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STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA COASTAL COMMISSION
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Hearing Date: 5/12/04
Commission Action:

RECORD PACKET COPY

CLAIM OF VESTED RIGHTS

STAFF REPORT AND RECOMMENDATION

CLAIM NO: 3-04-20-VRC

CLAIMANT: ALISTAIR BLACK

PROJECT LOCATION: Beach and base of coastal bluff seaward of residence at 4440 Opal Cliff Drive in the Opal Cliffs region of the unincorporated Live Oak area of Santa Cruz County (Assessor's Parcel Number 033-151-08).

DEVELOPMENT CLAIMED: Concrete shoreline protective device (seawall) at base of bluff.

FILE DOCUMENTS: 1) Claim of Vested Right, including, among other things, opinion of G.E. Weber, Ph.D., Geological Consultant, dated October 1, 2002, and aerial photographs of site included therewith, 2) Letter from Commission staff to claimant's attorney dated April 14, 2003, and aerial photographic image of site taken in June, 1978, attached thereto, and 3) Letter from claimant's attorney to Commission staff dated August 12, 2003 and supplemental opinion by G.E. Weber dated August 5, 2003, enclosed therewith.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends **denial** of the claim of vested rights. Alistair Black ("claimant") claims a vested right, relieving him of the obligation to which he would otherwise be subject to apply for and obtain a coastal development permit (CDP), for a stepped, concrete seawall constructed at the base of the coastal bluff on claimant's beachfront parcel. To prevail in this claim claimant must demonstrate that the seawall was present at this location prior to February 1, 1973, the effective date of the permitting requirement of the Coastal Zone Conservation Act of 1972 (Proposition 20). To make his case that the

subject seawall satisfies this standard, claimant places principal reliance on a photographic image from the collection of Dr. Gary Griggs, director of the Long Marine Lab at the University of California at Santa Cruz (UCSC). However, staff's interpretation of this photographic image is that there is an alternative explanation for the image of the "seawall" that claimant believes the photo shows, and, moreover, that there are features of the image that tend to undermine the claim. In addition, an independent investigation by staff brought to light an additional aerial photograph from Dr. Griggs' collection taken in June, 1978, that in the opinion or staff shows conclusively the absence of a seawall from the subject site. Claimant does not dispute the staff's interpretation of this 1978 photo, but argues that there is a plausible explanation for what the image shows that is not inconsistent with the subject claim. Specifically, claimant argues that the reason the 1978 photo does not depict the seawall is that the seawall has been obscured by a rock or landslide from the bluff above the seawall. However, this interpretation of the 1978 photo is inconsistent with the configuration of the seawall as shown on later aerial photographic images. For all these reasons, staff recommends that the Commission deny the claimant's vested rights claim for the seawall.

ACTION: Commission Hearing and Vote

STAFF RECOMMENDATION FOR DENIAL OF CLAIM: The Executive Director has made an initial determination that Claim of Vested Rights 3-04-20-VRC has not been substantiated. Staff recommends that the Commission deny Claim of Vested Rights 3-04-20-VRC, and that the claim thus be rejected.

Motion: *"I move that the Commission determine that Claim of Vested Rights 3-04-20-VRC is substantiated and the development described in the claim does not require a Coastal Development Permit."*

Staff recommends a **NO** vote. Failure of the motion will result in a determination by the Commission that the development described in the claim requires a Coastal Development Permit and in the adoption of the resolution and findings set forth below. The motion passes only by an affirmative vote of a majority of the Commissioners present.

Resolution for Denial of Claim:

The Commission hereby determines that Claim of Vested Rights 3-04-20-VRC is not substantiated and adopts the Findings set forth below.

Findings and Declarations

1. Legal Authority and Standard of Review

Section 30608 of the Coastal Act, in relevant part, provides that:

"No person who has obtained a vested right in a development prior to the effective date of this division or who has obtained a permit from the California Coastal Zone Conservation Commission pursuant to the California Coastal Act of 1972 (commenting with Section 27000) shall be required to secure approval for the development pursuant to this division; provided, however, that no substantial change may be made in any such development without prior approval having been obtained under this division."

The effective date of the division, i.e., the Coastal Act, is January 1, 1976. This site was also subject to the permitting requirements of the Coastal Act's predecessor statute, the Coastal Zone Conservation Act of 1972 (aka Proposition 20, "the Coastal Initiative"), which went into effect on February 1, 1973. The Coastal Zone Conservation Act required a coastal development permit for new development on this site occurring after February 1, 1973. Thus, the critical date for evaluating this Claim of Vested Rights is February 1, 1973 and this will be referred to as the effective date of the Coastal Act for this site.

Pursuant to Section 30608, if a person obtained a vested right in a development on the subject site prior to the effective date of the Coastal Act, no coastal development permit (CDP) is required for that development. However, no substantial change in the development may be made until obtaining either approval in a coastal development permit, or approval pursuant to another provision of the Coastal Act. In addition, any repair to the development must be conducted in compliance with the Coastal Act section 30610(d) and the regulations at Title 14 California Code of Regulations, section 13252.

The Coastal Act defines "development" as:

> *"the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including but not limited to, subdivision pursuant to the Subdivision Map Act ... change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, ...*

As used in this section, "structure" includes but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line." (Coastal Act Section 30106).

The procedural framework for Commission consideration of a claim of vested rights is found in Sections 13200 through 13208 of the Commission's administrative regulations. (Title 14, Division 5.5, California Code of Regulations (CCR)). These regulations require that the staff prepare a written recommendation for the Commission and that the Commission determine, after a public hearing, whether to acknowledge the claim. If the Commission finds that the claimant has a vested right for a specific development or development activity, then the claimant is exempt from coastal development permit requirements for that specific development only. Any changes to the exempt development after February 1, 1973 will require a permit. If the Commission finds that the claimant does not have a vested right for the particular development, then a coastal development permit must be obtained to authorize the development. If a coastal development permit is not obtained, then the development is subject to enforcement action under the Coastal Act to compel its removal.

The Commission must apply certain legal criteria to determine whether a claimant has a vested right for a specific development. These criteria are based on the terms of the Coastal Act and case law interpreting the Coastal Act's vested right provision, as well as common law vested rights claims. The standard of review for determining the validity of a claim of vested rights can be summarized as follows:

1. The development must have been completed by the date on which such development became subject to the permit requirements of the relevant law (in this case by February 1, 1973), or, if work was not completed by said date, the claimant must have performed substantial work and/or incurred substantial liabilities in good faith reliance on the governmental authorization received prior to February 1, 1973. (*Tosh v. California Coastal Commission* (1979) 99 Cal.App. 3d 388, 393*; Avco Community Developers, Inc. v. South Coast Regional Commission* (1976) 17 Cal.3d 785).

2. The claimed development must have received all applicable governmental approvals needed to complete the development prior to February 1, 1973, the effective date of the Coastal Zone Conservation Act of 1972. Typically this would be a building permit, grading permit, Final Map, Health Department approval for a well or septic system, etc. or evidence that no permit was required for the claimed development. (*Billings v. California Coastal Commission* (1988) 103 Cal.App.3d 729, 735).

The burden of proof is on the claimant to substantiate the claim of vested right. (Title 14, California Code of Regulation, Section 13200). If there are any doubts regarding the meaning or extent of the vested rights exemption, they should be resolved against the person seeking the exemption. *(Urban Renewal Agency v. California Coastal Zone Conservation Commission* (1975) 15 Cal.3d 577, 588).

A narrow, as opposed to expansive, view of vested rights should be adopted to avoid seriously impairing the government's right to control land use policy. *(Charles A. Pratt Construction Co. v. California Coastal Commission* (1982) 128 Cal.App.3d 830, 844, *citing, Avco v. South Coast Regional Commission* (1976) 17 Cal.3d 785, 797). In evaluating a claimed vested right to maintain a nonconforming use (i.e., a use that fails to conform to current zoning), courts "follow a strict policy against extension or expansion of those uses." (*Hansen Bros. Enterprises v. Board of Supervisors* (1996)12 Cal.4th 533, 568; *County of San Diego v. McClurken* (1957) 37 Cal.2d 683, 687).

The following vested rights analysis is based on information submitted by the claimant and supplemental Commission staff research or official Commission records.

2. Location, Description, and Background Regarding Property

The property on which the development that is the subject of the claim for vested rights (CVR) is located is at 4440 Opal Cliff Drive in an area of coastal Live Oak in unincorporated Santa Cruz County known as Opal Cliffs.[1] **(Exhibits 1, 2)** Opal Cliffs is the name for the area extending roughly from 41st Avenue to the City of Capitola city limits. This stretch of coastline is characterized by a row of private residential properties that are perched atop the bluffs located seaward of the first through public road (Opal Cliff Drive) from the sea. As a result, seaward public views and access from Opal Cliff Drive to the shoreline have been extremely curtailed. In addition, the base of Opal Cliff bluffs are almost continually armored (by rip-rap, seawalls, and other such structures) that significantly reduce the amount of beach area available for public use and enjoyment.

In 2001 Santa Cruz County granted to claimant and to claimant's immediate upcoast neighbor (4420 Opal Cliff Dr.) two coastal development permits (CDPs) for a "150 linear foot shotcrete shoreline protective structure on the upper 25 feet of bluff spanning the two subject properties equally." These CDPs were appealed to the Commission, and, on March 7, 2002, the Commission, on de novo review (Appeal Nos. A-3-SCO-01-117, 118), denied CDPs for the development that the County had approved. In doing so the Commission adopted findings that include the following observation:

> *As previously stated, there exists rip-rap (Banman) and rip-rap/concrete seawalls (Black) at the base of the bluffs at this location. The Commission has been unable to locate any coastal development permits authorizing the installation of the existing armoring, and pre-Coastal Act photo interpretation (to verify whether the armoring was placed prior to coastal permitting requirements) has proven*

[1] The Commission's processing of this CVR is based on the assumption that the subject development is located on land owned by the claimant. However, property boundaries at the shoreline of the Pacific Ocean are dynamic in character (see *Lechusa Villas West v. Cal. Coastal Comm'n* (1997) 60 Cal.App.4th 218, *cert. den.* 119 S.Ct. 163) and thus, at least at certain times of the year, the seawall may be located on publicly-owned tide or submerged lands. Nothing in this proceeding should be interpreted as constituting a waiver of any future assertion by the State of California of a proprietary interest in the land on which the subject seawall is located.

inconclusive. The County findings do not examine this point. Since large amounts of shoreline armor in coastal Live Oak were originally placed in the 1950s and 1960s, it may be that the existing armor at this location pre-dates the Coastal Act. In fact, the Applicant indicates that the armoring was originally installed in the early 1960s. In any case, since its installation date has not been verified, the status of the existing armoring remains partially clouded as of the date of this report.

In his CVR, the claimant describes the concrete seawall that is the subject of the claim as follows:

The wall [that is the subject of the claim] consists of 3x3x3-foot blocks tightly stacked over and around rip/rap held together by concrete. It is estimated that each block weighs approximately 2 tons. Each block has a hook made of bent steel bars that were clearly installed for the purpose of using a crane to move them and stack them.

The claimant goes on to state:

Approximately 2/3 of the wall is under discussion [i.e., is the subject of the CVR] and is that portion on Lot 32 (Black) which extends approximately 40 feet from the Black-Lincoln property boundary into [claimant's] property. Approximately 1/3 of the wall is on Mr. Lincoln's [downcoast] property.[2]

3. Analysis of Claim of Vested Rights

The claimant has submitted a Claim of Vested Rights (CVR) that purports to substantiate the claim that the subject concrete seawall was constructed prior to February 1, 1973. **(Exhibits 3, 4)** The CVR places principal reliance on an analysis by G.E. Weber, Ph.D., the claimant's geological consultant, of aerial photography of the site of the claimant's property. In light of the dispositive significance of the date of February 1, 1973, in his analysis Dr. Weber places particular emphasis on any photographic images of the claimant's property that were taken prior to that date that in his opinion show the presence of the seawall. Conversely, in staff's opinion equal significance deserves to be accorded to post-February 1, 1973 aerial photographic images, particularly any such images that depict the claimant's property without the seawall. In accordance with (14 CCR) section 13203 of the Commission's administrative regulations, the following paragraphs set forth 1) evidence advanced by claimant in support of his claim, 2) staff's response to the claimant's evidence, 3) evidence in opposition to the subject CVR, 4) claimant's response to opposing evidence, and 5) staff's analysis of claimant's response to opposing evidence.

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[2] In 1985 the Commission granted CDP No. 3-83-176-A2 for the portion of the seawall on property (4460 Opal Cliff Dr.) immediately downcoast from the subject site

a. Evidence Presented by Claimant and Staff Response.

i. The 1972 Aerial Photograph. In support of his CVR the claimant has submitted to the Commission pre-February 1, 1973, aerial photographic imagery taken of his property in the years 1967, 1969, and 1972 (2 images). In his CVR the claimant acknowledges that the images taken in 1967 and 1969 "show a vacant lot at my property *without a [sea]wall at the bottom of the cliff...."* (Emphasis added.) One of the two 1972 photographic images (taken in September, 1972, by the Department of Boating and Waterways) is simply inconclusive with regard to the presence or not of the subject seawall. Accordingly the claimant does not rely upon it.

Therefore, the only pre-February 1, 1973, photographic image that claimant has identified that according to the claimant shows the subject seawall on the claimant's property is that taken by Dr. Gary Griggs, Director of the Long Marine Laboratory at the University of California at Santa Cruz (UCSC) in November or December, 1972.

According to G.E. Weber, Ph.D., the claimant's geological consultant:

> *A simple comparison of the [December, 1972] photograph [with a 2002 photograph from approximately the same angle taken by Dr. Weber] reveals a* ***linear*** *white mass at the base of the seacliff that has the same* ***shape****, color and appearance as the seawall in the July 2002 photograph.* ***This mass is clearly not a portion of the seacliff, as indicated by its shape and position.*** *Therefore, I conclude, with virtual certainty that the seawall on the subject property was built...prior to January 1, 1973.*
>
> ...
>
> *...during my evaluation I took into consideration that this* ***linear*** *white mass...might be a shore platform,* ***part of the seacliff,*** *or simply rubble at the base of the cliff. Based on its position in respect to the cliff face, the rip-rap on the beach and the cliff to the northeast it is clear that it is none of these.* (Emphasis added.)

ii. Staff Response to Claimant's Evidence. Staff agrees that current aerial photographic images of the coastal bluff on the claimant's property show that the seawall at the base of that bluff is characterized by sharply delineated horizontal lines is thus is consummately "linear" in shape. However, the "white mass" shown on the 1972 photographic image is characterized by highly irregular and uneven margins that contrast dramatically with the regular and even horizontal margins of the seawall as shown in the 2002 photograph. Thus, contrary to the findings of Dr. Weber, the "white mass" shown in the 1972 image has a shape that is decidedly "nonlinear" in character. In addition, staff believes that a careful examination of the two photographs reveals that the "white mass" in the 1972 image is located in a different position relative to the cliff face than is the seawall in the contemporary image. Accordingly, in staff's view a much more likely interpretation of the "white mass" depicted in the 1972 image is that it is an outcropping of "Purisima Formation" bedrock. This interpretation finds support in the

outcroppings on this bedrock material that appear in the photographic images on neighboring properties at approximately the same elevation in the cliff face as the "white mass" shown in the l972 photograph.

iii. Sworn Statement by Mary Lee Lincoln. The claimant has also included in his CVR a sworn statement by Mary Lee Lincoln. Ms. Lincoln identifies herself as "the daughter-in-law of Robert and Fay Lincoln" owners of adjacent property at 4460 Opal Cliff Dr. In her statement Ms. Lincoln states that "prior to a house being constructed on...4440 Opal Cliff Dr." she observed "a large crane...lowering over the cliff, large concrete blocks...." In her statement Ms. Lincoln notes that the recollection stated therein is of "an event that occurred over thirty years ago."

iv. Staff Response to Claimant's Evidence. As noted in the sworn statement, the recollection contained therein is of an event that occurred "over thirty years ago," a period of time over which the reliability of anyone's memory can not unreasonably be questioned. Moreover, in staff's view this uncorroborated recollection is clearly outweighed by the much more compelling photographic evidence hereinafter discussed.

b. Evidence In Opposition to Claim, Claimant's Response to Unfavorable Evidence, and Staff Analysis of Claimant's Response.

i. The 1978 Aerial Photograph. Upon receipt of the subject CVR staff undertook an independent investigation of aerial photographic depictions of the beach and base of bluff at the claimant's property. Staff's investigation led it to the same collection of aerial photography that Dr. Weber utilized in performing his investigation, namely, that of Dr. Gary Griggs.[3] When staff investigated Dr. Griggs' collection it discovered a aerial photograph taken in June, 1978, that Dr. Weber had apparently overlooked in his investigation. The significance of this photographic image is that in it the seawall is completely absent from its location at the base of the bluff where it appears in later photographs. If this 1978 photographic image is taken at face value for what it appears to show, namely, the absence of any seawall on the claimant's property, it is fatal to the claimant's CVR because it means that the seawall was constructed sometime after 1978.

ii. Claimant's Response to Unfavorable Evidence. After staff called the claimant's attention to the 1978 photograph **(Exhibit 5)**, Dr. Weber, the claimant's geological consultant, prepared a supplemental analysis dated August 5, 2003 **(Exhibit 6)**. In his supplemental analysis Dr. Weber concludes that, contrary to what would appear to be the case from an examination of the 1978 photographic image, "the wall is present, but covered with earth from a small earth fall off the cliff face."[4]

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[3] Dr. Griggs has an extensive collection of historical aerial photography of the Santa Cruz County coastline.

[4] Elsewhere in his supplemental report Dr. Weber expresses the view that "the sea wall is [only] *partly* buried by an earth fall in the 1978 oblique photo of Griggs." (Emphasis added.) If the seawall is only "partly" buried then the part that is not buried should be visible in the image. No such "unburied" portion of the seawall is apparent in the 1978 photograph.

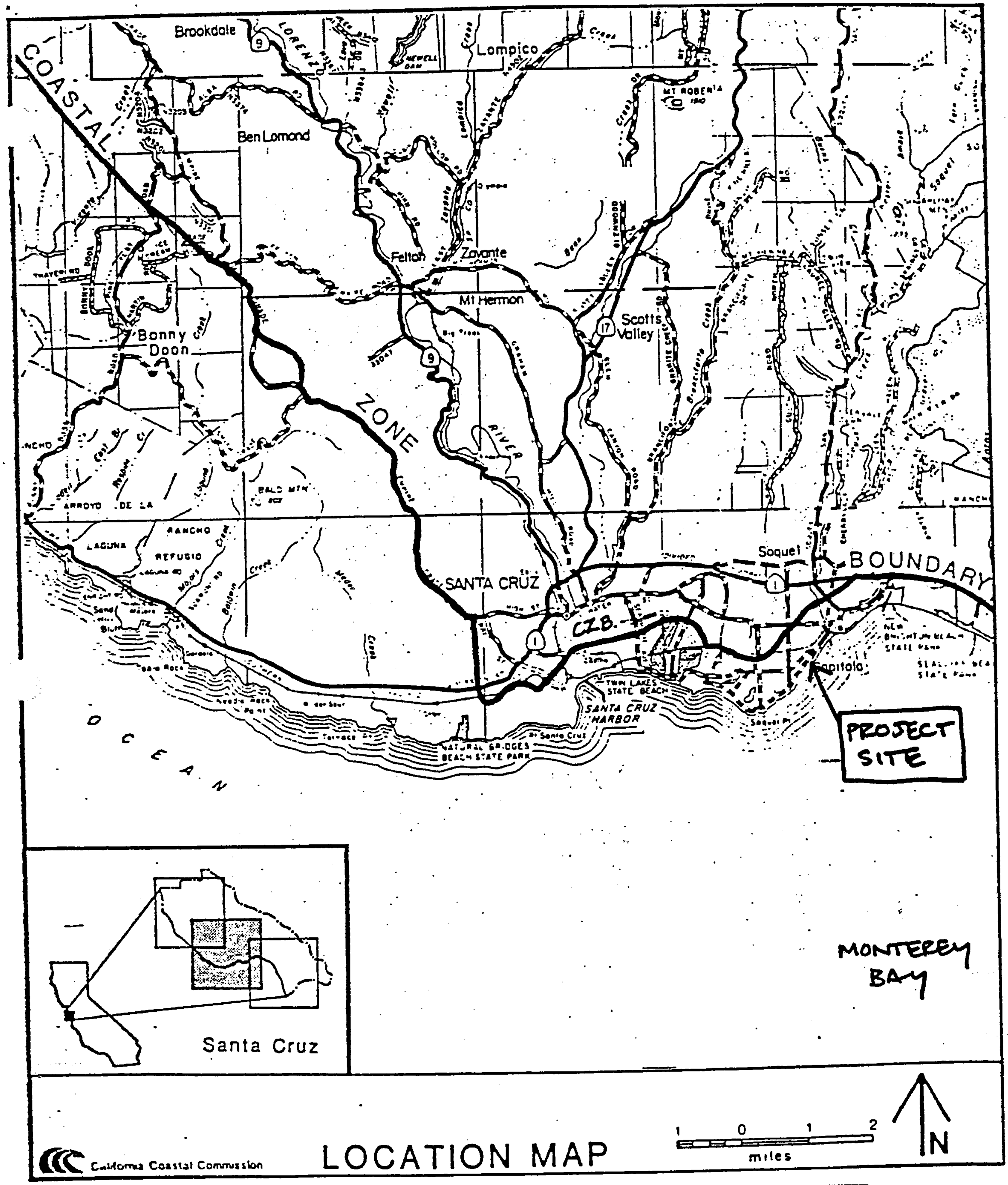
Claimant also, at least by inference, raises questions regarding the accuracy of what the 1978 oblique photograph appears to depict by repeated assertions that the seawall is visible on pre-1978 (but post-February 1, 1973) aerial photographs. In other words, if the seawall is present in pre-1978 photographs it is highly unlikely that it is not be present when the 1978 photograph was taken. For example, in his CVR the claimant asserts unreservedly that "the wall is completely visible in the 1975 pair [of photographs, identified by Dr. Weber as "SCZCO 1-1, 1-2"] (under stereo magnifier)." In his supplemental (but not in his original) report, Dr. Weber states that on the basis of his interpretation of these 1975 photographs "my level of certainty [as to the presence of the seawall in the photograph] is greater than 90%." Similarly, in his initial report Dr. Weber analyzes vertical photographs of the subject site taken in 1973 (identified by Dr. Weber as "Big Creek Lumber 7-1, 7-2, 8-1, and 8-2") and concludes that "[Despite] relatively poor resolution and scale,...with about 75-80% certainty I believe these photographs...show a sea wall at the base of the seacliff on the subject property."

iii. Staff Analysis of Claimant's Response to Unfavorable Evidence. Staff concurs with Dr. Weber that a small earth fall can be identified on the 1978 photograph. However, such an observation leaves unanswered the critical question of whether the "earth fall" that is apparent in the 1978 photograph is of sufficient magnitude to completely cover and obscure from sight a structure of a size and bulk as that of the subject seawall. For the following reasons, staff believes this question must be answered in the negative. Dr. Weber's supplemental report prompted staff to compare the 1978 photograph with later photographs in which the seawall is clearly present on the claimant's property. Staff found an oblique aerial photographic image of the claimant's property taken in the summer of 1987 as part of a joint undertaking by the Dept. of Water Resources and the Commission to be particularly instructive as a basis of comparison with the 1978 photograph. Such a comparison reveals convincingly that, given the configuration of the seawall as shown in the 1987 photographic image, if the seawall were present on the claimant's property in 1978 it would clearly project beyond the furthest downcoast extent of the earth fall and thus to that extent would be visible in the 1978 photograph. Since it is not visible to this extent, it is clear that the seawall is not present in the 1978 photograph.

