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STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, Governor

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Hearing Opened:	October 11, 1996
Staff:	Robert Merrill
Staff Report:	November 1, 1996
Hearing Date:	November 12, 1996
Commission Action:	

STAFF REPORT: APPEAL

LOCAL GOVERNMENT:	Humboldt County
DECISION:	Approval with Conditions
APPEAL NO.:	**A-1-HUM-96-58**
APPLICANT:	**GARY JOHNSON**
PROJECT LOCATION:	40 Ridgeview Circle, Shelter Cove area, Humboldt County, APN 109-161-53.
PROJECT DESCRIPTION:	**Development of a 1,245-square-foot, one bedroom single-family residence with an attached two-car garage with the living area above the garage.**
APPELLANTS:	William & Mary Lee Rourke
SUBSTANTIVE FILE DOCUMENTS:	Humboldt County Local Coastal Program; Humboldt County Coastal Development Permit No. CDP-36-95 and Special Permit No. SP-30-95; Living with the California Coast, edited by Griggs and Savoy, 1985 edition.

SUMMARY OF STAFF RECOMMENDATION:

The staff recommends that the Commission, after public hearing, determine that a substantial issue exists with respect to the grounds on which the appeal has been filed. The appellants raise a variety of issue related to the geologic stability of the site and the adequacy of the soils/geologic investigation report prepared for the project. Staff believes that the report does not provide adequate information to satisfy the requirements of the LCP. Of particular importance is the lack of a verifiable bluff retreat rate. Without such a rate, it is impossible to determine whether the narrow 20-foot setback from the 250-foot-high bluff recommended for the house will be adequate to

assure the safety of the development. Consequently, staff believes the project raises a substantial issue not only with regard to whether the soils/geologic investigation satisfies the information requirements of the LCP policies, but as to whether the development will assure the geologic stability and structural integrity of the project for its expected economic life as required by the geologic hazard policies of the LCP.

The Motion to adopt the Staff Recommendation for finding a Substantial Issue is found on Page 3.

STAFF NOTE:

After certification of Local Coastal Programs (LCPs), the Coastal Act provides for limited appeals to the Coastal Commission of certain local government actions on coastal development permits (Coastal Act Section 30603.)

Section 30603 states that an action taken by a local government on a coastal development permit application may be appealed to the Commission for certain kinds of developments, including developments located within certain geographic appeal areas, such as those located between the sea and the first public road paralleling the sea or within three hundred feet of the mean high tide line or inland extent of any beach or top of the seaward face of a coastal bluff. Furthermore, developments approved by counties may be appealed if they are not designated the "principal permitted use" under the certified LCP. Finally, developments which constitute major public works or major energy facilities may be appealed, whether approved or denied by the city or county. The grounds for an appeal are limited to an allegation that the development does not conform to the standards set forth in the certified local coastal program or the public access policies set forth in the Coastal Act.

The subject development is appealable to the Commission because the proposed inn is located between the sea and the first public road paralleling the sea.

Section 30625(b) of the Coastal Act requires the Commission to hear an appeal unless the Commission determines that no substantial issue is raised by the appeal. Proponents and opponents will have three minutes per side to address whether the appeal raises a substantial issue. It takes a majority of Commissioners present to find that no substantial issue is raised. Unless it is determined that there is no substantial issue, the Commission would proceed to a full public hearing on the merits of the project, which may occur at a subsequent meeting. If the Commission were to conduct a de novo hearing on the permit application, because the proposed development is between the first road and the sea, the applicable test for the Commission to consider would be whether the development is in conformity with the certified Local Coastal Program and with the public access and public recreation policies of the Coastal Act.

The only persons qualified to testify before the Commission on the substantial issue question are the applicant, persons who made their views known before the local government (or their representatives), and the local government. Testimony from other persons regarding substantial issue must be submitted in writing.

I. STAFF RECOMMENDATION ON SUBSTANTIAL ISSUE

The staff recommends that the Commission determine that a substantial issue exists with respect to the grounds on which the appeals have been filed. Staff recommends a NO vote on the following motion:

MOTION:

I move that the Commission determine that Appeal No. A-1-HUM-96-58 raises NO substantial issue with respect to the grounds on which the appeals have been filed.

To pass the motion, a majority of the Commissioners present is required. Approval of the motion means that the County permit is valid.

II. Findings and Declarations.

The Commission hereby finds and declares:

A. APPELLANTS' CONTENTIONS

The Commission received an appeal for this project from William B. & Mary Lee Rourke, who live across the street from the proposed development. The Rourkes raise a variety of issues related to the geologic stability of the site and the potential for the house, as proposed, to contribute to geologic instability.

The appellants submitted a lengthy attachment to their appeal form, discussing their concerns. The appellants also subsequently submitted two additional letters received in the Commission office on September 27, 1996 and October 11, 1996, providing more elaboration on their concerns. The attachment to the appeal form and the two letters are included as Exhibit No. 6 of this report, and the concerns raised in these documents are summarized below.

The appellants contentions involve the following issue areas:

1. The Proposed Development Will Contribute to Erosion and Geologic Instability.

The appellants contend that grading of the lot for the foundation fo the proposed house, and placement of the proposed house on the site will contribute significantly to erosion and the substantial weight of the

proposed two-story building will contribute to geologic instability that could undermine not only the house itself, but the street and the sewer line running underneath the street, inconsistent with Section 30253 of the Coastal Act, which has been enacted as County policy within the South Coast Area Plan portion of the Humboldt County LUP. Section 30235 states in applicable part that "New development shall minimize risks to life and property in areas of high geologic...hazard, assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas..."

2. Inadequate Soil Engineering and Geological Engineering Investigation.

The appellants contend that the soil engineering and geological investigation report of conditions at the project site performed by the applicants' civil engineer is inadequate in that the information provided in the report is not sufficient and is not accurate enough to meet the requirements for such reports specified in LUP Policy 3.28(B)(1). Some of the alleged deficiencies of the report cited by the appellant include the following:

a. The reports do not include adequate descriptions of the substrata underlying the site nor mention the surface manifestation of the San Andreas fault line two blocks away from the site;

b. The reports do not describe and analyze available evidence of slump erosion and seacliff failure on adjacent and nearby property;

c. The reports fail to address the potential effects of seismic forces resulting from a maximum credible earthquake, which is of particular significance given that the appellants' house across the street from the proposed development was destroyed by the April 1992 earthquakes that hit the region;

d. The reports fail to address the off-site impacts of the development, including the potential to undermine the street and the sewer line running underneath the street, and do not detail mitigation measures for such impacts or alternative solutions;

e. The reports fail to reference any currently acceptable engineering stability analysis method used in the evaluation, and describe the degree of uncertainty of analytical results due to assumptions and unknowns.

f. The reports prepared by the applicants' civil engineer does not constitute a geological investigation prepared by a geologist.

g. The reports prepared by the applicants civil engineer contain a number of inaccurate statements and contradictions that call into question the legitimacy of its findings and recommendations.

3. Failure to Maintain a Setback Equivalent to the Area of Demonstration in an Area of Known High Instability.

The appellants contend that siting the house 20 feet from the bluff edge as proposed will not maintain a bluff setback equivalent to the "area of demonstration" in an area of known high instability. As the appellants contend that the soil and geologic engineering investigation has not demonstrated that the development will assure the stability and structural integrity of the project, the appellants contend the proposed development is inconsistent with Policy 3.28B(2) of the South Coast Area Plan which requires that new development not be located in the area of demonstration unless a soil and geologic engineering investigation report demonstrates that development within the area of demonstration will assure the stability and structural integrity of the project for its expected economic life.

B. LOCAL GOVERNMENT ACTION

The Humboldt County Planning Commission held a public hearing on the proposed development and approved the project on August 8, 1996. In approving the project, the Planning Commission imposed nine special conditions. The County's final conditions of approval and findings are included as Exhibit No. 5.

The conditions address a variety of requirements including requirements that the applicant construct two required on-site parking spaces and connect to the public water system prior to occupancy, that fire resistant construction design be maintained, and that the proposed landscaping, outdoor lighting, and metal flashing meet certain requirements. Of particular relevance to the grounds for the appeal filed with the Coastal Commission are Conditions 2 and 3. These two conditions require in part, the following:

Condition 2: "...the recommendations of the R-2 Geotechnical Report for the subject parcel shall be fully integrated into the building/construction plans submitted to the Building Inspection Division."

Condition 3: "Prior to occupancy, a written certification shall be submitted to the Building Inspection Division for inclusion in the project file...indicating that the development authorized by this Coastal Development Permit has implemented all fo the applicable recommendations of the R-2 report. This statement may be prepared by A.M. Baird Engineering & Surveying...or another qualified consultant..."

The recommendations of the R-2 report that must be implemented pursuant to Conditions 2 and 3 are on page sheet 5 of Exhibit No. 7 of this report (Soils/Geologic Investigation). Summarizing from the R-2 report, the major recommendations of the R-2 report include: (a) directing roof runoff and surface runoff away from the foundations to an off-site location; (b) installing any fill or cutbanks in conformance with the Uniform Building Code and revegetating such features as soon as practical and prior to fall rains to prevent erosion; (c) utilizing conventional spread footings and foundation walls in the design of the structure provided the requirements of the Uniform Building Code are adhered to; and (d) maintaining a 20-foot setback from the bluff edge.

The approval of the Planning Commission was not appealed to the Board of Supervisors by the Rourkes or anyone else. However, Section 13573 of the California Code of Regulations states that exhaustion of all local appeals shall not be required if the local government jurisdiction charges an appeal fee for the filing or processing of appeals. In this case, Humboldt County does charge an appeal fee, and so this appeal may properly be processed by the Coastal Commission.

The County provided appropriate notice of its final action to the Commission and the County's action on the coastal development permit was considered final as of August 22, 1996. The local decision was appealed to this Commission by William & Mary Lee Rourke. The appeal was received in the Commission office on September 6, 1996, within the 10 working day appeal period.

C. PROJECT SETTING AND DESCRIPTION.

The proposed project consists of the development of a single-family residence at 40 Ridgeview Circle, in the Shelter Cove area of Humboldt County (see Exhibits 1-3).

Shelter Cove is located in southern Humboldt County along the Lost Coast between the King Range National Conservation Area and Sinkyone Wilderness State Park, about 25 miles west of Garberville. The Shelter Cove subdivision was created in 1965, prior to passage of the Coastal Initiative. The subdivision occupies a coastal terrace that forms Point Delgada and extends inland and north of the terrace into the coastal mountains of the King Range.

The project site is located north of the terrace on an approximately 250-foot -high bluff above the ocean. The 0.13-acre bluff top parcel slopes up from the street before leveling off and dropping precipitously at an average 70% slope down the face of the bluff towards the ocean. The site is vegetated but contains no known environmentally sensitive species.

The proposed single-family residence will be a 1,245-sq-ft house with one bedroom an attached 2-car garage (see Exhibit 4). The living area will be located above the garage. The small lot limits siting options for the house.

As proposed, the 32.5-foot-wide by 26.5-foot-deep house will be set back 12 feet from the pavement of Ridgeview Circle Drive and 20 feet from the edge of the bluff.

The property is situated in a partially developed residential neighborhood and is designated and zoned in the LCP for low density residential use.

D. SUBSTANTIAL ISSUE ANALYSIS.

1. Valid Grounds for an Appeal.

Section 30603(b)(1) of the Coastal Act states:

> The grounds for an appeal pursuant to subdivision (a) shall be limited to an allegation that the development does not conform to the standards set forth in the certified local coastal program or the public access policies set forth in this division.

The contentions raised in the appeal present potentially valid grounds for appeal in that they allege the project's inconsistency with policies of the certified LCP. The appellants appeal includes substantial discussion of how they believe their concerns about the project establish inconsistencies with LUP policy 3.28 and Section 30253 of the Coastal Act. As have most other Chapter 3 policies of the Coastal Act, this Coastal Act policy has been enacted as County policy within the LUP, and is thus a policy of the certified LCP.

Public Resources Code section 30625(b) states that the Commission shall hear an appeal unless it determines:

> "With respect to appeals to the commission after certification of a local coastal program, that no substantial issue exists with respect to the grounds on which an appeal has been filed pursuant to Section 30603."

As discussed above, the grounds for an appeal identified in section 30603 concern whether the challenged development conforms to the standards in the LCP and the public access policies found in the Coastal Act. The term substantial issue is not defined in the Coastal Act. The Commission's regulations simply indicate that the Commission will hear an appeal unless it "finds that the appeal raises no significant question." (Cal.Code Regs., tit. 14, section 13115(b).)

The appellants have submitted a lengthy analysis as part of their appeal (see Exhibit No. 6) that raises numerous specific points which the appellants believe demonstrate that the project as approved by Humboldt County is inconsistent with the certified Humboldt County LCP. All of these points relate to the geologic stability of the site and the potential for the proposed development to contribute to geologic hazards. Although the Commission does not necessarily agree with all of the points raised by the

appellants, the Commission finds that a substantial issue exists with regard to the project's conformance with the certified Humboldt County LCP, with respect to the area of concern raised by the appellant, as discussed below.

2. Relevant LCP Policies.

The applicable LUP policies on geologic hazards are found in the South Coast Area Plan, the LUP segment that includes the Shelter Cove Area. These policies also refer to use of specific portions of the Humboldt County Safety and Seismic Safety element of the General Plan, portions of which are considered to be part of the certified LCP. The policies are listed in total in Exhibit 10.

The principal policies include: (a) Section 30253 of the Coastal Act, enacted as County Policy in the LUP, (b) LUP Policies 3.28(A) and 3.28(B)(1), and (c) LUP Policy 3.28(B)(2)

(a) Section 30253. Section 30253 of the Coastal Act states in applicable part:

> New development shall...minimize risk to life and property in areas of high geologic, flood, and fire hazard,...assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas or in any way require the construction of protective devices..."

(b) LUP Policy 3.28(A) and 3.28(B)(1). These policies establish a requirement that soil engineering and geological engineering investigation reports be prepared by registered geologists or certain kinds of engineers for new development within certain hazardous areas, including seismic shaking hazard zones, landslide zones, and liquefaction zones. These reports must consider, describe and analyze a variety of specific information about the project site and the proposed development. Besides requiring certain specified information, Policy 3.28(B)(1) also sets certain development standards including a standard that, "The developments permitted in the hazard areas shall be sited and designed to assure stability and structural integrity for their expected economic lifespans...Bluff and cliff developments...shall not create or contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas.

(c) LUP Policy 3.28(B)(2). This policy also establishes certain development standards stating the following:

> New development on ocean front lots shall maintain a minimum structural setback defined as the area of demonstration, unless a report prepared consistent with the provisions of Appendix Chapter 70, Section 7006 of the Uniform Building Code, as amended above, demonstrates that development at alternative site will assure the stability and structural integrity of the project for its expected economic life.

The policies are generally aimed at minimizing the geologic hazard impacts associated with new development. With regard to development proposed on the tops of eroding bluffs or cliffs, such as the house proposed by the applicants, the primary approach set forth in the above-described LUP policies for minimizing the hazard of coastal erosion is to require an adequate setback for any new development. By maintaining a sufficient setback, natural erosion can continue without the need for protective devices and the development will remain safe. The setback will vary from location to location, depending on the rate of erosion, and the expected lifetime of the proposed structures. For example, if the expected lifetime of a house is 75 years, the LUP policies would require that the house be setback behind a line delineating the future bluff edge resulting from 75 years of erosion. The method depends on the establishment by qualified experts of a long term erosion rate for the specific site based on the erosional history of the site and existing geologic conditions. This approach is the same approach that the Commission has followed when reviewing bluff top development within its own permit jurisdiction.

3. Discussion.

Broadly categorized, the appellants' contentions can be broken down into three general areas of concern. These three areas of concern are:

1. The soil engineering and geologic engineering investigation prepared for the site does not provide sufficient information to satisfy the requirements of Policy 3.28(B)(1) of the South Coast Area Plan (the applicable LUP for this site);

2. The required soil engineering and geologic engineering investigation prepared for the site does not demonstrate that the development will assure the stability and structural integrity of the project for its expected economic life as required by Policy 3.28(B)(2); and

3. It has not been demonstrated that the proposed development will minimize risks to life and property in areas of high geologic...hazard, assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas..,." as required by Section 30253 of the Coastal Act, incorporated into the Humboldt County LCP as County policy.

The Commission finds that the first two general areas of concern raised by the appellants do raise a substantial issue with regard to the project's conformance with the certified Humboldt County LCP. These two general areas of concern raised by the applicant are discussed separately below.

A. Inadequate Soil Engineering and Geological Engineering Investigation.

The appellants contend that the soil and geological investigation report prepared for the project by the applicants' civil engineer is inadequate in that the information provided is neither sufficient nor accurate enough to meet the requirements of LUP Policy 3.28(B)(1). The appellants set forth numerous specific points concerning alleged inadequacies of the report in their appeal (see Exhibit No. 6).

The findings adopted by the County for the project mention that a geologic report dated August 10, 1995 has been prepared for the subject parcel by Allan M. Baird, and that the report has been approved by the Building Inspections Division. The findings also make reference to a May 16, 1996 addendum to the report which was written in response to a request by County staff that the report address the required setback defined as the "Area of Demonstration" in the LUP. The County Planning Commission was provided a supplemental information packet by County staff that included a copy of the soils/geologic investigation report, the addendum, and a copy of a letter from A.M. Baird Engineering dated June 17, 1996 describing the extent of excavation proposed. A copy of the supplemental information packet containing all of the soils/geologic information for the project considered by the Planning Commission is attached as Exhibit No. 7 of this report.

As the County approved the coastal development permit in part, on the basis that the project is consistent with the certified LCP, the County apparently determined that the soils/geologic engineering investigation prepared for the project is consistent with the information requirements of Policy 3.28(B)(1). However, the County findings do not discuss at all the specific conformance of the soils/geologic report prepared for the project by the applicants's engineer with the requirements of Policy 3.28(B)(1) of the LUP, except to say that the report was approved by the Building Inspections Division. Thus, the County has not demonstrated why it believes the soils/geologic engineering investigation work performed for the project meets the requirements of Policy 3.28(B)(1).

After examining the soils/geologic engineering investigation work available to the County Planning Commission and additional information submitted by the appellants and applicants, the Coastal Commission finds that in several respects, the soils/geologic investigation prepared for the project does not provide all of the information called for in LUP Policy 3.28(B)(1). The information provided fails to meet the requirements of the policy in the two principal ways discussed below.

i. Inadequate Examination of Cliff Geometry and Site Topography Pursuant to LUP Policy 3.28(B)(1)(a)

Subsection (a) of Policy 3.28(B)(1) states that the report prepared for the required soil engineering and geologic investigations should consider, describe, and analyze "Cliff geometry and site topography, extending the surveying work beyond the site as needed to predict unusual geomorphic conditions that might affect the site."

The extent of the information in the soils/geologic investigation report materials that address cliff geometry and site topography consist of the following. The report includes a 9-line "Site Description" that includes a general written description of how the parcel slopes up from the street at a 5% slope before dropping down sharply for approximately 200 feet to the ocean (see sheets 3 and 4 of Exhibit No. 7). The supplementary letter of May 16, 1996 adds that the slope to the ocean is, on average, 70% (see second paragraph of page 12 of Exhibit 7). An exhibit attached to the original report shows the lot lines and includes a line dividing the parcel roughly in half identified as "Edge of Steep Bank," and continuing a note for the landward half of the parcel indicating "5% to 10% slope (see sheet 7 of Exhibit 7).

The minimal information described above does not provide basic information necessary to evaluate the cliff geometry and site topography as called for in LUP Policy 3.28(B)(1). Nowhere does the submitted information include a basic topographic map of the site at a scale that would be useful for analysis. In addition, the report fails to include a basic cross section of the lot and its ocean bluff. Such a cross section would depict the toe of the bluff, the slope profile of the bluff, and the bluff top where the building site is to convey basic information useful for evaluating bluff retreat. Such diagrams are typically provided in geologic reports.

ii. Inadequate Analysis of Seacliff Erosion Pursuant to LUP Policy 3.28(B)(1)(b) and (h)

Subsections (b) and (h) of Policy 3.28(B)(1) require that the soil engineering and geologic investigation report should consider, describe, and analyze cliff erosion, both due to marine erosion, as required by subsection (h), and other forces as required by subsection (b). As noted previously, the determination of cliff or bluff erosion rates is critical to the primary approach set forth in the LCP hazard policies for minimizing the hazard of coastal erosion associated with bluff top development by requiring an adequate setback for any new development. In order for the setback to be sufficient "to assure the stability and structural integrity of the project for its expected economic life" as required by Policy 3.28(B)(2), a realistic setback based on a site specific appraisal of the cliff or bluff erosion rates is critical.

The initial report prepared for the project notes that "from published reports, the average rate of bluff retreat in the area appears to be on the

order of less than twenty feet in the past fifty years or so," (see sheet 4 of Exhibit No. 7) Included under Conclusion and Recommendation (6) of the report, is the recommendation that "no structure should be placed within 20 feet of the edge of the steep slope facing the Pacific Ocean," (see sheet 6 of Exhibit No. 7).

No Usable Bluff Retreat Rate Provided. The conclusions of the soils/geologic investigation about cliff retreat do not present an actual rate from which it is possible to determine a suitable setback for the expected economic life of the project. The LUP does not contain a policy specifying what the expected economic life of a house should be. However, economic lifespans of 100 years are often used by coastal communities around the country and the Commission has historically considered 75 years to be the normal economic lifespan of a house. The conclusion about bluff retreat given by the geologic/soils report only looks at bluff retreat rate over the past 50 years, without explicitly making a projection for the future. Even if this conclusion is meant to imply that only 20 feet can be expected over the next 50 years, this amount of time is well short of what most people would consider the normal economic lifespan of a house. This implication could be interpreted as suggesting that the house as proposed, 20 feet from the bluff edge, could be undermined by erosion in 51 years or it might be interpreted as suggesting the house might never be undermined by erosion. Thus, the information provided on bluff retreat is inadequate to allow the substantive requirements of the LUP policies requiring that new development assure the stability and structural integrity of the project for its expected life to be addressed.

Conclusions About Bluff Retreat Not Supported by Evidence Presented. Besides failing to provide an actual bluff retreat rate necessary for applying LUP Policy 3.28(B)(2), the conclusion about bluff retreat is not supported in the material provided and does not appear to be site specific.

The report does not provide any direct evidence to substantiate the conclusion that the bluffs have eroded less than 20 feet over 50 years. Later, in the letter to the County staff dated May 16, 1996, (see sheet 13 of Exhibit 7) the engineer indicates that the conclusion is based on (a) "evaluations of old maps and surveys dating back to 1871 and analysis of aerial photographs" taken between 1941 and 1988, and (b) an investigation by Tuttle in 1992 of coastline retreat at Shelter Cove. However, none of the old maps, surveys, aerial photographs, are identified, and none of these materials nor the Tuttle investigation referred to is included for review. Thus, it is impossible to verify the conclusions reached.

In a letter to the Coastal Commission dated October 10, 1996, Allan M Baird indicates that at the time he prepared his report, he reviewed a Geologic Hazard Report that was created for the development of a house on a lot immediately north of the Johnson lot and that he is in total agreement with the conclusions reached (see sheet 12 of Exhibit No. 8). The geologic hazard report is prepared by Cooksley Geoscience, Inc. and was forwarded to the

Commission along with Mr. Baird's October 10, 1996 letter as part of the applicants' response to the appeal. The Cooksley report is contained in sheets 13 through 37 of Exhibit No. 8. Neither the Cooksley report or Mr. Baird's letter of October 10 was included in the record considered by the Humboldt County Planning Commission when they acted on the project.

Cooksley Report Does Not Establish a Bluff Retreat Rate for Johnson Lot. Whether or not the the Cooksley Report is properly considered part of the record, it also does not provide a bluff retreat rate useful for the Johnson lot for a variety of reasons. First, Page 5 of the report (sheet 20 of Exhibit No. 8) expressly states that the authors are only responsible for the conclusions and opinions contained in the report "based on the data only to this specific project and site..." Thus, the Cooksley report is not intended by the author to provide conclusions for the Johnson lot.

Second, the report was prepared over 6 years ago, in August of 1990. Most geologic reports are not considered reliable if they are older than several years. The age of the Cooksley report is particularly relevant given that the report was prepared prior to the April 1992 Humboldt County earthquakes. The largest of these earthquakes registered 7.1 on the Richter scale and caused extensive damage in southern Humboldt County. Of particular note is that the appellants, who live directly across the street from the Johnson home, indicate that their home was totally destroyed by the April 1992 earthquakes. Given that the Cooksley report itself indicates that seismically induced slope/bank failure, is one of the two major risk of potential geologic hazards with the Shelter Cove area (see page 6 of the Cooksley report, sheet 21 of Exhibit No. 8), the existing condition of the cliff may have changed since 1990 when the Cooksley Report was prepared.

The third reason the Cooksley Report does not establish a bluff retreat rate for the Johnson lot is that, like the Baird investigation, the Cooksley Report does not actually establish a bluff retreat rate. In fact, the language used to address bluff retreat in the Cooksley Report is exactly the same as the language used in the Baird investigation. The Cooksley Report contains the same statement used by Baird that, "From published reports, the average rate of bluff retreat in the area appears to be on the order of less than twenty (20) feet in the past fifty (50) or so years..." Thus, for the reasons described in relation to the inadequacy of the Baird Investigation bluff retreat conclusion, the Cooksley Report also does not provide a bluff retreat rate that can be used to predict cliff erosion at the site more than 50 years in the future.

Fourth, the Cooksley Report, like the Baird investigation, also does not provide or identify supporting evidence that could be used to verify the conclusions on bluff retreat.

Fifth, the discussion that is provided in the Cooksley report about bluff retreat suggests that the bluff retreat information provided is not site specific. As stated in its section on Bank/Slope Instability Hazards on page

21 of the report (see sheet 34 of Exhibit No. 8), the Cooksley Report describes two general forces affecting slope stability. These two forces include wave attack at the base of the bluffs and slumping and erosion of the marine terrace deposits higher up on the bluffs. With regard to the rate of erosion from wave attack, the Cooksley Report states the following:

> "...In several such studies done in the Point Delgada/Shelter Cove area it has been concluded that discernible changes in location, or configuration, of the bedrock sea cliff in the area over the past fifty (50) or so years are not in evidence...."

With regard to the rate of bluff retreat associated with slumping material from above, the Cooksley Report states the following:

> "...From published reports, the average rate of bluff retreat in the area appears to be on the order of less than twenty (20) feet in the past fifty (50) or so years. In certain stretches along the coast, this rate has been far exceeded..."

It is apparent from both of the above statements that the Cooksley report relies on average retreat rates produced by others for the entire Shelter Cove area to draw its conclusions concerning bluff retreat at the subject property. The above statements include such references as "from published reports" and "in several such studies." Nowhere in the Cooksley report are there any indications that a site specific analysis of bluff retreat specific to the lot that was the subject of the report was performed. There is no reference to an analysis being performed by the authors of the Cooksley report of aerial photographs, historic maps and other evidence particular to the subject lot. The danger in relying on average retreat rates for the Shelter Cove area as a whole is that the topography and geology of the area around the Johnson lot is very different from much of Shelter Cove.

Much of the Shelter cove shoreline is comprised of the shoreline around the flat coastal terrace that forms Point Delgada. In this area, the bluffs are relatively low, approximately 20 feet or less. As noted earlier, the subject property is located away from the terrace in a mountainous area to the north on a high bluff that is approximately 250 feet high. The Cooksley and Baird reports describe the underlying bedrock at Shelter Cove as the Franciscan Formation, which is described as a geologic formation that is very resistant to wave attack and other erosion. Along the shoreline of the coastal terrace at Point Delgada, this formation is overlain by only a few feet of other materials. Along the shoreline near Ridgeview Circle, where the subject property is located, the Cooksley report describes the Franciscan formation as being overlain by deep layers of material comprising three other formations, the Upper Shelter Cove Formation, the Shelter Cove Formation, and the Humboldt Creek Formation. The Cooksley report indicates that although the actual thicknesses of these other formations are not known, it is suspected that the Upper Shelter Cove Formation "is approximately ten (10) to twenty (20) plus or minus," the Shelter Cove Formation is "greater than several tens of feet," and

the Humboldt Creek Formation is also "greater than several tens of feet." The Cooksley Report describes the Shelter Cover formation as "deposits formed by earth, mud and debris flow" and the Humboldt Creek Formation as "a marine terrace deposit." Because of their composition, these formations are not as resistant to erosion as the Franciscan Formation. Thus, even if the underlying Franciscan Formation is effective at resisting wave attack, the less-resistant overlying formations would not be as effective at resisting erosion, whether from large wave run-up washing up the face of the bluffs, ocean spray attacking the bluffs, concentrated runoff discharging down the face of the bluff, seismically induced slumping, or some other erosional force. Thus, the cliff or bluff at the Johnson lot and surrounding areas has a much different topography and geologic structure than much of the Shelter Cove shoreline, and cliff retreat rate at this location could very likely be very different than the rate of retreat for Shelter Cove as a whole.

Another source of information about bluff retreat at the Shelter Cove area suggests that cliff retreat in the vicinity of the project site is very different than the rate of bluff retreat as whole at Shelter Cove. Exhibit 11 shows a map of the shoreline in the vicinity of Shelter Cove derived from a figure contained in Living with the California Coast, edited by Gary Griggs and Lauret Savoy, published by Duke University Press in 1985. The geologists who wrote Living with the California Coast examined existing data about shoreline erosion and developed a series of maps delineating hazardous or potentially hazardous areas and existing erosion rates. The map for the Shelter Cove area, shown in Exhibit 11, shows a series of erosion rates. Around the coastal terrace upon which the Landing Strip is shown, erosion rates of 0 inches per year are shown. Further up the shoreline, in the vicinity of the Johnson lot, much greater erosion rates are shown. The nearest erosion rate given to the south of the Johnson lot is 8 inches per year. The nearest erosion rate given to the north of the Johnson lot shows 15 inches per year. This information indicates there is variability in the shoreline erosion rates in the Shelter Cove area and suggests that shoreline erosion near the Johnson lot may be much higher than the minimal average erosion rates developed for Shelter Cove as a whole by others that are referred to in the Cooksley and Baird reports. Therefore, the lack of a shoreline erosion/cliff retreat rate specific to the Johnson lot calls into question the appropriateness of the 20-foot setback recommended in the Baird investigation for the Johnson lot.

B. No Demonstration of Project Stability for Expected Economic Life.

The appellants contend that that siting the house 20 feet from the bluff edge as proposed will not maintain a bluff setback equivalent to the "area of demonstration" in an area of known high instability. As the appellants contend that the soil and geologic engineering investigation has not demonstrated that the development will assure the stability and structural integrity of the project, the appellants contend the proposed development is inconsistent with Policy 3.28B(2) of the South Coast Area Plan which requires that new development not be located in the area of demonstration unless a soil

and geologic engineering investigation report demonstrates that development within the area of demonstration will assure the stability and structural integrity of the project for its expected economic life.

The "area of demonstration" mentioned in Policy 3.28(B)(2) refers to the base, face, and top of the bluff or cliff. The extent of the bluff top considered to be within the area of demonstration includes all of the area between the face of the bluff and a line described on the bluff top by the intersection of a plane included at a 20 degree angle from horizontal passing through the toe of the bluff or cliff. In the case of the subject property, the entire lot is within the area of demonstration. Thus, pursuant to Policy 3.28(B)(2), the proposed home could not be approved unless a soil and geologic engineering investigation report demonstrates that development will assure the stability and structural integrity of the project for its expected economic life.

