

## CALIFORNIA COASTAL COMMISSION

NORTH COAST AREA

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Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-98-28**

APPLICANT: **CITY OF EUREKA**

PROJECT LOCATION: At the City of Eureka Small Boat Basin on Humboldt Bay, west of Highway 101, at 500 West Waterfront Drive, west of Commercial Street, Eureka, Humboldt County (APN 003-011-01 and 003-062-17)

PROJECT DESCRIPTION: Modernize an existing marina by performing portions of the following development: (1) demolishing and removing the existing 130-berth dock system, two structures overhanging the intertidal zone, two concrete boat launch ramps and other development; (2) installing 1,200 lineal feet of rock slope protection; (3) constructing a new 132-berth dock system; (4) constructing a new two-lane boat launch ramp; (5) constructing shoreside buildings including a 9,300-square-foot two story Wharfinger Building, a 950-square-foot tenant facility, and a 500-square-foot restroom with fish cleaning station; (6) installing gangways including a wheel chair accessible ramp to connect the Wharfinger building with the dock system; (7) paving a parking lot and access driveways; (8) installing walkways and landscaping; (9) restoring eelgrass habitat in a corner of the basin that will no longer be used for berthing; and (10) creating 21,600 square feet of intertidal mudflat habitat at an off-site location along the banks of the Elk River to mitigate for the filling of intertidal mudflat habitat associated with the proposed rock slope protection. Only the development in tidal areas and within the mudflat creation area is within the Commission's jurisdiction.

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LOCAL APPROVALS RECEIVED: City of Eureka: (1) Coastal Development Permit No. CDP-16-97 approved April 3, 1997; (2) CEQA Mitigated Negative Declaration certified April 3, 1997.

Humboldt Bay Harbor District: (1) Harbor District Permit for development proposed in tidal areas approved February 12, 1998.

OTHER APPROVALS REQUIRED: (1) Regional Water Quality Control Board water quality certification or waiver; (2) U.S. Army Corps of Engineers Individual Permit.

SUBSTANTIVE FILE DOCUMENTS: City of Eureka LCP

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SUMMARY OF STAFF RECOMMENDATION:

Staff recommends that the Commission approve with conditions the coastal development permit application submitted by the City of Eureka for the rehabilitation of the Eureka Small Boat Basin marina. The marina is an important berthing facility for the commercial fishing fleet and recreational boaters. Both commercial fishing and boating facilities are priority uses for which the Coastal Act allows filling of coastal waters.

To mitigate for the proposed filling of approximately 21,600 square feet of intertidal mudflat habitat for rock slope protection, the City proposes to expand intertidal mudflat habitat at a site along the Elk River, approximately three miles south of the marina. The City would remove old fill and upland area and contour the site to match the existing adjoining mudflat. The City also proposes to enhance habitat values at the marina itself by establishing new eel grass habitat within an approximately 7,900-square-foot area of mudflat that will no longer be needed for boat mooring habitat. Staff believes the mitigation plan provides appropriate mitigation consistent with Coastal Act policies for the loss of mudflat habitat as the plan would provide for no net loss of mudflat habitat, would result in a net enhancement of the biological productivity of the bay environment, would have a high chance of success, and would provide mitigation in close proximity to the impact area, both on-site and along a nearby portion of the Eureka waterfront. The Department of Fish & Game and other reviewing agencies have commented favorably on the mitigation plan. Fish & Game has suggested several minor modifications to the monitoring program specified in the mitigation plan. Special Condition No. 1 would require the submittal of a revised mitigation plan prior to issuance of the permit that would incorporate these changes and require implementation of the modified plan.

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To address water quality concerns and ensure consistency with Section 30231 of the Coastal Act, staff is recommending several other conditions that would control the use of concrete in Bay waters, require debris removal, and require the City to follow through on plans to provide facilities at the marina to handle boat waste including pump outs for vessel sewage, an oil and water separator to treat bilge water, and a storage facility for accepting waste oil from boat engines. As conditioned, staff believes that the project is fully consistent with the Coastal Act and recommends that the Commission adopt the resolution on page 3 of this report.

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STAFF NOTE

1. Standard of Review

The proposed project is located in the City of Eureka. Eureka has a certified LCP, but the portion of the project that is the subject of Coastal Development Permit Application No. 1-98-28 is within the Commission's retained jurisdictional area along Humboldt Bay. Therefore, the standard of review that the Commission must apply to the project is the Coastal Act.

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I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION:

1. Motion:

I move that the Commission approve Coastal Development Permit No. 1-98-28 subject to conditions.

2. Staff Recommendation of Approval:

Staff recommends a **YES** vote and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

3. Resolution to Approve Permit:

The Commission hereby grants, subject to the condition below, a permit for the proposed development on the grounds that the development, as conditioned, 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, 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 Attached.

III. Special Conditions:

1. Revised Mitigation Plan.

PRIOR TO ISSUANCE of the coastal development permit, the applicant shall submit for the review and approval of the Executive Director a revised habitat mitigation plan which incorporates the following changes to the mitigation plan submitted by the applicant with its application:

- A. Copies of all mitigation monitoring reports shall be submitted to the Department of Fish & Game and the U.S. Fish & Wildlife Service at the same time they are submitted to the Commission.
- B. The Monitoring program shall include provisions for establishing fixed photo points for use in photographing the mitigation areas. Photographs shall be taken during each monitoring period and submitted with each monitoring report.
- C. A "control" monitoring site shall be established on an undisturbed eelgrass bed adjacent to the project site for use in comparing the habitat values of the eel grass enhancement area with those of an undisturbed site during the annual monitoring. Each annual report shall include a comparison of habitat characteristics between the control site and the enhancement area.
- D. The implementation schedule for the Mitigation Plan shall be modified to provide for the following additional implementation milestones:
  - i. Creation of the intertidal mudflat at the Elk River site shall be completed prior to use of the new docks at the Eureka Small Boat Basin;
  - ii. Creation of the raised mudflat bed at the boat basin shall be completed prior to use of the new docks; and
  - iii. Transplanting of eel grass clumps to the eelgrass enhancement site shall commence and be completed during the first May and June following creation of the raised mudflat;

The applicant shall undertake the mitigation program in accordance with the approved final mitigation plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. Proposed changes to the approved final plan shall not occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. Corps of Engineers Approval.

PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the applicant shall submit a copy of any necessary U.S. Army Corps of Engineers permit granting approval for the project.

3. Cement and Concrete Precautions.

All concrete fill to be used on the site shall either be of precast concrete or quick set concrete to minimize adverse impact to coastal waters. No runoff from the cleaning of cement or concrete mixing and pouring equipment shall be allowed to enter Humboldt Bay.

4. Hazardous Materials.

If hazardous materials are discovered within the old fill area to be excavated for development of the intertidal mitigation site or elsewhere within the project site during construction authorized by this permit, all work in the vicinity of the discovered hazardous materials shall be suspended. The applicant shall then have a qualified consultant inspect the project site, determine the nature of the materials discovered, and develop appropriate mitigation measures.

Should it be determined that mitigation measures are necessary, the applicant shall report the mitigation measures to the Executive Director. The applicant shall apply to the Commission for an amendment to permit 1-98-28, requesting that the permit be amended to include the mitigation plan proposed by the consultant, unless the Executive Director determines that no amendment is necessary. The plan shall provide for cleanup, monitoring, evaluation, protection, and mitigation on the project site. Should the consultant determine that no mitigation measures are necessary, then work on the project may be resumed.

5. Vessel Waste Facilities

The applicant shall install and maintain the following facilities proposed in the application and shown in the submitted project plans for the Eureka Small Boat Basin Rehabilitation Project to control the entry of vessel wastes into Bay waters from vessels using the marina:

- A. Sewage pumpout facilities with connections to the shoreside sanitary sewer system;
- B. Restroom facilities;
- C. A refuse and waste oil storage facility;
- D. Bilge water pumpout facilities with connections to a shoreside oil and water separator; and

E. A fish cleaning station.

The applicant shall educate marina tenants and users on the proper use of these facilities and enforce such use.

6. Construction Debris Removal.

All construction debris shall be removed from the site upon completion of the project. Placement of any debris in the coastal zone at a location other than in a licensed landfill will require a coastal development permit.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

1. Site Description.

The City of Eureka proposes to rehabilitate the existing Eureka Small Boat Basin at 500 West Waterfront Drive (see Exhibits 1-2). The marina occupies a small embayment along middle Humboldt Bay and includes 130 vessel berths and boat launching facilities used by both commercial fishing vessels and recreational boaters (see Exhibit 3). Approximately 60% of the vessels moored at the marina are commercial fishing boats and the remainder are recreational vessels. The existing marina was first constructed in the 1940's and periodically updated, but the deteriorated condition of the floats and support facilities now requires complete reconstruction of the marina.

The existing marina docks extend in an array from from two main pierheads and include both individual berths and long fingers for berthing multiple boats. The marina has two one-lane boat ramps, one located near the existing yacht club building at the east end of the project site and the other in the cove at the west end of the marina basin (see Exhibit 3). Two existing structures overhang intertidal areas, including a 644-square-foot Wharfinger Building and a 1,512-square-foot Yacht Club building used by the Humboldt Yacht Club. The most inland part of the basin includes a stormwater outfall that is protected by a narrow groin-like structure. Most of the upland area of the site is devoted to marina parking. The shoreline of the cove is lined with sacked concrete and rock that was previously placed for erosion control, although much of this material has slumped and encroached into the marina basin. A collection of debris also lines many parts of the banks of the basin.

As the site has been developed for a marina for decades, the land area surrounding the cove has been previously disturbed and does not contain significant habitat. The tidal areas contain extensive mudflat habitat that is home to various worms, mollusks, and invertebrates. A large eel grass meadow extends bayward off the tip of the groin in areas outside of the existing and proposed berthing areas (see Exhibit 3). No eelgrass is currently growing within the marina basin itself. The marina basin is dredged

approximately every 10 years which has precluded the eelgrass becoming established in the basin on a permanent basis. The marina was dredged during the winter of 1997-98, and any small growth of eel grass that became established after the previous dredging event has been removed.

Although the entire site is within the coastal zone, only the portions of the site that are subject to tidal action are within the Commission's coastal development permit jurisdiction. The project site is located on a portion of the Eureka waterfront where the Commission has delegated its original permit jurisdiction over the upland areas of the shoreline to the City of Eureka as an area that is potentially subject to the public trust but which has been filled, developed, and committed to urban uses. The City granted a coastal development permit for the shoreside improvements in early April of 1998.

