

CALIFORNIA COASTAL COMMISSION

NORTH COAST AREA

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 Staff: Bill Van Beckum
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 Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 1-97-58

APPLICANTS: SEADRIFT BEACH & TENNIS CLUB (c/o MARVIN MORGENSTEIN);
 WILLIAM & LINDA BUCKLIN; BROOKS WALKER; MASON WILLRICH;
 HENRY & KAREN SAFRIT; PHILIP SMITH; ELIZABETH HAZARD;
 DAVID KING; PROCTOR & MARTHA JONES

PROJECT LOCATION: 331 to 351 Seadrift Road, Stinson Beach, Marin County,
 APNs 195-300-16; 195-310-47; 195-310-62 to -69.

PROJECT DESCRIPTION: Repair 675 lineal feet of timber and asbestos-sheet
 bulkhead by facing the bulkhead with epoxy-coated steel
 interlocking sheet pile armor and backfilling the space
 behind the armor sheets with gravel.

APPROVALS RECEIVED: County of Marin Design Review and Tidelands Permit
 Exemptions;
 U.S. Army Corps of Engineers Nationwide Permit Number 3
 Authorization.

SUBSTANTIVE FILE DOCUMENTS: Marin County Local Coastal Program; Emergency
 Permit No. 1-97-072-G.

STAFF NOTES:

1. Standard of Review. The proposed project is located on the west shore of Bolinas Lagoon. Marin County has a certified LCP, but the project site is in tidal areas within the Commission's retained jurisdiction. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

2. Summary of Staff Recommendation. Major issues raised by the proposed project include fill in coastal waters, the protection of water quality, geologic stability, and visual resources. Staff recommends approval of the project with conditions that (1) restrict the type of anti-corrosive protective coating that may be applied to the sheet pile armor to a kind that won't leach significant contaminants into the lagoon, (2) require that measures be taken to prevent construction debris and soils behind the bulkhead from polluting the waters of the lagoon, (3) require that the bulkhead structure be constructed in accordance with the recommendations of the project's geotechnical engineer and that structural design changes be subject to permit amendment review, and (4) require the bulkhead to be compatible in color with adjacent bulkhead development. Staff recommends that

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the Commission find that the proposed development, as conditioned, is consistent with the Coastal Act, including Coastal Act requirements that public coastal access not be adversely affected by development.

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions.

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

II. Standard Conditions. See Attachment A.

III. Special Conditions.

1. Sheet Pile Coating Limitations.

As the protective coating for the steel sheet pile armor, only "two component, cross-linked epoxy," such as described in the product data sheets submitted by the applicant for "Carboline 890," shall be used. No "coal tar epoxy" or "glass flake filled epoxy" coatings shall be used.

2. Construction Debris Removal.

All construction debris shall be removed from the site and disposed of at a lawful disposal site. Any floating debris allowed to enter the waters of Bolinas Lagoon shall be retrieved and lawfully disposed of.

3. Cement and Concrete Precautions.

Cement or concrete for the bulkhead cap shall only be pured during periods of dry weather. A fabric form liner shall be installed prior to pouring of the cement or concrete. No cement or concrete shall be allowed to come into contact with Bolinas Lagoon, and no cleaning of cement or concrete mixing and pouring equipment shall be performed in Bolinas Lagoon.

4. Revegetation.

Upon completion of project construction, all barren disturbed areas

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behind the bulkhead shall either be restored to previously landscaped conditions or seeded with quick growing ground-stabilizing vegetation, mulched, and covered with fiber matting or other erosion protection material placed and secured to prevent any scour or sheet erosion and loss of plants during the wet season. The applicants shall maintain the erosion protection until the vegetation has been re-established sufficiently to stabilize the soil.

5. Project Modifications.

The bulkhead repair project shall be constructed in accordance with the recommendations contained in the project's geotechnical evaluation (Geotechnical Evaluation prepared by Geoengineering, Inc., September 30, 1997, File No. 3-78-nc), and shall be constructed as a continuous structure extending the full 675-foot distance between the east and west endpoints defining the "limits of project" as depicted on the Exhibit 3 plan sheet entitled "Plan View, Sheet 3 of 4 for Bolinas Lagoon Bulkhead Repair" (prepared by Noble Consultants, Inc., 8/1/97). Any change in the bulkhead's design, including, but not limited to, segmenting the bulkhead in a manner that does not provide for continuous uninterrupted sheet pile armoring along the entire length of the shoreline between the project's end points shall require an amendment to this permit.

6. Epoxy Coating Pigmentation.

The pigmentation for the sheet pile armor epoxy coating shall be whichever available pigment most closely matches the adjacent bulkhead's pigmentation.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

1. Emergency Permit.

Application No. 1-97-58 is an application for a regular coastal permit for the work authorized on an emergency basis by the Executive Director under Emergency Permit No. 1-97-72-G, issued on November 10, 1997. The development involves the repair of a failing bulkhead that protects ten adjacent properties in the Seadrift subdivision on the Bolinas Lagoon in Marin County.

A copy of Emergency Permit No. 1-97-72-G is attached as Exhibit 5. The emergency permit was granted by the Executive Director on the basis that the erosion and undercutting of portions of the existing bulkhead in combination with anticipated seasonal high tides threatened the existing developments that are located on the parcels behind the bulkhead.

In accordance with Section 13142 of the Commission's regulations, the current application was submitted to allow the project to be reviewed by the

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Commission and the public through the normal hearing process. In addition, Emergency Permit 1-97-072-G itself required the completion of the current follow-up application.

With two exceptions, the attached conditions impose the same substantive requirements as the conditions of Emergency Permit No. 1-97-72-G. One exception is the addition of the requirement through Special Condition No. 5 that any change in the bulkhead's design shall require an amendment to this permit. The other exception is the addition of the requirement through Special Condition No. 6 that the bulkhead shall be compatible in color with adjacent bulkhead development.

The list of conditions in the emergency permit does not match exactly the list of special conditions in Section III of the staff report. Special Condition Nos. 3 and 4 of this authorization were not specifically listed in the emergency permit. Instead, the emergency permit included Condition 10 which simply required that the project be carried out in conformance with the requirements of the Department of Fish & Game Streambed Alteration Agreement for the project. Special Condition Nos. 3 and 4 of Permit No. 1-97-58 mirror two specific requirements of the Streambed Alteration Agreement. In addition, many of the procedural requirements of the conditions of the emergency permit are addressed in similar fashion in the Standard Conditions listed at the end of the staff report, making it unnecessary to include those conditions of the emergency permit as special conditions of Permit No. 1-97-58. Furthermore, those conditions of the emergency permit that are only appropriate for use in the emergency permit have not been repeated in the special conditions of Permit No. 1-97-58. For example, the requirement of Condition No. 4 of the emergency permit that the permittee complete Application No. 1-97-58 has already been met and thus was not included.