As noted previously, the findings adopted by the County for the project do not discuss the adequacy of the Baird investigation in establishing a suitable bluff retreat rate. The County apparently accepted the conclusions of the Baird investigation with regard to bluff retreat at face value. Having done so, the County made the following finding with regard to the project's conformance with the development standard set forth by Policy 3.28(B)(2):

> "In the addendum, Baird has mentioned that little erosion has taken place on the slope at the rear of the lot in the last 96 years demonstrating that the proposed development within the setback will assure stability and structural integrity of the project for its expected economic life."

For the reasons discussed in detail above, the Commission finds that the soils/geologic investigation prepared for the project has not established a reliable cliff retreat rate. As discussed previously, without a reliable cliff retreat rate, it is impossible to establish how much of a setback from the bluff edge is needed to keep the proposed home from being undermined by cliff retreat during the lifetime of the house. In addition, the County did not consider what the expected economic life of the project is. As noted previously, many coastal communities around the country have considered 100 years to be the expected economic life and in many permit decisions the Coastal Commission has made, the Coastal Commission has established 75 years as an appropriate expected economic life of a house. The conclusions about bluff retreat made by the applicants' engineer implies that less than 20 feet of bluff retreat can be expected over the next 50 years. This implication suggests that the house as proposed, 20 feet from the bluff edge, could be undermined by erosion within 51 years. Thus even if the general conclusions drawn by the engineer about bluff retreat were accepted as establishing a reliable bluff retreat rate, it has not been demonstrated that the house will not be undermined by cliff retreat during what would generally be accepted as the expected economic life of the project. Therefore, the Commission finds that a substantial issue exists with regard to whether the project is consistent with Policy 3.28(B)(2) of the LUP.

C. Significance of Lack of Conformance to LCP Hazard Policies.

The issues raised by the appellants and discussed above about whether the project is consistent with the LUP policies on geologic hazards are significant for a variety of reasons.

The Humboldt County LUP policies mirror and expand upon the requirements of Section 30253 of the Coastal Act, which state in applicable part that new development shall assure stability and structural integrity, and neighbor create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas. In fact, the LUP enacts Section 30253 of the Coastal Act as County policy. Thus, the effective implementation of the geologic hazard policies of the LUP is essential to carry out the policy requirements of the Coastal Act.

As stated in the Coastal Plan, submitted by the California Coastal Zone Conservation Commission to the state Legislature in 1975 to satisfy the requirements of the Coastal Initiative in 1972, "Development that interferes with or ignores ...natural geologic processes may impose direct or indirect danger and costs on the public and accelerate or aggravate long-term natural geologic processes of the coast." As an example of these costs, Griggs and Savoy in Living with the California Coast (1985 edition, pg 1) state that public and private losses due to shoreline erosion along the California coastline during severe storms occurring in 1978 amount to over $18 million. The authors state that such damage caused by the severe high tides and storm damage in the winter of 1983 inflicted over $100 million in damage to ocean-front property.

The particular setting of the proposed project makes effective implementation of the geologic hazard policies especially important. The Cooksley report notes that the Point Delgada area where Shelter Cove is located has a high to very high level of risk of geologic hazard for development (pg 23, see sheet 36 of Exhibit 23). The risk is due in part to the fact that the location is within one of the most seismically active parts of the state. As stated in the Cooksley report, "due to its proximal location relative to zones of major global tectonics, this portion of coastal northern California (the Point Delgada/Shelter Cove area) is seismically very active and susceptible to earthquakes of large magnitude which can produce significant ground shaking," (see pg 15, sheet 30 of Exhibit 8). This statement was bourne out in April of 1992 when a series of earthquakes, include an earthquake measuring 7.1 on the Richter Scale rocked southern Humboldt County and destroyed a home directly across the street from the subject property. Besides being subjected to a high level of risk of seismic hazard which can cause, among other things, significant ground shaking and seismically induced bank/slope failure, the Cooksley report notes that the Point Delgada/Shelter Cover area is also subject to other kinds of slope/bank instability hazards and landsliding. In addition, the specific location of the subject property within the Shelter Cove area raises particular concern about geologic hazards. As noted previously, the subject property is a narrow bluff top parcel that sits atop a

very high (approximately 250 feet) and very steep (approximately 70% slope) bluff. Thus, the specific location of the project raises much more than the usual level of concern about the geologic hazards associated with building on a bluff top lot.

The fact that the County made no findings demonstrating why it believes the soils/geologic engineering investigation work performed for the project meets the requirements of Policy 3.28(B)(1) by itself raises an issue of conformance of the project to Policy 3.28(B)(1). The lack of County findings on the acceptability of the report together with the deficiencies of the report in establishing a verifiable bluff retreat rate makes the issue of conformance to Policy #.28(B)(1) particularly significant. As noted previously, a verifiable bluff retreat rate is critical to the approach set forth in the LCP and also used by the Coastal Commission to protect bluff top development from bluff retreat. In projects within the Commission's jurisdiction, applicants for bluff top development within the area of demonstration are routinely required to prepare geologic reports with verifiable bluff retreat rates. Without a realistic bluff retreat rate, a safe setback cannot be established and the safety of the proposed development cannot be adequately assured.

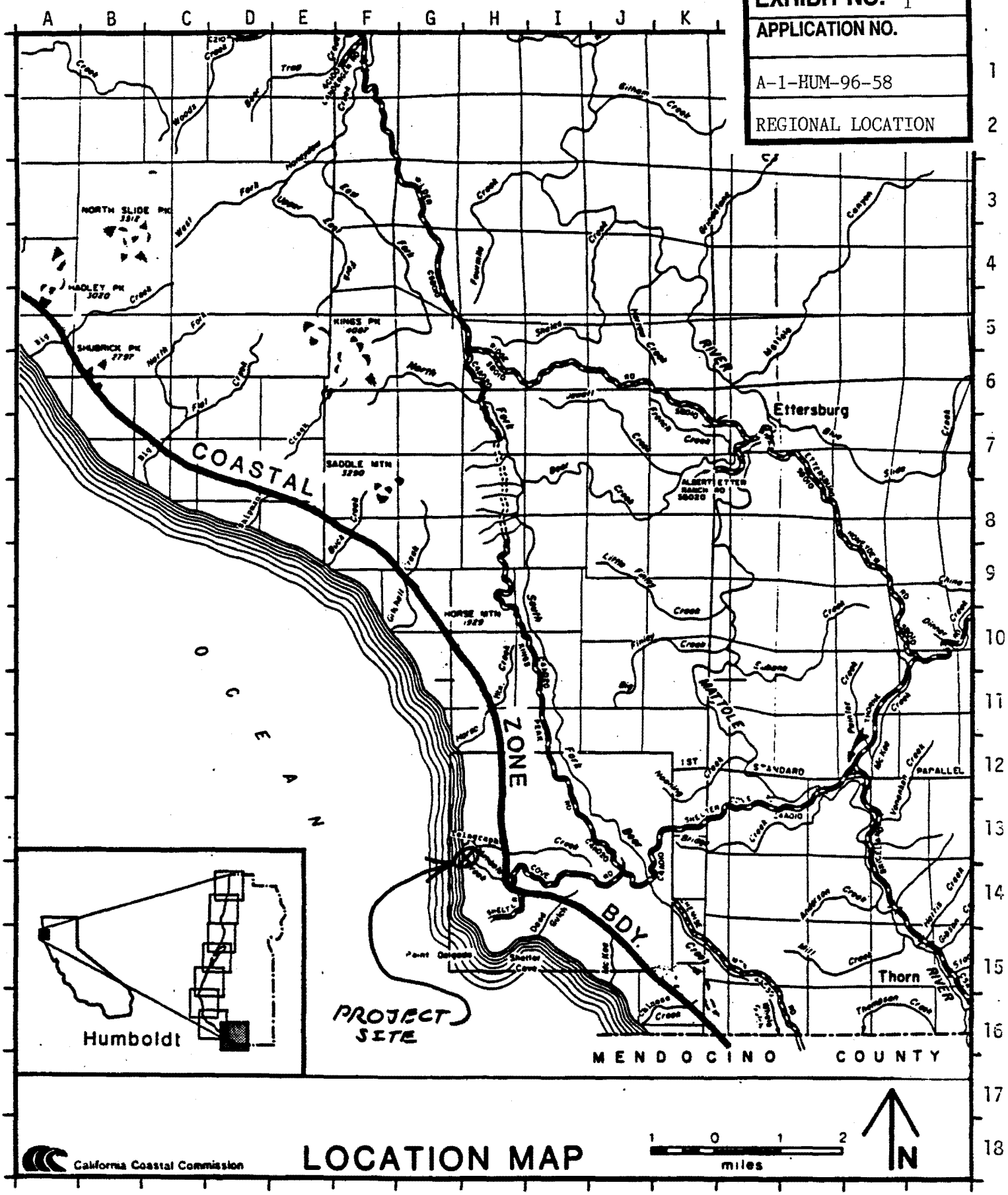
The Commission is also concerned about how the County's implementation of its geologic hazard policies in this case might affect future cases. The Shelter Cove Subdivision is only partially built out. Numerous bluff top lots and other lots subject to high risk of geologic hazard have not yet been developed, including others in the immediate vicinity of the subject property. If the soils/geologic investigation prepared for this project and its acceptance and implementation by the County becomes the standard by which the County reviews other projects in locations at Shelter Cove subject to geologic hazards, the geologic stability of a great deal of future development at Shelter Cove will be brought into question.

D. Conclusion.

In summary, for the reasons stated above, the Commission finds that the project as approved and conditioned by the County of Mendocino raises a substantial issue with regard to the project's conformance with the certified LCP, with respect to the grounds on which the appeal has been filed.

9097p

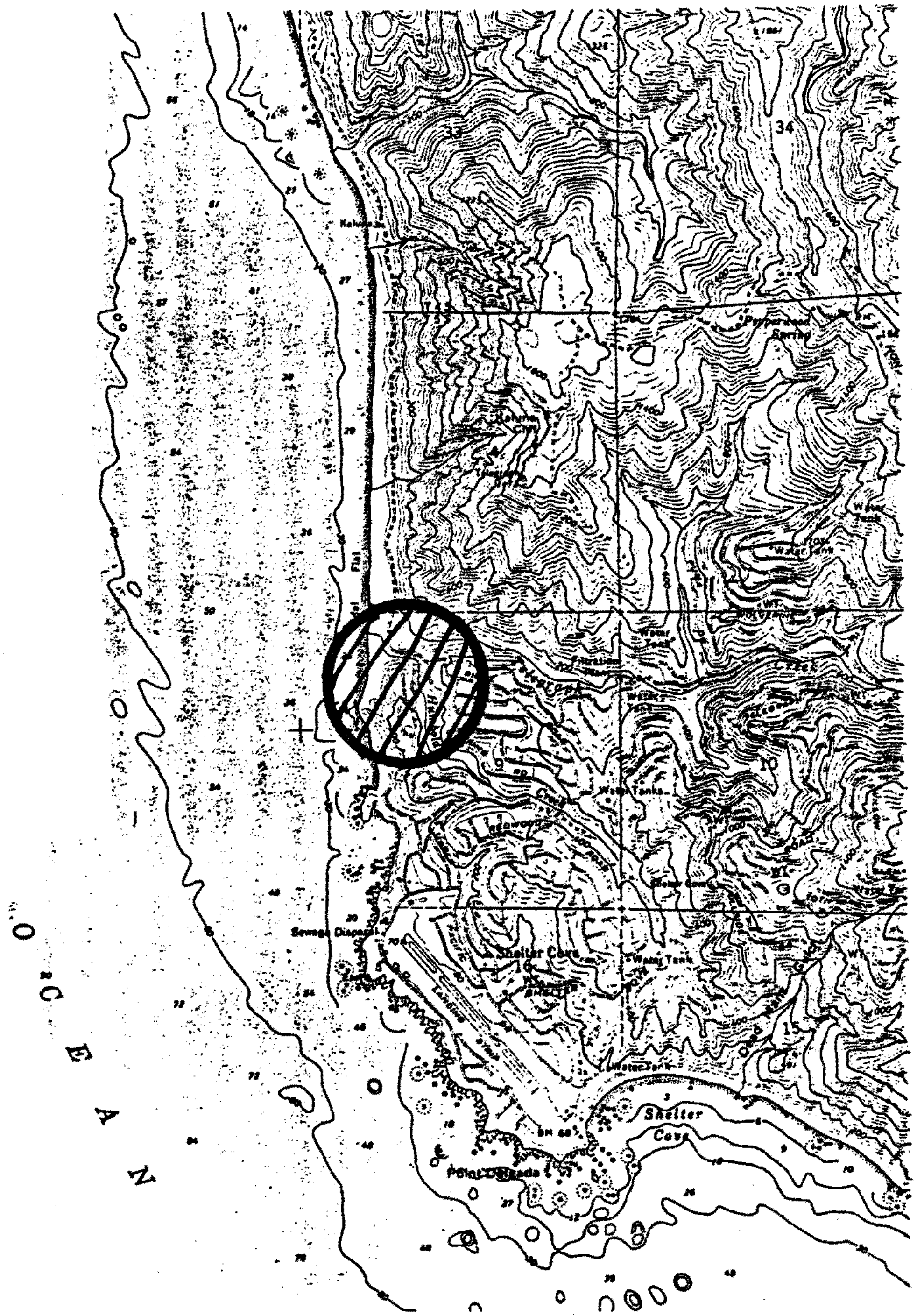
EXHIBIT NO. 1
APPLICATION NO.
A-1-HUM-96-58
REGIONAL LOCATION



California Coastal Commission

LOCATION MAP

County of Humboldt



Proposed Johnson Coastal Development Permit
Shelter Cove Area CDP-36-95
APN 109-161-53 Section 9 T5S, R1E H.B.&M.

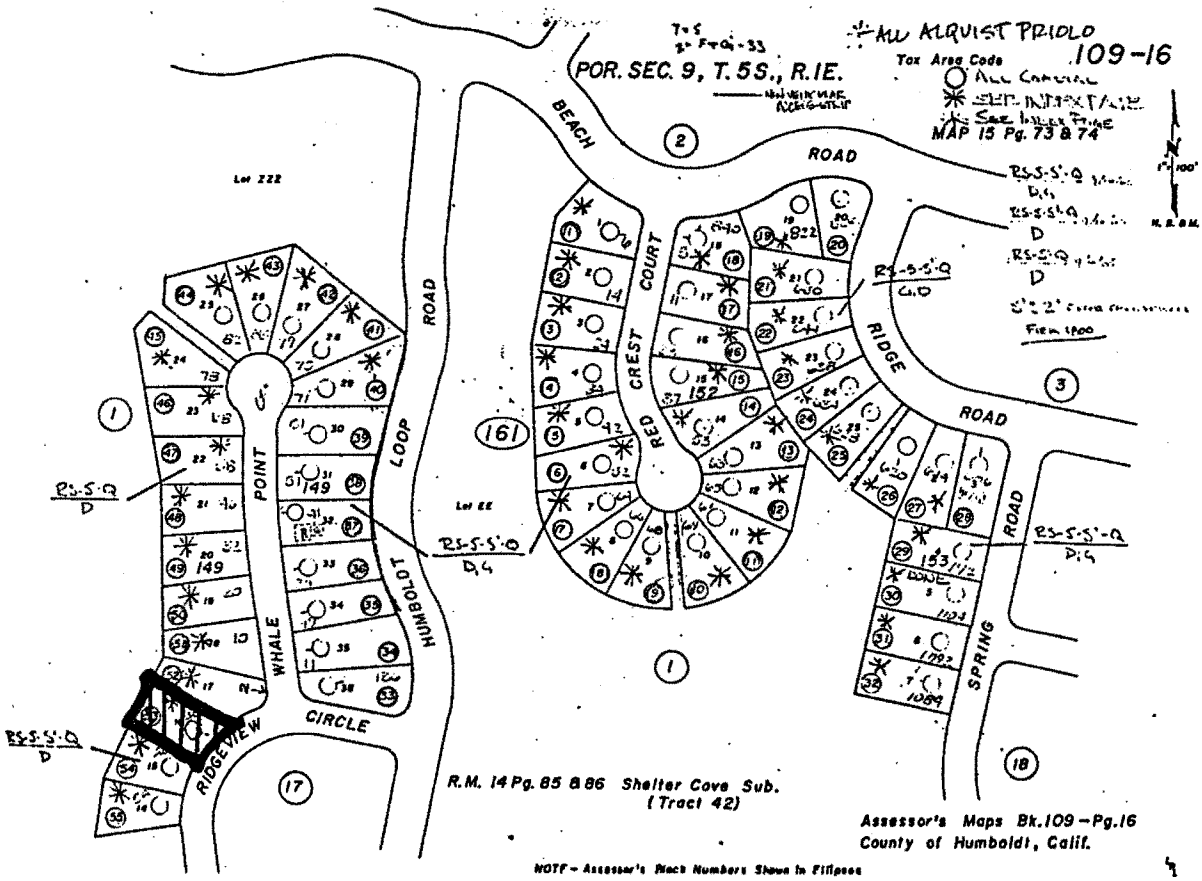
Location Map

N

EXHIBIT NO. 2
APPLICATION NO.
A-1-HUM-96-58
LOCATION MAP

Scale: N.T.S.

17

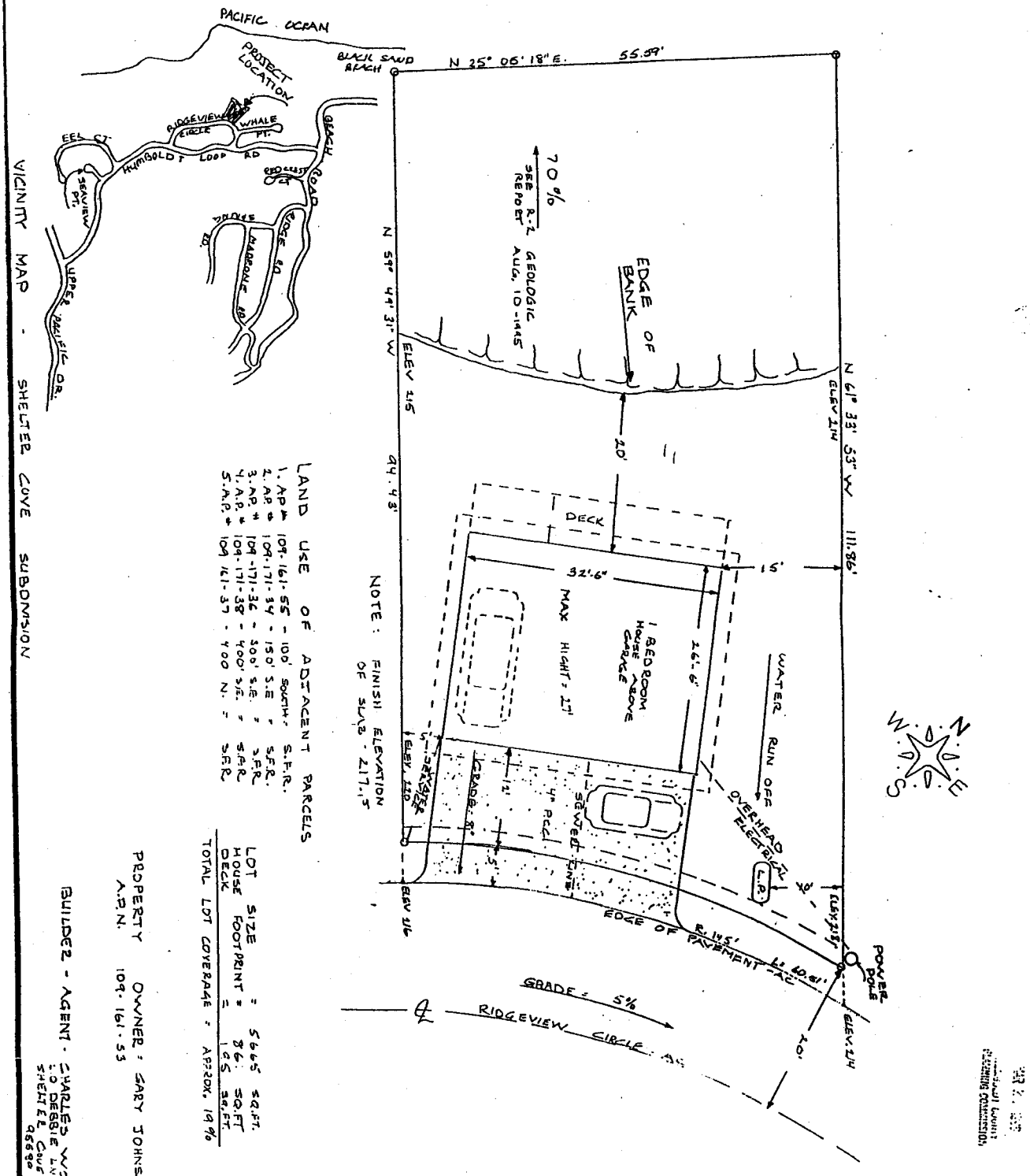


Proposed Johnson Coastal Development Permit
Shelter Cove Area CDP-36-95
APN 109-161-53 Section 9 T5S, R1E H.B.&M.
Assessors Parcel Map

N

Scale: N.T.S.

EXHIBIT NO. 3
APPLICATION NO.
A-1-HUM-96-58
SUBJECT PARCEL



DRAWN	Charles Woods
CHECKED	
DATE	9.1995
SCALE	
JOB NO.	
PLAN SHEET	
OF SHEETS	

PLOT PLAN FOR GARY JOHNSON
APN 109-161-53
40 RIDGEVIEW CIRCLE

EXHIBIT NO. 4
APPLICATION NO.
A-1-HUM-96-58
SITE PLAN

EXHIBIT A

APPROVAL OF THE COASTAL DEVELOPMENT PERMIT AND SPECIAL PERMIT ARE CONDITIONED ON THE FOLLOWING TERMS AND REQUIREMENTS WHICH MUST BE SATISFIED

A. **Before a Building Permit is secured:**

1. The two (2) required parking spaces shall be constructed on-site prior to occupancy of the building. This requirement shall be solely administered by the Building Inspections Division.

2. Exhibit "B", which reiterates verbatim the recommendations of the R-2 Geotechnical Report for the subject parcel **shall be fully integrated into the building/construction plans submitted to the Building Inspection Division.**

BID EGP

3. Prior to occupancy, a written certification shall be submitted to the Building Inspection Division for inclusion in the project file (CDP-36-95 & SP-30-95) indicating that the development authorized by this Coastal Development Permit has implemented all of the applicable recommendations of the R-2 report. This statement may be prepared by A.M. Baird Engineering & Surveying, author of the R-2 report, or another qualified consultant. A note describing this requirement shall appear on the plot plan for the building permit application.

4. Plans submitted for building permit approval shall show the design of the structure is fire resistant to the satisfactions of the Building Inspection Division. The design of the structure shall be found to be fire resistant if it has the following features: 1) Class A roof assemblies, 2) firebrand resistant siding, 3) protected openings, 4) rated standards for exposed decks/supports, and 5) overall attention is given to prevent firebrand capture or propagation.

5. Connection to the public water system is required prior to building occupancy.

B. **On-going Requirements/Development Restrictions which must continue to be satisfied for the life of the project:**

1. All galvanized metal flashing shall be painted to match the roof or exterior walls.

2. All new outdoor lighting shall be compatible with the existing setting and directed within the property boundaries.

3. Landscaping material shall not cultivate flammable vegetation; and shall instead be comprised of fire resistant species instead. Vegetation shall be maintained as green and healthy or removed. Grasses shall be mowed to less than six (6) inches. Yards shall remain free of dead vegetation accumulations, flammable natural debris, and flammable man-made storage items and debris.

4. The fire resistant construction design shall be maintained.

C. **Informational Notes**

1. The January 1, 1991 document "Project Review Input Basic To All Development Projects" is considered part of input from the California Department of Forestry (CDF) on this project. CDF requests that the applicant have access to that document's input at the earliest contact possible. The handout which describes that document is attached.*

2. The applicant must apply for and obtain an encroachment permit for the driveway. Application may be made at the Public Works Department. This must be done ***prior*** to issuance of the building permit. The permit will require the driveway entrance to be surfaced with asphalt concrete or Portland cement concrete.

*Attachments to be included in final approval packet.

EXHIBIT NO. 5
APPLICATION NO.
A-1-HUM-96-58
CO. FINAL CONDITIONS AND FINDINGS (2 OF 9)

EXHIBIT B

Away from the coastline, in the hilly portion of Shelter Cove and southwest of the actual coastal range itself, the principal erosion process is that of concentrated runoff draining across the sloping topography. Rain runoff is gathered and carried seaward via a drainage system which appears to be highly structurally controlled. The actual amount of erosion on any given site within this area is dependent on the amount of moisture received, the amount and type of vegetation present, the slope of the land surface, and the type and amount of soil cover present.

Within the area of the subject lot, there appear to be no bank/slope instability hazards that would likely affect the site. Note that Ridgeview Circle has been in place some thirty years, and only shows minor settling cracks related to settling of the underlying road bed itself.

CONCLUSIONS AND RECOMMENDATIONS

In my opinion soils of the proposed building site are capable of supporting a load of 1,000 pounds p.s.f.. A two story single family residence is a satisfactory use for this site provided that considerations are given to the recommendations presented herein.

1) Gutters are to extend along all roof lines and lead to downspouts, in turn, downspouts should lead to pipes carrying the roof runoff away from the building site and away from areas of any fill or foundations which may adversely affect the site soil.

2) All surface runoff should be controlled to flow and drain away from the foundation and site preferably to the West. Surface water flow should be directed offsite in a non-erosive manner.

3) If any fill or cutbanks are to be installed they are to be constructed in conformance with Chapter 70 of the 1991 Uniform Building Code.

4) All existing and proposed fill and cutslopes are to be revegetated to prevent erosion, this is to be done to the satisfaction of local building officials. Protection of the slopes and bluffs is to be installed as soon as practical and prior to fall rains.

5) If cutting or grading is to be done at a depth greater than 10 feet, this office should be contacted for further specific recommendations.

EXHIBIT NO. 5
APPLICATION NO.
A-1-HUM-96-58
CO. FINAL CONDITIONS AND FINDINGS (3 OF 9)

6) The foundation should be extended into natural ground. Footings should be at least 18 inches below adjacent surface. The horizontal distance from the bottom of any footing to adjacent ground surface shall not be less than shown in figure 70-2, 1991 Uniform Building Code. Additionally, no structure should be placed within 20 feet of the edge of the steep slope facing the Pacific Ocean.

7) Spread footings and foundation walls should be reinforced and be at least 12" wide for a one story and 15" wide for two story residences. Floor slabs should be reinforced by #3 Reinforcing Bars at 24' c.c. each way and be underlying by at least 4" of class 2 aggregate base to act as a capillary moisture break, underlying by a vapor barrier. A sand blanket of 1 1/2" to 2" should be placed over the vapor barrier to facilitate the placement of concrete.

8) All foundation design and construction shall be in conformance with Chapter 29 of the Uniform Building Code. All footings are to meet the areas requirements for seismic criteria, as required by the current Uniform Building Code. When at such time building plans are submitted, review of the foundation should be made and more detailed discussion of the footing design is possible at that time.

It was assumed that the existing test holes are representative of subsurface conditions throughout the site. If the proposed construction is modified, or resited, or if it is found during construction that subsoil conditions differ from those described, the conclusions and recommendations of this report should be considered invalid unless the changes are reviewed and the conclusions and recommendations are modified or approved in writing.

If you have any questions regarding this report, please feel free to contact me at 725-5182.

Sincerely,

Allan M. Baird
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ALLAN M. BAIRD
No. 23681
EXP. 12-31-97
CIVIL
STATE OF CALIFORNIA

TOR/sm

EXHIBIT NO. 5
APPLICATION NO.
A-1-HUM-96-58
CO. FINAL CONDITIONS AND FINDINGS (4 OF 9)

JOHNSON STAFF REPORT

Pursuant to Section A315-3(A)(4) of the Humboldt County Code, a Coastal Development Permit is required for any development within the Coastal Zone. Humboldt County Code Section A314-57 requires a Special Permit for design review.

Required Findings

The Appendix to Title III, Division 1, Section A315-14 of the Humboldt County Code (H.C.C.) specifies the findings that must be made to grant the Coastal Development Permit and Special Permit. Basically, the Hearing Officer may grant the Coastal Development and Special Permit if, on the basis of the application, investigation and submitted evidence, the following findings are made:

1. The proposed development is in conformance with The County General Plan;

2. The proposed development is consistent with the purposes of the existing zone in which the site is located;

3. The proposed development conforms with all applicable standards and requirements of these regulations;

4. The proposed development and conditions under which it may be operated or maintained will not be detrimental to the public health, safety, or welfare.

In addition, the California Environmental Quality Act (CEQA) states that one of the following findings must be made prior to approval of any development which is subject to the regulations of CEQA:

5.

a) The project is either categorically or statutorily exempt; or

b) There is no substantial evidence that the project will have a significant effect on the environment or any potential impacts have been mitigated to a level of insignificance and a negative declaration has been prepared pursuant to Section 15070 of the CEQA Guidelines; or

c) An environmental impact report (EIR) has been prepared and all significant environmental effects have been eliminated or mitigated to a level of insignificance, or the required findings in Section 15091 of the CEQA Guidelines are made.

Recommendation:

The required findings can be made based on the following analysis.

Staff Analysis

1. General Plan

The proposed development is in conformance with the County General Plan.

Land Use

The subject area is located in the Shelter Cove area and is designated Residential Low Density (RL) by the South Coast Area Plan. The purpose of the RL designation is to allow the development to homeowner residential uses making conservative use of urban land where adequate services are available. The maximum density for this use designation is 1 - 7 dwelling units per acre. The proposed project involves the construction of a single family residence on approximately 0.13 acres (about 7.7 dwelling units per acre). The residence on the subject parcel will exceed the maximum density allowed in the RL designation (7 units per acre). However, the Shelter Cove Subdivision was created in 1965 and the South Coast Area Plan was not certified by the California Coastal Commission until 1985. The parcel was created legally and the H.C.C. does not prohibit the development of legally created substandard lots.

Geologic Hazards

The project site is located in an area of high geologic instability as indicated on the geologic hazard maps of Volume I of the Humboldt County General Plan. A geologic report dated August 10, 1995 has been prepared for the subject parcel by Allan M. Baird. An addendum dated May 16, 1996 was written in response to a request by staff that the report address the required setback defined as the "Area of Demonstration" in the South Coast Area Plan. In the addendum Baird has mentioned that little erosion has taken place on the slope at the rear of the lot in the last 96 years demonstrating that the proposed development within the setback will assure stability and structural integrity of the project for its expected economic life.

Staff has received comments regarding geologic stability of the subject parcel from a concerned neighbor. William B. Rourke has noted that the subject parcel has recently experienced massive slumping and that any removal of vegetation at the top of the bluff could result in more erosion. Rourke also claims that there is not enough room on the parcel for the proposed structure and the required setbacks. (See attached letter received May 28,1996.) The original soils report has been approved by the Building Inspections Division and the recommendations set forth in the report (attached as Exhibit "B") will be enforced by that Division.

Approximately 40 cubic yards of soil will have to be removed from the subject parcel along the road in order to construct the driveway. The soil will be placed on another parcel in Shelter Cove outside the coastal zone (APN 109-201-14). (See attached letters of June 17 and June 25, 1996.)

Fire/Flood Hazards

The subject parcel is located in a high fire hazard area. The California Department of Forestry and Fire Protection (CDF) has asked that the applicant have access to the January 1, 1992 document "Project Review Input Basic To All Development Projects". This has been made an informational note in Exhibit A.

EXHIBIT NO. 5
APPLICATION NO.
A-1-HUM-96-58
CO. FINAL CONDITIONS AND FINDINGS (6 OF 9)

The subject parcel is located in a Flood Zone "D" on the Flood Insurance Rate Map (community-panel number 060060 1800 B) produced by the Federal Emergency Management Agency. Flood Zone "D" is defined as "areas of undetermined, but possible, flood hazards".