## 2. Project Description.

The proposed rehabilitation work consists of (1) removal of existing docks, boat ramps, buildings and other development; (2) installation of 1,200 lineal feet of rock slope protection; (3) installation of a new dock system for approximately 132 berths; (4) construction of a new two lane boat launch ramp; (5) construction of shore side buildings including a 9,300-square-foot two story Wharfinger Building, a 950-square-foot tenant facility, a 500-square-foot restroom facility with a fish cleaning station; (6) paving of a parking lot and access driveways; (7) installation of walkways and landscaping; (8) habitat mitigation, including the restoration of eelgrass habitat in a corner of the basin that will no longer be used for berthing and creation of 21,600 square feet of intertidal mudflat habitat at an off-site location approximately three miles south of the site along the banks of the Elk River (see Exhibits 4-6). The habitat mitigation work is proposed to mitigate for the filling of intertidal mudflat habitat associated with the proposed rock slope protection.

Removal of Old Facilities. The proposed project includes the removal of a number of existing facilities built on or over tidal areas. The existing 130-berth dock system will be completely removed. In addition, the two existing one-lane boat ramps will be removed. Furthermore, the Wharfinger Building and the Yacht Club building used by the Humboldt Yacht Club will be removed. Finally, most of the existing shoreline revetment and bulkhead structures will be removed. Virtually all of the above-described removal work will occur within the Commission's jurisdiction.

Proposed Rock Slope Protection. The proposed project includes the construction of 1,200 feet of engineered rock slope protection along the shoreline of the marina basin to replace the existing failing seawall, allow the boat basin to be dredged to historic depths, and protect against wave erosion (see Exhibits 4 and 6). Approximately 9,000 cubic yards of mud will be excavated from the adjoining mudflat to create a toe trench for the revetment. Approximately 4,200 cubic yards of rock will be placed in a three-foot-thick layer at a two horizontal to one vertical slope to create the

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new revetment. In one location, adjacent to an existing box culvert near the southwest end of the project site, the revetment will be placed at a 1.5 horizontal to one vertical slope. The revetment will generally measure 40 feet from its toe to the top of the slope. The revetment will cover a total of approximately 21,600 square feet of intertidal mudflat area. All but the upper portions of the revetment will be constructed within the Commission's jurisdiction.

Construction of New 132-Berth Dock System. The new 132-berth docking system will consist of concrete docks and piles arrayed in four main piers extending off a connecting dock that will line the inner perimeter of the basin (see Exhibit 4). The dock system includes short fingers that demarcate individual berths, as well as longer fingers that are meant to accommodate larger commercial fishing vessels and allow for side tying of vessels when necessary. The dock system will cover a total of approximately 38,940 square feet of bay surface area. The outer docks adjacent to the open bay will be constructed with additional piles and greater width (12 feet as compared to 8 feet for the other docks) to allow these docks to serve as wave attenuators to provide more protection to the marina basin. Three gangways will connect the dock system to shore, including a wheelchair-accessible gangway extending from the new Wharfinger building across a narrow channel and its adjoining berm to the docks. The docks will be constructed with facilities for pumping out and receiving bilge water and vessel sewage. Bilge water would be pumped to a shoreside oil and water separator and the sewage would be pumped to the City's Sanitary sewer lines.

Construction of New Two-Lane Boat Launch Ramp. The new two-lane boat launch ramp will be constructed in approximately the same location as the more easterly of the two one-lane ramps that the new ramp will replace (see Exhibits 3-5). The ramp will have a slope of 15%. To reduce the potential for settlement, the lower portion of the ramp will be supported by concrete piles driven into the substrate and underlying bay mud in this section will be removed and replaced with cobble or gravel fill. The upper portion of the ramp will consist of a cast-in-place concrete slab. The western side of the ramp will be flanked by a portion of the proposed rock slope protection and the eastern side will abut an approximately 150-foot-long sheet pile wall that will retain the higher ground of an adjoining upland parking area. All but the upper parts of the boat ramp will be constructed within the Commission's jurisdiction.

Shoreside Buildings. The proposed project includes the construction of three buildings on upland portions of the marina facility. A 9,300-square-foot two story Wharfinger Building will be constructed near the southwest end of the site. The building will house the Wharfinger office, shop and storage space for the Wharfinger, a community room overlooking the Marina available for rent to groups for large gatherings, three smaller offices, restrooms, and outdoor storage space. A 950-square-foot tenant facility housing services for the marina tenants including restrooms, showers, a laundry, and vending machines will be constructed near the middle of the



marina shoreline. Finally, a 500-square-foot restroom facility will be constructed near the northeast end of the project site. All three of the proposed buildings will be constructed outside of the Commission's jurisdiction.

Public Access Walkway. The proposed project includes constructing a continuous public access walkway along the edge of the marina basin from one end of the site to the other (see Exhibit 4). Because the walkway is proposed in an upland area, it will be constructed outside of the Commission's jurisdiction.

Parking Lots and Access Drive. Most of the rest of the upland area of the site will be devoted to access driveways and parking. A total of approximately 153 off-street parking spaces are proposed. Currently, there are less than 70 spaces. Because these developments are proposed in upland areas, they will be constructed outside of the Commission's jurisdiction.

Habitat Mitigation. The project includes two habitat restoration and creation efforts, proposed to mitigate for the adverse impacts of the proposed rock slope protection fill. The proposals include creating approximately 21,600 square feet of new intertidal mudflat at an offsite location (see Exhibit 7) and creating approximately 7,900 square feet of eelgrass habitat within a portion of the marina basin. Both restoration sites are entirely within the Commission's retained jurisdictional area. The proposals are detailed in a Mitigation Plan submitted with the application and included as Exhibit 8.

a. Mudflat Restoration

To mitigate for the loss of approximately 21,600 square feet of intertidal mudflat that will be covered by the proposed rock slope protection, the City proposes to expand a broad intertidal mudflat near the mouth of the Elk River, a major tributary of Humboldt Bay. The mitigation site is off of Hilfiker Lane, approximately three miles southwest of the Eureka Small Boat Basin Marina on city-owned property adjacent to the sewage treatment plant (see Exhibit 7). The area has been a dumping ground for many years for concrete products, iron, and other debris. The mudflat will be expanded by excavation of an approximately 21,600-square-foot area that consists of old fill, debris, and upland area to elevations similar to those of the adjoining existing mudflat. A total of approximately 43,000 cubic yards of material will be excavated and disposed of at the Cummings Road landfill site outside the coastal zone. The Mitigation Plan calls for excavating the area to the elevation of the adjacent intertidal mudflats, leaving a slope that drops from the remaining uplands at about 7 feet MLLW to the existing mudflat at about +2 feet MLLW. No sensitive habitat exists in the proposed excavation area. The site is covered with upland grasses. A one-half-foot-high perimeter berm will be created along the landward edge of the mitigation site to direct drainage. The area would be

cordoned off by large boulders placed along Hilfiker Lane to prevent vehicular access to the site in an effort to stop illegal dumping in the intertidal zone. Pedestrians will still be able to gain access to the site by walking between the boulders.

b. Restoration of Eelgrass Habitat.

The proposed project includes the creation of 7,900 square feet of eel grass habitat to increase the biological productivity of the project site. The eel grass habitat area will be located within the small cove at the southwest corner of the marina basin (see Exhibit 4).

The eelgrass habitat will be created in several steps. First, wrack, eroded soils from the banks of the marina basin, debris, and the old concrete boat launch ramp will be removed and the area excavated to an elevation of -1 foot MLLW. Second, an underwater retaining wall, actually a lower, underwater continuation of the rock slope protection to the north, will be constructed across the mouth of the cove to create an intertidal raised bed where the eelgrass will be planted (See Exhibit 6.1). The top of the underwater rock slope protection retaining wall will be at an elevation of approximately -1 MLLW. The bed will then be backfilled with muds excavated in the process of creating a toe trench for the rock slope protection. The final elevation of the bed will be between +1 and -2 feet MLLW, to create elevations beneficial for the establishment of eel grass. Clumps of eel grass that retain established mud and root wads would then be transplanted to the raised bed. The source of the clumps would either be from the meadows of dense eel grass growth off the tip of the groin at the project site, or from other parts of Humboldt Bay. All transplanting efforts would be performed in consultation with the Department of Fish & Game. Collection and transplanting of the eelgrass clumps would be undertaken during the spring months, while all the transplanting will be completed by mid-June to allow for sufficient vegetative growth prior to the next winter.

Efforts at transplanting eel grass on the Pacific Coast have been successful in the Pacific Northwest and in southern California, but limited success has occurred in Humboldt Bay. Recognizing that past local efforts have not met with great success, the City's Mitigation Plan submitted with the application indicates that the City views the eel grass planting as an experimental effort, beyond the mitigation required to mitigate the effects of the project. However, the City believes the eel grass restoration effort may have a good chance for success because (1) use of a raised bed will reduce the chances of the area sloughing off into the dredged marina basin and reduce sedimentation from tidal action, (2) the site is in an area where eelgrass has historically grown naturally, and (3) the site is protected from winds and waves by the berthed vessels, the existing groin, and the proposed docks.

The Mitigation Plan submitted by the City (see Exhibit 8) includes various success standards for the two habitat restoration proposals that set standards for habitat area and density, reproductive success, food chain support, presence of exotics, topographical changes, and water quality variables. The Mitigation Plan also includes monitoring and reporting by a qualified biologist, with inspections and submittal of reports after each phase of the projects and once per year for five years following the completion of the projects. The Mitigation Plan indicates that should the monitoring indicate that remedial action is necessary to attain the prescribed success standards, the City would consult with the Department of Fish and Game and its biological consultants to determine what measures should be taken to correct the problem. The City would then submit a corrective action plan to the Commission and apply for any needed permit amendment that is necessary to authorize the proposed corrective actions.

3. Priority Uses

The proposed project will support the continued use of a major berthing area along the Eureka waterfront for recreational boaters and commercial fishermen.

The Coastal Act contains strong policy language supporting marina uses. Section 30220 provides that:

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Section 30224 provides that:

Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

Section 30234 provides, in part that:

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded....

Section 30255 provides that:

Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

The proposed marina rehabilitation project is necessary to ensure the continued use of the Eureka waterfront for these priority uses. Without the proposed marina rehabilitation project, the Eureka Small Boat Basin would eventually become unusable. Adequate replacement berthing facilities are not available elsewhere within Humboldt Bay. Therefore, the Commission finds that the proposed maintenance dredging is necessary to protect recreational boating and commercial fishing, consistent with Sections 30220, 30224, 30234, and 30255 of the Coastal Act.