With respect to the 1973 and 1975 photographs that Dr. Weber interprets in his reports, staff notes that, in contrast to the 1972, 1978, and 1986 photographs discussed above, these photographs 1) are vertical rather than oblique images of the property, and 2) are of a much lower scale and resolution, as noted by Dr. Weber himself. Staff has carefully examined the 1973 and 1975 photographs and can find in them no persuasive evidence of the presence of the seawall on claimant's property sufficient to cast doubt on the accuracy of the 1978 photograph.

CONCLUSION

For all the reasons set forth above, the Commission finds that Alistair Black has not met the burden of proving its claim of vested rights for a concrete seawall at the beach and bluffs seaward of the residence at 4440 Opal Cliff Drive, Santa Cruz County. This is not a determination of whether, ultimately, a seawall or other shoreline protective device can be allowed on the site, although the findings in Appeal Nos. A-3-SCO-01-117, 118, in which the Commission denied on appeal a shoreline protective structure on the upper bluff at this site, makes it unlikely that a seawall or other shoreline protective device can be allowed at the site at this time. Rather, the decision to deny the claim of vested rights means only that the development that is the subject of the claim is unauthorized unless and until the claimant goes through the permitting process under the Coastal Act, and is granted a CDP for it.



LOCATION MAP

EXHIBIT NO. /
APPLICATION NO. VRC
3-04-20-VRC

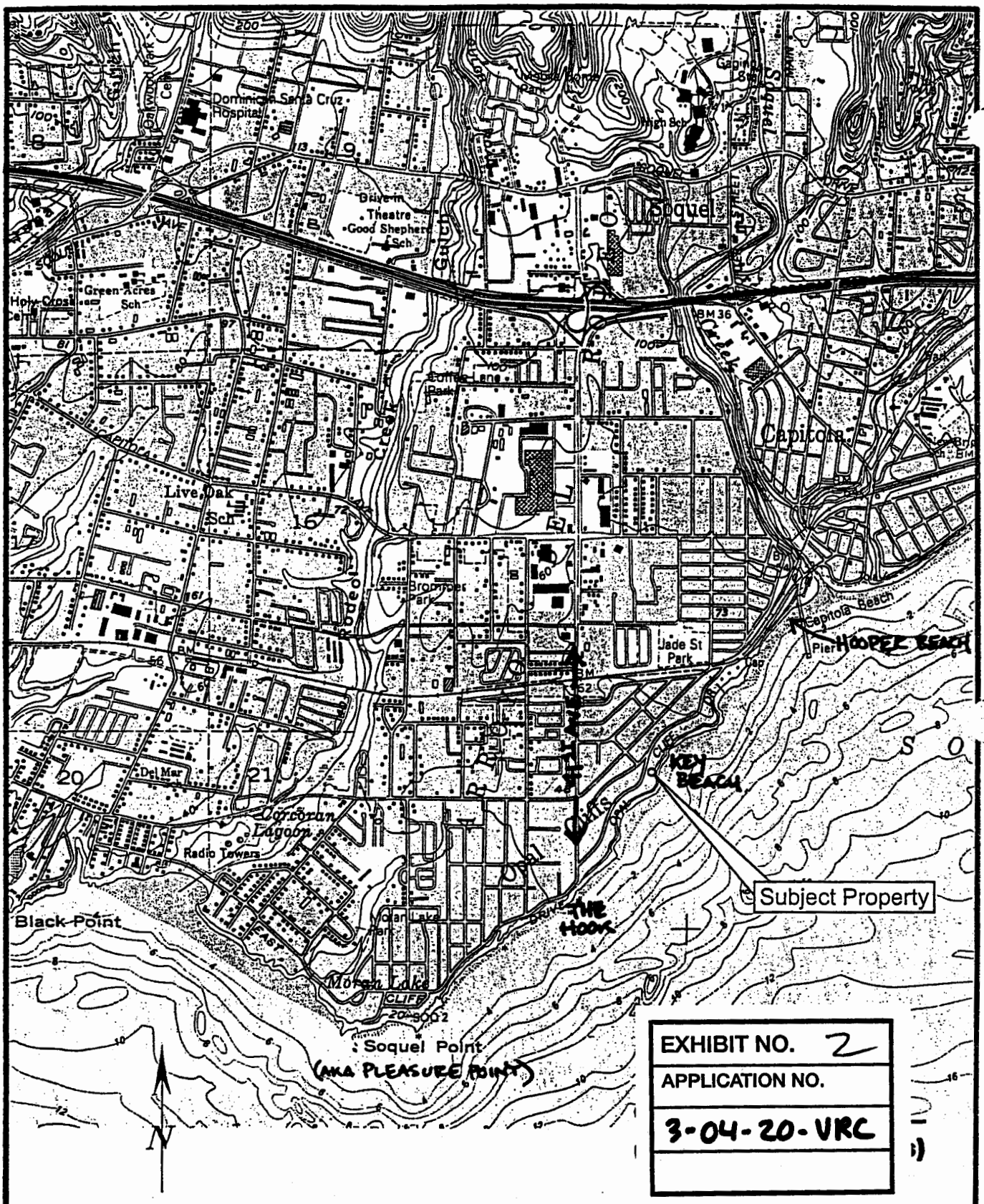


EXHIBIT NO. 2
APPLICATION NO.
3-04-20-VRC

BASE MAP: SOQUEL 7.5' Quadrangle, United States Geological Survey, 1954 (Photorevised 1994) Scale: 1" = 2,000'

Zinn Geology

TOPOGRAPHIC INDEX MAP
Banman Residence
4440 + 4420 Opal Cliff Drive
Santa Cruz, California

FIGURE # 1
JOB # 2001002-G-SC

EXHIBIT NO. 3	
APPLICATION NO.	
3-04-20-VRC	

RECEIVED
MAY 28 2002
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

May 24, 2002

Sharif Traylor
Enforcement Officer
Central District Office
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, CA 95060

Re: Seawall at 4440 Opal Cliffs Drive

Dear Mr. Traylor:

This letter is intended to both summarize major discussion points at the meeting of April 25, as you requested at the time, as well as the several events that have occurred since that time, including your letter of May 7.

First I would like to thank you for the printout of the 1972 photo that I had requested. However, the resolution of the scanning of that picture is not as good as I need for a full analysis. I would like to request, and would greatly appreciate, that I get access to the negative of that scanned picture. The picture is labeled "Portion of 1972 COAP Oblique Photo No. 722091". I would be happy to pay for my own high resolution copy to be made from the original negative of this photograph.

Also, let me again apologize for the lateness of my response to your request. I had hoped to assemble copies of the viewed photographs for your records, but I have discovered that the location of negatives for reproduction of archival photos takes somewhat longer than I might have hoped. I am still working on it and when my consulting geologist, Professor Gerald Weber of the University of California at Santa Cruz, returns from his vacation next week, I will get an update on when I may provide these items for you.

I received your summary dated May 7. I first wish to correct a couple of omissions in your summary. I also mentioned these in my voice mail to you last week:
At the meeting of April 25, I provided an original of a notarized statement from one Mary Lee Lincoln who witnessed the actual building of the wall previous to the building of the house, as is detailed in the statement.
I also provided for you at that meeting a copy of a "building inspection job record". This record details the dates of the major events in the original building of the house in 1972 as handwritten by the inspectors at the time.

I also provided the number of the CCC correspondence 3-83-176-a2 at that meeting. I followed up through Mr. Burroughs with a copy of the document that you mentioned in your letter. I also gave you a date for the purchase of the property by Mr. Raymond Ansell of approximately March 17, 1972 as stated on a document called "grant deed". I did not provide this document to you as it is hard to read and I was not sure if that date was the exact date of purchase.

Thank you for your letter of May 7th summarizing our meeting of April 25, 2002. As promised in that meeting, this letter summarizes why we believe that the seawall at my property was constructed before February 1, 1973. From all the evidence we can gather, it is readily apparent that the seawall was constructed in the late summer/fall of 1972. There is no evidence that we have seen that the wall was constructed anytime after February 1, 1973.

This property has changed ownership eight times since 1972, but we have been able to piece together the facts that pertain to the wall's construction. The facts, as we currently know them and traced backward in time, are as follows:

1. The wall today is clearly not new, by examination. It consists of approximately 3x3x3-foot blocks tightly stacked over and around rip-rap held together by concrete. We estimate that each block weighs in excess of one ton. Each block has a hook made of bent steel bars that were clearly installed for the purpose of using a crane to move them and stack them. In your May 7th letter, you raised the possibility of a field visit to inspect the seawall. I would be pleased to accompany you on any such visit. Just let me know a convenient time.

2. The wall is part of a longer seawall that extends across the property of my downcoast neighbor, Mr. Robert Lincoln. According to the Coastal Commission staff report (#3-83-176-A2) that led to the approval of Mr. Lincoln's wall, his wall was to "essentially fill a highly erodable gap between two existing concrete walls [one of which is now mine] approved by the Commission's previous action." We have already provided a copy of this staff report to Nancy Cave in your San Francisco office.

3. My attorney, Jim Burroughs, has been informed by Nancy Cave that Commission staff are still searching for the above-referenced "Commission's previous action" approving my wall.

4. An aerial photograph from 1986 shows a structure where my wall should be, partially obscured by vegetation or landslide debris. We reviewed this

photograph at our April 25th meeting, and I will provide a copy for your further review at a later date (when I have one).

5. An aerial photograph from 1975 clearly shows the same structure as the 1986 photograph (without the vegetation on top). We also reviewed this photograph at our meeting, and I will provide a copy for your further review at a later date (when I have one).

6. An aerial photograph taken on April 11, 1973 also shows evidence of the wall structure. This is the photograph that you thought was inconclusive as to the existence of the wall. You suggested in your May 7th letter that it would be appropriate to involve the Commission's mapping and geological experts to help interpret the meaning of this photograph. If after consideration of all the relevant facts and circumstances, there is still doubt in your mind as to the existence of the seawall as of the date of this photograph, then I welcome your suggestion and recommend that we convene a meeting soon that brings us together with the Commission's experts and Professor Gerald E. Weber of the University of California, Santa Cruz. Professor Weber has been assisting me on interpreting these old photographs. I am currently endeavoring to have usable copies made of this 1973 photograph.

7. An aerial photograph from 1969 again shows the vacant lot without a seawall at the bottom of the cliff, but does show a significant amount of rip/rap where the seawall was subsequently constructed. We also reviewed this photograph at our meeting, and I will provide a copy for your further review at a later date (when I have one).

8. With regard to the construction of the current residence, it was built in 1972 by Raymond H. Ansell (now deceased) after he purchased the property from Jack Heinz (now deceased) in the early part of that year. We know it was built in the fall of 1972 pursuant to a building permit dated July 7, 1972. According to notes and dates written on the "building inspection job record" by building inspectors, the foundation for the house was laid in October, 1972, and the frame for the house was raised in December 1972. We reviewed these building permit notes at our meeting where I gave you a copy of this document.

9. Mary Lee Lincoln is the daughter-in-law of the deceased occupant next door at 4460 Opal Cliff Drive and she recalls seeing cranes moving blocks for the seawall over the side of the cliff at my property when it was still vacant and before the

house had been built. We reviewed this notarized statement at our meeting where I gave you an original copy.

These are the facts as we presently know them. I have owned this house for two years and thus was not present when the wall was constructed. I must use the facts as I have found them to be to reach my current understanding. I can reach only one conclusion at this point: The seawall was installed with a crane before the frame for the house that I live in today was raised in December of 1972. We know this by reference to Ms. Lincoln's notarized statement and the 1986, 1975 and April 11, 1973 photographs which show evidence of the seawall.

Logically, it makes sense to me that the seawall would have been installed after the property purchase but before the frame for the house was raised. Access by a crane to lower the heavy seawall blocks over the cliff top would have been blocked by the house once it was built. Lowering the blocks over the cliff and stacking them at the bottom seems to me to be by far the easiest construction method that could both deliver the blocks to the base of the bluff and stack them. Of course I am not an expert at construction.

If the Commission staff have additional relevant facts, please advise me immediately. I base my summary completely on the factual data that I have uncovered in my research on this property and have outlined above as stated at the meeting of April 25. Additional research is ongoing and if additional pertinent facts come to my attention that modify my conclusions then I reserve the right to do so.

Moving forward, and only if Commission staff are still not convinced of our position, I suggest that we convene a meeting of principals to review the known evidence. Assuming that such a meeting can most easily and timely be convened at your San Francisco offices, I am currently making arrangements to have the April 11, 1973 photograph reproduced for our collective use as well as a number of other photographs. This and other photos, including your 1972 photo need to be copied from the original negative as the age, and in some cases the scanning, of the existing photos makes interpretation of them more difficult and I would like the evidence to be a clear as possible.

Jim Burroughs will be in touch on my behalf to follow-up on our suggested meeting. Jim can be reached at the law firm of Allen Matkins in San Francisco at 415/273-7482.

Very truly yours,

Alistair Black

cc: Charles Lester, District Manager
Nancy Cave, Enforcement Supervisor
Greg Benoit, Mapping and Cartography
James T. Burroughs, Allen Matkins

CALIFORNIA COASTAL COMMISSION
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
VOICE AND TDD (415) 427-4863

CLAIM OF VESTED RIGHTS

NOTE: Documentation of the information requested, such as permits, receipts, buildings department inspection reports, and photographs, must be attached.

1. Name of claimant, address, and telephone number:
(Please include zip code & area code):

** Please see attached sheet for Answers to Questions - Thank you.

2. Name, address and telephone number of claimant's representative, if any:
(Please include zip code & area code):

See attached

3. Describe the development claimed to be exempt and its location. Include all incidental improvements such as utilities, road, etc. Attach a site plan, development plan, grading plan, and construction or architectural plans.

See attached

4. California Environmental Quality Act/Project Status.

Check one of the following:

see attached

a. Categorically exempt _____. Class: _____. Item: _____.

Describe exempted status and date granted: _____

b. Date Negative Declaration Status granted: _____

c. Date Environmental Impact Report approved: _____

Attach environmental impact report or negative declaration.

EXHIBIT NO. 4
APPLICATION NO.
3-04-20 VRC

FOR COASTAL COMMISSION USE:

Claim Number: _____ **Date Submitted** _____
Date Filed _____

10. List the amount and nature of any liabilities incurred that are not covered above and dates incurred. List any remaining liabilities to be incurred and dates when these are anticipated to be incurred.

see attached

11. State the expected total cost of the development, excluding expenses incurred in securing any necessary governmental expenses.

see attached

12. Is the development planned as a series of phases or segments? If so, explain.

see attached

13. When is it anticipated that the total development would be completed?

see attached

14. Authorization of Agent.

I hereby authorize _____ to act as my representative and bind me in all maters concerning this application.

_____
Signature of Claimant

15. I hereby certify that to the best of my knowledge the information in this application and all attached exhibits is full, complete, and correct, and I understand that any misstatement or omission, of the requested information or of any information subsequently requested, shall be grounds for denying the exemption or suspending, or revoking any exemption allowed on the basis of these or subsequent representations, or for the seeking of such other and further relief as may seem proper to the Commission.

Signature of Claimant(s) or Agent

California Coastal Commission

Claim of Vested Rights – Answers to questions for Application attached

1) **Name and Address of Claimant –**
Alistair Black
4440 Opal Cliff Drive
Santa Cruz, CA 95062

Contact number – 408-891-9781

2) **Name and address of representative –**
Jim Burroughs
Allen Matkins Leck Gamble & Mallory LLP
333 Bush, 17th Floor
San Francisco, CA 94104
415/273-7482

Also

Joel Schwartz
Consultant
Phone number 831-462-3413

3) **Description of Development claimed to be exempt and its location. Include all incidental improvements such as utilities, etc. Attach site plan, development plan, grading plan, and construction or architectural plans.**

The subject of this application is the seawall depicted on the recent photograph dated July 2002 and attached as Appendix AA. The wall today is clearly not new, by examination. It consists of approximately 3x3x3-foot blocks tightly stacked over and around rip/rap held together by concrete. It is estimated that each block weighs approximately 2 tons. Each block has a hook made of bent steel bars that were clearly installed for the purpose of using a crane to move them and stack them.

The relevant portions of a survey dated Nov. 1990 by George R Dunbar have been provided to Mr. Sharif Traylor of the California Coastal Commission at a previous meeting. A copy is attached for your convenience as Appendix AB. This survey provides the position of the wall relative to the boundaries of the property at 4440 Opal Cliff Drive. The parcel numbered 32 on the survey and marked as "Black" is 4440 Opal Cliff Drive. The wall is depicted relative to the property lines of Lincoln (parcel 31) and Black (32). Approximately 2/3 of the wall is under discussion and is that portion on Lot 32 (Black) which extends approximately 40 feet from the Black-Lincoln property

boundary into my property (32). Approximately 1/3 of the wall is on Mr. Lincoln's property.

This structure was completed prior to February 1, 1973, and was most probably built in 1972 by or under the direction of the property owner at that time, Raymond H. Ansell, now deceased. Since 1972, property ownership has changed hands 8 times. I purchased this property from the most recent owner, Norman and Carol Chapman, in April 2000.

Evidence that the seawall was completed sometime prior to February 1, 1973 is as follows:

Please Note: Some evidence referred to here is only available as a photo record and is held in archive at the UC Santa Cruz map library. In the case of some of these photos copies from negatives were unavailable and significant degradation of resolution quality occurs with other duplication techniques. Further the overhead aerial photos require viewing with a stereo microscope for proper analysis. Thus, in such cases the archive itself must be consulted, as it has been by Coastal Commission Staff, Coastal Commission experts, Dr. Gerald Weber, and myself. In all cases original evidence is either provided directly (or has been already provided directly to Mr. Sharif Traylor) or may be traced to appropriate archive owners.

a) An aerial photograph from 1969 and another from 1967 shows a vacant lot at my property without a wall at the bottom of the cliff, but it does show a significant amount of rip/rap where the wall was subsequently constructed. A blow up of the relevant section of these photographs is attached as Appendix AC. The original aerial photo is held at the UC Santa Cruz map library (1967 and 1969-E SC 1-1 fro the U.S. ACE 1:3600).

b) The current residence on the property was constructed in 1972 by the aforementioned Mr. Ansell after he purchased the property from Jack Heinz (now deceased) in the early part of that year. A building permit for this house was issued by the County and dated July 7, 1972. According to notes and dates written on the "building inspection job record" by building inspectors, the foundation for the house was laid in October 1972, and the frame for the house was completed by December 1972. These permit documents are attached as Appendix AD.

c) The seawall at the bottom of the cliff was constructed at least by November 1972 as concluded by the expert analysis of Dr. Gerald E. Weber. Please review Appendix AE which contains Dr. Weber's analysis and supporting evidence shown as his report and Appendix A – a list of reviewed aerial photos, Appendix B-1972 Oblique photos and 2002 Oblique photos and analysis, and Appendix C- the resume, qualifications and list of publications of Dr. Weber.

d) Appendix AG contains photos of the aerial photos used in Dr. Weber's aerial photo investigation. The flight line is analyzed in these diagrams where stereo pairs are put side by side to show the area of interest in both photos (note the circled area). The line through the circle depicts the direction of the cliff edge on the property 4440 Opal Cliff Drive. These photos allow the analysis of relative parallax of the top of the cliff relative to the wall at the base of the cliff for the purpose of understanding the amount of wall view that is obstructed by the top of the cliff due to the position of the airplane taking the photos. These are included for reference aid in examining aerial photos. They show that there is a significant amount of the wall is partially obscured by the top of the cliff in the 1973 pair, while the wall is completely visible in the 1975 pair (under stereo magnifier).

e) Mary Lee Lincoln is the daughter-in-law of the deceased occupant next door at 4460 Opal Cliff Drive during the years before and after the construction of the house and wall. Mrs. Lincoln recalls seeing cranes moving the blocks for the seawall over the side of the cliff at my property when it was still vacant and before the house had been built. A copy of Mrs. Lincoln's notarized statement is attached as Appendix AF. Please note that an original copy of this statement was provided to Mr. Sharif Traylor of the California Coastal Commission at a previous meeting.

f) It is important to note that several additional pieces of evidence have been previously provided to Mr. Sharif Traylor of the California Coastal Commission as well as the fact that three aerial photos two of which are specifically mentioned in Dr. Weber's report (April 1973, 1975 – directly mentioned in Dr. Weber's report – as well as 1986) have been viewed in the UCSC Map Library by Coastal Commission staff. I believe that they have also been viewed by Mr. Van Coops of the Coastal Commission SF office. Other evidence already provided is an original copy of Mrs. Mary Lee Lincoln's statement, an analysis (performed by Alistair Black) of a 1972 oblique provided by Mr. Van Coops, a building inspection record, and a letter depicting the probable scenario of the wall construction. All of these items have been previously provided to Mr. Traylor and should be on file with the commission.

g) Appendix AI contains useful photo prints of already incorporated material including 1972 photos, 2002 equivalents and comparisons.