Natural Resource Protection/Biological Resources

Review of the South Coast Area Plan Resource Protection maps indicates that there are no resource protection policies that affect the subject property, but there is a Natural Resources zone directly to the west of the subject parcel. This area is primarily submerged and/or tidal lands located at the base of the bluff of the subject parcel. The proposed project is not expected to have any significant impact on the land zoned Natural Resources.

2. Zoning

The proposed development is consistent with the scenic values of the area and the purposes of the existing zone in which the site is located.

The subject parcel is currently zoned as Residential Single Family with a 5,000 square foot minimum lot size, Qualifying, and Design Review combining zones (RS-5-Q/D). The RS zone classifies "single family residential" as a principally permitted use. The Qualifying combining zone refers to Ordinance 1914. The Ordinance prohibits second dwelling units; temporary and/or recreational housing (tents, travel trailers, and motor homes), except as permitted under Section A314-37(A)(5) while constructing a residence; and accessory buildings, except as allowed pursuant to, or following the issuance of, a building permit for construction of the primary residence. The Design Review combining zone provides design review for conformance of new development with the policies and standards of the General Plan, and to provide for a design review process where neighborhoods within the same zone district desire to preserve or enhance the area's historical, cultural or scenic values. Staff has reviewed elevations submitted by the applicant and conducted a site visit and determined that the proposed project will be compatible with the surrounding homes.

According to Section A314-57(E), the following design review standards must be considered by the reviewing authority:

a) *Applicable Elements of the General Plan* - The subject parcel, according to the South Coast Area Plan, is not located in a Coastal View Area.

b) *Protection of Natural Landforms* - Only minor grading is proposed and the house will be located 20 feet from the edge of the bluff. (See the attached soils report dated August 10, 1995 and the accompanying letters of May 16, June 17, and June 25, 1996.)

c) *Exterior Lighting* - No exterior lighting is proposed.

d) *Landscaping* - No landscaping has been proposed.

e) *Underground Utilities* - All utilities will be underground.

EXHIBIT NO. 5
APPLICATION NO.
A-1-HUM-96-58
CO. FINAL CONDITIONS AND FINDINGS (7 OF 9)

f) *Setbacks from Property Lines* - The setbacks were found to be appropriate to protect scenic and visual qualities of the area since they conform to the setback and height limit requirements of the RS zone (see section 3 of this report).

g) *Off-Premise Signs* - The proposed project does not involve the location of off-premise signs.

f) *Building and Structural Design Standards* - Plans received by the Planning Division show that the proposed project complies with all of the building structural design standards for the following reasons: 1) the width of the building is at least 20 feet; 2) foundations for all residential and attached structures in Shelter Cove are required by the Building Inspection Division to meet the Uniform Building Code requirements of Seismic Zone IV; 3) exterior walls and roofing materials are not made of unfinished or galvanized metal; and 4) there is a minimum roof overhang of 12 inches. It has been made an operational restriction in Exhibit A that all galvanized metal flashing shall be painted to match the roof or exterior walls.

3. Development Standards

The proposed project conforms with all applicable development standards and requirements.

The proposed development conforms to the Development and Performance Standards for the zone. The following development and performance standards apply to the (RS-5-Q/D) zone (source: H.C.C. §A313-16).

	H.C.C. requirement	Proposed Project
Minimum Parcel Size:	5,000 square feet	±5,665 square feet
Minimum Lot Width:	50'	±55'
Lot Coverage:	max. 35%	±19%
Yard Setbacks:		
Front	2' min.*	±12'
Rear	10' min.	20' (to edge of bluff)
Side	5' min.	south: 5' north: ±15'
Building Height:	max. 35'	35'
Parking:	2 spaces min.	2 spaces

*Although the subject parcel does not have the 'S1' combining zone typical of those lots with the 2 foot front yard setback, the parcel is a part of the area included in the blanket variance approved in 1968. The parcels included in the blanket variance were originally marked on the assessor map pages with circles. The 'S1' combining zone was later adopted to replace the circles on the maps. Although the subject parcel does not have the combining zone for the two foot front yard setback, it does have the circle on the map. Staff has determined that the parcel was included in the blanket variance and that an error was made on the zoning maps when the 'S1' combining zone was added.

EXHIBIT NO. 5
APPLICATION NO.
A-1-HUM-96-58
CO. FINAL CONDITIONS AND FINDINGS (8 OF 9)

4. Public Health, Safety, and Welfare

Staff has determined that the proposed project will not be detrimental to the public health, safety and welfare since: all reviewing referral agencies have approved or conditionally approved the proposed project design; as conditioned, the proposed project is consistent with the general plan and zoning ordinances; and the proposed project will not cause significant environmental damage.

The Department of Public Works has noted that grading will occur in order to provide the driveway, parking, and building pad. The lot is about 6 feet above the road on the north end and 4 feet higher on the south end of the property. Public Works also noted that an encroachment permit will be required for the driveway and that all parking must be on-site. This has been included as an informational note in Exhibit A.

The Division of Environmental Health has no objection to the proposed project, provided all development is connected to community sewer and water per Community Service District requirements. The development will be served by Resort Improvement District No. 1.

5. Potential for Environmental Impact

The proposed project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15303, Class 3 of the CEQA Guidelines.

EXHIBIT NO. 6
APPLICATION NO.
A-1-HUM-96-58
APPEAL (1 OF 16)

Mr. Robert Merrill
California Coastal Commission
North Coast Division
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

I am appealing to the California Coastal Commission the Decision of the Humboldt County Planning Commission, approving the Gary Johnson Coastal Development Permit (CDP) 36-95 / Special Permit (SP) 30-95, to build a single family structure on Assessor Parcel 109-161-53, on property known as 40 Ridgeview Circle, Shelter Cove, California. This project is located within the Coastal Zone.

I appeal to the California Coastal Commission to initiate its own third party geological survey of a narrow bluff top lot 16, between Ridgeview Circle roadway and the precipitous seacliff face falling away to the Pacific ocean. I appeal to the California Coastal Commission to investigate the proposed building of a residence structure on a seacliff top, within the Area of Demonstration.

I am appealing based upon a failure to adhere to policy established in the HUMBOLDT COUNTY GENERAL PLAN, Volume II, SOUTH COAST AREA PLAN of the Humboldt County Local Coastal Program: April 1990:

THE COASTAL ACT AND SOUTH COAST CONCERNS

2.20 COASTAL ACT GOALS AND POLICIES

The state legislature by enacting the Coastal Act of 1975 adopted the following basic goals for the Coastal Zone:

(a) Protect, maintain, and, where feasible, enhance...the overall quality of the coastal zone environment and its natural...resources.

The appellant asserts that building the steel frame residence as proposed necessitates removal of protecting natural vegetation from the top of the seacliff bluff, destabilizing the bluff substrata, increasing the probability of landslide/erosion of the seacliff.

SOUTH COAST AREA DEVELOPMENT AND RESOURCE POLICIES

3.10 INTRODUCTION

...The Coastal Act requires that all development be subject to standards designed to protect natural and cultural resources and assure public safety.

The appellant asserts that building the steel frame two story residence would place a significant weight upon only moderately compacted strata forming the seacliff, thus risking failure in fracture of the bluff top, as can be seen on immediately adjacent

seacliff. Fracture of the strata, with further slumping, would hazard Ridgeview Circle roadway and its underlying sewer line, to the detriment of public safety.

3.28 HAZARDS

*** 30253 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 areas...

The appellant asserts that grading of the lot for foundation, and placement of the proposed structure, WILL contribute significantly to erosion, and the weight WILL contribute to geologic instability.

A. DEVELOPMENT POLICIES

New development shall be consistent with the adopted Humboldt County Safety and Seismic Safety element of the General Plan. Specifically, when siting new development, the Natural Hazards/ Land Use Risk Rating Matrix, Chapter 3 of Vol.I should be used in conjunction with plates I, II, & IV. Plates I and II are maps delineating seismic zones relating to earthquakes shaking as well as land stability and other natural hazard conformation. Plate IV defines the Alquist-Priolo special studies zone established by Chapter 7.5 Division Z of the California Resources Code.

Appellant asserts that in "siting (the proposed) new development, the Natural Hazards/ Land Use Risk Rating Matrix, Chapter 3 of Vol.I (were NOT) used in conjunction with plates I, II, & IV. Specifically:

B. HAZARDS

1. Hazards Review -- The County shall...require soil engineering and geological engineering investigations...for classes of development and hazard areas as shown in Table I (page 3-11...).

The appellant asserts that the required geological engineering investigation was NOT done/presented to the Planning Commission.

The (geological engineering investigation) report should consider, describe and analyze the following:

a. Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site;

The appellant asserts that the CIVIL engineer reports submitted do NOT include descriptions of the moderately compacted detritus from

the King Range of mountains, which are the substrata underlying Whale Point Court and Ridgeview Circle and its adjacent lots; nor is any mention made of the surface manifestation of the San Andreas fault line along Humboldt Loop road, immediately behind Whale Point Court and its very recent influence on all contiguous lots.

b. Historic, current, and foreseeable cliff erosion..

The CIVIL engineer reports submitted do NOT refer to the nearby house constructed on lot 14, on slumped erosion material evidencing historic seacliff failure; nor to obliteration of lots 9 through 14 along the former Beach Road and the road itself; nor the current evidence of erosion of the seacliff, vicinity of lots 20, 21 and 22; nor the unquestionable evidence of erosion all along the toe of the cliff. The civil engineer reports DO confirm that the area is seismically active and particularly susceptible to fracture and erosion of designated unstable strata.

c. Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features, such as bedding, joints, and faults;

The CIVIL Engineer reported: "I reviewed the above referenced building site for a SOILS investigation. I am furnishing this report to satisfy the grading requirements and SOILS report requirements that may be required by the County of Humboldt as part of any presite inspection that might take place for the residence. Observations of this inspection pertaining to the site SOILS are enclosed in this report."

"Geologic conditions, including...rock types and characteristics in addition to structural features, such as bedding, joints, and faults" included in addenda refer to "basal rock" visible along the shore as a rather thin underlayment, but NOT to the "Geologic conditions, including...structural features, such as bedding..." of substrata sediment which composes the bulk of the underlying structure of lot 16 and the whole of Ridgeview Circle and Whale Point Court, as required.

d. Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity;

The house on nearby lot 14 was built on seacliff landslide material slumped away from the bluff, evidencing seacliff failure. The very prominent "scoop" of the seacliff behind lots 20, 21 and 22 are the most telling evidence of past and potential landslide conditions. These two visible examples of past landslides are evidence of the inherent slope instability of the underlying substrata. The two examples of seacliff failure - landslide - straddle the Johnson lot 16 site, and evidence the potential of landslide of that lot bluff top with development placed on it.

e. Impact of construction activity on the stability of the site and adjacent area;

The substantial weight of a two story building on the demonstrated unstable substrata certainly has the potential of setting off other fracture failure, resulting in landslide, with probable failure of Ridgeview Circle road and the sewer line beneath it.

f. Ground and surface water conditions and variations, including hydrologic changes caused by the development (i.e....alterations in surface drainage);

Removal of the trees covering the lot 16 bluff top for foundation, will expose the subsurface to water infiltration and further the instability of the substrata. After construction, concentration of very heavy rain runoff from the building roof could further hazard the site to erosion, increased instability and landslide.

g. Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e. landscaping and drainage design);

Probably adequately addressed by the Civil Engineer report, given that construction practices are adhered to without reservation.

i. Potential effects of seismic forces resulting from a maximum credible earthquake;

Even the CIVIL Engineer report states: "This area of California is seismically very active and possibly subject to earthquakes of large magnitude which can produce significant ground shaking. This high to very high level of risk of seismic hazard is typical for Shelter Cove, and residents routinely assume this risk."

If it were a risk only to the residents on lot 16 I would hold my counsel. I fear it is a risk to the roadway, the sewer line, and to all households on Ridgeview Circle.

None the less, the report fails to address the "Potential effects of seismic forces resulting from a MAXIMUM CREDIBLE EARTHQUAKE;" My house across the street from the proposal - 55 Ridgeview Circle was totally destroyed by the April 1992 Mendocino quake, of only a 4.8 magnitude.

"The report should evaluate the off-site impacts of development (e.g. development contributing to geological instability on access roads)... The report should also detail mitigation measures for any potential impacts and should outline alternative solutions. The report should express a professional opinion as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the lifespan of the project. The report should use a currently acceptable engineering stability analysis method and should also

describe the degree of uncertainty of analytical results due to assumptions and unknowns."

The CIVIL Engineer reports provided to the Planning Commission do NOT "evaluate the off-site impacts of development (e.g. development contributing to geological instability on access roads)..."

The CIVIL Engineer reports provided to the Planning Commission do NOT "...detail mitigation measures for any potential impacts..." nor do they "...outline alternative solutions".

The CIVIL Engineer reports provided to the Planning Commission DO "...express a professional opinion as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the lifespan of the project", but the CIVIL Engineer professional opinion is NOT the GEOLOGICAL Engineer professional opinion called for by policy.

NO "...currently acceptable engineering stability analysis method" was referenced, nor did the CIVIL Engineer report "...describe the degree of uncertainty of analytical results due to assumptions and unknowns", as is required by policy.

3.28B Shoreline erosion

> New development on ocean front lots shall maintain a minimum structural setback defined as the area of demonstration, unless a report prepared consistent with the provisions of Appendix Chapter 70, Section 7006 of the UBC, as amended above, demonstrates that development at an alternate site will assure the stability and structural integrity of the project for its expected economic life.

The Planning Commission relied upon the CIVIL Engineer report that a setback of only 20 feet would meet this requirement. Reference was made to aerial photographs not available to the appellant or the Planning Commission for review and verification. The appellant did bring to the public hearing of the Planning Commission the video tape accompanying this appeal. The video tape was not reviewed at the public meeting, nor was it accepted by the Planning Commission when offered, for their later and private review. The statement of the CIVIL Engineer was taken as unsubstantiated fact and relied as the basis for approval in spite of the policy requirement for the geological investigation by a GEOLOGIST.

DEFINITIONS

"Area of demonstration of stability" - ...the area of demonstration of stability...includes the base, face and top of all bluffs and cliffs. The extent of the bluff top considered should include the area between the face of the fluff and a line described on the bluff top by the intersection of a plan included at a 20 degree angle from horizontal passing through the toe of the bluff or

cliff, or 50 feet inland from the edge of the cliff or bluff which ever is greater. The County may designate a greater area of demonstration or exclude development entirely in areas of know high instability.

The proposed new development on ocean front lot 16 is in the area of demonstration. "The area between the face of the bluff and a line described on the bluff top by the intersection of a plane inclined at a 20 degree angle from horizontal passing through the toe of the bluff or cliff" would fall far outside the lot 16 boundary.

The proposed new development on ocean front lot 16 is in the area of demonstration. The lot depth from the street curb (not the lot's front boundary line) is 55 feet to the seacliff escarpment. The proposed building is totally within, not set back from, the area of demonstration.

Humboldt County Seismic Safety and Public Safety Element pp. 49-50 includes Shelter Cove on Seismic Safety Map, Plate I. It designates Shelter cove to be area "3 = High Instability", wherein:

Single Family residences require:

Site investigation
Landslide Zone

Although "The County may designate a GREATER area of demonstration or EXCLUDE development entirely in areas of known high instability" the Planning Commission in this case has approved the construction WITHIN the area of demonstration, and IN an area of known high instability.

I am writing to request your intervention in such building because: The California Coastal Zone was established to protect diminishing coastal environs from ill advised development.

As a trained geologist, I had more than casual interest in strata and sub-strata of the immediate area. I paid a California licensed geologist to survey my lot in 1991, who verified that the set back of my house from the bluff was a safe distance, but he also spoke to the fact that those lots across the street were hazardous.

Sincerely,

William B. Rourke

William B. Rourke
55 Ridgeview Circle
Shelter Cove, CA 95589

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Evergreen, CO 80439

Accompanying:

Personal video of the subject area as an aid in appreciating the factors described herein.

Mr. Robert Merrill
California Coastal Commission
North Coast Division
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

References:
(a) Appeal Information Sheet
Local Coastal Program Development Permits
HG: 4/88

(b) HUMBOLDT COUNTY GENERAL PLAN, Volume II
SOUTH COAST AREA PLAN of the Humboldt County Local Coastal Program, April 1990

I have appealed to the California Coastal Commission, the Humboldt County Planning Commission decision, approving the Gary Johnson Coastal Development Permit (CDP) 36-95 / Special Permit (SP) 30-95, to build a single family structure on Assessor Parcel 109-161-53, on property known as 40 Ridgeview Circle, Shelter Cove, California. This project is located within the Coastal Zone.

I have appealed to the California Coastal Commission to initiate its own third party geological investigation of a narrow bluff top Lot 16, which is the "Area of Demonstration", between Ridgeview Circle roadway and the precipitous seacliff face falling away to the Pacific ocean.

My formal appeal was based upon a failure to follow POLICY set in the Humboldt County Local Coastal Plan (LCP), allowed by reference (a) when the local authority charges fees for appeals. This added material is supplemental, showing that evidence offered to Humboldt County Planning Commissioners, by a CIVIL engineer, in lieu of the required GEOLOGICAL investigation, had insufficient and inaccurate data, declarations and summaries. None the less, it was this CIVIL engineer data, declarations and summaries that were the basis for the Planning Commission's approval of the application.

The first document provided to me in preparation of a protest was the letter of Allan M. Baird, California Registered Professional Engineer, CIVIL No. 23,681, to Humboldt County Planning Department, of June 17, 1969; received by Humboldt County Planning Commission June 19, 1996. Quotations from within have my CAPS for emphasis:

> "I have reviewed your letter of June 7, 1996... In that letter YOU HAVE REQUESTED INFORMATION CONCERNING THE LOT GRADING that is to take place with the residence.
> "...we have determined the total amount of SOIL that will be excavated from this site will be approximately 40 cubic yards. This being the case, in my opinion, the proposed excavation by the contractor is both acceptable and necessary for the development of the lot."

There is no indication whatsoever in this or subsequent documents by CIVIL engineer Baird of the GEOLOGICAL investigation required by reference (b). It is precisely the geological inaccuracies and/or misleading views of a CIVIL engineer that show citizens' wisdom in establishing GEOLOGICAL inquiry as a matter of Coastal Plan policy. Planning Commissioners can not be misled by sticking to the policy.

The second document provided to me in preparation of a protest was the letter of CIVIL engineer Allan M. Baird to the County of Humboldt, Building Department, of January 25, 1991, Revised August 10, 1995; Received August 17, 1995.

I wish to note first that the copy of the letter provided to me for preparing a protest had no cover sheet. After the Public Hearing, I asked for copies of all documents pertaining to the application. The same letter of January 25, 1991, Revised August 10, 1995 and received August 17, 1995, provided this time, had a cover sheet and it was titled, PRELIMINARY ENGINEERING, GEOLOGIC R-2, SOILS REPORT. The cover sheet was marked received November 27, 1995, after my inquiries about the impending development and is GEOLOGIC aspects. One does make a silk purse of a sows ear. The SOILS REPORT cannot be made a GEOLOGIC investigation by addition of a cover sheet.

The important issues however are the body of the letter, and, again the quotations from within it have CAPS by me for emphasis:

> "I reviewed the above referenced building site for a SOILS investigation.
> "I am furnishing this report to satisfy the GRADING requirements and SOILS report requirements... I made a site inspection of said property off of Ridgeview Circle in Shelter Cove with the purpose of determining the suitability for construction. Observations of this inspection pertaining to the site SOILS are enclosed in this report."

Note: This CIVIL engineer report of the SOIL is not the GEOLOGICAL engineering investigation report of the STRUCTURE/SUBSTRATA of the site per Section 3.28, B., 1. of reference (b), nor does it fulfill those subsections a. through j. of same. Reference (b), Table I, requires a GEOLOGICAL investigation on both counts, that it is a single family residence sited in Landslide Zone 3, and that it is in the "Area of Demonstration".

> "The site is on the SOUTHERLY slope of the Coast Range Mountains at about 200 feet in elevation. It is located approximately 700 feet from the Pacific Ocean."

Note: The site is on the WEST NORTHWEST local slope of one local prominence on the Pacific Plate which is riding up (EAST NORTHEAST) and along (NORTHWEST) the WESTERLY, or, at best, WEST SOUTHWESTERLY slope of the North American Plate, Coast Range Mountains. The fact of plate separation by a major fault system, gives very significant emphasis to the site being in Landslide Zone 3 - High Instability, as shown by an enclosure of Baird's CIVIL, SOILS report.

Note: If the 200' elevation to 700' distance from the ocean were an accurate ratio, the angle of repose of the slumped material, broken away from Lot 16's seacliff would be less than 16 degrees. Even an untrained eye would estimate more than 45 degrees; more like the 70 degrees implied in the next paragraph.

> "The remainder of the property drops down sharply for approximately 200 ft. to the Pacific Ocean."

Note: The 200' elevation of Lot 16 is understated and the Lot being 700' distant from the ocean is overstated: that combination being self-contradictory to the seacliff having a face that "...drops down sharply...to the Pacific Ocean." Even an argument that the measurement is from the shoreline to the lot's street line, vice from the toe of the slope to the seacliff edge, does not compute.

> "SOILS from approximately two feet to three feet consist of dark coluvial (sic) SOIL; SUBSOIL below this is a light brown sandy clayey loam."

Note: I submit that the soils from approximately two to three feet consist of dark loam (sandy/clayey by definition), and the subsoil below this is the moderately compacted colluvium, of a substantial depth to a basal rock which rises only a few feet above MSL. The substrata colluvium is susceptible to fracture, slump and erosion. The SOILS report is NOT the GEOLOGIC investigation required.

> "There is a special study earthquake zone directly East of this site. I have attached copies of that as referenced in nature of the property in question appears to be stable."

Note: The very fact that Lot 16 is right at the boundary of the Alquist-Priolo Special Study Zone is itself evidence of earthquake susceptibility of the Lot. The CIVIL engineer report also included the GEOLOGIC MAP from reference (b), showing Lot 16 to be in "Slope Stability 3 - High Instability". It is a factual contradiction of, "...the property in question appears to be stable." It is also the reason why the required GEOLOGIC engineering investigation should be performed by a California Professional GEOLOGIC Engineer.

> "There is no indication in the surrounding area of any slumps, faults, or springs that would be detrimental to the home site."

Note: This is a factually and observably inaccurate statement. The recent and very obvious fracture of the colluvium substrata, which underlies all Ridgeview Circle and Whale Point Court lots, shows dramatic slumping behind lots 20, 21 and 22. Also the house built on Lot 14 is on slumped colluvium substrata, which fractured away from the seacliff. The remaining bluff top is concreted car port.

> "This area of California is seismically very active and possibly subject to earthquakes of large magnitude which can produce significant ground shaking."

Note: The house directly opposite Lot 16 at 55 Ridgeview Circle was destroyed in the April 1992 Mendocino earthquake. That structure survived the first magnitude 7.1 shock, but was destroyed by later mid-morning after-shock of 6.5 magnitude. This fact alone requires California Professional GEOLOGICAL Engineer investigation.

> "This high to very high level of risk of seismic hazard is typical for Shelter Cove, and residents routinely assume this risk."

Note: Having been resident since the Mendocino earthquake, talking to would-be land/home owners, I vouch that many have decided not to buy/build at Shelter Cove. Our insurance rebuild was a matter of economics - a cash payoff was a loosing proposition. The residents will assume risk only when they have professional evidence that the risk is not extraordinary. I had the advice of one of California's Professional GEOLOGICAL Engineers, who advised me that those lots across the street were not safe. The rebuild of my destroyed house included all the latest seismic engineering planning, material and construction precisely because of professional GEOLOGICAL advice.

> "...it has been determined that noticeable changes in location, or configuration, of the bedrock sea cliff in the area for the past fifty years has not occurred."

Note: This is a factually and observably inaccurate statement. The old road accessing the former ship's pier has been obliterated. An extensive rock and concrete retainer wall has been constructed that preserves the present boat launch access. A swimming pool that had been behind Wayne White's house has been obliterated. The history of extensive damage to the sewage treatment facility seacliff has been documented in the Corps of Engineer's design and contracts to repair and defend against further bedrock cut-back. The lots that are currently being considered for the "Institution" and the lots that had been along the extension of Beach Road, which have also been obliterated, show the most dramatic changes in location and configuration bedrock and associated seacliff in the area within the past fifty years.

> "This is due to the tough, erosion resistant characteristics of the basal bedrock which underlies the topical SOILS at seaside bluff sites."

Note: This is a factually and observably inaccurate statement. A basal bedrock does not underlie topical soils of Ridgeview Circle and Whale Point Court lots. Basal bedrock is of varying thickness out of the sea, on the order of tens of feet above sea level. The bulk of substrata thickness underlying the topical soil down to bedrock, is colluvium, only moderately compacted, which is very susceptible to fracturing, slumping and erosion, as is observable. I brought in coffee cans of the substrata, obtained by simply scraping the edge of the cans below the topical soil and above the "basal bedrock". Neither the scraped material nor the video of it brought to the public hearing would be viewed by the Commissioners.

> "The basal rock is very resistant to direct ocean waves forces, and offers protection for the bluff face above at the site."

Note: This is a factually and observably inaccurate statement. A view of the destruction of basal rock all along the Shelter Cove water edge, especially at the sewage plant, shows how incredibly forceful ocean wave action is. More to the point, however, is the fact that basal rock is not the major substrata in question. The major substrata is moderately compacted colluvium, which is quite susceptible to earth shaking fracturing, with resulting slumping, as can be seen on both sides of Lot 16. The major substrata is moderately compacted colluvium, which is quite susceptible to water erosion, especially from winter season storms, and not protected from erosion by basal rock.

> "From published reports, the average rate of bluff retreat in the area appears to be on the order of less than twenty feet in the past fifty or so years. In certain areas along the coast, this rate has been exceeded in several instances in the past due to extreme wave action from very severe storms."

Note: The published reports referred to were not available to me, nor were they presented at the public hearing (although referred to), nor were they asked for by the Planning Commissioners. One must watch "averages". The CIVIL engineer report acknowledges that "In certain areas along the coast, this rate has been exceeded in several instances..." There is observable evidence of greater than "average" bluff retreat on both immediate sides of Lot 16.

> "Within the area of the subject lot, there appear to be no bank/slope instability hazards that would likely affect the site."

Note: Such an unqualified statement, in the face of evidence to the contrary on both sides of Lot 16, shows exactly why the GEOLOGICAL investigation that is required by reference (b) should be done.

The third document provided to me in preparation of a protest was the letter of CIVIL engineer Allan M. Baird to the Humboldt County Planning Department, of May 16, 1996; Received May 21, 1996. Also, the quotations from within have CAPS by me for emphasis.

> "...the front 15 feet will slope down towards the (Ridgeview Circle) road at an 8% slope. The flatter portion of the lot behind this is approximately 50 feet (front to back) and will slope toward the road at a 1% slope"

Note: The depth of Lot 16 from the Ridgeview Circle road curb to the seacliff edge is only 55 feet. The stated measures belie fact.

> "The remainder of the lot towards the rear drops down at an average 70% slope to the Pacific Ocean."

Note: I concur with Mr. Baird's observation of 70% angle of repose for the slumped material below the seacliff edge. Thus, for a 70% slope to his stated elevation of 200', the lot's seacliff edge must be just shy of 73' from the shoreline. It is not. If the lot he stated is 700' from the shoreline, with a rear slope of 70%, it too must be at 1922.8' elevation. It is not. The CIVIL engineer data proffered are in error.

> "Bedrock erosion at the surfline is potentially the most substantial geologic hazard affecting the project site."

Note: After having stated earlier, "...it has been determined that noticeable changes in location, or configuration, of the bedrock sea cliff in the area for the past fifty years has not occurred", this is one more self-contradiction showing exactly why required GEOLOGIC investigation should be made. Further, such a statement about bedrock erosion, when the bulk of the seacliff is made up of moderately compacted colluvial detritus also show exactly why the required GEOLOGIC investigation should be made by a GEOLOGIST.

> "Cliff erosion in the Shelter Cove area generally occurs along northeast trending fractures within the basaltic rock. these (sic) zones of weakness represent either joint systems or ancient faults. There are no major fracture systems on the proposed development site and therefore no apparent avenues of significant land erosion."

Note: This effort at geologic literacy is beyond the pale, in view of the basic substrata being compacted detritus, lending itself to substantial erosion from any direction from which water flows. It further demonstrates that the required GEOLOGIC investigation must be accomplished by a California Registered Professional GEOLOGIST.

> "Large waves generated by storms coinciding with high tides and storm surges have produced accelerated sea cliff erosion on many portions of the Northern California coastline."

Note: The statement directly contradicts the CIVIL engineer's later

> "...analysis of aerial photographs dated 1941, 1966, 1974, 1980, 1981, and 1988 indicate very little bluff retreat in the past approximately 100 years at the project."

Note: I don't know who analyzed which of the listed aerial photos, but having been a beach terrain hydrographer/photo-interpreter, I would like to see the listed series of aerial photos. The least sophisticated observer of the shoreline basal rock and overlying seacliff topography, would interpret extensive erosion and bluff retreat in most specific areas of Shelter Cove. Why did not such an extensive analysis include much more recent aerial photos?

> "Tuttle (1982)...concluded that 'measurements and study of the 1871 map and 1941 aerial photos show very little change along this section' and that 'three measurements were made on three

different maps from aerial photos over a 96-year period. The measurements varied six feet and the accuracy was considered significant to about ten feet'".

Note: Tuttle would no doubt agree that 1871 maps are hardly quality comparisons to aerial photographs made 70 years later, but, in any case, we do not know what "section" it was that he was studying. In 1982 it probably was the boat launch or airport, but limited to monuments established in the earlier survey. Lets be serious and remember that the Wright brothers glider flights were only 93 years ago - Kitty Hawk on the EAST coast. I am not aware that any aerial photographs were made on any of those first flights. Differentials of 10 feet to 55 feet on the Lot 16 bluff top is significant.

"There are not indications of landward erosion during historic times."

Note: Of all the inaccuracies contained within the three documents proffered to the Planning/Building Department, and upon which the Planning Commission relied for approval of the Johnson application, this one defies credibility. Photographs of the early ship's pier in the vicinity of the present boat launch verify landward erosion of the seacliffs on the South coast of the Shelter Cove land mass. Early pictures of the landward extension toward the buoy from Mall Combs Park verify landward erosion from the Southwest, as does the missing swimming pool at the Wayne White house, and the gully near Seal Rock which threatens to undermine Lower Pacific. The costly, extensive erosion barrier built at the direction of the Army Corps of Engineers to prevent loss of the sewage treatment plant verifies landward erosion from the Northwest. The obliteration of those lots formerly along the extension of Beach Road and the loss of the road itself verifies landward erosion from the West. There is more important evidence of landward erosion at the toe of the seacliff, immediately below Lot 16, which is significant.

"The western edge of the property is well buttressed by competent bedrock..."

Note: The edge is really facing Northwest, and its bedrock rises from the sea only tens of feet at the toe of the seacliff. In fact the bulk of the moderately compacted colluvium detritus forming the substrata underlying Lot 16 can be considered to be buttressed only by an improbable guarantee on no more earthquakes or winter rains.

"...and there are not indications of soil erosion on the development or adjacent lots."

Note: SOIL from Lot 16 runs down the curb edge of Ridgeview Circle after each and every rain. The ocean edge of Lot 19 is retained by tree root networks on the bluff surface and face. Removal of trees and their root networks will remove anchoring holding the remaining lot material in place. It is not the SOIL that is of concern. The underlying colluvium material, only moderately compacted, and its susceptibility to all shake induced fracture, as well as erosion,

would be of concern to a GEOLOGIST. To say that the house built on Lot 14, on slumped seacliff material, does not indicate erosion is wrong. To say that the deeply scalloped seacliff and lower slumped material in the vicinity of Lots 20, 21, and 22 are not indications of erosion is dangerously inaccurate. To limit the statements to "adjacent" lots in the strictest sense is also expressly inaccurate and begs the evidence of erosion in the material that underlies all the lots on Ridgeview Circle and Whale Point Court. A entire grove of trees along Humboldt Loop Drive, below Whale Point Court, rooted in the very same colluvium material that underlies Lot 16, has the "leans" because erosion of the material weakened the root network.