4. Fill in Coastal Waters and Environmentally Sensitive Habitat Areas.

The Coastal Act defines fill as including "earth or any other substance or material ... placed in a submerged area." The proposed project involves placing fill materials in coastal waters, as the proposed piles, dock floats, rock slope protection and boat ramp will be installed within intertidal and submerged areas of Humboldt Bay. The total area of fill proposed in coastal waters is approximately 21,600 square feet, consisting of solid fill for the rock slope protection and boat ramp. An additional amount of fill is proposed for the pile supported dock system, consisting of the piles and docks. However, no net fill will result for this purpose as the dock fill will replace fill for the existing dock system that will be removed.

The proposed project could have several potential adverse impacts on estuarine habitat. The piles rock slope protection, and boat ramp will be installed within mud flat habitat that supports a variety of benthic organisms. Furthermore, the proposed project could have water quality impacts.

Several sections of the Coastal Act address the placement of fill within coastal waters and the protection of environmentally sensitive habitat. Section 30231 of the Coastal Act provides as follows, in applicable part:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes...shall be maintained and, where feasible, restored...

Section 30233(a) of the Coastal Act 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.

...

(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...

...

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

...

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary....

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

- a. that the purpose of the project is limited to one of eight uses.
- b. that the project has no feasible less environmentally damaging alternative;
- c. that adequate mitigation measures to minimize the adverse impacts of the proposed project on habitat values have been provided.
- d. that the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

A. Permissible Use for Fill

The first general limitation set forth by the above referenced Chapter 3 policies is that any proposed fill can only be allowed for certain limited purposes. Under Section 30233(a), fill in coastal waters may only be performed for any of eight different uses, including under subsection (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..."

The proposed project consists of the placement of solid fill and fixed pier and floats as part of a public berthing facility for the mooring of commercial fishing vessels and recreational craft. As such, the project consists of both "new or expanded coastal-dependent industrial facilities, including commercial fishing facilities," and a new or expanded boating facility." Therefore, the Commission finds that the purpose of the fill is consistent with subsections (1) and (4) of Section 30233(a) of the Coastal Act.

B. No Feasible Less Environmentally Damaging Alternatives.

A second general limitation set forth by the above referenced Chapter 3 policies is that any proposed fill project must have no less environmentally damaging feasible alternative.

There are no apparent alternatives that would be less environmentally damaging. The 8 foot-widths of the floats, and the number of new piles to be driven are not excessive in comparison with typical marinas. In addition, the reconstructed marina extends no farther out into Humboldt Bay than the existing marina and is nearly identical in size. Furthermore, by using pile supported fill for the wire alternator as opposed to placing earthen fill to create a solid breakwater, the project has minimized the amount of fill required and resulting adverse environmental impacts.

The no project alternative would not accomplish the project objective of providing mooring space for commercial fishing vessels and local recreational boats, a priority use under the Coastal Act.

Developing the marina in another location would create much greater adverse impact than the project as proposed because far more fill would be required. Much of the fill proposed for the current project replaces fill that already exists. An entirely new facility in another location would require far more fill for boat ramps, docking systems, breakwaters, and other typical marina features than the current proposal.

In developing the plans for the marina, the City considered other design options that would have provided better operational advantages, but which were ultimately rejected because of the additional adverse environmental effects that would have resulted. One such option considered was to construct the

proposed rock slope protection at a 3:1 slope, instead of the 2:1 slope now proposed. The 3:1 slope would have greatly expanded the area of mudflat that would be covered by the rock slope protection resulting in much greater impact on habitat values.

Another design option considered was to construct the Wharfinger Building on piles over the rock slope protection and mudflat area. Even though a pile-supported structure would not have obliterated the tidal habitat underneath, the proposal would have shaded the habitat, thereby reducing its productivity and habitat value. For this reason, and because some of the uses of the Wharfinger Building may not qualify as uses for fill approvable under Section 30233 of the Coastal Act, the City relocated the Wharfinger Building to its currently proposed location entirely on land.

Another design option considered by the City was to extend a box culvert from the end of the stormwater outfall at the southwest corner of the marina. Extending the culvert and filling over and around it would have created more land area which could have supported some of the proposed structures, access roads, and parking. However, this option would have resulted in the filling of several thousand square feet more of mudflat area and so was rejected in favor of the current proposal.

Therefore, the Commission finds that the proposed reconstruction of the marina involves the least environmentally damaging alternative as required by Section 30233(a).

C. Mitigation for Adverse Impacts.

A third general limitation set forth by Sections 30231 and 30233(a) is that adequate mitigation to minimize the adverse impacts of the proposed project on habitat values must be provided.

Feasible mitigation measures are available to mitigate the potential adverse impacts of the project. The two main impacts include loss of intertidal mudflat habitat by filling the sides of the marina basin with rock slope protection, and potential water quality impacts from project construction and vessel waste discharges.

i. Filling of Mudflat Habitat With Rock Slope Protection.

Construction of the rock slope protection will result in the filling of approximately 21,600 square feet of mudflat habitat at the base of the banks of the marina basin. The 2 horizontal to 1 vertical slope of the new revetment will cause it to encroach further into the marina basin than the old revetment which was steep and unstable. In addition, the piles to be installed to support the new dock system will displace a certain amount of mudflat habitat.

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To mitigate for this loss of mudflat habitat, the City has proposed a mitigation plan, attached as Exhibit 8. As described in Finding 2, Project Description, the mitigation plan has two chief elements, including the restoration of approximately 7,900 square feet of eelgrass habitat in a corner of the basin that will no longer be used for berthing and creation of 21,600 square feet of intertidal mudflat habitat at an off-site location approximately three miles south of the site along the banks of the Elk River. The submitted plan includes success standards, monitoring and reporting by a qualified biologist during each phase of the mitigation projects and over the following five years, and a procedure for implementing any necessary remedial actions to attain the prescribed success standards. The mitigation plan was prepared in consultation with the Department of Fish & Game and has been received favorably by the resource agencies that have reviewed it. In comments provided to the Army Corps of Engineers which is also reviewing a permit application for the project, the staff of the Department of Fish & Game has indicated it "has been pleased with the measures taken to minimize and mitigate for project impacts..." The eelgrass restoration proposal and the mudflat creation proposal are discussed in greater detail in Finding 2.

Besides the two habitat restoration and proposals, the City's mitigation plan also includes other elements designed to enhance the marine environment at the marina basin. First, the project includes the removal of concrete, iron materials, and other debris that has been placed over the years around the perimeter of the marina basin. Second, the rock slope protection to be installed will provide another form of habitat, rocky intertidal habitat. Third, the City will remove the two existing structures that overhang part of the shoreline. Removal of these structures and relocating the uses made of the structures to a new Wharfinger Building to be constructed completely on land will allow the portions of the proposed rock slope protection that otherwise would have been covered by the old structures to be fully exposed to sunlight and thereby improve its value as rocky intertidal habitat. Fourth, the old piles that support the current dock system will be removed, exposing more mudflat area. As the existing and proposed dock systems are similar in size, the removal of the old piles should mitigate the loss of mudflat habitat associated with the installation of the new piles at roughly a 1:1 ratio.

In past permit actions in recent years, the Commission has encouraged wetland mitigation proposals that provide (1) mitigation on-site whenever possible; (2) in-kind habitat replacement; (3) restoration of former wetlands that have been filled or diked as opposed to the more problematic creation of new wetlands out of purely upland habitat; (4) habitat replacement adjacent to functioning wetland habitat of the same kind to increase the chances of success; (5) mitigation at ratios of habitat creation to habitat loss typically ranging from 2:1 to 4:1 or greater, in recognition that wetlands restoration projects are difficult to implement successfully and that there is often a significant lag time between the time when the wetlands are filled and the time when full habitat values are restored; and (6) that the mitigation proposal be adequately supported with appropriate success standards, a suitable monitoring program, and proposed remedial action. Wetland mitigation



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measures that more fully conform to these goals are more likely to provide adequate mitigation as required by the third test of Section 30233 of the Coastal Act, and better ensure that the biological productivity and the quality of coastal waters and wetlands are maintained and where feasible restored as is also required by Section 30233.

The applicant's mitigation proposal conforms well to these goals. The eelgrass enhancement portion of the mitigation plan will be performed on-site, in the small cove near the southwest end of the basin. The City is proposing the 21,600 square feet of mudflat creation at an off-site location because no area is available for this purpose at the Eureka Small Boat Basin. However, the off-site mudflat creation proposal is only about three miles away and is still along the City's waterfront on Humboldt Bay, at the mouth of the Elk River (see Exhibit 7).

The mitigation provides for in-kind mitigation as it calls for creation of new mudflat to replace the amounts of such habitat that will be lost due to the proposed fill project. The eelgrass enhancement effort also will enhance mudflat habitat.

The proposed mudflat creation proposal consists partly of restoration and conversion of upland area to mudflat. Much of the proposal involves the removal of fill from former tidelands that were filled decades ago. The City indicates that even much of the upland area to be excavated consists of dry land where sedimentation from the river and Bay allowed upland area to be formed through accretion. Furthermore, the proposed eelgrass enhancement effort will involve enhancement of existing wetland area.

The proposed mitigation projects will also be developed adjacent to functioning wetland habitat of the same kind. The new mudflat area to be created is adjacent to a broad intertidal mudflat that exists at the mouth of the Elk River. The eelgrass enhancement site within the marina basin is close to an existing eel grass meadow that is growing off the tip of the existing groin at the southwest end of the marina.

The ratio of habitat creation to habitat loss would be 1:1. Although this ratio is low in comparison with the ratio the Commission requires with some projects, the Commission has approved many projects at 1:1 ratios when the kind of habitat involved is unvegetated mudflat, such as the case with the Eureka Small Boat Basin project. The biotic community in unvegetated mudflat areas is relatively simple in comparison with eelgrass or salt marsh habitats, and the benthic organisms that are commonly found within unvegetated mudflat areas typically can be expected to fully colonize new mudflat areas within a couple of years. Given that the new mudflat area will be created adjacent to an extensive mudflat habitat, benthic organisms can be expected to migrate to and colonize the new habitat area fairly readily. Furthermore, the project does include an additional 7,900 square feet of eelgrass habitat enhancement. Although the enhancement will not create new wetland habitat, the enhanced habitat values resulting from this effort will reduce the need for a greater

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mitigation ratio. The other elements of the mitigation plan also reduce the need for a higher mitigation ratio. The proposed removal of existing debris from the basin and the removal of structures that shade part of the intertidal area will improve habitat values. The new rock slope protection will also provide more rocky intertidal habitat, a form of habitat that is in short supply in Humboldt Bay. It has previously been determined (Roberts and Bott 1986) that the area of soft bottom habitat in Humboldt Bay is enormous, that the area of hard intertidal substrate is relatively limited, and that substitution of the latter for the former is an acceptable effect within Humboldt Bay. Therefore, taking into account the improved habitat values that will result from the proposed mitigation plan apart from direct mudflat creation, the Commission finds that the 1:1 ratio is appropriate.

