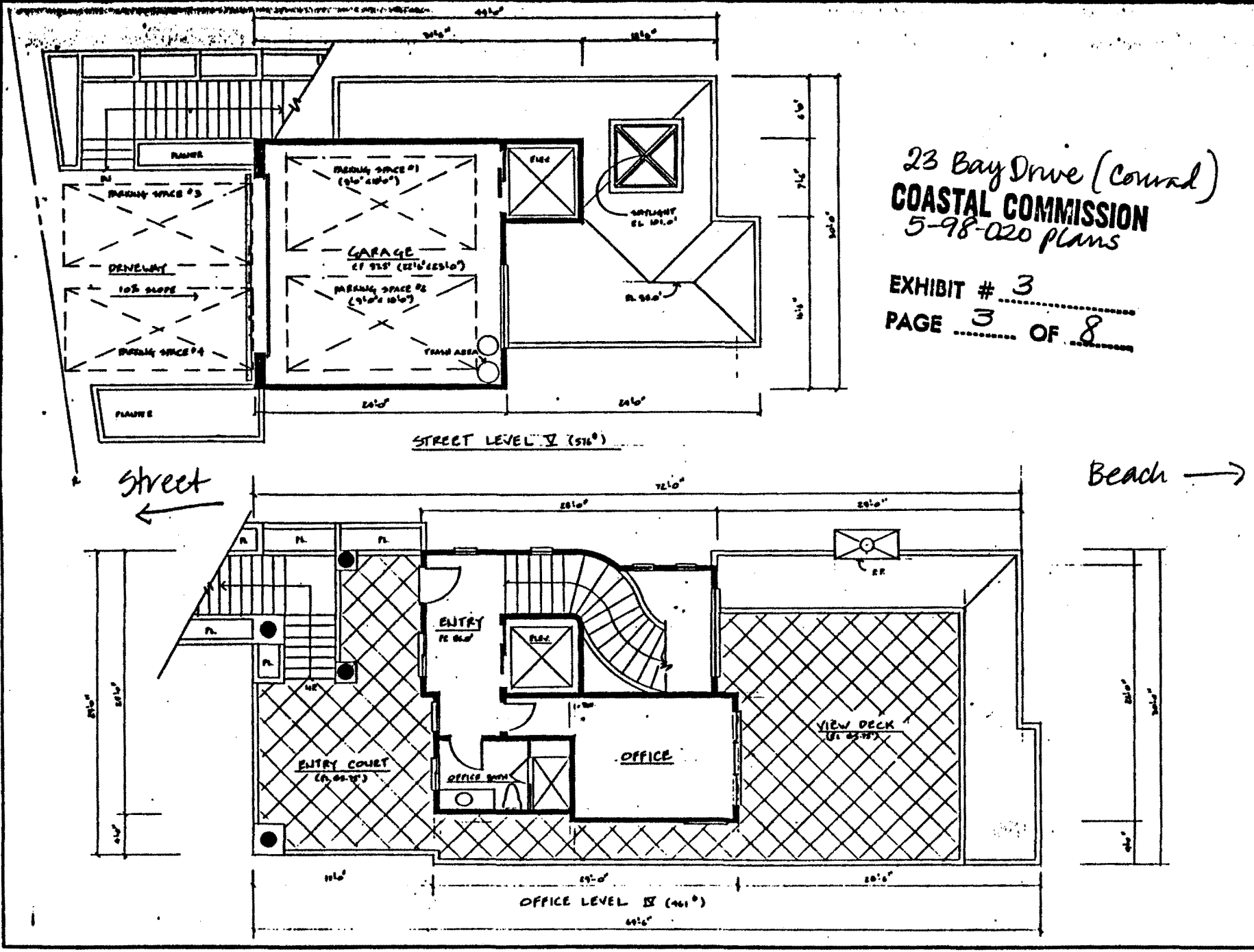
COASTAL COMMISSION

5-98-020 Plans

EXHIBIT # 3

PAGE 2 OF 8





23 Bay Drive (Conrad)

COASTAL COMMISSION
5-98-020 Plans

EXHIBIT # 3

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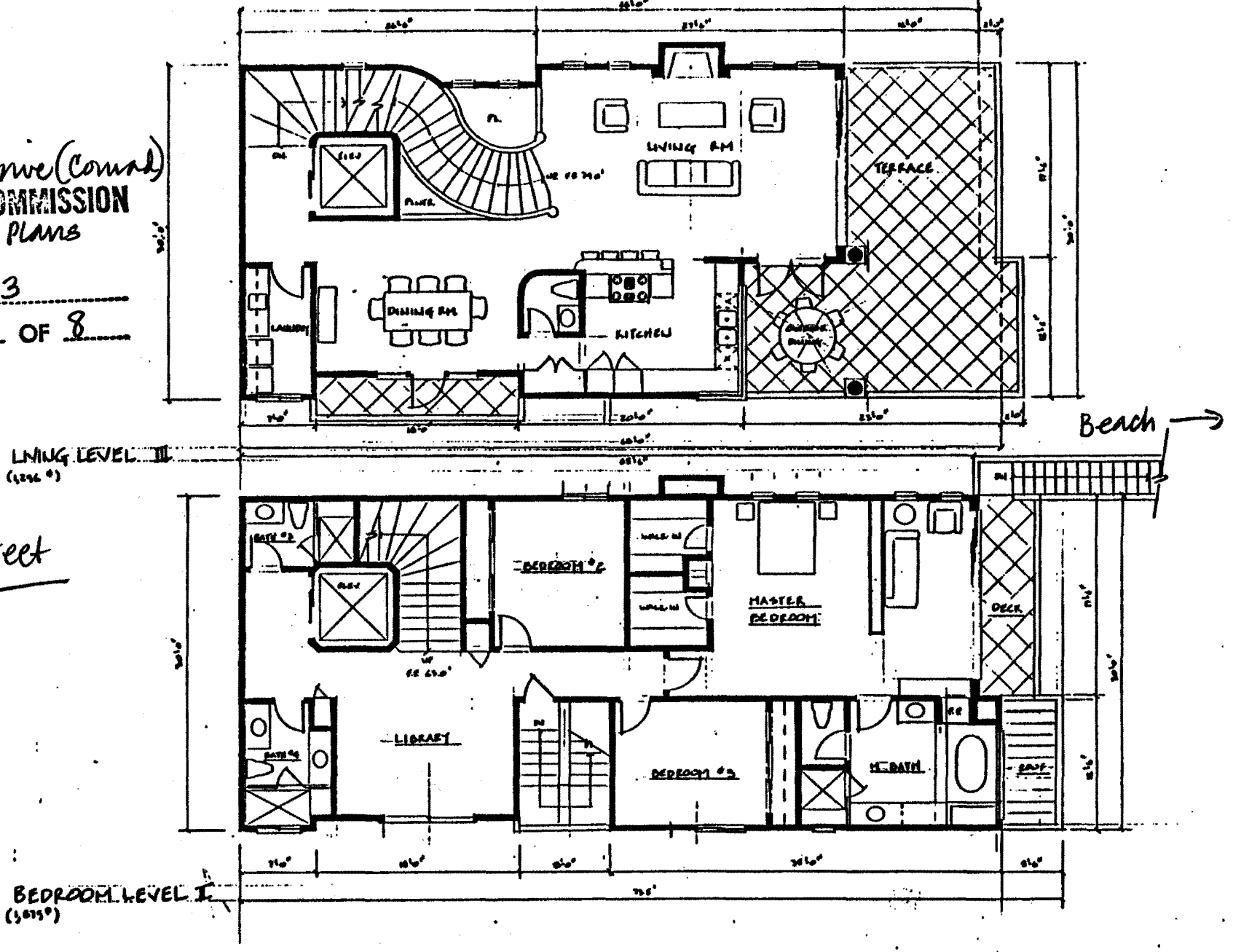
23 Bay Drive (Conrad)
COASTAL COMMISSION
5-98-020 Plans

EXHIBIT # 3
PAGE 4 OF 8



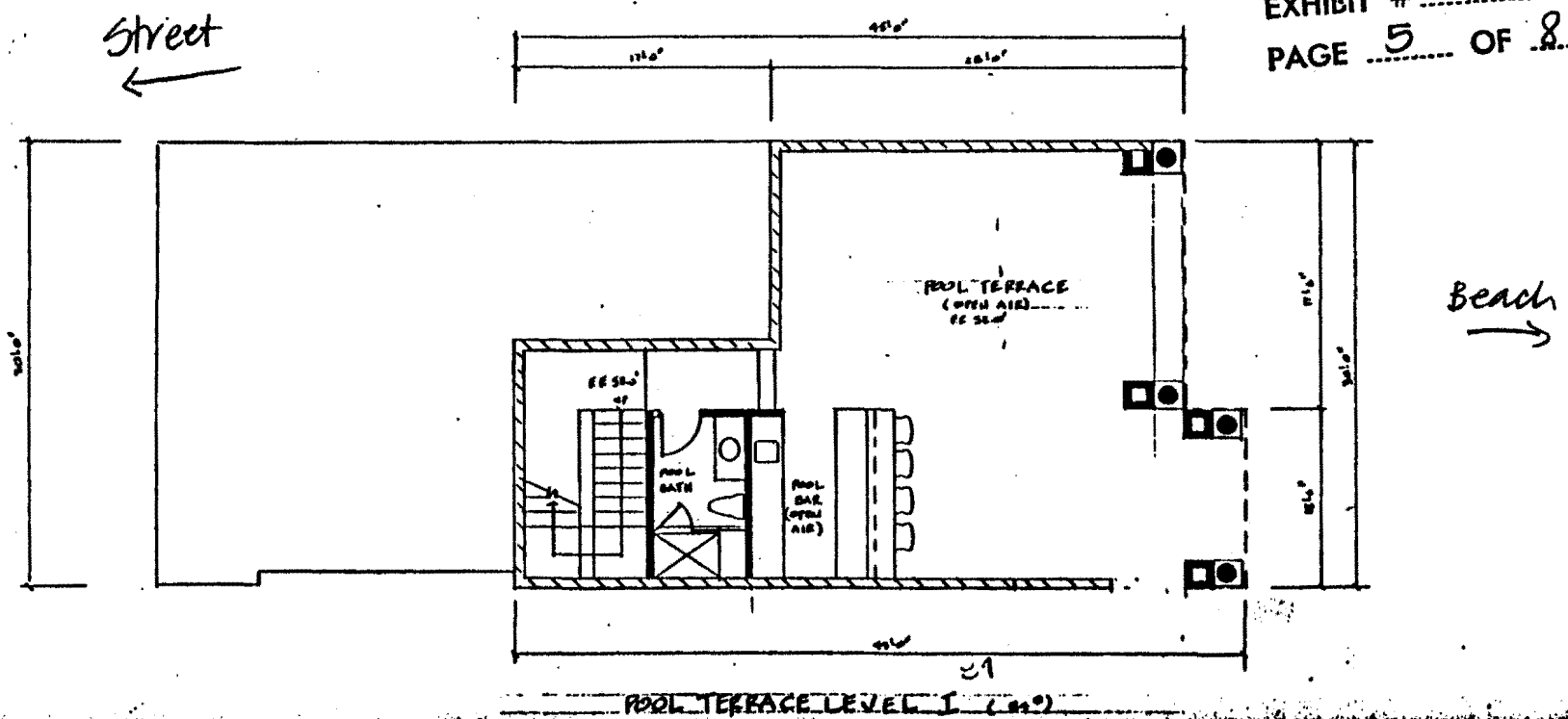
A-3

Conrad Residence
23 Bay Drive

James Conrad Architect

23 Bay Drive (Conrad)
COASTAL COMMISSION
5-98-020 Plans

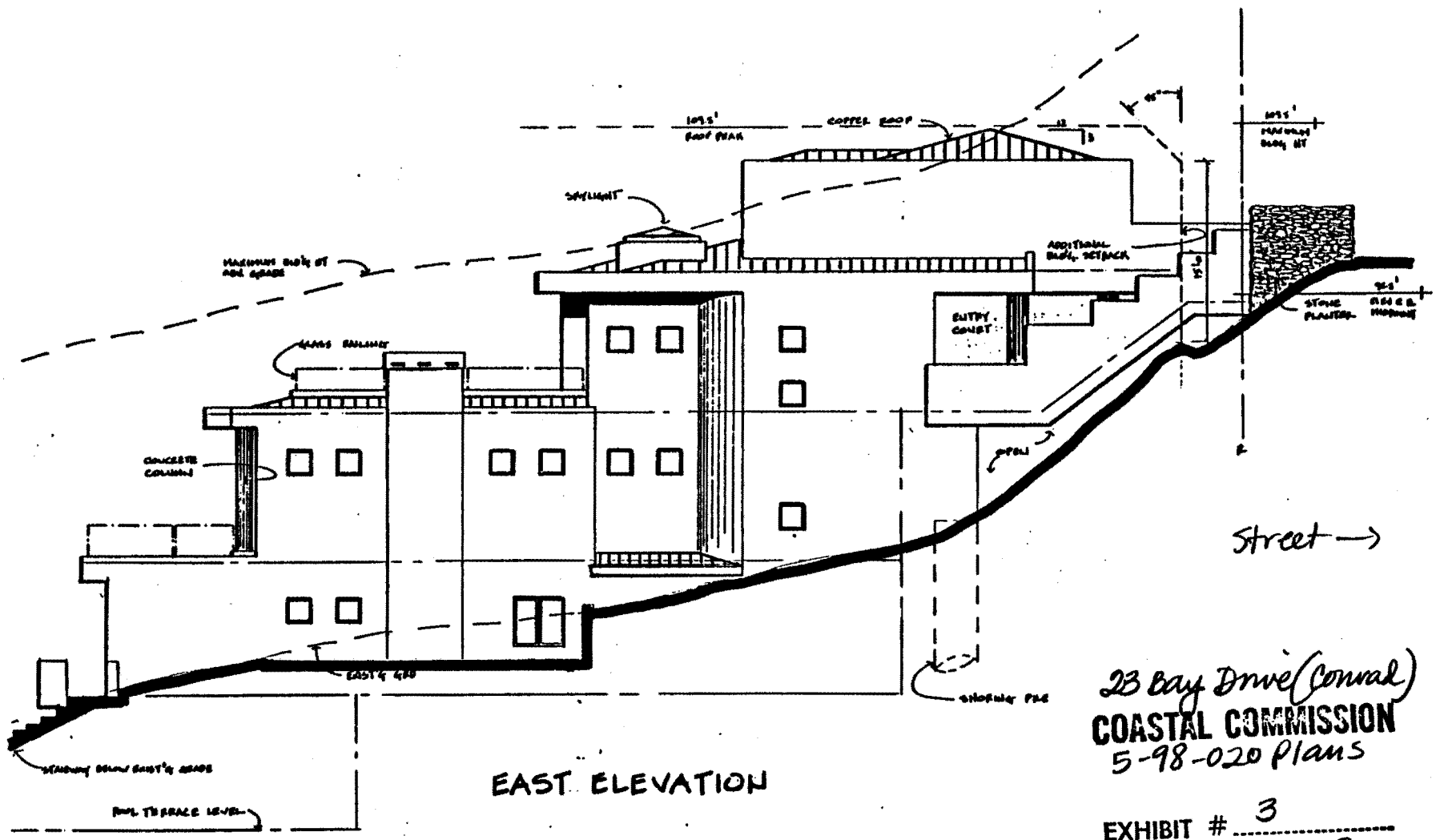
EXHIBIT # 3
PAGE 5 OF 8



A-4

Conrad Residence
25 Bay Drive

James Conrad Architect



EAST ELEVATION

23 Bay Drive (Conrad)
COASTAL COMMISSION
5-98-020 Plans

EXHIBIT # 3
PAGE 6 OF 8

A-5

Conrad Residence
23 Bay Drive
South Laguna Beach

James Conrad Architect

23 Bay Drive (Conrad)
COASTAL COMMISSION
5-98-020 Plans

EXHIBIT # 3

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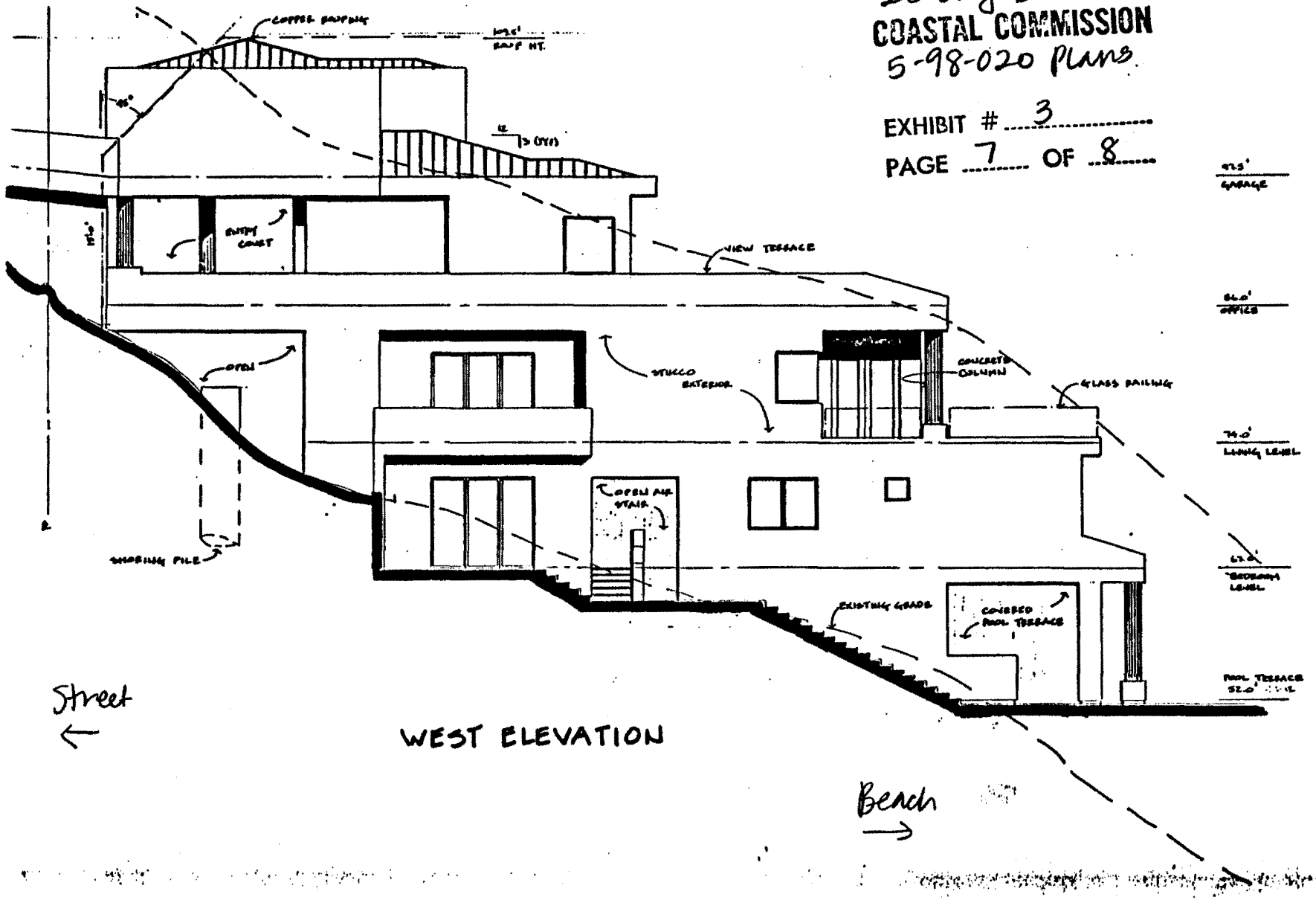


WEST ELEVATION

A-6

DATE 6-25-97 | REV. DATE: 8-20-97

TITLE: ELEVATIONS

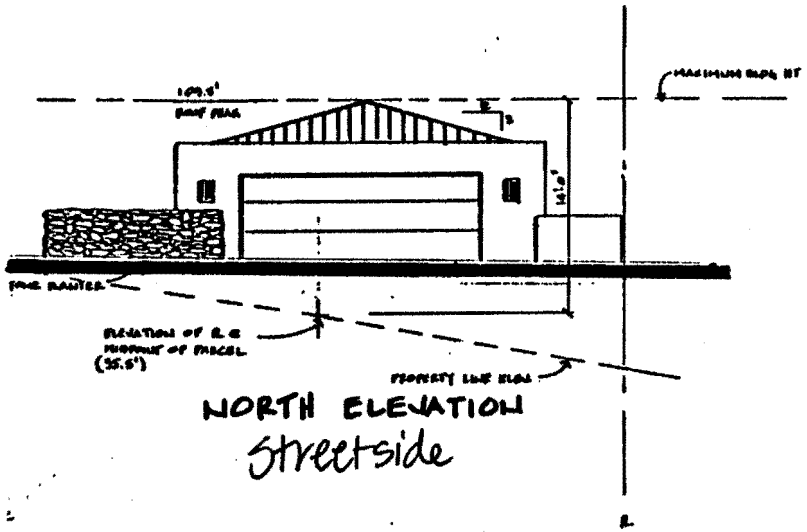
SCALE: 1/4"=1'-0" | APPROVED:

Conrad Residence

23 Bay Drive
South Laguna Beach, Ca.

James Conrad Architect

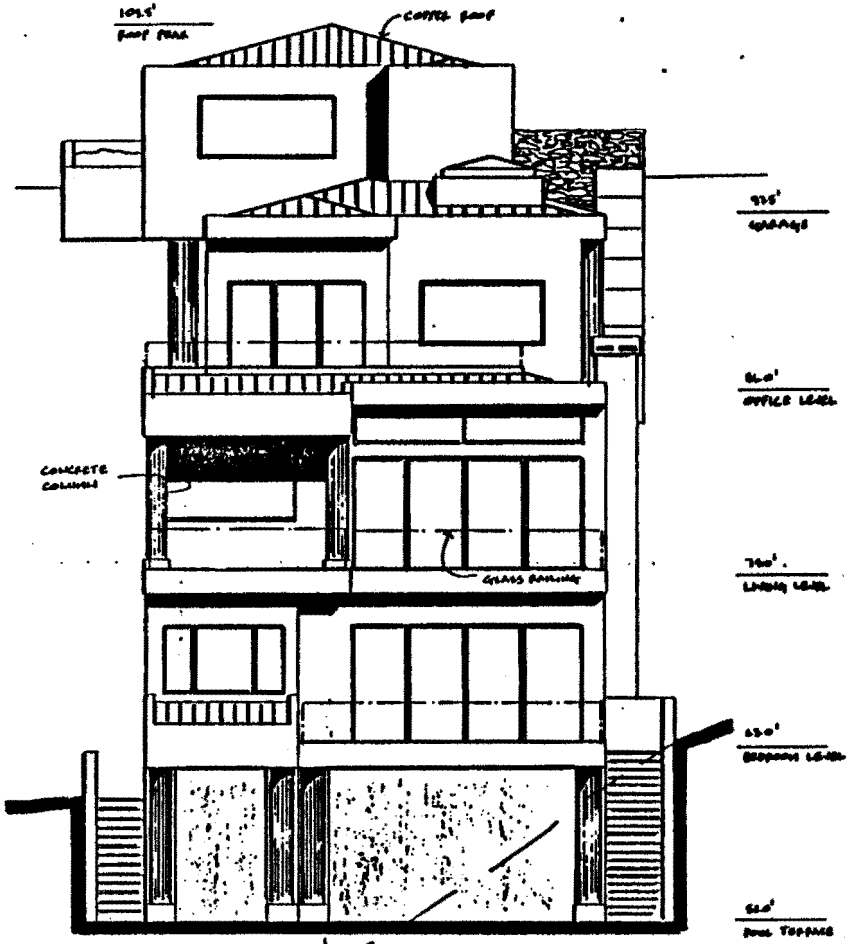
1000 S. COAST HWY. STE. 17
LAGUNA BEACH CA. 92651
TEL. NO. (714) 497-0200
FAX NO. (714) 497-0550



NORTH ELEVATION
Streetside

23 Bay Drive (Conrad)
COASTAL COMMISSION
5-98-020 Plans

EXHIBIT # 3
PAGE 8 OF 8



SOUTH ELEVATION
Beachside

A-7

TITLE ELEVATIONS

DATE 6-25-97

REV. DATE

Conrad Residence

23 Bay Drive

James Conrod Architect

Barnes Beach House

25 Bay Drive

CODE INFORMATION

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES:

BUILDING:	1991 UBC
MECHANICAL:	1991 UMC
ELECTRICAL:	1990 NEC
PLUMBING:	1991 UPC
ENERGY:	TITLE 24

CONSULTANTS

STRUCTURAL:

MECHANICAL:

LANDSCAPING:

CIVIL:

SOILS/GEOLOGY:

SOILS/ENGINEERING:

PROJECT DATA

OWNER: TROY & CELESTE BARNES
715 MARLIN DR.
LAGUNA BEACH, CA
92651

LEGAL DESCRIPTION: LOT 27, TRACT 570 T.A.B.

SITE SUMMARY

BUILDING AREA — TOTAL 4,458 ft²
- LIVING AREA 3,747 ft²
- GARAGE 711 ft²
- DECKS 812 ft²

LOT AREA 9,514 ft²

BUILDING FOOTPRINT 2,700 ft² (28%)

AVERAGE SLOPE CALCULATION.
- LOT DEPTH = 206.22'
- ELEV. CHANGE: 73.75'
- 73.75 ÷ 206.22' = 36.6%

NET LOT AREA (NIC SANDY BEACH)
8,649 ft² x .75 = 3,024 ft² x 1.5 = 4,536 ft²

VICINITY MAP

SHEET INDEX

A-1	SITE PLAN
A-2	FLOOR PLAN
A-3	FLOOR PLAN
A-4	FLOOR PLAN
A-5	ELEVATIONS
A-6	ELEVATIONS
A-7	ELEVATIONS

RECEIVED
APR 6 1998
CALIFORNIA COASTAL COMMISSION

EXHIBIT # 4
PAGE 1 OF 9

COMMISSION
5-98-044 Plans

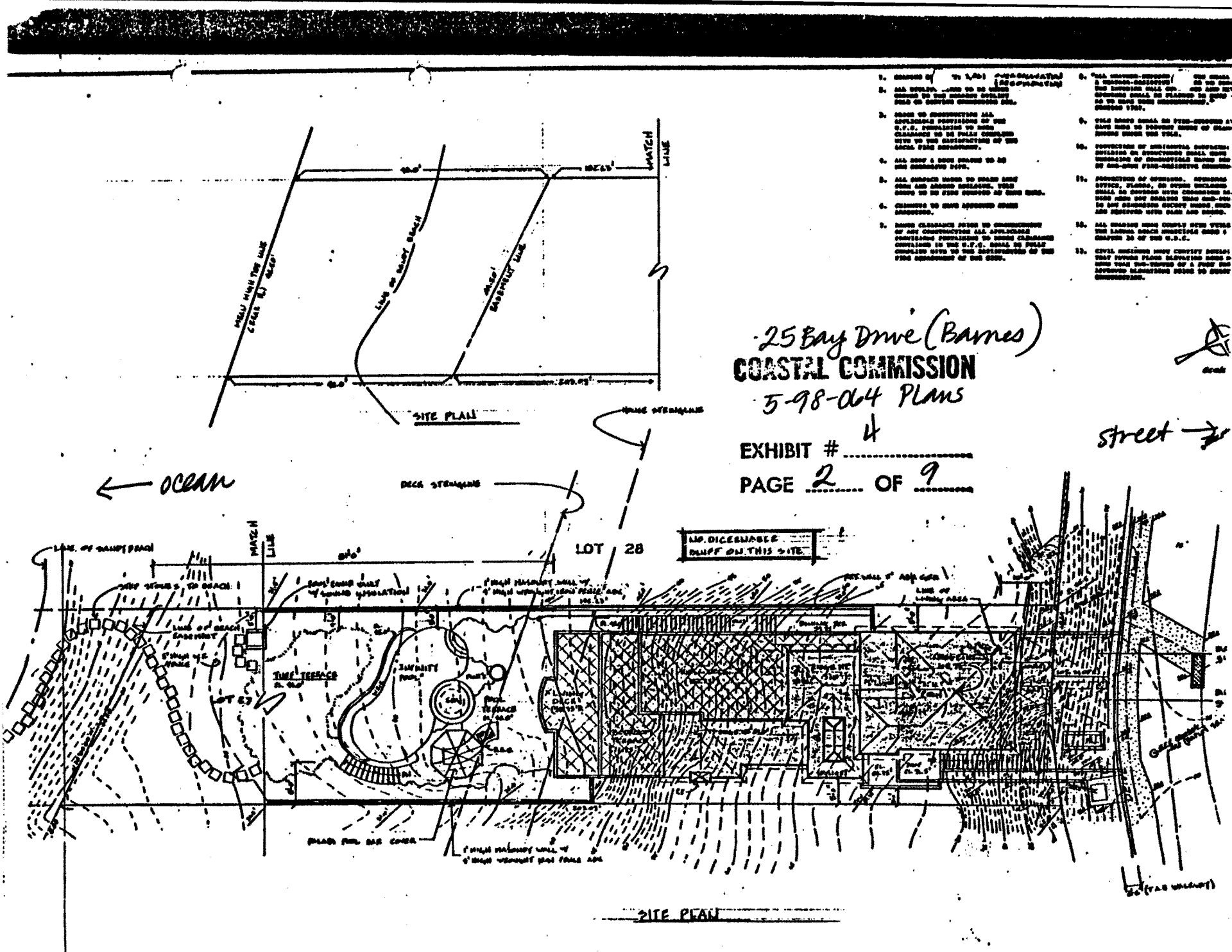
25 Bay Drive (Barnes)