> "In light of this evidence, it is my (CIVIL) opinion that this structure may be safely located within 20 feet of the bank at the rear of the lot. I do not feel that the requirements imposed by the county's "Geologic Hazards Regulations" need be adhered to in order to reasonably insure the geologic stability of this residence."

Note: The essence of these inaccuracies is that a CIVIL engineer should not be the source of dismissing "...the requirements IMPOSED by the county's 'Geologic Hazards Regulations'... The particular site, in what is stated to be an especially seismically active area requires a California Registered GEOLOGICAL Engineer investigation. I would accept such a third person's professional judgment.

These inaccuracies indicate that your intervention in assuring that the POLICY required GEOLOGICAL investigation is done assures that: "The California Coastal Zone was established to protect diminishing coastal environs from ill advised development".

Consider that a winter rain accumulation of ground water around the proposed building, creating further slumping, would quickly create the same situation that now exists on Shelter Cove Road just below the intersection with Toth road, where fracturing of the moderately compacted detritus, and its erosion, threatens the roadway itself. I am concerned that when the fracture/erosion of Parcel 109-161-53 proceeds to undermine Ridgeview Circle, it will threaten the sewer line underneath the street, with far more significant damage.

Sincerely,

Bill Rourke

William B. Rourke
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Mr. Robert Merrill
California Coastal Commission
North Coast Division
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References:
(a) APPEAL INFORMATION SHEET
LOCAL COASTAL PROGRAM DEVELOPMENT PERMITS
HG: 4/88
(b) HUMBOLDT COUNTY GENERAL PLAN, Volume II
SOUTH COAST AREA PLAN of the
Humboldt County Local Coastal Program, April 1990

A formal appeal per reference (a), based upon a failure to follow the reference (b) LCP POLICY has been filed. This is supplemental information, relating to the Planning Commissioners' acceptance of inaccurate and false testimony at the public hearing, and their concurrent refusal to receive/consider appellant's evidence offered in the one and same public hearing. This supplemental information further illuminates certain problems of that public hearing on CDP 36-95/SP 30-95, Lot 16 application, including due process policy.

I initiated an appeal requesting your intervention in such building because: The California Coastal Zone was established to protect diminishing coastal environs from ill advised development. This is an ill advised location for a residence.

The earth material underlying Lot 16 has fractured, broken away and massively slumped down. The resultant bluff is very steep. Some numbers of nearby lots to the north, show more recent fracture away from Lots 19, 20 and 21. This fact was pointed out to the Planning Commissioners. A video tape showing physical evidence of the fact was offered to them. The Commission declined to view it.

The earth material which has broken away from Lot 16 has massively slumped because the structure is composed of detritus that is only moderately compacted. I brought three coffee cans of the material, along with photographs showing me scraping the material from the underlying structure. There was no need for a geologist's hammer. Just scraping with the edge of a coffee can broke away the material that underlies Lot 16. The Commissioners declined to view the cans of material or the photographs of where the samples came from.

The testimony pointed out that a series of lots, formerly bordering the lower reaches of Beach Road, and composed of the same detritus, and the road itself built on the same detritus bordering Black Sand Beach, no longer exist. The bulk of the road has been obliterated; the lots severely fractured, slumped and eroded; washed away by the sea. One member of the applicant's team stated that the lots were two (2) to three (3) miles away, which is factually in error. None the less, the Commissioners accepted the false statement, even when

they had in their hands the CIVIL Engineer's report, with included maps showing the distance to be from 1,050 FEET through 1,600 FEET.

In response to warnings of the California Coastal Commission, and as a trained geologist, I had more than casual interest in strata and sub-strata of the immediate area. I paid a California licensed geologist to survey my lot, prior to buying it in 1991. A geology professional verified that the set back of my house from the Lot 16 sea cliff was a safe distance. He also spoke to the fact that the lots across the street, including Lot 16, were a geological hazard to building.

The Catalogue(s) of U.S. Geological Survey Strong-Motion Records, (years) list numerous earthquake episodes in the Shelter Cove area. Almost every home on the Ridgeview Circle, Whale Point Court roads, on the bluff top in contention, was damaged in three April, 1992 earthquake episodes. The house directly across the street from the Parcel 109-161-53 in question, 55 Ridgeview Circle, was destroyed in that April, 1992 Mendocino earthquake, in spite of the fact that it had been judged sound by Humboldt County officials and the home loan's appraiser.

I have appealed to the California Coastal Commission the Decision of the Humboldt County Planning Commission, approving the Gary Johnson Coastal Development Permit (CDP) 36-95 / Special Permit (SP) 30-95, to build a single family structure on Assessor Parcel 109-161-53, on property known as 40 Ridgeview Circle, Shelter Cove, California. This project is located within the Coastal Zone.

I have appealed to the California Coastal Commission to initiate its own third party geological survey of a narrow bluff top lot 16, between Ridgeview Circle roadway and the precipitous seacliff face falling away to the Pacific. I have appealed to the California Coastal Commission to investigate the proposed building of a residential structure on a seacliff top, within the Area of Demonstration. An accumulation of ground water around the proposed building, creating further slumping, would quickly create the same situation that now exists on Shelter Cove Road just below the intersection with Toth road. Fracturing of that moderately compacted detritus and ongoing erosion of those fractures threatens the very roadway itself. It is precisely because of the risk that erosion of Lot 16 undermining Ridgeview Circle, and hazarding the sewer line beneath the street, that I have appealed to the Coastal Commission. I will abide by the view of a third party Professional California Registered Geologist.

Sincerely,

William B Rourke

William B. Rourke
55 Ridgeview Circle
Shelter Cove, CA 95589
(707) 986-7798

Post Office Box 3309/196 JEFFCO 65
Evergreen, CO 80437
(303) 674-1639, (303) 556-2920

SUPPLEMENTAL INFORMATION

For Planning Commission Agenda of:
August 8, 1996

[ ]	Consent Agenda Item	}	
[ ]	Continued Hearing Item	}	
[x]	Public Hearing Item	}	No. 1
[ ]	Department Report	}	
[ ]	Old Business	}	

Re: Johnson, Gary; Case No. CDP-36-95/SP-30-95; APN 109-161-53, Shelter Cove Area

Attached for the Planning Commission's record and review is (are) the following supplementary information item(s):

1. Copy of Preliminary Engineering Geologic Report (R-2) prepared for Gary Johnson by A.M. Baird Engineering and Surveying dated August 10, 1995 (last revision).

2. Copy of letter from A.M. Baird Engineering dated May 16, 1996 addressing the Area of Demonstration requirements and potential for landward bluff retreat.

3. Copy of letter from A.M. Baird Engineering dated June 17, 1996 describing the extent of excavation proposed.

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (1 OF 15) INVESTIGATION

PRELIMINARY ENGINEERING

GEOLOGIC R-2

SOILS REPORT

PREPARED FOR

GARY JOHNSON APN 109-161-53

HUMBOLDT COUNTY, CALIFORNIA

PREPARED BY

A.M. BAIRD
Engineering & Surveying
1101 Main St., P.O. Box 396, Fortuna, CA 95540, (707)725-5182

A.M. BAIRD
Engineering & Surveying
1100 MAIN STREET — P.O. BOX 396, FORTUNA, CA 95540 — (707) 725-5182
CONSULTING — LAND DEVELOPMENT — DESIGN — SURVEYING

January 25, 1991
Revised August 10, 1995

County of Humboldt
Building Department
3015 H Street
Eureka, California 95501

ATTN: Todd Sobolik

RE: Gary Johnson
APN 109-161-53
Block 149 Lot 16
Soils Report
911269

Dear Mr. Sobolik,

Pursuant to a request by Mr. Gary Johnson, I reviewed the above referenced building site for a soils investigation. This is in reference to a proposed residence for the parcel. As to whether the application of the residence has been officially submitted to the Building Department is not known to me at this time. I have not reviewed a specific foundation plan for this residence.

I am furnishing this report to satisfy the grading requirements and soils report requirements that may be required by the County of Humboldt as part of any presite inspection that might take place for the residence. I made a site inspection of said property off of Ridgeview Circle in Shelter Cove with the purpose of determining the suitability for construction. Observations of this inspection pertaining to the site soils are enclosed in this report. I inspected the site on January 17, 1991, and again during the last week of July 1995.

SITE DESCRIPTION

The site is on the southerly slope of the Coast Range Mountains at about 200 feet in elevation. It is located approximately 700 feet from the Pacific Ocean. Access to the building site is off of Ridgeview Circle.

I have attached a site plan for reference to the parcel size. I have attached an assessor's parcel map showing relationships of access road and the parcel size.

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (3 OF 15) INVESTIGATION

At the front of the lot (on Ridgeview Circle) there isan existing 1:1 cutbank which is approximately three feet in height. Behind this, the lot slopes away from Ridgeview Circle at a +/- 5% slope, for approximately 60 feet. The remainder of the property drops down sharply for approximately 200 ft. to the Pacific Ocean.

SITE, SOIL, AND GEOLOGIC CONDITIONS

Cutbanks in the vicinity have been observed, and test holes have been dug. The topsoil consists of 6" to 12" of dark sandy loam. Soils from approximately two feet to three feet consist of dark coluvial soil; subsoil below this is a light brown sandy clayey loam.

There is a special study earthquake zone directly East of this site. I have attached copies of that as referenced in nature of the property in question appears to be stable. There is no indication in the surrounding area of any slumps, faults, or springs that would be detrimental to the home site.

This area of California is seismically very active and possibly subject to earthquakes of large magnitude which can produce significant ground shaking. This high to very high level of risk of seismic hazard is typical for Shelter Cove, and residents routinely assume this risk.

In recent studies of coastal erosion rates for this area, it has been determined that noticeable changes in location, or configuration, of the bedrock sea cliff in the area for the past fifty years has not occurred. This is due to the tough, erosion resistant characteristics of the basal bedrock which underlies the topical soils at seaside bluff sites. This basal bedrock is very resistant to direct ocean waves forces, and offers protection for the bluff face above at the site.

At present, the most active erosion process attacking the coast at Shelter Cove is slumping of the marine terrace deposits as a result of concentrated runoff discharging down the face of the bluffs, large wave run-up washing up the face of the bluffs and/or ocean spray attacking the bluffs. From published reports, the average rate of bluff retreat in the area appears to be on the order of less than twenty feet in the past fifty or so years. In certain areas along the coast, this rate has been exceeded in several instances in the past due to extreme wave action from very severe storms.

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (4 OF 15) INVESTIGATION

Away from the coastline, in the hilly portion of Shelter Cove and southwest of the actual coastal range itself, the principal erosion process is that of concentrated runoff draining across the sloping topography. Rain runoff is gathered and carried seaward via a drainage system which appears to be highly structurally controlled. The actual amount of erosion on any given site within this area is dependent on the amount of moisture received, the amount and type of vegetation present, the slope of the land surface, and the type and amount of soil cover present.

Within the area of the subject lot, there appear to be no bank/slope instability hazards that would likely affect the site. Note that Ridgeview Circle has been in place some thirty years, and only shows minor settling cracks related to settling of the underlying road bed itself.

CONCLUSIONS AND RECOMMENDATIONS

In my opinion soils of the proposed building site are capable of supporting a load of 1,000 pounds p.s.f.. A two story single family residence is a satisfactory use for this site provided that considerations are given to the recommendations presented herein.

1) Gutters are to extend along all roof lines and lead to downspouts, in turn, downspouts should lead to pipes carrying the roof runoff away from the building site and away from areas of any fill or foundations which may adversely affect the site soil.

2) All surface runoff should be controlled to flow and drain away from the foundation and site preferably to the West. Surface water flow should be directed offsite in a non-erosive manner.

3) If any fill or cutbanks are to be installed they are to be constructed in conformance with Chapter 70 of the 1991 Uniform Building Code.

4) All existing and proposed fill and cutslopes are to be revegetated to prevent erosion, this is to be done to the satisfaction of local building officials. Protection of the slopes and bluffs is to be installed as soon as practical and prior to fall rains.

5) If cutting or grading is to be done at a depth greater than 10 feet, this office should be contacted for further specific recommendations.

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (5 OF 15) INVESTIGATION

6) The foundation should be extended into natural ground. Footings should be at least 18 inches below adjacent surface. The horizontal distance from the bottom of any footing to adjacent ground surface shall not be less than shown in figure 70-2, 1991 Uniform Building Code. Additionally, no structure should be placed within 20 feet of the edge of the steep slope facing the Pacific Ocean.

7) Spread footings and foundation walls should be reinforced and be at least 12" wide for a one story and 15" wide for two story residences. Floor slabs should be reinforced by #3 Reinforcing Bars at 24' c.c. each way and be underlying by at least 4" of class 2 aggregate base to act as a capillary moisture break, underlying by a vapor barrier. A sand blanket of 1 1/2" to 2" should be placed over the vapor barrier to facilitate the placement of concrete.

8) All foundation design and construction shall be in conformance with Chapter 29 of the Uniform Building Code. All footings are to meet the areas requirements for seismic criteria, as required by the current Uniform Building Code. When at such time building plans are submitted, review of the foundation should be made and more detailed discussion of the footing design is possible at that time.

It was assumed that the existing test holes are representative of subsurface conditions throughout the site. If the proposed construction is modified, or resited, or if it is found during construction that subsoil conditions differ from those described, the conclusions and recommendations of this report should be considered invalid unless the changes are reviewed and the conclusions and recommendations are modified or approved in writing.

If you have any questions regarding this report, please feel free to contact me at 725-5182.

Sincerely,

Allan M. Baird
Principal Engineer

TOR/sm

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (6 OF 15) INVESTIGATION

1100 Main Street
Fortuna, CA 95540
(707) 725-5182

A.M. BAIRD
Engineering & Surveying

P.O. Box 396
Fortuna, CA 95540

SUBJECT SITE PLAN JOB NO. 911269

BY TOR DATE 1-91 CLIENT G. JOHNSON CHECKED BY _____ APPROVED BY _____

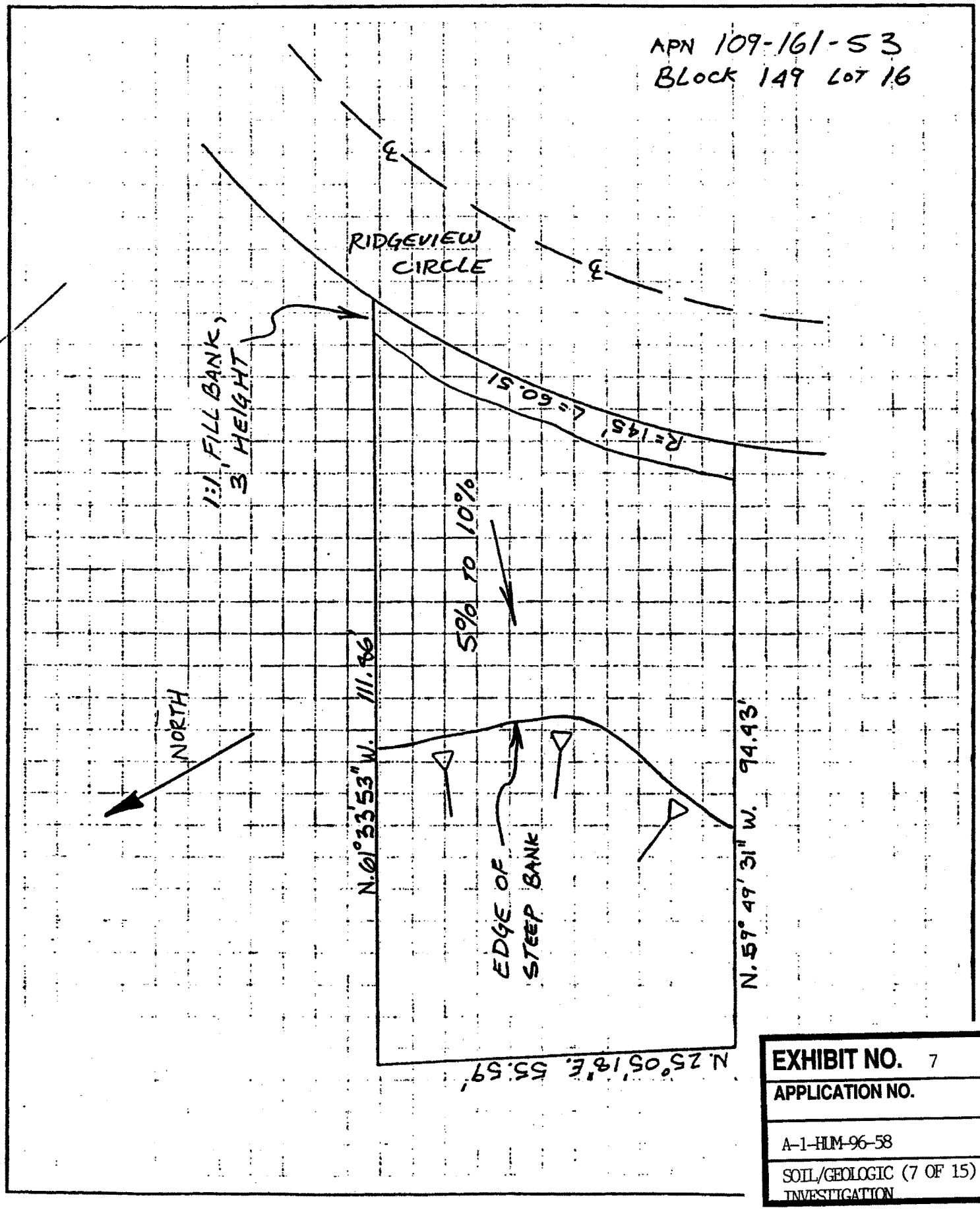
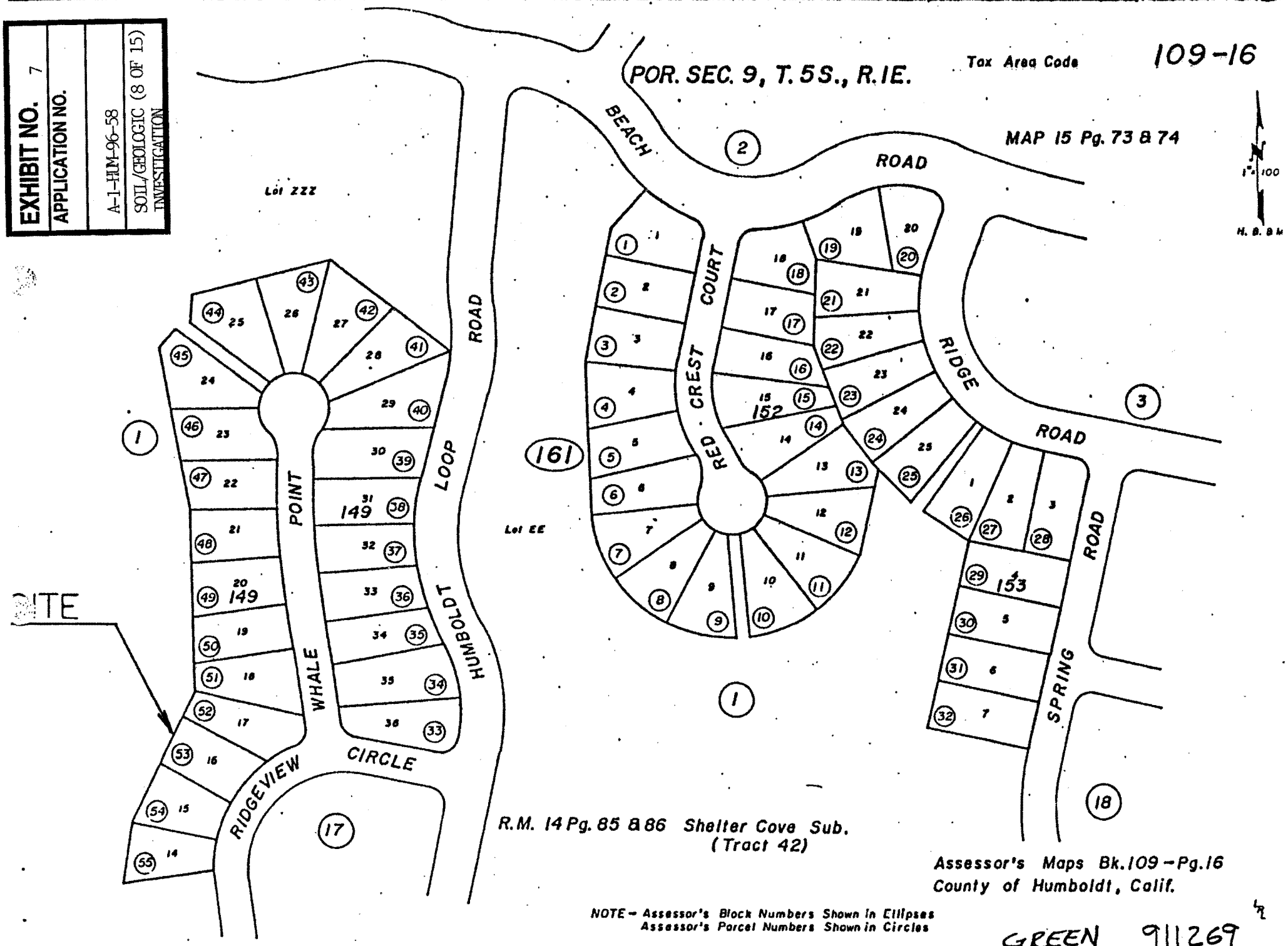


EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (7 OF 15) INVESTIGATION

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (8 OF 15) INVESTIGATION



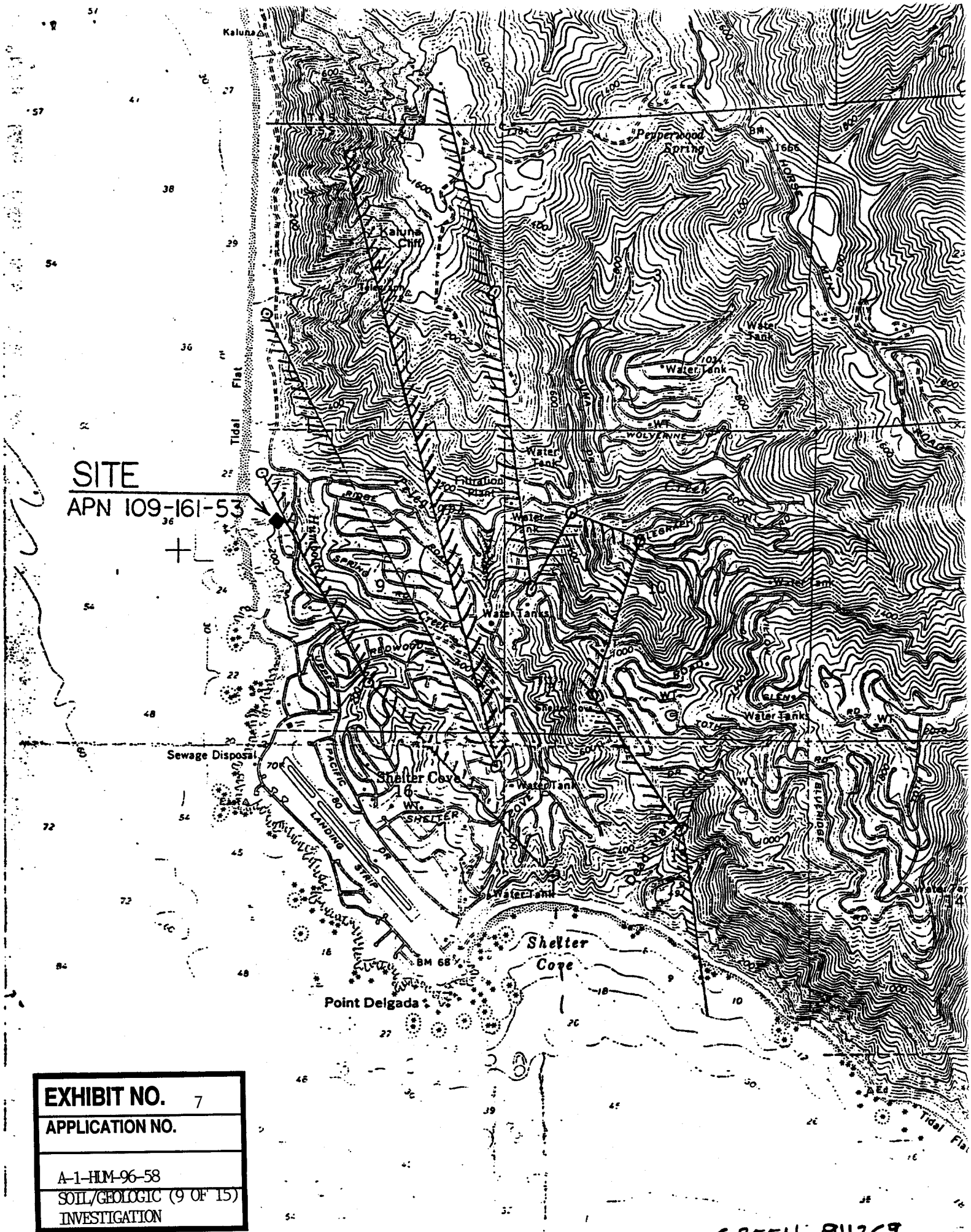


EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (9 OF 15) INVESTIGATION

GREEN 911269

GENERAL PLAN
GEOLOGIC MAP

MAP 3 OF 5
(Scotia to Garberville)

SLOPE STABILITY

3 HIGH INSTABILITIY

2 MODERATE INSTABILITIY

1 LOW INSTABILITY

STABILITY BOUNDARIES

——— KNOWN

— — — DASHED WHERE INFERRED

..... DOTTED WHERE CONCEALED

—?—?— QUESTIONED WHERE UNCERTAIN

FAULT

——— KNOWN

— — — DASHED WHERE INFERRED

..... DOTTED WHERE CONCEALED

—?—?— QUESTIONED WHERE UNCERTAIN

——— THRUST FAULT

SHEAR ZONE

o———o *ALQUIST-PRIOLO SPECIAL STUDY ZONE BOUNDARY.

0 inch 1

0 mile 1

Humboldt County
Planning Department

*FOR SCHEMATIC
SEE OFFICIAL M

PLANNING CO
Approved on 11

BOARD of SUF
Adopted on 12-

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC(10 OF 15) INVESTIGATION

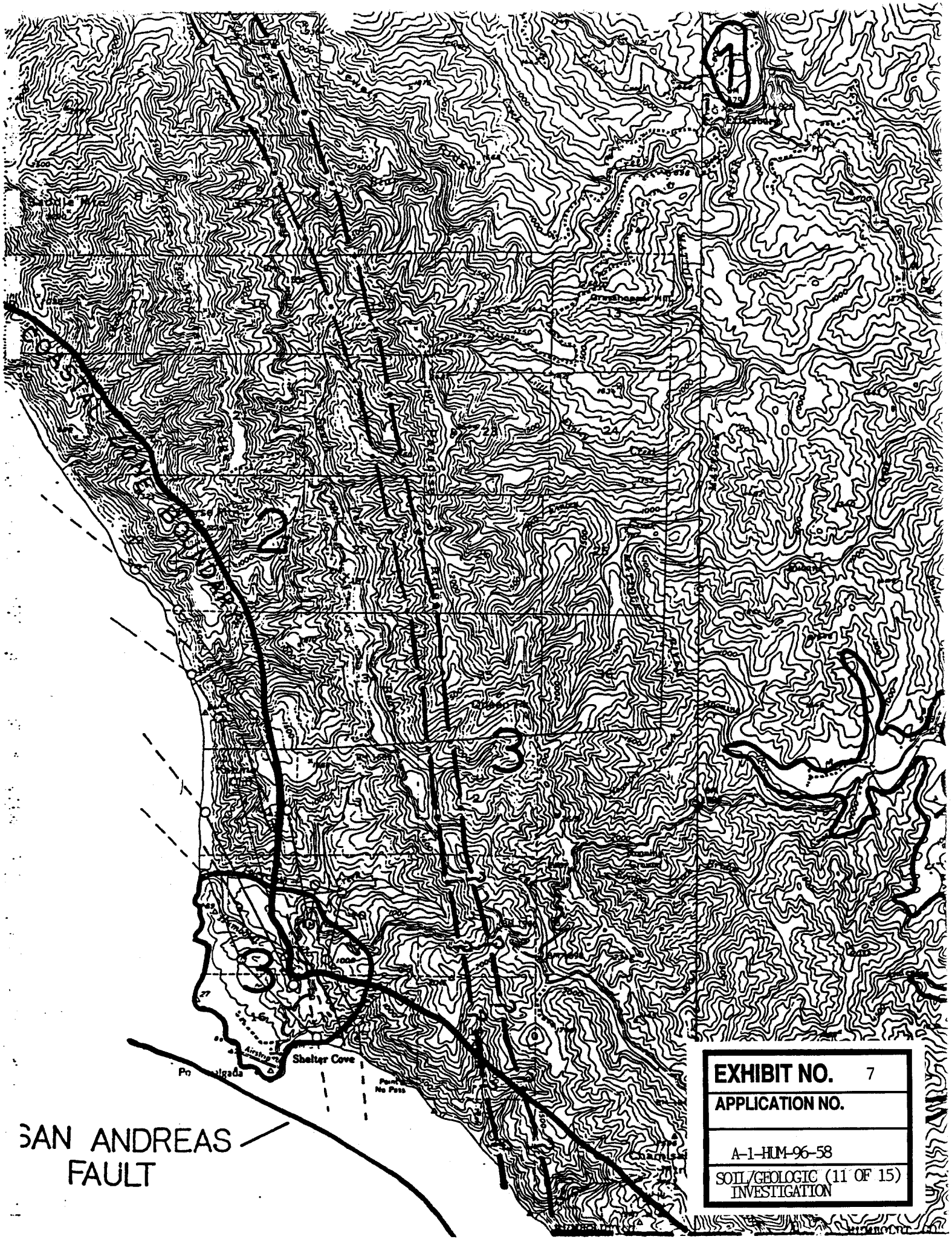


EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (11 OF 15) INVESTIGATION

A.M. BAIRD
Engineering & Surveying

1100 MAIN STREET — P.O. BOX 396, FORTUNA, CA 95540 — (707) 725-5182

CONSULTING — LAND DEVELOPMENT — DESIGN — SURVEYING

May 16, 1996

Humboldt County Planning Department
3015 "H" Street
Eureka, California 95501

ATTN: Erik Pearson

RE: Woods/ Johnson
Single Family Residence
APN 109-161-53
Block 149 Lot 16
911269

Dear Mr. Pearson:

In regards to the Humboldt County Planning Department's "Conditions of Approval" concerning the above referenced project, I have investigated the site and surrounding area. I have reviewed the counties' requirements concerning the "Area of Demonstration of Stability".

When construction grading is completed for this residence, the front 15 feet will slope down towards the road at an 8% slope. The flatter portion of the lot behind this is approximately 50 feet (front to back) and will slope toward the road at a 1% slope. The remainder of the lot towards the rear drops down at an average 70% slope to the Pacific Ocean.

I have reviewed plans for the proposed residence; the back of the residence be set back 20 feet from the edge of the previously mentioned bank at the rear of the lot.

Bedrock erosion at the surfline is potentially the most substantial geologic hazard affecting the project site.