The proposed mitigation plan also includes success standards, monitoring, and remedial action procedures. The stated provisions in the plan are appropriate, although the Department of Fish & Game suggested three minor revisions. These revisions include insuring that resource agencies such as Fish & Game and the U.S. Fish & Wildlife Service receive copies of the mitigation monitoring reports, (2) that the monitoring efforts include photography with photos taken from fixed photo points to ensure adequate comparisons, and (3) that a "control" monitoring site for the eelgrass enhancement effort be established on the nearby undisturbed eel grass bed to allow for better evaluation of the health of the enhancement area. The Commission finds that these recommendations are appropriate and has imposed Special Condition No. 1, which requires that the City submit a revised Mitigation Plan for the review and approval of the Executive Director that incorporates these measures. The condition also includes a requirement that the revised mitigation plan include certain implementation milestones to ensure that the mitigation proposals are implemented in a timely manner so that the time lag between habitat impacts and restoration of full habitat values is minimized.

As conditioned, the Commission finds that the project will provide feasible mitigation measures that will adequately mitigate the impacts of the proposed project on the filling of the intertidal mudflat habitat.

ii. Water Quality.

The proposed project could adversely affect the water quality in Humboldt Bay in at least four principal ways. First, excavation at the habitat mitigation site could uncover and expose to bay waters hazardous materials previously buried in the historic fill on the site. The historic fill at the mitigation site was placed over several decades. Although there is no evidence that hazardous materials were actually included in the historic fill, given the lack of regulation of the dumping and filling activity that has occurred, it is not inconceivable that some hazardous materials could have been placed at the site. Second, the Department of Fish and Game indicates paved concrete that has not set up prior to exposure to tidal waters can affect the ph level of the water in a manner that could harm aquatic habitats. Third, vessel

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wastes could pollute Humboldt Bay waters if such wastes are discharged into the basin or the Bay. Finally, construction debris could pollute Humboldt Bay waters if such debris was allowed to enter the Bay.

To reduce the potential that any uncovered hazardous wastes might pollute the Bay, Special Condition No. 4 requires all work on the project to be suspended if hazardous materials are discovered during construction. Work can only resume after a qualified consultant has investigated the materials found and any necessary mitigation measures have been implemented.

To reduce the potential for paved concrete to adversely affect water quality, the Commission attaches Special Condition No. 3 which requires that all concrete fill to be used on the subject site shall either be of precast concrete or quick-set concrete to minimize adverse impacts to coastal waters.

To reduce the potential for vessel wastes to be discharged into the Bay, the Commission attaches Special Condition No. 5 which requires that various facilities proposed by the City that are designed to mitigate against vessel waste discharge are actually installed. These facilities include (1) pumpout stations for pumping out vessel sewage from holding tanks, (2) pumpout facilities for pumping out bilge water from vessel bilges and a shoreside oil and water separator to treat the bilge water and remove oily waste, (3) restroom facilities, (4) a fish cleaning station, and (5) a refuse and waste oil storage facility. All of these facilities are intended to provide appropriate means for boaters and fishermen to discharge vessel wastes as an alternative to discharging these wastes into the Bay.

To reduce the potential for construction debris to enter the Bay, the Commission attaches Special Condition No. 6, which requires that all construction debris be removed from the site upon completion of the project

The Commission finds, that as conditioned, the proposed project will include adequate mitigation to minimize the potential water quality impacts of the project.

iii. Conclusion on Adequacy of Mitigation Proposal.

The Commission finds, that as conditioned, the proposed project is consistent with the third test for approvable fill projects set forth in Section 30233 of the Coastal Act in that adequate mitigation for the adverse environmental effects of the proposed project will be provided.

D. Maintenance and Enhancement of Estuarine Habitat Values.

The fourth general limitation set by Sections 30231 and 30233(a) on fill project is that any proposed fill project shall maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

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The proposed mitigation plan will both maintain and enhance the biological productivity and functional capacity of Humboldt Bay. As discussed above, the mitigation plan will ensure that there will be not net loss of mudflat habitat. Thus, mudflat habitat values will be maintained. In addition, the proposed mitigation plan includes several habitat enhancement measures, including the restoration of the 7,900 square feet of eelgrass habitat in the southwest corner of the marina, the creation of expanded rocky intertidal habitat in the marina which is in relatively short supply in Humboldt Bay, and enhancement of existing mudflat area by removal of debris.

Therefore, the Commission finds that the project, as conditioned, will maintain the biological productivity and quality of Humboldt Bay, consistent with Section 30231 of the Coastal Act. Similarly, as conditioned, the proposed project will maintain the functional capacity of the wetlands as required by Section 30233(c).

5. Allowable Shoreline Protection Device.

Section 30235 of the Coastal Act states, in part, that revetments, breakwaters, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

The proposed project includes the placement of approximately 1,200 lineal feet of rock slope protection (RSP) along the shoreline in areas within the marina basin. The RSP will prevent continued bank erosion. The RSP will serve coastal-dependent uses as the site is used as coastal dependent commercial fishing harbor and as a recreational boating facility which must be located on or adjacent to the water to function at all.

The proposed seawall will not adversely affect local shoreline sand supply as the seawall will replace existing revetment and the marina basin is an enclosed harbor within Humboldt Bay. No changes in sediment transport for Humboldt Bay should result.

Therefore, the project is consistent with Section 30235 of the Coastal Act as the proposed rock slope protection is required to protect existing structures and to serve coastal-dependent uses and has been designed to minimize adverse impacts on local shoreline sand supply.

6. Geologic Stability

The Coastal Act contains policies to assure that new development does not create erosion, and to minimize risks to life and property. Section 30253 of the Coastal Act states in applicable part:

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 land forms along bluffs and cliffs.

The City hired SHN Consulting Engineers & Geologists, Inc. to perform a geotechnical evaluation of the project. The consultants made numerous borings to evaluate substrate conditions and examined other available reports. The resulting geotechnical report concluded that the project can be safely developed to minimize geologic hazards and made a number of specific recommendations with regard to the pile driving, excavating a suitable toe trench for the rock slope protection, and constructing the boat ramp. The report recommended that the lower portion of the ramp be supported by concrete piles driven into the substrate and underlying bay mud in this section be removed and replaced with cobble or gravel fill to reduce the potential for settlement. The project plans submitted with the application incorporate all of the recommendations of the geotechnical report that are still applicable. Changes made to the project since preparation of the geotechnical report eliminated the usefulness of some of the recommendations.

As the geotechnical report concludes that the project can be safely developed to minimize geologic hazards so long as certain recommendations are followed, and as the project plans incorporate all the applicable recommendations, the Commission finds that the project is consistent with Section 30253 of the Coastal Act.

7. 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 this section, 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.

The proposed project will provide significant public access and recreational opportunities for the public. The proposal to rehabilitate the Eureka Small Boat Basin includes the installation of a continuous shoreline walkway from one end of the site to another. The walkway will be constructed along the

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edge of the basin at the top of the bank. In addition, the project will include public restrooms that will be available to public access users as well as marina tenants. Furthermore, the project will greatly increase the amount of parking at the marina. The parking will be available for public access users. A number of the parking spaces will be oriented to provide bay views for people who want to drive to the site and enjoy the waterfront from their parked cars, perhaps as they eat a brown bag lunch. Furthermore, the boat launching facilities and marina berths will promote recreational boating and provide direct access to the waters of Humboldt Bay for the public. As the property is owned by the City of Eureka, the City will provide for maintenance of the public access facilities. As the Commission's retained jurisdiction is limited to tidal areas, the proposed public access improvements will be provided within the City's permit jurisdiction. The City has already granted a coastal development permit for the project and any future proposal to reduce or eliminate any of the public access improvements would require a permit amendment that could be appealed to the Commission.

The Commission finds that the proposed project would be a public access and recreational asset to the coastal zone within the City of Eureka and would not adversely affect public access in any way. Thus, the Commission further finds that the project is fully consistent with the public access and recreation policies of the Coastal Act.

8. State Waters.

The project site is located in areas that were formerly State-owned waters or were otherwise subject to the public trust. However, these State-owned waters were transferred to the City of Eureka through a legislative grant. Therefore, the applicant has the necessary property rights to carry out the project on former State-owned waters.

9. U.S. Army Corps of Engineers Review.

The project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 2 which requires the permittee to submit to the Executive Director evidence of U.S. Army Corps of Engineers approval of the project prior to the commencement of work.

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**CITY OF EUREKA**

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10. City of Eureka LCP.

The City of Eureka LCP designates and zones the the property as Waterfront Commercial (CW) and Coastal Dependent Industrial (MC). The zoning ordinance allows docks in CW MC districts as a principally permitted use.

As the proposed project involves the placement of fill within Humboldt Bay, which is a coastal waterway and an area recognized as an environmentally sensitive habitat area under Policy 5.5 of the City's LUP, the project is subject to the coastal resources and development policies of Chapter 5 of the LUP. The project, as conditioned is consistent with these policies as (1) the biological productivity and the quality of coastal waters will be maintained (Policy 5.2); (2) the proposed project will serve a coastal dependent use (Policy 5.4); (3) the conditions of this permit that will require habitat mitigations to offset the impacts to mudflat habitat associated with the proposed fill for rock slope protection which will protect the environmentally sensitive habitat areas of Humboldt Bay against significant disruption (Policy 5.6); (4) the development to be allowed within Humboldt Bay is for uses dependent on the resource (Policy 5.6); and (5) the filling of coastal waters authorized herein is for a permitted use, there is no feasible less environmentally damaging alternative, feasible mitigation measures have been provided to minimize adverse effects, and the functional capacity of the resource area will be maintained, all as discussed in Finding 4 above (Policies 5.8, 5.10, 5.12, and 5.14).

Approval of the project, as conditioned to fully mitigate for the project's fill impacts on coastal waters, is consistent with the City's certified LCP.