No site plan, development plan, grading plan, and construction or architectural plans were ever required by any public agency in connection with this seawall, and none were ever prepared to my knowledge. We have not been able to locate construction plans, if any, that were used by Mr. Ansell in building the wall.

There are no incidental improvements

4) **California Environmental Quality Act/Project Status**

The construction of the seawall did not require a discretionary permit from a public agency. Thus, CEQA was not applicable.

5) **List all Governmental Approvals which have been obtained and list the date of each final approval. Attach copies of all approvals.**

No governmental approvals were required from any public agency for the construction of the seawall because it was completed before February 1, 1973. The absence of any required County permits is confirmed by the letter dated July 31, 2002 from Mr. Alvin James, Director of the County of Santa Cruz's Planning Department to Mr. Sharif Traylor in care of the California Coastal Commission, Santa Cruz office. This letter is attached as Appendix AH.

(This letter has been delivered to Mr. Sharif Traylor as per his request. A copy of this letter is attached for convenience as Appendix AH)

6) Not applicable.
7) Not applicable.

8) Not Applicable

For evidence of Date of construction of the wall please see response to question #3.

9) Not applicable.
10) Not applicable.
11) Not applicable

12) Not Applicable

13) Not Applicable - The development was completed prior to Feb. 1 1973.

APPENDIX 4A

July 2002 GE Weber

Appendix A5

BASIS OF BEARINGS

BEARINGS ARE BASED ON THE EASTERN BOUNDARY OF OPAL CLIFF DRIVE AS SHOWN ON 25-M-12 AND ESTABLISHED FROM MONUMENTS FOUND AS SHOWN = NORTH 11°25' EAST

90155
90159

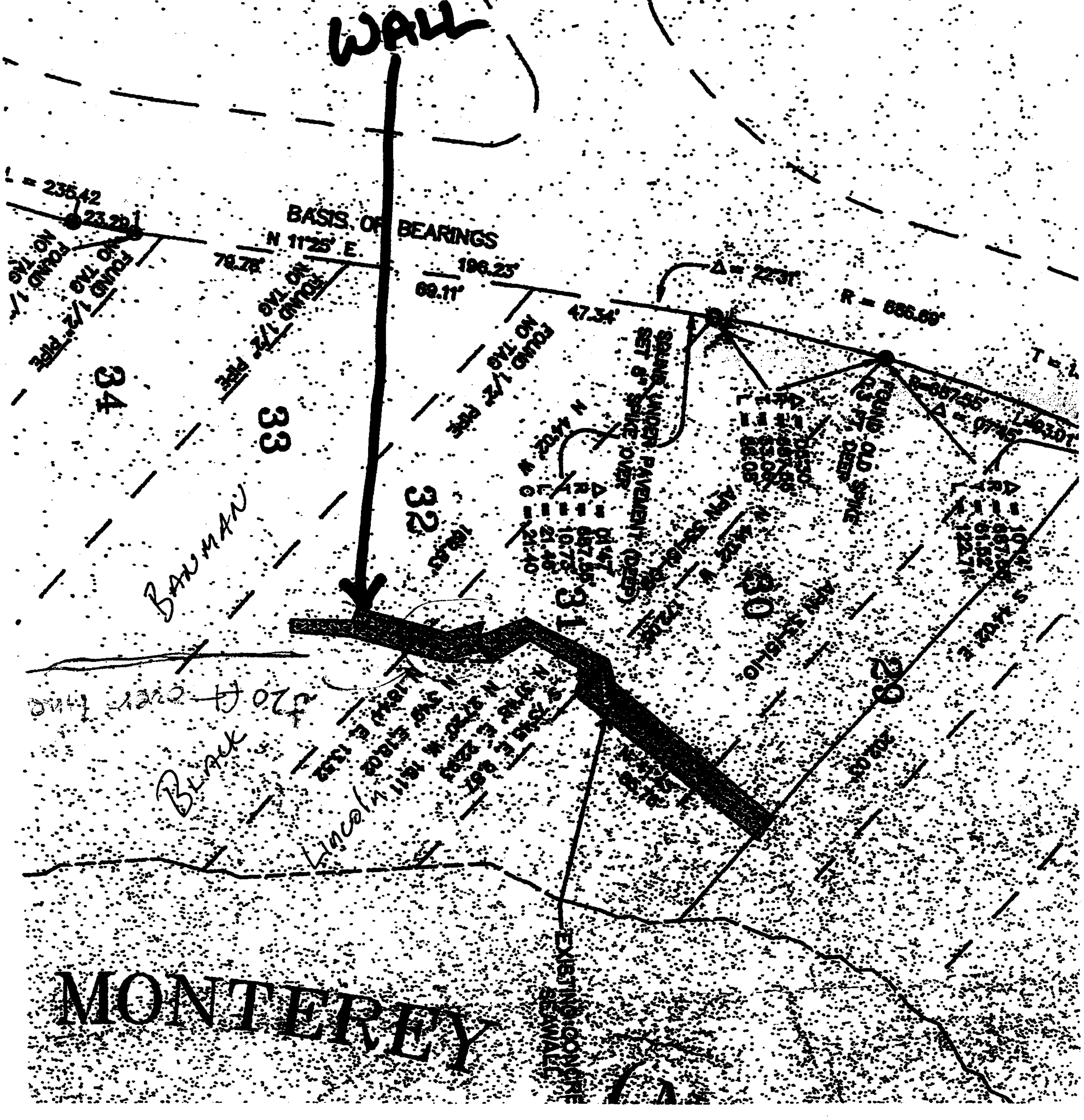
APN 33-151-09 (LINCOLN)
APN 33-151-10 (PUHL)
APN 33-151-03 (CHAMBERLIN)
APN 33-151-04 (MORGAN)

LICENSED LAND SURVEYOR GEORGE R. DUNBAR 3660 STATE OF CALIFORNIA

Renewal [illegible]

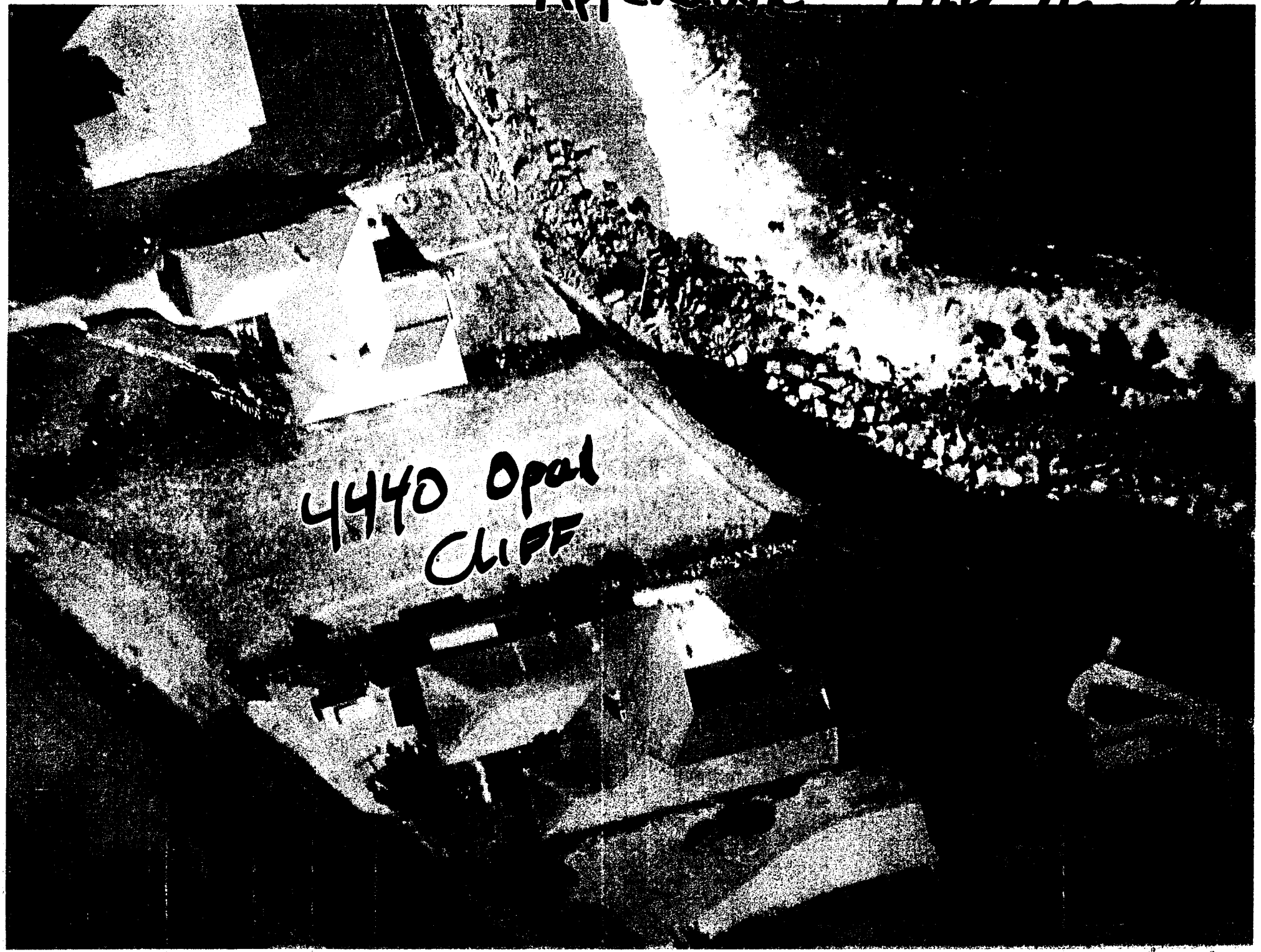
George R. Dunbar Land Surveys 1011 Cedar Street Santa Cruz CA 95060 P.O. Box 1915 Santa Cruz CA 95061 Professional Land Surveyor No. 3660		SURVEYOR'S MAP of the lands of ROBERT O. LINCOLN et al Situate in RANCHO ARROYO del RODEO Santa Cruz County, California	
Scale 1" = 100'	Drawn by GRD	Job No. 90155	Sheet 1
Date NOV 90	Checked by	Index RODEO 3E	
Fieldwork [illegible]	Co. Map no 105	File No. 90155	

II Appendix B



APPENDIX AC - 1967 Aerial - Zoom

Appendix AC 1960



Appendix D

OWNER
ANSELL, RAYMOND H.

PARCEL NUMBER
33-151-08

LOCATION
Opal Cliffs Dr, SC o.k. 2/8/73 R.P.
9440 ~~trench: 32254, 12-18-72~~
sewer: 29340, 7-7-72

TYPE
4 Br, 2½ bath, 2 story SFD
w/att garage

VALUATION
34,800.

tpp: 30990, 9-26-72 o.k. 9/29/72 R.P.

CONTRACTORS

BUILDING (12/18/72 fOE)		PLUMBING AND GAS		ELECTRIC (3000')	
NAME: owner		NAME: Cimarelli Plmb		NAME: owner	
PERMIT NUMBER: 29340	DATE: 7-7-72	PERMIT NUMBER: 31267	DATE: 10-11-72	PERMIT NUMBER: 31807	DATE: 11-10-72

mech: 29340, 7-7-72

INSPECTIONS

BUILDING	PLUMBING AND GAS	ELECTRIC
FOUNDATION: gar OK 10-6-72 10/3/72 R.P.	ROUGH: 10-20-72 NO OPEN PLB ACCESS; Ok 11-20-72; 11/21/72 fOE	ROUGH: 12/13/72 fOE
FRAME: 12/13/72 fOE	VENT: Topout 12/13/72 fOE	FINISH
STUCCO WIRE: 12/20/72 fOE	FINISH	FIXTURES, ETC.: nailers; driveway not approved; 2-7-73
LATH	GAS - ROUGH	
FLUE: fire place - partial 1/23/73 fOE	GAS - P.T.: 2/2/73 fOE	
FINISH COMPLETE: 11/20/73 fOE certified as to completion only	GAS - FINISH: O.K. 2/2/73 RE	SERVICE CLEARED: O.K. 2/8/73 per B.W.

BUILDING INSPECTION JOB RECORD
BLD - 2 (REV.)

REMARKS ON REVERSE

ANSELL, Raymond H. — Opal Cliffs Dr — SFD

Appendix AD

33-151-08

Ansell, R.H.

Opal Cliffs Dr, SC

HD# 29340
7-7-72

Appendix AD

29340

ROOM 400
701 OCEAN STREET
PHONE 425-2286

COUNTY OF SANTA CRUZ
DEPARTMENT OF PUBLIC WORKS
Building Inspection Division

Owner:	Applicant:	Location of Job:
Raymond H. Ansell	owner	Opal Cliffs Drive Santa Cruz

BUILDING

Contractor _____ Lic. No. _____

Assessor's Parcel No. 33-151-08

Code Area 96-035

4 bedroom 2½ bath, 2 story single family dwelling with attached garage

2400 @ 13.40 : 32.160.00 / 216 @ 1.50 : 324.00 / 528 @ 4.25 : 2,244.00

Valuation $ 34,800.00

Bldg. Fee $ 114.00 PC 57.00 sm 2.44

PLUMBING & GAS	ELECTRIC
Ref. B.P.# 29340 Date 7-7-72	Ref. B.P.# _____ Date _____
Contractor _____	Contractor _____
Permit $ _____	Permit $ _____
Fixtures _____ _____	Lights _____ _____
Water Heater _____ _____	Fixtures _____ _____
Water Piping _____ _____	Switches _____ _____
Gas _____ _____	Plugs _____ _____
Total $ _____	Range _____ _____
	Oven _____ _____
	Dryer _____ _____
	Water Heater _____ _____
	Space Heater _____ _____
	Motors _____ _____
	_____ _____
	Power Pole _____
	Total $ _____

Ref. B.P.# same Date 7Ø7Ø72
Contractor owner

District East Cliff Sanitation

Annexation required? _____

If "Yes", date petition filed _____

Type of service, units, etc.

Annexation $ _____
Connection 50.00
Inspection 5.00
Other permit 2.00
41st Ave. Dr. 177.60
1776 sq. ft.
Total $ 57.00

MECHANICAL

Permit $ 3.00
htrs. 5.00
Total $ 8.00

DRIVEWAY OR ROAD OPENING—Road No _____

Ref. B.P.# _____ Date _____
Contractor _____

Insurance _____

	Length	Width	Depth	
Driveway				$ _____
Road opening				_____
Other				_____
Total				$ _____

Permits applied for as above are based on certain plans and specifications filed with the Department of Public Works and are subject to all county ordinances, state laws, and conditions stated on the reverse hereof, which conditions are hereby accepted.

Raymond H Ansell 7-7-72
Signature of Applicant Date

238.44 +
Total Fees Received $ 177.60

By Rose Buckwood
Cashier's validation

7-7-72 4632-000586 TUBLA CH

BUILDING INSPECTOR'S DIVISION

Appendix D
31267

ROOM 400
701 OCEAN STREET
PHONE 425-2286

COUNTY OF SANTA CRUZ
DEPARTMENT OF PUBLIC WORKS
Building Inspection Division

Owner:	Applicant:	Location of Job:
RAYMOND H. ANSELL	contractor	9440 Opal Cliffs Drive Santa Cruz, California

BUILDING

Contractor — Lic. No.

Assessor's Parcel No. 33-151-08

Code Area

Valuation $

Bldg. Fee $

	PLUMBING & GAS	ELECTRIC
Ref. B.P.# Date	Ref. B.P.# 29340 Date 10-11-72	Ref. B.P.# Date
Contractor	Contractor CIMARELLI PLUMBING	Contractor

District	Permit		$ 2.00
Annexation required?	Fixtures	12	18.00
If "Yes", date petition filed	Water Heater	1	1.50
Type of service, units, etc.	Water Piping	1	1.50
	Gas	1	1.50
	Total		$ 24.50

Electric: Permit $; Lights; Fixtures; Switches; Plugs; Range; Oven; Dryer; Water Heater; Space Heater; Motors; Power Pole; Total $

Annexation $; Connection; Inspection; Other; Total* $

MECHANICAL
Permit $
Total $

DRIVEWAY OR ROAD OPENING—Road No.
Ref. B.P.# Date
Contractor

Insurance

Driveway Road opening. Length Width Depth $
Other
Total $

Total Fees Received $ 24.50
By [signature]
Cashier's validation

511-72-7431-000363 TOTAL CH 24.50

Permits applied for as above are based on certain plans and specifications filed with the Department of Public Works and are subject to all county ordinances, state laws, and conditions stated on the reverse hereof, which conditions are hereby accepted.

[signature]
Signature of Applicant — Date

BUILDING INSPECTOR'S DIVISION

Appendix AE

REPORT OF DR. G.E. WEBER

G.E. WEBER GEOLOGIC CONSULTANT
129 Jewell Street, Santa Cruz, CA 95060
831. 469. 7211 831. 469. 3467 Fax

October 1, 2002

Alistair Black
4440 Opal Cliff Drive
Santa Cruz, California 95062

Subject: Determination of the age of sea wall at 4440 Opal Cliff Drive, Santa Cruz, California

Dear Dr. Black:

At your request I have conducted an evaluation of the age of a small sea wall that lies at the base of the seacliff at the above referenced property. The purpose of the investigation was to determine if the sea wall was built prior to or after January 1st 1973. Apparently no documents exist regarding the construction of the sea wall. Consequently, I approached the problem by attempting to locate dated photographs that would allow determination of the age of the sea wall in respect to the date of January 1, 1973. I was assisted in this task by Erik Zinn of Nolan, Zinn and Associates, Engineering Geologists; and Danica Stein of CartoSearch.

Methodology

Phase 1: In my initial investigation I relied primarily on the vertical stereo aerial photographs available at the Map Room in the Science Library at the University of California, Santa Cruz. Appendix A is a list of all the vertical stereo pair aerial photographs examined during this phase of the investigation. The relevant vertical aerial photographs discussed in this report are designated by an * in Appendix A.

During this phase of the investigation we also conducted an extensive search of aerial photo catalogues and libraries for vertical stereo pair photographs within the 1972-73 period.

Phase 2: I located, copied and examined aerial oblique photographs of the Opal Cliff shoreline that I received from Dr. Gray Griggs, Director of the Long Marine Lab at UCSC, and from Margaret D'Orio in the United States Geological Survey - UCSC Coastal Studies Laboratory at UCSC. I also flew the coastline on July 23, 2002 to obtain recent photographs the shoreline. The recent photos were used for comparison with the 1972 aerial oblique photographs that I received from Dr. Griggs.

Erik Zinn, Alistair Black and I examined these materials at length, comparing photos and evaluating the evidence for the presence of the sea wall.

Results

Vertical Aerial Photographs: I evaluated the vertical aerial photographs using a 6X power stereoscope, and using 10X and 14X pocket magnifiers. The usefulness of these photos was hampered by a combination of: variations in photo resolution, small photo scale, the shadow cast from the seacliff onto the beach and parallax. On several photos the shadow cast by the seacliff

made it impossible to view the base of the seacliff. On others the location of the flight line in respect to the seacliff resulted in the seacliff hiding the base of the cliff.

Using the vertical aerial photographs taken in 1967, 1969, 1970, 1973 and 1975 we were able to conclude with certainty that the wall was constructed between 1970 and 1975. Because of relatively poor resolution and scale, my analysis of the 1973 photographs was not 100 % conclusive. However, with about 75-80% certainty I believe that these photographs (flown April 11, 1973) show a sea wall at the base of the seacliff on the subject property.

The vertical aerial photos also indicate that the base of the seacliff has been protected by varying amounts of rip-rap starting in the 1960's.