Cliff erosion in the Shelter Cove area generally occurs along northeast trending fractures within the basaltic bedrock. these zones of weakness represent either joint systems or ancient faults. There are no major fracture systems on the proposed development site and therefore no apparent avenues of significant land erosion.

Large waves generated by storms coinciding with high tides and storm surges have produced accelerated sea cliff erosion on many portions of the Northern California coastline. Although not as well documented, tsunamis generated by earthquakes, can also produce coastal erosion.

Evaluations of old maps and surveys dating back to 1871 and analysis of aerial photographs dated 1941, 1966, 1970, 1974, 1980, 1981, and 1988 indicate very little bluff retreat in the past approximately 100 years at the project. Tuttle (1982) in his investigation of coastline retreat at Shelter Cove, has concluded that "measurements and study of the 1871 map and 1941 aerial photos show very little change along this section" and that "three measurements were made on three different maps from aerial photos over a 96-year period. The measurements varied six feet and the accuracy was considered significant to about ten feet".

There are not indications of landward erosion during historic times. The western edge of the property is well buttressed by competent bedrock and there are not indications of soil erosion on the development or adjacent lots.

In light of this evidence, it is my opinion that this structure may be safely located within 20 feet. of the bank at the rear of the lot. I do not feel that the requirements imposed by the county's "Geologic Hazards Regulations" need be adhered to in order to reasonably insure the geologic stability of this residence.

If you have any questions or comments regarding this review, please feel free to contact me at 725-5182.

Sincerely,

Allan M. Baird
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ALLAN M. BAIRD
No. 23,681
EXP. 12-31-97
CIVIL
STATE OF CALIFORNIA

TOR/jb

911269.sr

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (13 OF 15) INVESTIGATION

A.M. BAIRD
Engineering & Surveying

1100 MAIN STREET — P.O. BOX 396, FORTUNA, CA 95540 — (707) 725-5182

CONSULTING — LAND DEVELOPMENT — DESIGN — SURVEYING

June 17, 1969

Humboldt County Planning Department
3015 "H" Street
Eureka, California 95501

ATTN. Erik Pearson

Re: Johnson
APN 109-161-53
91-1269

Dear Mr. Pearson

I have reviewed your letter of June 7, 1996 to Mrs. Connie Woods regarding the above referenced project. In that letter you have requested information concerning the lot grading that is to take place with the residence.

From discussions with the contractor, Mr. Charlie Woods, we have determined the total amount of soil that will be excavated from this site will be aproximately 40 cubic yards. This soil will be removed from this site and trucked to another project location in Shelter Cove. The work at this site involves only excavation and will be performed in accordance with Section 3306 of the 1994 building code; and as such is exempt from the necessity of a permit. This being the case, in my opinion, the proposed excavation by the contractor is both acceptable and necessary for the development of the lot.

If you have any questions or comments please feel fee to contact me at your convenience.

Sincerely

Allan M. Baird

REGISTERED PROFESSIONAL ENGINEER
ALLAN M. BAIRD
No. 23,681
EXP. 12-31-97
CIVIL
STATE OF CALIFORNIA

TOR/mm
c:win6.0/91-1269.wpd

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (14 OF 15) INVESTIGATION

A.M. BAIRD
Engineering & Surveying

1100 MAIN STREET — P.O. BOX 396, FORTUNA, CA 95540 — (707) 725-5182

CONSULTING — LAND DEVELOPMENT — DESIGN — SURVEYING

June 25, 1996

Humboldt County Planning Department
3015 "H" Street
Eureka, California 95501

ATTN: Erik Pearson

Re: Johnson
APN 109-161-53
911269

Dear Mr. Pearson,

Pursuant to our discussion today concerning the above referenced project, I have been informed by Connie Woods that all of the soil excavated from this Lot will be placed at 285 Beach Road (APN 109-201-14). That Lot is owned by Mr. Charlie Woods; the fill will be placed in accordance with the 1994 building code.

Feel free to contract me if you have any questions or comments.

Sincerely

Terry O'Reilly

Terry O'Reilly, P.E.

TOR/mrh
cwin6.0/91-126-9ltr

RECEIVED
JUN 26 1996
HUMBOLDT COUNTY
PLANNING COMMISSION

EXHIBIT NO. 7
APPLICATION NO.
A-1-HUM-96-58
SOIL/GEOLOGIC (15 OF 15) INVESTIGATION

LAW OFFICE OF
NANCY A. CHILLAG
A PROFESSIONAL CORPORATION

418 WILLOW ROAD
MENLO PARK, CALIFORNIA 94025
TELEPHONE (415) 321-6796
FAX (415) 321-1187

October 11, 1996

Received at Commission Meeting

OCT 11 1996

From: Nancy Chillag

California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: Appeal No. A-1-96-58
Johnson, Humboldt County

Dear Commissioners:

This office has been retained by Gary and Carol Johnson, the owners of the undeveloped property located at 40 Ridgeview Circle, Shelter Cove, California, to represent them with respect to the appeal filed by Mr. and Mrs. Rourke to prevent issuance of a permit to allow them to construct a home on their property.

We have enclosed our formal response to the appeal. It is our understanding that the Coastal Commission staff is recommending that the Commission open the hearing on this matter and then continue it to the November hearing. We have been informed by staff, however, that if we can demonstrate to the Commission the lack of any substantial issue presented by the Rourke's appeal, that the Commission has the ability to dismiss the appeal and issue the permit.

In light of this information, we are submitting this response to demonstrate that the Rourke's appeal lacks any substantial issue upon which this Commission can rule and we request that the Commission dismiss the appeal and issue a permit to the Johnsons. If the Commission finds that a substantial issue exists, or if the Commission is inclined to continue this hearing regardless of the existence of a substantial issue, the Johnson's reserve the right to submit an additional response which deals with the specifics of the appeal.

Very truly yours,

Nancy A. Chillag

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE
(1 OF 43)

RESPONSE OF GARY AND CAROL JOHNSON
TO THE APPEAL OF WILLIAM B. AND MARY LEE ROURKE
FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (3 OF 43)

APPEAL A-1-96-58
40 RIDGEVIEW CIRCLE
SHELTER COVE, CALIFORNIA
HUMBOLDT COUNTY
APN: 109-161-53

APPELLANT: WILLIAM B. AND MARY LEE ROURKE
RESPONDENT: GARY AND CAROL JOHNSON
COASTAL COMMISSION HEARING DATE: OCTOBER 11, 1996

RESPONSE OF GARY AND CAROL JOHNSON TO THE APPEAL OF WILLIAM B. AND MARY LEE ROURKE FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT

PROCEDURAL SUMMARY

Mr. And Mrs. Johnson applied on November 27, 1996 for a building permit to construct a two story house on their coast side property. Prior to an issuance of the permit they were required to obtain Humboldt County planning department approval. In June 1996 Mr. and Mrs. Rourke sent a letter to the planning commission challenging the issuance of a permit. The planning commission scheduled and held a hearing on August 8, 1996. At the hearing Mr. Rourke appeared and presented his objections. After hearing Mr. Rourke's presentation as well as the presentation of the planning staff and Mr. and Mrs. Johnson, along with their experts, the planning commission unanimously voted to approve the project subject to issuance of a permit by the Coastal Commission. The Rourke's did not appeal the decision of the planning commission. Rather they directly brought their appeal to the Coastal Commission. The arguments made by the Rourke's in the appeal before this Commission are identical to the arguments presented to the planning commission.

THE APPEAL LACKS ANY SUBSTANTIAL ISSUE UPON WHICH THE COASTAL COMMISSION CAN RULE

A. NO CREDIBLE EVIDENCE IS PRESENTED BY MR. AND MRS. ROURKE.

The Rourke's make extensive assertions regarding the geological conditions of the property in question and the Shelter Cove area in general. They use geological terminology and draw broad conclusions regarding the stability of the soil. Their ultimate conclusion is that no construction should take place.

In the appeal the Rourke's do not cite one geological report to substantiate their claims. They do not quote one geologist or geological engineer licensed by the State of California in support of their position. The Rourke's refer to a survey performed by a California licensed geologist with respect to their lot in Shelter Cove and that the geologist opined that the lots across the street (namely the Johnson lot) was hazardous. No report has been presented to the Coastal Commission, nor was

it presented to the Planning Commission of Humboldt County.

Mr. Rourke purports to be a "trained geologist", yet he does not cite any degrees he received in the field of geology, nor any licenses that he has obtained as a geologist or as a geological engineer. Even if Mr. Rourke could produce such documentation, he fails to demonstrate that he has any training or experience in the Shelter Cove or similar area. The engineer that has rendered opinions with respect to the Johnson property is licensed in the State of California, practices in the Humboldt County area, in particular Shelter Cove, and is fully experienced with the area. Thus, the only credible evidence presented to the Planning Commission and, now, to the Coastal Commission is the evidence presented by the Johnsons which is in support of issuance of a permit.

B. THE ROURKE'S SELECTIVELY QUOTE THE HUMBOLDT COUNTY SEISMIC SAFETY AND PUBLIC SAFETY RULES, THUS IGNORING THE PROVISIONS WHICH SPECIFICALLY DEAL WITH THIS TYPE OF DEVELOPMENT AND IN FACT AUTHORIZE THIS DEVELOPMENT.

1. What the Rourke's Request. The general theme of the appeal is (a) no site specific geological testing was performed with respect to the property, (b) no opinion has been rendered by a licensed geologist or geological engineer and (c) the code specifically prohibits building in the area of demonstration. The Rourke's reference specific sections of the Code to support their position. What the Rourke's fail to tell you is that the sections they rely on for support do not apply to this project.

Through their appeal the Rourke's are requesting that this Commission require certain testing, sampling, etc. to be performed with respect to the Johnson property prior to approval of the building permit. They, in essence, are requesting that the Commission require the Johnsons to provide information far in excess of that even required under an R1 report.

2. What the law requires for this project. The Geologic Hazards Land Use Matrix governs the types of reports to be issued for various proposed construction under certain site conditions. We have attached the matrix as **Exhibit A**. Based on the construction descriptions, the project in question comes under the low risk heading described as "Residential wood frame structures two stories or less on existing lots". Under the land designated as Level 3 Slope Stability, namely property located in the Coastal Zone Area, which covers the project in question, only an R2 report is required. Please note that a site specific investigation within the parameters set forth in the code, did take place by the civil engineer hired by the Johnsons and the report discusses that investigation. Furthermore, even under an R1 report a soil sample would not be required.

An R2 report (per the General Plan, see **Exhibit B**) may be prepared by either a registered geologist or a registered civil engineer experienced and knowledgeable in the practice of soil engineering. An R2 report was issued with respect to this project by Baird & Company which is a registered civil engineering firm experienced and knowledgeable in the practice of soil engineering. The credentials of Mr. Baird, the specific engineer opining on the Johnson project, are not challenged in the appeal. The Rourke's contend that only a licensed geologist can render an opinion and this is not true. No basis exists for requiring such an opinion, unless the civil engineer determines such an opinion is necessary, which was not the case with respect to the Johnson property. The Rourke's present no qualified opinion to this Commission that a geologist is required or that further testing is required. To hold the Johnson's to requirements equal to or even greater than an R1 report when the law itself, as well as their licensed engineer, does not require it, would be wrong.

3. A project may be built within the "Area of Demonstration." South Coast Area Plan Section 3.28B 2. states that a project may be approved within the area of demonstration if the reports issued provide certain information. Such a report was issued and accepted by the planning department. The Rourkes do not allege that the report failed to provide the required information, they simply and incorrectly allege that the Planning Commission cannot allow any construction in the area of demonstration. Again this is a misinterpretation of the Plan provisions.

4. Additional Opinion of Johnson's Engineer regarding the above issues. To put to rest any issues with respect to the above, we have attached a letter from Allen M. Baird, the licensed engineer who rendered the opinions on the Johnson project and issued the soils report. See **Exhibit C**. In that letter Mr. Baird specifically opines that the type of testing and investigation requested by the Rourke's is not necessary. We also attach a copy of a report issued by a registered geologist, Cooksley Geoscience, Inc. (see **Exhibit D**), which Mr. Baird references in his letter. Please note that the minutes of the Humboldt County Planning Commission hearing in August documents Mr. Baird's testimony concerning his reliance on the Cooksley report and his opinions reached as a result thereof. See **Exhibit E**, page 2)

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EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (5 OF 43)

C. THE EVIDENCE SURROUNDING THE CONSTRUCTION OF THE ROURKE RESIDENCE CONTRADICTS THE POSITION THEY TAKE IN THEIR APPEAL.

1. **THE ROURKE'S USED LICENSED CIVIL ENGINEERS TO SUPPORT CONSTRUCTION OF THEIR OWN HOUSE, NOT GEOLOGISTS OR GEOLOGICAL ENGINEERS.**

In 1992 Mr. and Mrs. Rourke applied for a building permit to construct a residence across the street from the Johnson property (not more than 100 feet). See map **Exhibit F**. As referenced in the appeal, the Rourke house had been seriously damaged in the previous earthquake in 1992. They applied to demolish the existing structure in order to build a new one. The point worth noting, however, is that they requested the Humboldt County Building Department to authorize them to use the existing foundation for the new house. In support of their request they submitted a letter from a licensed engineer who opined that the existing foundation was good and was not effected by the 1992 earthquake. See **Exhibit G** attached. In reading the appeal you are left with the opinion that the instability of the ground caused major damage, but clearly if the site was so unstable and subject to massive destruction one would clearly expect to see damage to the foundation. Yet there was none. One is led to conclude that the damage to the residence actually occurred due to the quality of the construction of the house.

The Rourke's conducted no soil sampling, obtained no geologist report and obtained no geological engineering report to determine whether their property was safe to build on or whether it would have an impact to the surrounding community.

The Rourke's present no evidence as to why the ground under their house is any less stable than the Johnson property. In fact, they specifically use their property as an example of the instability of the area. Nor do they present any credible evidence that construction on their land does not have the same effect on the bluff, sewer system, streets, etc. as construction on the Johnson property.

A condition of the issuance of a building permit for the Rourke property was the approval of this Commission and in fact this Commission did approve the permit. To now deny the Johnson's a permit or to even delay issuance of the permit based on the Rourke appeal would be a contradiction to the past actions of this Commission.

2. **THE ROURKES SELECTIVELY CHOOSE THE PROJECTS TO CHALLENGE BASED UPON THE OBSTRUCTION OF THEIR VIEW OF THE OCEAN**

In 1991 the owner of the property two lots south (Lot 14)

of, and no more than 60 feet from, the Johnson's property applied for a permit to construct a residence coast side. That project went before the Planning Commission for approval and all surrounding neighbors were notified. Mr. and Mrs. Rourke never challenged that construction. Please note the following: the Johnson's house is smaller than the house on Lot 14, there was no damage to the Lot 14 house in the 1992 earthquake, nor was there any damage to the slope, bluff, sewer system, roads, or any other item of concern mentioned in the Rourke appeal. The Lot 14 house, however, did not block the Rourke's view of the ocean, as the Johnson proposed project will, and thus did not merit challenge by the Rourke's.

The owner of the property three lots to the north (Lot 19) of, and no more than 140 feet from, the Johnson property applied for a permit to construct a residence coast side. That project also went before the Planning Commission for approval without any objection from Mr. and Mrs. Rourke. That project, like the one to the south, did not block the Rourke's view of the ocean.

All three projects are within the area of demonstration as defined by Mr. and Mrs. Rourke and as defined by the general plan. This commission approved the issuance of permits for both of those projects.

CONCLUSION

There is no substantial issue presented by the Rourkes or any credible evidence which justifies this appeal. We request that the Commission dismiss the appeal and approve the issuance of a permit to the Johnsons.

In the alternative, if the Commission is so inclined to continue the hearing on this matter until November, the Johnson's request guidance as to what type of reports, testing, etc. the Commission may request at such hearing so that the information can be gathered in advance and presented at the hearing to avoid any additional delays to issuance of a permit.

Respectfully submitted,

Nancy A. Chillag
Attorney for Respondents
Gary and Carol Johnson

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (7 OF 43)

EXHIBITS

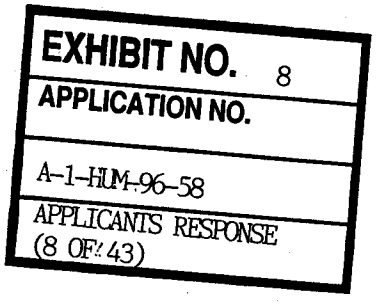


EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE
(8 OF 43)

Adopted 12/10/84

GENERAL PLAN

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (9 OF 43)

5/58

Figure 3-5
(RES. 85-81, 8/20/85)

GEOLOGIC HAZARDS LAND USE MATRIX

	BUILDING TYPE/LAND USE	Earthquake Shaking	Slope Stability 0	1	2	3	Liquefaction Mod. high	Fault Rupture SS2*	Critical Water Supply Areas***
hazardous	Nuclear power plants major dams, hazardous chemical storage	R 1							
essential	Hospitals, fire and police stations, civil defense headquarters, life line utility systems, ambulance stations								
high risk	Schools, theaters, auditoriums, hotels, large motels, major office buildings, high density residential, redundant utility systems, major highway bridges								
low risk	Major subdivision heavy industrial	D	R2	R2	R1	R1	D	R2	R2*
low risk	Multi-family structures greater than 4-plexes	D	D	D	R2	R1	D	R2	R2*
	minor subdivisions	D	D	D	R2	R1	D	R2	R2*
	light industrial, warehousing, commerical	D	D	D	D	R2	D	D	R2*
low risk	residential structures on existing lots with footing loads greater than typical two story wood-frame dwellings	D	D	D	R2	R2	D	D	R2*
	residential wood-frame structures two stories or less on existing lots	D	D	D	R2	R2	D	D	R2**

R means preliminary report is required (see Section 3292.1 for R1 and R2 requirements.

D means preliminary report is discretionary.

*SSR means Alquist-Priolo Special Studies Zone - See NOTE in Section 3292.1B

** A single-family wood frame structure not exceeding two stories is exempt when such dwelling is not part of a development of four more dwellings.

*** As designated on the Biological Resources Map.

Major Subdivision: defined as subdivisions requiring the filing of a final map pursuant to Subdivision Map Act (See Gov. Code Section 66426).

Minor Subdivision: subdivisions requiring the filing of a parcel map pursuant to the Subdivision Map Act.

EXHIBIT A

(12.95/tom2)

1/5B

3292 STANDARDS

1 Require geologic reports according to the Geologic Hazards Land Use Matrix as follows:

A R1 Report Requirements

1. A preliminary engineering geologic report and a preliminary soils engineering report shall be prepared for the classes of development and hazard areas indicated by "R1" in the Geologic Hazards Land Use Matrix.

2. The preliminary engineering geologic report shall be prepared by a certified engineering geologist and shall provide a geological reconnaissance and evaluation of the project site and surrounding terrain. The preliminary report shall identify areas or issues which either do or do not require further engineering geologic and/or soils engineering evaluation.

3. The preliminary soil engineering report shall describe the nature of the subsurface soils and any soil conditions which would affect the design and/or layout of the proposed development. The report shall include the locations and logs of any test borings and percolation test results if on site sewage disposal is proposed. The report shall recommend areas or issues of concern which require additional engineering or geologic evaluation.

4. The additional information that is recommended by the preliminary reports shall be provided or the proposed development shall be modified to avoid the identified areas of potential instability. The proposed development shall be sited and designed in accordance with the recommendations of the reports in order to minimize risk to life and property on the project site and for any other affected properties.

B. R2 Report Requirements

NOTE: A report prepared by a registered geologist is required in the fault rupture Special Studies Zone unless waived pursuant to the Alquist-Priolo Act.

1. A preliminary engineering geologic report and a preliminary soils engineering report shall be prepared for the classes of development and hazard areas indicated by "R2" in the Geologic Hazards Land Use Matrix. These reports shall be prepared by either a registered geologist or a registered civil engineer experienced and knowledgeable in the practice of soil engineering. These reports shall provide a geologic reconnaissance and evaluation of the project site and surrounding terrain. (Res. 85-126, 12/17/85)

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (10 OF 43)

EXHIBIT B

2. A soils engineering analysis may meet the preliminary geologic report requirement for developments where the primary concerns are soils mechanics and appropriate structural design. In such cases it is incumbent upon the engineer to consult a registered geologist should it become apparent that an adequate structural solution requires additional geologic input. If, after preliminary investigation of the project site and the surrounding terrain, no geological consultation is felt by the engineer to be required, the engineer shall certify that such an evaluation is not required. It is incumbent upon the geologist to recommend that a soils engineer be consulted when it becomes apparent that soils mechanics analyses are needed.

3. The applicant shall either provide additional information as recommended by the preliminary geologic or soils report or modify the application to avoid identified areas of potential instability. The proposed development shall be sited and designed in accordance with the recommendations of the report(s) in order to minimize risk to life and property on the project site and for any other affected properties.

C. The above required geologic reports, "R1" and "R2", shall be prepared in accordance with the California Division of Mines and Geology (CDMG) Note #44, "Recommended Guidelines for Preparing Engineering Geologic Reports". CDMG Notes #37, 43, and 49 shall be utilized as applicable when seismic or fault rupture hazards are identified as concerns.

D. The report requirement may be waived when an adequate geologic assessment at a suitable scale already exists for the site proposed for development.

E. The criteria for determining whether or not a report is required when it is discretionary include the following; however, where evaluation of items 1-6 is inconclusive, a statement is required by a registered engineer that a geologic report is not required for the safety of the project.

1) the site inspection of the building inspector;
2) geologic maps and reports covering the area;
3) the potential for the development to affect adjacent property or improvements;
4) the degree to which public exposure to risk may be a factor;
5) the size and scale of the proposed development;
6) for development within the Coastal Zone, the policies of certified local coastal plans.

F. Waivers of the R1 report requirements as indicated in the Land Use Geologic Hazards Matrix, but not within critical Watersheds, may be provided for by ordinance where consistent with protection of the public health, safety, and welfare and with the County's certified coastal plans.

A.M. BAIRD

Engineering & Surveying

1100 MAIN STREET — P.O. BOX 396, FORTUNA, CA 95540 — (707) 725-5182

CONSULTING — LAND DEVELOPMENT — DESIGN — SURVEYING

October 10, 1996

California Coastal Commission
45 Fremont, Suite 2000
San Francisco, California 94105-2219

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (12 OF 43)

RE: Appeal No. A-1-96-58
Johnson, Humboldt County

Dear Commissioners:

I am the California Licensed Civil Engineer #23681 that submitted the Preliminary Engineering Geologic R-2 Soils Report for the Johnson Project. The report was dated August 10, 1995.

At the time of issuing the report, and today, it is my opinion that it was and is not necessary to consult with a Registered Geologist or Geological Engineer for alternate structural solutions and/or additional geologic input for the site. This opinion is based upon the following:

1. At the time of the report I reviewed a Geologic Hazard Report that was created for Lot 17, which is the lot immediately north of the Johnson lot and not more than 15 feet from the location of the proposed structure on the Johnson property. The report was prepared by Cooksley Geoscience, Inc. Mr. J.W. Cooksley, the author of the report, is a Certified Engineering Geologist (#285). I found nothing in the Cooksley report to indicate (a) that a building problem existed for the proposed structure at a 20 foot setback, (b) further testing was required, and/or (c) that the Lot was particularly unique from its immediate neighbors. In reviewing the report I am in total agreement with the conclusions reached therein.

2. Based upon my site inspections of Lot 16 and the surrounding terrain, in particular its location to Lot 17, I was at the time and am currently unaware of any significant geologic difference between Lot 17 and Lot 16, or even any indication of a potential significant difference.

3. Based upon my knowledge and my experience in the practice of soil engineering, which is extensive and covers more than 20 years, the majority of which is in the Shelter Cove area, it is my opinion that no additional geologic consultation is necessary for this project and no additional geologic evaluation is required.

Sincerely,

Allan M. Baird
Allan M. Baird
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ALLAN M. BAIRD
No. 23.681
EXP. 12-31-97
CIVIL
STATE OF CALIFORNIA

EXHIBIT C

GEOLOGIC HAZARDS INVESTIGATION AND SOILS REPORT FOR LOT 17, BLOCK 149, THE SHELTER COVE SUBDIVISION, HUMBOLDT COUNTY, CALIFORNIA

Prepared by:

COOKSLEY GEOSCIENCE, INC.

Redding, California

August, 1990

EXHIBIT D

GEOLOGIC HAZARDS INVESTIGATION AND

SOILS REPORT FOR LOT 17, BLOCK 149, OF

THE SHELTER COVE SUBDIVISION,

HUMBOLDT COUNTY, CALIFORNIA

INTRODUCTION

Purpose of Work

The purpose of the work reported herein was to determine the suitability of the site, in terms of its geotechnical characteristics, for residential construction. Investigated were the site and surrounding area's topography/geomorphology, lithologies, soils and erosional characteristics as they pertain to the principal geologic hazards of the Shelter Cove Area: Primary seismic shaking due to earthquakes, seismically induced slope failure, slope/bank instability hazards and, impact from surface creep/slippage and landsliding.

It is CGI's understanding that the proposed residential development on this lot will consist of a single-family, wood-frame residence with appurtenant structures. The information provided herein is presented in that context and pertains only to Lot 17, located on Ridgeview Circle, in Block 149 of the Shelter Cove Subdivision.

The scope of geologic investigations and evaluations presented in this report is based on the Humboldt County Coastal Zoning Regulations, the California Coastal Commission Statewide Interpretative Guidelines (1980) and the California Division of Mines and Geology's Guidelines to Geologic/Seismic Reports.

Site Location

Shelter Cove is located on Point Delgada on the Pacific Ocean some fifty-five (55) air miles south-southwest of Eureka, and approximately twenty-five (25) road miles west-southwest of Garberville, in Humboldt County, northern California (refer to Highway Location Map, page 2).

Within Shelter Cove, the subject lot is located in the north-western portion of the community, at the intersection of Whale Point and Ridgeview Circle, on Ridgeview Circle.

TABLE OF CONTENTS

FIGURES

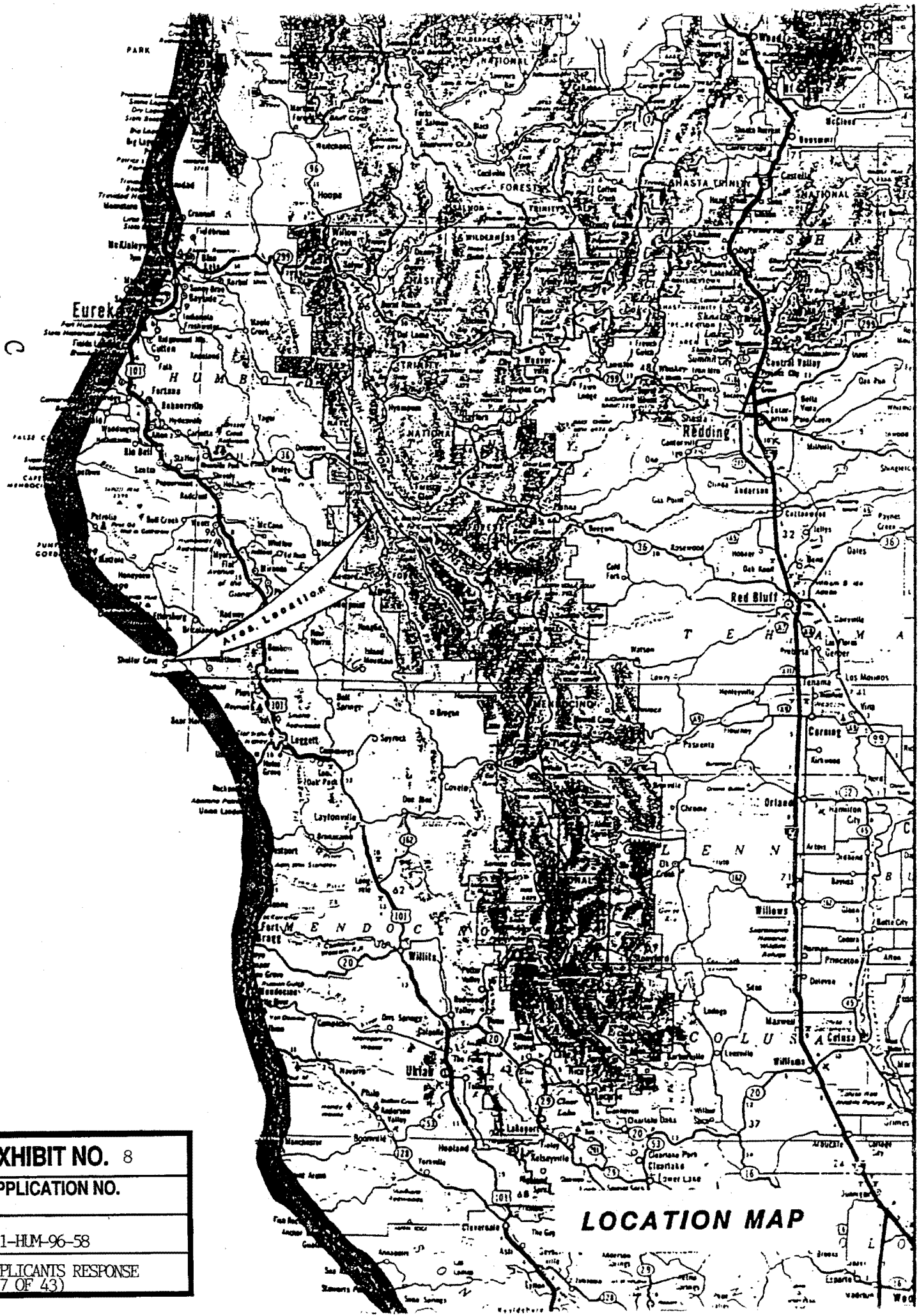


EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (17 OF 43)

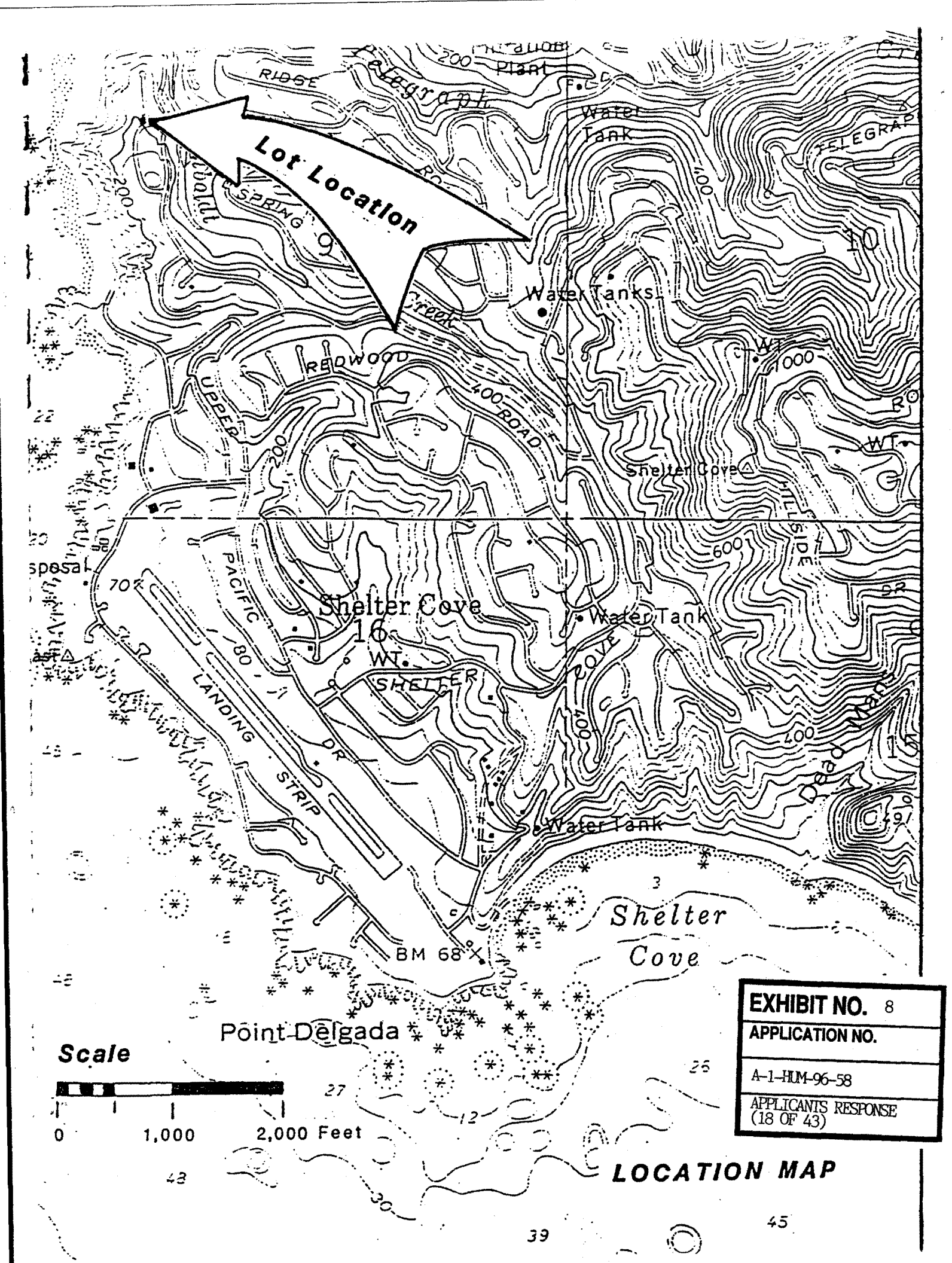


EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (18 OF 43)