COASTAL COMMISSION

5-98-064 Plans

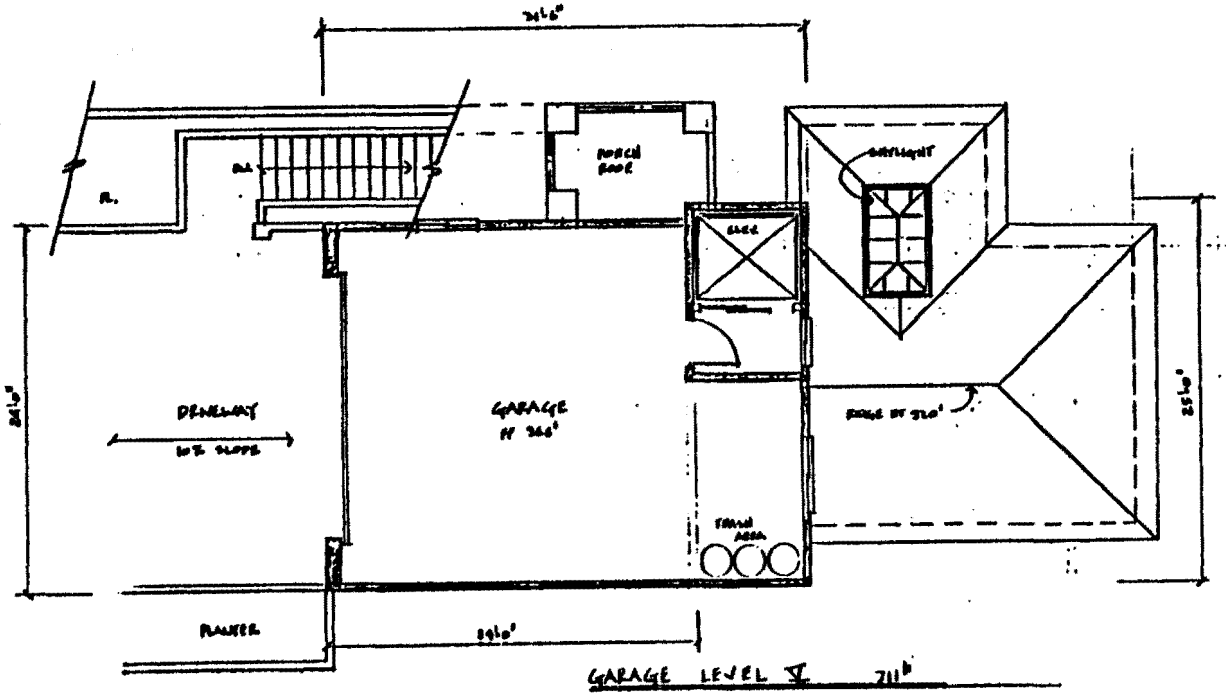
EXHIBIT # 4

PAGE 2 OF 9

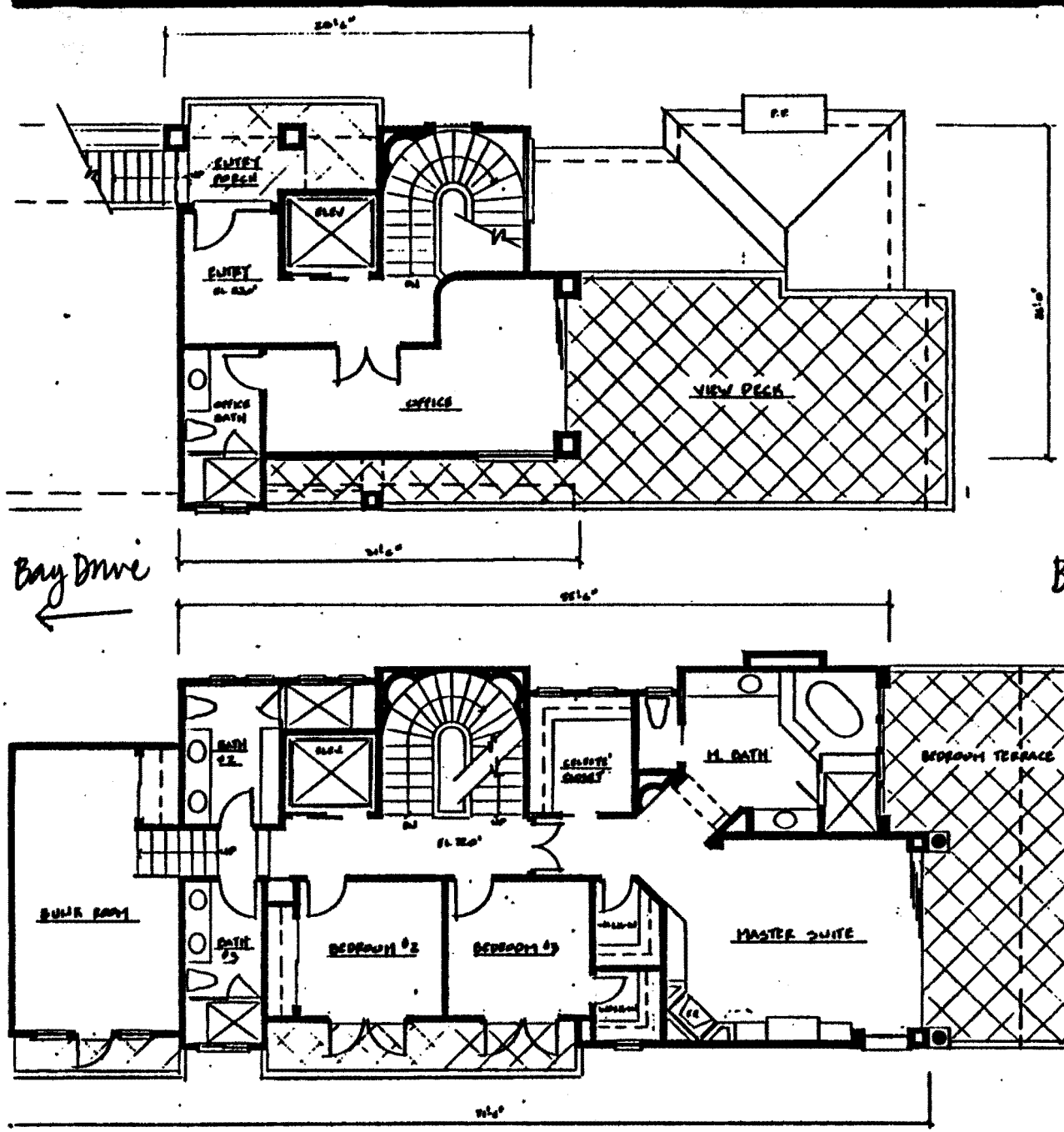


25 Bay Drive (Barnes)
COASTAL COMMISSION
5-98-064 Plans

EXHIBIT # 4
PAGE 3 OF 9



Beach →

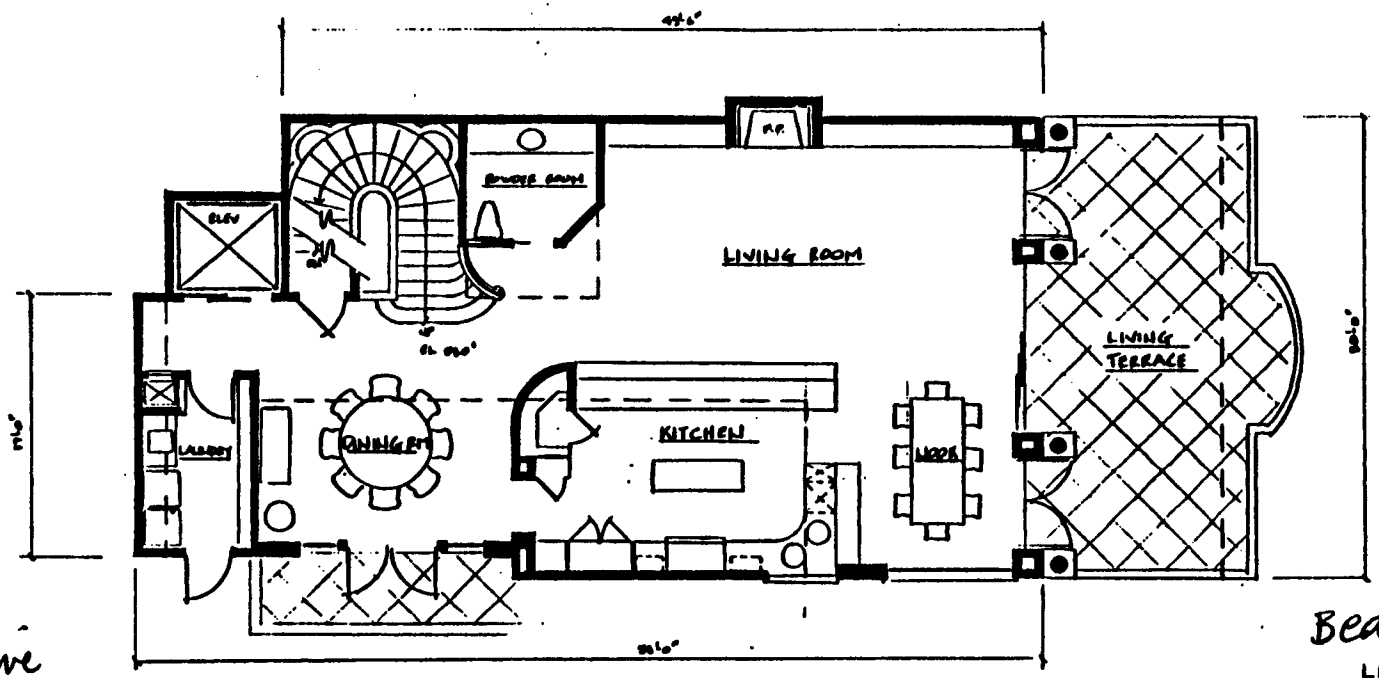


25 Bay Drive (Barnes)
COASTAL COMMISSION
5-98-064 Plans
EXHIBIT # 4
PAGE 4 OF 9

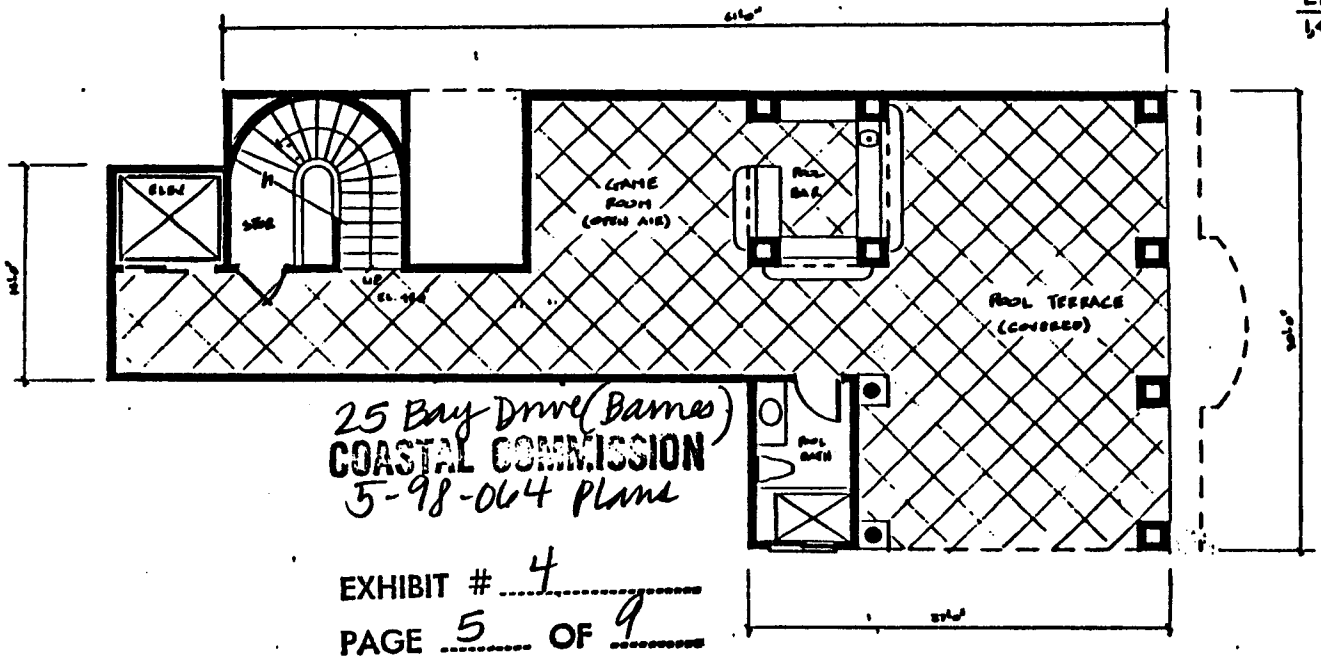
A-3

Barnes Beach House

James Conrad Architect



LIVING LEVEL II
1,937 sq. ft.



GAME LEVEL I 80.5 sq. ft.

25 Bay Drive (Barnes)
COASTAL COMMISSION
5-98-064 Plans

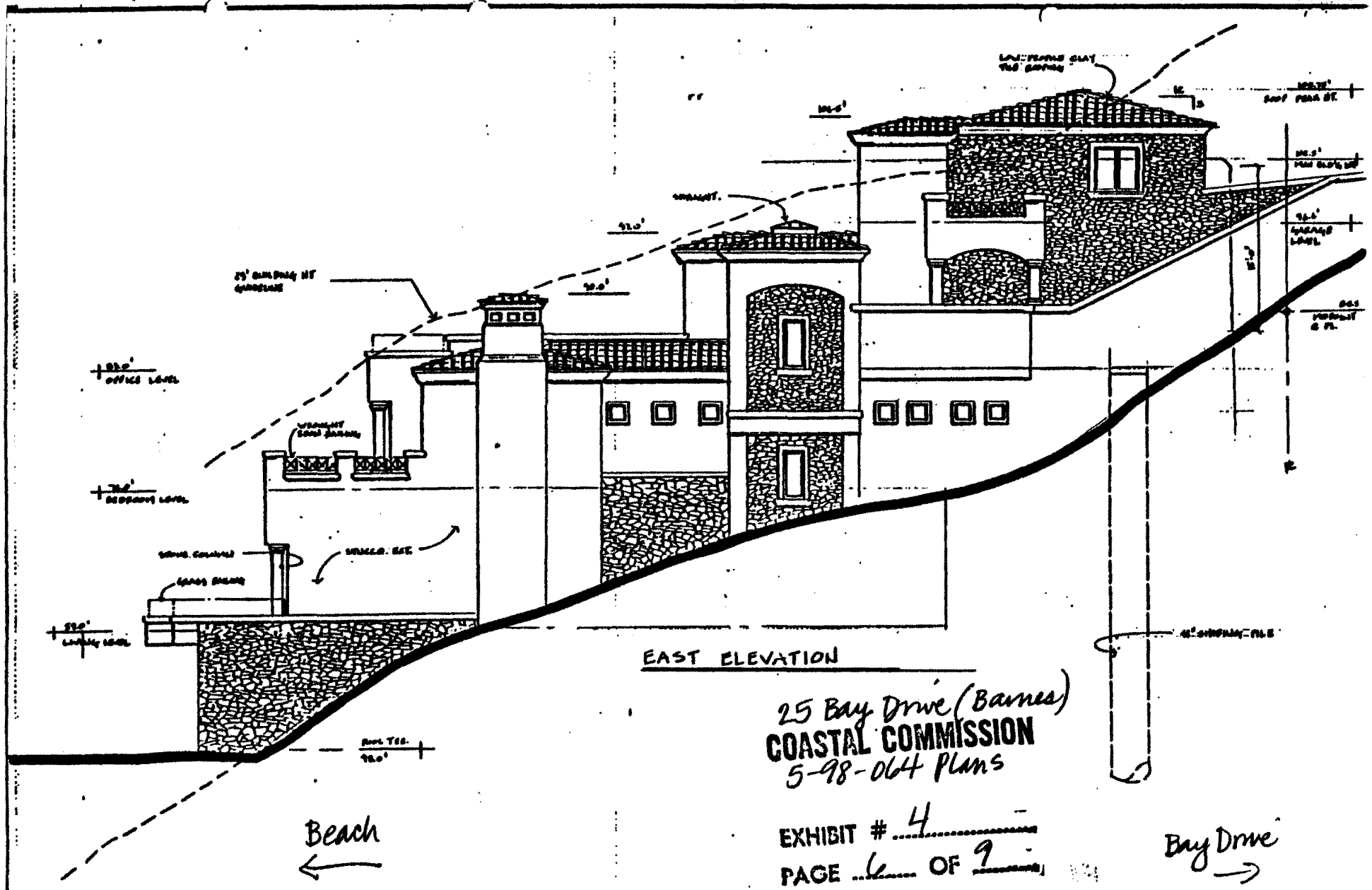
EXHIBIT # 4
PAGE 5 OF 9

A-4

DATE 7-29-97
REV. DATE 9-4-97
TITLE FLOOR PLANS
SCALE 1/4"=1'-0"
APPROVED:

Barnes Beach House
35 Bay Drive, South Laguna Beach, CA

James Conrad Architect
1000 S. COAST HWY., STE. 17
LAGUNA BEACH CA. 92651
TEL. NO. (714) 497-0200
FAX NO. (714) 497-0255



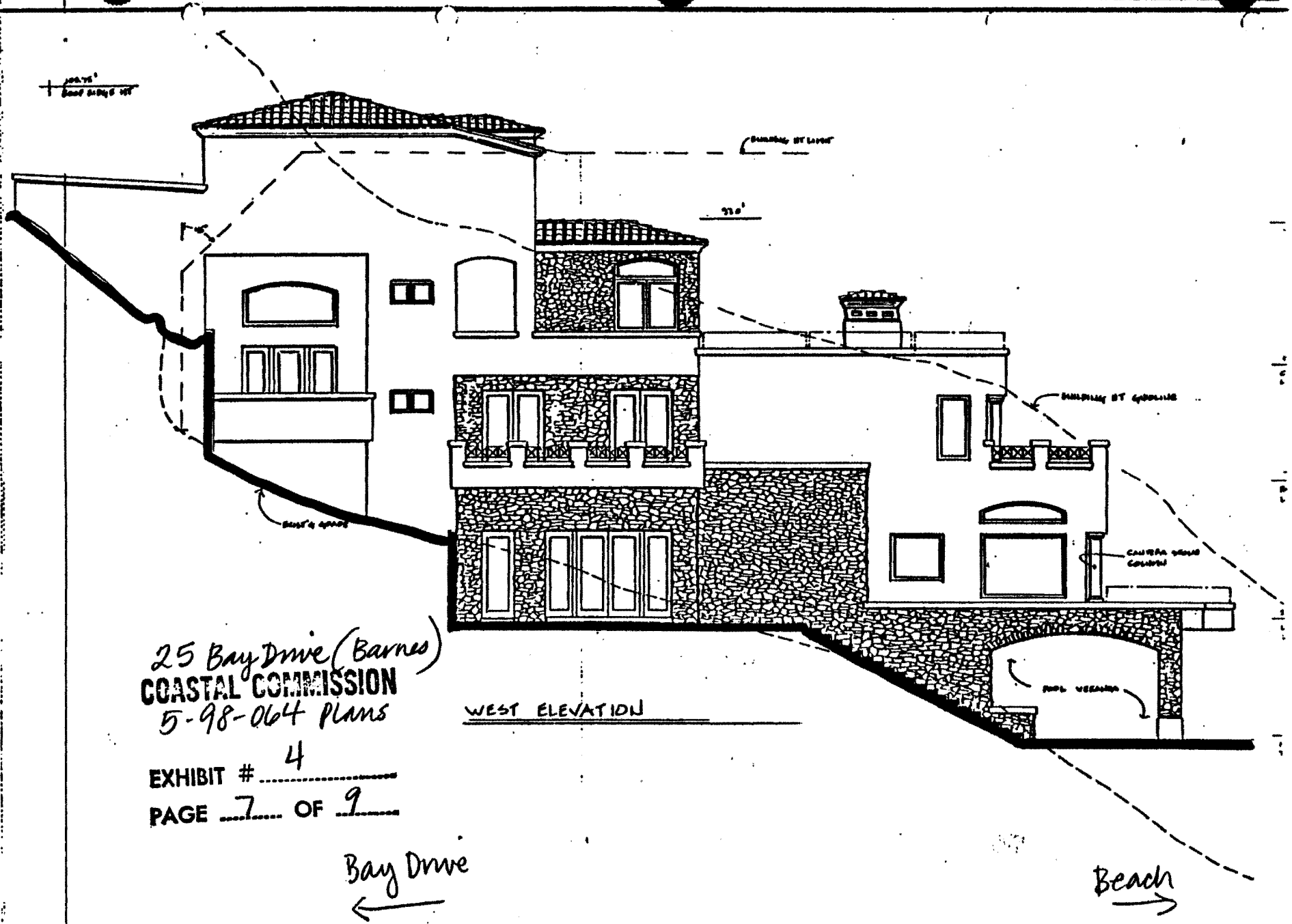
EAST ELEVATION

25 Bay Drive (Barnes)
COASTAL COMMISSION
5-98-064 Plans

EXHIBIT # 4
PAGE 6 OF 9

Beach ←

→ Bay Drive



25 Bay Drive (Barnes)
COASTAL COMMISSION
5-98-064 Plans

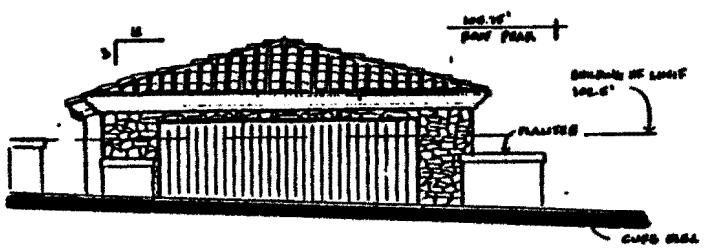
EXHIBIT # 4

PAGE 7 OF 9

WEST ELEVATION

Bay Drive

Beach

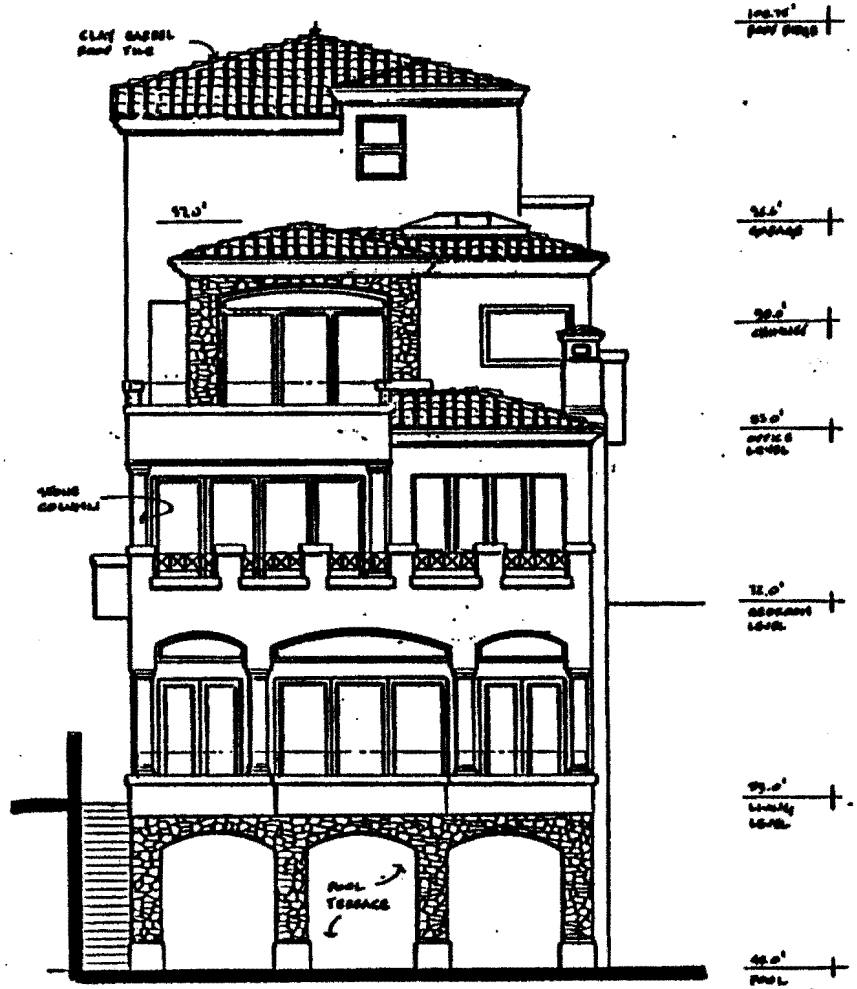


Streetside
NORTH ELEVATION

25 Bay Drive (Barnes)
COASTAL COMMISSION
5-98-064 Plans

EXHIBIT # 4

PAGE 8 OF 9

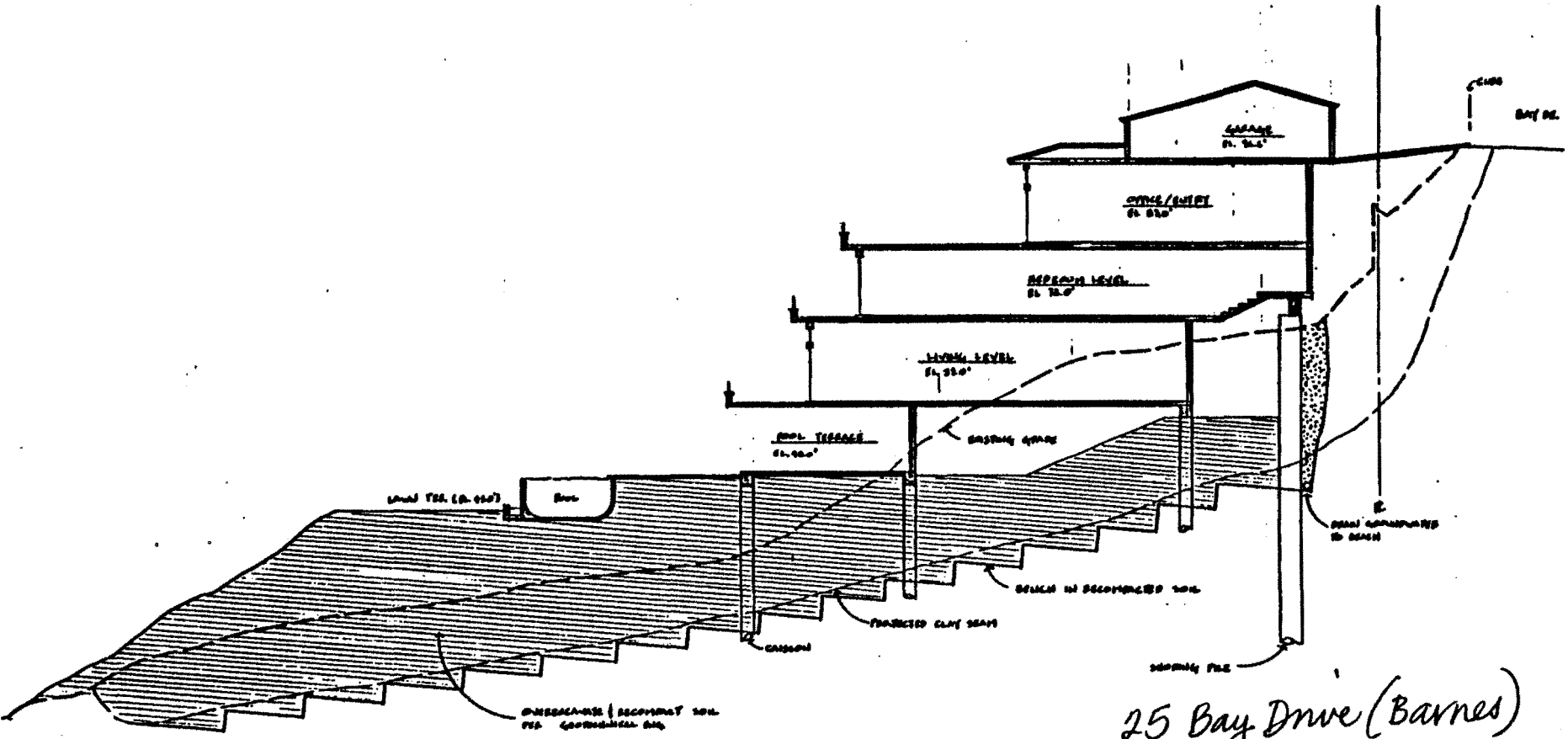


Beachside
SOUTH ELEVATION

Barnes Beach House

James Conrad Architect

A-7



25 Bay Drive (Barnes)

COASTAL COMMISSION
5-98-064 Plans

EXHIBIT # 4

PAGE 9 OF 9

Beach ←

Bay Drive →

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CALIFORNIA
COASTAL COMMISSION

GRISWOLD RESIDENC

(NOT BEFORE COMMISSION)

CODE INFORMATION

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING CODES:

BUILDING: 1991 UBC
MECHANICAL: 1991 UMC
ELECTRICAL: 1990 NEC
PLUMBING: 1991 UPC
ENERGY: TITLE 24

CONSULTANTS

STRUCTURAL:

MECHANICAL:

LANDSCAPING:

CIVIL:

SOILS/ENGINEERING:

PROJECT DATA

OWNER: CHARLES & VALERIE GRISWOLD
19737 LIVE OAK CYN RD
TRABUCO CA. 92679

LEGAL DESCRIPTION:
LOT 28 & A PORTION OF LOT 29, TRACT 970

SITE SUMMARY

BUILDING AREA: 5,948 ft
LIVING AREA: 5,197 ft
GARAGE AREA: 751 ft
DECK AREA: 1,594 ft
LOT AREA: 18,020 ft
BUILDING HEIGHT:
AVERAGE SLOPE CALCULATION:
AVERAGE LOT DEPTH: 226.92
AVERAGE ELEV. CHANGE: 60.2
A.S.L.: 27.7%
NET LOT AREA (N.L.A.) USABLE FOOTAGE: 12,506 ft