Oblique Aerial Photographs: During my investigation I contacted Dr. Gary Griggs, Director of the Long Marine Lab at UCSC. Dr. Griggs has been conducting research on seacliff erosion in the Monterey Bay area since approximately 1969. I obtained from him two 2 ¼ x 2 ¼ slides that show the subject property, described as follows:

1. A slide taken in 1972 by the Department of Boating and Waterways; #722091(possibly #7220091). This slide was obviously taken prior to the construction of the house on the subject property This dates the slide as having been taken prior to approximately September of 1972. This photo is identical to the photo provided to Alistair Black by John Van Coops of the California Coastal Commission.

2. A slide taken in either late November or early December of 1972 by Dr. Gary Griggs. The house at the subject property is clearly under construction at the time the photo was taken.

Copies of these two oblique aerial slides are attached as Appendix B.

Also attached in Appendix B are several oblique aerial slides that I took during the flight of July 23, 2002. These slides were used for comparison with the 1972 photos.

Prints were made from the December 1972 slide taken by Dr. Gary Griggs and one of my July 23, 20002 slides by Bay Photo Lab. These were then scanned and placed side by side for comparison (Figure 1). A simple comparison of the two photographs reveals a linear white mass at the base of the seacliff in the December 1972 photograph that has the same size, shape, color and appearance as the sea wall in the July 2002 photograph. This mass is clearly not a portion of the seacliff, as indicated by its shape and position. Therefore, I conclude, with virtual certainty that the sea wall on the subject property was built prior to the construction of the home and prior to January 1, 1973.

Conclusions

By comparison of the oblique aerial photograph taken by Dr. Griggs in November or December of 1972 with the photos that I took in July of 2002, I can conclude with virtual certainty, that the sea wall was present in early December of 1972 on the subject property. Although my interpretation of the vertical aerial photographs was hampered by problems of scale, parallax, etc., with reasonable certainty (75-80%) I conclude that the sea wall was in place by April of 1973. These observations and interpretations are consistent with the generally accepted observation that the sea wall was built between 1970 and 1975, and the reasonable interpretation that the wall was built prior to the construction of the home.

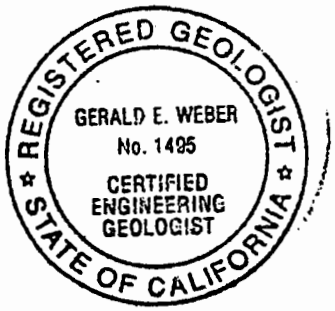
It is important to point out that interpretation of aerial photographs can be fraught with uncertainty, and that alternate hypotheses must always be considered. Consequently, during my evaluation I took into consideration that this linear white mass at the base of the seacliff in December 1972 photo taken by Dr. Griggs might be a shore platform, part of the seacliff or simply rubble at the base of the cliff. Based on its position in respect to the cliff face, the rip-rap on the beach and the cliff to the northeast it is clear that it is none of these. Hence, I find no reasonable alternative hypothesis to the conclusion that this is truly the sea wall.

I have taken the liberty of attaching my professional resume to this document as Appendix C. I have approximately 40 years of experience in working with aerial photographs (both vertical and oblique), and have taught the use and interpretation of aerial photographs for 19 years in my field geology classes at UCSC, and also in geomorphology and engineering geology classes.

If you have any questions regarding this report please contact me.

Very truly yours,

Gerald E. Weber, Ph.D.
Registered Geologist # 714
Certified Engineering Geologist #1495



Appendix A

Vertical Aerial Photographs

	year	UCSC grouping	DATE FLOWN	FLIGHT LINE	PHOTO NUMBERS	SCALE	PRINTS
	1931	1931 -B	1931	B	28-30	1:12,000	Black & white
	1948	1948	04/25/48	CDF5 -4	61 & 62, 17 & 18	1:10,000	Black & white
	1953	1953	08/25/53	SC	46-49	1:10,000	Black & white
	1961	1961 -B	12/06/61	SC	28-32	1:10,000	Black & white
	1965	1965 -J	05/11/65	SC -1	38-41	1:3,600	Black & white
	1967	1967 -A	02/02/67	SC -1	10 & 11	1:3,600	Black & white
*	1967	1967 -K	01/18/67	SC -1	8-11	1:3,600	Black & white
*	1967	1967 -E	02/02/67	SC -1	52-55	1:12,000	Black & white
*	1969	1969 -E	10/07/69	SC -1	1-3	1:3,600	Black & white
*	1970	1970	04/02/70	5	95-97	1:12,000	Black & white
*	1973	1973 -74	04/11/73	Big Creek Lumber	7-1 & 7-2 , 8-1 & 8-2	1:15,840	Black & white
*	1975	1975	10/14/75	SCZCO -1	1 & 2, 40 & 41	1:12,000	Black & white
	1976	1976 -77	10/05/76	DNOD-AFU -C	167-170	1:12,000	Natural color
	1982	1982 -C	01/08/82	JSC	9-1 & 9-2 , 10-1 & 10-2	1:20,000	Black & white
	1986	1986 -87	03/26/86	CC-APU -C	224 & 225	1:12,000	Natural color
	1989	1989 -B	10/18/89	AV 3662-A -4	1 & 2	1:12,000	Black & white
	1989	1989 -G	10/18/89	SANTA CRUZ B	22171-22173, 22168 & 22169	1:7,200	Black & white
	1994	1994	06/22/94	Big Creek Lumber -12	1-3	1:15,840	Black & white
	1997	1997	04/25/97	WAC-97CA -14	255 & 256	1:24,000	Black & white