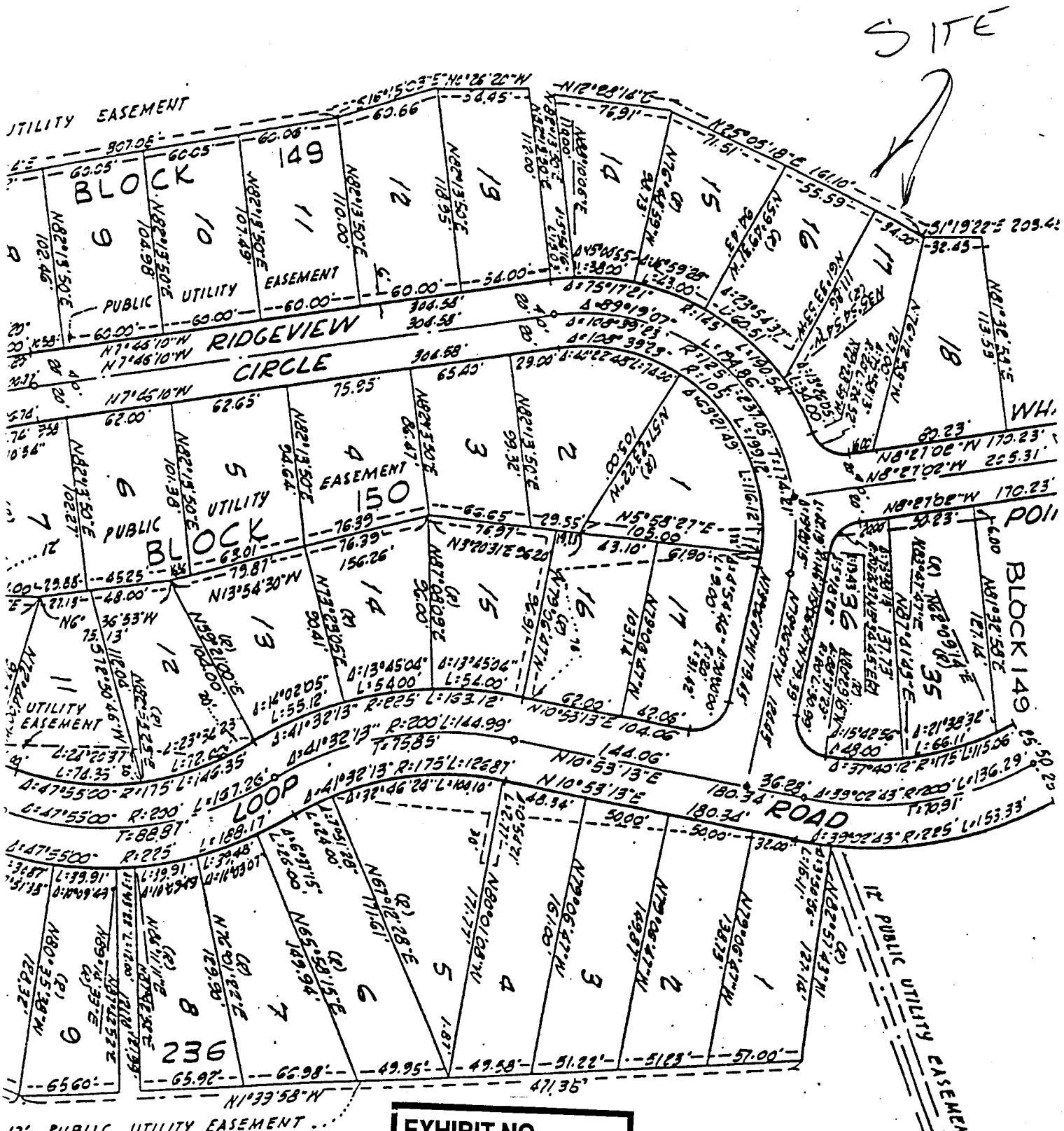


EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (19 OF 43)

ASSESSOR'S LOT LOCATION MAP

Timing of Work

Compilation and review of the geologic and geotechnical literature for the Shelter Cove area was completed prior to commencement of field activities. Field work was accomplished during the period 17 August through 23 August, 1990. Compilation and review of the field observations and report writings were accomplished in the week following completion of field work. Work on the project was completed, and the final report submitted at the beginning of the week of August 27, 1990.

LIMITATIONS

This report has been compiled for the exclusive use of Mr. Chuck Southall, his architect(s), engineer(s), and other design consultants. CGI is responsible for the conslusions and opinions contained in this report based on the data relating only to this specific project and site as described in the Purpose of Work section on page 1 of this report.

In the event that any changes in the design or lacation of the proposed single-family, wood-framed residential improvments, CGI should be notified in writing of such changes so that we can determine if any modifications to our original recommendations are necessary, or if additional field studies are required to confirm our original recommendations.

In addition, if any conclusions or recommendations are made by others, or in the event that ownership changes (whether by sale, gift, ingeritiane, order of court or otherwise) we disclaim liability for any opinions, conclusions, assumptions, or other observation of data, analysis, or recommedations contained herein, should these opinions, conclusions, assumptions, or their findings differ from CGI's, unless such differinces are reviewed by CGI and approved in writing.

CGI has prepared this report in accordance with locally accepted geologic hazard and soil investigation practices and makes no other warranties either expressed or implied. CGI disclaims liability for poor foundation performance if: 1) CGI recommendations are not followed, 2) if the type of structure or its general design is altered from that described in information provided us prior to submission of this report, unless in either instance such deviations are reviewed by CGI and approved in writing. In addition, CGI disclaims liability from poor foundation performance resulting from improper cinstruction techinque or use of substandard materials in foundation related construction.

The analysis and recommedations contained herein are based upon information derived from the public domain, proprietary data bases, proprietary analysis techniques, and field observations on and around the site. CGI makes no warranties either expressed or implied as to the excavation characteristics of the subsurface soils or rocks other than those described herein. The nature and extent of variations encounterd, if such exist, may not become evident until construction is underway. If such variations then become apparent, it will be necessary for a re-evaluation of the recommendations after performing on-site observations and noting the characteristics of any variation.

Copies of CGI's full report should be examined by bidders, and if is recommended that they investigate the site conditions of the project and fully satify themselves of both the surface and subsurface conditions there, and base their bid accordingly. Itr is fruther recommended that a statement to this effect be provided the contractor(s) in their bid proposal. The subsurface investigation was made to assist in engineering design and is not intended for use in making cost estimates by bidders.

No ground water was encountered during this investigation. This data has been reviewed and interpretations made in that context in this report. However, it must be noted that water level fluctuations may occur due to temperature, precipitation, seasons, infiltration, dirunal barometric changes, and local irrigation practices. Other factors not evident at this time of CGI's investigation may also effect changes.

GEOLOGIC SETTING

Structural Setting

In terms of potential geologic hazards within the Shelter Cove area, both the principal risk, primary seismic shaking, and the secondary risk, seismically induced slope/bank failure, result from the areas geographic location being within a zone of major global tectonic activity. (Refer to the Global Tectonics Map, the Generalized Geologic Map of Northern California, the Bouguer Gravity Profile across Northern California and, the Sea Floor Bathymetry Off California showing the distribution of principal morphological features.)

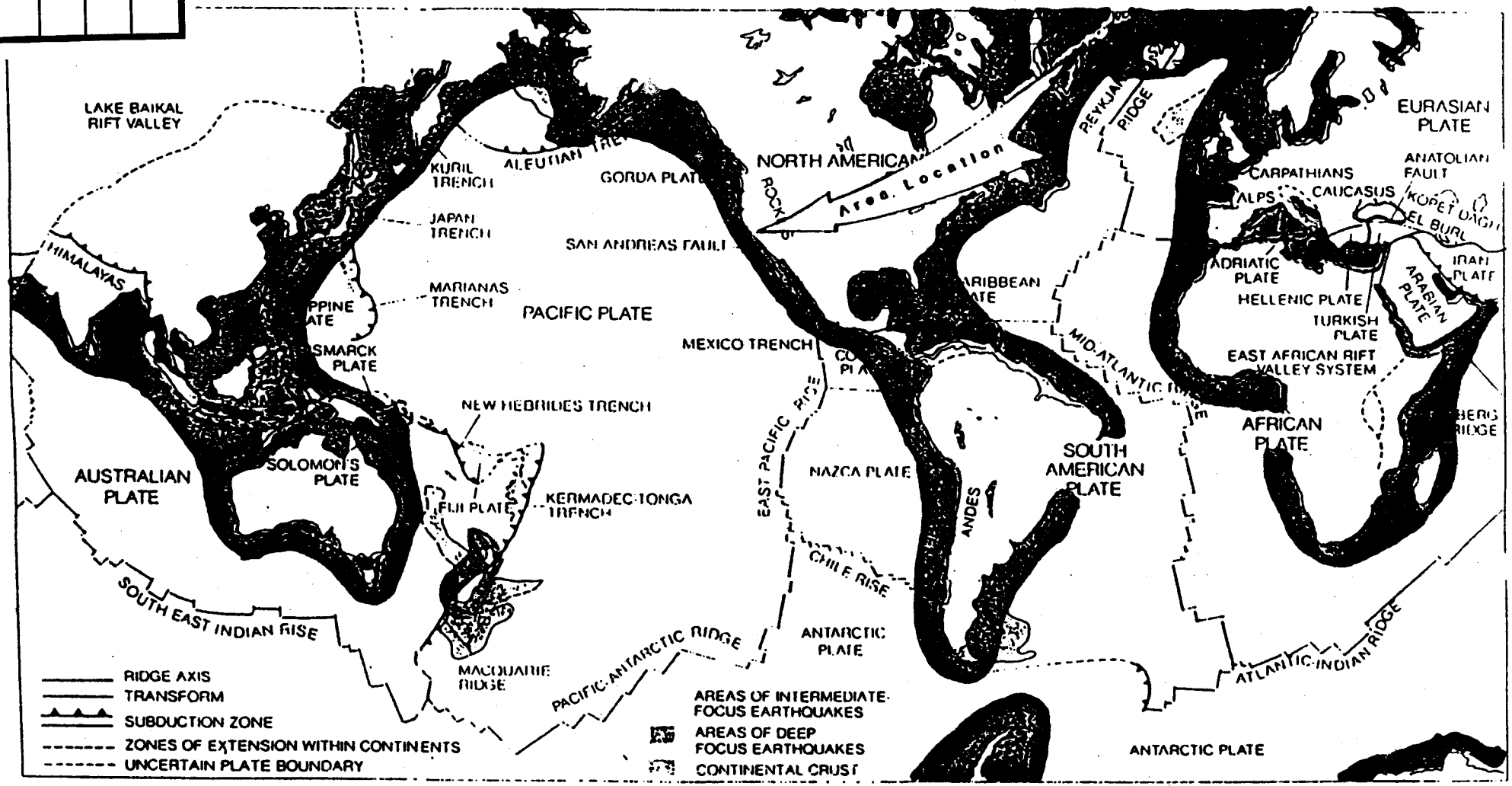
A strand of the San Andreas fault comes on shore on the southern portion of Point Delgada, just to the west of Dead Man's Gulch, and departs out to sea, north of Shelter Cove proper, in the vicinity of the mouth of Horse Mountain Creek, where it empties into the Pacific. On shore, through the Shelter Cove area, this segment of the San Andreas fault manifests itself as a zone 1,000 to 2,000 feet in width which trends roughly NNW-SSE, across the point (refer to The Generalized Fault/Fracture Zone Location Map). The easternmost fault trace of the zone separates

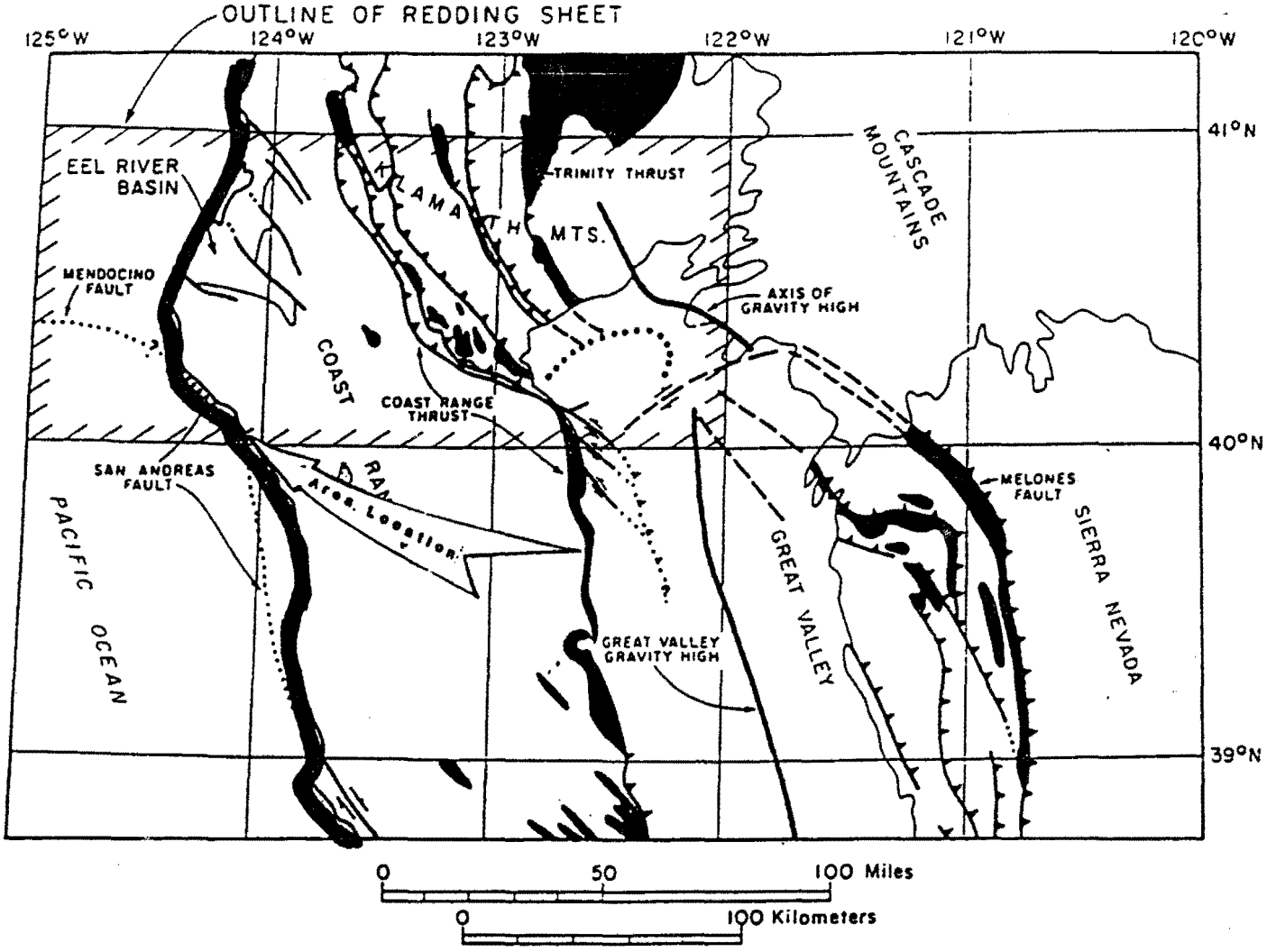
EXHIBIT NO. 8

APPLICATION NO.

A-1-HMB-96-58

APPLICANTS RESPONSE (22 OF 43)





EXPLANATION

Ultramafic rocks

High-angle fault
(dotted where concealed)

Thrust fault
(sawtooth on upper plate)

Inferred fault
(based on geophysical data — may be high-angle or thrust)

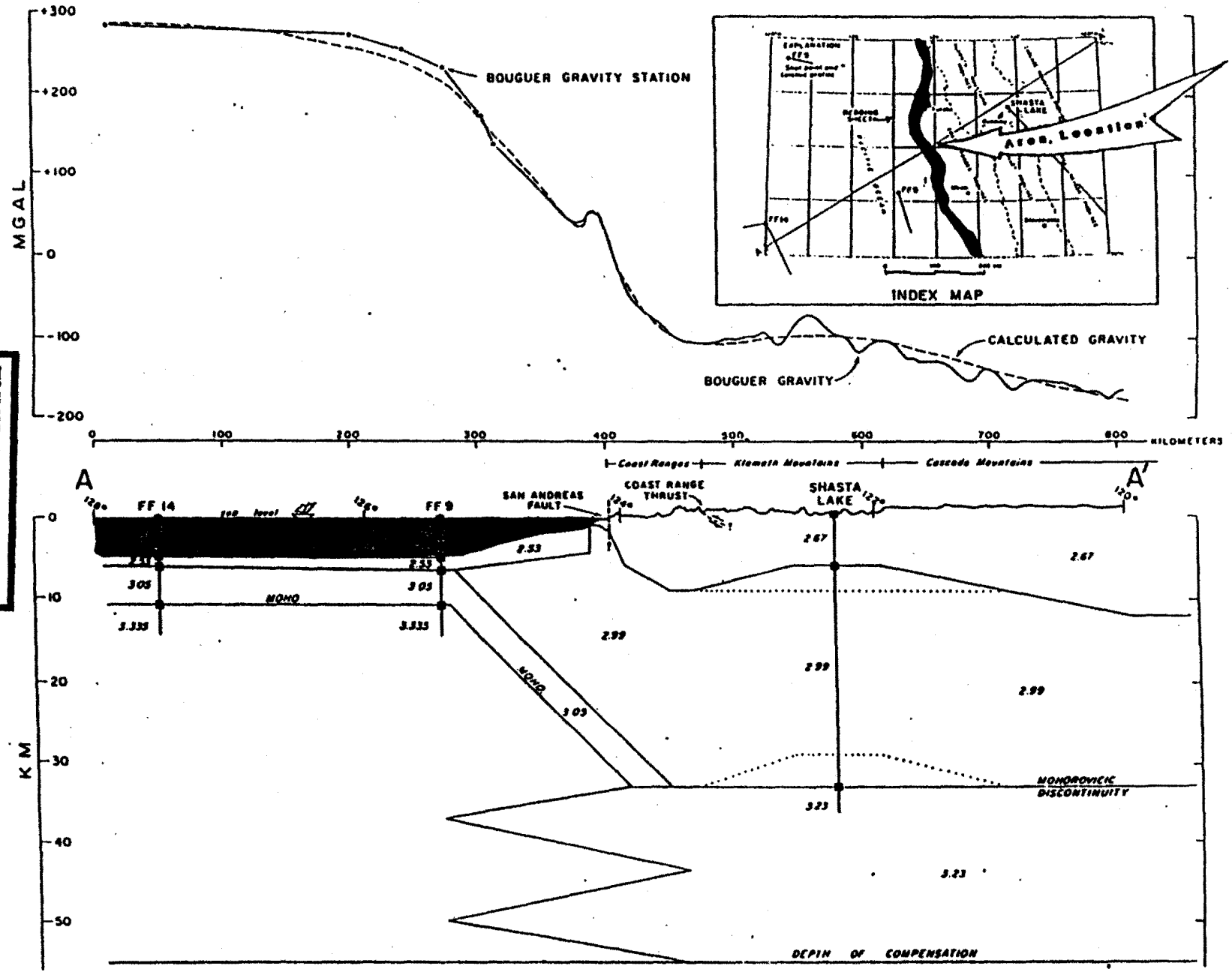
North border of magnetic and gravity lows

Generalized geologic map of northern California: Structural relations between various geologic provinces at the north end of the Great Valley are indicated by faults (dashed and dotted lines) inferred from geophysical and extrapolated geologic data. Geology modified from U.S. Geological Survey (1966) using Davis (1969, figure 1), Jones and Irwin (1971), figure 1), and Irwin (1972).

(After Griscom, A., Bouguer Gravity Map of California, Redding Sheet: U.S.G.S.)

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (23 OF 43)

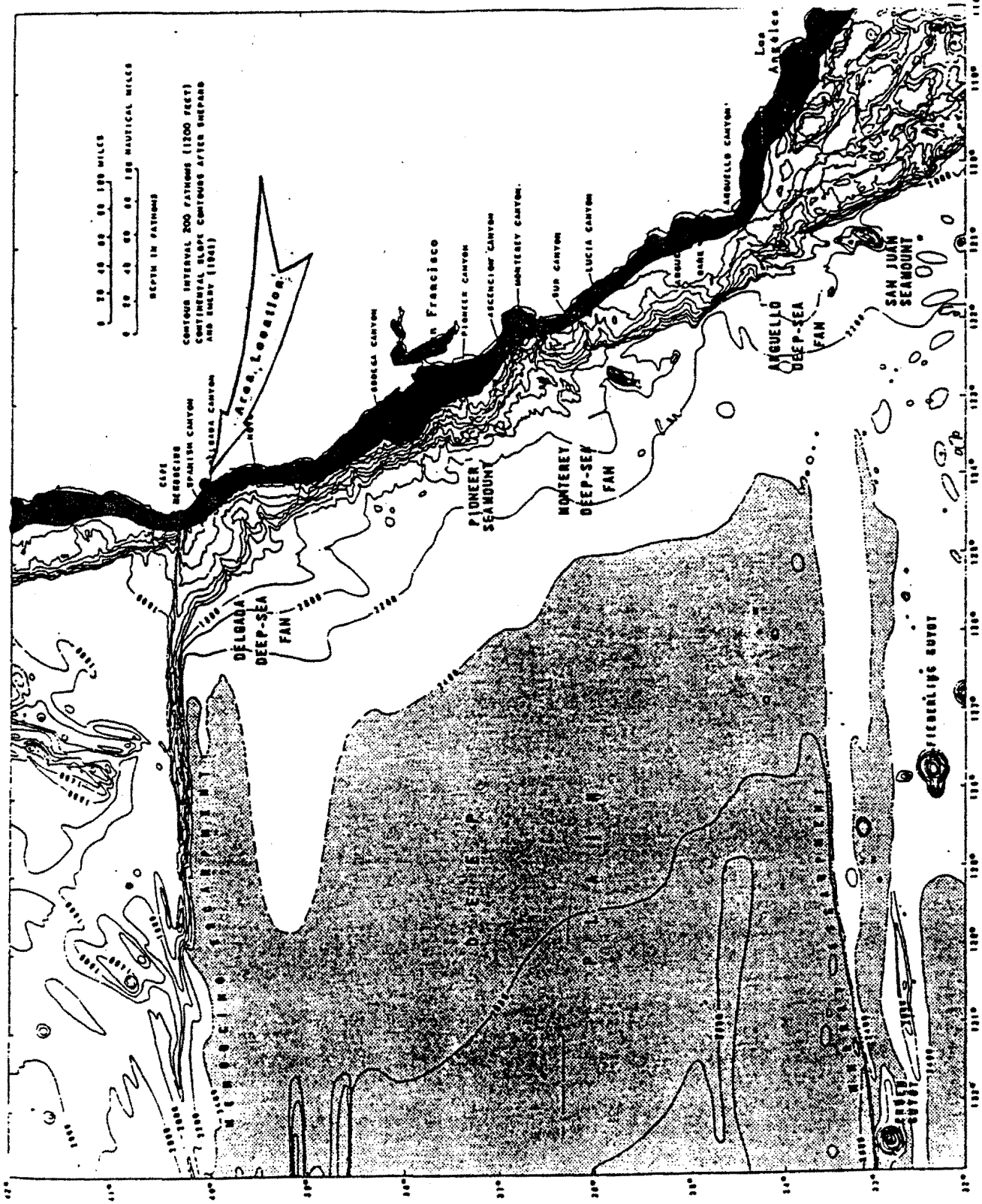
EXHIBIT NO. 8
APPLICATION NO. A-1-HUM-96-58
APPLICANTS RESPONSE (24 OF 43)



Bouguer gravity profile across northern California and computed crustal density model constrained by available seismic refraction data. Numbers within cross-section are layer densities in g/cm³. Dotted lines represent alternative model beneath Shasta Lake area.

(After Griscom, A., Bouguer Gravity Map of California, Redding Sheet: U.S.G.S.)

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (25 OF 43)



Sea floor bathymetry off California showing the distribution of principal morphological features, after Shepard and Emery (1941).

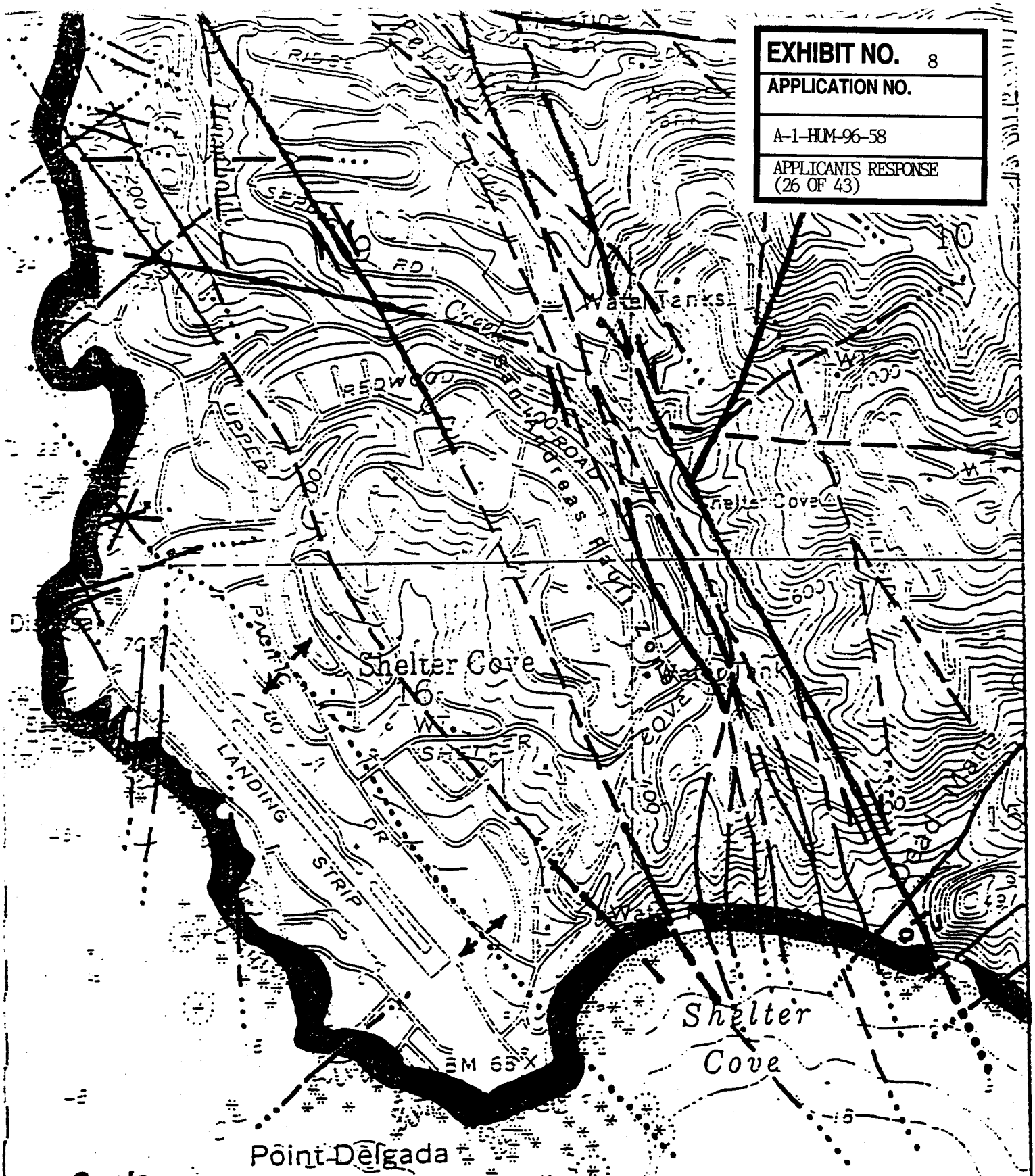


EXHIBIT NO. 8

APPLICATION NO.

A-1-HUM-96-58

APPLICANTS RESPONSE (26 OF 43)

GENERALIZED FAULT/FRACTURE ZONE LOCATION MAP

Franciscan Formation to the west from Upper Jurassic and Cretaceous marine sandstones, shales and conglomerates to the east.

Another continental scale tectonic feature which contributes significantly to the seismicity of the area is the Mendocino fault/fracture zone (again, refer to the Generalized Geologic Map of Northern California and the Sea Floor Bathymetry Plot). This east-west trending feature intersects the San Andreas, and the coastline, some thirty-five (35) to forty (40) miles north, along the coast, of Shelter Cove, in the vicinity of Punta Gorda.

Other potential sources of seismicity in the Shelter Cove area are possible movement along complex northwesterly-southeasterly trending compressional fault systems present south of, in, and north of, the Humboldt Bay Region (again, reference the Generalized Geologic Map of Northern California). Within these systems, three (3) major fault zones (the Little Salmon, Mad River, and the Grogan) contain numerous active faults.