Section 30604 of the Coastal Act authorizes permit issuance if the project is consistent with Chapter 3 of the Coastal Act. Approval of the project, as conditioned to fully mitigate for the project's fill impacts on coastal waters is consistent with Chapter 3 of the Coastal Act as discussed above.

11. California Environmental Quality Act (CEQA).

Section 13096 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The proposed project has been conditioned in order to be found consistent with the Coastal Act. Mitigation measures have been attached, including requirements that (1) a mitigation plan for the impacts of the fill on intertidal mudflat habitat be implemented that would provide for in-kind mitigation as well as additional habitat enhancements at the site, and

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**CITY OF EUREKA**

Page 24

(2) that certain measures be imposed to protect water quality, including requirements that construction debris be removed, that concrete exposure to bay waters be minimized during curing operations and construction cleanup, that the City install certain improvements designed to prevent discharges of vessel wastes including sewage and bilge water pump out facilities, an oil and water separator, restroom, a facility for accepting and storing oily wastes, and a fish cleaning station.

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

9970p



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.

A B C D E F G H I J K L M N O

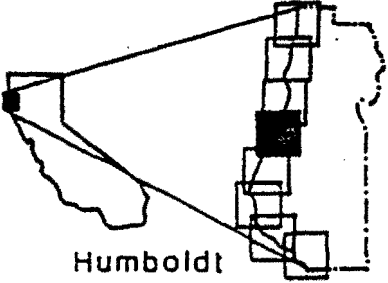
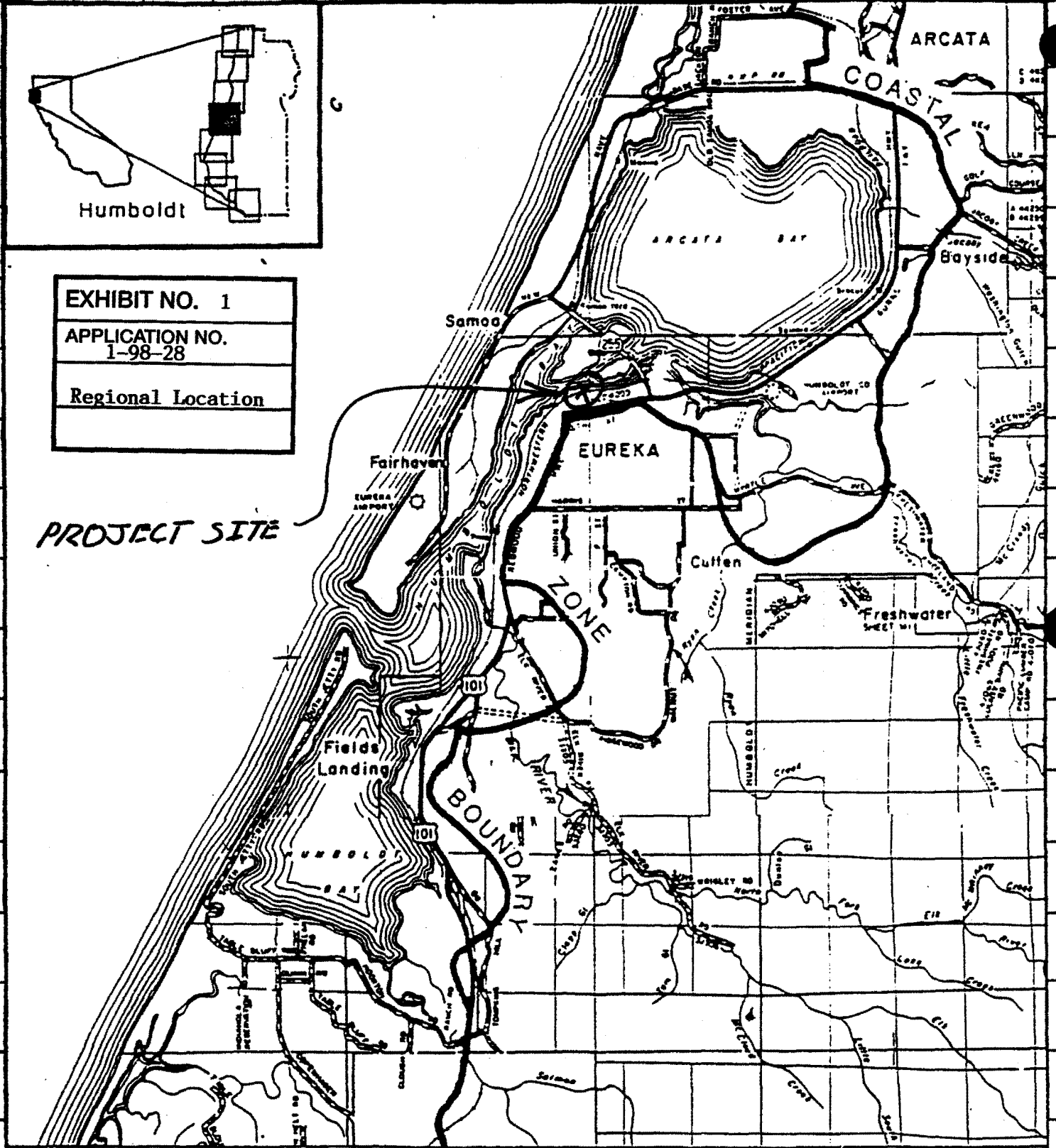


EXHIBIT NO. 1

APPLICATION NO.  
1-98-28

Regional Location

PROJECT SITE



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LOCATION MAP



CITY OF EUREKA  
SMALL BOAT BASIN PROJECT

INDIAN ISLAND  
ROBERTS ISLAND

CITY LIMIT

PROPOSED MITIGATION  
AREA

EXHIBIT NO. 2

APPLICATION NO.  
1-98-28

Vicinity Map

CITY OF EUREKA  
SMALL BOAT BASIN PROJECT  
MITIGATION PLAN

AREA MAP

11

COUNT

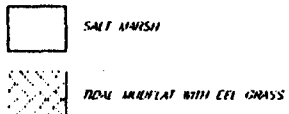
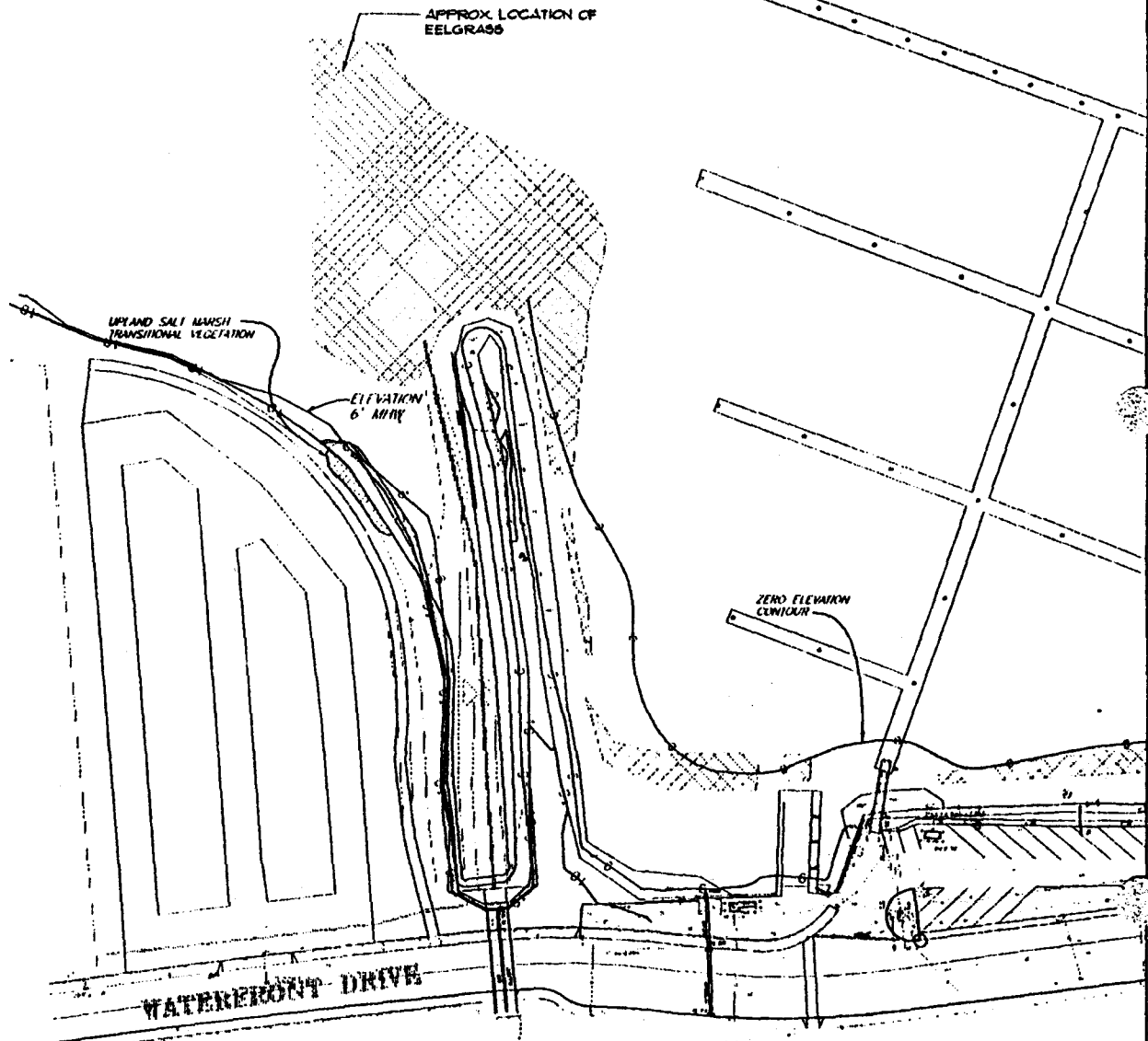


EXHIBIT NO. 3
APPLICATION NO. 1-98-28
Existing Site
( 1 of 2 )

NOTE:  
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 10" MHW CONTOUR ELEVATION LOCATED WITHIN LIMITS OF EXISTING SEAWALL. LOCATION OF 10" MHW CONTOUR ELEVATION SHOWN WHERE NOT WITHIN LIMITS.