2. Project and Site Description.

The proposed development site encompasses the Bolinas Lagoon shoreline of nine residential parcels and a portion of the adjacent Seadrift Beach & Tennis Club, near the west end of the Seadrift spit, in Stinson Beach, Marin County. See Exhibits 1 - 3. The applicant propose to repair 675 lineal feet of timber and asbestos-sheet shoreline bulkhead by facing the bulkhead with epoxy-coated steel interlocking sheet pile armor and backfilling the space behind the armor sheets with gravel. The lagoon bottom area that would be displaced by the project consists of 675 square feet of unvegetated fine to medium sands directly in front of the existing bulkhead. Neither the project site nor properties protected by the bulkhead contain any environmentally sensitive habitat areas (ESHAs). See Exhibit 3, Plan View, and Exhibit 4, Section View.

Bulkhead's Current Construction Design

The existing bulkhead consists of a corrugated asbestos sheet pile wall that is anchored by a timber waler, timber cap, and steel rod and steel cable tie rods that are secured to horizontally placed timber pile deadmen buried behind

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the bulkhead (Exhibit 4). The bulkhead structure has a maximum height of about 9.5 feet above Mean Lower Low Water (MLLW), or about 5.83 feet above Mean High Water (MHW). See Exhibit 4. The toe depth of both the asbestos and timber sheet piling does not extend below elevation -6 feet MLLW, and in some cases may not extend to this depth.

Purpose of Proposed Repairs

The applicants describe the purpose of the bulkhead repairs as follows:

During the past couple of years, there has been some significant changes taking place within Bolinas Lagoon, with some areas experiencing more shoaling and other areas experiencing more erosion, that is associated with the rechannelization occurring within Bolinas Lagoon during the flooding and ebbing exchange of tidal waters. This has resulted in the narrowing and deepening of the main channel passing directly in front of the subject properties. During the past year the subject properties have experienced major failures to their existing bulkhead with the toe end rotating outward due to lack of support and the top of wall rotating inward Installation of the proposed new bulkhead is urgently required since the existing bulkhead will continue to experience ongoing failure with its potential total collapse during upcoming periods of high flood/ebb currents associated with the high tidal ranges.

Proposed Repair Design

The proposed project consists of installing a new bulkhead directly in front of the failing bulkhead. The new bulkhead would consist of steel interlocking sheet piles, factory-coated with an epoxy protective substance, driven to a depth of -21 to -27 feet MLLW. The bulkhead would be anchored near its top by tie rods, connected to the steel sheet piles by a double steel channel wale spanning the length of the bulkhead. These 40-foot-long tie rods would be attached to the wale at eight feet on centers, and, for lateral anchor support, be tied to buried helical anchors, driven into the soil behind the bulkhead (Exhibits 3 and 4).

The sheet piles would be driven in place by use of an overhead crane with a vibratory hammer, and placed either from landside or from a small portable barge from the water side. The inside edge of the steel sheets would be placed 6 to 7 inches out from the existing timber bulkhead face to allow placement of a reinforced concrete bulkhead cap. The approximately 0.7-foot gap between the existing and new bulkheads would be filled with granular permeable gravel material.

The reinforced concrete bulkhead cap would be cast in place along the top of the interlocking sheet piles and extend over the tie rod/steel channel wale connection. The cap is intended to provide protection to the tie rod/wale connection, to structurally tie together the top of the sheet piles, and to provide a uniform top-of-wall elevation, about one-half foot above the top of

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the existing bulkhead.

3. Fill in Coastal Waters and Protection of Marine Resources.

The Coastal Act defines fill as including "earth or any other substance or material ... placed in a submerged area." The proposed project includes the placement of fill in coastal waters in the form of the steel sheet piling and the gravel backfill between the sheet piling and the existing bulkhead. The sheet piles appear corrugated in plan view (Exhibit 3). Thus, the distance between the outside face of the piles and the existing bulkhead face varies with an average of 12 inches. The total encroachment of the piling and backfill materials into the bay thus would be approximately 675 square feet, or 0.015 acres.

Sections 30233 and 30235 of the Coastal Act address the placement of fill within coastal waters and the construction of seawalls. Section 30233(a) provides as follows, in applicable part:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.

(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of

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existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

Section 30235 provides, in applicable part:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local sand supply.

The above policies set forth a number of different limitations on what seawall fill projects may be allowed in coastal waters. For analysis purposes, the limitations can be grouped into four general categories or tests. These tests are:

- a. that the purpose of the seawall fill is either for one of eight uses allowed under Section 30233, to serve coastal dependent uses, or to protect existing structures or public beaches in danger from erosion; and
- b. that the project is designed to eliminate or mitigate adverse impacts on local sand supply; and
- c. that the project has no feasible less environmentally damaging alternative; and
- d. that adequate mitigation measures to minimize the adverse environmental impacts of the proposed project have been provided.

Purpose of Seawall Fill

The proposed project, although not an allowable use for fill under Section 30233(a), meets the first limitation regarding project purpose as the purpose of the project is to protect existing residential and beach/tennis club structures from erosion, consistent with Section 30235.

Protection of Sand Supply

The project also meets Section 30235 criteria regarding the protection of local shoreline sand supply because it would repair an existing seawall and

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there is no evidence that the existing seawall has had any effect on existing local shoreline sand supplies. The nearest sandy beach, just west of the tennis club, is located a few hundred feet west of the project's west end. The beach, near the end of the Seadrift spit, is just inside the entrance to the Bolinas Lagoon. The sand supplies at the Seadrift spit are strongly effected by ocean wave dynamics, and not primarily by the currents within the lagoon. The proposed repairs of the bulkhead with its minimal encroachment (675 square feet) onto the lagoon bottom will not affect ocean wave dynamics. In addition, the proposed repairs will augment an existing bulkhead that already acts to contain the bank material from eroding into the lagoon and becoming part of the local sand supply.

Alternatives

The application includes a discussion of several alternatives that the applicants considered prior to selecting the proposal for installing steel sheet piling in front of the existing bulkhead. These alternatives, and the applicants' considerations regarding their acceptability or unacceptability, are described below:

a. No project.

According to the applicants:

(This) alternative was considered unacceptable since the existing bulkhead is extremely close to total collapse. Loss of this bulkhead will result in direct loss to the existing residences and their exterior improvements. Additionally, the loss of this existing bulkhead will result in the discharge of fill materials, existing bulkhead debris materials and existing site improvement materials directly into Bolinas Lagoon.

b. Perform repairs to existing in-place bulkhead.