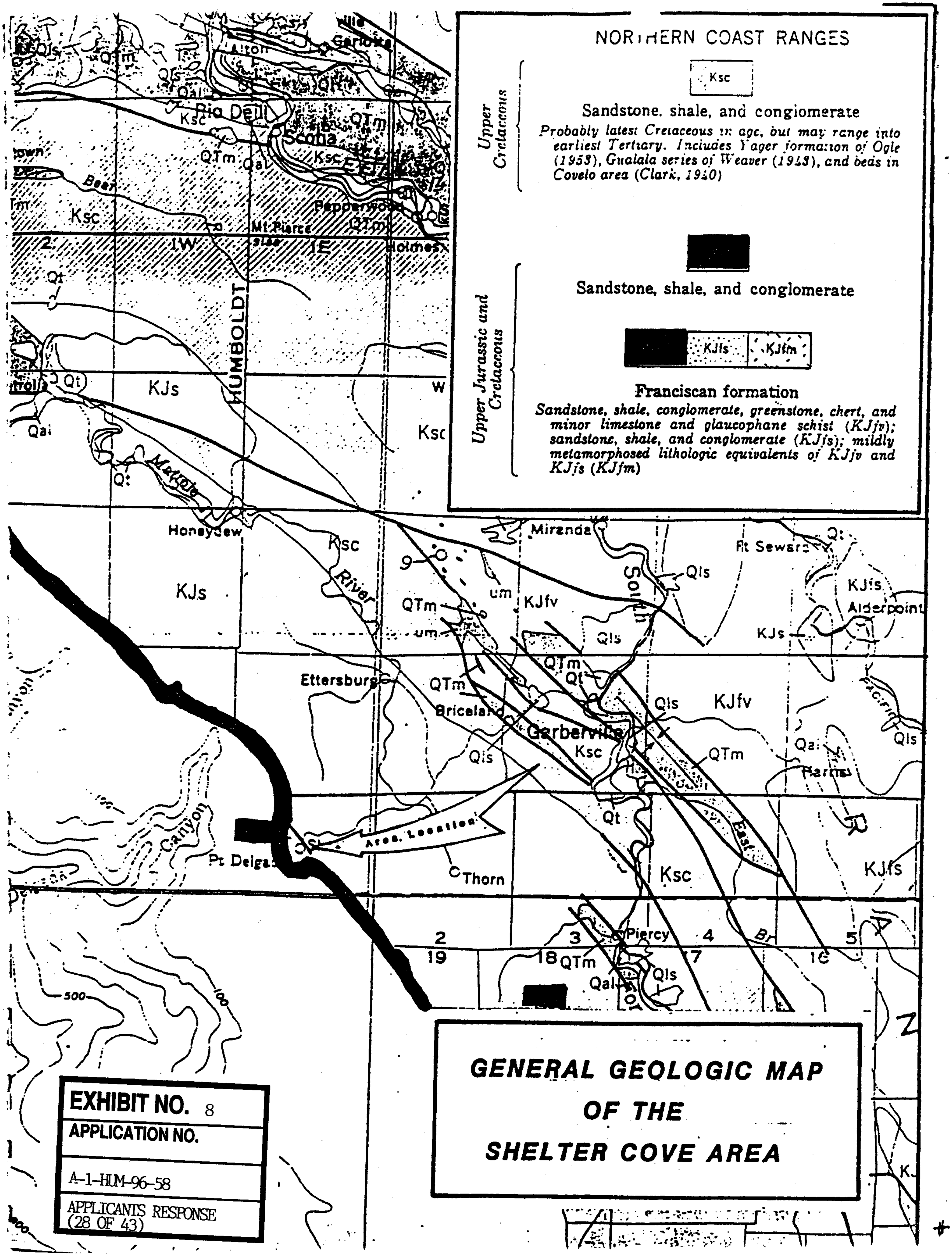
Abrupt strike-slip movement along fault zones mapped in the vicinity of Garberville, east of Shelter Cove, could also produce significant ground motion within the Point Delgada area.

Sequence of Geologic Units

As mentioned in the preceding section, the easternmost fault trace of the San Andreas zone at Point Delgada separates Franciscan formation to the west from Upper Jurassic and Cretatceous sandstones, shales and conglomerates, to the east (refer to the General Geologic Map of the Shelter Cove Area). Within the vicinity of Shelter Cove, the Franciscan is comprised of intensely fractured sandstones, sheared shales, conglomerates, some chert and very minor amounts of limestone and glaucophane schist. These units, the Franciscan, to the west of the fault, and the Upper Jurassic and Cretaceous units to the east, comprise bedrock for the area.

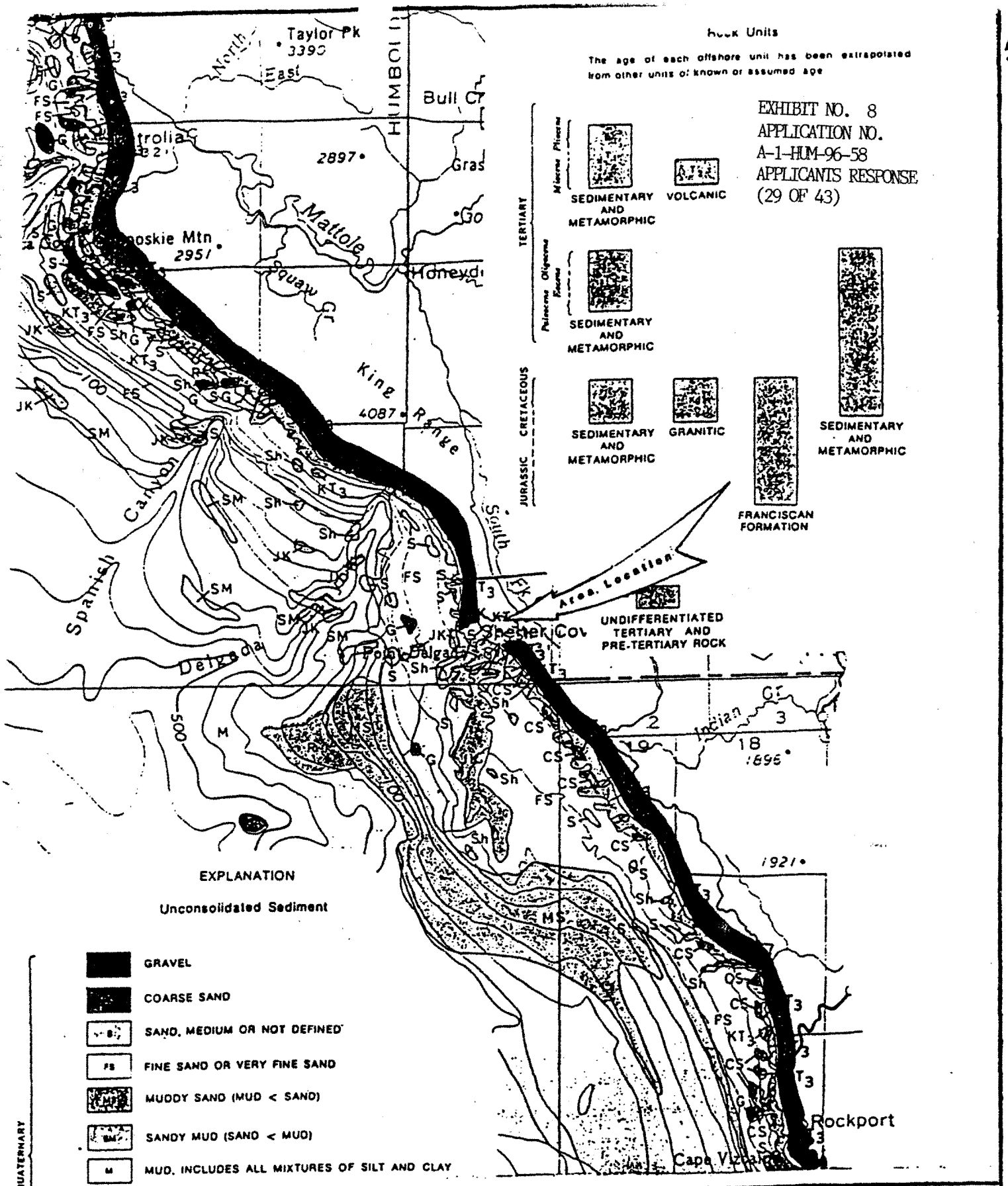
The top of the Franciscan Formation is marked by a buried erosion surface on which the Humboldt Creek formation lithologies were deposited. The Humboldt Creek Formation, a marine terrace deposit, consists typically of (from oldest to youngest/bottom to top in the sequence): One (1) to two (2) feet of fine-grained, light gray, silt and/or sandstone, overlain by about one (1) to five (5) feet of finely sorted pebbles capping basal wave rounded cobbles, overlain by up to sixty-five (65) feet of gray silts and subangular gravels.

Depending on the specific site within the area, the Humboldt Creek formation can be overlain by either, approximately one (1) to three (3) feet of yellowish sandy clay, in turn overlain by twelve (12) to twenty-four (24) inches of dark sandy loam topsoil, or, by the informally termed Shelter Cove formation, deposits formed by earth, mud and debris flow.



GENERAL GEOLOGIC MAP OF THE SHELTER COVE AREA

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (28 OF 43)



GENERAL OFFSHORE GEOLOGY OF THE SHELTER COVE AREA

Mass wasting (landsliding) similar to that which formed the Shelter Cove formation continues north and south of Point Delgada. Often it is initiated by ground shaking originating from earthquakes in the region.

Typically, the Shelter Cove formation consists of lenticular to indistinctly bedded, brownish, buff weathered, moderately indurated, angular to subangular fragments of various size containing variable percentages of silt, clay and sand. The fragments are typically pieces of intensely sheared sandstone, siltstones and argillites derived from the Franciscan in the area.

GEOTECHNICAL CONSIDERATIONS AND ENGINEERING PROPERTIES OF THE SITE

General

The terms "geologic hazard" and "risk" are used in a specific context in this report. The dictionary defines "hazard" as "a source of danger or loss arising from a chance event". "Risk" on the other hand is defined as "the degree or probability that a chance event of loss or peril to a subject matter will occur".

Within that context, the term "Geologic Hazard" is used to identify specific chance events which could arise as a consequence of the geologic environment of a given site and which could occur at, or in proximity to, that site and might result in damage to, or loss of, improvements on the site (e.g.; earthquakes producing seismic shaking, slope/bank failure, etc.).

"Risk" is used to qualify the probability that such a chance geologic event might occur within a given period of time (Typically, within a forty (40) year period for a report such as this: An estimate of the economic life of the proposed building improvements).

Within the Point Delgada/Shelter Cove Area several geologic hazards, and potential geologic hazards, have been identified. They include, but are not limited to: Primary seismic shaking (ground motion) resulting from earthquakes, seismically induced bank/slope failure, potential slope/bank instability hazards and impact from surface/soil creep/slippage and landsliding.

Regarding seismicity in the Point Delgada/Shelter Cove area, due to its proximal location relative to zones of major global tectonics, this portion of coastal northern California is seismically very active and susceptible to earthquakes of large magnitude which can produce significant ground shaking. The high, to very high, level of risk of this hazard in the area is typical for Southern Humboldt County locations and is routinely assumed by residents.

Generally, four (4) tectonic sources of large magnitude earthquakes affect the Point Delgada/Shelter Cove area. The most common source of seismic shaking is the Mendocino fault/fracture zone which comes onshore some thirty-five (35) to forty (40) miles north, along the coastline. Large magnitude earthquakes that occur in this zone are likely to produce moderate to strong levels of seismic shaking in the Shelter Cove area.

A second source of seismic shaking is the San Andreas fault, which cuts across Point Delgada (again, refer to the Generalized Fault/Fracture Zone Location Map). Historic data indicates that the San Andreas fault system is capable of generating large, to very large magnitude earthquakes, in the order of magnitude 8.4 to 8.5, plus. Any such earthquakes originating from the San Andreas system near Point Delgada are likely to produce strong, to very strong, levels of seismic shaking in the area.

Another source of earthquakes which could produce moderate to strong levels of seismic shaking at Point Delgada is the subducting of the Gorda oceanic crustal plate whose southern boundary is defined by the Mendocino Fault zone (Refer to the Global Tectonics Map). A number of earthquakes resulting from deformation of this crustal plate as a result of its "collision" with the North American plate have been of large magnitude, one of the most recent of which was a magnitude of 7.0, that occurred on 8 November, 1980. Large magnitude earthquakes that originate from this tectonic activity are quite likely to produce moderate to strong levels of seismic shaking at Point Delgada.

The forth most likely source of seismic activity within the area arises from possible movement along complex northwesterly-southeasterly trending compressional fault systems present south of, in, and north of, the Humboldt Bay Region. Within these systems, three (3) major fault zones (the Little Salmon, Mad River and Grogan) contain numerous active faults. Large, to very large magnitude earthquakes that originate along these fault systems are likely to produce moderate, to strong levels of seismic ground shaking in the Point Delgada/Shelter Cove area.

Another potential source of significant ground motion in the Point Delgada/Shelter Cove area is abrupt strike-slip movement along fault zones mapped in the Garberville area, east of Shelter Cove.

Other potential geologic hazards which can exist in the area are: Seismically induced bank/slope failure, potential slope/bank instability hazards and, impact from surface/soil creep/slippage and landsliding. Since the existence, or non-existence, of these hazards is very site dependent, discussion of these risks will be included in the more site/lot specific portion of the report, rather than in this section.

Site Description

Presently, the subject lot is undeveloped with the only improvements being street, water and sewer hookups. To the east and north are undeveloped parcels, with the Pacific Ocean on the west. To the south, a residential structure exists.

The lot is located on a moderately sloping surface of very young Quaternary sediments of the Upper Shelter Cove Formation at an elevation of bewteen 240 and 280 above mean sea level (MSL) and is presently covered with secondary sere vegetation (plant regrowth and rejuvination as a result of fire or other catastrophic event).

Measured from Ridgeview Circle, a five (5) foot high road birm extends the width of the subject site. From this feature, the lot "bumps" into a mild ridge for approximately seventy (70) feet, generally striking N 30 degrees E, terminating on a very steep slope approximately two-hundred (200) feet in height. Upon site observation, the lot "footprint" appears of sufficient size to support a single-family wood structure (refer to Recommendations, page 23).

Based on exposures in the street cut along the northern side of Ridgeview Circle across from the property and auger holes dug on the lot, geologic deposit that underlie the lot consist of about six (6) to twelve (12) inches of dark sandy loam overlaying another one (1) to two (2) feet of coluvial soil. Beneath the soil cover is approximately ten (10) to twenty (20), plus or minus, feet of weathered, stress relieved Upper Shelter Cove formation. Below this surficial zone are more competent materials of the Shelter Cove formation. While the actual thickness of the Shelter Cove Formation beneath the lot is not known, it is suspected that it is greater than several tens of feet.

Underlying the Shelter Cove Formation are marine terrace deposits (tenatively identified as Humboldt Creek Formation) which are comprised of beddèd, brownish, buff weathered, moderately indurated, angular to subangular gravels comprised of fragments of Franciscan Formation rocks of the area. The actual thickness of what is believed to be the Humboldt Creek Formation under the lot is also unknown, but, it is believed that it is greater than several tens of feet.

No evidence of recent, Holocene (less than 10,000 years b.p.) faulting was observed on, or immediately adjacent, to the subject lot. There were no surface fault ruptures present nor was there any indication of displaced strata.

Potential Seismic Hazards

Within the area of the lot the principal geologic hazards are seismically induced slope/bank failure and primary seismic

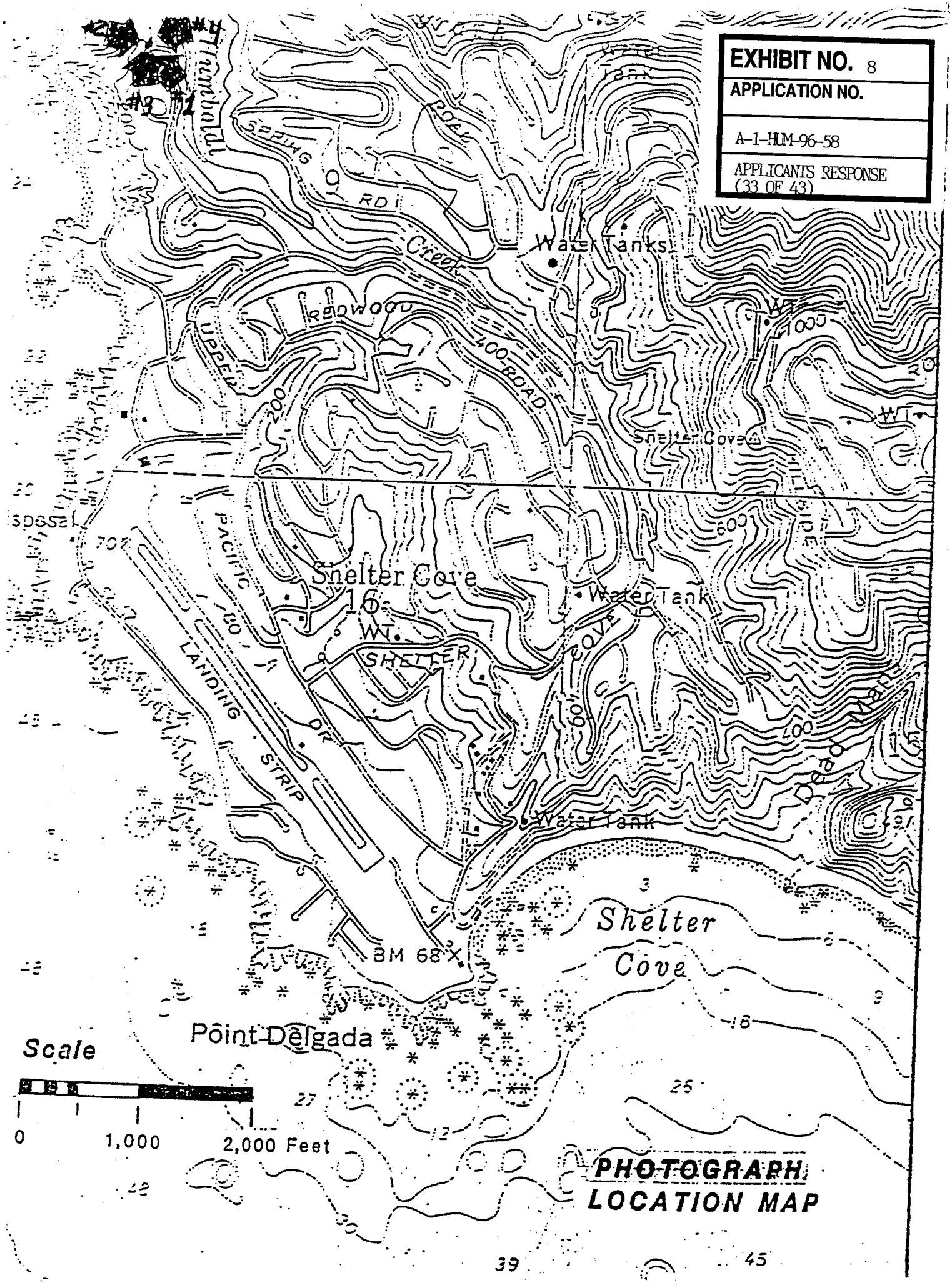


EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (33 OF 43)
Trinidad
SPRING
ROAD
Creek
Water Tanks
REDWOOD
UPPER
400-ROAD
200
1000
Shelter Cove
SPOSAL
PACIFIC
Shelter Cove
16
Wt.
SHELTER
Water Tank
COVE
LANDING
STRIP
DR
600
Water Tank
Shelter
Cove
BM 68
Point Delgada
Scale
0
1,000
2,000 Feet
PHOTOGRAPH
LOCATION MAP

shaking resulting from moderate to large magnitude earthquakes. The potential sources for such events have already been discussed in the preceding section of this report.

In view of the nature of the tectonic zone in which the site is situated, it is worth stating again that any moderate to large magnitude earthquake from any of the aforementioned sources is likely to produce moderately strong, to very strong levels of seismic shaking within the area of the lot.

Bank/Slope Instability Hazards

Comparative examination of maps and aerial photographs taken over an extended period of time (several decades, at least) provides a reasonable basis for determining local coastal erosion rates. In several such studies done in the Point Delgada/Shelter Cove area it has been concluded that discernible changes in location, or configuration, of the bedrock sea cliff in the area over the past fifty (50) or so years are not in evidence. This is primarily due to the erosion resistant character of the basal bedrock (Franciscan Formation) which is very resistant to, and therefore protects the bluff face from, direct wave attack.

At present, the most active erosion process attacking the coast along Point Delgada is slumping of the marine terrace deposits as a result of concentrated runoff discharging down the face of the bluffs, large wave run-up washing up the face of the bluffs and/or ocean spray attacking the bluffs. From published reports, the average rate of bluff retreat in the area appears to be on the order of less than twenty (20) feet in the past fifty (50) or so years. In certain stretches along the coast, this rate has been far exceeded in several instances in the past due to extreme wave action from very severe storms.

Away from the coastline, in the hilly portion of Shelter Cove and southwest of the actual coastal range itself, the principal erosion process is that of concentrated runoff draining across the sloping topography. Rain runoff is gathered and carried seaward via a drainage system which appears to be highly structurally controlled. The actual amount of erosion on any given site within this area is dependent on: The amount of moisture received, the amount and type of vegetation present, the slope of the land surface and the type and amount of soil cover present.

Within the area of the subject lot, there appear to be no bank/slope instability hazards that would likely affect the site. Note that Ridgeview Circle has been in place some twenty (20) years, to date, and only shows minor settling cracks related to settling of the underlying road bed itself.

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (34 OF 43)

Erosional Characteristics

As stated in the previous section, the most active erosion process attacking the bluffs along the coast of Point Delgada is slumping of the marine terrace deposits as a result of concentrated runoff discharging down the face of the bluffs, large wave run-up up the face of the bluffs and/or ocean spray attacking the bluff faces. On top of the bluffs and in the hilly portion of Shelter Cove, concentrated runoff draining across the land surface is the primary erosion mechanism.

As there exists very steep embankments on, or immediately adjacent to, the subject property, significant bluff/embankment erosion is of concern. Field inspection of the lot uncovered no significant rilling or gullying effects of erosion on the lot "footprint". Utilizing setbacks on the subject site would help to insure structural integrity.

Considering the slope of the lot, the type and amount of vegetation and amount of the soils present, soils at the site appear to be moderately erodible under conditions of heavy rainfall. As long as all drainage and onsite runoff is conveyed off the lot in a non-erosive manner, the lot should not have erosion problems under conditions of heavy rainfall.

Soils

Based on exposures in the street cut along Ridgeview Circle and auger holes dug on the lot, geologic soil units which underlie the lot consist of about six (6) to twelve (12) inches of dark sandy loam overlaying another one (1) to two (2) feet of coluvial soil. Beneath the soil cover is approximately ten (10) to twenty (20) feet of weathered, stress relieved Upper Shelter Cove formation. A description of the lithologies underlying the topsoil is given in the preceding Site Description Section of this report.

Near Surface Compressive/Bearing Strengths

Based on field observations and the data obtained from the refraction seismic survey, the soils on the subject lot appear to have a minimal bearing capacity of about 1,000 pounds per square foot (psf) at a depth of one and one-half (1.5) feet.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

It is the opinion of the undersigned that a single family residence can be designed so as to directly, or indirectly, mitigate most geologic hazard risk levels on the lot if the recommendations contained herein are implemented. This is not to say that all geologic hazards can be eliminated from the development for such is not possible in an active tectonic zone such as that which encompasses the Point Delgada/Shelter Cove area.

The high, to very high, level of risk within the whole area of the Point Delgada area is typical for southern Humboldt County and is routinely assumed by its residents. All geologic hazards cannot be eliminated completely, but geotechnical site evaluation followed by appropriate engineering design and construction of structures can minimize building damage and onsite seismically induced bank/slope failures.

Recommendations

* To mitigate the effects of strong seismic shaking, the residence should be of wood-frame construction. The minimum standard for construction of the residence should be in accordance with the latest edition of the Uniform Building Code (UBC) for the most seismically active areas.

* Grading on the lot should be restricted to that required for foundation construction. A UBC foundation design for most seismically active areas should be completed and reviewed by a California registered civil engineer prior to issuance of a building permit.

* The residence should be set on cut as much as possible. If fill is used, the topsoil should be stripped off before the fill is emplaced.

* No structure should be placed within twenty (20) feet of the edge of the steep slope facing the Pacific Ocean.

* All drainage and onsite runoff should be conveyed in a non-erosive manner offsite.

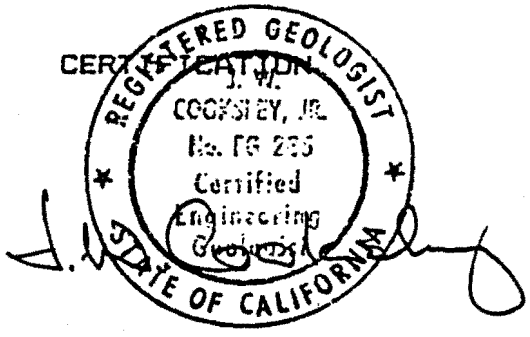
* The residence should be set on excavated cut surfaces and fill materials should be avoided unless there is approval inspection by a certified engineering geologist or a registered civil engineer.

* All storm water runoff and onsite drainage should be conveyed away from the footings and foundation in a non-erosive manner offsite. The ground surface should be shaped to effect a slope downward from the foundation and/or footings of 0.5 per ten (10) feet horizontally from the residence or, french drains should be emplaced around the perimeter of the building in such a way as to prevent water falling from the roof, running off walls, and and running from the drainspouts, from seeping into the subsurface in proximity to the footings and/or foundation.

Respectfully submitted,

James W. Cooksley,
Engineering Geologist

Scott R. Clark,
Assistant Geologist



J. W. Cooksley
Registered Engineering
Geologist # 285

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (37 OF 43)

HUMBOLDT COUNTY PLANNING COMMISSION

M I N U T E S

AUGUST 8, 1996

COMMISSIONERS PRESENT: Kitch Eitzen
Mickey Fleschner
Mary Gearheart
Dave Kirby
Jeffrey Smith
Jim Sorensen

COMMISSIONERS EXCUSED: Garrett Smith

STAFF PRESENT: Thomas D. Conlon, Planning Director
Giny Chandler, Deputy County Counsel
Steve Werner, Current Planning
Jim Baskin, Current Planning
Ann Kilgore, Clerk

The meeting was called to order at 7:45 p.m. in the Board of Supervisors' Chambers of the Humboldt County Courthouse, Chair Gearheart presiding.

The Minutes of the Revised JULY 11, 1996 approved (Kirby, Fleschner) by a vote of 4-0-2, COMMISSIONER JEFFREY SMITH AND CHAIR GEARHEART ABSTAINING; and Revised JULY 25, 1996 meetings approved (Jeffrey Smith, Sorensen) by a vote of 6-0. The Minutes of JULY 16, 1996 was continued to August 22, 1996.

PUBLIC HEARING ITEMS

1. **GARY JOHNSON, SHELTER COVE AREA;** a Coastal Development Permit and Special Permit for the design review and development of a 1,245 square foot, one bedroom single family residence with an attached two car garage with the living area above the garage. The residence is proposed to be served by public water and sewer. **CASE NOS. CDP-36-95 & SP-30-95; FILE NO. AP109-161-53.** (EJP)

   STAFF RECOMMENDATION: Approval based on findings in the staff report and as conditioned in Exhibit A.

THE PUBLIC HEARING WAS OPENED.

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE
(38 OF 43)

EXHIBIT E

STEVE WERNER gave the staff report summarizing the project. He spoke of the issue of the potential of bluff retreat. The applicant is required to provide a geologic report, this and an addendum were prepared for this project and are provided in the Supplemental. The report finds that the site is suitable for residential purposes but recommends a 20 foot setback from top of slope for building. This setback is included as a condition of approval. He referenced Mr. Rourke's letter regarding his concerns for bluff erosion.

COMMISSIONER JEFFREY SMITH expressed difficulty in determining the annual retreat of the bluff.

STEVE WERNER deferred to Baird Engineering to respond to this issue.

ALLAN BAIRD, engineer for applicant; spoke of the history of working in this area and has acquired an understanding of this area regarding bluff retreat. He referred to a report prepared in 1990 for an adjacent lot and one for lot 14. In 1992 a severe earthquake took place and the residences engineered by his firm have not sustained any structural damage. They have reviewed the retreat of the bluff for the last 60 years. They have been able to determine that the retreat is less than 20 feet in about 50 years. This is how he determined his recommendation of a 20 foot setback. This lot is helped more because it wraps around and faces almost due north, therefore, the wave action does not come into this toe. Also, there are no stress cracks in the road in this area. He recommends approval.

COMMISSIONER JEFFREY SMITH asked about lot 14. **ALLAN BAIRD** responded that it is two lots to the south of this applicant's property.

BILL ROURKE, Colorado and 55 Ridgeview Circle; during the 1992 earthquake their home on Ridgeview Circle was destroyed. When SHN evaluated the home as not repairable, the house was rebuilt by Graceco Construction. He emphasized that he does not object to this project because of view issue or because he wants no neighbors. He spoke of another house which was built next door on the same side of the street. The applicant is proposing to build on the bluff top which he feels is inappropriate. He spoke of standing on the beach, looking back at the bluff face, and notice the slumping which has occurred. The slump is caused by ground surface water. He continued to speak of the slumping and that the applicant is proposing to build on land that has yet to slump. He commented that he is a geologist graduated from University of New Mexico in 1956 and is not licensed in the state of California. He then spoke of the bluff retreat and that it is masked by vegetation. The slumping is obvious. He then quoted from the Code. If allowed to build, this structure will contribute to the slope instability. He then referred to erosion at Whale Point. He

BILL ROURKE CONTINUED: spoke of other erosion taking place in this immediate area. He spoke of bringing a can full of shale which he scraped up with the can to demonstrate how soft this rock is. He also reached over the edge of Shelter Cove Road and scraped with a can to show the difference between the compaction there and that on the proposed site. He then referred to a road nearby which has eroded almost entirely out. He fears that this bluff will give way if this house is built. When it goes, it will take out the sewer line with it opposite his house. The drainage has been designed to drain away from the bluff edge. He also expressed concerns for geologic instability of his road and Shelter Cove Road. He further spoke of needing a 50 foot setback from the top of the bluff. He spoke of this Commission not being on a site visit to get a better idea of what the reality of this site is. He made a video showing that the applicant is not blocking his view. He also went to the beach and took a view of what was a road and 12 lots that have eroded. He then went down Telegraph Creek and took a view up to where Shelter Cove Road is eroding. He submitted these cans of material and the video for Planning Department's records. He is asking that this not be approved as a building site.

CHARLIE WOODS, agent and resident of Shelter Cove; builds houses in Shelter Cove. He pointed out that the lots which eroded on Beach Road are quite some distance away. He spoke of the geologic reports done on all of these properties which demonstrate the retreat. He spoke of the erosion on Shelter Cove Road being several miles away. The bluff is about 250 feet high and the toe is about 75 feet away. This bluff does not drop straight down. There are other houses in this location which were not substantially damaged by the 1992 earthquake. The applicant's house will be a steel-framed house which makes it highly earthquake proof. He spoke of the 20 foot setback requirement. He urged that this Commission use the information provided by the California licensed professionals.

CAROL JOHNSON, applicant; explained that they did their homework before they bought the land and that they have measured the risks. She feels that Mr. Rourke does have a view and when they build part of it will be destroyed. That this is his real issue, not the issue of safety concerns. She also spoke of the whole state of California being an earthquake area. This is part of living in California. She believes that this is a buildable place. There is no way she would live in a home that she believes would go off a bluff taking her family with it and requested approval.

COMMISSIONER KIRBY explained that this Commission has been to Shelter Cove and have firsthand knowledge of this area. He has seen this lot and does not see the necessity for submitting Mr. Rourke's video.

ALLAN BAIRD; referred to a letter sent May 16 regarding the area of demonstration of stability. He spoke of the types of materials submitted to substantiate his report. He quoted a statement from Don Tuttle, Public Works Department regarding the retreat of the bluff in this area of demonstration.

THE PUBLIC HEARING WAS CLOSED.

COMMISSIONER FLESCHNER commented that he feels the project meets the technical requirements. He concurs with the applicant and that they should be able to take their own risks.

COMMISSIONER KIRBY commented that he has had concerns of projects in this area. He has come to the conclusion that if people choose to live in dramatic places, they subject themselves to more risks. He also pointed out the Mr. Rourke apparently likes this area because he had his house rebuilt on the same lot. If he felt information were being withheld from buyers in this area, he would oppose more projects out there. He feels that if a buyer is well informed, it is their business as to where they choose to build when the requirements of law are met.

THE MOTION WAS MADE (Kirby, Sorensen) to approve this project based on the findings in the staff report and as conditioned in Exhibit A.