**EXISTING CONDITIONS**

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION

DATUM: MLLW

ADJACENT PROPERTY OWNERS:

1. CITY OF EUREKA
2. SOUTHERN PACIFIC TRANS. CO.
3. NORTH COAST RAILROAD



SCALE: 1" = 100'

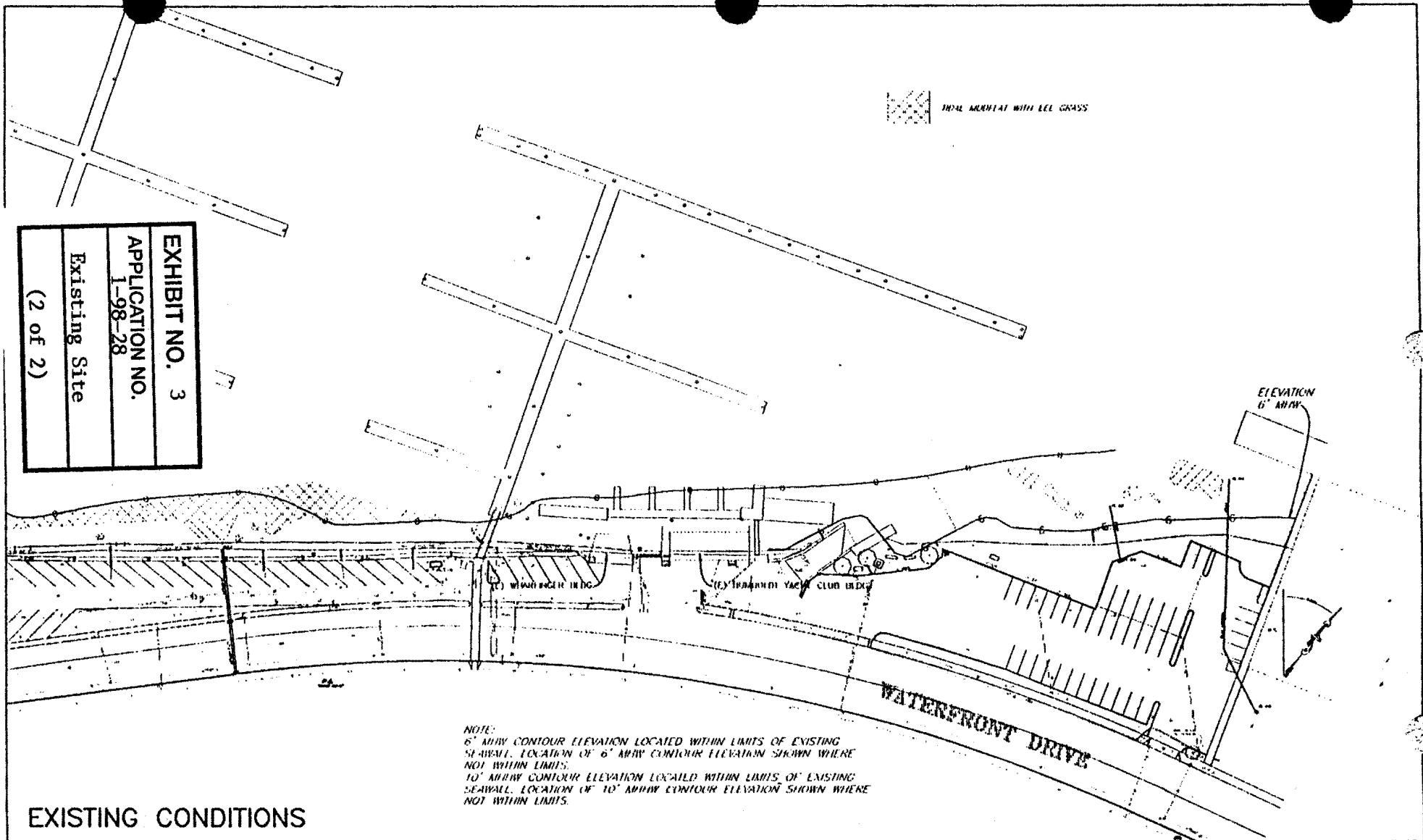
CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA

SHEET: 2a DATE: MARCH 1998

EXHIBIT NO. 3
APPLICATION NO. 1-98-28
Existing Site (2 of 2)

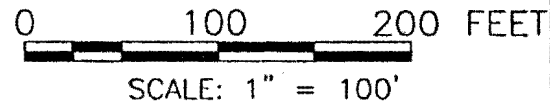
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NOTE:  
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 10' ANHW CONTOUR ELEVATION LOCATED WITHIN LIMITS OF EXISTING SEAWALL. LOCATION OF 10' ANHW CONTOUR ELEVATION SHOWN WHERE NOT WITHIN LIMITS.

**EXISTING CONDITIONS**

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD



CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA  
 SHEET: 2b DATE: MARCH 1998

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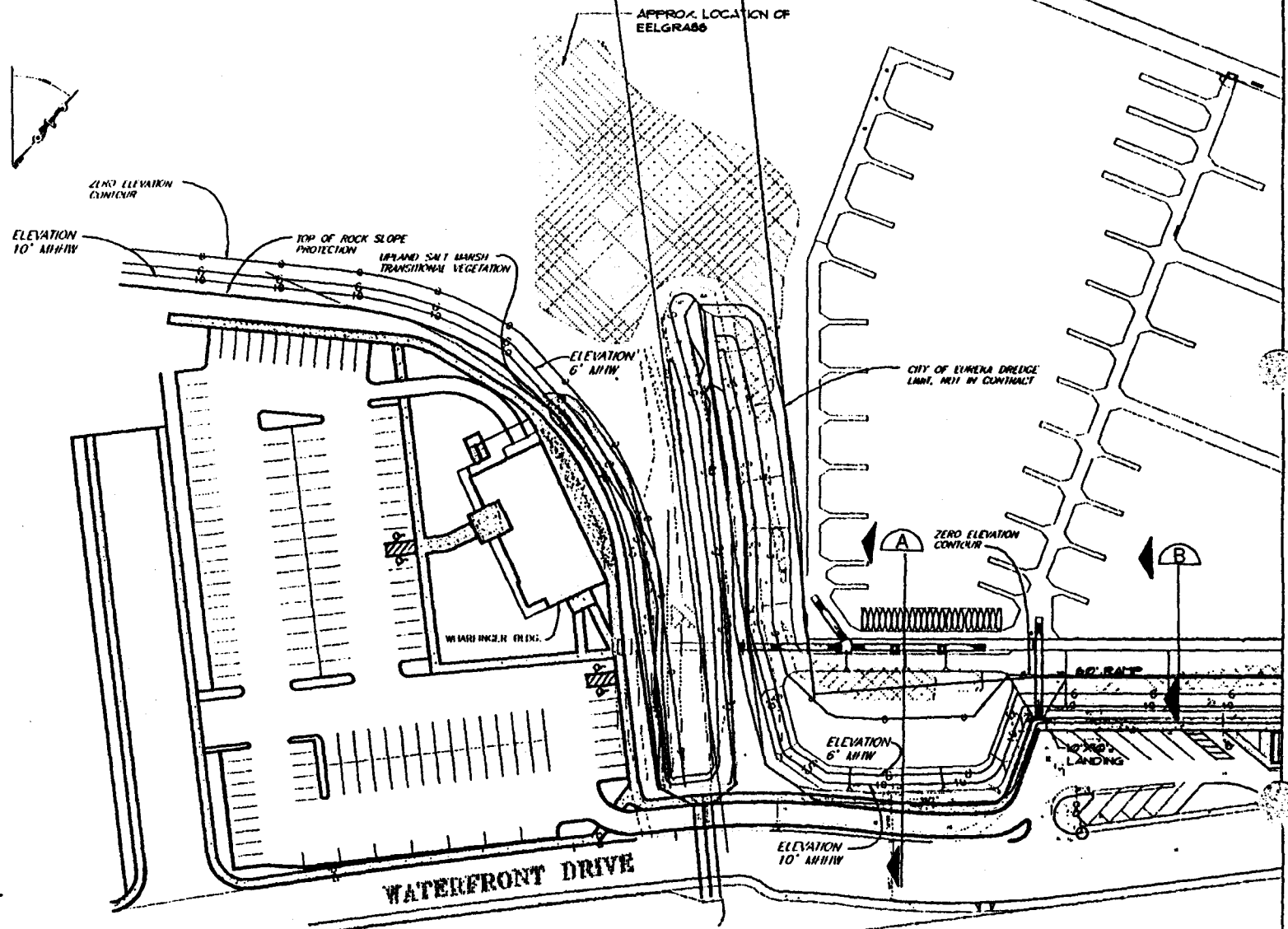
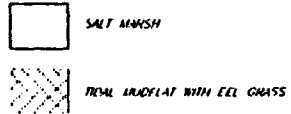
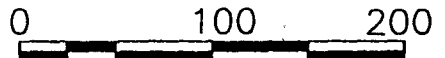


EXHIBIT NO. 4  
 APPLICATION NO. 1-98-28  
 Site Plan  
 (1 of 2)