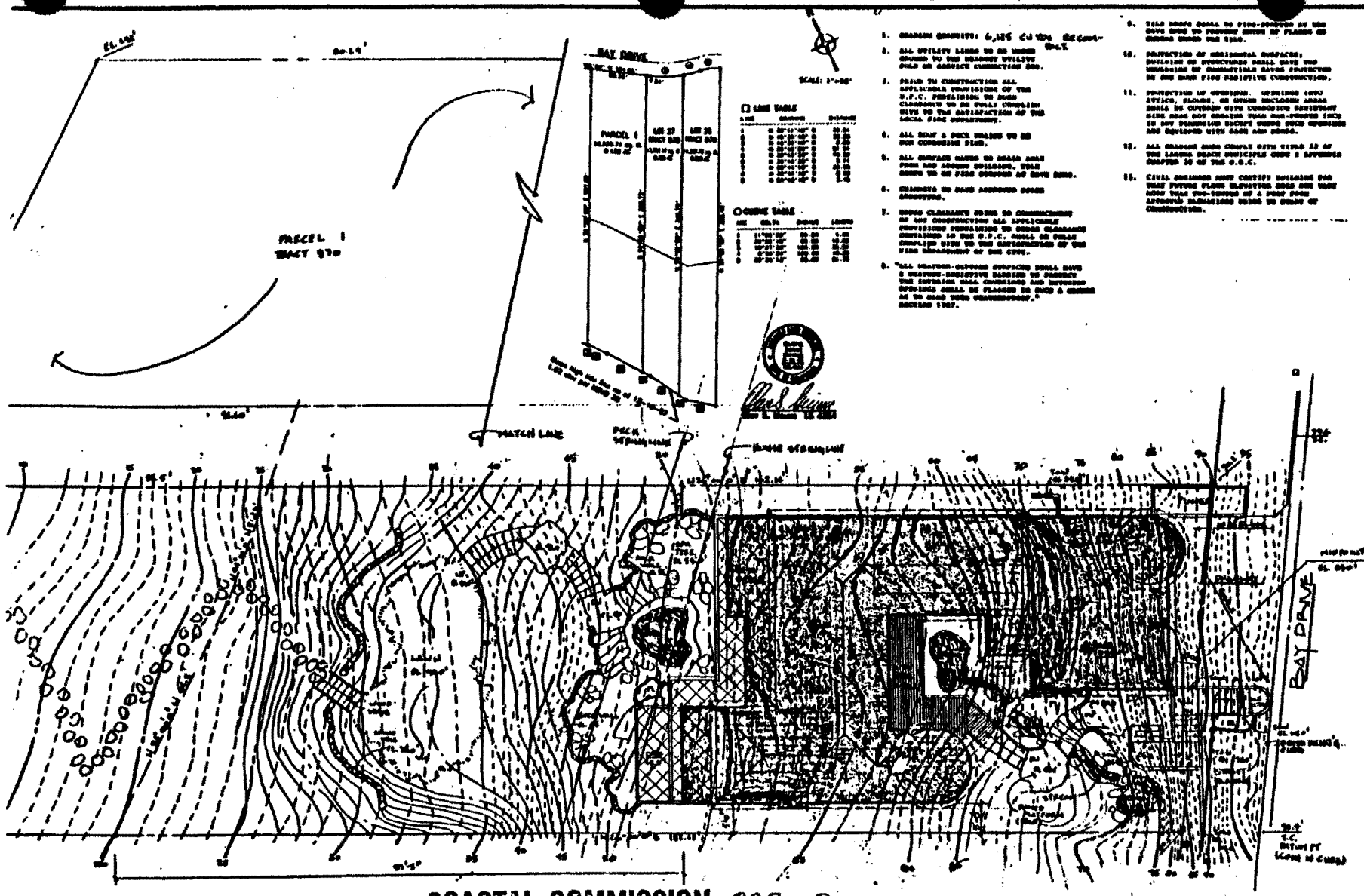
VICINITY MAP

SHEET INDEX

T-1	TITLE SHEET
A-1	SITE PLAN
A-3	GARAGE LEVEL PLAN
A-4	LIVING LEVEL PLAN
A-5	BEDROOM LEVEL PLAN
A-6	GAME ROOM PLAN
A-7	ELEVATION
A-8	ELEVATION
A-9	ELEVATION

29 Bay Drive
COASTAL COMMISSION
Plans

EXHIBIT # 5
PAGE 1 OF 9



COASTAL COMMISSION 29 Bay Drive
Not Before Commission

SITE PLAN

Griswold Residence

James Conrad Architect

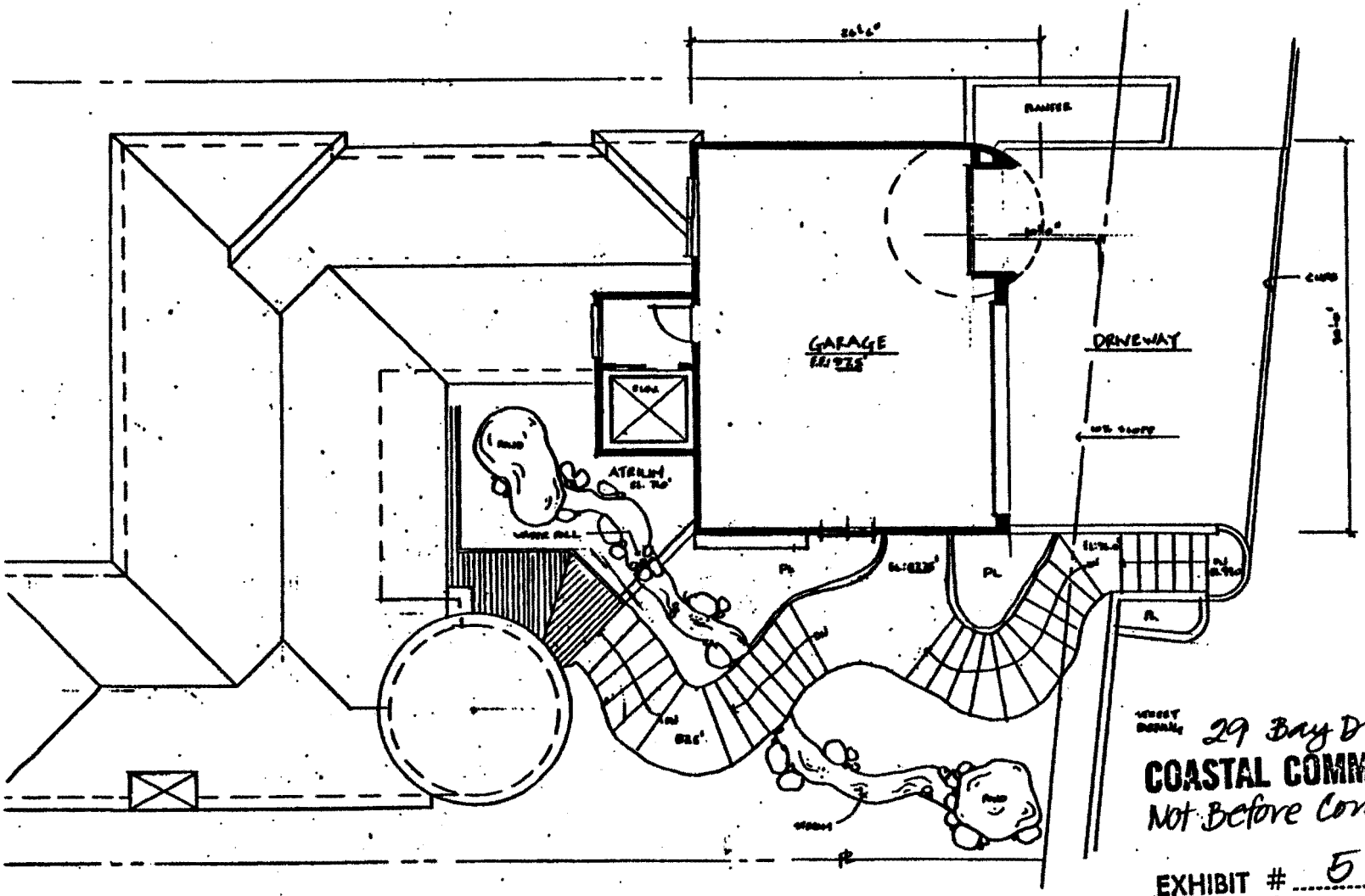
A-1

Beach ←

Street →

EXHIBIT # 5

PAGE 2 OF 9



29 Bay Drive

COASTAL COMMISSION

Not Before Commission

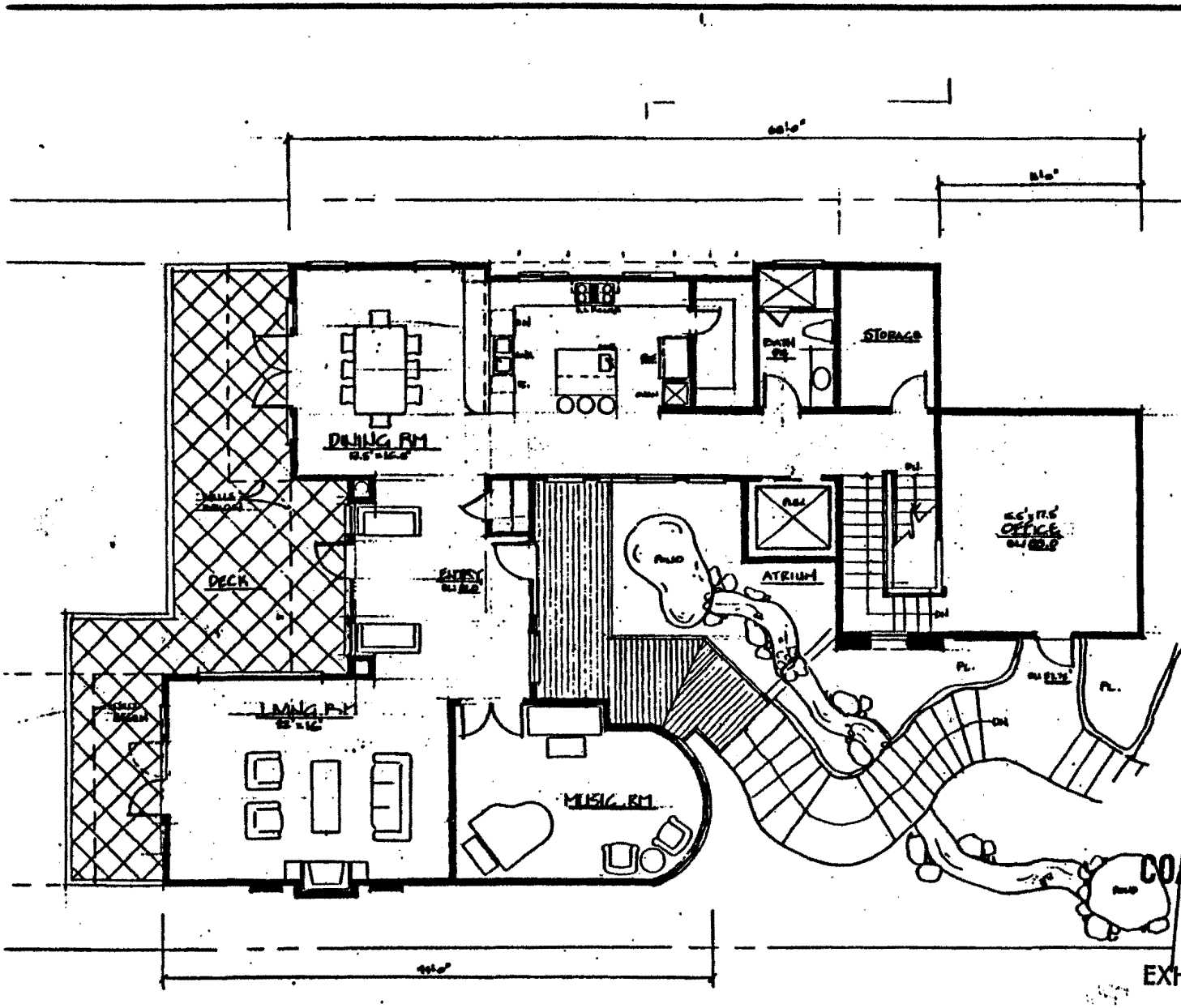
EXHIBIT # 5

PAGE 3 OF 9

A-3

Grisvold Residence

James Conrad Architect



LIVING LEVEL II

29 Bay Drive

COASTAL COMMISSION

Not Before Commission

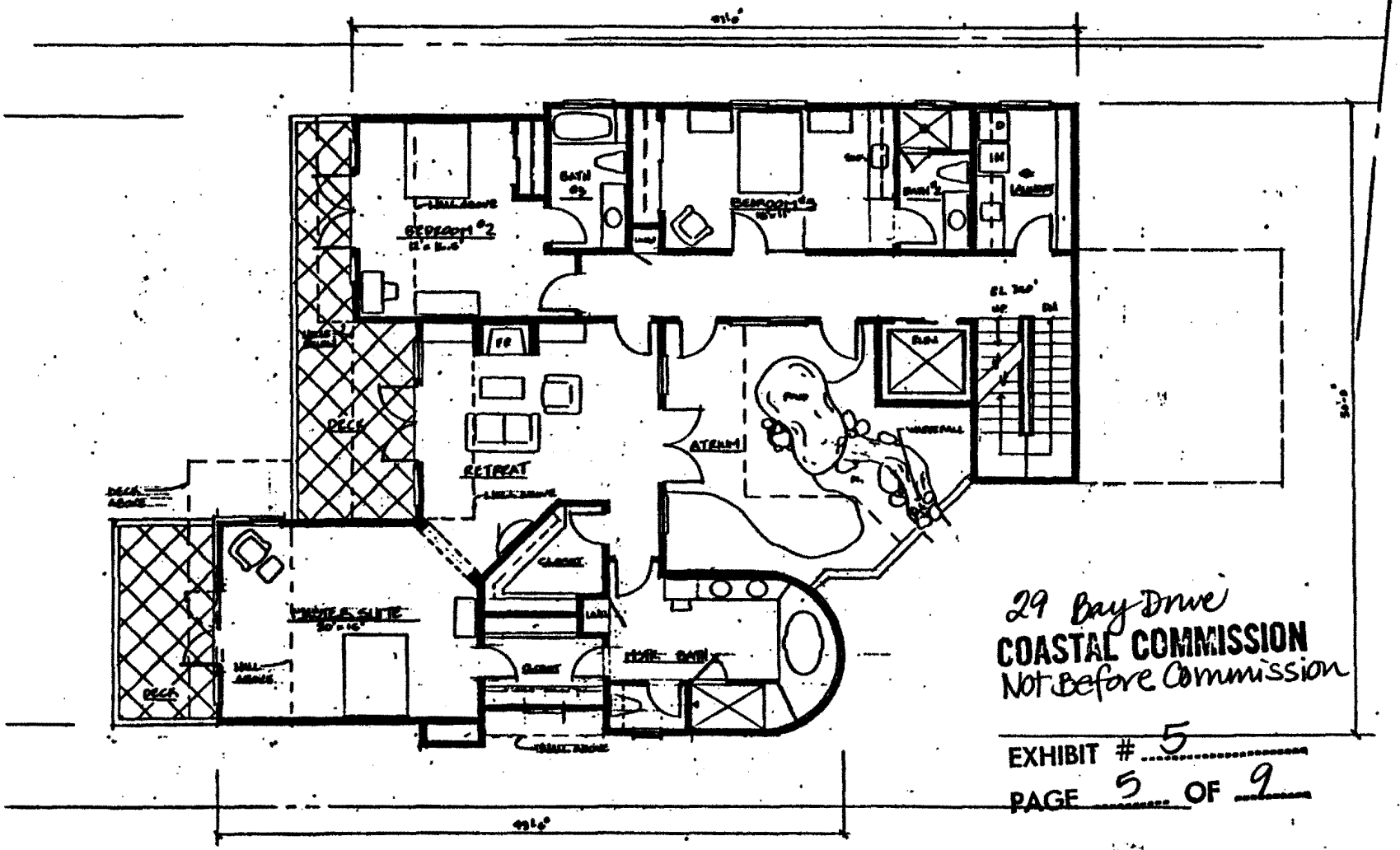
EXHIBIT # 5

PAGE 4 OF 9

A-4

Griswold Residence

James Conrad Architect



29 Bay Drive

COASTAL COMMISSION
Not Before Commission

EXHIBIT # 5

PAGE 5 OF 9

Beach

Street

BEDROOM LEVEL II

A-5

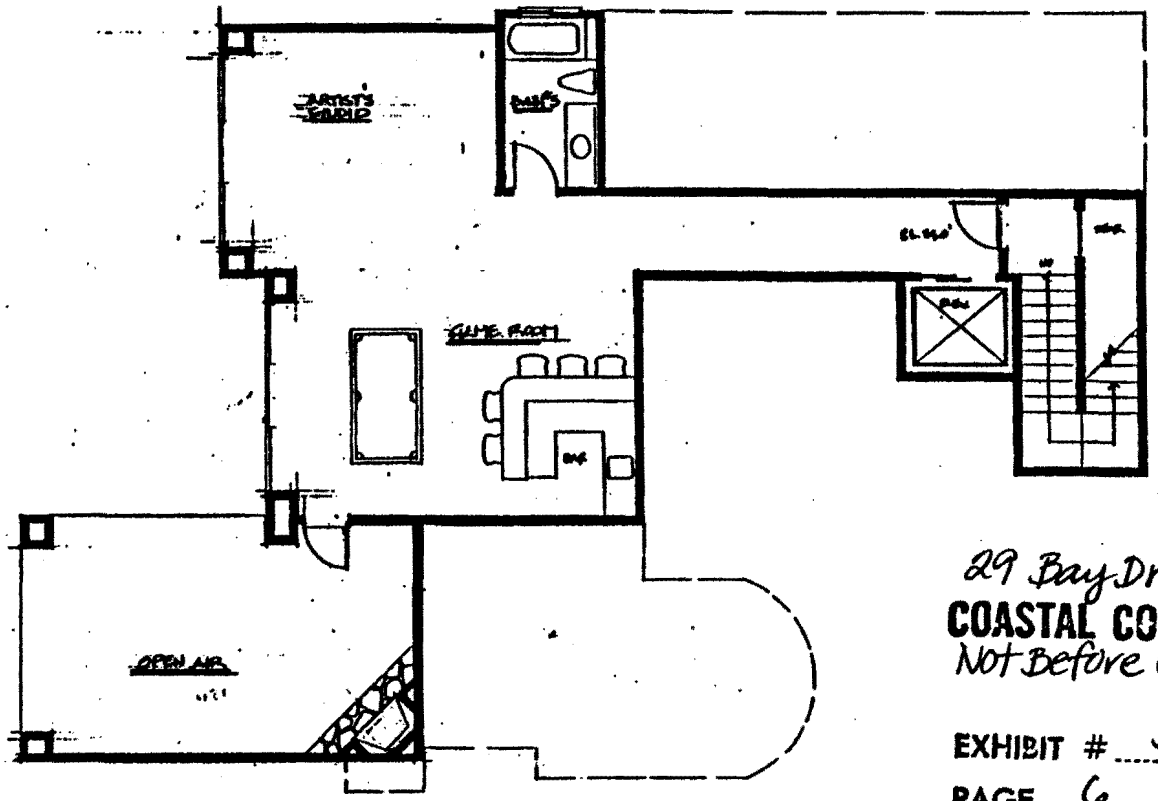
REV. DATE

DATE 10-1-97

TITLE: BEDROOM LEVEL FLOOR PLAN

Griswold Residence

James Conrad Architect



29 Bay Drive

COASTAL COMMISSION

Not Before Commission

EXHIBIT # 5

PAGE 6 OF 9

Beach ←

LOWER LEVEL FLOOR PLAN

→ Street

A-6

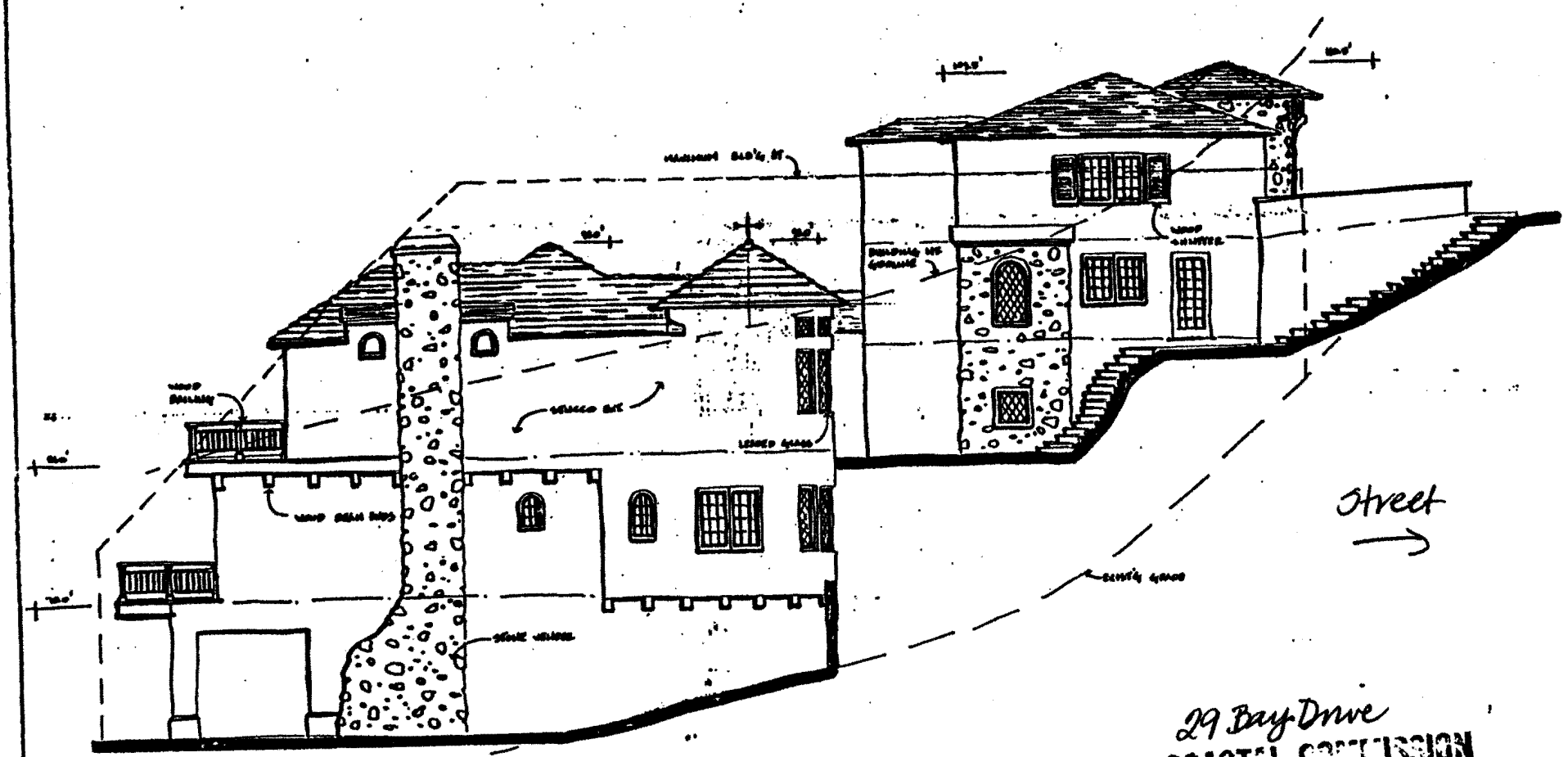
TITLE LOWER LEVEL PLANS PLAN

DATE 10-1-97

REV. DATE

Griswold Residence

James Conrad Architect



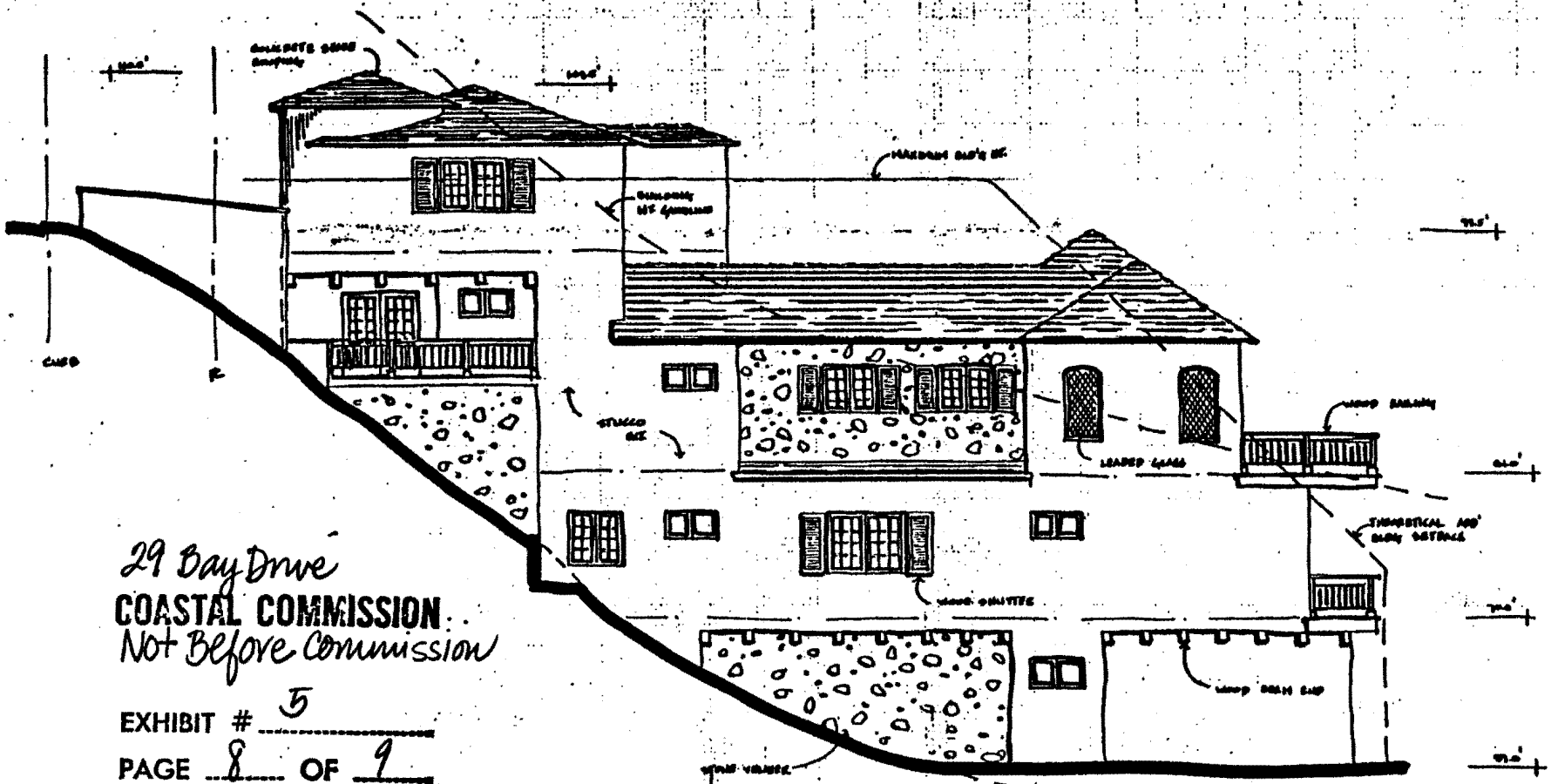
EAST ELEVATION

29 Bay Drive

COASTAL COMMISSION
Not Before Commission

EXHIBIT # 9

PAGE 1 OF 9



29 Bay Drive

COASTAL COMMISSION
Not Before Commission

EXHIBIT # 5

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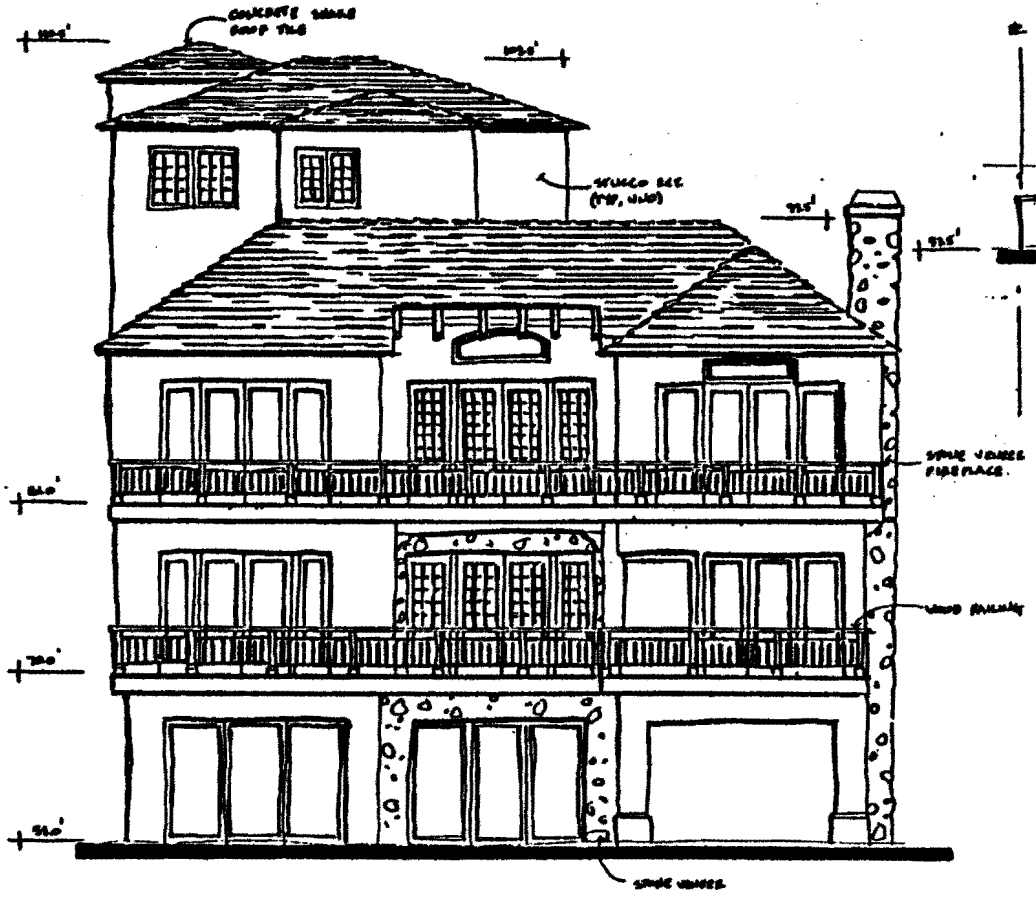
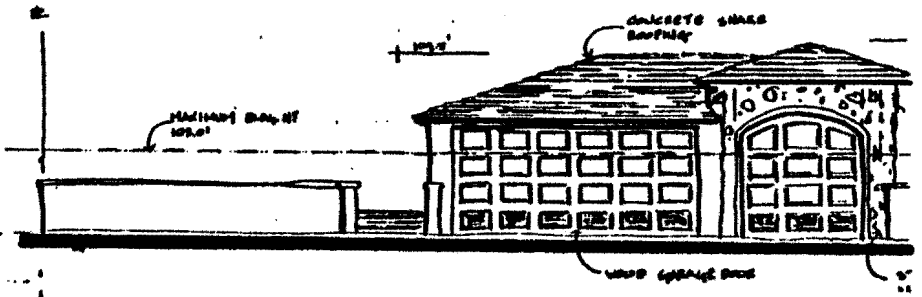
WEST ELEVATION

Street ←

Beach →



SOUTH ELEVATION
Beachside



NORTH ELEVATION
Streetside

29 Bay Drive

COASTAL COMMISSION
Not before Commission

EXHIBIT # 5

PAGE 9 OF 9

McMullen Residence

31 Bay Drive

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CALIFORNIA
COASTAL COMMISSION

E INFORMATION

OJECT SHALL WITH THE ING CODES:

NG: 1991 UBC
ANICAL: 1991 UMC
RICAL: 1996 NEC
SING: 1991 UPC
3Y: TITLE 24

CONSULTANTS

STRUCTURAL:

MECHANICAL:

LANDSCAPING:

CIVIL:

SOILS/ENGINEERING:

PROJECT DATA

OWNER: TIM & DEBBIE MCMULLEN
709 DAVIS WAY
LAGUNA BCH CA.