According to the applicants:

(This) alternative is engineering unsound since the existing bulkhead cannot withstand the increased lateral load associated with the deepening water depths directly in front of the bulkhead. The existing deadman system (buried horizontal timber piles), the shallow penetration of the bulkhead's sheet pile toe, and the asbestos and timber construction materials will not withstand this increased lateral loading associated with the deepening water depths. The direct placement of rock along the lagoon side of the bulkhead in order to decrease water depths directly in front of the existing bulkhead would result in a large volume of infilling to the Bolinas Lagoon. Additionally, the existing bulkhead's toe depth and structural ability to withstand higher lateral loads can not be adequately strengthened by repairing/upgrading the existing structure short of its total replacement.

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- c. Replace existing bulkhead with either a sloped or stepped revetment constructed of stone or some other suitable slope stabilization material.

According to the applicants:

(This) alternative is considered unfeasible from an engineering viewpoint. A revetted structure would require approximately a 2:1 (horizontal:vertical) slope placed from a design toe elevation of approximately -8 feet MLLW to a +10 feet MLLW top of grade elevation. This would require 36 horizontal feet. Placing this revetment directly in front of the existing bulkhead would result in a massive infilling to Bolinas Lagoon. Removal of the existing bulkhead in order to either place the entire revetment landward of the existing bulkhead location, or to place a major portion of it landward, would require: removal of all residential yard improvements; relocation of the existing residences further landward (if even possible); and significant interface problems where the revetted shoreline returns to the bulkheaded shoreline for those properties not included in the project. Even if the revetted slope was designable to a 1:1 slope requiring 18 horizontal feet, the same conditions discussed above would still apply. This alternative is therefore eliminated from further consideration.

- d. Install new anchored (tied-back) vertical bulkhead (either timber, vinyl, concrete or steel) directly in front of the existing bulkhead, in the same location as the existing bulkhead, or directly behind the existing bulkhead.

According to the applicants, the only practical alternative is the installation of a new vertical steel sheet pile bulkhead, directly in front of the existing bulkhead. The use of timber, vinyl or concrete was ruled out by the applicants for the reasons below:

Using a design bottom scour elevation of -6 to -8 feet MLLW and a top of existing grade elevation of +10 feet MLLW eliminates the use of timber and vinyl as suitable sheet pile construction materials due to the requirements to withstand higher bending loads. The bulkhead would have a height of eighteen feet during a maximum design scour of -8 feet MLLW, and a sixteen feet height for a -6 feet scour elevation. Even after designing for an anchored bulkhead, the design bending moment exceeds 30,000 ft-lbs per lineal foot of bulkhead. This bending moment requirement far exceeds that available for timber or vinyl bulkhead sections. The use of a second level (lower level) of tieback anchors is neither engineering or economically feasible for this project, and would still result in bending moments exceeding available strengths for typical timber or vinyl bulkheads.

An adequately designed concrete sheet pile bulkhead would weigh approximately 4 to 6 times more than a steel sheet pile bulkhead. Since

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there is limited site access either by land or by water for constructing a new bulkhead, a steel sheet pile bulkhead is considered the most appropriate and feasible construction material for the Bolinas lagoon site ...

Installing the new (steel) bulkhead either in the same location (same alignment) as the existing bulkhead or directly behind the existing bulkhead would require removal of the existing bulkhead. Its removal, even if performed in a phased removal, would result in the large loss of unsupported site materials (native and fill soils) into the Bolinas Lagoon. In addition, residential yard improvements would be lost, removal of the entire existing bulkhead which contains asbestos sheets would be required and temporary shoring could be required to safeguard the existing residences. Also, the potential exists for some loss of existing bulkhead materials into the Bolinas Lagoon.

- e. Install new cantilever vertical bulkhead (either timber, concrete or steel) directly in front of existing bulkhead, in same location as existing bulkhead, or directly behind existing bulkhead.

According to the applicants:

(This alternative) is not considered engineering feasible for the above stated design conditions for scour depth and top of wall, since it would require longer/deeper sheet piles and a heavier/wider section than a comparable tied-back wall. In addition, the cantilever wall could result in unacceptable deflection at its top during design load conditions.

- f. Install shorter length vertical bulkhead (driven to shallower toe depth) and place stone rip rap toe directly in front of bulkhead, to reduce bending moment loads acting on the bulkhead by stabilizing the bulkhead from further bottom scour.

According to the applicants:

(This alternative) is unacceptable since it requires a large volume of infilling to the Bolinas Lagoon, and it would only minimally reduce the size of the required bulkhead sheet piling.

In addition to alternatives a.-f., staff discussed with the applicants' representative the alternative of utilizing vertical steel sheet piles (alternative d. above) but without coating the steel with an anti-corrosive epoxy as proposed. The applicants have submitted technical data sheets for three different epoxy coatings, which are, in order of the applicants' first to last preference: "coal tar epoxy," "glass flake filled epoxy," and a "two component, cross-linked epoxy." According to the applicants' representative, "no coating of steel sheet piling is considered an unacceptable alternative since the structure's life span would be significantly reduced from no

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protection against corrosion."

As stated above, one of the tests for assessing if a project that involves the placement of fill in coastal waters is consistent with Coastal Act Section 30233(a) is that there is no feasible less environmentally damaging alternative.

Of the alternatives considered and discussed above for repairing the failing bulkhead, several are either inadequate to meet the project's long-term shoreline protection objectives or are not feasible from an engineering standpoint. These include: the replacement-in-kind of the existing bulkhead; construction of a sloped or stepped revetment (unless incorporating a substantially larger amount of fill than the amount of fill associated with the proposed steel sheet wall design); the installation of a timber, vinyl or concrete vertical bulkhead; the installation of steel sheet wall armor that is not protected by an anti-corrosive epoxy coating; and the installation of a timber, concrete, or steel cantilever bulkhead.

Another of the alternatives discussed above, a combination of the placement of stone rip rap with the installation of a shorter length vertical bulkhead than proposed, would require the placement of a larger volume of fill in the lagoon than that associated with the proposed deeper vertical bulkhead.

The "no project" alternative would result in the eventual collapse of the existing bulkhead and losses to existing structures the bulkhead is meant to protect, as well as in the discharge of bulkhead debris materials (including asbestos) and existing site materials (native and fill soils) directly into Bolinas Lagoon. Similarly, installing a new steel bulkhead either in the same location as the existing bulkhead or directly behind it, rather than in front of it as proposed, would require removal of the existing bulkhead with the potential, during demolition, for accidental discharge into the lagoon of the same types of debris and fill materials. No other feasible alternatives for repairing the existing structure have been identified that would involve less fill and less disruption to the lagoon.

Therefore, the Commission finds that the proposed alternative of installing a new anchored vertical steel epoxy coated bulkhead directly in front of the existing bulkhead is the least environmentally damaging feasible alternative consistent with Section 30233 of the Coastal Act.