PROPOSED PROJECT

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD

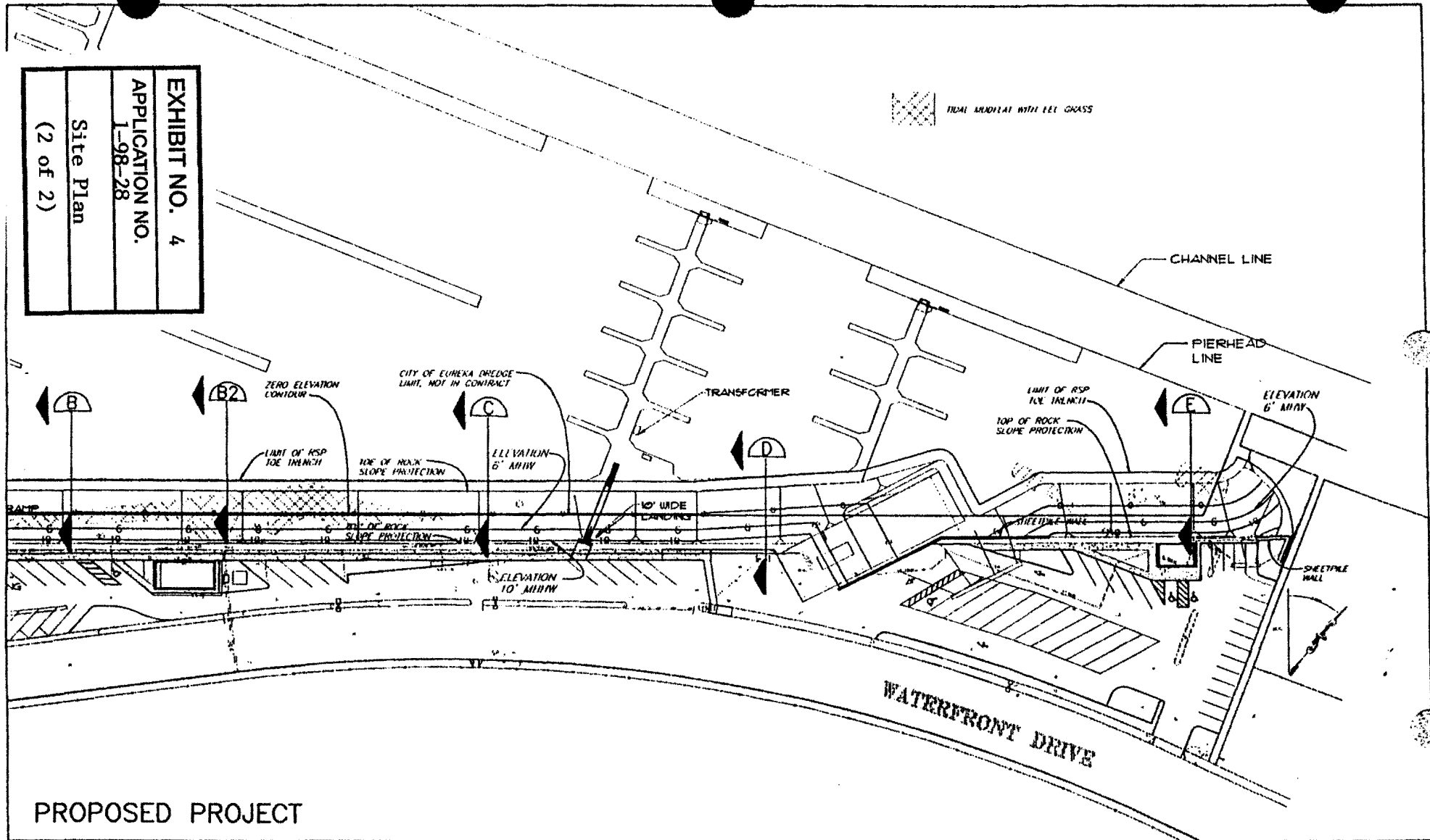


SCALE: 1" = 100'  
 CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA

SHEET: 3a DATE: MARCH 1998

EXHIBIT NO. 4
APPLICATION NO. 1-98-28
Site Plan (2 of 2)



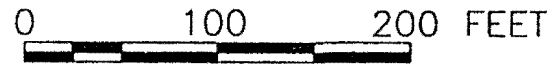
**PROPOSED PROJECT**

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION

DATUM: MLLW

ADJACENT PROPERTY OWNERS:

1. CITY OF EUREKA
2. SOUTHERN PACIFIC TRANS. CO.
3. NORTH COAST RAILROAD



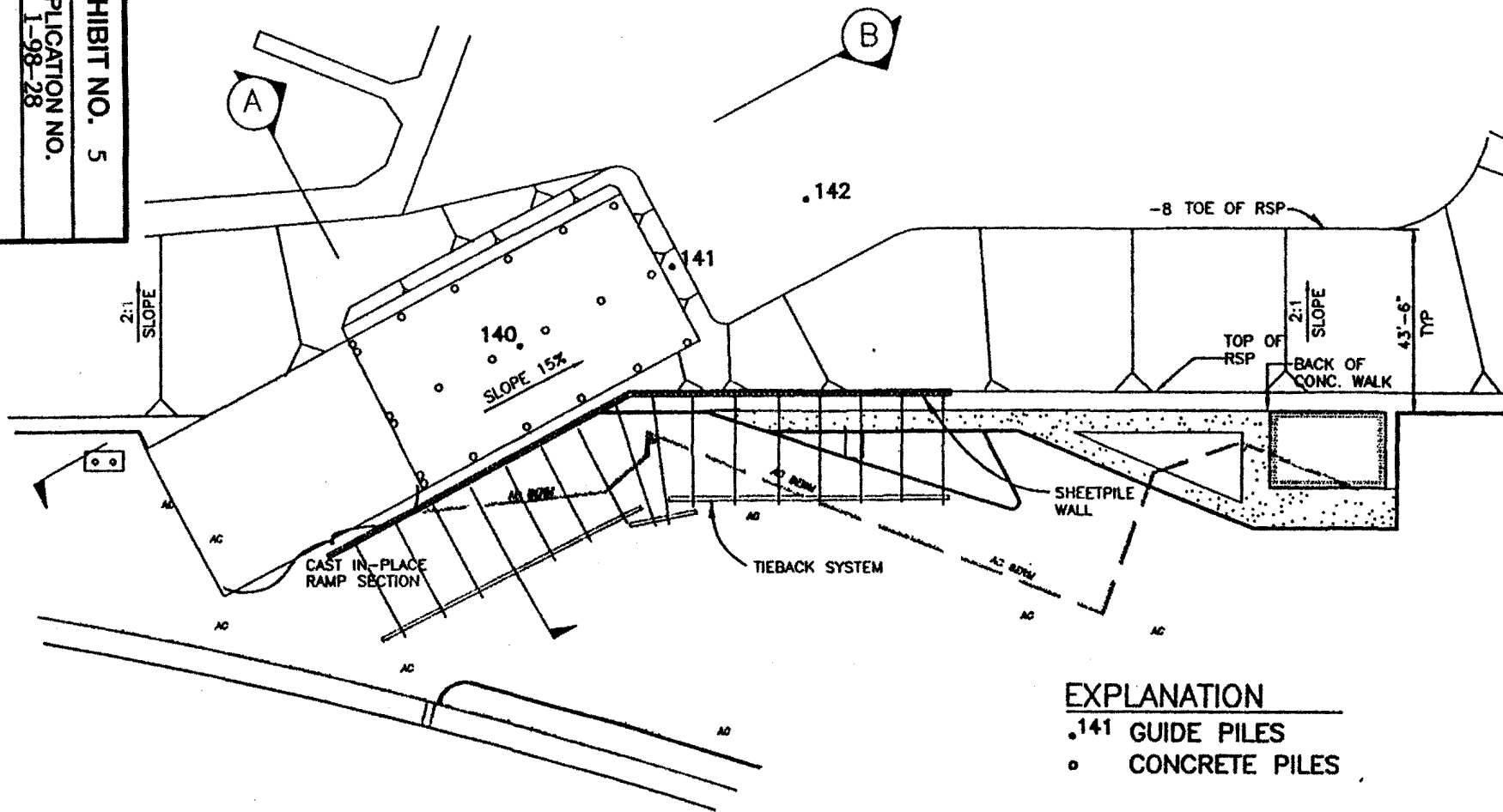
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CITY OF EUREKA  
531 K STREET  
EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
AT: EUREKA SMALL BOAT BASIN  
COUNTY OF: HUMBOLDT  
STATE: CALIFORNIA  
APPLICATION BY: CITY OF EUREKA

SHEET: 3b DATE: MARCH 1998

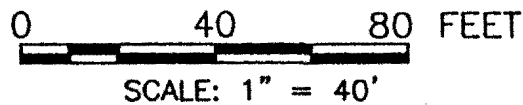
EXHIBIT NO. 5
APPLICATION NO. 1-98-28
Boat Ramp
(1 of 2)



**EXPLANATION**  
 .141 GUIDE PILES  
 ○ CONCRETE PILES

**BOAT LAUNCH RAMP PLAN**

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD



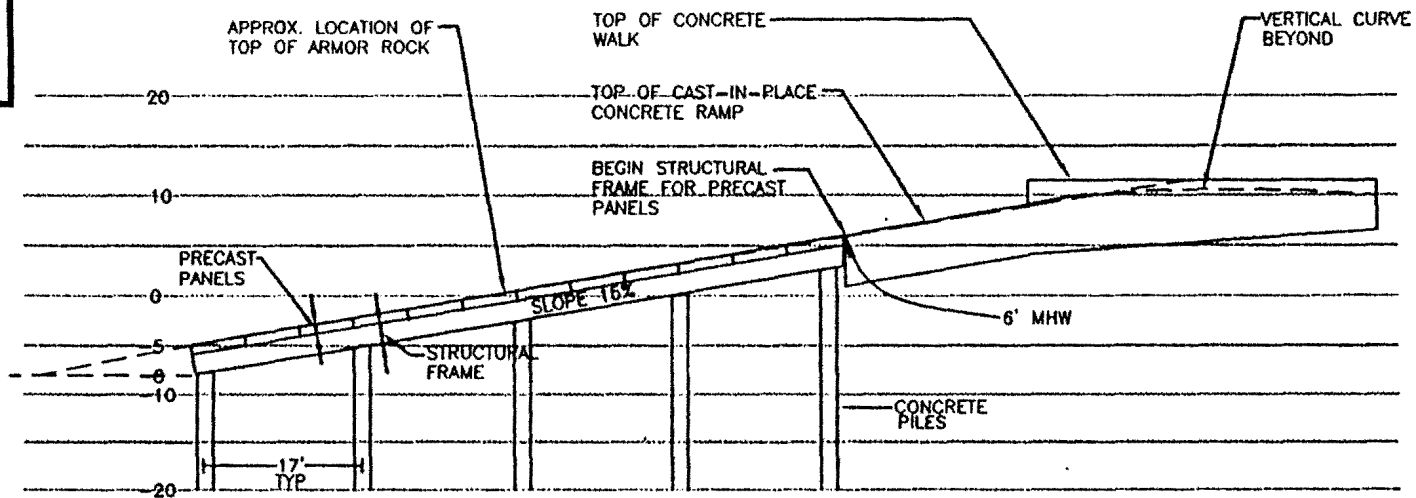
CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA

SHEET: **10** DATE: MARCH, 1998

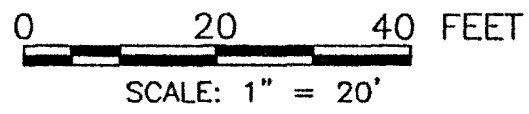


EXHIBIT NO. 5
APPLICATION NO. 1-98-28
Boat Ramp
(2 of 2)



### BOAT LAUNCH RAMP SECTION B

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
DATUM: MLLW  
ADJACENT PROPERTY OWNERS:  
1. CITY OF EUREKA  
2. SOUTHERN PACIFIC TRANS. CO.  
3. NORTH COAST RAILROAD