LEGAL DESCRIPTION:
LOT 30 & A PORTION OF LOT 29, TRACT 970

SITE SUMMARY

BUILDING AREA: TOTAL = 5,952
LIVING AREA: 5,210
GARAGE AREA: 742
DECK AREA: 2,110
LOT AREA: 18,520
BUILDING FOOTPRINT: 2,554
AVERAGE SLOPE CALCULATION
AVG LOT DEPTH = 205'
AVG ELEV CHANGE = 91.0'
A.S. = 44%
NET LOT AREA (MIC) SANDY BEACH = 11,220
11,220 x .35 = 3,927 x 15 = 5,890

VICINITY MAP

SHEET INDEX

T-1	TITLE SHEET
L-1	LANDSCAPING PLAN
A-1	SITE PLAN
A-3	GARAGE LEVEL PLAN
A-4	ENTRY LEVEL PLAN
A-5	MAIN LEVEL PLAN
A-6	BEDROOM LEVEL PLAN
A-7	POOL LEVEL PLAN
A-8	EAST ELEVATION
A-9	WEST ELEVATION
A-10	NORTH & SOUTH ELEVATION
A-11	SITE SECTION

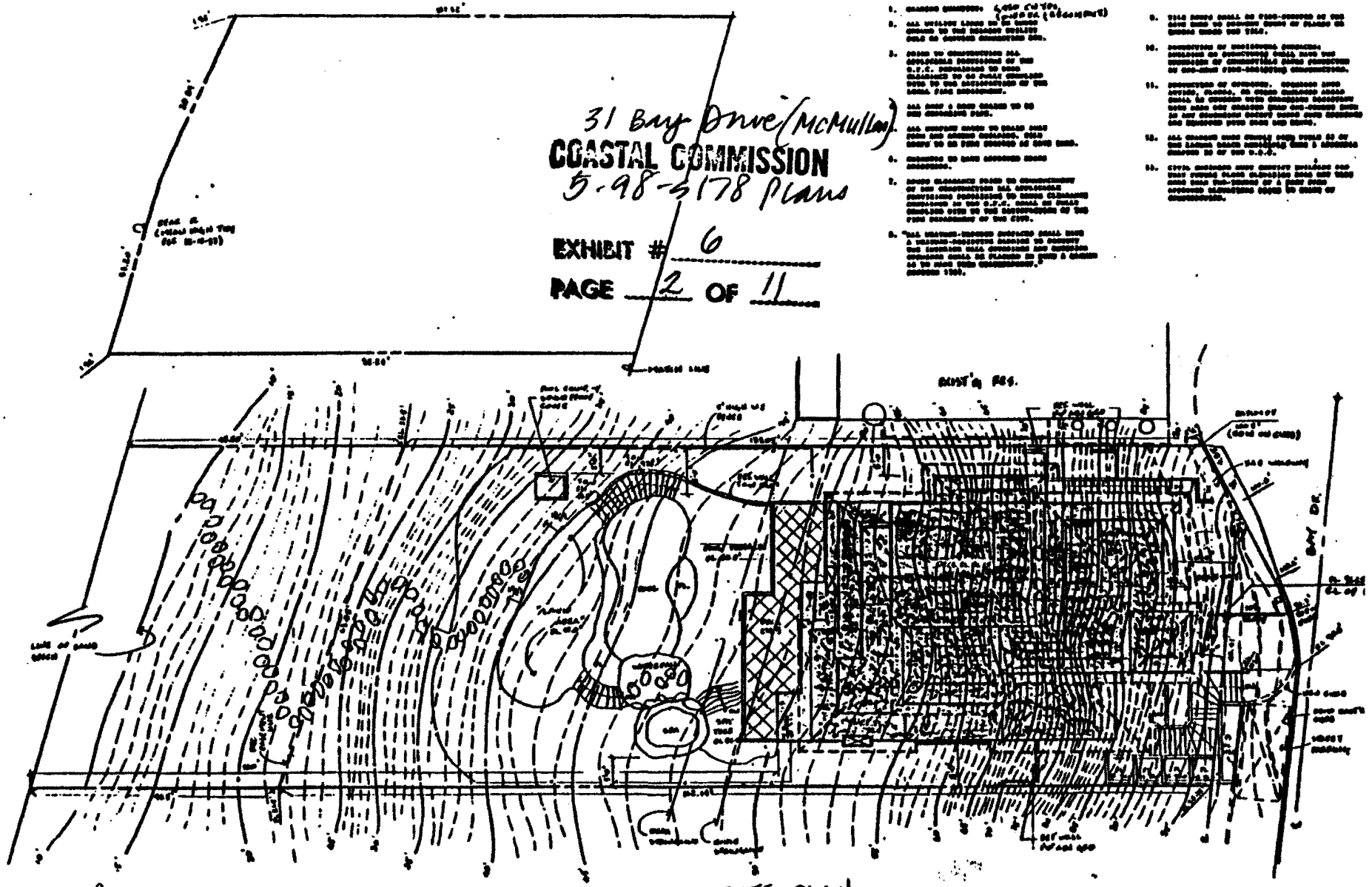
COASTAL COMMISSION
5-98-178 Plans

EXHIBIT # 6
PAGE 1 OF 11

31 Bay Drive (McMullen)

COASTAL COMMISSION
5-98-178 Plans

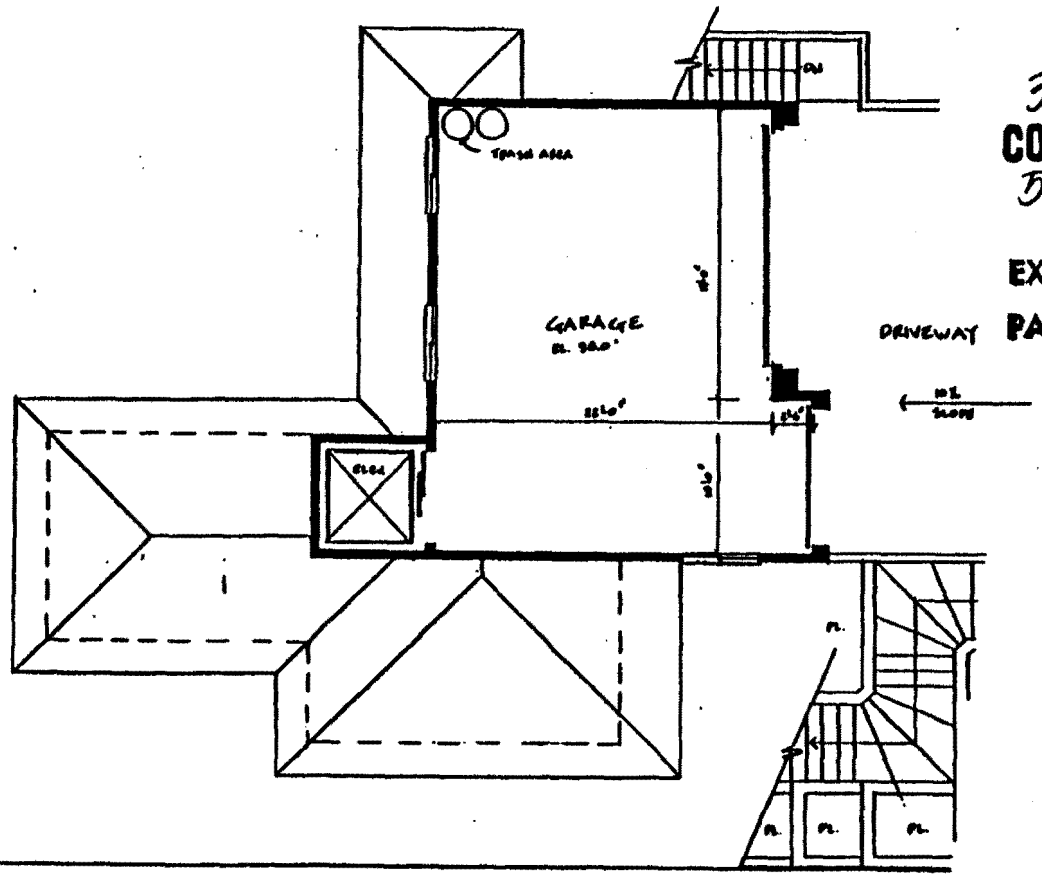
EXHIBIT # 6
PAGE 2 OF 11



SITE PLAN

Plans

Street



31 Bay Drive (McMullen)
COASTAL COMMISSION
5-98-178 (Plans)

EXHIBIT # 6

PAGE 3 OF 11

Plans ←

→ Street

GARAGE LEVEL II
742 SQ FT (INC ELEV SHAFT)
40 SQ FT (ELEV SHAFT

A-3

McMullen Residence

James Conrad Architect

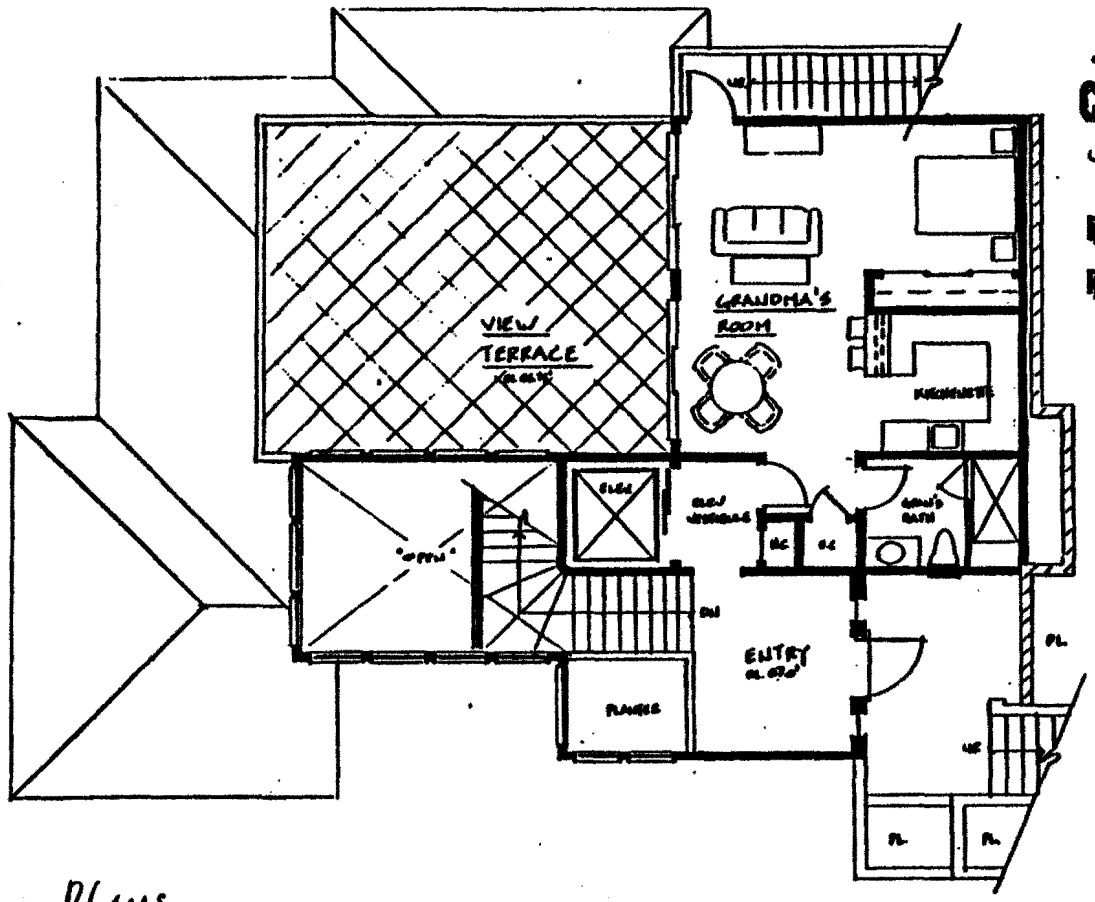
31 Bay Drive (McMullen)

COASTAL COMMISSION

5-98-178 Plans

EXHIBIT # 6

PAGE 4 OF 11



Plans ←

→ Street

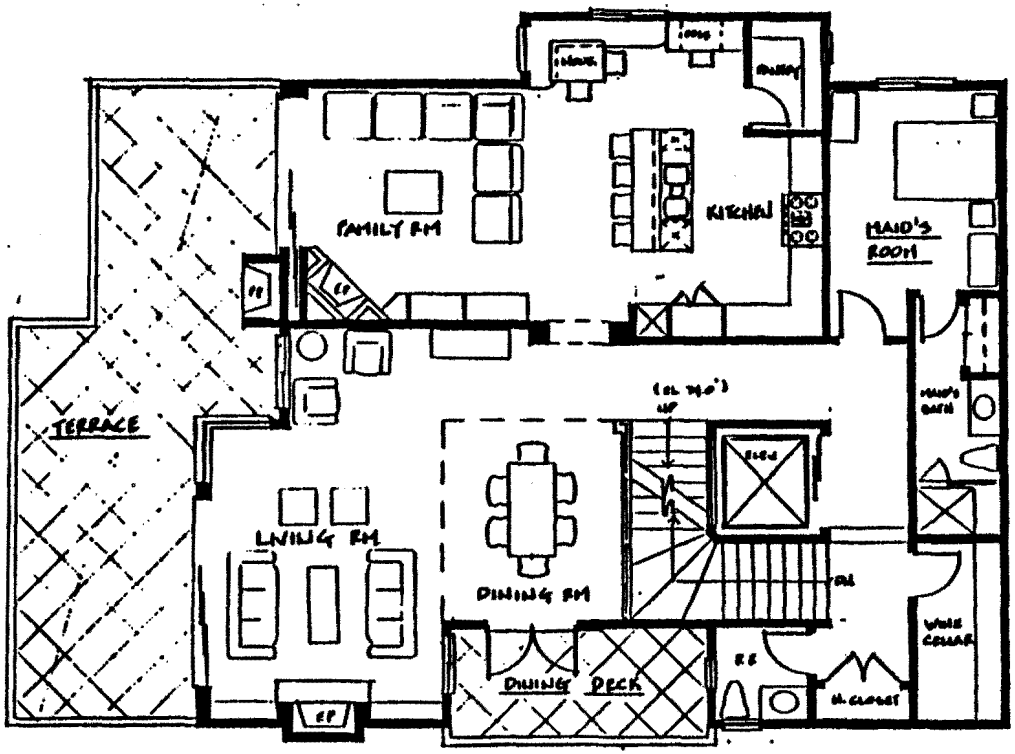
ENTRY LEVEL

924 sq.ft.

DECK AREA : 954

31 Bay Drive (McMullen)
COASTAL COMMISSION
5-98-178 Plans

EXHIBIT # 6
PAGE 5 OF 11



Beach

Street

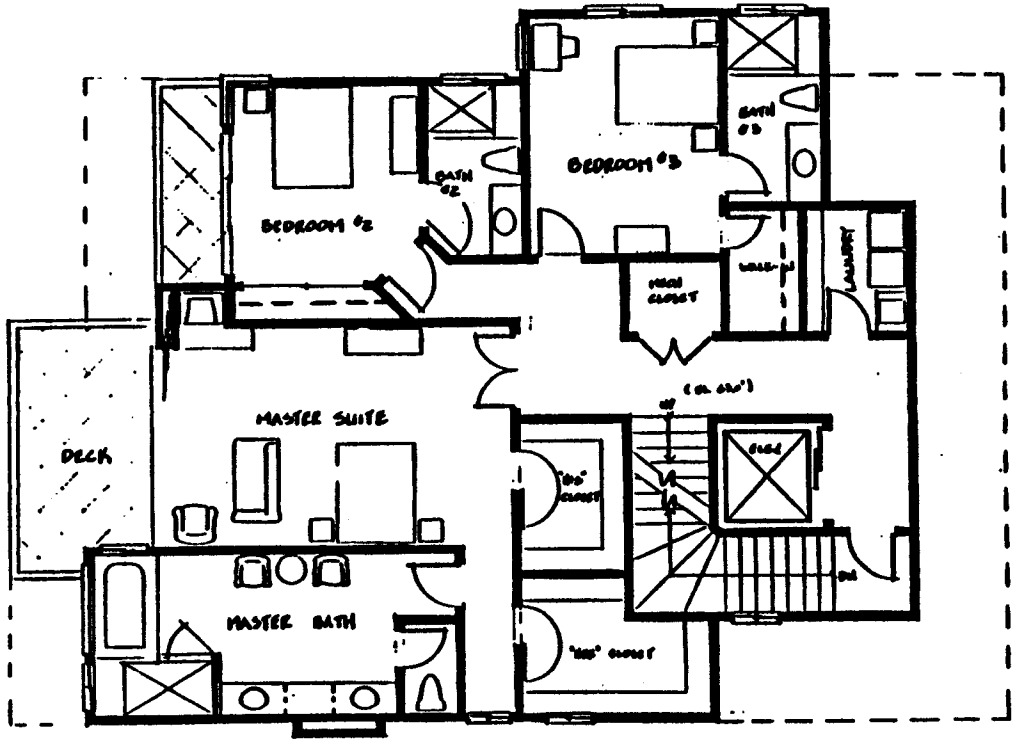
LIVING LEVEL (1960 ±)
DECK AREA : 948 ±

31 Bay Drive (McMullen)

COASTAL COMMISSION
5-98-178 Plans

EXHIBIT # 6

PAGE 6 OF 11



Beach ←

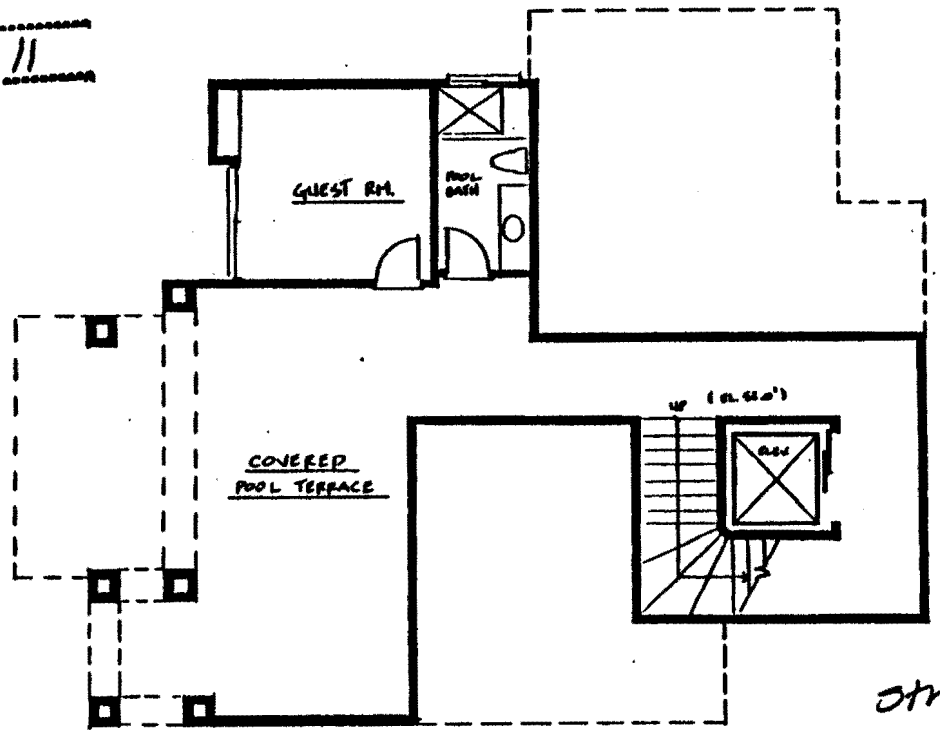
→ Street

BEDROOM LEVEL II (2056 ft²)

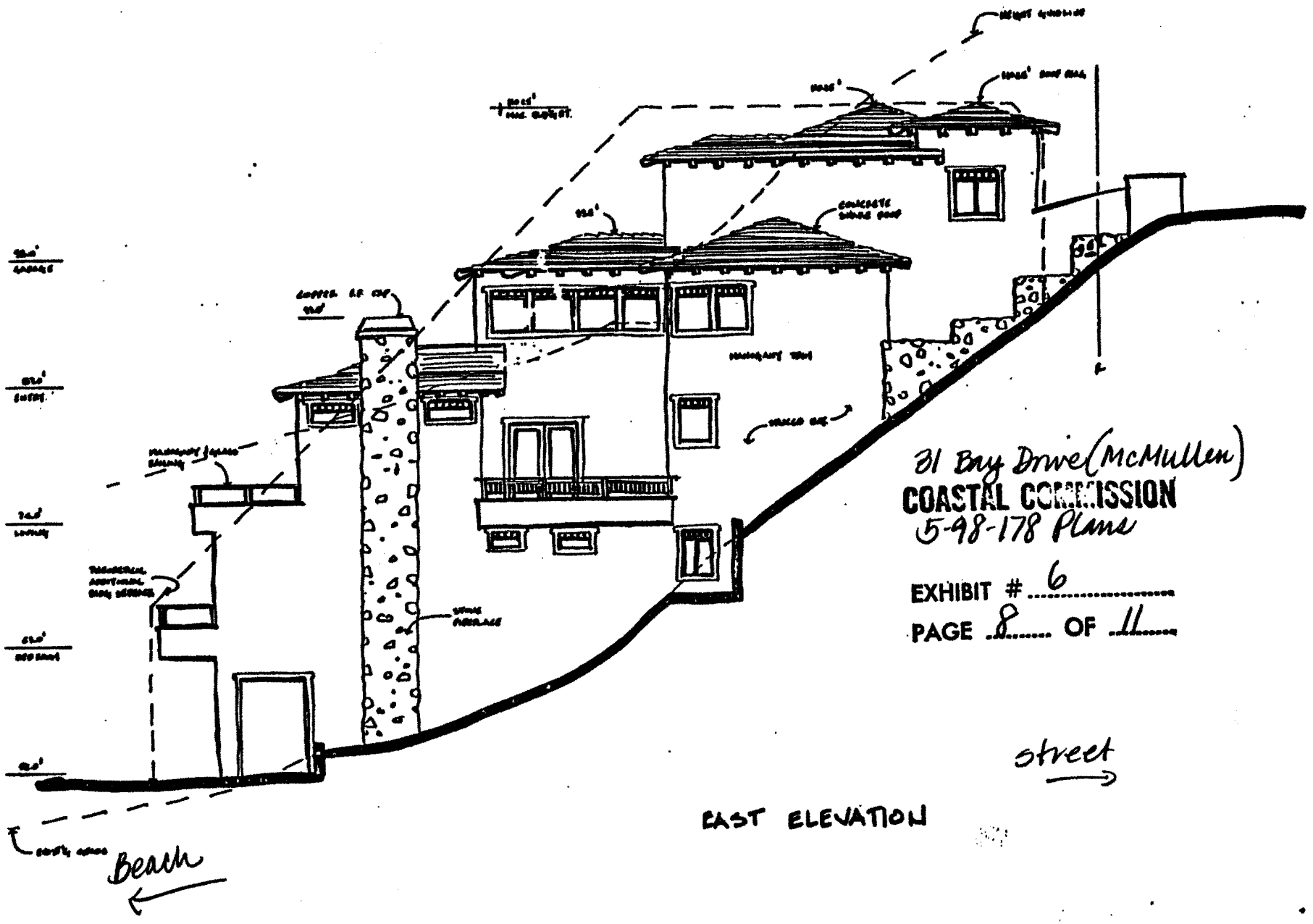
DECK AREA: 212 ft²

31 Bay Drive (McMullen)
COASTAL COMMISSION
5-98-178 Plans

EXHIBIT # 6
PAGE 7 OF 11



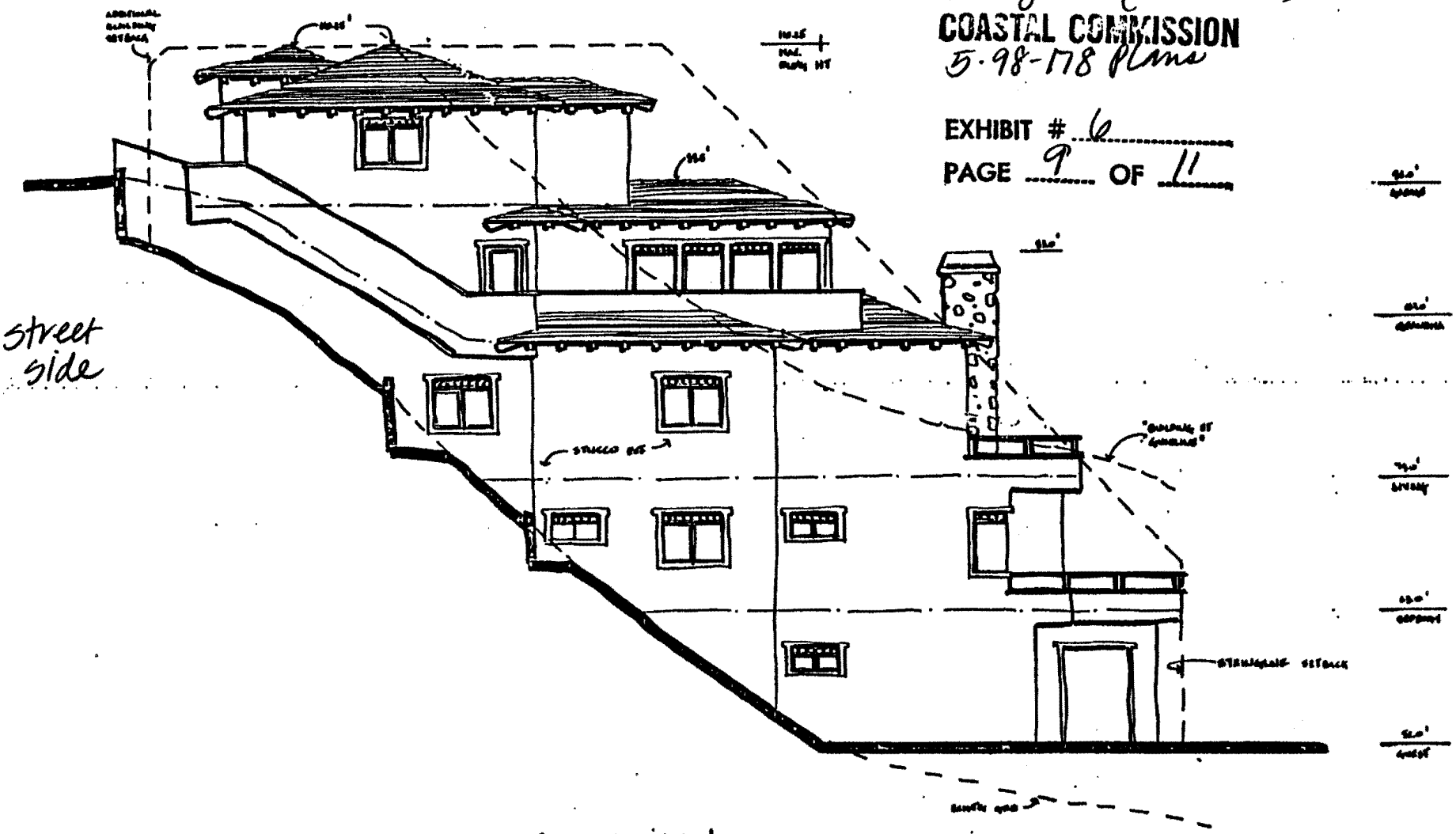
POOL TERRACE LEVEL I
(LVL 8)