Appendix B

Image1

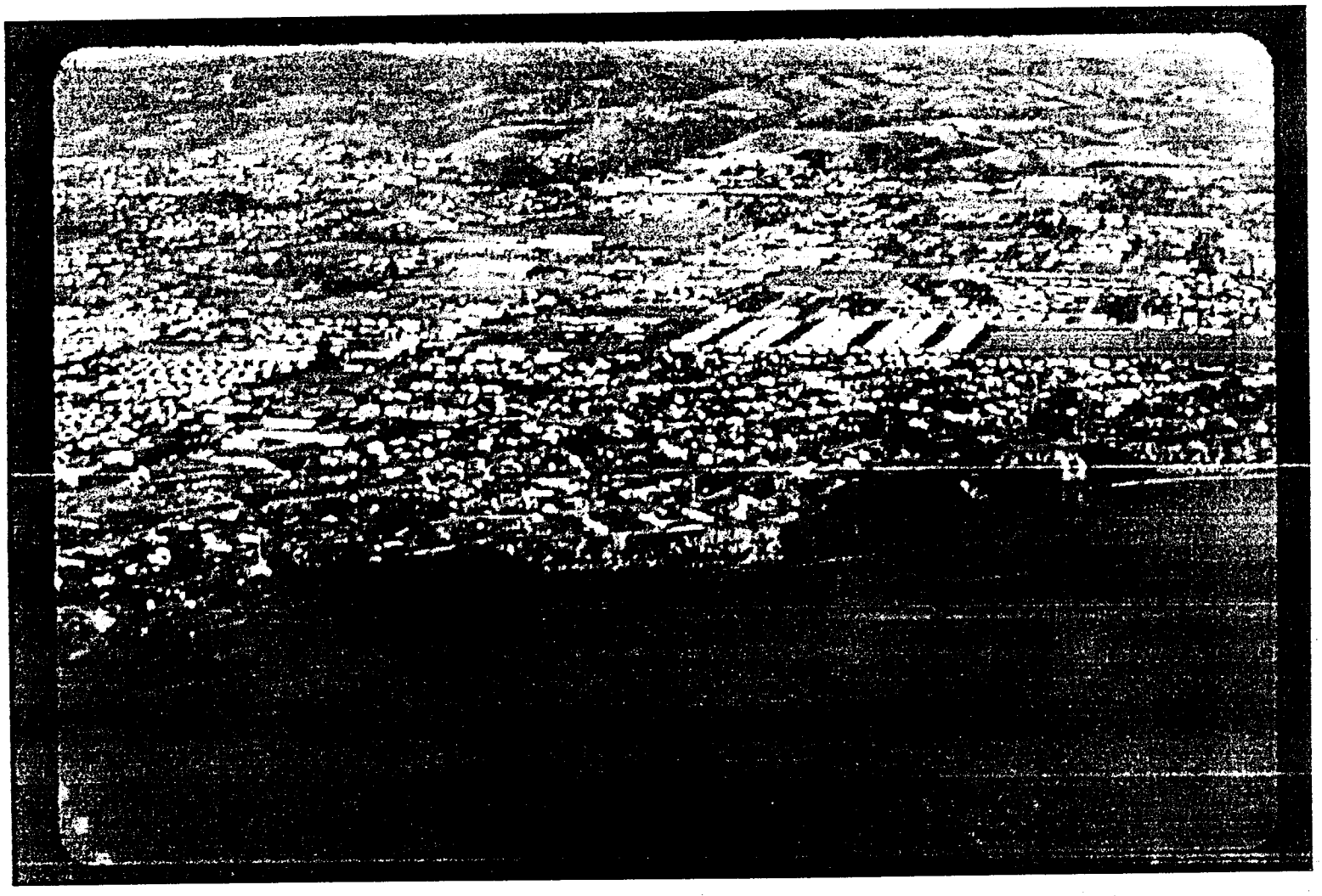


Image2

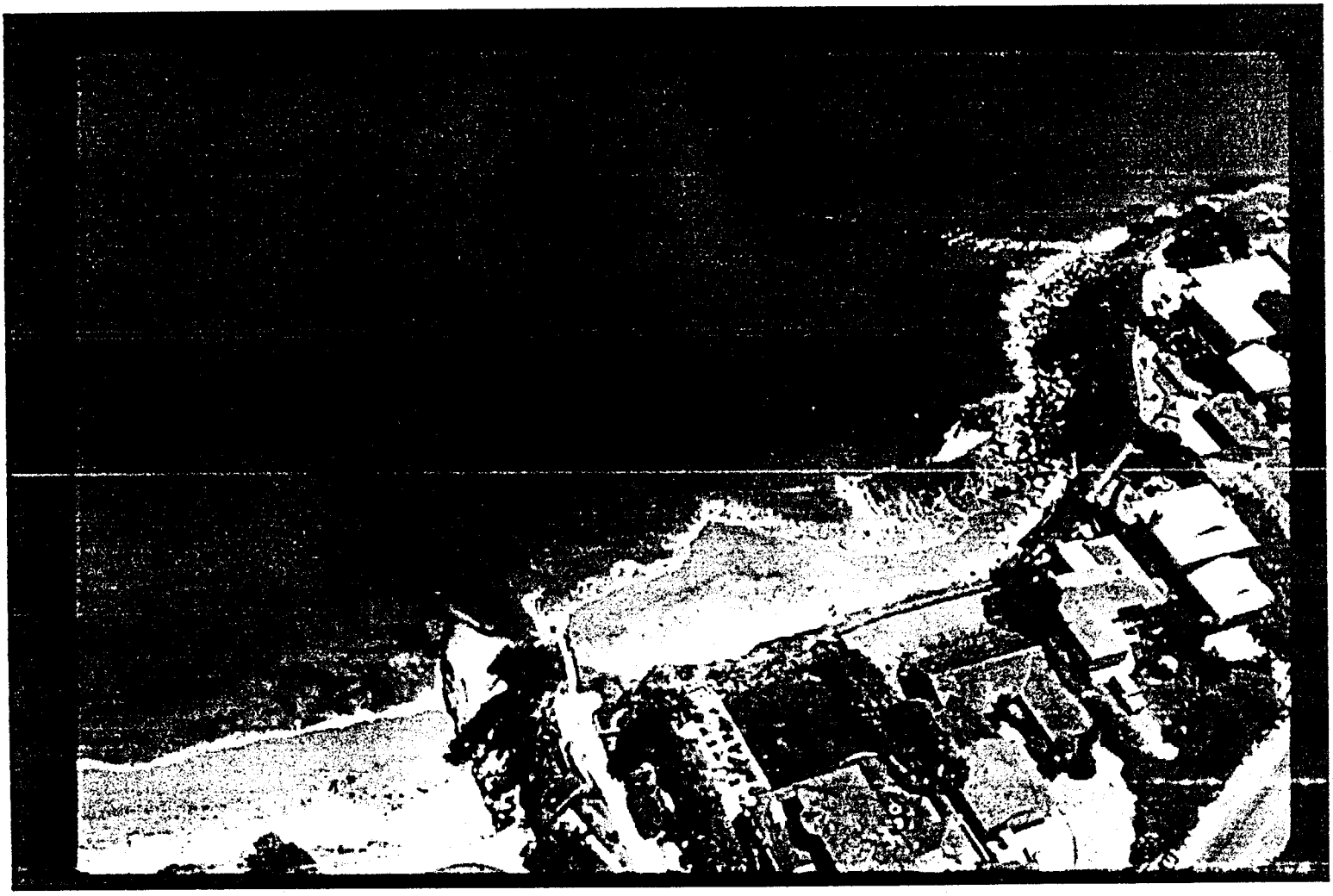


Image3

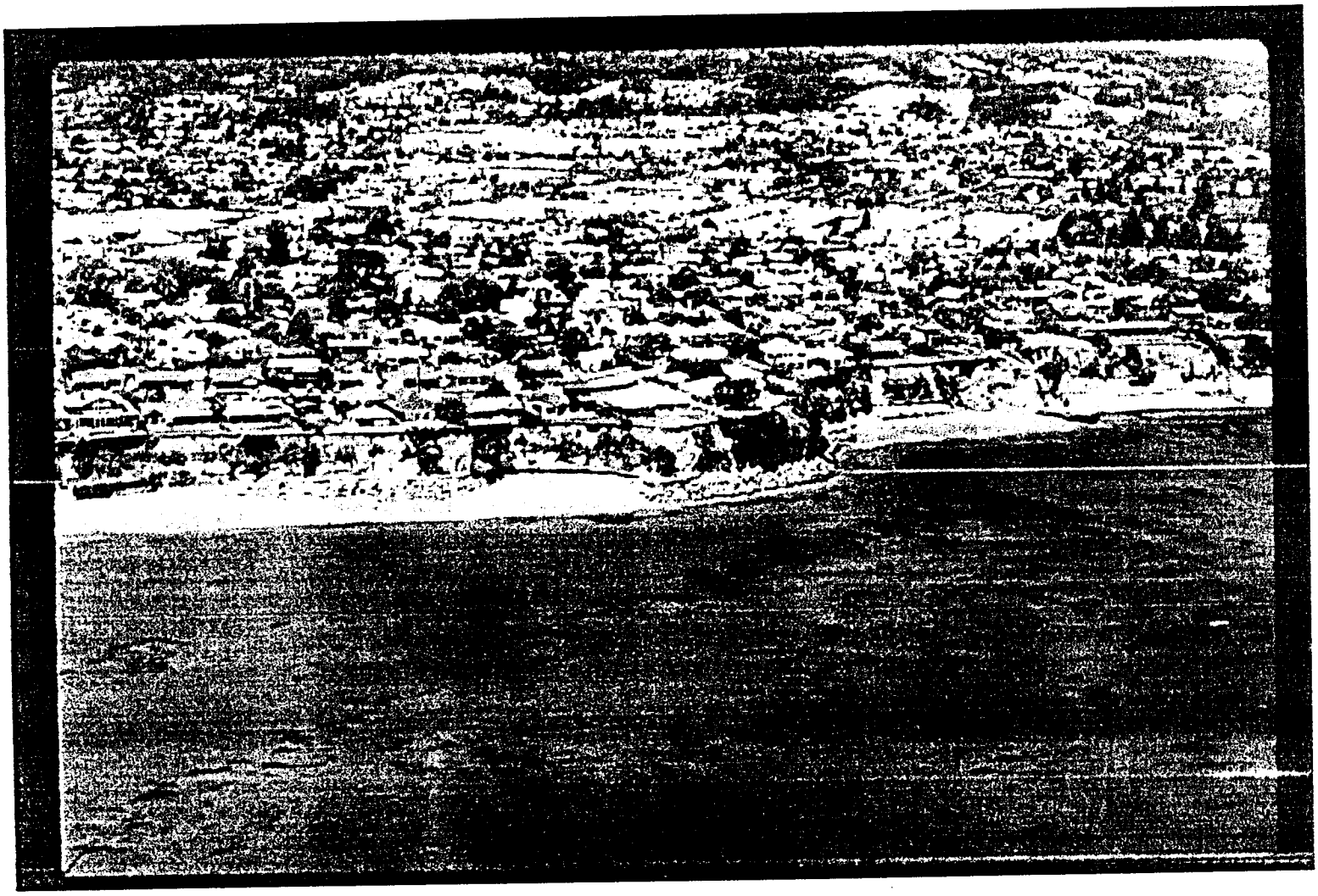


Image4

Image5

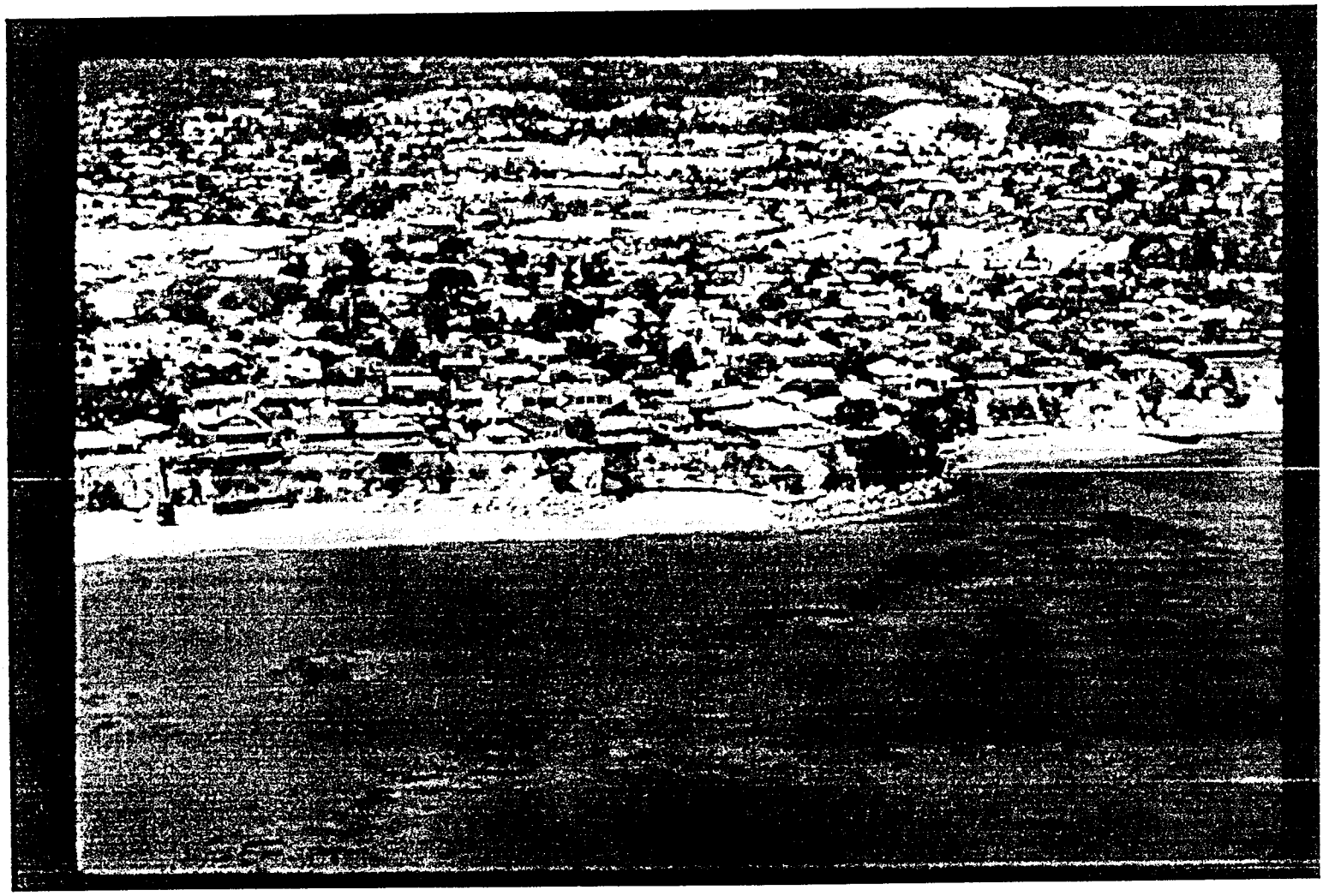


Image6

Application - Appendix E
~~Exhibit~~ WEBER - Appendix B

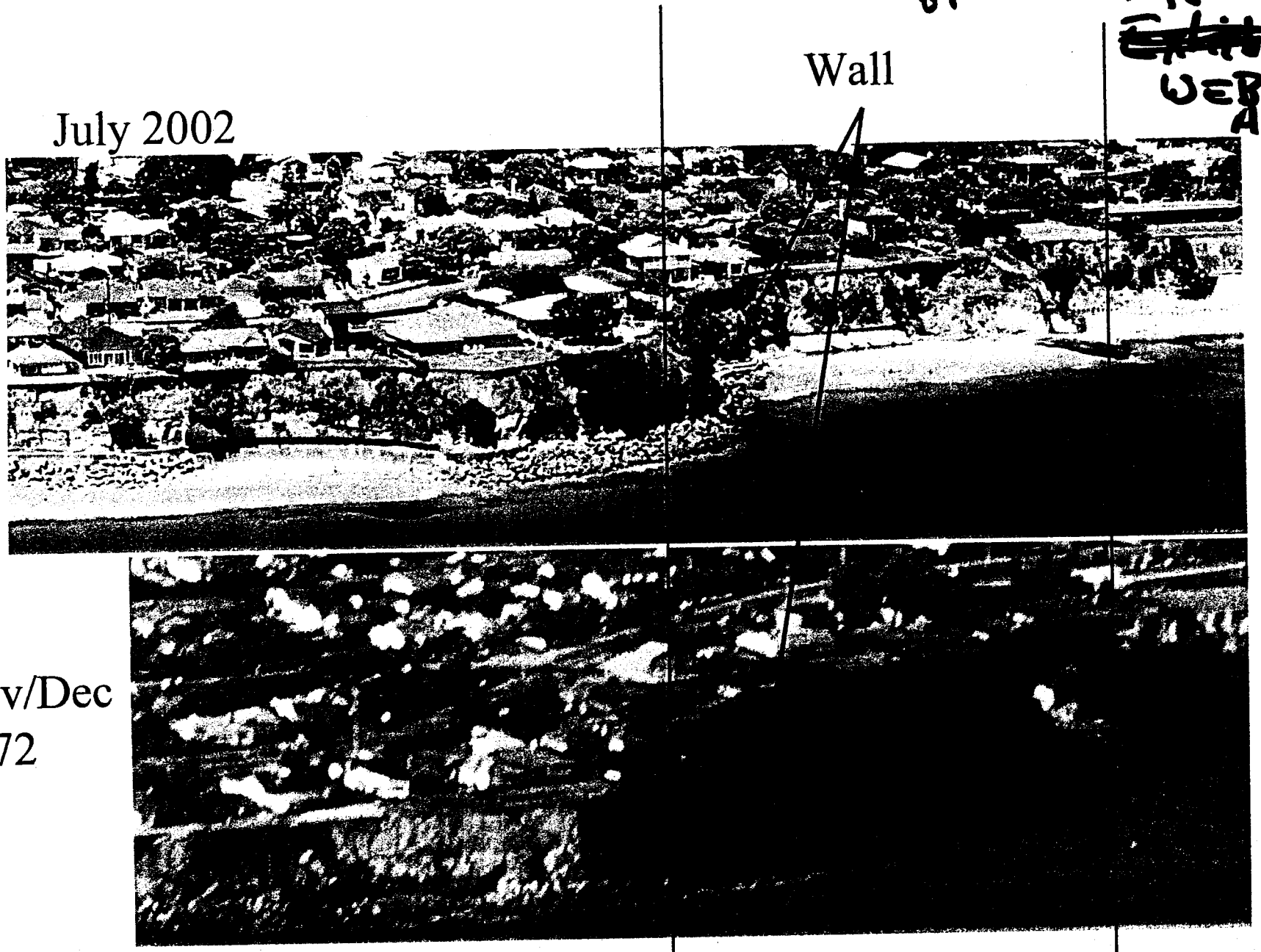


Figure 1. Comparison of December 1972 and July 2002 Aerial Obliques

Appendix C

G. E. WEBER GEOLOGIC CONSULTANT

129 Jewell Street, Santa Cruz, CA 95060
831. 469. 7211 831. 469. 3467 Fax

RESUME

Gerald E. Weber, Sr.

EDUCATION

1980 Ph.D., Earth Sciences, University of California, Santa Cruz. Dissertation Title: Recurrence Intervals and Recency of Faulting Along the San Gregorio Fault Zone, San Mateo and Santa Cruz Counties, California

1968 Master of Arts, Geology, University of Texas at Austin. Thesis Title: Geology of the Fluvial Deposits of the Colorado River Valley, Central Texas

1962 Bachelor of Arts, Geology, University of California, Riverside

REGISTRATION

Registered Geologist, California #714
Certified Engineering Geologist, California, #1495

PROFESSIONAL HISTORY

Geologic Consultant **1973 to present**

Over the past 28 years, varied work on a wide variety of geologic problems in Engineering Geology, Petroleum Geology, Fluvial Geomorphology, Hydrogeology, Ground Water Exploration, Economic Geology, and Quaternary Geology in California and the Western United States.

ENGINEERING GEOLOGY, QUATERNARY GEOLOGY & HYDROLOGY

Principal Geologist **October 1996 to present**
G. E. Weber Geologic Consultant,
Santa Cruz, California

Geologic studies of flooding, intensities of seismic shaking, impact of ground water pumping, and active faulting in preparation for trial. Practice limited to research studies, primarily in neotectonics, and work as an expert witness.

Engineering Geology/Legal

Worked with the State Attorney General's Office to evaluate the effects of logging on slope and stream processes along California's North Coast; and to determine the effectiveness of the California Department of Forestry's Timber Harvest Regulations in reducing environmental damage and damage to Salmon and Steelhead fisheries.

Analyzed geologic conditions to determine causation of landsliding in approximately 15 lawsuits in the Monterey Bay area. Includes studies of sea cliff failures along Beach Drive in Aptos; and monitoring and analysis of the Amesti Road landslide in Corralitos that severed Amesti Road.

Evaluation and analysis of geology of the Majors Creek - Back Ranch Road area in respect to the saline groundwater desalinization project proposed by the City of Santa Cruz. Continued work on the geology of the area in response to the potential impact of a proposed goat farm on surface and subsurface water quality.

Analysis of historic changes in a portion of the active dune field in Marina California to determine the cause of the depletion of sand adjacent to the city's waste water treatment plant. We used analysis of aerial photographs taken over the past 60 years to determine the that the loss of the sand was clearly due to sand mining.

In two separate legal cases, I analyzed inorganic materials found in food products to determine their origin. In one case the analysis was performed using megascopic techniques, while in the other I had to use microscopic analysis and x-ray fluorescence.

Evaluated the rock fall hazard in the Kaluanui Stream Valley on the island of Oahu, Hawaii for the plaintiffs in a lawsuit against the State of Hawaii. The action was in regard to a small rock fall in Sacred Falls State Park that killed 8 and injured 50 on Mother's Day 1999.

Studied a series of debris flow landslides in the Carmel Highlands area of Monterey County, California that clogged culverts and overflowed roads causing extensive damage to 3 homes during the 1998 floods.

For Caltrans I analyzed the historic changes associated with the construction of the Warren Freeway (Highway 13) in Oakland to determine if they were the causation of a landslide on an adjoining property.

Worked for the Sempervirens Fund on the potential impacts of opening of an old logging road in the Gazos Creek watershed in San Mateo County, California.

Engineering Geology

Analysis of the geology, neotectonics and recent seismic history of the Reliz-Rinconada fault zone in the Santa Lucia Mountains in Monterey County. The work was performed for the University of California, Santa Cruz MBEST Center to evaluate the evidence for the location of the Reliz fault near the MBEST Center site, and to determine the activity level of the fault. These data were then used to classify the fault using the most recent version of the Uniform Building Code.

Review of engineering geology reports prepared for the UCSC Architects Office on three proposed building sites on the UCSC campus. Work includes the preparation of guidelines for consulting engineering geologists performing studies in the complex karst geology of the campus; and examination of foundation excavations of the buildings during construction.

With John Gilchrist performed the Initial Study on the effects of the proposed East Cliff Drive Seawall for the Santa Cruz County Redevelopment Agency. My responsibilities included presentation of the geologic aspects of the study in public meetings.

Fluvial Geomorphology/Legal

Extensive study of the history of flooding and the migration of the Carmel River during the past 150 years for the Office of the County Counsel for Monterey County. Work in response to a lawsuit filed because of the flooding of the Mission Fields Tracts during the 1995 floods.

Study of the flooding and massive erosion in Canada de la Ordena, a tributary of the Carmel River, during the storm of February 2-4, 1998. Work included developing a history of changes in the drainage over the past 70 - 100 years and analysis of flow records.

Study and analysis of the repeated flooding of a home in the City of Monterey during the storms of January - March, 1995. Work included analysis of rainfall events and patterns over the past 50 years, mapping the property and a careful analysis of the events contributing to the flooding.

Field investigation of accelerated erosion in a drainage ditch across agricultural land for the County Counsel's Office, Monterey County. Included analysis of rainfall patterns, frequency of flooding and the history of changes in the drainage over the past 40 years using aerial photography.

Five studies of flooding and erosion along streams in Santa Cruz and Monterey Counties during floods of 1995 and 1998. My studies typically addressed the recent history of flooding, changes in the drainage basin and an analysis of rainfall records and stream flow records. One study focused on the effects of gravel mining in Arroyo Seco near King City, California on fluvial processes in the stream bed.

President and Principal Geologist **January 1988 to October 1996**
Weber, Hayes and Associates, Inc., Engineering Geologists and Hydrogeologists,
Watsonville, California

Prepared and directed geologic investigations of active faults, landslides, fluvial systems and coastal processes. Prepared regional geologic studies for groundwater exploration in both alluvial and bedrock aquifers. Extensive work as an expert witness in lawsuits pertaining to landslides, fluvial processes, coastal processes, active faulting and seismicity, groundwater supply, and groundwater contamination.

Engineering Geology

Detailed field studies of the ground deformation (landslides, etc.) in the epicentral region of the 10-17-89 Loma Prieta earthquake for the U.S. Geological Survey. Member of the Technical Advisory Group, convened by FEMA under the auspices of the U.S. Army Corps of Engineers to study the landslides and ground cracking in "areas of critical concern" in the Santa Cruz Mountains, induced by the Loma Prieta earthquake. Focus of study was the analysis of the origin and movement histories of these landslides and the determination of the geologic hazards associated with them.

Investigation and analysis of doline collapse under the foundation of the Earth and Marine Sciences Building on the U.C. Santa Cruz campus.

Preliminary geologic hazards investigation of Pacines Ranch, San Benito County, California. Pre-development analysis of the hazards of surface ground rupture, seismic shaking and liquefaction for a 9000 acre property situated at the junction of the Calaveras and San Andreas faults.

Evaluated the geology and slope stability of the proposed transfer center site at the Santa Cruz County sanitary landfill on Buena Vista Road, for R. W. Beck Corporation.

Developed technique for determining the initiation of landslide movement on the Big Rock Mesa Landslide in Los Angeles County, for William Cotton and Associates.

Prepared the preliminary geologic hazards evaluation of the Big Creek Reserve Field Station site for the University of California Wilderness Reserve System.

Directed investigations and/or prepared geologic investigations of landslides, active faults, coastal erosion, and fluvial processes and erosion on over 100 properties in the Santa Cruz Mountains and Monterey Bay area.

Hydrogeology

Evaluation of groundwater potential along the north coast of Santa Cruz County. Prepared for the City of Santa Cruz Water Department.

Evaluated existing water supply, and potential for discovery of additional water at Rancho Larios, San Benito County. Included evaluation of computer models of groundwater movement in the Hollister groundwater sub-basins.

Worked on the evaluation of geologic site conditions on approximately two dozen Environmental Site Assessments and site characterizations.

Evaluation and analysis of groundwater basins in Santa Cruz County to determine the potential impacts of continued pumping. For the Santa Cruz County Planning Department as a portion of the update of the county's General Plan.

Exploration for groundwater at the Lick Observatory on Mount Hamilton, for the University of California, Santa Cruz.

Prepared and directed the successful groundwater exploration drilling program in the karst terrain on the UCSC campus. Directed the subsequent spring monitoring and groundwater monitoring program on campus.

Legal

Directed investigation and analysis of hydrogeologic conditions at contaminated shallow groundwater site in Sunnyvale, and provided expert testimony for defendants in lawsuit regarding contamination of aquifer with VOC"s. Included analysis of computer models of contaminant plumes and site remediation plans.

Expert witness, presenting evidence for the California Public Utilities Commission Division of Rate Payer Advocacy in the Diablo Canyon Nuclear Power Plant hearings.

Directed and conducted geologic and hydrologic studies, and provided expert testimony in approximately 40 lawsuits for a variety of clients, including both private parties and public agencies. Work included analysis of landslides, active faults, fluvial processes, oceanographic and coastal erosional processes and hydrogeology.

Principal Geologist **October 1984 to December 1987**
Rogers E. Johnson and Associates, Consulting Engineering Geologists
Santa Cruz, California

Engineering Geologist

Planned and directed the fault hazard evaluation study for the New San Clemente Dam on the Carmel River, for Monterey Peninsula Water Management District.

Detailed geologic investigation of sink holes and faulting at the site of the New Science Library and the Natural Sciences III building on the University of California, Santa Cruz campus.

Directed the preparation of, or prepared over 100 studies of landslides, slope stability, active faulting, coastal erosion, and ground water in the Santa Cruz Mountains - Monterey Bay area. Most studies were for single family residences.

Worked as consultant to Geomatrix Consultants, San Francisco, and to Pacific Gas & Electric Company in the geologic re-evaluation of the seismicity of the Diablo Canyon Nuclear Power Plant. Primary responsibility was to map marine terraces, Quaternary deposits and faults between San Simeon and Pismo Beach, California.

Evaluation of the foundation problems at the site of the East Sports Facility, Swimming Pool and P.E. complex on the UC Santa Cruz campus.

Legal

For the City and County of Santa Cruz, California, planned and directed the investigation of the Love Creek Landslide (with William Cotton and Associates) in preparation for litigation.

Worked with the legal counsel of both Santa Cruz County and the City of Santa Cruz as an expert witness in 8 lawsuits concerning landslides, and fluvial processes (1984 to 1988).

Prepared approximately two dozen detailed geologic investigations of landslides in preparation for litigation, along with testimony as an expert witness.

Chief Geologist **January 1974 to October 1984**
Weber and Associates , Consulting Engineering Geologists
Santa Cruz, California

Prepared more than 75 geologic studies of single family home sites in the San Andreas, Zayante and San Gregorio fault zones.

Prepared more than 50 studies of landslides and/or slope stability problems in the Santa Cruz Mountains - Monterey Bay area. Evaluated numerous home sites and properties in the weeks following the January 4, 1982 storm.

Planned and directed research studies funded by the U.S. Geological Survey Earthquake Hazards Reduction Program on the San Gregorio and San Simeon fault zones. Detailed studies of Quaternary stratigraphy, active faults and regional tectonics.

Prepared a detailed study of the fluvial geomorphology and ground water hydrology of the Carmel River for attorney Alexander Henson and the Carmel Valley Property Owners Association. The study was the basis for the lawsuit: Guenter Riemers, et al (Carmel Valley Property Owners Association) vs. California-American Water Company.

Geologic Advisor to Santa Cruz County Planning Department, (1974-1977 and 1980 to 1991); Advisor to the Santa Cruz County Environmental Health Department (1980 to present).

Geologist, GS-5 to GS-9 **May 1971 to December 1973**
Pacific Environmental Branch
United States Geological Survey, Menlo Park, California.

Worked for Ken Lajoie, Ed Helley, and others as a field assistant on the San Francisco Bay Project. Field and lab studies of the Pleistocene geology of the San Francisco Bay region and the San Mateo County coastline.

PETROLEUM GEOLOGY

President and Chief Geologist **October 1981 to December 1984**
Cordilleran Exploration, Inc.
Santa Cruz, California

Prepared regional exploratory studies and developed oil and gas prospects for Dow Chemical Company in the Ventura Basin and coastal California.

Prepared regional exploratory studies and generated prospects in east-central Utah for Ferguson and Bosworth, Independent Oil Producers. Study areas: Farnham Dome, Salt Valley Anticline -Book Cliffs, and Kaiparowits Plateau.

Prepared a regional geologic study of the petroleum potential of the Santa Cruz Mountains and the Salinas Valley for Ferguson and Bosworth and Trident Oil and gas, including the drilling of exploratory wells in the La Honda area.

Performed numerous evaluations of prospects and petroleum producing potential of areas in the Coast ranges, San Joaquin - Sacramento Valley, and Ventura Basin of California; and the Powder River Basin in Wyoming. Clients include: Rock Oil, Petro-Lewis, Cotton and Associates, and Western Continental Operating Company.

G. E. Weber, Consulting Petroleum Geologist **September 1970 to June 1971**
Santa Cruz, California

Prepared a report on the petroleum producing potential of the Santa Cruz Mountains for a group of independent oil companies.

Petroleum Geologist **January 1968 to October 1970**
Ferguson and Bosworth Independent Oil Producers
Bakersfield, California

Prepared regional exploratory studies for numerous sedimentary basins in the western U.S. Includes work in the San Joaquin Valley, Eastern Utah and Central Arizona.

Petroleum Geologist and Mud Logger **October 1966 to December 1967**
Independent Contractor

Worked on a contractual basis with Western Continental Operating Company, Ferguson & Bosworth, and other oil and drilling companies as a petroleum geologist and well logger.

Petroleum Geologist **February 1964 to September 1966**
Union Oil Company of California
Bakersfield, California

Worked in all phases of petroleum exploration and development. Emphasis on regional exploratory studies. Worked two summers in the exploration program in offshore Oregon and Washington.

ACADEMIC TEACHING EXPERIENCE

Senior Lecturer (Emeritus) **1983 to 2001**
Earth Sciences Department
University of California, Santa Cruz

Earth Sciences 109:	**Field Methods: Introduction to Field Geology - 19 years**
Earth Sciences 188 A,B:	**Summer Field Geology - 19 years**
Earth Sciences 142:	**Engineering Geology & Soil Mechanics - 1 year**

Lecturer - intermittent **1971 - 1979**
Earth Sciences Department
University of California, Santa Cruz

Earth Sciences 143:	**Geomorphology** - 1972, 1974, 1979
Stevenson 104:	**Sand and Beaches** - 1975

Instructor **September 1977 to March 1979**
Geology Department
De Anza College, Cupertino, California

Teaching assignments: **Introductory Geology** **Environmental Geology**

PROFESSIONAL AFFILIATIONS

American Association of Petroleum Geologists,
National and Pacific Coast Sections
American Shore and Beach Preservation Association
Monterey Bay Geological Society
Pacific Section SEPM
National Association of Geoscience Teachers

Geological Society of America
Northern California Geological Society
Association of Engineering Geologists
Friends of the Pleistocene
American Geological Institute
Peninsula Geological Society

GRANTS AND AWARDS

"Geologic Investigation of Recurrence Intervals and Recency of Faulting Along the San Gregorio Fault Zone, San Mateo County, California." with William R. Cotton, USGS EHRP Contract # 14-08-0001-16822, 1978-79, $52,000.00.

"Geologic investigation of the Marine Terraces of the San Simeon Region and Pleistocene Activity on the San Simeon Fault Zone, San Luis Obispo County, California." USGS EHRP Contract # 14-08-0001-18230, 1979-80, $25,000.00.

"Field Investigation and Evaluation of Land Treatment of Tannery Sludge, Land Farming Demonstration Project, Santa Cruz County, California." joint contract with Saltz Leathers, Inc., Santa Cruz, CA, SCS Engineers, Long Beach, CA, and UCSC, Santa Cruz, CA, Environmental Protection Agency and Tanners Council of America, 1980-85.

"Landslides and Associated Ground Failure in the Epicentral Region of the October 17, 1989 Loma Prieta Earthquake" USGS EHRP Contract #14-08-001-G1861, 1989-90, $41,000.

"Determination of Late Pleistocene - Holocene slip rates along the San Gregorio fault zone, San Mateo County, California" USGS NEHRP Contract No. 1434-93-G-2336, 1993, $65,000.00.

"Paleoseismic study of the Sargent fault, San Benito county, California." USGS NHERP Contract, 1994, $25,000.

"Paleoseismic study of the San Gregorio fault zone, San Mateo County, California." USGS NEHRP Contract No.1434-95-G-2593, 1995-96, $52,500.

CURRENT FIELDS OF INTEREST AND RESEARCH

Continued study of the Pleistocene geology and neotectonics of the central California coast. Field studies of faults, marine terraces and Quaternary Geology.

Geology of karst terrains.

Investigation of landslides and slope processes, including mitigation measures and stabilization techniques.

Coastal erosion and sediment supply to littoral drift along the central California coastline.

Faulting, glaciation, and volcanic activity in the Mono Basin, eastern California.

Education of geologists.

Geoscience education in grades K-12

PUBLICATIONS

Articles and Guidebooks

The following articles in Progress Report on the USGS Quaternary Studies in the San Francisco Bay Area Guidebook for Friends of the Pleistocene meeting, Oct. 6-8, 1972:

Long Range study of Intertidal Zone Erosion Rates in San Mateo and Santa Cruz Counties, California, p. 84-86.

Marine Terrace Deformation: San Mateo and Santa Cruz Counties, California, (with K.R. Lajoie, and J.C. Tinsley), p. 100-113.

Seismic Refraction Studies and Techniques, (with K.R. Lajoie, and J.C. Tinsley), p. 114-121.

Subsurface Facies Variations in the Metralla Sandstone Member of the Tejon Formation in the Wheeler Ridge and North Tejon Oil Fields, Kern County, California; in Sedimentary Facies Changes in Tertiary Rocks, California Transverse and Southern Coast Ranges, Guidebook for SEPM Field Trip #2, Annual Meeting, p. 34-39, 1973.

The following articles in Field Trip Guide to Coastal Tectonics and Coastal Geologic Hazards in Santa Cruz and San Mateo Counties, California, 197 p. Compiled by G.E, Weber, K.R. Lajoie and G.B. Griggs; 75th Annual Meeting of the Cordilleran Section of the Geological Society of America, 1979:

Quaternary Tectonics of Coastal Santa Cruz and San Mateo Counties, California, as Indicated by Deformed Marine Terraces and Alluvial Deposits, p. 61-80, (with K.R. Lajoie, S. Mathieson, and J. Wallace).