Adequate Mitigation Measures

The last of the four tests for assessing if a fill project is consistent with sections 30233 and 30235 of the Coastal Act is whether adequate mitigation measures to minimize the adverse environmental impacts of the proposed project have been provided. The proposed bulkhead project could have several adverse environmental impacts, but the Commission finds that adequate mitigation will be provided by the project, as conditioned, to reduce these impacts to a level of insignificance.

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The lagoon bottom area to receive the fill consists of 675 square feet of unvegetated fine to medium sands of medium density directly in front of the existing bulkhead. The fill area may provide habitat for benthic organisms such as worms and mollusks, and for such invertebrates as barnacles and mussels. The minor loss of lagoon bottom habitat to be displaced by the fill for the bulkhead repair is not proposed to be offset by the removal of other material.

Invertebrates such as barnacles and mussels sometimes are observed colonizing the vertical surfaces of sheet pile armor installations, even when, according to the applicants' representative, the sheet piles are coated with anti-corrosive epoxies like the ones proposed. The Commission finds that the adverse impact of the limited amount of additional bulkhead material on any invertebrates and benthic organisms that may be present at the project site could be offset by new habitat for invertebrates that the bulkhead's surface area may provide. Such hard intertidal substrate is relatively limited within Bolinas Lagoon. Furthermore, due to the corrugation of the sheeting, there will be more surface area for species colonization than would be the case if the sheeting were flat like the existing bulkhead. Therefore, the Commission finds that no additional mitigation is necessary for the minor displacement of bottom habitat.

Coastal Act Section 30230 provides in applicable part that uses of the marine environment be carried out in a manner that will sustain the biological productivity of coastal waters. As previously indicated, the application includes the coating of the proposed steel sheet piles with one of three anti-corrosive epoxies. The applicants have submitted technical data sheets for three different epoxy coatings, which are, in order of the applicants' first to last preference: "coal tar epoxy," "glass flake filled epoxy," and a "two component, cross-linked epoxy."

In previous Commission actions, the Commission has found that certain preservatives, such as creosote, used in marine construction projects, can lead to water pollution because of the potential for toxic substances contained in the preservatives to leach into the aquatic environment. Upon consultation with the Department of Fish and Game, staff was informed that creosote is in fact derived from coal tar, and that therefore the applicant's preferred preservative, "coal tar epoxy," shares the toxic characteristics of creosote preservatives. According to Fish and Game staff (Deborah Johnston, 9/16/97) use of such epoxy in marine environments is a violation of Fish and Game Code Section 56.50, which prohibits the use of specifically listed polluting substances, including "coal or oil tar," in state waters.

Furthermore, as described in technical information sheets supplied with the project application, leaching rate tests performed for coal tar epoxy show a production of 53 ppm (parts per million) of total organic compounds, well over the 5 ppm maximum leaching rate normally allowed by Dept. of Fish and Game regulations. Although specific leaching rates for the other two epoxies

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suggested by the applicant were not included in the technical data sheets provided with the application, Ms. Johnson was able to advise staff (11/7/97) that of the other two proposed epoxies, "glass flake filled epoxy" and "two component, cross-linked epoxy," Fish and Game could only recommend the "two component, cross-linked epoxy" as an acceptable anti-corrosive coating because of its lower potential for toxin leaching, based on its lower content (10%) of epoxy resins than that of "glass flake filled epoxy" (40%). Therefore, to ensure that the project is consistent with Coastal Act Section 30230 which requires, in part, that marine resources be maintained, and with the requirement of Section 30233 that adequate mitigation be provided for fill projects to minimize adverse environmental effects, the Commission attaches Special Condition No. 1, which prohibits the use of "coal tar epoxy" or "glass flake filled epoxy" coatings, and specifies that only "two component, cross-linked epoxy," such as described in the product data sheets submitted by the applicant for "Carboline 890," shall be used as the protective coating for the steel sheet pile armor.

The project also could have an adverse impact on the water quality of Bolinas Lagoon if construction materials and debris or soils now contained behind the existing bulkhead were allowed to enter the water. To ensure that the project is consistent with Coastal Act Section 30231 which requires, in part, that the quality of coastal waters be maintained, the Commission attaches Special Conditions Nos. 2 through 4. Special Condition No. 2 requires all construction debris to be removed from the site and lawfully disposed of, including any floating debris that enters the water. Special Condition No. 3 requires that measures be taken to prevent any poured wet cement or concrete, used to cap the bulkhead, and any cement or concrete residuals from the pouring operation, from entering the Bolinas Lagoon. Pursuant to Special Condition No. 4, the applicants must take steps to restore any surface areas behind the bulkhead that are disturbed during project construction so as to prevent the loss by erosion of any soils and vegetation into the lagoon.

Conclusion

The Commission thus finds that the project, although not one of the allowable uses for fill of coastal waters under Section 30233(a), is allowable as a repair of a seawall to protect an existing structure under Section 30235, will not create adverse impacts on local shoreline sand supplies, is the least environmentally damaging feasible alternative, and includes adequate mitigation for the minor impacts associated with the project. Therefore, the Commission finds that the proposed development is consistent with Sections 30230, 30231, 30233 and 30235 of the Coastal Act.

4. Geologic Stability.

The Coastal Act contains policies to assure that new development assures structural integrity, minimizes risks to life and property in areas of high flood hazard, and does not create erosion. Section 30253 of the Coastal Act states in applicable part:

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New development shall:

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

The applicants have submitted a geotechnical evaluation report for the proposed project (Geoengineering, Inc., September 30, 1997) that includes the results of on-site geological investigations and contains recommendations for ensuring the stability of the proposed development. The report's recommendations include criteria for the bulkhead's anchoring system and sheet pile installation techniques, and specification of soil design parameters for the anchorage zone. The evaluation notes that the geotechnical parameters set forth in the report have been used in development of the project's preliminary design. The evaluation also recommends monitoring of the site during construction, since "it may be necessary to modify the design to suit conditions encountered during construction, although the need for major changes are unlikely."

To ensure that the project's structural integrity and shoreline protection capabilities are maintained throughout its entire length, which extends for a continuous 675 feet as now designed, the Commission attaches Special Condition No. 5, requiring project development in conformance with the geotechnical evaluation's recommendations, and requiring a permit amendment for any design change that that may involve a reduction in the bulkhead's integrity or in the level of protection to any of the ten properties it is designed to protect. The Commission finds that as conditioned, the project is consistent with Coastal Act Section 30253 geologic hazards provisions.

5. Public Access.

Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. In applying Section 30211 and 30212, the Commission is also limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential access.