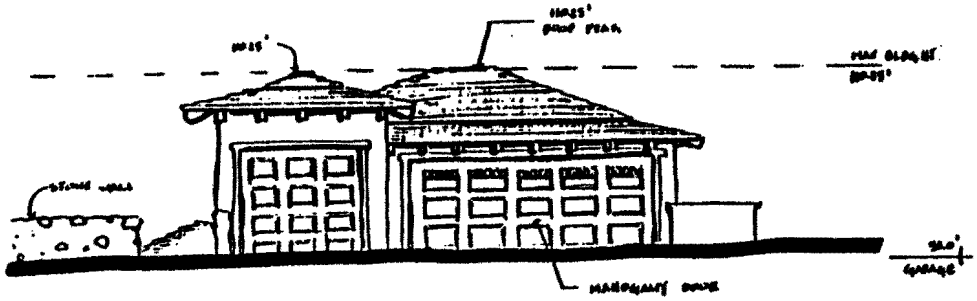
EAST ELEVATION

31 Bay Drive (McMullen)
COASTAL COMMISSION
5-98-178 Plans

EXHIBIT # 6
PAGE 9 OF 11



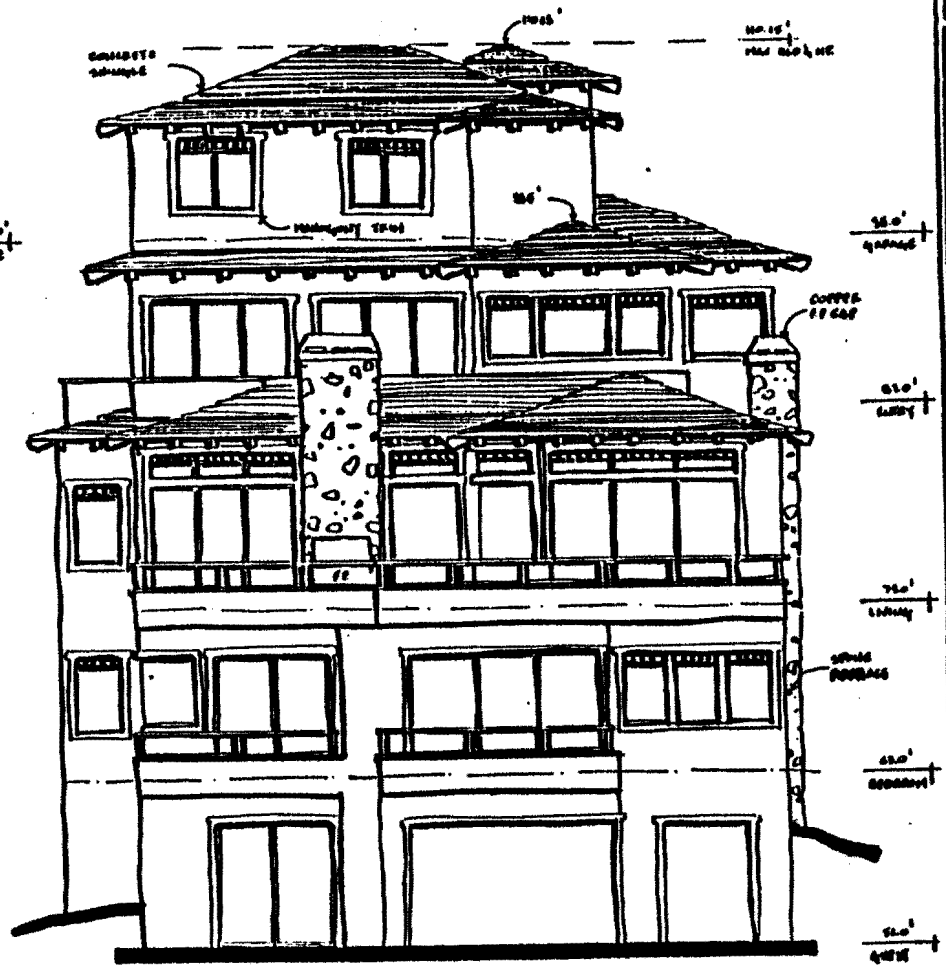
WEST ELEVATION



NORTH ELEVATION
Street Side

31 Bay Drive (McMullen)
COASTAL COMMISSION
5-98-178 Plans

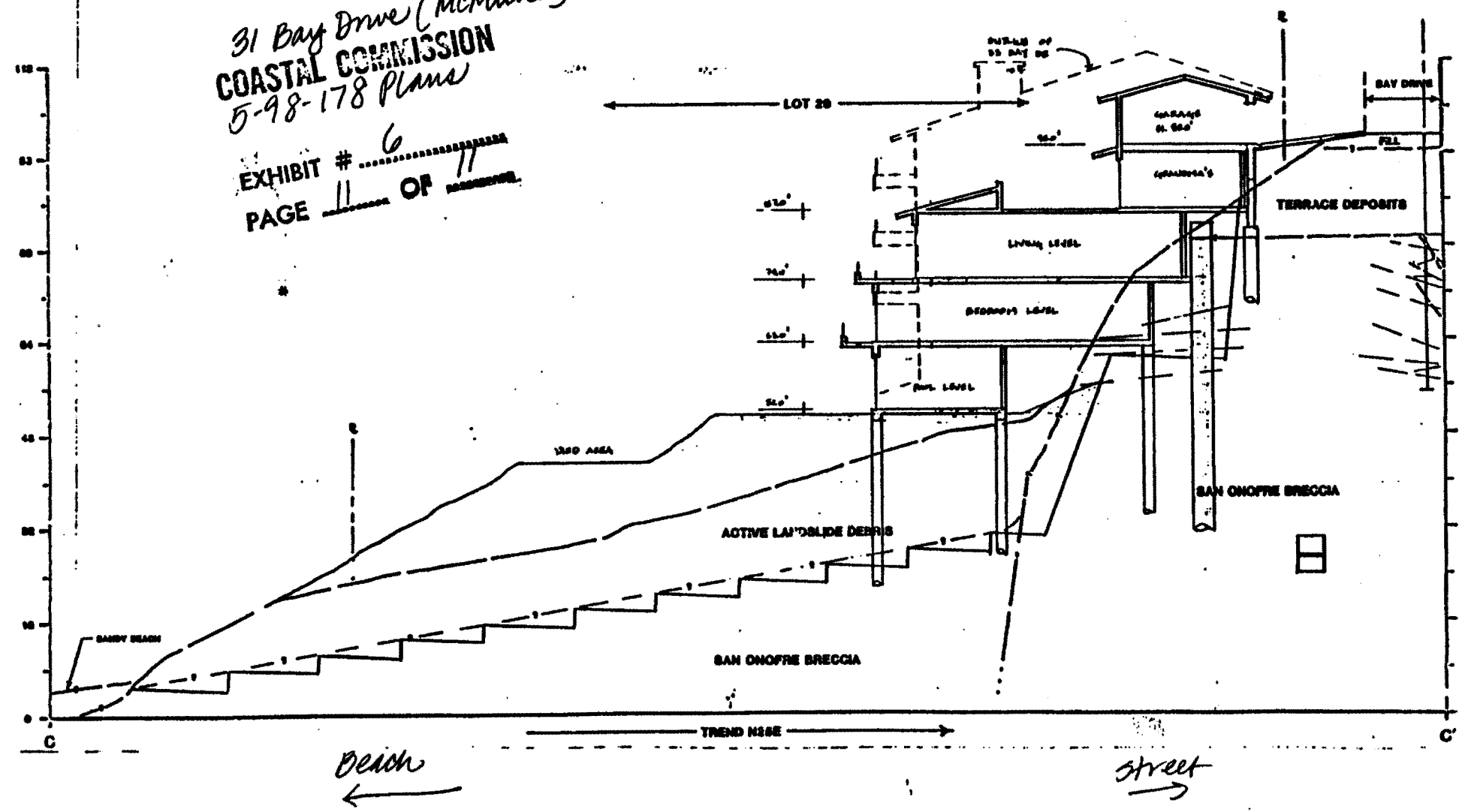
EXHIBIT # 6
PAGE 10 OF 11



SOUTH ELEVATION
Beach Side

31 Bay Drive (McMullen)
COASTAL COMMISSION
5-98-178 Plans

EXHIBIT # 6
PAGE 11 OF 11



November 14, 1997

5-97-371
Exhibit # 7
Lot line Adjustment
p.1 of 2

Charles & Valorie Griswold
19737 Live Oak Canyon Road
Trabuco, CA 92679

Re: Lot Line Adjustment No. 97-07

Dear Mr. and Mrs. Griswold:

At a regularly scheduled meeting of the City Council of the City of Laguna Beach held November 4. 1997, action was taken approving your application for Lot Line Adjustment No. 97-07 for property located at 27 & 31 Bay Drive. In order to finalize this process, the original copy of the document must be recorded by you with the Orange County Recorder. Please come in to the Department of Community Development at City Hall as soon as possible to pick up the original document for recording. The Lot Line Adjustment approval will automatically expire 90 days from the date of the City Council action if it has not been recorded.

For your information, the address of the Orange County Recorder is 630 N. Broadway, Finance Building #100, Santa Ana, and the telephone number is 834-2500.

If you have any questions regarding this matter, please call our Community Development Department at (714) 497-0712.

Sincerely,

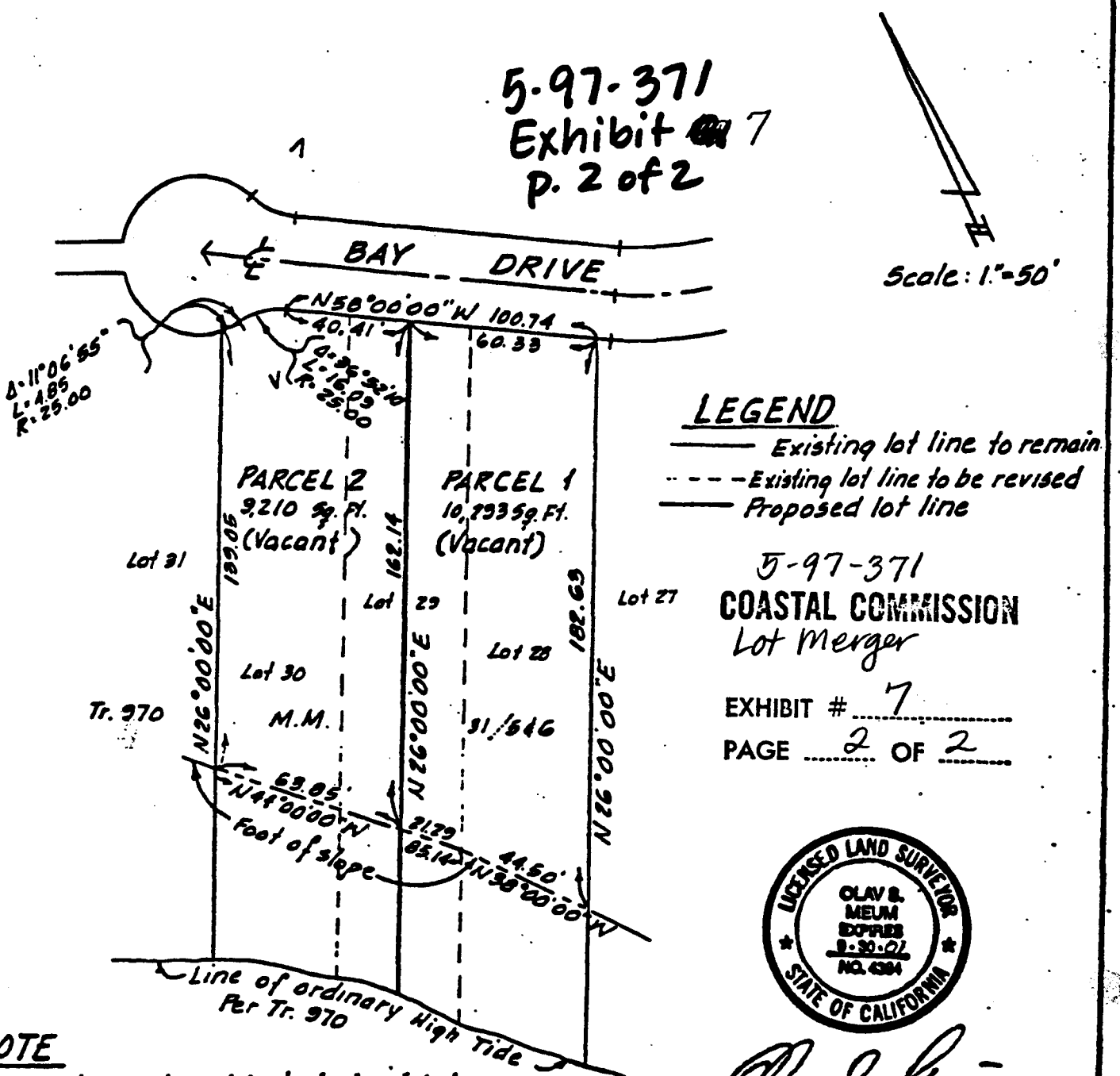
Chris Kreymann
Principal Planner

5-97-371
COASTAL COMMISSION
Lot Merger
EXHIBIT # 7
PAGE 1 OF 2

EXHIBIT B
LOT LINE ADJUSTMENT NO. LL -
(MAP)

OWNERS	EXISTING PARCLES AP NUMBER	PROPOSED PARCELS REFERENCE NUMBER
Charles & Valorie Griswold	056-180-44&47	Parcel 1
Timothy & Deborah McMullen	056-180-58	Parcel 2

5-97-371
Exhibit 7
p. 2 of 2



LEGEND

——— Existing lot line to remain
- - - - Existing lot line to be revised
——— Proposed lot line

5-97-371
COASTAL COMMISSION
Lot Merger

EXHIBIT # 7
PAGE 2 OF 2

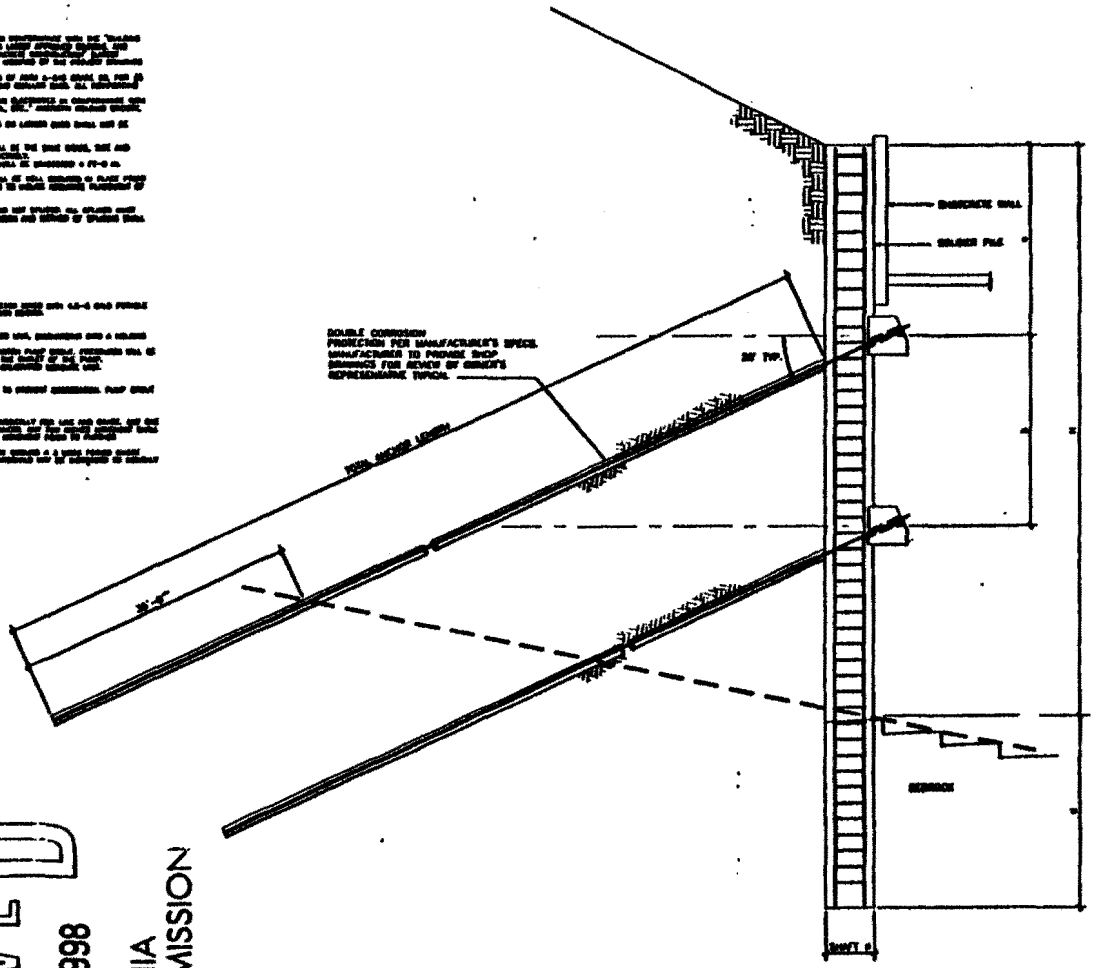
LICENSED LAND SURVEYOR
OLAV S. MEUM
EXPIRES 9-30-01
NO. 4384
STATE OF CALIFORNIA

NOTE

Areas shown do not include land between "Foot of slope" and "Line of ordinary high tide"

Olav S. Meum

Olav S. Meum LS 4384

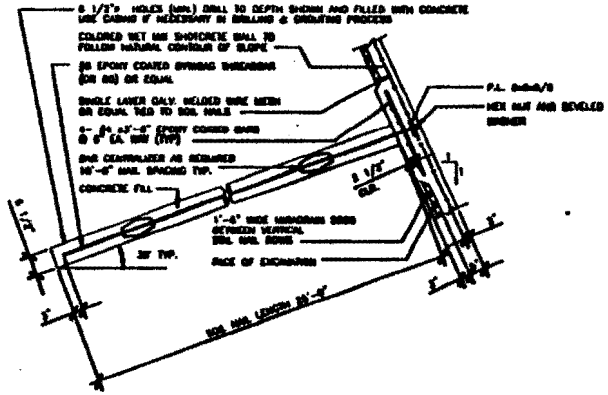


TYP. TIED-BACK SECTION ①

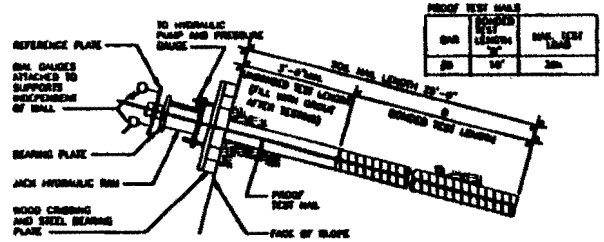
5-97-371
COASTAL COMMISSION
Geotechnical Plans
EXHIBIT # 8
PAGE 1 OF 8

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

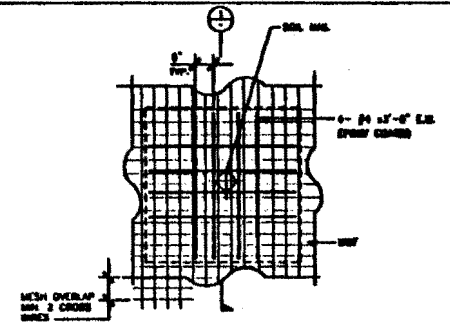
ES-1



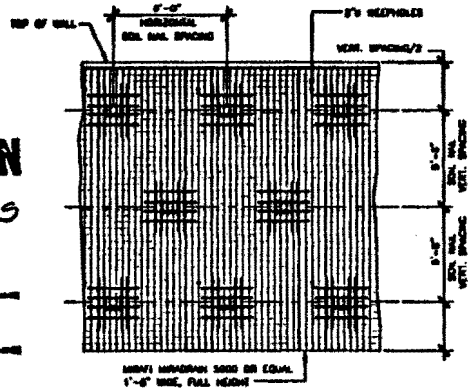
TYP. SOIL NAIL DETAIL (1)



TESTING OF NAILS (2)



REINFORCING @ SOIL NAIL (3)



PART ELEVATION (4)

5-97-371

COASTAL COMMISSION

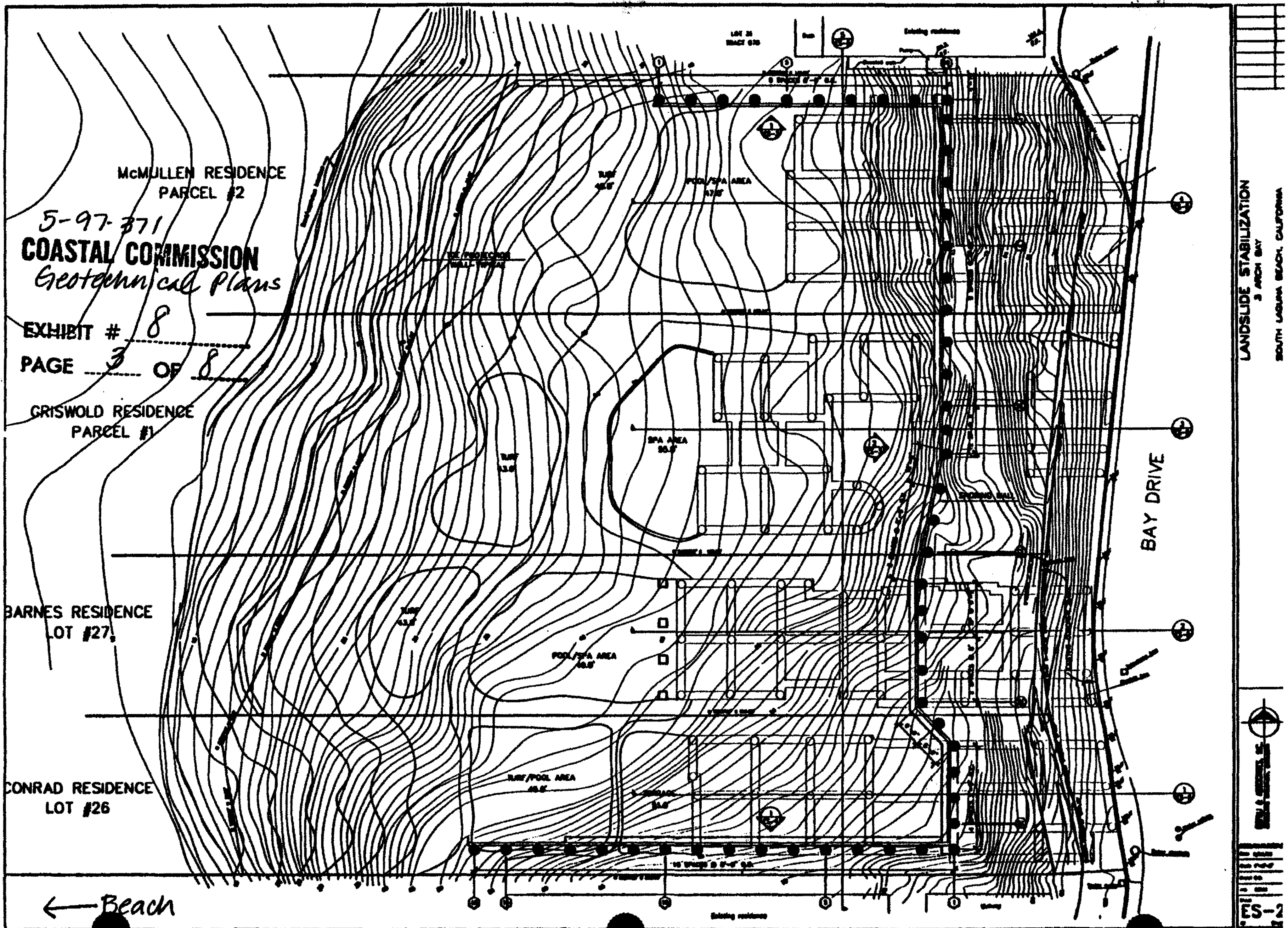
Geotechnical Plans

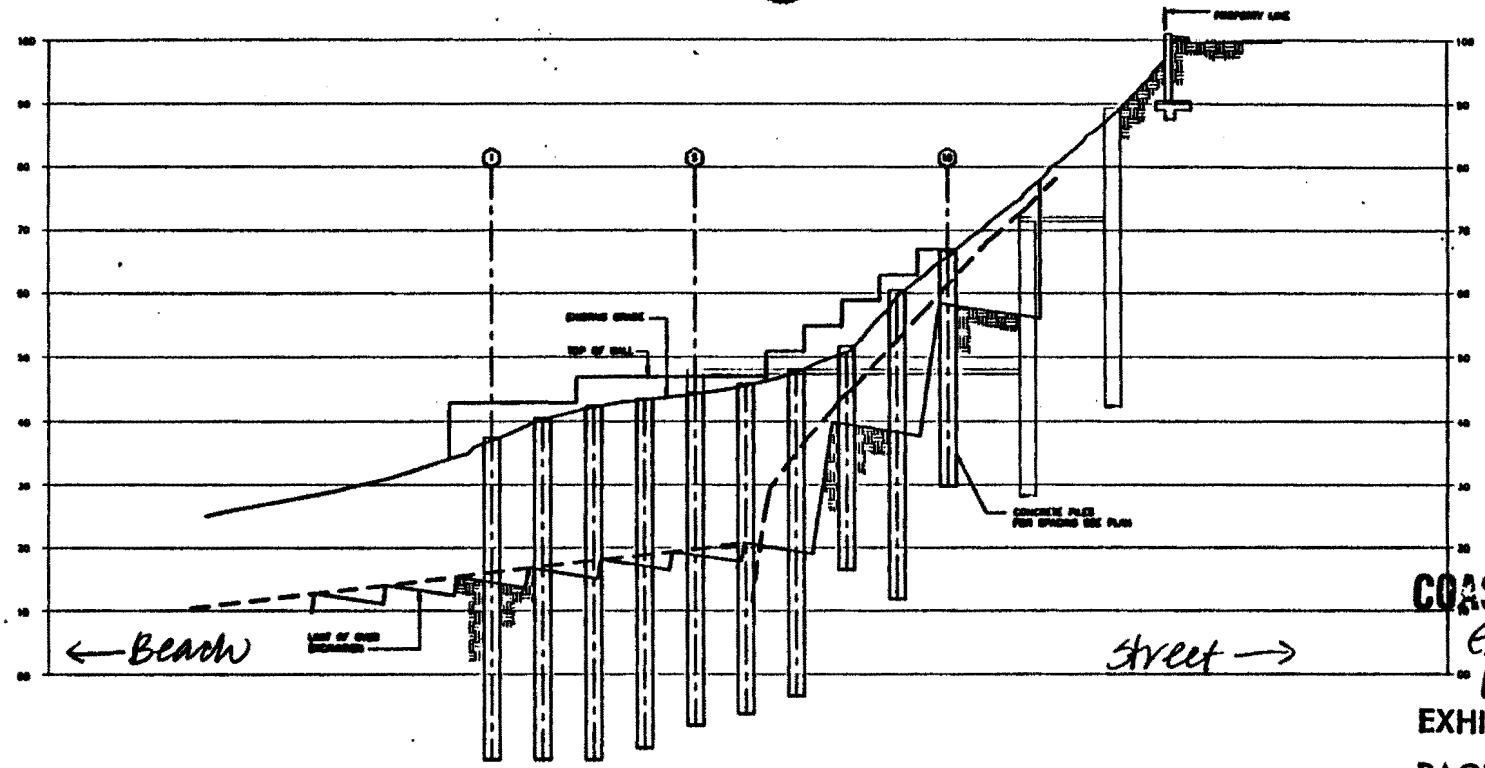
EXHIBIT # 8

PAGE 2 OF 8

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

ES1.1


McMULLEN RESIDENCE
PARCEL #2
5-97-371
COASTAL COMMISSION
Geotechnical Plans
EXHIBIT # 8
PAGE 3 OF 8
GRISWOLD RESIDENCE
PARCEL #1
BARNES RESIDENCE
LOT #27
CONRAD RESIDENCE
LOT #26
← Beach
BAY DRIVE
POOL/SPA AREA
SPA AREA
TURF
POOL/SPA AREA
TURF/POOL AREA
Existing residence
LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA
ES-2



NORTHWEST ELEVATION (1)

5-97-371
COASTAL COMMISSION
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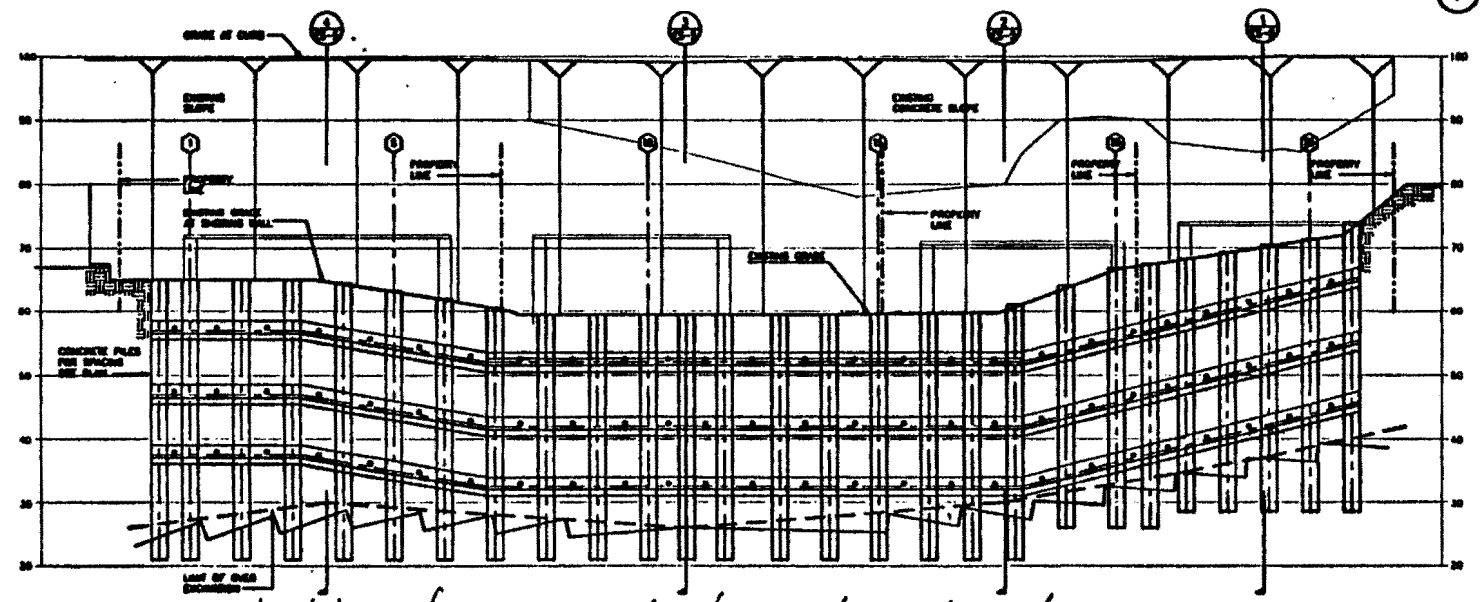
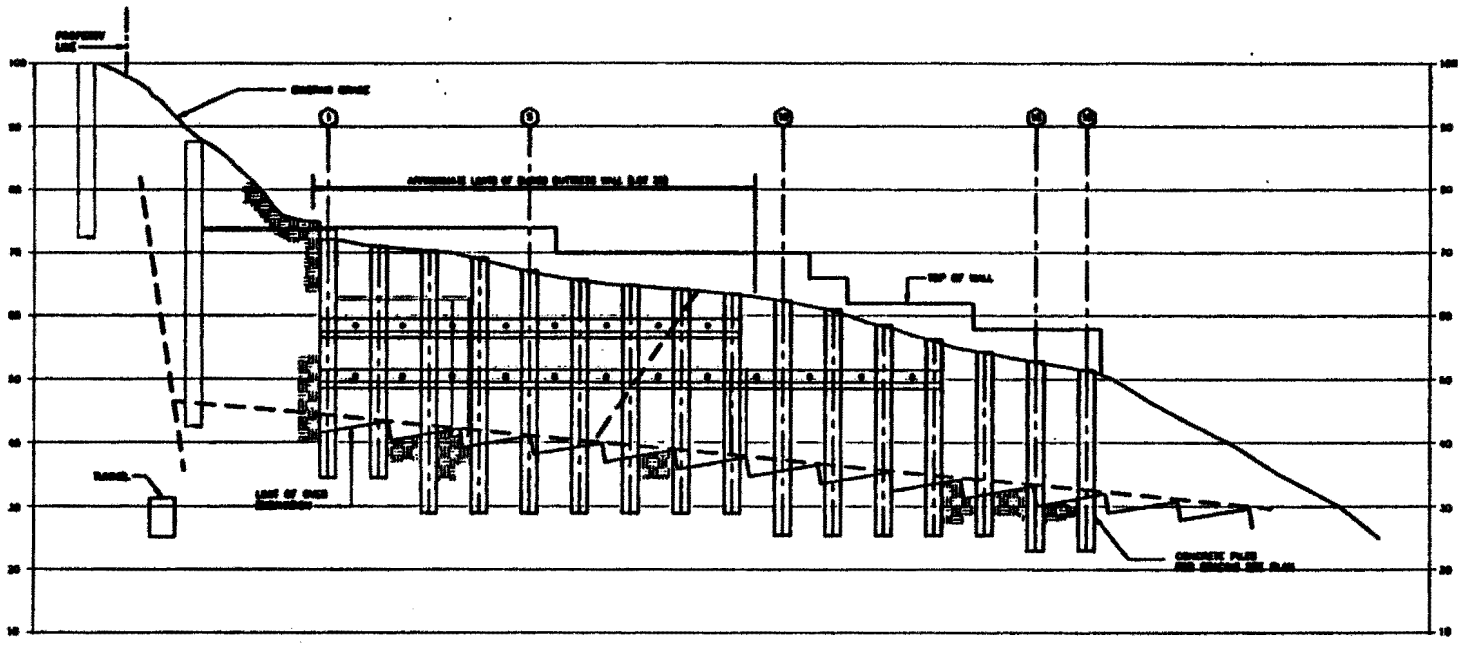
PAGE 4 OF 8