Vertical Displacement of the First Marine Terrace near Greyhound Rock, Santa Cruz County, California, Fault or Landslide Induced?, p. 81-91.

Evidence for Holocene Movement on the Frijoles Fault near Point Ano Nuevo, San Mateo County, California, p. 92-100, (with K.R. Lajoie).

Late Pleistocene Rates of Movement Along the San Gregorio Fault Zone, Determined from Offset of Marine Terrace Shoreline Angles, p. 101-111, (with K.R. Lajoie).

Recurrence Intervals for Major Earthquakes and Surface Rupture Along the San Gregorio fault zone, San Mateo County, California, p. 112-119, (with W.R. Cotton and I.K. Oshiro).

Vertical Crustal Movements near Point Ano Nuevo, San Mateo County, California, Possible Cause for the recent Stabilization of a Dune Field, p. 120-132.

Accelerated Coastal Erosion Rated in Response to the Construction of the Half Moon Bay Breakwater, San Mateo County, California, p. 133-138, (with K.R. Lajoie and J.C., Tinsley).

Quaternary Faulting Along the San Gregorio Fault between Moss Beach and Point Ano Nuevo, California, (with K.R. Lajoie), USGS Open File Report 80-907, 3 map sheets, 1980.

The Natural History of Ano Nuevo, edited by B. Le Boeuf and S. Kaza, Boxwood Press. Chapter on Physical Environment, p. 61-121, 1981.

Geologic Investigation of Recurrence Intervals and Recency of Faulting Along the San Gregorio Fault Zone, San Mateo County, California; (with William R. Cotton), USGS Open-File Report 81-0257, 131 p. 21 oversize sheets, 1981.

Geologic Investigation of the Marine Terraces of the San Simeon Region and Pleistocene Activity on the San Simeon Fault Zone, San Luis Obispo County, California; Final Technical Report on USGS EHRP Contract #14-08-0001-18230, 67p., 9 oversized sheets, 1981.

Geotechnical problems associated with the sighting of large structures over solution collapse features in karst terrain, East Sports Facility at the University of California, Santa Cruz, California; (with Steven Raas) in Symposium on Engineering Geology , University of Nevada, Reno, March 1989

The following articles in Field Trip Guide, Coastal Geologic Hazards and Coastal Tectonics, Northern Monterey Bay and Santa Cruz/San Mateo County Coastlines; (with G.B. Griggs), San Francisco Section of the Association of Engineering Geologists, p. 149, 1990.

Vertical Displacements of the Santa Cruz Terrace Near Greyhound Rock, Santa Cruz County, California, Fault or Landslide Induced?

Marine Terraces, a brief introduction.

Late Pleistocene Slip Rates on the San Gregorio Fault Zone, at Point Ano Nuevo, San Mateo County, California.

Marine Terraces and Dating of the Santa Cruz Terrace Sequence; in Schwartz, D.P., and Ponti, D.J., editors, Field Guide to Neotectonics of the San Andreas Fault System, Santa Cruz Mountains, in Light of the 1989 Loma Prieta Earthquake; U.S.G.S. Open-file Report 90-274, pp. 8-11, 1990.

Late Pleistocene Slip Rates on the San Gregorio Fault Zone, at Point Ano Nuevo, San Mateo County, California; in Geology and Tectonics of the Central California Coastal Region, San Francisco to Monterey, Volume and Guide Book, eds. R.E. Garrison, H.G. Greene, K.R. Hicks, G.E. Weber, T.L. Wright; for American Association of Petroleum Geologists Field Trip June 7-8, 1990; Pacific Section of American Association of Petroleum Geologists, pp. 193-203, 1990.

Coastal Bluff Landslides in Santa Cruz County Resulting from the Loma Prieta Earthquake of October 17, 1989; with R.H. Sydnor, G.B. Griggs, R.J. McCarthy, and N. Plant; in McNutt, S.R., and Sydnor, R.H., editors, 1990, The Loma Prieta (Santa Cruz Mountains), California earthquake of 17 October 1989: California Division of Mines and Geology, Special Publication #104, pp. 67-82.

Geologic Hazards in the Summit Ridge Area of the Santa Cruz Mountains, Santa Cruz County, California, Evaluated in Response to the October 17, 1989, Loma Prieta Earthquake: Report of the Technical Advisory Group: Members; D. Keefer, A.A. Raskstins, G.B. Griggs, E.L. Harp, P. Levine, C.C. McAneny, T.E. Spittler, G. E. Weber, 1991, U.S.G.S. Open-File Report 91-618, 427 pp., 13 oversize plates.

Evaluation of Ground Cracking Caused by the 1989 Loma Prieta Earthquake, Santa Cruz County, California; with J. Nolan, in: Proceedings of the 28th Symposium on Engineering Geology and Geotechnical Engineering, pp. 272-286, Owhyee Plaza Hotel, Boise, Idaho, April 1992.

Landslides and Associated Ground Failures in the Epicentral Region of the October 17, 1989, Loma Prieta Earthquake - Factors Affecting the Distribution and Nature of Seismically Induced Landsliding; with J. Nolan, in Proceedings of the 28th Symposium on Engineering Geology and Geotechnical Engineering, pp. 361-377, Owyhee Plaza Hotel, Boise, Idaho, 1992.

Determination of the Initiation of Slide Movement, Big Rock Mesa Landslide, Malibu, California; in: Engineering Geology Field Trips, Guidebook and Volume, Field Trip C - Malibu, pp. C-45 - C-53, 1992.

Landslides in the Epicentral Region of the October 17, 1989 Loma Prieta Earthquake: Factors Affecting the Distribution of Seismically Induced Landsliding, with J. Nolan, in: Proceedings of the 35th Annual Meeting of the Association of Engineering Geologists, 1992, pp.176 - 186.

Evaluation of Ground Cracking Caused by the 1989 Loma Prieta Earthquake, Santa Cruz County, California: Case Histories, with J. Nolan, in: Proceedings of the 35th Annual Meeting of the Association of Engineering Geologists, 1992, pp. 541 - 552.

Geology of the San Andreas Fault System, Field Trip #5, Santa Cruz to Marin County, Eighth International Conference on Geochronology, ICOG-8; with G.D. Simpson, W.R. Lettis, N.T. Hall, W.F. Cole, K.I. Kelson, J. Wakabayashi, 30p., 1994.

Field Trip Guide: Day 3, Pescadero to Ano Nuevo to Half Moon Bay, pp. 50-72, and **Late Pleistocene Slip Rates on the San Gregorio Fault Zone at Point Ano Nuevo, San Mateo County, California,** pp. 193-203, in: Quaternary Transpressional Plate Deformation in the Greater San Francisco Bay Area; Field Trip Guidebook, Friends of the Pleistocene Pacific Cell Field Trip, September 30 - October 2, 1994.

Evaluation of coseismic ground cracking accompanying the earthquake: Trenching studies and case histories, with Jeffrey M. Nolan; in David K. Keefer, Editor, The Loma Prieta, California, Earthquake of October 17, 1989 - Landslides, U. S. Geological survey Professional Paper 1551-C, pp. 145 - 164, 1998.

Field Trip #2 - Neotectonics of the San Gregorio Fault Zone, Central Coastal California, with J. C. Clark, L. Rosenberg, and K. Burnham, in Proceedings of Pacific Section, American Association of Petroleum Geologists Annual Meeting, Monterey, California, April 28 - May 2, 1999, pp.

Field Trip Guidebook, June 1st 1999, Neotectonics and Quaternary Geology of the San Gregorio Fault Zone, Santa Cruz and San Mateo Counties, California, edited by G. E. Weber, with contributions from Gary Simpson, Jennifer Thornburg, Jeffrey Nolan and William Lettis, 82 p., 1 oversized plate, 1999.

The Geology from Santa Cruz to Point Ano Nuevo - The San Gregorio Fault Zone and Pleistocene Marine Terraces, with Alan O. Allwardt, in: Geology and Natural History of the San Francisco Bay Area, editors, Philip W. Stoffer and Leslie C. Gordon: A Field Trip Guidebook, for 2001 Fall Field Conference of the National Association of Geoscience Teachers, Far Western Section; U. S. Geological Survey Bulletin 2188, pp. 1-33.

Abstracts

Holocene Movement on the San Gregorio Fault Zone near Point Ano Nuevo, San Mateo County, California, with K.R. Lajoie, Geol. Soc. of America, Abstracts with Programs, vol. 6, no. 3, p. 273, 1974.

Late Pleistocene Coastal Tectonics, Half Moon Bay, California, with K.R. Lajoie, J.C. Tinsley, and J. B. Wallace, Geological Society of America, Abstracts with Programs, vol. 7, no. 3, p. 338, 1975.

Late Pleistocene and Holocene Tectonics of the San Gregorio Fault zone between Moss Beach and Point Ano Nuevo, San Mateo County, California, with K.R. Lajoie, geological Society of America, Abstracts with Programs, vol. 9, no. 4, p. 524, Symposium on San Gregorio - Hosgri Fault System, 1977.

Quaternary Crustal Deformation Along a Major Branch of the San Andreas Fault in Central California, with K.R. Lajoie and J.F. Wehmiller, Abstract, International Symposium on Recent Crustal Movements, Stanford University, July 1977; Tectonophysics, vol. 52, no. 1-4, p. 378-379, February 1979.

Changes in Beach Sediment Supply and Coastal Erosion Rates Near Point Ano Nuevo, San Mateo County, California, Geological Society of America, Abstracts with Programs, vol. 11, no. 3, p. 134, 1979.

Recurrence Intervals for Surface Faulting Along the Frijoles Fault and the Ano Nuevo Thrust Fault of the San Gregorio Fault Zone, San Mateo County, California, with W.R, Cotton, Geological Society of America, Abstracts with Programs, vol. 11, no. 3, p. 134, 1979.

Historic Evidence of Major Changes in Beach Sediment Supply and Accelerated Cliff Erosion Rates in Santa Cruz County, California, Resulting from Erosional Changes at Point Ano Nuevo. Abstract for Coastal Society, 6th Annual Conference Proceedings, 1980.

Structural Analysis of Faulting Along the San Gregorio Fault Zone: Implications for Recurrence Intervals and Earthquake magnitude; (with William R. Cotton and Lloyd K. Oshiro), Geological Society of America, Abstracts with Programs, vol. 13, no. 2, p. 113, 1981.

Evidence for late Pleistocene or Holocene Faulting Along the San Simeon Fault Zone at San Simeon Bay, San Luis Obispo County, California; (with Lloyd K. Oshiro, Damon F. Brown and Patricia A. McCrory), Geological Society of America, Abstracts with Programs, vol. 13, no. 2, p. 113, 1981.

Recognition of Multiple Faulting Events and Estimation of Earthquake Magnitude Along Reverse Faults; Abstract, AGU Chapman Conference, Fault Behavior and Earthquake Generation Process, 1982.

Structural Analysis of Faulting Along the San Gregorio Fault Zone; Evidence for Large Displacements Along Secondary Faults; Abstract, AGU Chapman Conference on Fault Behavior and the Earthquake Generation Process, October 1982.

Probable Cause of Decrease in Beach Sediment South of Point Ano Nuevo: Implication for Beach Stability and Coastal Erosion in Santa Cruz County, California; Geological Society of America, Abstracts with Programs, vol. 15, no. 5, p. 248, 1983.

Pleistocene Tectonics of the San Simeon Fault Zone, San Luis Obispo County, California; Geological Society of America, Abstracts with Programs, vol. 15, no. 2, p. 417, 1983.

Methods and Problems in Determination of Quaternary slip Rates from Deformed Marine Terrace Sequences; Seismological Society of America, Symposium on Reliability and Uncertainty in Quaternary Slip Rates, Abstract, 1984.

Possible Causes of Decrease in Beach Sediment in Northern Monterey Bay, Importance of a Temporary Point Source of Beach Sediment; (Abstract) California's Battered Coast: Shoreline Erosion Conference, American Shore and Beach Preservation Association, San Diego, February, 1985.

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Following four abstracts in: **San Gregorio Fault Symposium - Gerald Weber, Joseph Clark - Convenors:** *in:* Convention Program, Pacific Section, American Association of Petroleum Geologists, Monterey, California April 28 - May 2, 1999.

> **Late Quaternary Slip Across the San Gregorio Fault Zone, San Mateo County, California; Estimates from Marine Terrace Offsets,** with Jeffrey Nolan and Erik Zinn, p. 46
>
> **Recurrence Intervals, Recency of Movement and Holocene Slip Rates Across the San Gregorio Fault Zone at Point Ano Nuevo, San Mateo County, California,** with Jennifer Thornburg and Jeffrey Nolan, p. 46.
>
> **Map of Quaternary Deposits and Faulting Along the San Gregorio Fault Zone, San Mateo and Santa Cruz, Counties, California,** with Jeffrey Nolan and Erik Zinn, p. 46.
>
> **Historic Sedimentation in San Gregorio Creek; Implications for Absence of Geomorphic Expression of Recent Surface Rupture Along the San Gregorio Fault Zone, San Mateo County, California,** with Jennifer Thornburg, p. 44.

Geologic Evidence for Recency of Movement and late Quaternary Slip Rates Across the San Gregorio Fault Zone, San Mateo County, California, Geological Society of America, Abstracts with Programs, vol. 31, no. 6, p. A-106, 1999.

Appendix AF

April 24, 2002

To whom it may concern:

I, Mary Lee Lincoln, the daughter in law of Mr. Robert O. Lincoln Sr. and Fay W. Lincoln, who in 1957 purchased the property at 4460 Opal Cliff Drive, Santa Cruz, California, do make the following statement:

In a period prior to a house being constructed on the lot, now known as 4440 Opal Cliff Drive, I was visiting my in-laws at 4460 Opal Cliff Drive. While there I observed a large crane parked on the lot, now known as 4440 Opal Cliff Drive, lowering over the cliff, large concrete blocks which now form the present concrete block wall in front of 4440 Opal Cliff Drive.

I affirm the above statement is my true recollection of an event that occurred over thirty years ago.

Signed: Mary Lee Lincoln
Mary Lee Lincoln Dated: April 24, 2002

Mary Lee Lincoln
175 14th Avenue
Santa Cruz, CA 95062-4810
831-476-3428

STATE OF CALIF
COUNTY OF SANTA CRUZ
SUBSCRIBED AND SWORN TO BEFORE ME
THIS 25th DAY OF April, 2002
BY Marlene Menge
MARLENE MENGE
NOTARY PUBLIC

MARLENE MENGE
Comm. 1218391
NOTARY PUBLIC-CALIFORNIA
SANTA CRUZ COUNTY
MY COMMISSION EXPIRES MAY 6 2003

Copy

Appendix AG

1973 Aerial Photos (Stereo pair) – flt line Analysis

Appendix #G

1975 Aerial Photos (stereo pair) FM line Analysis

Appendix A H

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET. SUITE 410. SANTA CRUZ. CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
ALVIN JAMES. DIRECTOR

Wednesday, July 31, 2002

Mr. Sharif Traylor
c/o California Coastal Commission, Santa Cruz office
725 Front Street, 3rd floor
Santa Cruz CA 95060

SUBJECT: PERMIT REQUIREMENTS FOR PLACEMENT OF CONCRETE BLOCKS AT 4440 OPAL CLIFF DRIVE. APN 033-151-08

Dear Mr. Traylor:

I understand that the Coastal Commission is questioning the construction timing and permit requirements for the placement of some concrete blocks/block wall, located at the base of the bluff at 4440 Opal Cliff Drive.

This type of work is categorized as "fill placement" under the County's Grading Ordinance, and therefore is of the nature to require Grading and Coastal Permits from the County. The County Grading Ordinance was adopted in November of 1977, and the pertinent Coastal Permit Regulations were adopted in November of 1982.

Therefore, if the placement of these concrete blocks occurred prior to these Code adoption dates, formal County Grading and Coastal Permits were not, and are not required.