Although the project is located between the first public road, Shoreline

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Highway (Highway 1), and the sea, it will not adversely affect public access. No public access exists on the site that could potentially be affected by the project. In addition, the proposed bulkhead repairs will not change the nature or intensity of residential or beach and tennis club use, and thus will not create any new demand for public access or otherwise create any additional burdens on public access. Therefore, the Commission finds that the proposed project does not have any adverse effect on public access, and that the project as proposed is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

6. Visual Resources.

Section 30251 of the Coastal Act states that the scenic and visual qualities of coastal areas be considered and protected as a resource of public importance, and requires in applicable part that permitted development be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

The project will not require any land form alteration other than temporary excavations behind the bulkhead. The bulkhead repair project will not result in any blockage of public views to Bolinas Lagoon because it is to protect the shorelines of private properties which are already hidden from view by development on the properties. Also, the proposed sheet piles will parallel the existing bulkhead within one foot of the existing bulkhead's face, and thus will not appreciably obstruct any views along the waters' edge.

The only public views of the project site are from the water or from Shoreline Highway (Highway 1), approximately four-fifths of a mile across Bolinas Lagoon. The appearance of the existing bulkhead, and of the adjacent identical bulkhead to the east, is unobtrusive because of the bulkheads' weathered timber construction, which gives the bulkheads an earth-toned non-glare surface finish. To ensure that the new bulkhead is similarly inobtrusive and will not contrast in appearance with the adjacent bulkhead in a manner that would make the new bulkhead visually incompatible with the character of the area, the color of the new bulkhead should match that of the adjacent bulkhead. Since the proposed project will utilize different construction materials, i.e., epoxy-coated steel sheet piles, for the repairs, an identical match to the existing appearance is not possible. However, according to the epoxy coating specification sheets submitted with the application, a variety of color pigments are available for the coating. The specifications also state that although the epoxy's finish is a high gloss when applied, "epoxies lose gloss and eventually chalk in sunlight exposure."

So that the repaired bulkhead may be as visually unobtrusive as possible, the Commission attaches Special Condition No. 6, requiring that whichever available epoxy coating pigment most closely resembles the adjacent bulkhead's pigmentation be applied to the sheet pile armor. As conditioned, the

SEADRIFT BEACH & TENNIS CLUB, et. al.

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Commission finds that the project is consistent with Section 30251 coastal visual resources protection requirements.

7. California Environmental Quality Act (CEQA).

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(i) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. As discussed above, the project has been mitigated to prevent contaminants from sheet pile coatings, concrete to be poured for the project, sediment from shoreline areas disturbed during construction, and construction debris from polluting the waters of Bolinas Lagoon. To ensure that the bulkhead remains visually unobtrusive from public view areas the project has been conditioned to be compatible in color with adjacent bulkhead development. In addition, the development has been conditioned to require construction in conformance with the recommendations of the geotechnical report prepared for the project to ensure that the proposed bulkhead does not contribute to geologic instability and hazards. The project, as conditioned, therefore will not have a significant adverse effect on the environment within the meaning of CEQA.

EXHIBITS:

1. Regional Location Map
2. Site Vicinity Map
3. Plan View
4. Section View
5. Emergency Permit No. 1-97-72-G

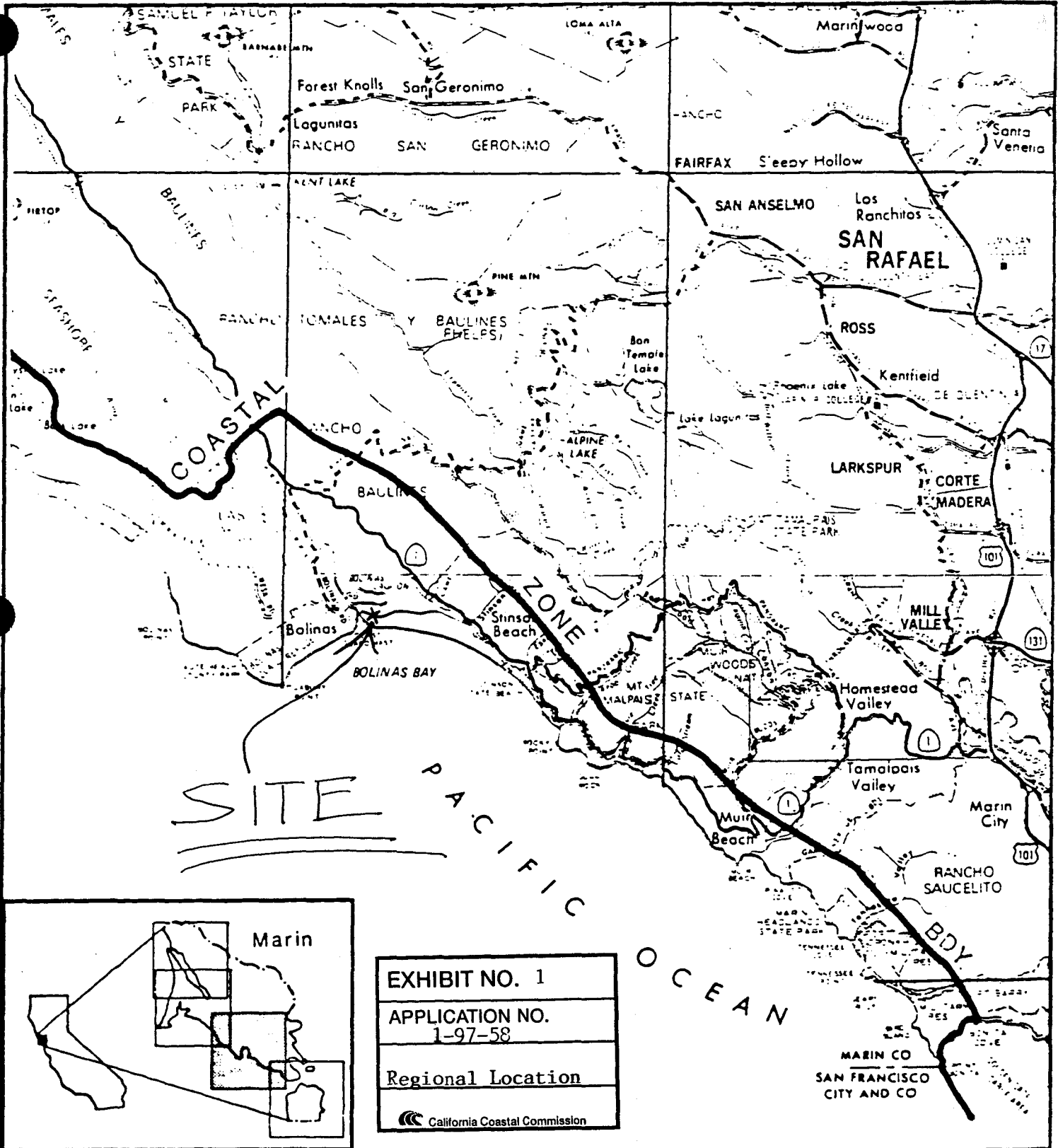
9791p/bvb/

ATTACHMENT A

Standard Conditions

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.