NORTHEAST ELEVATION looking from beach towards street (2)

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

ES-3



SOUTHEAST ELEVATION ← Street Beach → ①

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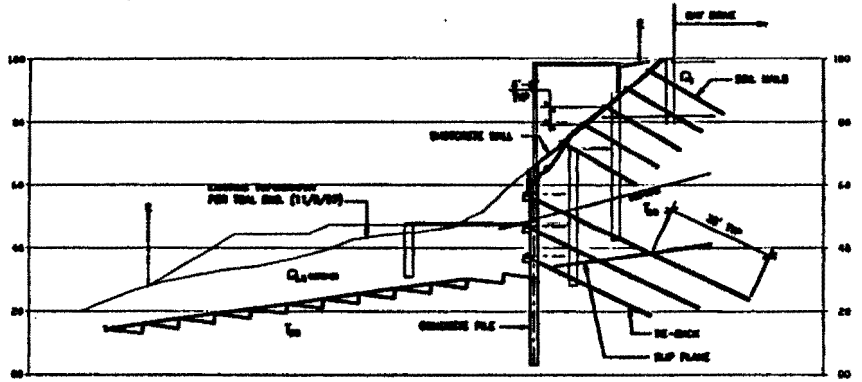
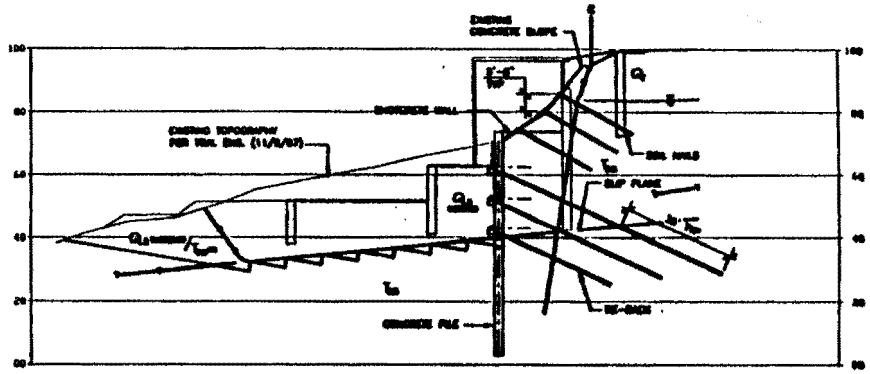
COASTAL COMMISSION
Geotechnical Plans
EXHIBIT # 8
PAGE 5 OF 8

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

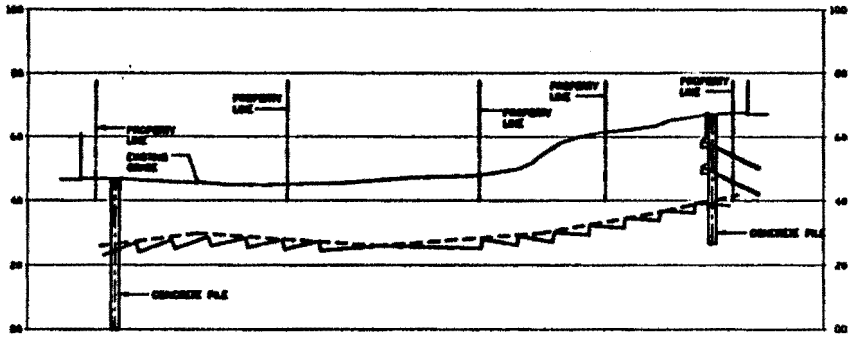
ES-4



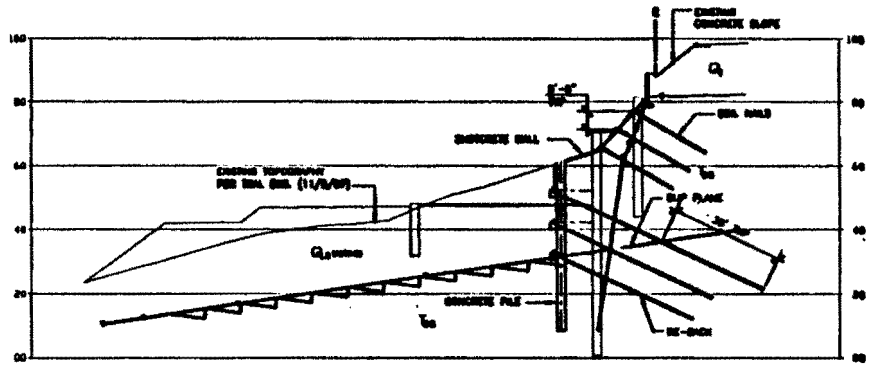
SECTION ← Beach Street → (4)



SECTION ← Beach Street → (1)



SECTION looking from beach towards street (5)



SECTION ← Beach Street → (2)

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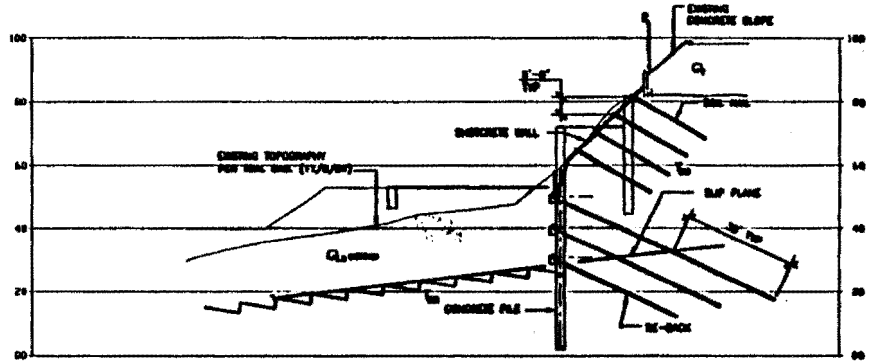
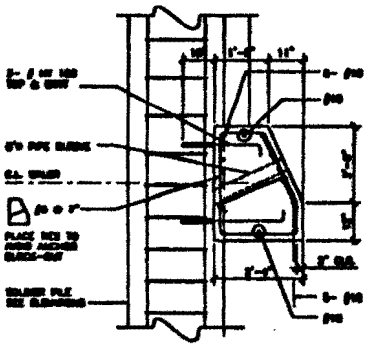
COASTAL COMMISSION
Geotechnical Plans
EXHIBIT # 8
PAGE 6 OF 8



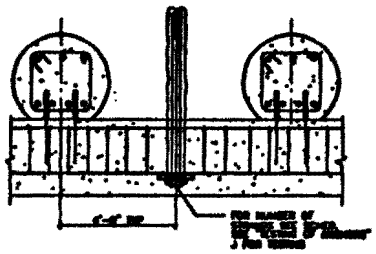
SECTION ← Beach Street → (3)

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

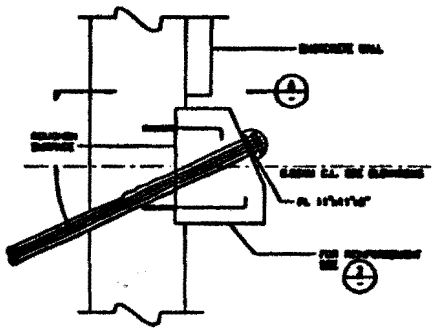
ES-5



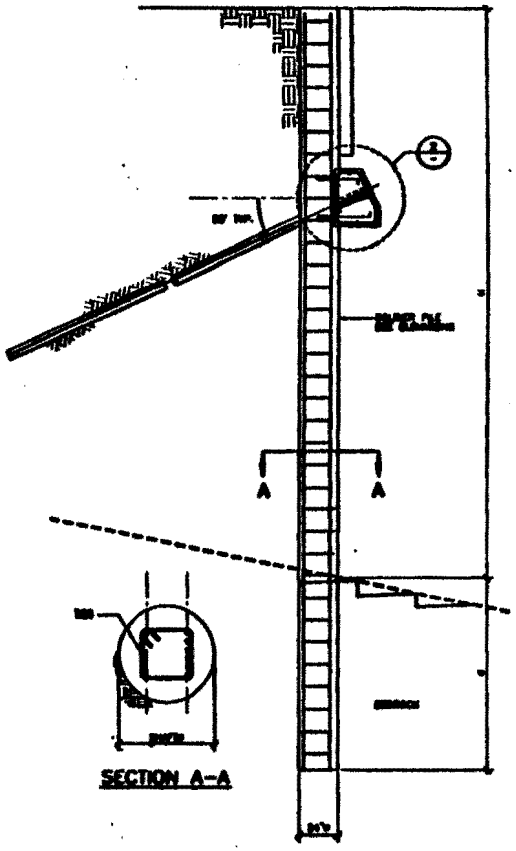
WALER DETAIL 2



DAM - SECTION A



ANCHOR DETAIL 3



SECTION A-A

SECTION 1

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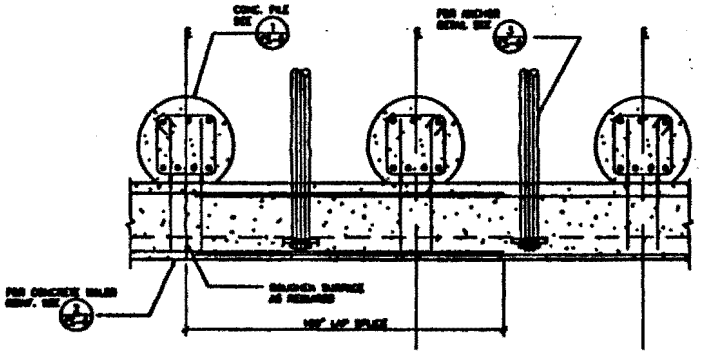
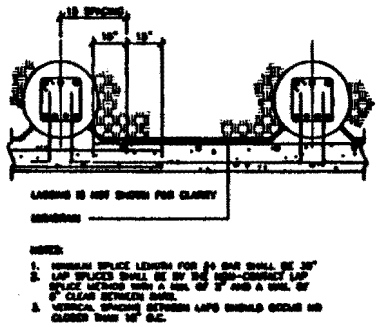
COASTAL COMMISSION
Geotechnical Plans
EXHIBIT # 8
PAGE 7 OF 8

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

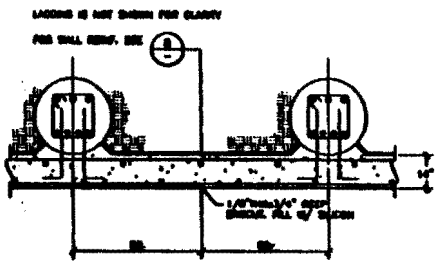
ES-6



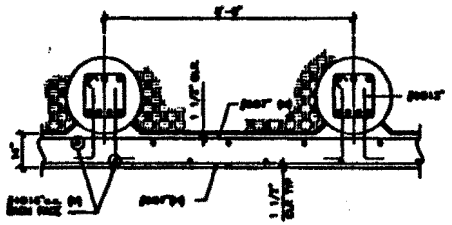
CONCRETE WALER CONSTRUCTION JOINT DETAIL (7)



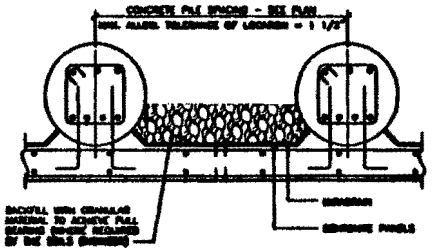
TYPICAL REBAR SPLICE DETAIL (4)



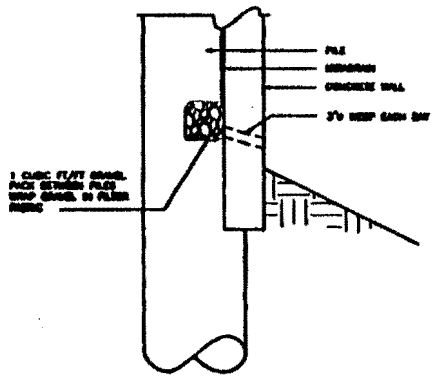
CONTROL JOINT DETAIL (1)



WALL REINFORCEMENT DETAIL (8)

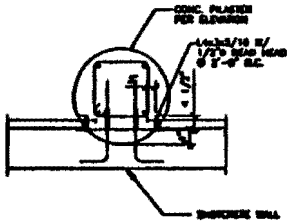


TYPICAL PLAN SECTION (5)

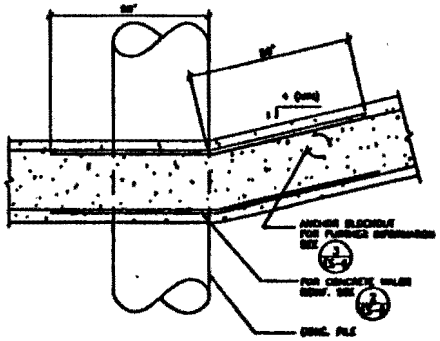


DETAIL (2)

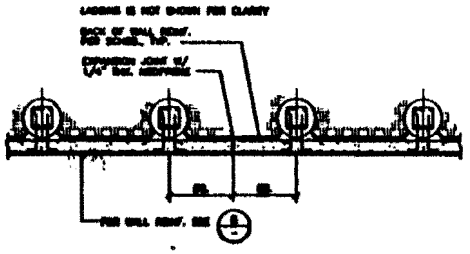
5-97-371
COASTAL COMMISSION
Geotechnical Plans
EXHIBIT # 8
PAGE 8 OF 8



DETAIL (9)



GRADE BEAM DETAIL (6)



EXPANSION JOINT DETAIL (3)

LANDSLIDE STABILIZATION
3 ARCH BAY
SOUTH LAGUNA BEACH, CALIFORNIA

ES-7

JAMES CONRAD, ARCHITECTS

July 21, 1998

Mr. John Auyong
Staff Analyst
California Coastal Commission
200 Oceangate Suite 1000
Long Beach, CA

RE: BAY DRIVE SHORING WALL & 4 PRIVATE RESIDENCES

In response to the request for information that you made via telephone conversation today, I offer the following response.

1. Benching of buttress fill.

I spoke with the Civil Engineer, Ray Toal of Toal Engineering, about the absence of benching at the buttress fill. He responded that the geotechnical report specified that a key way be installed at the toe of the buttress fill but it did not require benching to be utilized. Mr. Toal felt that the bedrock surface was not seep enough to require benching.

I then spoke with Mark Hetherington, the Engineering Geologist, about the issue. Mr, Hetherington explained that the reason that benching was not required was because of the flat grade of the failure plane (bottom of buttress fill). The slope of failure plane is approximately a 2.5 : 1 slope. Benching is required, typically, when the slope of the bottom of a buttress fill exceeds 5: 1. As a safety precaution, we would propose to add the note to the grading plan that if the slope of bottom of the buttress fill exceeds 5: 1 , benching will be required. The design for this benching, if required, will be done as an addendum to the plan.

2. Response to Ninyo & Moore's claim about slope stability.

I spoke to our structural engineer, David Cefali, and the engineering geologist, Mark Hetherington regarding this assertion. They both requested a copy of the slope stability analysis that Ninyo & Moore prepared to make the assertion. I have requested this analysis (see attached letter to Mr. Piggott). We will respond to the concern as soon as we receive the supporting documents.

1590 SOUTH COAST HWY., SUITE 17 • LAGUNA BEACH, CA • 92651
PHONE: (714) 497-0288 • FAX: (714) 497-0288

If you have any further questions please give me a call.

Sincerely,

James Conrad, Architect

CC: Mr. Chuck Damm, Senior Deputy Director
Ms. Deborah Lee, South Coast Deputy Director
Ms. Teresa Henry, South Coast District Manager
Ms. Lesley Ewing, Associate Civil Engineer

5-97-371
COASTAL COMMISSION
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PAGE 2 OF 4

JAMES CONRAD, ARCHITECTS

July 16, 1998

Mr. John Auyong
Staff Analyst
California Coastal Commission
200 Oceangate Suite 1000
Long Beach, CA

RE: BAY DRIVE SHORING WALL & 4 PRIVATE RESIDENCES

Dear John,

I have received your fax this morning where you pose several questions. Below are the answers to those questions.

1. The drawing for the wall at the base of the buttress fill, the key way protection wall, is located on the grading plans, (sht. 2). The calculations for this structural design are located in the calculation package prepared by Noble Consultants. These have both been sent to you previously. If you need another copy of either of these please give me a call.

2. The tie backs proposed are to be placed into a 6" diameter hole drilled into the bedrock. An anchor will be then placed into the hole. The anchors are either 8 or 9 strands, (approximately ½" in diameter). The tiebacks are then grouted per specifications.

3. The site will be excavated down to the failure plane but the benching as proposed previously will not be necessary. The buttress is stabilized by the construction of the soil key way. The key way is protected by the inclusion of a buried key way protection wall.

1500 SOUTH COAST HWY., SUITE 17 • LAGUNA BEACH, CA • 92651
PHONE: (714) 497-0388 • FAX: (714) 497-0288

4. There will not be sub drains located at each bench as previously proposed. The benches have been eliminated. We are, however, proposing to install a series of french drain trenches that will be situated perpendicular to Bay Drive at the center of each lot. These french drain trenches will convey the ground water to the ocean.

If you have any further questions please give me a call.

Sincerely,

James Conrad, Architect

CC: Mr. Chuck Damm, Senior Deputy Director
Ms. Deborah Lee, South Coast Deputy Director
Ms. Teresa Henry, South Coast District Manager
Ms. Lesley Ewing, Associate Civil Engineer

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COASTAL COMMISSION
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HETHERINGTON ENGINEERING, INC.

SOIL & FOUNDATION ENGINEERING • ENGINEERING GEOLOGY • HYDROGEOLOGY

March 18, 1998
Project No. 1800.3
Log No. 4448

California Coastal Commission
South Coast Area Office
200 Oceangate, 10th Floor
Long Beach, CA 90802-4302

FAX (562) 590-5084

Attention: Mr. John Auyong

Re: OFF-SITE IMPACTS
Lots 26, 27, 28, 29 and 30; Tract 970, Laguna Beach, California

Dear Mr. Auyong:

The development (restoration including the proposed shoring wall and recompaction of landslide debris/reconstruction of the slope) of the site at Lots 26, 27, 28, 29 and 30, Tract 970, (23-31 Bay Drive) in Laguna Beach, California, as proposed under coastal development permit application 5-97-371 will not adversely affect adjacent off-site properties from a geotechnical standpoint assuming appropriate design and construction. With regard to surface drainage considerations, again assuming appropriate design and construction, we have no reason to believe that the proposed project will adversely affect adjacent properties from a drainage standpoint. Surface drainage considerations should, however, be addressed by the Civil Engineer.

Sincerely,

HETHERINGTON ENGINEERING, INC.

Mark D. Hetherington
Civil Engineer 50488
Geotechnical Engineer 397
(expires 3/31/00)

REGISTERED PROFESSIONAL ENGINEER
MARK D. HETHERINGTON
No. 397
Exp. Date
GEO TECHNICAL
STATE OF CALIFORNIA

5-97-371
COASTAL COMMISSION
geologists letter
EXHIBIT # 10
PAGE 1 OF 1

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

5-97-371
COASTAL COMMISSION
Neighbors Geologist

July 15, 1998
Project No. 201351-01

EXHIBIT # 11
PAGE 1 OF 10

Ms. Shirley Frahm
c/o George B. Piggott
2603 Main Street, Suite 1050
Irvine, California 92614-6232

RECEIVED
JUL 17 1998
CALIFORNIA
COASTAL COMMISSION

Subject: Geotechnical Review
Proposed Shoring System – Bay Drive
Laguna Beach, California

Dear Mr. Piggott:

In accordance with your request and authorization, we have performed a geotechnical review of a shoring system proposed along Bay Drive and adjacent to the easterly side of the Frahm Residence in the Three Arch Bay area of Laguna Beach, California. The purpose of our review was to evaluate the relevant geotechnical reports (as listed in the references) and shoring system design prepared by others and to provide our review comments.

The Frahm residence is located on the beach side of the cul-de-sac at 33 Bay Drive (Lot 31). The shoring system proposed will extend along an approximately 200 foot length of vacant properties parallel to the existing slope which descends from Bay Drive. The shoring system will also extend along the property line adjacent to 33 Bay Drive as well as along the property line adjacent to Lot 25 at the southern end. The shoring system is planned to support Bay Drive and adjoining residential properties during excavation work associated with removal of an active landslide and construction of four new residential structures on the site. The roadway and some residential properties have experienced distress in the past and have been subject to various remedial measures and a number of reports and geotechnical evaluations have been performed in the past.

The project architect is Mr. James Conrad. The project geotechnical consultant is Hetherington Engineering, Inc. Structural design and plans were prepared by Cefali & Associates, Inc. The project civil engineer is Toal Engineering, Inc.

SCOPE OF SERVICES

Our scope of work during this review has included the following services. A list of referenced documents reviewed is attached.

- A review of readily available published regional geologic data, topographic maps and aerial photographs.
- A site visit to observe the general surface conditions and topographic features.
- A review of various prior geotechnical reports associated with properties along Bay Drive.
- Review of project geotechnical reports and shoring plans for the subject project.
- Geotechnical engineering, including slope stability analyses.
- Consultations and preparation of this letter report.

REVIEW FINDINGS AND COMMENTS

The geologic data presented in Hetherington Engineering's (HE) report dated January 26, 1998, include the results of subsurface exploration performed by their firm and also include a compilation of data from earlier studies. In general, the data presented indicate that the slope area beneath Bay Drive is underlain by Pleistocene-age terrace deposits which rest unconformably on sedimentary bedrock of the San Onofre Breccia. The geologic structure, as presented, is characterized by a number of high angle, north-northwest to north-northeast trending faults and associated zones of fracturing. Orientation of bedding in the San Onofre Breccia is variable, but the bedding strikes predominantly to the northeast and dips from approximately 15 to 25 degrees to the southeast. The active landslide includes the vacant lots below Bay Drive and extends beneath a portion of the Frahm residence. The headscarp of the landslide is considered to be coincident with a steeply dipping fault, which is subparallel to Bay Drive and trends approximately N80W and dips approximately 82 degrees south. Significant amounts of groundwater seepage were reported. Based on our review, it is our opinion that the geologic interpretation presented in the HE report is reasonable based on the available data.

The proposed shoring system consists of a drilled pier and tie-back system parallel to Bay Drive and along the southeast side adjacent to Lot 25. The shoring system adjacent to 33 Bay Drive is depicted as a row of cantilever drilled piers without tie-backs.

Based on our review of the project reports and shoring plans, we have the following comments:

1) The geologic data presented in the HE report, as well as previous reports by others, indicate that the area along Bay Drive is complicated by the presence of faulting, fracturing and jointing. The proposed shoring system will rely on the strength of the formational materials beneath Bay Drive as well as the bonding stress between the formational soil and the pressure grout to withstand tie-back forces. We are concerned with the potential impact that planes of weakness, associated with faults, fractures, and/or joint sets may have on the planned tie-back system. We note that subsurface exploration has not been extended into the zone where the tie-back anchors are proposed.

2) Tie-back lengths specified on the plans show a bonded length of 35 feet beyond the intersection with a slip plane which has been projected from the active slide plane. This slip plane has not been depicted on geologic cross-sections and its presence is not defined. We recommend that details regarding the projection of the slip plane and specifications for determining the slip plane in the field be provided.

3) The tie-backs are closely spaced. During tie-back testing, if a failure occurs additional tie-backs are not likely feasible. We recommend that the project specifications include detailed procedures to follow in case of tie-back failure.

4) According to the shoring plans each tie-back is designed for a tensile strength of approximately 210 kips to be distributed along the 35 foot bonded length. A bond stress of 25 pounds per square inch (psi) was recommended by HE for design of the bonded

length. Based on our experience, the actual distribution of stress along the bonded length of tie-back may be concentrated along the first 15 to 20 feet. Consequently, it may require a bonding stress higher than 25 psi between the formational soil and pressure grout in the bonded length. In addition, our review of the calculations performed by Cefali & Associates, dated June 9, 1998, indicate that a tie-back force ranging from 220 to 270 kips was utilized in the design. We recommend that additional slope stability analyses be performed, using a tie-back force of 210 kips along with adequate structural analysis, to evaluate the final design shown on the plans.

5) The tie-backs appear to be close to the sewer tunnel. We recommend that the project consultants address potential conflicts among the tie-backs, pressure grouts and the existing sewer tunnel.

6) Construction staging and sequencing should be evaluated and addressed prior to construction; including drilling access and stability of temporary cuts and fills.

7) Caving conditions were encountered during exploratory drilling on site and will likely be encountered during drilling for shoring. We recommend that the project specifications address control of groundwater, caving potential and drilling sequencing.

8) After the shoring and tie-back system is in-place numerous additional caissons are planned between the shoring wall and Bay Drive for the proposed foundations systems. It appears that these caissons will interfere with the tie-backs. HE's report states that the shoring system is a permanent feature. We recommend that the project consultants address potential conflicts between the shoring tie-back system and future foundation systems.

9) Our analyses of the proposed shoring system have included evaluation of a cross-section oriented approximately due south through the Frahm residence on Lot 31 and through

the shoring system. Our analyses of this section show a potential unstable condition when the landslide material is excavated and the temporary slopes rely on the shoring system for support. For these analyses we have adopted the same design concept as presented in the plans dated June 22, 1998 and assumed that a weak bedding plane projected from the active slide plane may exist. Since there are no tie-backs proposed as a part of the shoring system in this area, our analysis indicated that the proposed 2-foot diameter piles will deflect excessively and may fail by tilting.

10) The shoring plans reviewed include notes regarding monitoring of the shoring system, but details regarding the type of monitoring are not specified. Details regarding the monitoring system and frequency of readings should be specified. We recommend that inclinometer casings be installed prior to the excavation and readings taken frequently to monitor the performance of the shoring system.

11) We recommend that a back-up plan be prepared in the event of a shoring system failure.

12) A detailed subsurface drainage system should be installed either behind the proposed shoring system if the shoring systems are to be left in place after construction or behind the basement walls between Bay Drive. This drainage system should be designed based on the amount of estimated groundwater seepage and should be directed to a suitable outlet.

13) Additional slope stability analyses including, but not limited to, a deep-seated failure surface along the slip surface projected from the active slide plane and extending up through the slope behind Bay Drive should be performed to address the overall slope stability for both during construction and after completion of construction.

SUMMARY

The purpose of our review was to evaluate the feasibility of the planned shoring system from a geotechnical perspective and to provide review comments. Based on our review of the available referenced material, it is our opinion that the geologic interpretation regarding the active landslide presented by Hetherington Engineering is reasonable, but we have concerns regarding the potential impact of faulting and fracturing on the integrity of the shoring system proposed. In our opinion, additional subsurface exploration to evaluate the bedrock material in the tie-back zone is warranted; particularly in light of the consequences of a shoring system failure. The additional exploration should be designed to evaluate the bedrock conditions with respect to degree of faulting and fracturing, material strength and should be extended to the depths planned to the tie-back anchors.

As indicated, our own analyses of the cantilever shoring system parallel to the Frahm residence indicate a potential for excessive deflection of the shoring and possibly failure. In our opinion additional evaluation of this portion of the shoring system should be performed. Additional measures of support may be appropriate.

The evaluation and stability analyses were generally limited to the subject property and Bay Drive. As indicated in Item 13, we recommend that a more global slope stability analyses be performed which includes upgradient properties to the northeast. The interim construction and long-term site stability should be evaluated including these upgradient conditions. Without such analyses, the stability of the proposed shoring system as well as the safety and stability of Bay Drive can not be evaluated adequately.

We also recommend that the review comments listed above be addressed. We would be pleased to meet with the project consultants to discuss our concerns and analyses, if requested.

Our scope of work has been limited to review of the referenced documents and engineering analyses utilizing the available data. We have not performed subsurface exploration or laboratory

testing. Our review has been limited to the data available to us. Additional data regarding the project, if available, should be provided for our review.

Ninyo & Moore appreciates the opportunity to provide geotechnical services on this project. If you have any questions regarding this letter, please contact the undersigned at your convenience.

Sincerely,
NINYO & MOORE

Lawrence Jansen, C.E.G.
Senior Geologist

Daniel Chu, G.E.
Chief Geotechnical Engineer

Avram Ninyo, G.E.
Principal Engineer

LTJ/CAP/DC/AN/av

Distribution: (3) Addressee

Attachments: References

COASTAL COMMISSION
5-97-371

EXHIBIT # 11

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REFERENCES

Cefali and Associates, Inc., 1998, "Landslide Stabilization, 3 Arch Bay, South Laguna Beach, California", Sheets ES-1 through ES-6, dated June 22.

Converse, Ward, Davis, Dixon, Inc., 1979, Preliminary Geotechnical Investigation, Proposed Residence, Lot 27, Tract 970, Three Arch Bay, California, dated November 30.

Doodlebug Enterprises, 1979, Refraction Seismic Survey, 33 Bay Drive, Three Arch Bay, dated March 31.

E. J. Miller, Inc., 1980, Foundation Investigation for a Proposed Residence to be Constructed on Lots 30 and 31 in Three Arch Bay, California, dated July 16.

E. J. Miller, Inc., 1981, Alternative Measures for Maintaining Stability of Properties Adjacent to the Proposed Excavation on Lots 30 and 31 in Three Arch Bay, California, Project 81-016, dated April 28.

Ensoft, Inc., 1993, Documentation of Computer Program LPILE, Version 4.0 by L. C. Reese and S. T. Wang.

Federal Highway Administration, 1986, STABL6 with Reinforcing Layer Option User's Manual, by D. N. Humphrey and R. D. Holtz, Publication No. JHRP-86-18.

Galbraith, John, Architect, 1981, "Kinard House" – Site Map, Location of Lots 31 and 30 with Relation to Private Right of Way and To Ocean, dated July 22.

Galbraith, John, 1982, "Kinard House", Architectural Plans, Sheets 1 to 10, Structural Plans, Sheets S-1 to S-3, Electrical Plans, Sheet E-1, Total of 17 Sheets, dated July 2.

Galbraith, John, undated, Handwritten letter to E.J. Miller regarding work done on Kinard Residence, 3 Arch Bay, South Laguna, California.

Galbraith, Mark, W., 1982, Estimated Cost of Construction, dated August 18.