CHAIR GEARHEART spoke of trusting the experts in forming decisions.

THE MOTION PASSED BY A UNANIMOUS VOTE OF 6-0.

2. **LELAND ROCK, ALTON AREA;** a Conditional Use Permit, Surface Mining Permit, Reclamation Plan and review of financial assurance cost estimates for an in-stream surface mining operation involving the annual extraction of up to 100,000 cubic yards of river-run material from the Van Duzen River. **CASE NOS. CUP-34-94, SMP-05-94, & RP-05-94; FILE NO. AP201-262-05.** (JRB)

   STAFF RECOMMENDATION: Approval based on findings in the staff report and as conditioned in Exhibit A.

THE PUBLIC HEARING WAS OPENED.

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-59
APPLICANTS RESPONSE (41 OF 43)

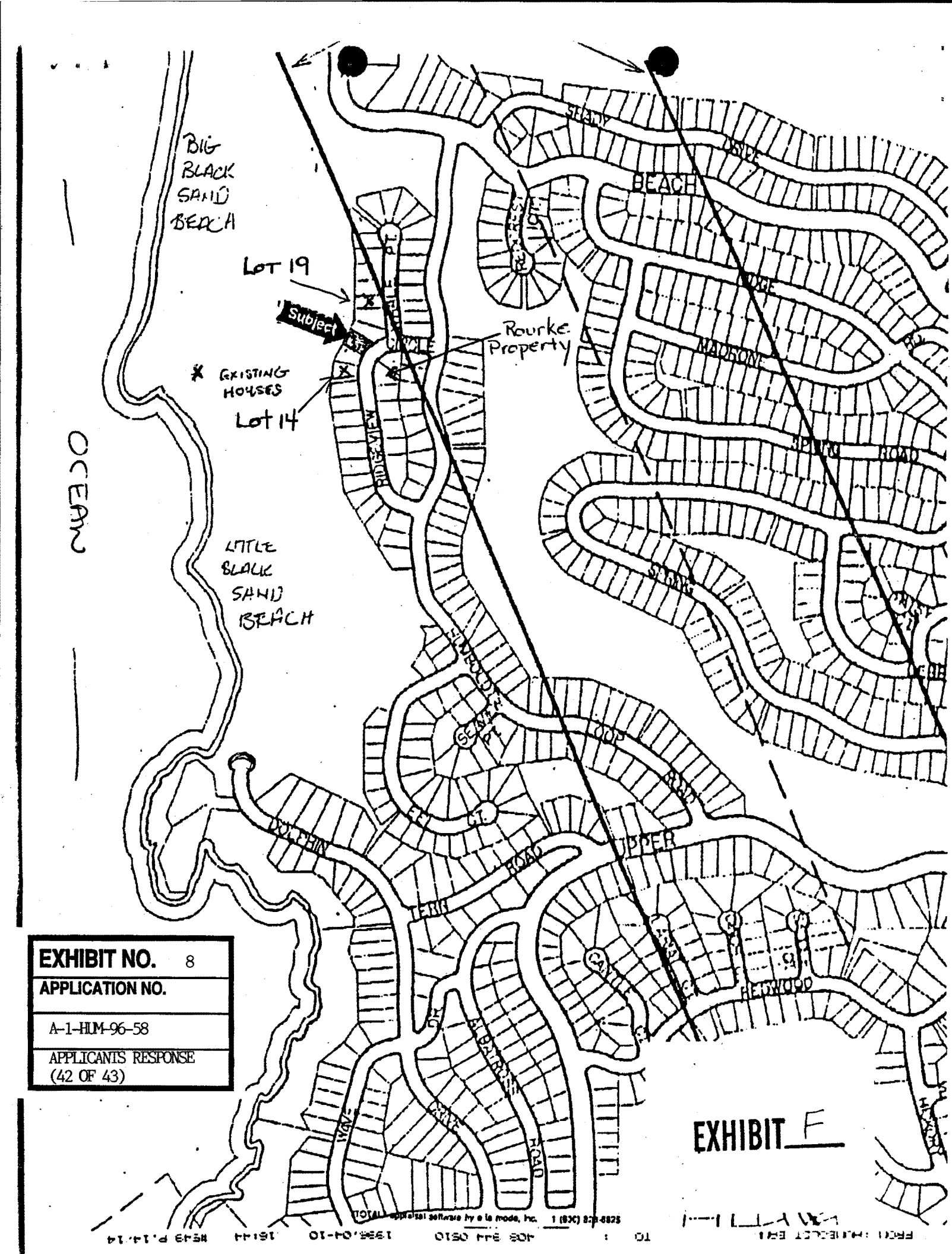


EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE (42 OF 43)

August 24, 1992

55 Ridge View Ct, Shelter Cove, Humboldt County, CA

Report of inspection of existing foundation

I inspected the existing foundation twice, once on July 30, 1992 and once on August 7, 1992. The existing foundation is in good condition. It appears to have suffered no damage from the seismic event of April 25, 1992. The plans show an adequate amount of steel in the foundation, and I was informed of a conversation with the builder in which he said he added more steel.

Based on these observations and reports I hereby certify that the foundation is adequate for use to rebuild another structure of the same size, shape and usage as was previously built.

If you have any questions, please call me.

Thank You

Marvin D. Chapman PE
P.O. Box 1123
Arcata, CA 95521
707-826-9412

EXHIBIT NO. 8
APPLICATION NO.
A-1-HUM-96-58
APPLICANTS RESPONSE
(43 OF 43)

EXHIBIT G

A.M. BAIRD
Engineering & Surveying

1100 MAIN STREET — P.O. BOX 396, FORTUNA, CA 95540 — (707) 725-5182

CONSULTING — LAND DEVELOPMENT — DESIGN — SURVEYING

October 4, 1996

EXHIBIT NO. 9
APPLICATION NO.
A-1-HUM-96-58
ENGINNEER'S (1 OF 7)

Nancy Chillag
c/o Carol Rees-Johnson
17880 Holiday Drive
Morgan Hill, California 95037

RE: Johnson
APN # 109-161-53
Block 149 Lot 16
Shelter Cove, California
91-1269

Dear Ms. Chillag,

As requested by Mrs. Carol Rees-Johnson I have reviewed a letter from Mr. William Rourke to Mr. Robert Merrill of the California Coastal Commission (undated) regarding the development of Mr. and Mrs Johnson's house at 40 Ridgeview Circle in Shelter Cove. In addition, I have reviewed a soils report dated August 10, 1995 that I had created for this lot, as well as a Geologic Hazards Investigation for the lot directly to the north of the Johnson lot (dated August, 1990). I have also referred to the Humboldt County General Plan Volume 2, south coast area plan of the Humboldt County local coastal program, April of 1990, as well as the Humboldt County General Plan, Volume 1, December 10, 1994, and the appendix to Title III, Division I of the Humboldt County Code - Coastal Zoning Regulations (no date).

I have been asked by Mrs. Rees-Johnson to review Mr. Rourke's letter and provide a response to his individual items. Mr. Rourke's letter basically quotes sections of the County Code, sometimes verbatim, sometimes not. He provides his own written response to some 20 excerpts from the County Code. As a method of providing some clarification our responses to Mr. Rourke's ideas, I have gone through Mr. Rourke's letter and tried to separate out his responses (see attached). I have labeled his responses alphabetically from A thru T on his letter. In my letter to you I will retype his response from A thru T and provide a counter response from myself immediately after his response.

A) *The appellant asserts that building the steel frame residence as proposed necessitates removal of protecting natural vegetation from the top of the seacliff bluff, destablishing the bluff substrata, increasing the probability of landslide / erosion of the seacliff.*

B) *The appellant asserts that building the steel frame two story residence would place a significant weight upon only moderately compacted strata forming the seacliff, thus risking failure in fracture of the bluff top, as can be seen on immediately adjacent seacliff. Fracture of the strata, with further slumping, would hazard Ridgeview Circle roadway and its underlying*

sewer line, to the detriment of public safety.

C) *The appellant asserts that grading of the lot for foundation, and placement of the proposed structure, WILL contribute significantly to erosion, and the weight WILL contribute to geologic instability.*

Mr. Rourke's first three items of concern A, B, and C, basically state that construction of the residence will lead to destabilization of the bluff because of removal of vegetation, as well as the additional weight imposed from the structure and the overall grading of the site will contribute to geologic instability. These factors were all discussed in our soils report on pages 2 and 3 as well as in the geologic report by Cooksley on pages 21 and 22. It is our general consensus that these concerns by Mr. Rourke are unfounded and that the homesite will not contribute to the instability of the hill side in this area. From my own discussions with the contractor, it is understood that all of the surface drainage from this lot will be directed towards the street, away from the edge of the bluff. In addition, the weight of the soil to be removed from the construction site is greater than the weight of the proposed construction; this will make the bluff tip safer than it is now.

D) *New development shall be consistent with the adopted Humboldt County Safety and Seismic Safety element of the General Plan. Specifically, when siting new development, the Natural Hazards/Land Use Risk Rating Matrix, Chapter 3 of Vol. I should be used in conjunction with plates I, II, & IV. Plates I and II are maps delineating seismic zones relating to earthquakes shaking as well as land stability and other natural hazard conformation. Plate IV defines the Alquist-Priolo special studies zone established by Chapter 7.5 Division 2 of the California Resources Code.*

Appellant asserts that in "siting (the proposed) new development, the Natural Hazards/ Land Use Risk Rating Matrix, Chapter 3 of Vol. I (were NOT) use in conjunction with plates I, II, and IV. Specifically:

Mr. Rourke makes reference to plates I, II, and IV which are maps showing earthquake zones and slopes stability related issues. In fact, these plates (maps) have been replaced with a more current updated map (see enclosed: The General Plan Geologic Map which has been adopted by the County in 1984. The Geologic hazard Land Use Rating Matrix, Chapter 3 of Volume I (Figure 3-5), as well as the Geologic Hazards Land Use Matrix of Appendix to Title IV). Division 1 of the Humboldt County Code - Coastal Zoning Regulations (Figure 1) merely dictates which type of geologic investigation is needed for each specific development. For residential development in this area the Geologic Hazards Land Use Matrix calls out for an R2 Soils Report to be provided. Mr. Rourke states that the Matrix was not used in conjunction with the Plates (or maps). In fact, these are two separate issues. The Matrix merely tells you which type of report is required. When writing the R2 report the author needs to reference the maps, which we have done on page 2 in our report, and Mr. Cooksley has done on page 11 of his report.

E) *Hazard Review -- The County shall...require soil engineering and geological engineering investigations...for classes of development and hazard areas as shown in Table 1*

(page 3-11....).

F) *The appellant asserts that the required geologic engineering investigation was NOT done / presented to the Planning Commission.*

Now Mr. Rourke is referring to the Humboldt County General Plan Volume II - South Coast Area Plan, April 1990. More specifically, he is selectively quoting paragraph B.1 (Chapter 3, Page 9) of the south coast area plan.

Mr. Rourke is basically stating here that the County requires the developer to provide an engineering soils report and in fact, we did submit that report to the Building Department. It was approved by the Building Department. Mr. Cooksley's report was also submitted and approved by the Building Department.

G) *The appellant asserts that the CIVIL engineer reports submitted do NOT include descriptions of the moderately compacted detritus from the King Range of mountains, which are the substrata underlying Whale Point Court and Ridgeview Circle and its adjacent lots; nor is any mention made of the surface manifestation of the San Andreas fault line along Humboldt Loop road, immediately behind Whale Point Court and its very recent influence on all contiguous lots.*

Mr Rourke has asserts that there is a different type of soil found on the sites, specifically a compacted detritus. However, the geologic report by Cooksley, a registered engineering geologist, clearly describes which type of soil is actually found there on pages 12, 15, 17 and 22 of his report. It was determined that subsoils of the site are of adequate strength to support the proposed development. This is mentioned on page 23 of Mr. Cooksleys report, and on page 3 of our report. Mr. Rourke also asserts that a surface manifestation of the San Andreas Fault line is evident along Humboldt Loop Road, immediately behind Whale Point Court. This too is incorrect. The County maps, in fact, show San Andreas Fault heading out to sea south of Shelter Cove. A field survey has been done within the past two years at Shelter Cove to try to determine localized fault lines in the area. To the best of my knowledge this data has not been published yet.

H) *The CIVIL engineer reports submitted do NOT refer to the nearby house constructed on lot 14, on slumped erosion material evidencing historic seacliff failure; nor to obliteration of lots 9 through 14 along the former Beach Road and the road itself; nor the current evidence of erosion of the seacliff, vicinity of lots 20, 21 and 22; nor the unquestionable evidence of erosion all along the toe of the cliff. The civil engineer reports DO confirm that the area is seismically active and particularly susceptible to fracture and erosion of designated unstable strata.*

Mr. Rourke makes several ascertains in this paragraph, the first being some alleged slumps in the erosion material near lot 14. In fact, there is some minor soil that has eroded down the bank along the entire length of the cliff. This is common throughout any coastal area and is not indicative of an impending major slope failure. Another assertion that he makes is that lots 9 through 14, along the former Beach Road have been obliterated. To the best of my knowledge, there were no other roads or lots created down hill from this site. He speaks of erosion of the

seacliff in the vicinity of lots 20, 21, and 22 and of an alleged unquestionable evidence of erosion all along the base of the cliff. Again, at the base of any cliff there will be some material that has slumped down. However, as indicated in the report on page 21, this is not indicative of an impending major slope failure.

I) *"Geologic conditions, including...rock types and characteristics in addition to structural features, such as bedding, joints, and faults" included in addenda refer to "basal rock" visible along the shore as a rather thin underlayment, but NOT to the "Geologic substrata sediment which composes the bulk of the underlying structure of lot 16 and the whole of Ridgeview Circle and Whale Point Court, as required.*

Mr. Rourke implies that we have not, and Mr. Cooksley has not, adequately described the underlying soils at the site. However, both reports are very thorough in describing the overall soil conditions at the site.

J) *The house on nearby lot 14 was built on seacliff landslide material slumped away from the bluff, evidencing seacliff failure. The very prominent "scoop" of the seacliff behind lots 20, 21 and 22 are the most telling evidence of past and potential landslide conditions. These two visible examples of past landslides are evidence of the inherent slope instability of the underlying substrata. The two examples of seacliff failure-landslide-straddle the Johnson lot 16 site, and evidence the potential of landslide of that lot bluff top with development placed on it.*

This paragraph by Mr. Rourke is essentially the same as paragraph G, above, where he alledges that minor slufling of seacliff material indicates that the entire seacliff is about to fail. Again, this is incorrect. I have reviewed a soils report created for lot 14 by R.E. Futrell, R.C.E # 22,772, of Pacific Crest Engineering (Nov. 1990); In this report there is nothing to indicate that the house on nearby lot 14 was built on seacliff landslide material slumped away from the bluff, evidencing seacliff failure.

K) *The substantial weight of a two story building on the demonstrated unstable substrata certainly has the potential of setting off other fracture failure, resulting in landslide, with probable failure of Ridgeview Circle road and sewer line beneath it.*

This is a prime example of the "slippery slope" argument. The allegation is that a small insignificant event is suppose to lead to a major catastrophic failure. Again, we do not concur with Mr. Rourke. As was mentioned in our response to his paragraphs A, B, and C above.

L) *Removal of the trees covering the lot 16 bluff top for foundation, will expose the subsurface to water infiltration and further the instability of the substrata. After construction, concentration of very heavy rain runoff from the building roof could further hazard the site to erosion, increased instability and landslide.*

Construction of the residence on the site will cover any tree root areas that have been exposed, and any other excavations for tree removal can be backed filled as required. This is mentioned in our soils report. Also mentioned in our soils report are requirements for dealing with the drainage from the house in order to prevent erosion at the site. Again, all of the drainage from the street will be directed towards Ridgeview Circle.

M) *Probably adequately addressed by the Civil Engineer report, given that construction practices are adhered to without reservation.*

Mr. Rourke is correct that these issues were addressed by our soils report. As a part of the inspection process (by the County Building Department) during construction of the residence, the building inspector verifies that all of the recommendations mentioned in the soils report are adhered to by the builder.

N) *Even the CIVIL Engineer report states: "This area of California is seismically very active and possibly subject to earthquakes of large magnitude which can produce significant ground shaking. This high to very high level of risk of seismic hazard is typical for Shelter Cove, and residents routinely assume this risk."*

If it were a risk only to residents on lot 161 would hold my counsel. I fear it is a risk to the roadway, the sewer line, and to all households on Ridgeview Circle.

Mr. Rourke again is reiterating his fear that construction of this house will bring down the entire hillside. Again, the licensed professional engineers and geologists do not concur.

O) *None the less, the report fails to address the "Potential effects of seismic forces resulting from a MAXIMUM CREDIBLE EARTHQUAKE;" My house across the street from the proposal--55 Ridgeview Circle was totally destroyed by the April 1992 Mendocino quake, of only a 6.5 magnitude.*

In fact the R2 soils report does take in to account a maximum credible earthquake; that is the whole purpose for requiring a R2 soils report. To the best of my knowledge, the only house that received significant structural damage in the 1992 earthquake, which by the way had a magnitude of 7.1, was Mr. Rourke's residence. It is my understanding that this residence was not, at that time, built to code; ie did not have the required lateral strength to resist an earthquake or wind forces. Whether this was a design error or a construction error is not known to me at this time. However, again through my close contact with nearly all the builders in the Shelter Cove area, as far as I know this was the only residence that suffered significant damage in that earthquake. Upon review of Mr. Rourkes project file at the County Building Department, it has been determined by Mr. Marvin Chapman, RCE 40310, that the foundation for Mr. Rourkes house was "adequate for use to rebuild another structure of the same size, shape and usage as was previously built".

P) *The CIVIL Engineer reports provided to the Planning Commission do NOT "evaluate the off-site impacts of development (e.g. development contributing to geological instability on access roads).....*

The CIVIL Engineer reports provided to the Planning Commission do NOT "....detail mitigation measures for any potential impacts...." nor do they "....outline alternative solutions".

The CIVIL Engineer reports provided to the Planning Commisston DO "...express a professional opinion as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the life span of the project", but the CIVIL Engineer professional opinion is NOT the GEOLOGICAL Engineer professional opinion called for by policy

NO "...currently acceptable engineering stability analysis method" was referenced, nor

did the CIVIL Engineer report "...describe the degree of uncertainty of analytical results due to assumptions and unknowns', as is required by policy.

Mr. Rourke has several issues in this paragraph. The first issue is dealing with off-site impacts. In our opinion there are no off-site impacts of development for this project. The house itself is the entire project and its access driveway has been included in our original analysis. Mr. Rourke feels that we need to detail mitigation measures for potential impact. Again, we do not feel that there are any other potential impacts that would be imposed by this development. Therefore, no alternative solutions are needed. Mr. Rourke also implies that a Civil Engineer is not qualified to express the opinions that are required by the policy. However, the policy does not call out for a geological engineer to provide input on this matter since an R2 report is required. A civil engineer with knowledge and experience in soils conditions can render such a report. My knowledge and experience is as follows: I have been a registered, practicing civil engineer for over 20 years. During that time I have inspected and written soils reports for approximately 90 sites in the Shelter Cove Subdivision. These reports have all been reviewed by qualified professionals and found to be sufficiently adequate. In addition, during my undergraduate program at Humboldt State University I have taken classes in Geology, Geotechnical Engineering, and Soils Science. Mr. Rourke also refers to a currently exceptable engineering stability analysis method. In fact, our reports have relied on photographic evidence of the area as well as an investigation of subsoils in the area. On this data we have formed a professional opinion; this is a currently acceptable engineering stability analysis method.

Q) *The planning Commission relied upon the CIVIL Engineer report that a setback of only 20 feet would meet this requirement. Reference was made to aerial photographs not available to the appellant or the Planning Commission for review and verification. The appellant did bring to the public hearing of thlek Planning Commission the videw tape accompanyint this appeal. The video tape was not reviewed at the public meeting, nor was it accepted by the Planning Commission when offered, for their later and private review. The statement of the CIVIL Eklngineer was taken as unsubstantiated fact and relied as the basis for approval in spite of the policy requirement for the geological investigation by a GEOLOGIST.*

We can provide aerial photographs of this area showing the lack of bluff retreat. We have not seen any video tape that has been prepared by Mr. Rourke. Mr. Rourke refers to the fact that the County relied on the opinion of a civil engineer. This is standard procedure in this situation, where an R2 report is required.

R) *The proposed new development on ocean front lot 16 is in the area of demonstration. "The area between the face of the bluff and a line described on the bluff top by the intersection of a plane inclined at a 20 degree angle from horizontal passing through the toe of the bluff or cliff" would fall far outside the lot 16 boundary.*

The proposed new development on ocean from lot 16 is in the area of demonstration. The lot depth from the street curb F(not the lot's front boundary line) is 55 feet to the seacliff escarpment. The proposed building is totally within, not set back from, the area of demonstration.

S) *Although "The County may designate a GREATER area of demonstration of EXCLUDE development entirely in areas of known high instability" the Planning Commission in this case*

has approved the construction WITHIN the area of demonstration, and IN an area of known high instability.

Mr. Rourke refers to an area of demonstration of stability from the Humboldt County General Plan of April, 1990. Mr. Rourke fails to fully quote the section. It states that the County may designate a lesser area of demonstration in specific areas of known geologic stability (as determined by adequate geologic evaluation and historic evidence), or where adequate protected works already exist. And it is our opinion and Mr. Cooksley's opinion that this area is geologically stable and the addition of the residence will not contribute to any geologic instability.

T) *As a trained geologist, I had more than casual interest in strata and sub-strata of the immediate area. I paid a California licensed geologist to survey my lot in 1991, who verified that the set back of my house from the bluff was a safe distance, but he also spode to the fact that those lots across the street were hazardous.*

Mr. Rourke ascerts that he is a trained geologist (however, there is no record of him being a trained geologist in the State of California, according to the Board of Registration for Geologists). He also mentions that he paid a licensed geologist to survey the lot in 1991, who allegedly made some claims regarding the slope in the area. However, I have not been provided with such a report, and I saw no Geologic Soils Report in any of his files at the County Building Department.

The facts in this case are that this area has been inspected by myself, a registered civil engineer, and the immediately adjacent lot which is nearly identical to lot 16, has been inspected by J.W. Cooksley, a registered engineering geologist. Both of our reports indicate that this site is safe and adequate for the intended construction, under the conditions set forth in said reports. If anyone were to dispute are opinions, this person would also need to be trained engineer or geologist in my opinion.

If you have any questions or comments please feel free to contact me at your convenience.

Sincerely,

REGISTERED PROFESSIONAL ENGINEER ALLAN M. BAIRD No. 33681 EXP. 12-31-97 CIVIL STATE OF CALIFORNIA

Allan M. Baird
Principal Engineer

TOR/am
C:WIN6.0/91-1269.ltr1

EXHIBIT NO. 9
APPLICATION NO.
A-1-HUM-96-58
ENGINEER'S (7 OF 7)

3.28 HAZARDS

*** 30253. New development shall:

1. Minimize risks to life and property in areas of high geologic, flood and fire hazard.

2. Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

A. DEVELOPMENT POLICIES

New development shall be consistent with the adopted Humboldt County Safety and Seismic Safety element of the General Plan. Specifically, when siting new development, the Natural Hazards/Land Use Risk Rating Matrix, Chapter 3 of Vol. I should be used in conjunction with plates I, II, & IV. Plates I and II are maps delineating seismic zones relating to earthquake shaking as well as land stability and other natural hazard conformation. Plate IV defines the Alquist-Priolo special studies zone established by Chapter 7.5 Division Z of the California Resources Code. The County shall request that the fire service agencies recommend to the planning staff new ordinances or amendments to existing ordinances that will promote the orderly implementation of recognized fire protection practices in the South Coast Area Plan. These recommendations shall be evaluated by the Board of Supervisors for inclusion in Phase III of the Local Coastal Plan for the South coast Area.

B. HAZARDS

1. Hazards Review -- The County shall amend Appendix Chapter 70, Section 7006 of the Uniform Building Code to require soil engineering and geological engineering investigations, prepared by a registered geologist or by a professional civil engineer with expertise in soil mechanics or foundation engineering, or by a certified engineering geologist, for classes of development and hazard areas as shown in Table 1 (page 3-11 of this document). The report should consider, describe and analyze the following:

   a. Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site;

   b. Historic, current, and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs, where available, and possible changes in shore configuration and sand transport;

   c. Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features, such as bedding, joints, and faults;

   d. Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity;

EXHIBIT NO. 10
APPLICATION NO. A-1-HUM-96-58
Certified LUP Policies
(Page 1 of 3)

e. Impact of construction activity on the stability of the site and adjacent area;

f. Ground and surface water conditions and variations, including hydrologic changes caused by the development (i.e. introduction of sewage effluent and irrigation water to the ground water system; alterations in surface drainage);

g. Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e. landscaping and drainage design);

h. Effects of marine erosion on seacliffs;

i. Potential effects of seismic forces resulting from a maximum credible earthquake;

j. Any other factors that might affect slope stability.

The report should evaluate the off-site impacts of development (e.g. development contributing to geological instability on access roads) and the additional impacts that might occur due to the proposed development (e.g. increased soil moisture from a septic system). The report should also detail mitigation measures for any potential impacts and should outline alternative solutions. The report should express a professional opinion as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the lifespan of the project. The report should use a currently acceptable engineering stability analysis method and should also describe the degree of uncertainty of analytical results due to assumptions and unknowns. The degree of analysis required should be appropriate to the degree of potential risk presented by the site and the proposed project.

Waivers from this report requirement may be granted by the Chief Building Inspector outside the areas designated in Appendix E.

The developments permitted in the hazard areas shall be sited and designed to assure stability and structural integrity for their expected economic lifespans while minimizing alteration of natural land forms. Bluff and cliff developments (including related storm run-off, foot traffic, site preparation, construction activity, irrigation, waste water disposal and other activities and facilities accompanying such development) shall not create or contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas.

Alteration of cliffs and bluff tops faces, or bases by excavation or other means shall be minimized. Cliff retaining wall shall be allowed only to stabilize slopes.

3.28B 2. Shoreline Erosion

New development on ocean front lots shall maintain a minimum structural setback defined as the area of demonstration, unless a report prepared consistent with the provisions of Appendix Chapter 70, Section 7006 of the Uniform Building Code, as amended above, demonstrates that development at an alternate site will assure the stability and structural integrity of the project for its expected economic life.

TABLE 1
LAND USE/NATURAL HAZARDS INVESTIGATION

BUILDING TYPE/LAND USE	HMZ	Landslide Zone 0	1	2	3	Liquefaction Zone N	L	M-L	M	H	VH
Nuclear power plants, major dams hazardous chemical storage	X		X	X	X		X	X	X	X	X
Hospitals, fire and police stations, civil defense headquarters, life line utility systems (non-redundant facilities), emergency broadcast stations, ambulance stations	X		X	X	X		X	X	X	X	X
Schools, theaters, auditoriums hotels, motels, office buildings, high and medium density residential, redundant utility systems, major highway bridges	X		X	X	X		X	X	X	X	X
Single Family residences, normal commercial, industrial, warehousing, and storage	X			A	X			X	X	X	X

Shelter Cove is included here on Plate I Seismic Safety Map

Explanation

X Site investigation required

A Site investigation required if located in Area of Demonstration

Landslide Zones: 0=Negligible, 1=Low Instability, 2=Moderate to Moderately High Instability, 3=High Instability

Liquefaction Zones: N=Nil, L=Low Potential, M-L=Moderate to Low Potential, M=Moderate Potential, H=High Potential, VH=Very High Potential

HMZ: Hazard Management Zone (Applies to Official Alquist-Priolo Special Study Zone

Source: Humboldt County Seismic Safety and Public Safety Element pp. 49-50 (ADOPTED)

EXHIBIT NO. 10
APPLICATION NO. A-1-HUM-96-58
Certified LUP Policies
(Page 3 of 3)

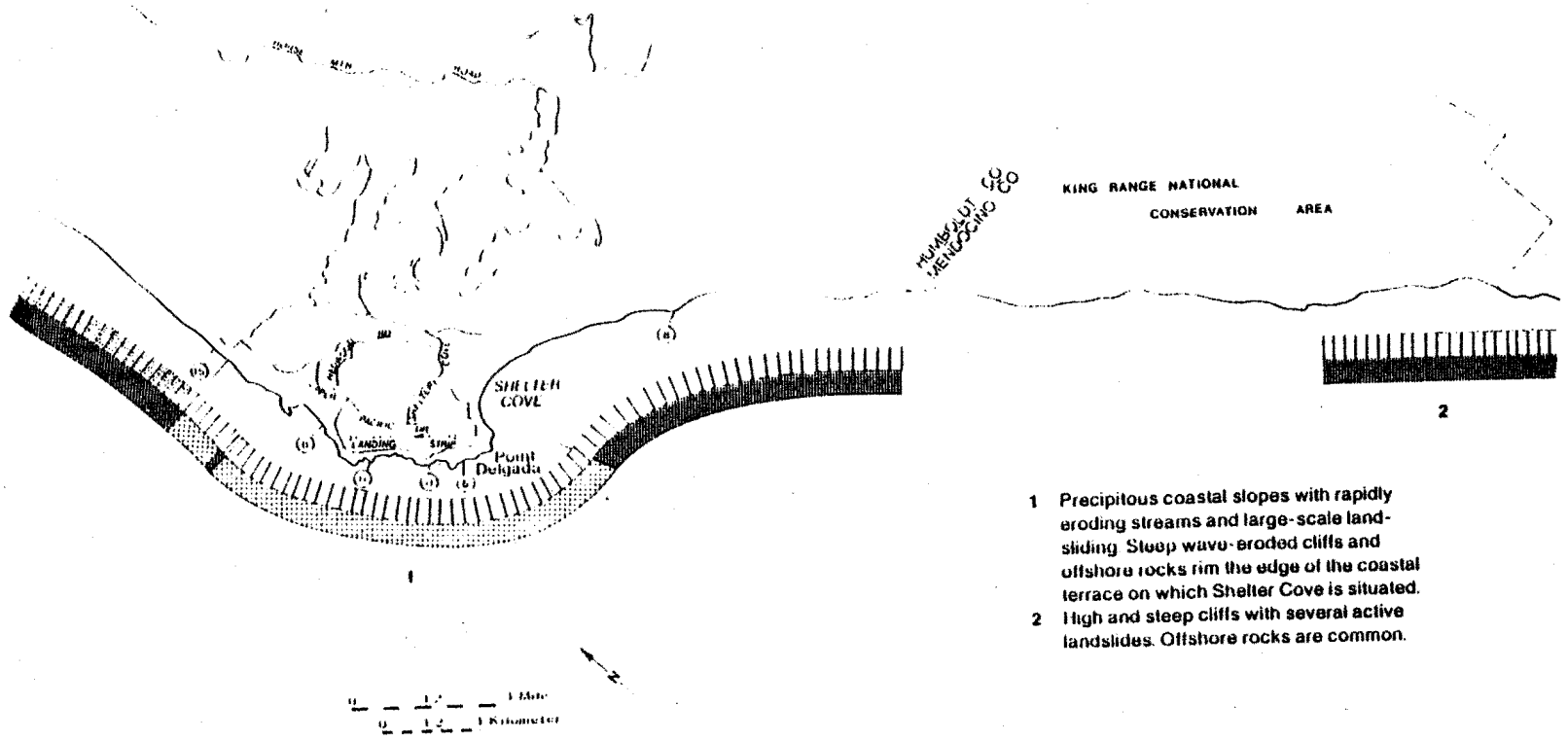


Figure 7.16. Site analysis: Shelter Cove area.

EXHIBIT NO. 11
APPLICATION NO. A-1-HUM-96-58
Erosion Rates

FROM; LIVING WITH THE CALIFORNIA COAST, GRIGGS & SAVOY, EDITORS