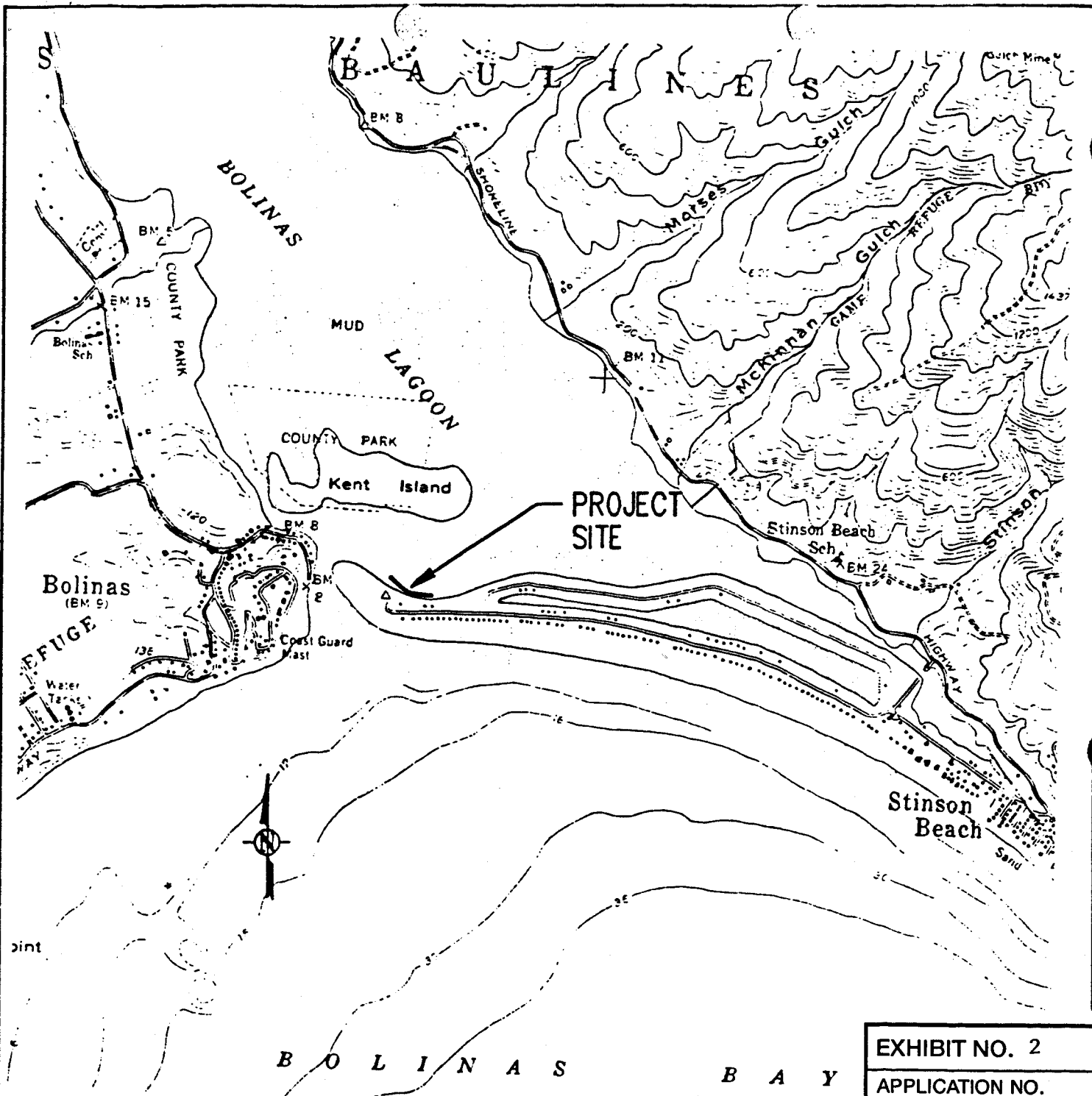


EXHIBIT NO. 2
APPLICATION NO. 1-97-58
Site Vicinity
California Coastal Commission

PURPOSE: STABILIZE SHORELINE & FAILING BULKHEAD
 DATUM: MLLW

MAP REFERENCE: USGS, "BOLINAS, CALIF."

SITE LOCATION



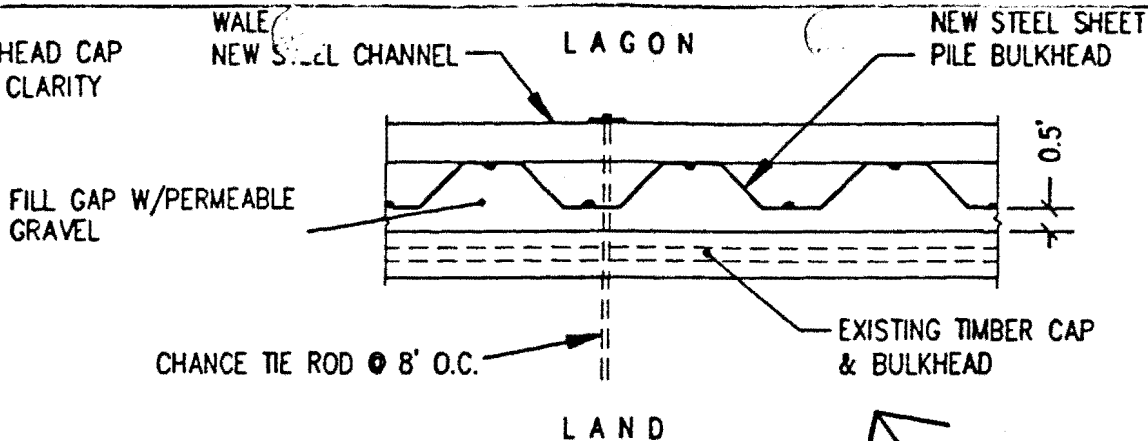
359 BEL MARIN KEYS BLVD.
 SUITE 9
 NOVATO, CA 94949
 (415) 884-0727