Sincerely,

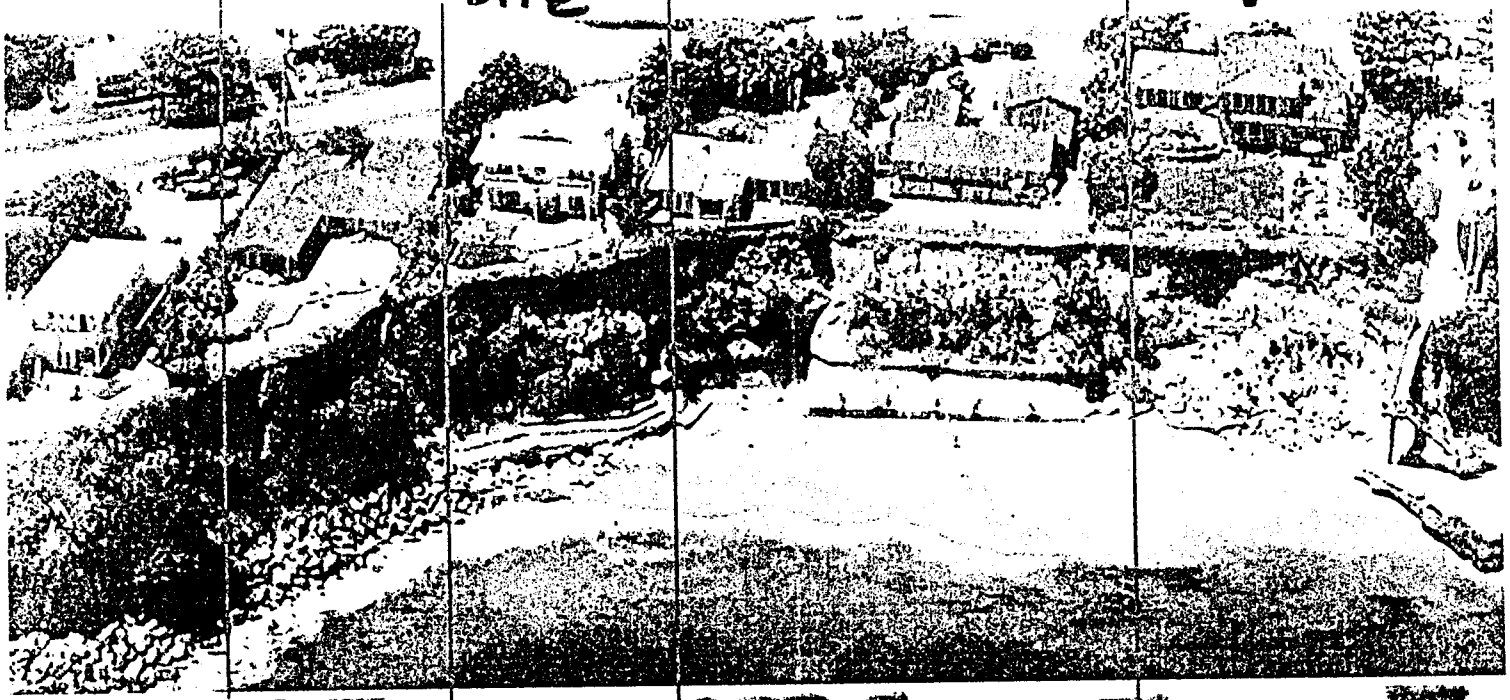
Alvin James
Director

App A1

1972 COAP provided by CCC

Appendix AI

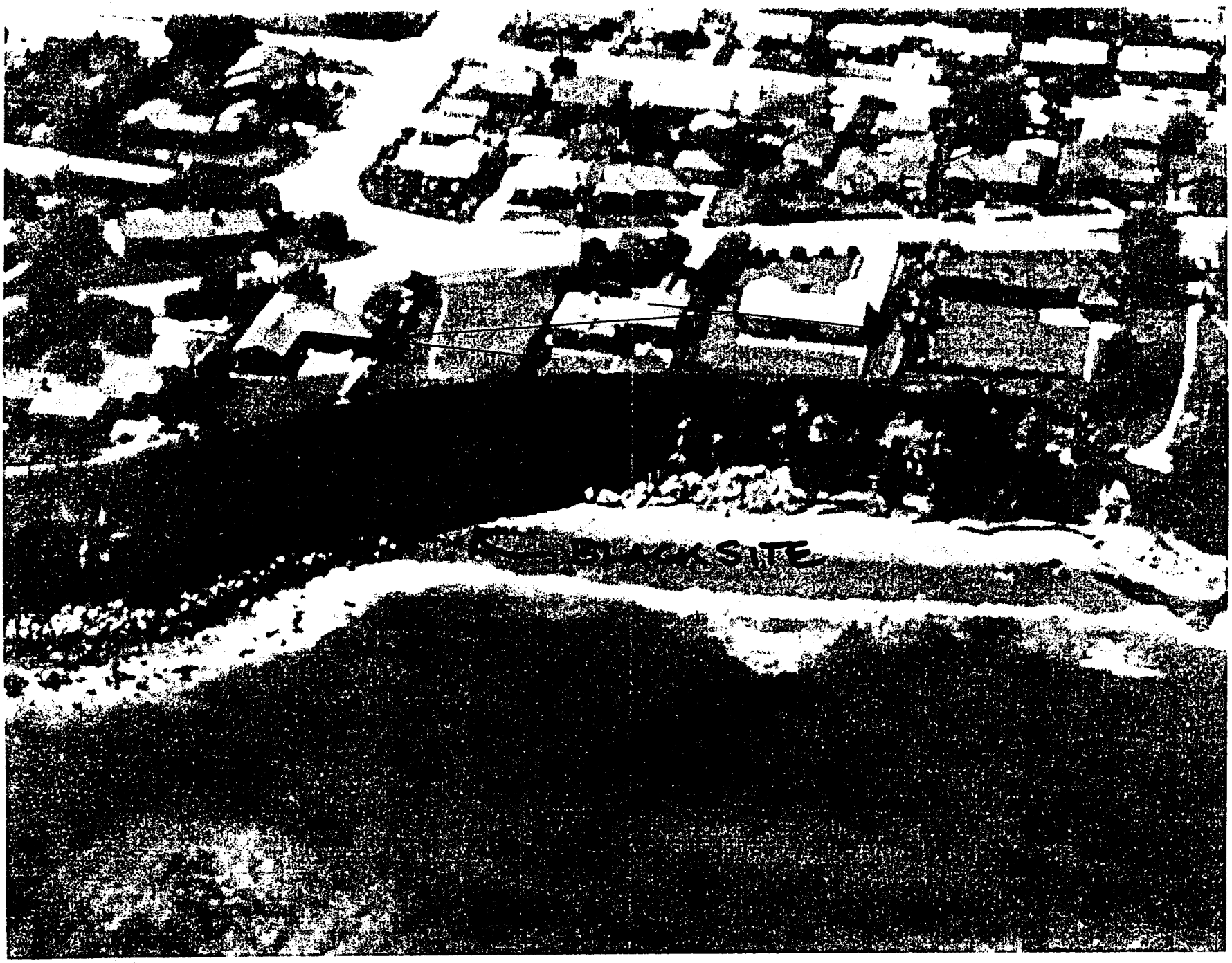
BLACK SITE



2002
GE WEBER

1972
COAP
CCC

BLACK SITE



1972 Comp Dept. Boating & Waterways

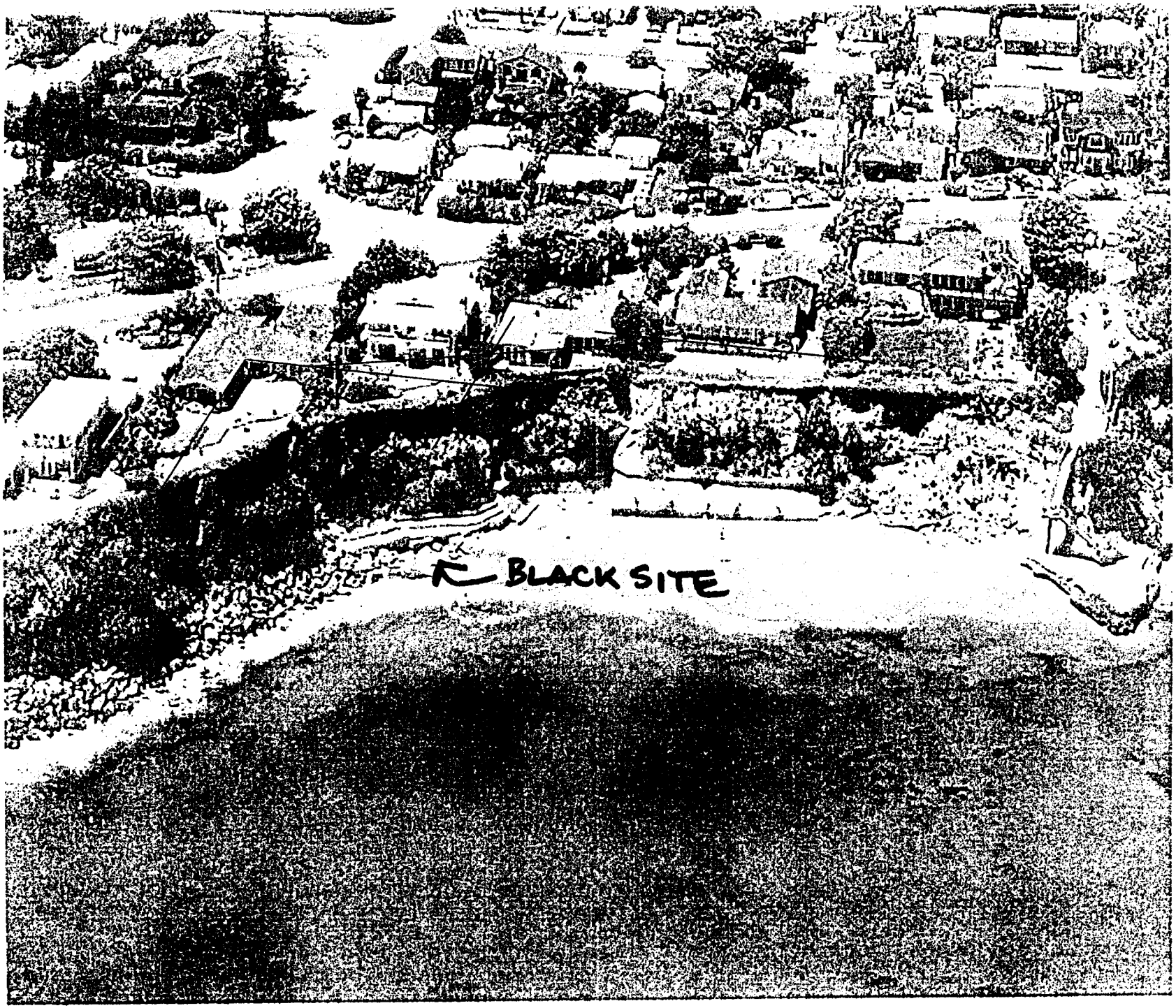
App F.1

PROF. GRIGGS
NOV/DEC.
1972

COAP 1972 CCC

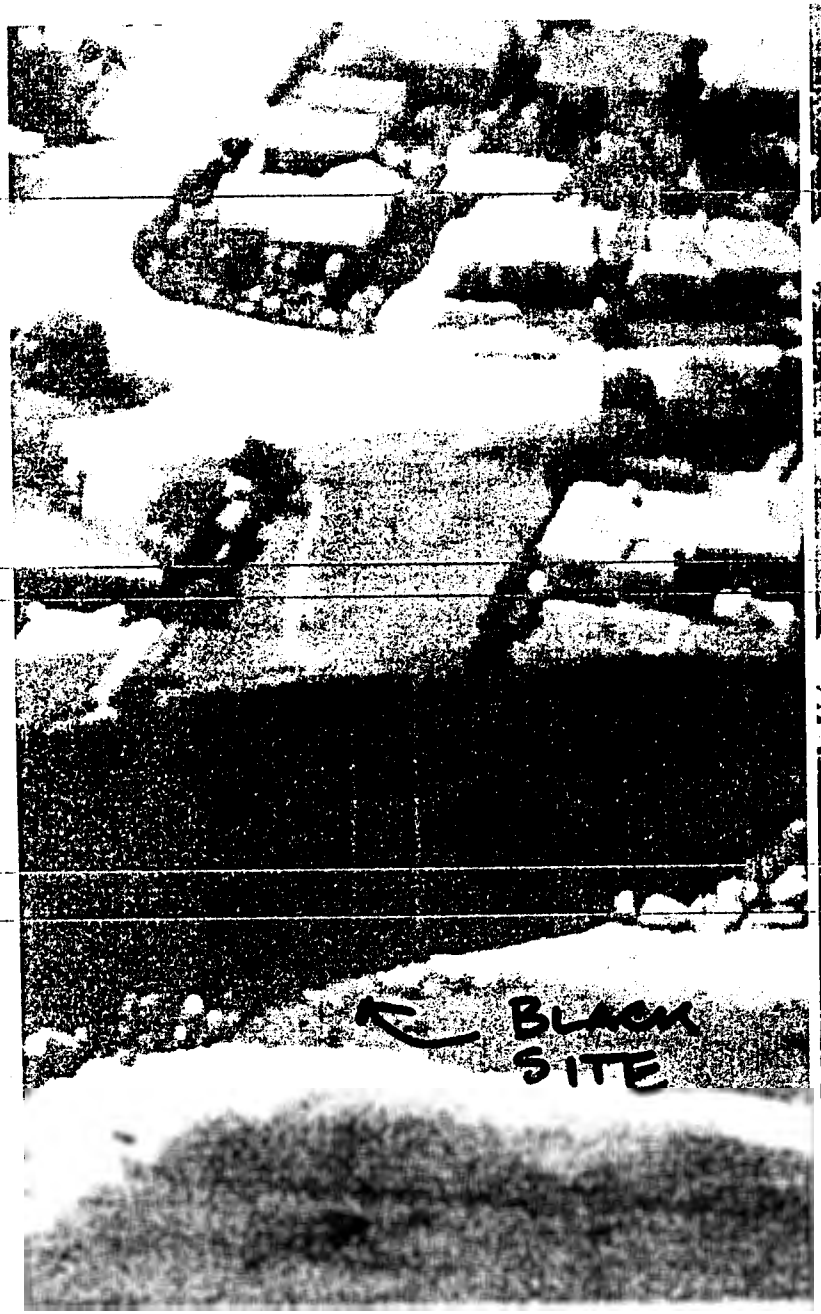
Appendix A-1

2002 GE WEBER APP AT

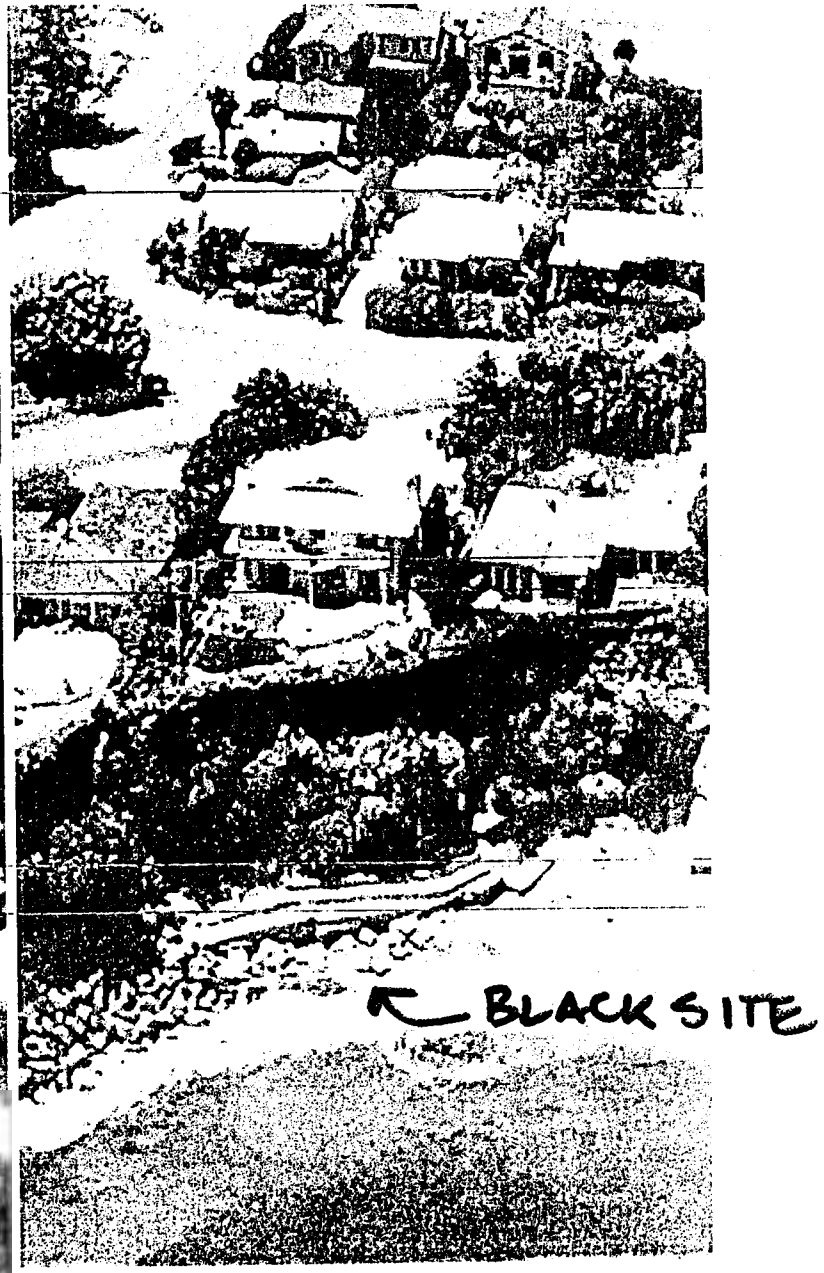


July 2002-

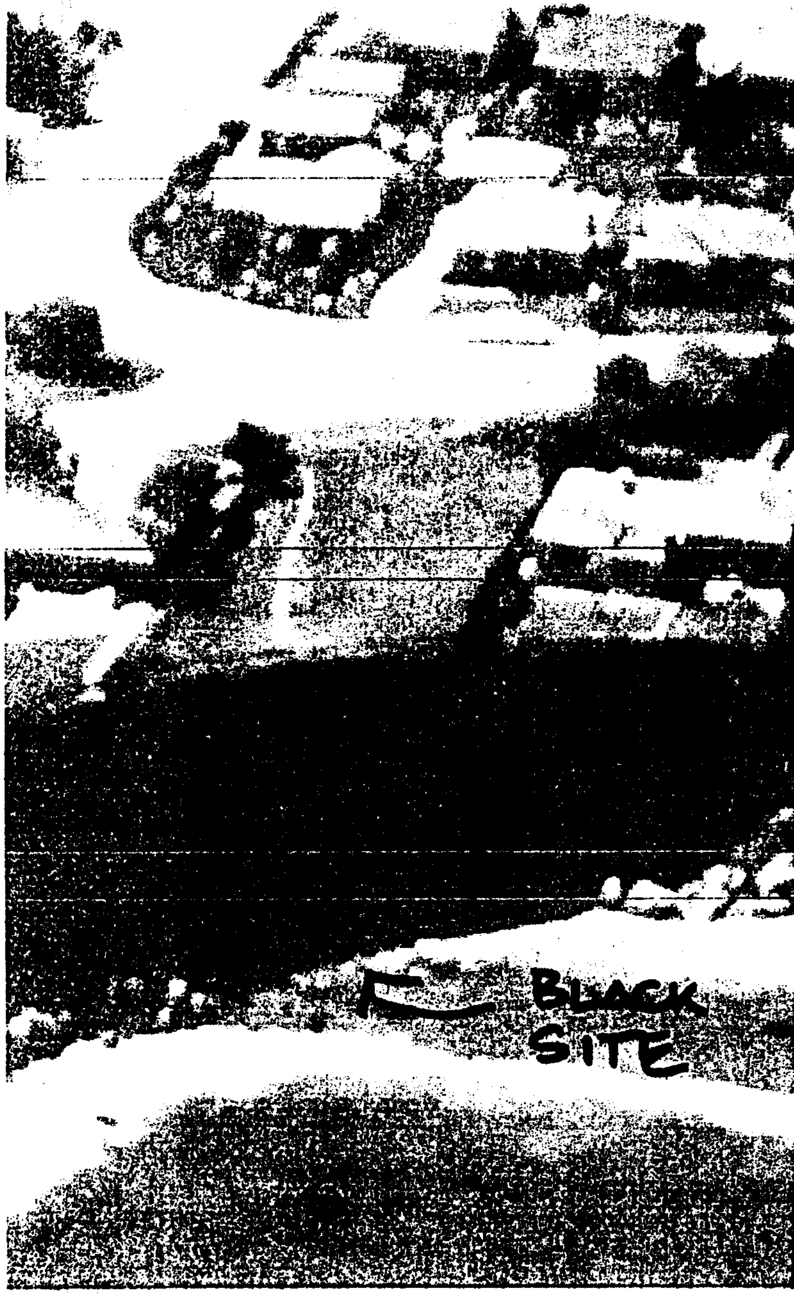
Appendix A.1



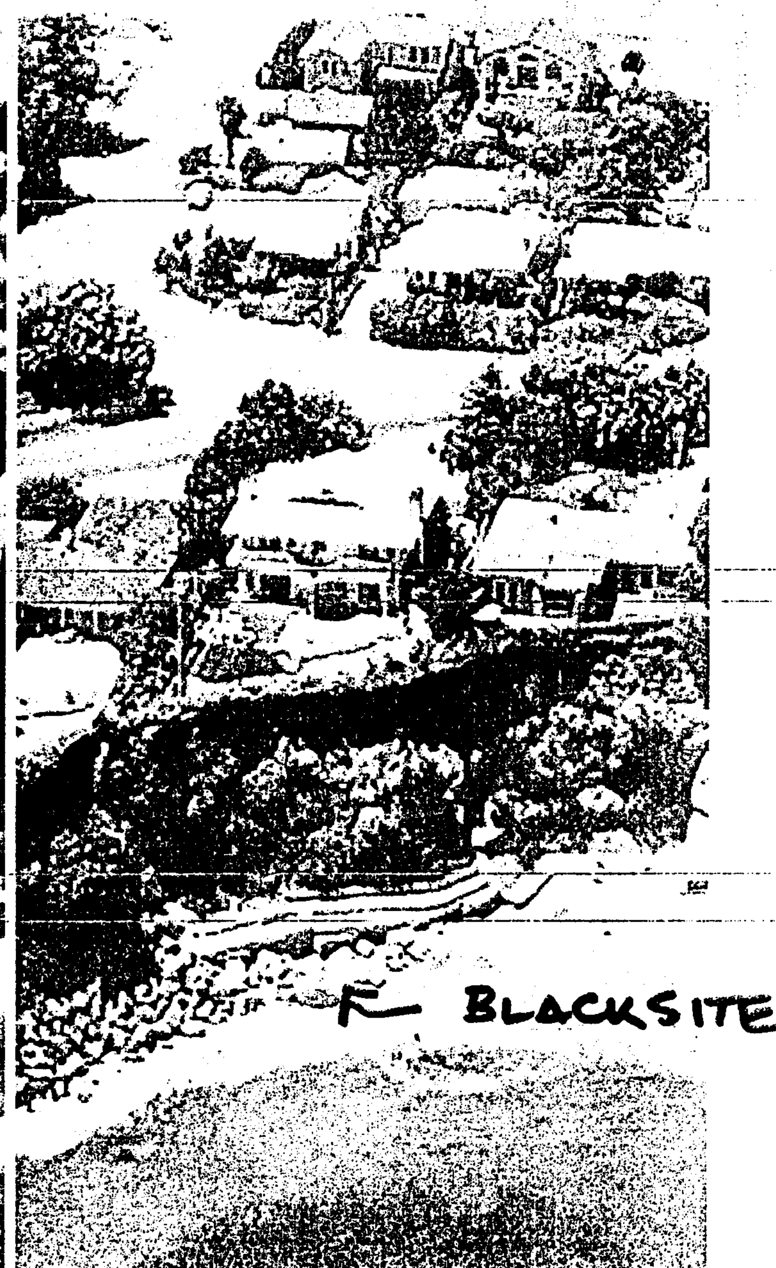
1972 COAP
provided by CCC



2007 Gerald Weber, Inc.



1972 COMP Dept. [illegible]
printed by [illegible]



2002 Photo
by Dr. Weber

STATE OF CALIFORNIA—THE RESOURCES AGENCY GRAY DAVIS, GOVERNOR

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400

April 14, 2003

Jim Burroughs, Esq.
Allen, Matkins, Leck, Gamble & Mallory LLP
333 Bush St., 17th Fl.
San Francisco, CA 94104

Re: Vested Rights Claim for Seawall Located at 4440 Opal Cliff Dr., Santa Cruz

Dear Mr. Burroughs:

I am writing for the purpose of calling your attention to newly discovered photographic evidence relevant to the above-referenced claim of vested right (CVR).

The evidence consists of an aerial image of the property that is the subject of the above-referenced CVR taken in June, 1978. The Commission's Mapping Division digitally scanned this image from an oblique image obtained in slide form from the slide collection of Dr. Gary Griggs at UCSC. A copy of this image is enclosed herewith for your information.

The image seems to Commission staff to document quite indisputably that at the time the slide that this image was produced from was taken (June, 1978), the seawall that appears in later slides/photographs was not present on the property.

Please inform me whether in light of this newly discovered evidence you still wish to proceed with consideration by the Commission of the subject CVR.

Feel free to contact me at 415/904-5229 if you have any questions.