Geofirm, 1980, Preliminary Geologic Review of Slope Stability Conditions, Lower Bay Drive, Three Arch Bay, South Laguna, California, dated May 5.

Geofirm, 1980, Preliminary Investigation of Slope Stability and Groundwater Conditions in and Adjacent to Bay Drive, Three Arch Bay, California, date June 9.

Geofirm, 1980, Investigation of Groundwater and Slope Stability Conditions in and Adjacent to Bay Drive, Three Arch Bay, South Laguna, California, dated September 8.

Geofirm, 1991, Geotechnical Design Recommendations for Slope Stabilization, Lower Bay Drive, Three Arch Bay, South Laguna, California, dated June 11.

Geofirm, 1991, Response to Review of Plans for Lower Bay Drive Slope Stabilization, Three Arch Bay, South Laguna, California, dated November 13.

Geofirm, 1992, Lower Bay Drive Tieback Loads and Bond/Embedment Lengths, Three Arch Bay, California, dated May 11.

Geofirm, 1992, Lower Bay Drive Remedial Construction, Proposed Caisson Design Recommendations, dated June 26.

Geofirm, 1992, Report of Observation of Tieback Installation, Caisson Excavation and Tieback Testing, Lower Bay Drive, South Laguna, California, dated November 23.

Geosoils, Inc., 1987, Preliminary Geotechnical Investigation, 31 Bay Drive, Three Arch Bay, Lot 30, Tract 970, County of Orange, California, dated December 7.

Geological Area Maps/Drain Design, 1981, dated December 1.

Hassiotis, S., Chameau, J. L., and Gunaratne, M., 1997, Design Method for Stabilization of Slopes with Piles, ASCE Geotechnical Journal Vol. 123, No. 4, April, pp. 314-323.

Hauck, Richard E., 1979, Property Survey, Lot 30 and a Portion of Lot 31 in Tract 970, Three Arch Bay, South Laguna Beach, California, dated April 2.

Hauck, Richard E., 1979, Topographic Map, Sheet 1, Lots 30 & 31, Tract 970, Three Arch Bay, South Laguna Beach, California, dated April 23.

Hauck, Richard E., 1980, Topographic Map, Lot 26 and Portions of Lots 27 and 28, Tract No. 970, dated April 1.

Hauck, Richard E., 1980, Topographic Resurvey, Lot 30 and a Portion of Lot 31 in Tract 970, dated April 26.

Hetherington Engineering, Inc., 1998, Supplemental Geotechnical Investigation, Proposed Residential Development, Lots 26, 27, 28, 29 and 30 of Tract 970, Three Arch Bay, South Laguna Beach, California, Includes plans and cross-sections, Plates 1-6, dated January 26.

James Conrad Architect, 1998, Bay Drive Improvement, Lots 26, 27, 28, 29 and 30: Tract 970, Three Arch Bay, South Laguna Beach, California, Sheets 1–1 of 6, dated April 17.

James Conrad Architect, 1998, Bay Drive Improvement, Lots 26, 27, 28, 29 and 30: Tract 970, Three Arch Bay, South Laguna Beach, California", Sheets 1-5 of 5, dated May 1.

Kinard, John, M., 1980, Notification of Hazardous Slope Conditions, 33 Bay Drive, South Laguna, California, dated June 3.

Kinard, John M., 1981, Letter pertaining to two sets of Jim Miller's recommendations. No sets of recommendations attached, dated April 30.

COASTAL COMMISSION
5-97-371

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PAGE 9 OF 10

Kinard, John M., 1981, Cover letter pertaining to recap of the alternative methods of foundation and retaining wall construction as seen by Jim Miller. Recap not attached, dated April 30.

Pratley, Fred, 1980, Engineering and Geologic Reconnaissance, 33 Bay Drive, Three Arch Bay, South Laguna, California, dated September 2.

Pratley, Fred, Geologist, 1982, Letter outlining visit to site regarding progress of the boring for the northwest column, dated March 24.

Soil Engineering Construction, 1992, Letter to Mrs. Bittle titled Landslide Mitigation Repairs, Bittle Residence, 21 Bay Drive, Three Arch Bay, South Laguna, California, includes parameters for buried buttress wall and underpinning, dated September 18.

Soil Engineering Construction, 1992, Remedial Repair, Bittle Residence, 21 Bay Drive, Three Arch Bay, South Laguna, California, dated October 19.

Soil Engineering Construction, 1992, Remedial Repair to Biddle Residence, 21 Bay Drive, Three Arch Bay, South Laguna, California, dated December 10.

Soil Engineering Construction, 1992, Remedial Repair to Biddle Residence, 21 Bay Drive, Three Arch Bay, South Laguna, California, dated December 17.

Soil Engineering Construction, 1993, Slope Correction Work at 21 Bay Drive, South Laguna Beach, California, dated April 14.

Syndor, Robert, Certified Engineering Geologist, 1981, Engineering Geology Review of Vacant Site, dated May 7.

Toal Engineering, Inc., 1997, Preliminary Grading Plan, Lots 26 and 27 of Tract 970, and Parcel 1 and 2 of LL Adj., Laguna Beach, California, Sheets 1-2, dated November 11.

Triad Foundation Engineering, Inc., 1986, Visual Geotechnical Inspection, dated January 14.

Twining Laboratories, 1982, Compression Test on Concrete Cylinders, 33 Bay Drive, South Laguna Beach, California, dated July 16.

2R Engineering, 1981, Loading Diagrams, Pier Retaining Wall for the Proposed Residence at 33 Bay Drive, South Laguna, California, dated August 5.

2R Engineering, 1981, Cover letter along with 2 copies of Soluble Sulfate Test Results for a Proposed Residential Development on Bay Drive, Three Arch Bay, South Laguna, California, dated September 4.

2R Engineering, 1982, Design Parameters for Piers to Support the Seaward Side of the Proposed Residence at 33 Bay Drive, Three Arch Bay, South Laguna, California, dated April 29.

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6370 Lusk Boulevard, Suite F200
San Diego, California 92121-2753
Telephone 619.558.2181
Facsimile 619.558.2188

6900 East Camelback Road, Suite 522
Scottsdale, Arizona 85251-2442
Telephone 602.945.5337
Facsimile 602.945.5499

JOSEPHSON WERDOWATZ & ASSOCIATES, INCORPORATED

COASTAL COMMISSION
5-97-371
EXHIBIT # 12
PAGE 1 OF 5

RECEIVED
JUL 17 1998
CALIFORNIA COASTAL COMMISSION

July 15, 1998

George B. Piggott, Esq.
Law Offices of George B. Piggott
2603 main Street, Suite 1050
Irvine, CA 92614-6232

Subject: **Review of Proposed Shoring Wall at 3 Arch Bay South Laguna Beach, California**

Dear Mr. Piggott:

At your request, we have completed our independent review of the proposed shoring wall intended for the properties adjacent to 33 Bay Drive within the 3 Arch Bay community of Laguna Beach. Our review to date is based on information provided to us which includes the following:

1) Structural drawings produced by Cefali & Associates, Inc., dated June 22, 1998

2) Structural calculations produced by Cefali & Associates, Inc., dated June 19, 1998

3) Supplemental Geotechnical Investigation produced by Hetherington Engineering, dated January 26, 1998

4) Civil engineering drawings produced by Toal Engineering, Inc., dated November 9, 1997

5) Site section drawings produced by James Conrad Architect, dated May 1, 1998

6) Other related documentation including Coastal Commission reports and previous soils reports.

Proposed System

Per the structural drawings and accompanying soils report, the proposed shoring wall is to be comprised of a drilled pier & tieback system. The drawings reflect this type of system including the use of horizontal concrete waler grade beams used to link the drilled piers together and provide anchorage for the tieback anchors themselves. Additionally, the drawings indicate the use of drilled piers *without* tieback anchors to be used adjacent to the Frahm property line. Design criteria is given within the body of the soils report for lateral earth pressures, minimum pier diameter and spacing, soil bearing values, tieback bond capacity etc. The soils report goes on to address the preliminary foundation recommendations for the future homes themselves, but acknowledges that final design

criteria should be provided once the building plans are better known.

Findings

Subsequent to our review of the drawings, calculations and accompanying soils report, the following items were noted as being either incorrect or inconsistent within the overall design intent.

Anchor Spacing/Wood Lagging

Per the soils report, drilled piers are to be spaced at a maximum of 2-1/2 diameters on center if lagging is not utilized. Using 24 inch diameter piers as shown on the drawings, the maximum pier spacing should be a maximum of five feet on center. Per the drawings, piers are typically spaced at eight feet on center (with some spacings reaching as great as ten feet on center).

Within the general notes, wood lagging is discussed, but nowhere in the drawings is this lagging ever referenced or detailed with the exception of detail 5 on sheet ES-6. Furthermore, nowhere in the calculations is this wood lagging ever designed.

Per the drawings, the connection of the support for the wood lagging to the soldier piles themselves is comprised of wedge anchors spaced at 2 feet on-center. Based on the "apparent earth pressure" parameters given by Hetherington Engineering, it appears that the proposed connection is not capable of resisting the design pressures.

Shotcrete Wall

The soils report does not address the use of any sort of containment wall aside from the use of wood lagging spanning between piers as discussed previously. Within the drawings however, an eight inch thick, reinforced shotcrete wall is referenced and detailed in numerous locations. Per the site section cuts, the shotcrete wall appears to be intended only for the top-most portion of the slope above the piers for purposes of stabilization. However, in other locations within the drawings, the shotcrete wall is shown in conjunction with the drilled piers, waler beams and tiebacks found at the lower portion of the slope. Furthermore, there is no design within the structural calculations for the shotcrete wall itself.

Pier Design/Reinforcement

Within the drawings, no specific reference to quantity or size of the longitudinal or horizontal reinforcement at the drilled piers is made. Review of the calculations shows three distinct shaft designs, but the corresponding reinforcement listed in these calculations does not appear

anywhere on the drawings. In addition, shaft section cuts on the drawings depicts an unsymmetrical reinforcing layout which appears to conflict with the design intent of the calculations.

Per the drawings, the diameter of the drilled piers is specified to be 24 inches. Per the shaft calculations, shaft diameters of 30 inches, 30 inches, and 36 are specified. The design for required flexural steel is not clearly detailed within the calculations and no supporting calculations or reference to a computer program or analysis method is included. As a result, with the diameter of the shafts on the drawings being specified as 24 inches as opposed to 30 and 36 inches as found in the calculations, it is possible that the proposed shaft design as shown on the drawings is inadequate.

Per the soils report, the minimum pier depth into bedrock is given as ten feet. Per the drawings, no pier depth is specifically given, although the wall elevations and sections provide a scale of height above sea level, for which the pier depth can be graphically estimated. Per the drawings, dimensions for total pier height, embedment into bedrock, and the location of the horizontal waler beams is denoted with different variables, This use of variables indicates the use of some sort of schedule, but no such schedule has been provided. The calculations provide elevations for the top and bottom of the retained slope, and state an embedment depth of 11 feet into bedrock, but this information does not appear anywhere on the drawings.

Per the drawings, the typical tied-back section indicates the section of pier extending upward from the base to the first horizontal waler beam to be "hardrock concrete." Per the concrete notes found on sheet ES-1, a slurry mix is specified to be used "above the wall." Interpreting the note in relation to the drawings, it is not clear which "wall" the designer is referring to. Furthermore, there is no mention of a slurry mix being used at any portion of the drilled piers anywhere in the calculations.

Tieback Design Depth

Nowhere in the calculations are the required lengths of the tieback anchors calculated based on the allowable design parameters. Tieback anchor reactions appear to be calculated within the proprietary computer program used by Cefali & Associates, but this reaction value does not appear to be used to compute the required anchor length based on the allowable tieback bond strength.

Per the shaft calculations, the maximum horizontal reaction at the tieback anchors is 254,000 lbs. In the following grade beam calculations, the maximum anchorage force is specified to be 280,000 lbs. (for anchors at a 25 degree angle). Per the drawings, the design load for the typical tieback anchor is 210,000 lbs. and the corresponding test load is 315,000 lbs (1.5 times

the design load of 210,000 lbs.). Utilizing the maximum design load of 280,000 lbs. found in the calculations, the design load and minimum test loads shown on the drawings are inadequate.

Per the drawings, the engineer requires that the first two anchors on the upper wall, as well as the first anchor on each lower wall, be tested to 200% of the design load. Based on the drawings, it is not clear which walls the designer is referring to, nor is it clear which anchors are to be tested to 200% of their design load.

North and South Bulkhead Design

The north and south bulkhead designs found within the structural calculations offer no specific design information as to the cantilevered piers at these locations. The one page output for each of the two bulkheads depicts graphical elevation views of the respective hillsides, but no other information regarding pier size, spacing, height, depth or reinforcement is given. Likewise, no information is given on the drawings regarding pier depth aside from the graphical scale indicating height above sea level discussed previously. Information provided to us by Ninyo & Moore specifies preliminary design criteria for the cantilevered piers along the north bulkhead (Frahm residence), and has yielded a design moment in excess of the design moment used to design shaft C in the original structural calculations. Furthermore, per the calculations provided by Ninyo & Moore, deflections for these cantilevered piers as originally designed is approximately 25 inches. This magnitude of deflection is not acceptable.

Conclusions

Without additional information, it is difficult to fully understand the approach taken by the original designer. However, based on review of the documents provided to our office, it appears that the coordination between the calculations and the drawings is lacking, and that certain information is either incorrect as stated on the drawings or missing altogether. The design provided by these drawings does not appear to be adequate to resist the proposed design loads. We therefore recommend that the following issues be reviewed and addressed by the original engineer prior to any submittal to the California Coastal Commission.

- Drilled pier spacing does not match soils report recommendations
- No design for wood lagging
- Insufficient support for wood lagging
- Unclear location and design of shotcrete wall
- Incomplete design of drilled piers (size, reinforcement, embedment and material)
- Pier size, embedment and reinforcing on drawings does not match calculations
- Lack of calculations for tieback design and depth

- Inconsistent tieback load testing criteria
- Lack of calculations at north and south bulkheads

If you have any questions or comments regarding our review or of the preceding findings, please feel free to contact us at your convenience. We thank you for the opportunity to be of service on this matter and look forward to working with you in the future.

Sincerely,

JOSEPHSON-WERDOWATZ & ASSOCIATES, INC.

Carl H. Josephson, S.E.
Principal Engineer

Matthew T. McPherson, P.E.
Associate Engineer

COASTAL COMMISSION
5-97-371

EXHIBIT # 12
PAGE 5 OF 5

POST, BUCKLEY, SCHUH & JERNIGAN, INC.

ENGINEERING
PLANNING

July 15, 1998

George B. Piggott
Law Offices
2603 Main Street, Suite 1050
Irvine, CA 92614-6232

Subject: Frahm Property, Three Arch Bay, Plan Review

Dear George:

In accordance with your telephone request and subsequent letter dated July 14, 1998 I have reviewed the following plans:

1. Preliminary Grading Plan – Lots 26 and 27 of Tract 970 and Parcel 1 and 2 of LL Adj., Laguna Beach, no print date, no professional signature
2. Landslide Stabilization – 3 Arch Bay, South Laguna Beach, California, no print date, no professional signature

My comments are as follows:

1. The grading plan requires details as to the method of drainage along the easterly property line of the Frahm property.
2. The keyway protection wall requires elevations on the plan and a profile along the Frahm property line. The sections should show the proposed ground line and existing ground line; it is not clear whether this wall will be constructed parallel to the Frahm property. The alignment and outlet of the sub-drain system should be shown on the plans.
3. The plan indicates that minor drainage will be directed to the Frahm property, however the existing contours shown on the plan note flows in this direction.
4. The plan indicates that the proposed pool deck will be approximately 10 feet above the Frahm property. This will have the visual affect of a 10-foot high wall in Frahm property rear yard.
5. The Landslide Stabilization Plan should have a profile of the piles and top of wall along the Frahm property. The existing ground line and existing Frahm property improvements should be shown in background.
6. There should be details for protection of the Frahm property and improvements during the construction of the piles and landslide stabilization wall.

I trust this review will be helpful to you and Mrs. Frahm as this project proceeds through the approval process. If you have any further questions please don't hesitate to call me.

Yours truly,

PBS&J

J.P. Kapp, P.E.
California Registered Professional Engineer, Civil, R.C.E. Number 22015
Expiration date: September 30, 2001

July 15, 1998

COPY BY FAX
562/590-5084

California Coastal Commission
Attention: Mr. John Auyong
200 Oceangate, 10th Floor
Long Beach, CA 90802-4302

Ref: Coastal Development Permit 5-97-371
Shoring Wall - Conrad et.al.

Dear Mr. Auyong:

Thank you very much for your letter of July 10th. It was sent to our old business address and just arrived. Please send all future correspondence or notifications to this address:

Sid Danenhauer
5930 Bandini Blvd.
Los Angeles, CA 90040

Phone: 323/727-9800
Fax 323/722-2848

We received the plans from Mr. Conrad and forwarded them to a consulting structural engineer. He had the following comments and concerns:

(1). How did the soils engineer arrive at the pressures used for the design?
(2). What are the depths of anchors into imbedement?
(3). Concerned about corrosion protection. Suggests double corrosion protection on tie backs into the street. This lengthens the life and minimizes sulfur and salt water attack.
(4). Recommends rather than conventional soldier pile construction described that they consider post tension concrete pile design to extend life and strength.
(5). Slope inclinometers should be installed to monitor and warn of any ground movement.
(6). Concerned about water - drainage, percolation and storm water removal. This will be a critical issue and a secondary or back up system is recommended.

We are also concerned about the location of the slide plane in relation to the depth of piles. Furthermore, we attended a meeting of the Three Arch Bay Board of Directors on July 13th where the shoring wall was discussed by their consultant, Mr. Osmond Pekin of Leighton & Associates. He indicated that he has reviewed the plans and has requested additional information before he can render an opinion.

Sincerely,

Sid D. Danenhauer

Sid & Lesley Danenhauer
5930 Bandini Blvd.
Los Angeles, CA 90040

cc: Jim Conrad

Neighbor Review
COASTAL COMMISSION
5-97-371
EXHIBIT # 14
PAGE 1 OF 1

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JUL 15 1998
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COASTAL COMMISSION

JAMES CONRAD, ARCHITECTS

July 16, 1998

Applicant's response to neighbors

COASTAL COMMISSION
5-97-371

EXHIBIT # 15
PAGE 1 OF 4

RECEIVED
JUL 17 1998
CALIFORNIA
COASTAL COMMISSION

Mr. John Auyong
Staff Analyst
California Coastal Commission
200 Oceangate Suite 1000
Long Beach, CA

RE: BAY DRIVE SHORING WALL & 4 PRIVATE RESIDENCES

" Response to concerns raised by neighbor's consultants ".

Dear John,

The following is a response to the concerns raised by the consultants hired by Ms. Frahm, the owner of 33 Bay Drive.

Response to issues raised by Ninyo & Moore

The report prepared by Ninyo & Moore listed 13 comments. The following is a general response to those comments.

1. The Geotechnical engineer had similar concerns and considered these issues in providing the allowable bonding stress values. The statement that " sub surface exploration has not extended into the zone where tie back anchors are proposed " is not accurate. Please see HEB-3 boring log in the geotechnical report.

2. The geologic sections used for the design of the tie backs were provided to the structural engineer by Hetherington & Associates. We did not include them in the submittal to the Coastal Commission. If you would like to see the sections we would be glad to provide those to you.

3. We will consider this comment in refining the plans and specifications.

4. We will consider this comment in refining the plans and specifications.

5. We will consider this comment in refining the plans and specifications.

1590 SOUTH COAST HWY., SUITE 17 • LAGUNA BEACH, CA • 92651
PHONE: (714) 497-0388 • FAX: (714) 497-0288

6. We will consider this comment in refining the plans & specifications as well as the method of employing the specified system.

7. We will consider this comment in refining the plans & specifications.

8. We will consider this comment in refining the plans & specifications as well as the coordination of implementing the system.

9. If this slope stability analysis is provided to us we will consider it in refining the plans & specifications.

10. We are planning to install inclinometers prior to commencement of construction.

11. We will consider this comment in refining the plans & specifications as well as the installation schedule for the shoring system.

12. Please see the grading and drainage plans prepared by Toal Engineering, civil engineers.

13. We are in the process of completing slope stability analysis as part of the refinement of the plans and specifications.

In the conclusion, I was happy to see that the consultant felt that the geologic interpretation regarding the active landslide presented by Hetherington Engineering is reasonable. We will take their comments into consideration in the refinement of the plans & specifications prior to submittal to the City of Laguna Beach Department of Building & Safety.

Response to comments made by Josephson Werdowatz & Associates, Inc.

In their report under the section " Conclusions " they list 9 concerns. I will respond to those concerns.

1. The drilled pier spacing does match the soils report as we propose to use lagging in the temporary situation.

2. We will provide the design for the lagging in the final structural submittal.

3. We will address the design of the lagging in the final structural submittal.

4. The shotcrete wall is located between the concrete piles.

5. The design of the reinforcement of the drilled piers will be more clear as the plans & specifications are refined.

6. Any inconsistencies between the plans and calculations will be corrected.

7. This comment will be addressed in the refinement of the plans & specifications.

8. This comment will be addressed in the refinement of the plans & specifications.

9. This comment will be addressed in the refinement of the plans & specifications.

The concerns raised by Josephson Werdowatz are technical in nature and will be addressed as the plans & specifications are revised for submittal to the City of Laguna Beach Department of Building & Safety. We feel confident that the structural design proposed will provide an adequate factor of safety as required by Coastal Policy Section 30253 of the Coastal Act. We will continue to work with the consultants as we refine the plans. The issues raised are by Josephson Werdowatz do not suggest that the structural system proposed will not be able to meet an acceptable factor of safety. The concerns they raised would be more appropriately addressed at the next phase of approval.

Response to comments made by Post, Buckley, Schuh & Jernigan, INC. (PBSJ)

The comments made by PBSJ are listed 1-6. The following is our response to those comments.

1. This comment will be considered in the refinement of the plans & specifications.

2. The key way protection wall is constructed to elevation 25' above sea level. The wall will return along the property line with Ms. Frahm's property. The drain outlets are shown on the grading / drainage plans (sht. 1).

3. This comment will be considered in the refinement of the plans & specifications.

4. The elevation of the wall could be lowered be incorporating a slope at the north side of the pool deck area. This would result in a retaining wall along the property line of approximately 5'-0".

5. The existing grade is shown on the elevation 1 / ES-3.

6. This will be considered in the refinement of the plans & specifications.

John, this is our general response to the comments made by the consultants hired by Ms. Frahm. If you need more detailed response to any of the specific comments, please let me know. We will respond promptly.

Thank you for you help with this application.

Sincerely,

James Conrad, Architect

CC: Mr. Chuck Damm, Senior Deputy Director
Ms. Deborah lee, South Coast Deputy Director
Ms. Teresa Henry, South Coast District Manager
Ms. Lesley Ewing, Associate Civil Engineer.

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5-97-371

EXHIBIT # 15

PAGE 4 OF 4

HETHERINGTON ENGINEERING, INC.

SOIL & FOUNDATION ENGINEERING • ENGINEERING GEOLOGY • HYDROGEOLOGY

July 6, 1998
Project No. 1800.3
Log No. 4580

Mr. James Conrad
1590 So. Coast Highway, Suite 17
Laguna Beach, California 92651

Re: Bay Drive/Whaling Wall Cafe and Gallery Slopes

Dear Mr. Conrad:

Stabilization/protection of the landslide effected slope seaward of the Whaling Wall Cafe and Gallery was not a part of that project. Instead, future coastal erosion and possible future landsliding of the slope were anticipated and the southwest portion of the structure is supported by a deepened foundation system designed to resist lateral loads caused by the anticipated removal of lateral support on the downslope side of the foundation system. The structure was unaffected by landslide movement this past winter as intended. The drilled pier shoring system constructed at the Whaling Wall Cafe and Gallery is oriented perpendicular to the shoreline and was intended to protect the adjacent property to the south during construction and to act as a permanent retaining wall. The drilled pier shoring system has performed as intended.

Stabilization/protection of the landslide effected Bay Drive slope is a part of the Bay Drive project. The stabilization/protection measures include: 1) removal of the landslide debris and reconstruction as compacted fill with a soil key way; 2) construction of a drilled pier and tieback shoring system to protect adjacent properties during grading and to provide permanent retaining walls; 3) construction of a buried key way protection wall to mitigate the possible future effects of coastal processes on the key way and compacted fill such as wave action and run-up during severe storm or extreme high tides.

If you should have any questions, please contact this office.

Sincerely,

HETHERINGTON ENGINEERING, INC.

Mark D. Hetherington
Civil Engineer 30488
Geotechnical Engineer 397
(expires 3/31/00)

REGISTERED PROFESSIONAL ENGINEER
MARK D. HETHERINGTON
No. 397
Exp. Date _____
GEO TECHNICAL
STATE OF CALIFORNIA

Applicant's geologist letter re: coastal erosion

5245 Avenida Encinas, Suite G • Carlsbad, CA 92008-4369 • (760) 931-1917 • Fax (760) 931-0545
32242 Paseo Adelanto, Suite C • San Juan Capistrano, CA 92675-3610 • (714) 487-9060 • Fax (714) 487-9116

NOBLE
CONSULTANTS, INC.

Coastal engineer's calculations for toe protection

COASTAL COMMISSION
5-97-371

June 23, 1998 823-01

EXHIBIT # 17
PAGE 1 OF 2

RECEIVED
JUL 14 1998
CALIFORNIA
COASTAL COMMISSION

James Conrad
James Conrad,Architect
1590 South Coast Highway, Suite 17
Laguna Beach, CA 92651

RE: Coastal Development Permit Application 5-97-371
Bluff Toe Wall for Lots 26, 27, 28. 29, and 30, Tract 970
Three Arch Bay, Laguna Beach, CA

Dear Mr. Conrad:

Attached are our structural calculations prepared for the proposed bluff stabilization toe wall for the subject lots. Our previous correspondence to you dated May 12 and April 2, 1998 discussed the design basis and necessity of this structure to protect your proposed slide repair buttress fill from coastal erosion. In that correspondence, we stated our opinion that a shoreline protection device will be necessary to preserve the long term stability of the Bay Drive right-of way and existing development behind it. This letter transmits our buried structure design which is proposed to provide the recommended toe protection.

We have located the toe wall as shown on Sheet 7 of our calculations packet to optimize setback distance and buttress fill considerations. We recommend that the wall be located approximately twenty-five (25) to thirty (30) feet landward of the existing slope/ sand boundary line. This location in our opinion allows for a conventional retaining wall structure design that may be buried from view. We understand that Hetherington Engineering, Inc. has designed an earthen key to stabilize the buttress fill itself. The proposed toe wall is designed to provide resistance to shoreline erosion and runup to protect the structural integrity of the soil key and associated fill. The toe wall's top elevation of +25 feet, MLLW was set based upon an anticipated wave runup elevation limit should the structure become fully exposed in the future.

We do not recommend that the toe wall be located further landward than shown. The existing toe wall has a ten foot high stem section. Moving the wall further back means that a more substantial structure would be required to accommodate higher lateral load conditions. The revised structure would be at least twenty feet high which would require tie-back and/ or caisson pile foundation support. Furthermore, a more landward wall location would significantly alter the site's aesthetics in our view because of the more massive vertical scale that the structure would present when exposed by future toe erosion.

☐ 359 BEL MARIN KEYS, SUITE 9 NOVATO, CA 94949-5637 415/884-0727 FAX 415/884-0735
☒ 2201 DUPONT DRIVE, SUITE 620 IRVINE, CA 92715-1515 714/752-1530 FAX 714/752-8381

Please contact us should you have any questions regarding this submittal.

Yours very truly,

NOBLE CONSULANTS, INC.

Jon T. Moore
Senior Engineer

JTM:jm

Attch: Structural calculations (3 copies)

HETHERINGTON ENGINEERING, INC.

SOIL & FOUNDATION ENGINEERING • ENGINEERING GEOLOGY • HYDROGEOLOGY

5-97-371

COASTAL COMMISSION

Applicants geologist's recommendations for toe protection

EXHIBIT # 18

PAGE 1 OF 2

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June 19, 1998
Project No. 1800.3
Log No. 4561

Mr. James Conrad
1590 S. Coast Highway, Suite 17
Laguna Beach, CA 92651

Subject: PRELIMINARY GEOTECHNICAL PARAMETERS
FOR STRUCTURAL DESIGN OF TOE WALL
Lots 26, 27, 28, 29 and 30 of Tract 970
Three Arch Bay
South Laguna Beach, California

References: 1) Preliminary Geotechnical Investigation, Proposed Four Lot Residential Development, Lots 26, 27, 28, and 29 of Tract 970, Three Arch Bay, South Laguna Beach, California, by Hetherington Engineering, Inc., dated April 11, 1997.

2) Supplemental Geotechnical Investigation, Proposed Residential Development, Lots 26, 27, 28, 29 and 30 of Tract 970, Three Arch Bay, South Laguna Beach, California, by Hetherington Engineering, Inc., dated January 26, 1998.

3) Preliminary Toe Wall Concept, by Noble Consultants, Inc.

Dear Mr. Conrad:

In response to the request of Mr. Jon Moore of Noble Consultants, Inc., we are providing preliminary geotechnical parameters for structural design of the proposed toe wall. We have assumed that the toe wall will be located as shown on Reference 3.

The proposed toe wall should be founded at a minimum depth of 3 feet into dense bedrock below the existing landslide debris. Toe wall footings founded as recommended may be designed for a bearing capacity of 2,000 pounds per square foot. This value may be increased by one-third for loads including wind or seismic forces. A lateral bearing value of 400 pounds per square foot per foot of depth and a coefficient of friction between foundation soil and concrete of 0.40 may be assumed. These values assume that footings will be poured neat against the foundation soils. Footing excavations should be observed

5245 Avenida Encinas, Suite G • Carlsbad, CA 92008-4369 • (760) 931-1917 • Fax (760) 931-0545
32242 Paseo Adelanto, Suite C • San Juan Capistrano, CA 92675-3610 • (714) 487-9060 • Fax (714) 487-9116

by the Geotechnical Engineer prior to the placement of reinforcing steel to ensure that they are founded in suitable bearing materials.

The proposed toe wall, retaining a 2:1 (horizontal to vertical) fill slope, should be designed for an active pressure of 65 pounds per cubic foot, equivalent fluid pressure. If the toe wall is restrained from movement at the top it should be designed for an additional uniform soils pressure of 8xH pounds per square foot where H is the height of the wall in feet. Any additional surcharge pressures behind the wall should be added to these values. The toe wall should be provided with adequate drainage to prevent buildup of hydrostatic pressure and should be adequately waterproofed.