BOLINAS LAGOON BULKHEAD REPAIR

IN: BOLINAS LAGOON
 AT: STINSON BEACH
 COUNTY OF: MARIN STATE: CA
 APPLICATION BY: RONALD M. NOBLE

SHEET 2 OF 4 DATE: 8/1/97

NOTE: NEW BULKHEAD CAP NOT SHOWN FOR CLARITY



DATUM: MLLW

BOLINAS LAGOON

LIMITS OF PROJECT

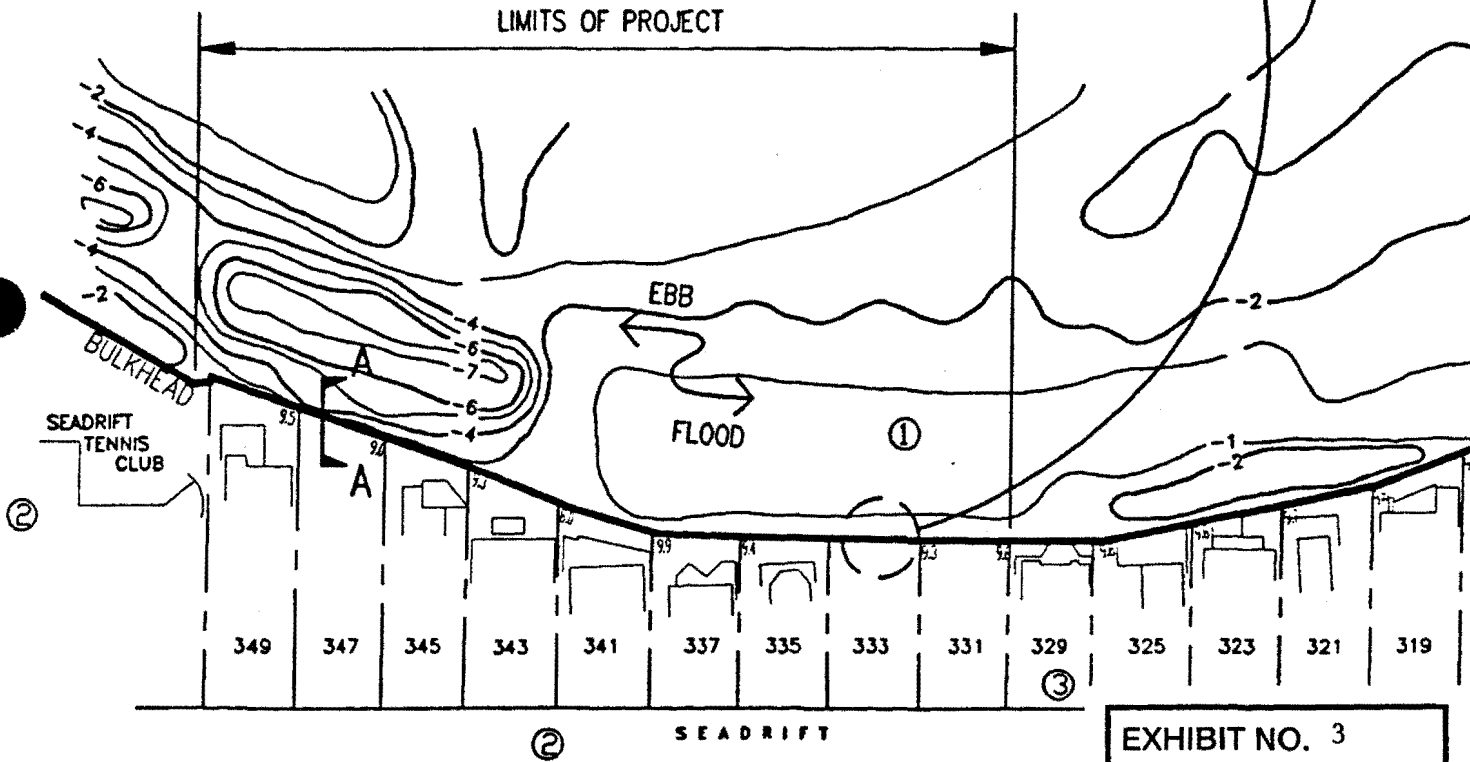


EXHIBIT NO. 3
APPLICATION NO. 1-97-58
Plan View
California Coastal Commission



PURPOSE: STABILIZE SHORELINE & FAILING BULKHEAD
DATUM: MLLW
ADJACENT PROPERTY OWNERS:
 ① COUNTY OF MARIN
 ② SEADRIFT ASSOCIATION
 ③ MR. PAUL MELODIA