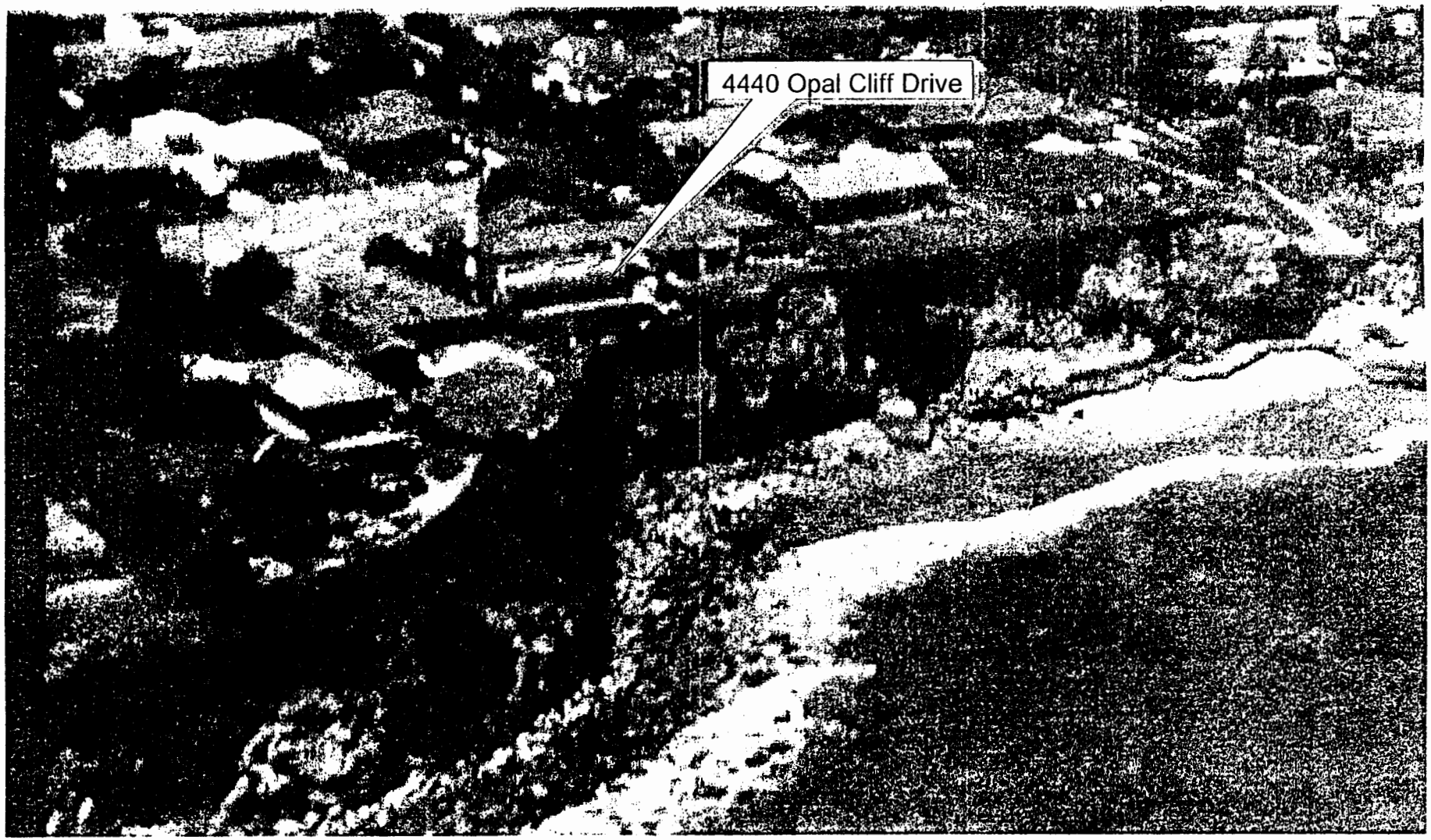
EXHIBIT NO. 5
APPLICATION NO.
3-04-20-VRC

Sincerely,

JOHN BOWERS
Staff Counsel

enc.

cc: Jon Van Coops
Diane Landry



CALIFORNIA
COASTAL
COMMISSION

Vested Rights Claim No. 01-2002
Alistair Black
4440 Opal Cliff Drive
APN 33-151-08
Santa Cruz County

Preliminary DRAFT

N

Exhibit 1

Allen Matkins Leck Gamble & Mallory LLP
attorneys at law

Allen Matkins

333 Bush Street 17th Floor San Francisco California 94104-2806
telephone. 415 837 1515 facsimile. 415 837 1516 www.allenmatkins.com

writer. James T. Burroughs t. 415 273 7482
file number. A5042-002/SF595569.01 e. jburroughs@allenmatkins.com

EXHIBIT NO. 6
APPLICATION NO.
3-04-20 VRC

August 12, 2003

VIA FEDEX

John Bowers
Staff Counsel
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: Vested Rights Claim for Seawall Located at 4440 Opal Cliff Dr., Santa Cruz

Dear Mr. Bowers:

This letter is to reiterate our request for a meeting with Commission staff with regard to the above-referenced application submitted by my client, Alistair Black. We understand that Coastal Commission staff are very busy. We would not be making this second request but for the fact that we sincerely believe that all sides would profit from a face-to-face meeting. With the aid of photographic interpretative equipment, this will allow our expert, Dr. Gerald E. Weber, to demonstrate to Commission staff the basis for his conclusions about the existence of the subject seawall.

When we spoke by phone on June 24th, you indicated that before Commission staff would consider another meeting request, you would need a written analysis in support of our contention that the 1978 photograph shows the seawall obscured by landslide debris. That analysis, prepared by Dr. Weber, is attached. It concludes that the wall does, in fact, appear to be obscured by landslide debris, especially when other photographic evidence of the wall is taken into consideration.

Also, you expressed surprise that the 1978 photograph did not surface until recently and was not included or referenced in my client's vested rights application. The simple fact is that we did not know about the photograph until you brought it to our attention. The reason we did not know about it is that most of our efforts to amass evidence relating to the wall were focused on photographs pre-dating 1975. Until we received your letter dated April 14, 2003, we did not think it was disputed that the wall existed at least as of 1975. As explained below, we had no reason to research later photographic records of Mr. Black's property.

In my client's first meeting with Coastal Commission staff (Sharif Traylor and Greg Benoit) on April 25, 2002, a 1975 photograph of the subject area was produced to show the

existence of the wall at least as of that date.[1] With the assistance of Dr. Weber, that photograph (and others) were viewed under a stereoscope. Commission staff initially interpreted the 1975 photograph to show that the wall might only be partially constructed. A 1986 photograph viewed at the same meeting, however, showed that the wall where it was then known to exist[2] was also partially obscured by vegetative or landslide debris, thus giving it the "partially constructed" look. It seemed clear, therefore, that the object viewed as the wall in the 1986 photo was the same object depicted in the 1975 photograph.

Under the firm impression that it had been established that the seawall existed at least as of 1975, a fair amount of time in that April 2002 meeting was focused on the meaning of a 1973 photograph of the beach area. It was this photo that Sharif Traylor thought was inconclusive as to the existence of the wall. In fact, Mr. Traylor suggested that it would be appropriate to convene a meeting with the Commission's mapping and geologic experts to help interpret the meaning of the 1973 photograph. Ever since then, we have been collecting further evidence in preparation for that meeting. Up to now, our chronological endpoints in this evidence-gathering process have been 1969 when we know by reference to a photo from that year that the wall did not exist, and 1975 when we thought we had agreement that the wall existed at least as of that date.

Now that Commission staff have brought the 1978 photograph to our attention, we are quite prepared to interpret its meaning in the context of all the other evidence adduced to date, and think that Dr. Weber's attached analysis provides a very clear explanation of why we think this photo is not inconsistent with our claim that the wall was built prior to February 1, 1973.

Please let me know when and if a meeting with the Commission's mapping and geologic experts would be convenient. You already have our written analysis and conclusions in the record. What we would like you to hear is the demonstrative evidence that Dr. Weber can offer by reference to the original photographs of the beach area, interpreted with the aid of a stereoscope.

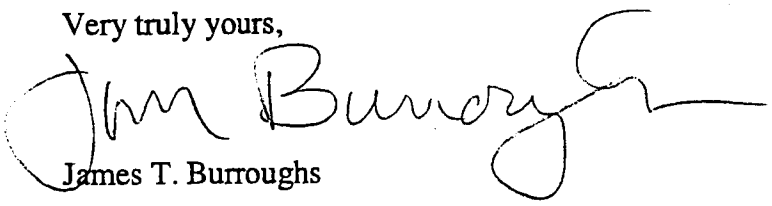
---

[1] At the time of the meeting, the 1975 photograph seemed especially relevant because we had been informed by Commission staff that any evidence of the wall prior to January 1, 1976 would suffice to prove our claim that the wall predated the permit requirements of the Coastal Act. Only subsequently were we informed by staff that in order for the wall to be considered "vested," it must pre-date February 1, 1973.

[2] A Coastal Commission staff report from 1983 (#3-83-176-A2) relating to a proposal by Mr. Black's neighbor to extend Mr. Black's seawall onto the neighbor's property noted the existence of Mr. Black's seawall at that time.

I look forward to hearing from you.

Very truly yours,



James T. Burroughs

JTB

cc: Alistair Black

G.E. WEBER GEOLOGIC CONSULTANT
129 Jewell Street, Santa Cruz, CA 95060
831. 469. 7211 831. 469. 3467 Fax

August 5, 2003

Alistair Black
4440 Opal Cliff Drive
Santa Cruz, California 95062

Subject: Additional comments regarding the age of sea wall at 4440 Opal Cliff Drive, Santa Cruz, California

Dear Dr. Black:

At your request I have evaluated additional materials regarding the age of a small sea wall on your property as described in my letter report of 10-01-02. Specifically, I have evaluated:

1. An oblique aerial photograph of the site, dated 1978, from Dr. Gary Griggs' personal slide collection.

2. The following vertical aerial photographs:

   a. State of California, Department of Navigation

      DNOD AFU-C-168, 169 flown 10-15-76
      DNOD AFU-4C - 127, 128 flown 05-06-78

   b. WAC SC-90 9-118, 9-119 flown 05-14-90

   c. SCZCO 1-1, 1-2 flown 10-14-75

   d. CDBW-APU-C 221, 222 flown 03-23-86

3. Ground level photographs of the sea wall that I took in 2002.

4. Most of the materials described in my letter report of 10-01-02.

The investigation was performed to determine if the sea wall is present in the 1978 aerial oblique photograph of Griggs, and to evaluate the Griggs photograph in regard to other photographic evidence from the same time period. Much of the material noted above was not evaluated in my earlier report because I was under the distinct impression that at our meeting with CCC staff at the UCSC Map Library on April 25th, 2002, everyone agreed that the wall was visible and present in the 1975 vertical aerial photographs (1-1, 1-2), as noted in my report of 10-01-02. During my initial meeting with Dr. Griggs I specifically looked for data from 1972 to 1974. During that meeting Dr. Griggs did not mention that he had a photo of the site taken in 1978.

Results

Griggs' 1978 Photograph:

Working with an 8" x 11" blowup of the original slide, it appears that the top of the sea wall is covered by a small earth and/or debris fall landslide off of the face of the sea cliff. As **Point "A"**

on Attachment #1 I have delineated the location and extent of the slide. **Point "B"** indicates a linear shadow that is a portion of the sea wall. **Point "C"** is a small landslide on a neighboring property to the east.

A close examination of **Point "A"** reveals that slide debris is scattered out onto the rip rap that lies in front of the sea wall. The majority of the landslide material would have been removed in subsequent years by wave erosion; probably during the large storms of January 1983, which caused extensive damage along the Santa Cruz County coastline. It is also apparent that more rip rap is present on the seaward side of the wall in 1978 then there is today. This is probably a consequence of the rip rap not being placed on bedrock; hence it has been subsequently undermined and has either sunk into the beach sand and/or moved offshore.

Further evidence of the slide is present in Attachment #2, my ground level photograph taken in 2002. **Point "A"** on the photographs indicates the remnants of a landslide mass, now covered with vegetation, that lies on the upper two steps of the sea wall.

Vertical Aerial Photographs: I evaluated the vertical aerial photographs using a 6 X to 10 X power stereoscope, and using 10X and 14X pocket magnifiers. As in the previous investigation the usefulness of these photos was hampered by variations in photo resolution, photo scale, the shadow cast from the seacliff onto the beach, and parallax. In general, the sea wall is difficult to discern except on large scale, high resolution photographs in which the nadir points of the photographs lie offshore.

The evidence from the period 1967 to 1975 in regard to the sea wall is as indicated in my previous letter report:

> *"Using the vertical aerial photographs taken in 1967, 1969, 1970, 1973 and 1975 we were able to conclude with certainty that the wall was constructed between 1970 and 1975. Because of relatively poor resolution and scale, my analysis of the 1973 photographs was not 100 % conclusive. However, with about 75-80% certainty I believe that these photographs (flown April 11, 1973) show a sea wall at the base of the seacliff on the subject property. The vertical aerial photos also indicate that the base of the seacliff has been protected by varying amounts of rip-rap starting in the 1960's."*

1975 Aerial Photographs

The wall appears to be present. One can discern a linear white blob, the wall, and what appears to be the lower step of the wall below it. The characteristic bend in the wall appears to be present at the right location. My level of certainty is greater than 90%. Certainly the preponderance of the evidence indicates the wall is present.

1976 Aerial Photographs

Waves are breaking on the rip-rap and the sea wall. The familiar bend of the wall is present in the white mass at the base of the cliff. A small earth fall landslide appears to be present at the property line to the west on photo #168. Nothing is visible on photo # 169 since the camera angle renders the cliff face invisible. Again my level of assurance that the wall is present I s about 90%.

1978 Aerial Photographs

The wall appears as a familiar white mass. Photo resolution is only fair, and wall is difficult to distinguish. From these photos my level of certainty would be about 75 - 80 %. The recent earth fall off the cliff face is present on the Black property, with material spreading across the top of the sea wall. The cliff shadow obscures part of cliff face and the wall on photo # 127. Coastal erosion has taken a large semicircular chunk out of the top of the seacliff on the neighboring property to the east between 1976 and 1978. On photo #128 the sea cliff is partly obscured by the camera angle. These photos support my conclusion that the sea wall is partly buried by an earth fall in the 1978 oblique photo of Griggs.

1986 Photographs

The wall is clearly present. The steps are visible as the amount of rip rap seaward of the wall has been greatly reduced.

1990 Photographs

Smaller scale photos and a bit overexposed when compared to other photos reviewed. Wall appears to be present, but, again it is not distinct. Main evidence of the wall is the white blob and the familiar bend. However, we know the wall is present at this time.

Conclusions

Analysis of and comparison of the oblique aerial photograph taken by Dr. Griggs in 1978 with the aerial photos listed above indicates that the wall is present, but covered with earth from a small earth fall off the cliff face. The ground level photos I took in 2002 also reveal what appears to be the remnants of a small earth fall that covers the upper two steps of the sea wall. This appears to be the same body of material seen in the 1978 photos. My conclusion is that the preponderance of the evidence indicates that the sea wall was present prior to 1978.

Consequently, I find no reason to change the conclusions in my report of 10-01-02:

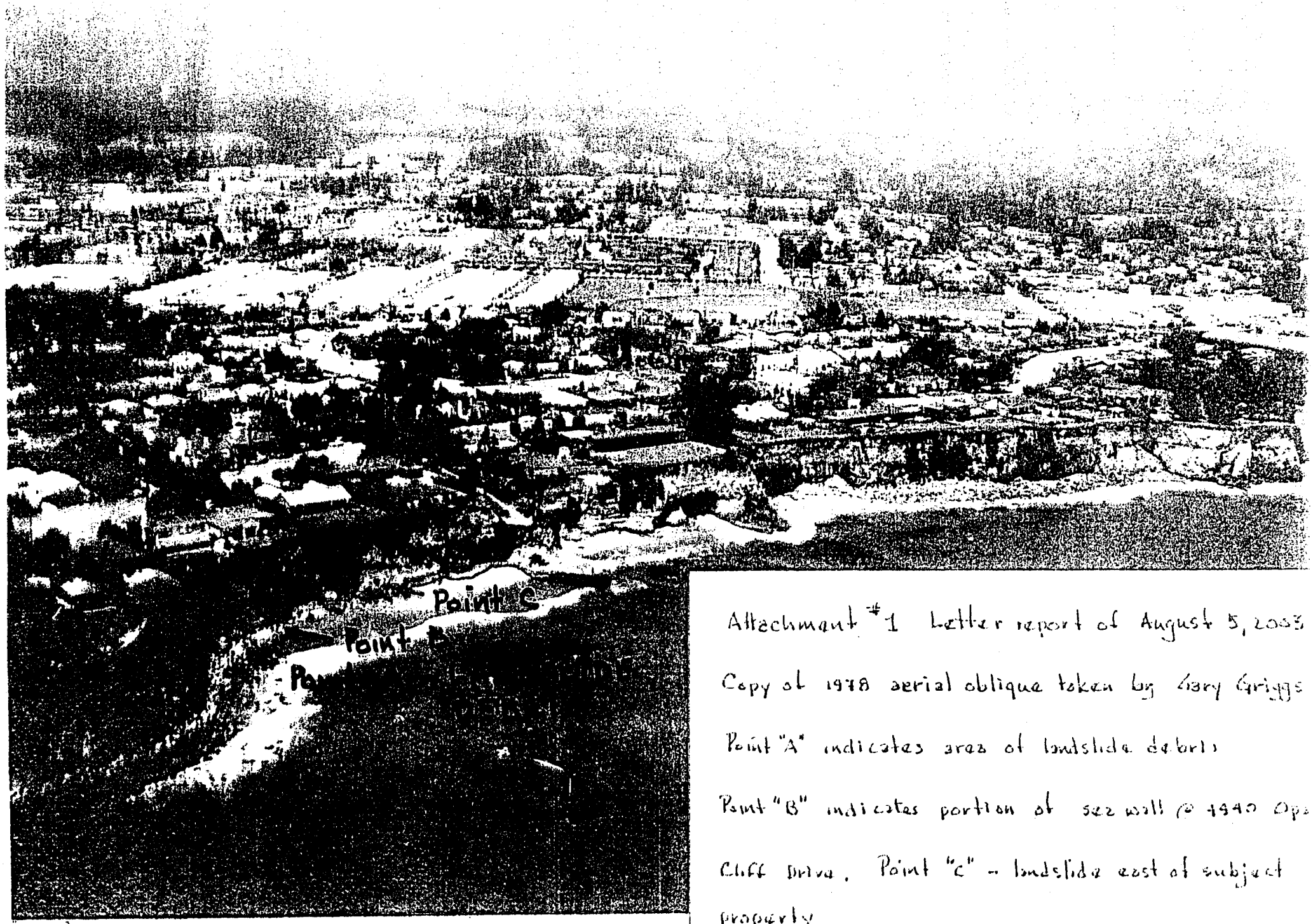
> *"By comparison of the oblique aerial photograph taken by Dr. Griggs in November or December of 1972 with the photos that I took in July of 2002, I can conclude with virtual certainty, that the sea wall was present in early December of 1972 on the subject property. Although my interpretation of the vertical aerial photographs was hampered by problems of scale, parallax, etc., with reasonable certainty (75-80%) I conclude that the sea wall was in place by April of 1973."*

If you have any questions regarding this report please contact me.

Very truly yours,

Gerald E. Weber

Gerald E. Weber, Ph.D.
Registered Geologist # 714
Certified Engineering Geologist #1495

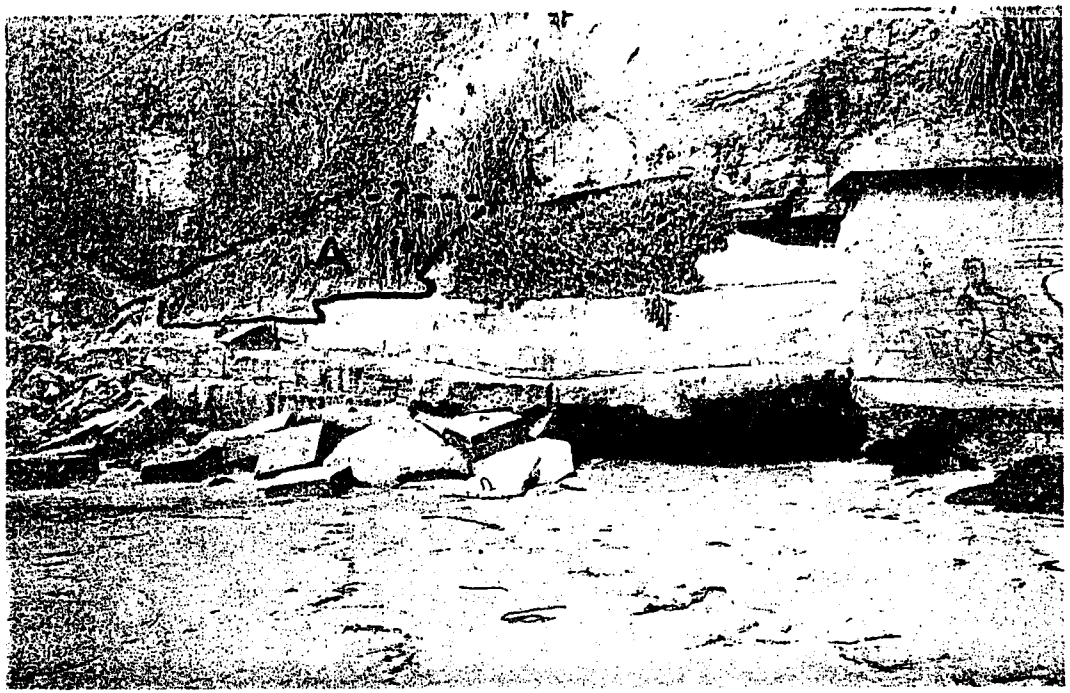


Attachment #1 Letter report of August 5, 2003

Copy of 1978 aerial oblique taken by Gary Griggs

Point "A" indicates area of landslide debris

Point "B" indicates portion of sea wall @ 4940 Opal Cliff Drive. Point "C" - landslide east of subject property



Attachment # 2 Letter report of August 5, 2003

Photos of seawall @ 4440 Opal Cliff Drive, Santa Cruz, California .. Landslide remnant indicated as Point "A" on overlay Photos by G.E. Weber, July 27, 2002