If you have any questions, please call our Carlsbad office.

Sincerely,

HETHERINGTON ENGINEERING, INC.

Mark D. Hetherington
Civil Engineer 30488
Geotechnical Engineer 397
(expires 3/31/00)

REGISTERED PROFESSIONAL ENGINEER
MARK D. HETHERINGTON
No. 397
Exp. Date _____
GEOTECHNICAL
STATE OF CALIFORNIA

COASTAL COMMISSION
5-97-371

EXHIBIT # 18
PAGE 2 OF 2

NOBLE
CONSULTANTS, INC.

May 12, 1998

823-01

Coastal engineer's assessment of need for toe protection

James Conrad
James Conrad,Architect
1590 South Coast Highway, Suite 17
Laguna Beach, CA 92651

RE: Coastal Development Permit Application 5-97-371
Shoring Wall and Bluff Repair at 23-31 Bay Drive, Laguna Beach, CA
Necessity for a Shoreline Protection Device

Dear Mr. Conrad:

Our coastal engineering assessment of the proposed project development dated April 2, 1998 included discussion concerning the need for toe protection of the proposed shoring wall and associated buttress fill material. In that correspondence, we stated our opinion that a shoreline protection device will be necessary to preserve the long term stability of the Bay Drive right-of way and existing development behind it. This letter is furnished to provide further clarification regarding the basis for this opinion.

Shoreline erosion rates along the Laguna Beach shoreline are related in part to seacliff retreat processes whereby wave action and high tides attack the toe. Historical data and previous studies concerning short term and long term rates of recession are nearly non-existent. As a result, the ability to provide quantitative forecasts of shoreline retreat with confidence is difficult at best.

The limited previous studies conducted to review seacliff retreat within the Laguna Beach Mini-Cells cite long term rates of recession on the order of 0.1 to 0.2 feet per year. These relatively low rates are more appropriate to describe coastal segments that are dominated by the erosion resistant San Onofre Breccia formational material. Where this bedrock is present in sufficient mass, low rates of shoreline erosion may be expected and the need for supplemental shoreline protection devices diminished. However, for those segments of shoreline where the bedrock is too low in elevation and/ or terrace deposit soils are exposed to wave impingement and runup (e.g. the Three Arch Bay project site) higher rates of retreat will occur.

The unique topography of the Three Arch Bay site and the proposed slide repair profile require that buttress fill material be placed to the backbeach boundary line. In so doing, the fill soil will be vulnerable to future coastal storm events which in our opinion will result in sequences of toe erosion. It is difficult to forecast the rate of recession since the erosion process is episodic, depends on the frequency and severity of coastal storm occurrences over time, and will be impacted by the residual stability of the soil mass that remains after each erosion event.

☐ 359 BEL MARIN KEYS, SUITE 9 NOVATO, CA 94949-5637 415/884-0727 FAX 415/884-0735
☒ 2201 DUPONT DRIVE, SUITE 620 IRVINE, CA 92715-1515 714/752-1530 FAX 714/752-8381

NOBLE CONSULTANTS, INC.

For purposes of project evaluation, we believe that an unprotected buttress fill will erode at a rate that is orders of magnitude higher than the natural seacliff retreat rate that has been estimated for the more resistant bedrock. In our opinion, it is conceivable that erosion of one quarter to one half of the entire buttress fill could be reasonably expected to occur over the project's life as a result of marine related processes. Thus, it is for this reason that we recommend that a shoreline protection device will be necessary and should be incorporated within the road repair project to preserve the shoring wall for the Bluff Drive right-of-way. We believe that this action is warranted irrespective of any other development considerations proposed seaward of the road in order to prevent more catastrophic loss of the primary access roadway and existing structures adjacent to it.

This concludes our supplemental discussion. Please contact us should you need clarification to the items discussed in this letter or if you have have any questions concerning our professional opinions that have been expressed.

Yours very truly,

NOBLE CONSULANTS, INC.

Jon T. Moore
Senior Engineer

JTM:jm

COASTAL COMMISSION
5-97-371

EXHIBIT # 19
PAGE 2 OF 2

NOBLE
CONSULTANTS, INC.

Coastal engineer's assessment of shoreline processes

April 2, 1998

James Conrad
James Conrad,Architect
1590 South Coast Highway, Suite 17
Laguna Beach, CA 92651

RE: Coastal Engineering Assessment
Coastal Development Permit Application 5-97-371
Shoring Wall and Bluff Repair at 23-31 Bay Drive, Laguna Beach, CA

Dear Mr. Conrad:

This letter summarizes our coastal engineering assessment of the above referenced development. Our scope of services has been limited to review of the relevant coastal processes of the Three Arch Bay, and providing responses to information requested by the California Coastal Commission. Letters from the Commission staff dated January 24 and 31, 1998 have asked the following coastal engineering related questions:

1. What is the controlling sand supply and shoreline processes within Three Arch Bay?

2. What is the potential for shoreline erosion and the necessity for shoreline protection devices?

3. What is the potential impact of seepage drainage on the beach?

Our response to these questions presented in this letter is based on a limited study effort consisting of a site visit to observe existing beach conditions, literature review, and assessment of potential project impacts based upon our professional judgement.

Controlling Sand Supply and Shoreline Processes

The project site is located at the southern end of the littoral physiographic unit known as the Laguna Beach Mini Littoral Cells of Orange County. This stretch of coastline which extends from the Newport Harbor entrance to Dana Point Harbor is characterized as one of projecting headlands, deep and shallow intervening bays with sandy beaches, and seacliffs. Three Arch Bay is a deep pocket beach approximately 1,400 feet long flanked by headlands that project seaward from either end of the crescent shaped beach by about 800 feet. As is the much of the Laguna coast, the shoreline within Three Arch Bay is urbanized with development and infrastructure close to the edge of the seacliff.

☐ 359 BEL MARIN KEYS, SUITE 9 NOVATO, CA 94949-5637 415/884-0727 FAX 415/884-0735
☑ 2201 DUPONT DRIVE, SUITE 620 IRVINE, CA 92715-1515 714/752-1530 FAX 714/752-8381

Because Three Arch Bay is a deep pocket beach, it is believed that the controlling coastal processes tend to be less influenced by alongshore sand transport and more dominated by cross shore sand exchanges that are related to short term storm driven episodes or longer lasting seasonal fluctuations. Studies which include the Laguna shoreline have been conducted by the US Army Corps of Engineers and the County of Orange under the auspices of the Coast of California Storm and Tidal Waves Study (CCSTWS.) Review of available documents indicates the following:

a) The Three Arch Bay shoreline has been stable between 1934 and 1981 with a peak width noted in 1959. Average beach widths have been observed to range from 69 to 130 feet between 1992 and 1994.

b) Alongshore transport past Three Arch Bay is estimated to be on the order of 10,000 to 20,000 cubic yards per year. Sand that passes by the area does not appear to be collecting within the embayment's beach as it apparently did between 1927 and 1987. It is speculated that the local nearshore profile has adjusted over time to a condition that is now conducive for transport to occur further offshore past the headlands.

In summary, existing studies have indicated that the alongshore sediment transport dynamics is not well understood within the Laguna Mini Cells primarily because of the lack of long term data. However, at Three Arch Bay, the deep pocket beach planform suggests that only a fraction of the net littoral transport that passes by the shore segment reaches the area, if at all, and permanent losses from the local beach to the offshore littoral currents may be minimal. Accordingly, we believe that the beach will respond more to changes in wave climate and tide which means that sand will likely move periodically inshore and offshore in response to prevailing northwesterly swell, local sea conditions, and occurrences of the more distant southern hemisphere swell. The fact that the deeply recessed pocket beach appears to have been relatively stable over time, indicates that permanent losses to the offshore probably does not occur to any significance.

Potential for Shoreline Erosion and the Necessity for Shoreline Protection Devices

Shoreline erosion processes along the entire Laguna coastline are dominated by a combination of seacliff retreat influenced by marine processes and slope failure and sloughing due to subaerial causes. Seacliff retreat rates have been estimated by Everts (1997) using geomorphic model methods, and analytical results predict average annual recessions ranging from 0.1 to 0.2 feet per year.

In reality, seacliff erosion within Three Arch Bay, as elsewhere along the south Orange County coast, is episodic and occurs sporadically in response to periods when beaches are depleted, storm swell occurrence is more intense and frequent, and the more severe storm related events arrive coincident with high tides. This El Niño winter is a good example of the more extreme conditions needed to produce erosional sequences. Reconnaissance of all beaches throughout the Laguna Mini Cell littoral reach indicates that they are severely depleted of sand which renders the adjacent seacliff toes

vulnerable to wave attack. Over time, this marine erosion processes leads to destabilization of the seacliff toe, and when combined with subaerial slope sloughing, causes the net seacliff recession that is observed. Although the quantitative estimates of seacliff recession given by Everts should be used with caution, they nevertheless provide an indication of the order of magnitude of the process within the locality. The proposed homes will be setback more than 100 feet from the seacliff toe. The homes are proposed to have pools that will come to within 70 feet of the seacliff toe. This implies that structures will be well over 100 years away from seacliff retreat encroachment. The densely vegetated bluff toes within Three Arch Bay imply that seacliff erosion is low. However, given the special circumstances of the reactivated landslide, more conservative toe protection strategies are warranted and have been proposed to protect Bay Drive.

Landslide repairs at seacliffs nearly always entail a two part plan of action: stabilization of the soil mass itself using conventional geotechncial methods and erosion protection of the bottom soil block that provides the necessary lateral restraint to the upper reconstructed slope wedge. An extreme example of this principal is the history of the Portuguese Bend landslide and proposed toe buttress repairs at the Palos Verdes Peninsula. In this case, wave erosion of the base of the slide area has been a major factor in loss of slope stability and continued movement of the upper soil mass (U.S. Army, 1990.)

Protection of the slide toe at Three Arch Bay is similarly considered to be a mandatory requirement to repair the slope and prevent catastrophic loss of the Bay Drive right-of-way and existing structures behind the access roadway. Recent landslide activity and slope failures at the site have necessitated shoring of over steepened slopes at the street edge. Continued slope movement toward the beach has prompted a design remedy to stabilize the existing structures and infrastructure. Repairs consist of excavation of landslide debris material, construction of a tied-back retaining wall, placement and recompaction of suitable backfill, and measures to protect the slope toe from marine erosion (Subbiondo, 1997.)

In the long term, measures to protect the toe have been proposed and will be necessary to preserve the integrity of the repaired slope. The current proposal consists of a buried toe buttress wall. Over time, this structure will likely daylight as the slow process of marine erosion progresses inland. Alternatively, toe walls setback from the beach may be constructed to simulate natural rock features in a manner similar to those constructed elsewhere along the Laguna Beach shoreline. To preserve aesthetics, the structural wall stems of the toe walls are clad with a simulated rock finish constructed of integrally colored sculptured shotcrete that is textured by hand to simulate the local rock outcrop strata. The methodology has also been applied to bluff repairs and stabilization measures of over steepened and failed seacliffs in San Clemente and Encinitas.

Armoring of the shoreline will deprive the littoral cell of upper terrace deposit sediments that would otherwise enter the littoral system through seacliff retreat and slope sloughing processes. However, the overall impact may be insignificant. Estimates of sediment supply to the littoral system from Three Arch Bay seacliff retreat has been estimated to annually average a volume of less than 200 cubic yards per year. This translates to about one percent of the total net alongshore transport rate

past the shore segment. Thus, permanently armoring the seacliff within the slide repair section (about 200 feet) implies that in the long term less than 0.2 percent of the alongshore transport volume may be impacted. In our opinion, this number is too small to be considered as being accurate given the limited state of knowledge of the local shoreline processes. Consequently, the potential for adverse impact on the littoral system by armoring the landslide toe must be interpreted as one of non-significance. This conclusion may be further put in perspective by considering the volume of sediment delivery from the nearby Aliso Creek. This fluvial sand contributor (estimated to discharge an annual average volume of 12,000 cubic yards per year) is the dominant source of coarse sand to the south Orange County beaches.

Potential Impact of Seepage Drainage on the Beach

The proposed slide repair includes four gravel drain outlets at the base of the slope which are intended as the terminus points of the groundwater collection system necessary to prevent adverse build up of subsurface water pressures or slope runoff. The drains are approximately 10 feet in diameter and will extend about fourteen feet below sand level. Groundwater seepage throughout the Laguna Beach coastline is common and naturally occurring. In our opinion, the proposed groundwater outlet structures will not adversely impact the local beach. It is anticipated that seepage rates will be low flows. Consequently it is expected that the porous cross sections of the storm drain outlets will allow for natural percolation to occur within the beach sands for most of the time. During and immediately after winter seasons having above normal rainfall totals, it is conceivable that seepage discharges may daylight to the surface at times. In such instances minor rilling of the beach could occur. However, since the entire sand lense within Three Arch Bay can be and often is mobilized by wave action, we believe that any groundwater influences to the beach will be insignificant by comparison.

This concludes our reponse to the Coastal Commission's request for information. Please contact us should you need clarification to the items discussed in this letter or if you have have any questions concerning our professional opinions that have been expressed.

Yours very truly,

NOBLE CONSULANTS, INC.

Jon T. Moore
Senior Engineer

JTM:jm
Attch: Bibliography

Bibliography

California Coastal Commission, January 24, 1998. Letter to James Conrad, Coastal development permit application 5-97-371; shoring wall and bluff repair at 23-31 Bay Drive, City of Laguna Beach.

California Coastal Commission, January 31, 1998. Letter to James Conrad, Coastal development permit application 5-97-371; shoring wall and bluff repair at 23-31 Bay Drive, City of Laguna Beach; Additional questions.

Everts Coastal, June 1997. (Unpublished report) Sediment Budget Analysis: Dana Point to Newport Bay, California.

Hetherington Engineering, Inc., January 26, 1998. "Supplemental Geotechnical Investigation" Proposed Residential Development Lots 26, 27, 28, and 30 of Tract 970 Three Arch Bay South Laguna Beach, California.

Hetherington Engineering, Inc., January 26, 1998. "Supplemental Geotechnical Investigation" Proposed Residential Development Lots 26, 27, 28, 29, and 30 of Tract 970 Three Arch Bay South Laguna Beach, California. (Appendix C).

U.S. Army Corps of Engineers Los Angeles District, June 1990. Rancho Palos Verdes/Rolling Hills Los Angeles County, California. Reconnaissance Study, Final Report.

U.S. Army Corps of Engineers Los Angeles District, April 1993. Existing State of Orange County Coast Final Report. (CCSTWS Report 93-1).

U.S. Army Corps of Engineers Los Angeles District, November 1995. Seacliff Erosion and its Sediment Contributions, Dana Point to the San Gabriel River, Final Report. (CCSTWS Report 95-1).

U.S. Army Corps of Engineers Los Angeles District, January 1996. Nearshore Hydrodynamic Factors and Wave Study of the Orange County Coast, Final Report. (CCSTWS Report 96-3).

U.S. Army Corps of Engineers Los Angeles District, January 1996. Coastal Sediment Budget Summary Orange County, California, Final Report. (Report 96-2).

Subbiondo, Blaise J., P.E., September 3, 1997. Concept Grading Plan For Lots 26, 27, 28, 29 & 30, Three Arch Bay, South Laguna Beach, California.

Cal/EPA

San Diego Regional Water Quality Control Board

9771 Clairemont Mesa Blvd, Suite "A" San Diego, CA 92124-1324 (619) 467-2952 FAX (619) 571-6972

December 17, 1997

Mr. James Conrad
1590 S. Coast Hwy., Suite 17
Laguna Beach, California 92651

Dear Mr. Conrad:

PROPOSED DRAINAGE SYSTEM

By letter dated December 16, 1997 you submitted plans for constructing a passive drainage system on your property in South Laguna Bay. We understand that the purpose of the drainage system is to divert ground water around a proposed shoring wall on the site to the adjacent beach. We further understand that the proposed drainage system will not result in a significant change to the current discharge of ground water to the beach.

Based upon this understanding, we have no objection to the construction of the proposed drainage system. If you have any questions or need further information, please call Mr. Bob Morris of my staff at (619) 467-2962.

Respectfully,

JOHN H. ROBERTUS
Executive Officer

RWM

JOHN H. ROBERTUS
Executive Officer

RWM

5-97-371
COASTAL COMMISSION
Water Quality Control Board Comments
EXHIBIT # 21
PAGE 1 OF 1

STATE OF CALIFORNIA — PETE WILSON, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202

ROBERT C. HIGHT, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone 1-800-735-2922
from Voice Phone 1-800-735-2929

Contact Phone: (916) 574-1892
Contact FAX: (916) 574-1925
E-Mail Address: smithj@slc.ca.gov

January 14, 1998

5-97-371

File Ref: SD 97-12-15.4

COASTAL COMMISSION
State Lands Comm. Letter
EXHIBIT # 22
PAGE 1 OF 2

James Conrad, Architect
1590 S. Coast Hwy. Suite 17
Laguna Beach CA 92651

Dear Mr. Conrad:

SUBJECT: Coastal Development Project Review for Proposed Retaining Wall and Grading, Three Arch Bay, Laguna Beach

This is in response to your request for a determination by the California State Lands Commission (CSLC) whether it asserts a sovereign title interest in the property that the subject project will occupy and whether it asserts that the project will intrude into an area that is subject to the public easement in navigable waters.

The facts pertaining to the project, as we understand them, are these:

You propose to construct a retaining wall, fill and regrade an existing slope, and construct a subdrain system in the bluff adjacent to Lots 26, 27, 28, 29 and 30 of Tract 970, M.M. 31-5, Orange County, adjacent to Three Arch Bay, also referred to as 23, 25, 27, 29 and 31 Bay Drive in Laguna Beach. The work is needed to protect the bluff top road and reestablish the bluff due to the effects of a landslide. These lots run some 200' parallel to the ocean and are presently undeveloped. There are existing residences on the lots both up and down coast. Based on the Concept Grading Plan dated September 3, 1997 and revised September 11, 1997, the retaining wall will be located between the 50' and 85' contour and the subdrain system will terminate at the 10' contour. The plan identifies an existing recreation easement. This easement is more specifically described in the title report as a 1932 recorded easement, dedicated and conveyed to the record owners of each and every lot in Tract 970 and 971, and/or their successors in interest, as being "... an easement over that portions of Lot 25 and Lots 27 to 32, both inclusive, of said Tract 970, between the foot of the slope and the line of ordinary high tide of the Pacific Ocean as shown on ...., for ingress and regress over and across, conduct of lawful sports upon, and for the free use and enjoyment of the record owners of each and every of said lots".

As to that portion of the project involving the proposed retaining wall, it does not

appear that it will occupy sovereign lands or intrude into an area that is subject to the public easement in navigable waters.

The subdrain system will involve the underground placement of four 12" Corrugated Metal Pipes which will drain into four eight-foot diameter outlet structures surrounded by rip rap. The outlet structures appear to terminate at or about the 10' elevation. We do not at this time have sufficient information to determine whether this portion of the project will intrude upon state sovereign lands or interfere with other public rights. Development of information sufficient to make such a determination would be expensive and time-consuming. We do not think such an expenditure of time, effort and money is warranted in this situation, given the limited resources of this agency and the circumstances set forth above. This conclusion is based on the size and location of the property, the character and history of the adjacent development, and the minimal potential benefit to the public, even if such an inquiry were to reveal the basis for the assertion of public claims and those claims were to be pursued to an ultimate resolution in the state's favor through litigation or otherwise.

Accordingly, the CSLC presently asserts no claims that the subdrain system intrudes onto sovereign lands or that it would lie in an area that is subject to the public easement in navigable waters. This conclusion is without prejudice to any future assertion of state ownership or public rights, should circumstances change, or should additional information come to our attention.

If you have any questions, please contact Jane E. Smith, Public Land Management Specialist, at (916) 574-1892.

Sincerely,

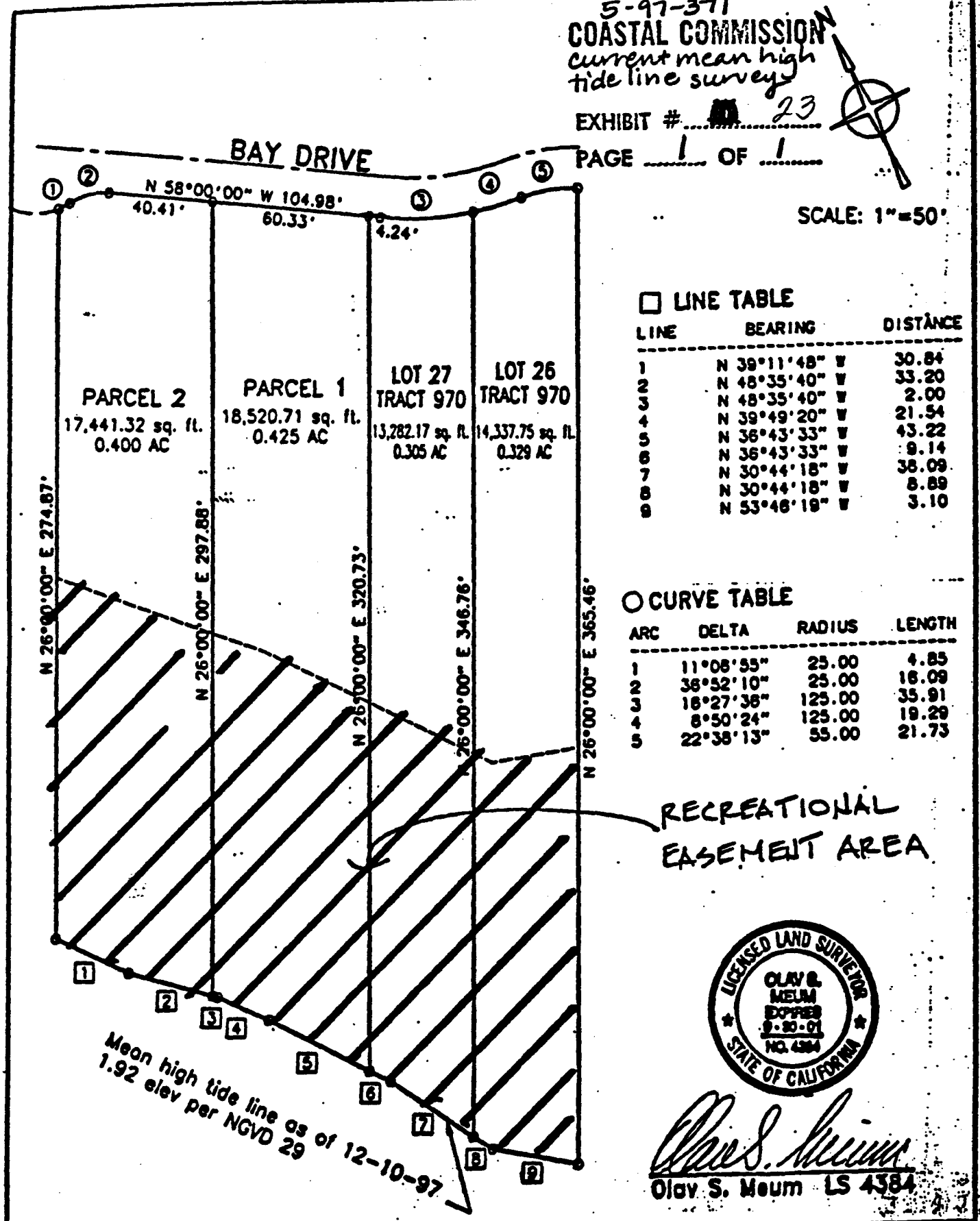
Robert L. Lynch, Chief
Division of Land Management

5-97-371
COASTAL COMMISSION
State Lands Comm. Letter
EXHIBIT # 22
PAGE 2 OF 2

TOAL ENGINEERING
139 AVENIDA NAVARRO
SAN CLEMENTE, CALIFORNIA 92672
(714) 492-8586
FAX (714) 498-8625

JOB 8397
SHEET NO. 1 OF
CALCULATED BY MSF DATE 12-11-97
CHECKED BY DATE
SCALE 1"=50'

5-97-371
COASTAL COMMISSION
current mean high tide line survey
EXHIBIT # 23
PAGE 1 OF 1



SCALE: 1"=50'

LINE TABLE

LINE	BEARING	DISTANCE
1	N 39°11'48" W	30.84
2	N 48°35'40" W	33.20
3	N 48°35'40" W	2.00
4	N 39°49'20" W	21.54
5	N 36°43'33" W	43.22
6	N 36°43'33" W	9.14
7	N 30°44'18" W	38.09
8	N 30°44'18" W	8.89
9	N 53°46'19" W	3.10

CURVE TABLE

ARC	DELTA	RADIUS	LENGTH
1	11°08'55"	25.00	4.85
2	36°52'10"	25.00	16.09
3	16°27'36"	125.00	35.91
4	8°50'24"	125.00	19.29
5	22°38'13"	55.00	21.73

LICENSED LAND SURVEYOR
OLAV S. MEUM
EXPIRES 9-30-01
NO. 4384
STATE OF CALIFORNIA

Olav S. Meum

Olav S. Meum LS 4384

THREE ARCH BAY

5 Bay Drive, South Laguna, California 92677, (714) 499-4567

December 17, 1997

James Conrad, Architect
1590 South Coast Highway - Suite 17
Laguna Beach, CA 92651

RE: Shoring Wall/Bay Drive
Coastal Development Permit 5-97-371

Thank you for your invitation to join you as a co-applicant on your petition to the Coastal Commission.

While the Association does not wish to participate as a co-applicant at the present time, you are granted permission to proceed with your application.

Please let us know if we can assist in anyway.

Sincerely,

Dewellyn de la Cruz, CCAM
Executive Director

cc Board of Directors

Three Arch Bay
Letter of Permission
COASTAL COMMISSION
5-97-371
EXHIBIT # 24
PAGE 1 OF 1

Thursday, December 18, 1997

Jim Conrad
Conrad Development
1590 S. Coast Hwy
Ste.17
Laguna Beach, CA 92651

Re: Coastal Commission

I Troy Barnes am The Legal Owner of Lot 27 Track 970 (25 Bay Drive). I give my authorization to Jim Conrad to act on my behalf in obtaining the Coastal Commission Development permit for both the shoring wall and the subsequent my home to be built on that lot.

Sincerely,

Troy D. Barnes
President/CEO

Letter of Permission from Owner of 25 Bay Drive

COASTAL COMMISSION
5-97-371/5-98-064

EXHIBIT # 25

PAGE 1 OF 1

5-97-371

To whom it may concern:

We, Charles and Valerie Griswold, authorize James Conrad to represent us in connection with the Coastal Division permit on our property at 29 Bay Drive, lots 28 and 29 of tract 970.

Charles Griswold 12/17/97
Charles Griswold Date

Valerie L. Griswold 12/17/97
Valerie Griswold Date

5-97-371

Letter of Permission from owners of 29 Bay Drive

COASTAL COMMISSION
5-97-371

EXHIBIT # 26

PAGE 1 OF 1

December 17, 1997

I, Tim McMullen, am the legal owner of Lot 30 tract 970 (31 Bay Drive). I give my authorization to Jim Conrad to act on my behalf in obtaining the Coastal Development Permit for both the shoring wall and subsequently my new home to be built on that lot.

Tim McMullen
Owner lot 30, tract 970, Laguna Beach

Letter of Permission from owner of 31 Bay Drive

COASTAL COMMISSION
5-97-371/5-98-178

EXHIBIT # 27
PAGE 1 OF 1

5-97-371

1590 S. Coast Hwy. Suite 17 Laguna Beach CA 92651

July 15, 1998

Mr. John Auyong
Staff Analyst
California Coastal Commission
200 Oceangate Suite 1000
Long Beach, CA

RE: BAY DRIVE SHORING WALL & 4 PRIVATE RESIDENCES
Coastal application 5-97-371, 5-98-020, 5-98-064, 5-98-178.

Dear Mr. Auyong,

I am the owner of the property at 21 Bay Drive, adjacent to the proposed shoring wall. I have reviewed the plans for the wall and I am supportive of the proposed project. I understand that the wall will require tiebacks to be placed under my property. I have consulted with my Architect, Structural engineer, and Geologist regarding this issue. It is my intention to allow the tiebacks to be placed under my property. I am currently working out the legal details for this with the property owner directly adjacent to my property, Mr. Jim Conrad.

If you have any questions about this or any other related matter, please do not hesitate to call.

Sincerely,
21 Bay Drive LLC,
by: William E. Baldwin — Manager

RECEIVED
JUL 21 1998
CALIFORNIA
COASTAL COMMISSION

Letter of Intent of permission from owner of off-site lot at 21 Bay Drive

COASTAL COMMISSION
5-97-371
EXHIBIT # 28
PAGE 1 OF 1

STATE OF CALIFORNIA - THE RESOURCES AGENCY PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

EXTENSION OF TIME (AB 884)

Re: Application No. 5-97-371

RECEIVED
MAY 18 1998
CALIFORNIA
COASTAL COMMISSION

APPLICANT
STREET
CITY, STATE, ZIP

Pursuant to Government Code Section 65957,

I, James Conrad, the (owner) (owner's representative, authorized to act in accordance with Title 14, Cal. Admin. Code subsection 13053.5) of the property before the Commission on Application No. 5-97-000, hereby request that the time limits for a decision on my coastal development permit application established by Government Code Section 65952 be extended for a period not to exceed 90 days. This 90 day extension shall become effective only upon consent of the Executive Director of the Coastal Commission.

5-15-98
Date

James Conrad
Signature of Applicant(s) or Authorized Agent

Time extension
COASTAL COMMISSION
5-97-371

EXHIBIT # 29
PAGE 1 OF 1

STATE OF CALIFORNIA - THE RESOURCES AGENCY PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

EXTENSION OF TIME (AB 884)

Re: Application No. 5-98-020
23 Bay Drive, Laguna Beach

APPLICANT JIM CONRAD
STREET 1590 S. COAST HWY #17
CITY, STATE, ZIP LAGUNA BEACH CA 92651

Pursuant to Government Code Section 65957,

I, Jim Conrad, the (owner) (owner's representative, authorized to act in accordance with Title 14, Cal. Admin. Code subsection 13053.5) of the property before the Commission on Application No. ~~5-98-020~~ 5-98-020, hereby request that the time limits for a decision on my coastal development permit application established by Government Code Section 65952 be extended for a period not to exceed 90 days. This 90 day extension shall become effective only upon consent of the Executive Director of the Coastal Commission.

6-1-98
Date

Signature of Applicant(s) or Authorized Agent

Time extension
COASTAL COMMISSION
5-98-020
EXHIBIT # 30
PAGE 1 OF 1

RECEIVED
JUN 3 1998
CALIFORNIA
COASTAL COMMISSION