PLAN VIEW

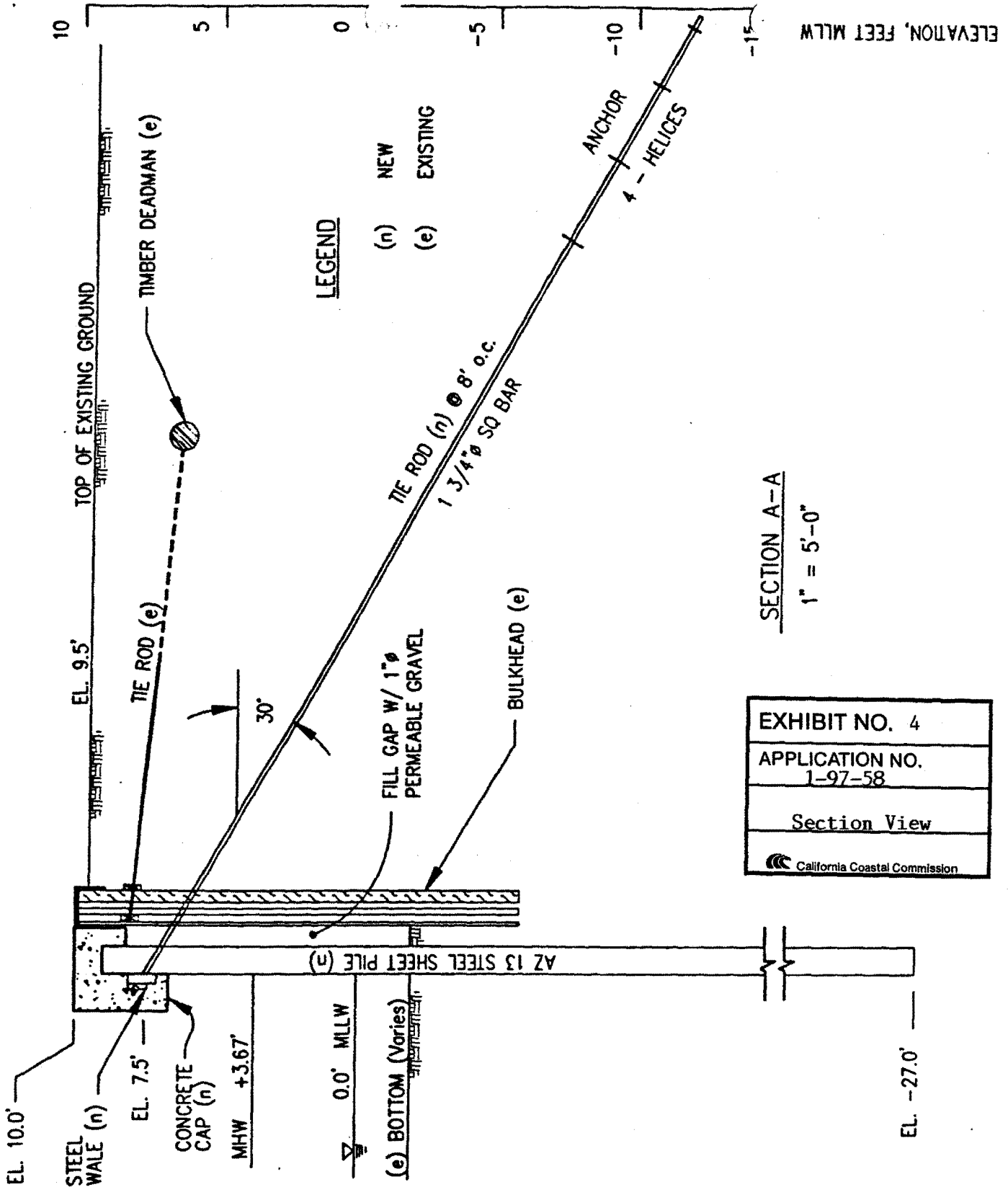
NOBLE
CONSULTANTS, INC

359 BEL MARIN KEYS BLVD.
 SUITE 9
 NOVATO, CA 94949
 (415) 884-0727

BOLINAS LAGOON BULKHEAD REPAIR

IN: BOLINAS LAGOON
 AT: STINSON BEACH
 COUNTY OF: MARIN STATE: CA
 APPLICATION BY: RONALD M. NOBLE

SHEET 3 OF 4 DATE: 8/1/97



SECTION A-A
1" = 5'-0"

EXHIBIT NO. 4
APPLICATION NO. 1-97-58
Section View
California Coastal Commission

PURPOSE: STABILIZE SHORELINE & FAILING BULKHEAD
DATUM: MLLW

SECTION VIEW



359 BEL MARIN KEYS BLVD.
SUITE 9
NOVATO, CA 94949
(415) 884-0727

BOLINAS LAGOON BULKHEAD REPAIR

IN: BOLINAS LAGOON
AT: STINSON BEACH
COUNTY OF: MARIN STATE: CA
APPLICATION BY: RONALD M. NOBLE

SHEET 4 OF 4 DATE: 8/1/97

RECEIVED
NOV 12 1997
NOBLE CONSULTANTS
Novato, CA

EMERGENCY PERMIT

Seadrift Beach & Tennis Club
William & Linda Bucklin
Brooks Walker
Mason Wilrich
Henry & Karen Safrit

Philip Smith
Elizabeth Hazard
David King
Proctor & Martha Jones

Date: November 10, 1997

Emergency Permit No. 1-97-072-G

LOCATION OF EMERGENCY WORK:

331 To 351 Seadrift Road, Stinson Beach (Marin County) (APN(s) 195-300-16, 195-310-47, 195-310-62, 195-310-63, 195-310-64, 195-310-65, 195-310-66, 195-310-67, 195-310-68, 195-310-69)

WORK PROPOSED:

Repair 675 lineal feet of timber and asbestos sheet bulkhead by facing with epoxy-coated steel interlocking-sheet pile armor and backfilling the space behind armor sheets with gravel.

This letter constitutes approval of the emergency work you or your representative has requested to be done at the location listed above. I understand from your information and our site inspection that an unexpected occurrence in the form of the erosion and undercutting of portions of the existing bulkhead in combination with anticipated seasonal high tides threatening residential development located on ten parcels behind the bulkhead, requires immediate action to prevent or mitigate loss or damage to life, health, property or essential public services. 14 Cal. Admin. Code Section 13009. The Executive Director of the Coastal Commission hereby finds that:


- (a) An emergency exists which requires action more quickly than permitted by the procedures for administrative or ordinary permits and the development can and will be completed within 30 days unless otherwise specified by the terms of this permit;
- (b) Public comment on the proposed emergency action has been reviewed if time allows;
- (c) As conditioned, the work proposed would be consistent with the requirements of the California Coastal Act of 1976.

The work is hereby approved, subject to the conditions listed on the attached page.

Sincerely,

PETER M. DOUGLAS
Executive Director

Bill Van Beckum
By: BILL VAN BECKUM
Coastal Planner

EXHIBIT NO. 5
APPLICATION NO. 1-97-58
Emergency Permit No. 1-97-72-G
 California Coastal Commission

CONDITIONS OF APPROVAL:

1. The enclosed Emergency Permit Acceptance form must be signed by the PROPERTY OWNERS and returned to our office within 15 days.
2. Only that work specifically described in this permit and for the specific property listed above is authorized. Any additional work requires separate authorization from the Executive Director.
3. The work authorized by this permit must be completed within 60 days of the date of this permit (i.e., by January 9, 1998).
4. Within 60 days of the date of this permit (i.e., by January 9, 1998), the permittee shall complete Coastal Development Permit Request No. 1-97-58 to have the emergency work be considered permanent. If the application is not completed, the emergency work shall be removed in its entirety within 150 days of the date of this permit, unless this requirement is waived in writing by the Executive Director.
5. In exercising this permit, the applicant agrees to hold the California Coastal Commission harmless from any liabilities for damage to public or private properties or personal injury that may result from the project.
6. This permit does not obviate the need to obtain necessary authorizations and/or permits from other agencies (i.e. Dept. of Fish & Game, U.S. Fish & Wildlife, U.S. Army Corps of Engineers, State Lands Commission.)
7. All construction debris shall be removed from the site and disposed of at a lawful disposal site. Any floating debris allowed to enter the waters of Bolinas Lagoon shall be retrieved and lawfully disposed of.
8. The bulkhead repair project shall be constructed in accordance with the recommendations of the project's geotechnical engineer (Geotechnical Evaluation prepared by Geoengineering, Inc., September 30, 1997, File No. 3-78-ng), and shall be located within the project boundaries depicted on the plan sheet entitled "Plan View, Sheet 3 of 4 for Bolinas Lagoon Bulkhead Repair" (prepared by Noble Consultants, Inc., 8/1/97).
9. As the protective coating for the steel sheet pile armor, only "two component, cross-linked epoxy," such as described in the product data sheets submitted by the applicant for "Carboline 890", shall be used. No "coal tar epoxy coatings" or "glass flake filled epoxy" shall be used.
10. The project shall be carried out in conformance with the requirements of Department of Fish and Game Notification No. 1132-97 ("Agreement Regarding Proposed Stream or Lake Alternation, dated 9/5/97).

Enclosure: 1) Acceptance Form (to R. Noble)

cc: Ron Noble, Noble Consultants Inc.
Andrea Fox, Planner, Marin County Community Development Agency
Richard Kamieniecki, General Manager, Seadrift Association