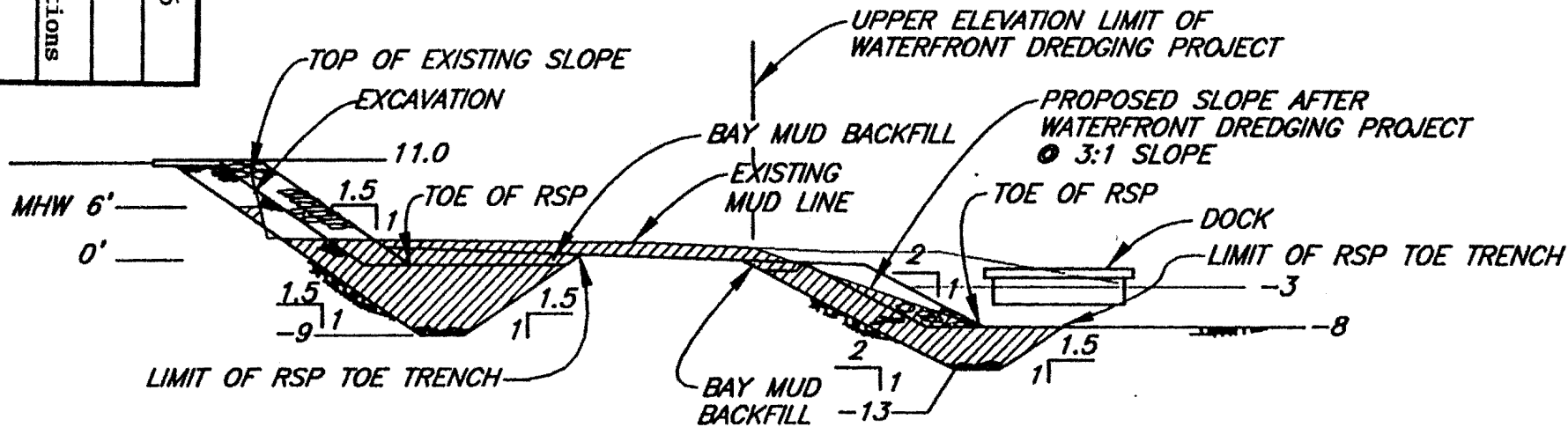


CITY OF EUREKA  
531 K STREET  
EUREKA, CALIFORNIA





IN: HUMBOLDT BAY  
AT: EUREKA SMALL BOAT BASIN  
COUNTY OF: HUMBOLDT  
STATE: CALIFORNIA  
APPLICATION BY: CITY OF EUREKA

SHEET: 12 DATE: MARCH, 1998

EXHIBIT NO. 6
APPLICATION NO. 1-98-28
Revetment Sections (1 of 6)



**EXPLANATION**

-  PROJECT DREDGING
-  ZONE OF EEL GRASS HABITAT
- FILL:
  -  QUARRY RUN ROCK
  -  ARMOR ROCK

**SECTION A**

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION

DATUM: MLLW

ADJACENT PROPERTY OWNERS:

1. CITY OF EUREKA
2. SOUTHERN PACIFIC TRANS. CO.
3. NORTH COAST RAILROAD

0 20 40 FEET



SCALE: 1" = 20'

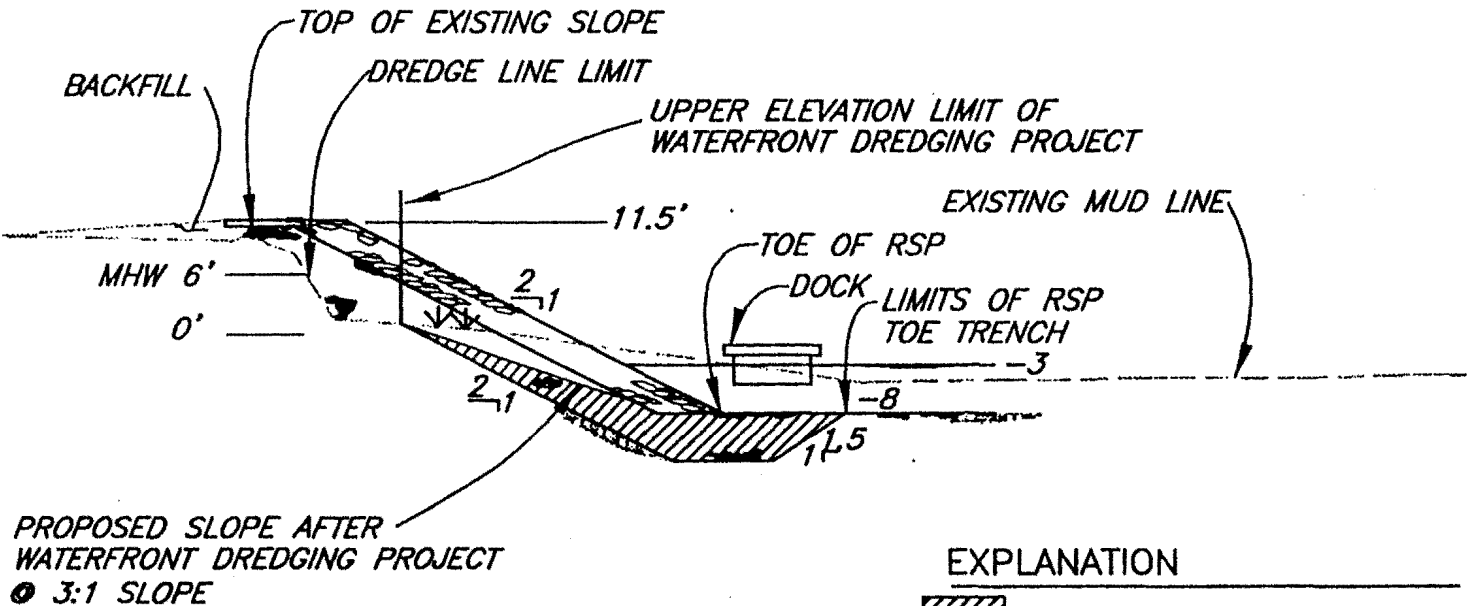
CITY OF EUREKA  
531 K STREET  
EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
AT: EUREKA SMALL BOAT BASIN  
COUNTY OF: HUMBOLDT  
STATE: CALIFORNIA  
APPLICATION BY: CITY OF EUREKA

SHEET: 4





DATE: AUGUST 1997

EXHIBIT NO. 6
APPLICATION NO. 1-98-28
Revetment Sections (2 of 6)



SECTION B

EXPLANATION

-  PROJECT DREDGING
-  ZONE OF EEL GRASS HABITAT
- FILL:
-  QUARRY RUN ROCK
-  ARMOR ROCK

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION

DATUM: MLLW

ADJACENT PROPERTY OWNERS:

1. CITY OF EUREKA
2. SOUTHERN PACIFIC TRANS. CO.
3. NORTH COAST RAILROAD

0 20 40 FEET



SCALE: 1" = 20'

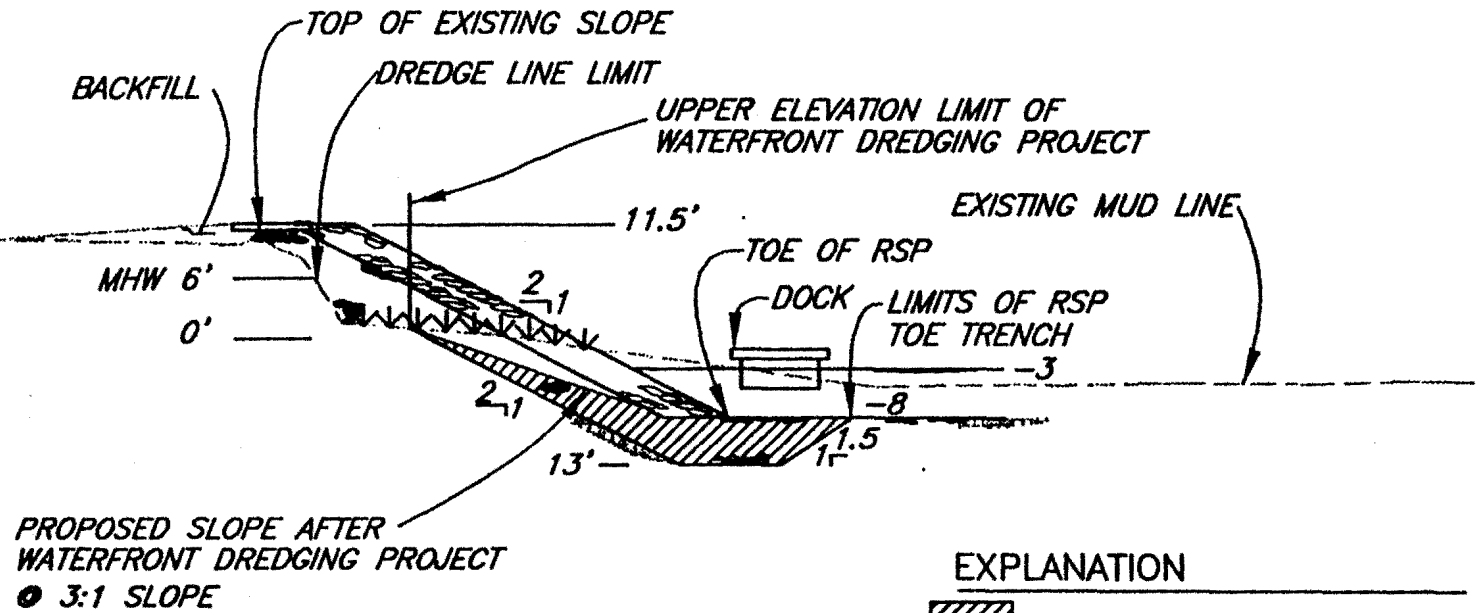
CITY OF EUREKA  
531 K STREET  
EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
AT: EUREKA SMALL BOAT BASIN  
COUNTY OF: HUMBOLDT  
STATE: CALIFORNIA  
APPLICATION BY: CITY OF EUREKA





SHEET: 6

DATE: MARCH, 1998

EXHIBIT NO. 6
APPLICATION NO. 1-98-28
Revetment Sections
(3 of 6)



SECTION B2

- EXPLANATION**
-  PROJECT DREDGING
  -  ZONE OF EEL GRASS HABITAT
  - FILL:
  -  QUARRY RUN ROCK
  -  ARMOR ROCK

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD

0 20 40 FEET  
 SCALE: 1" = 20'  
 CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA  
 SHEET: 5 DATE: MARCH, 1998

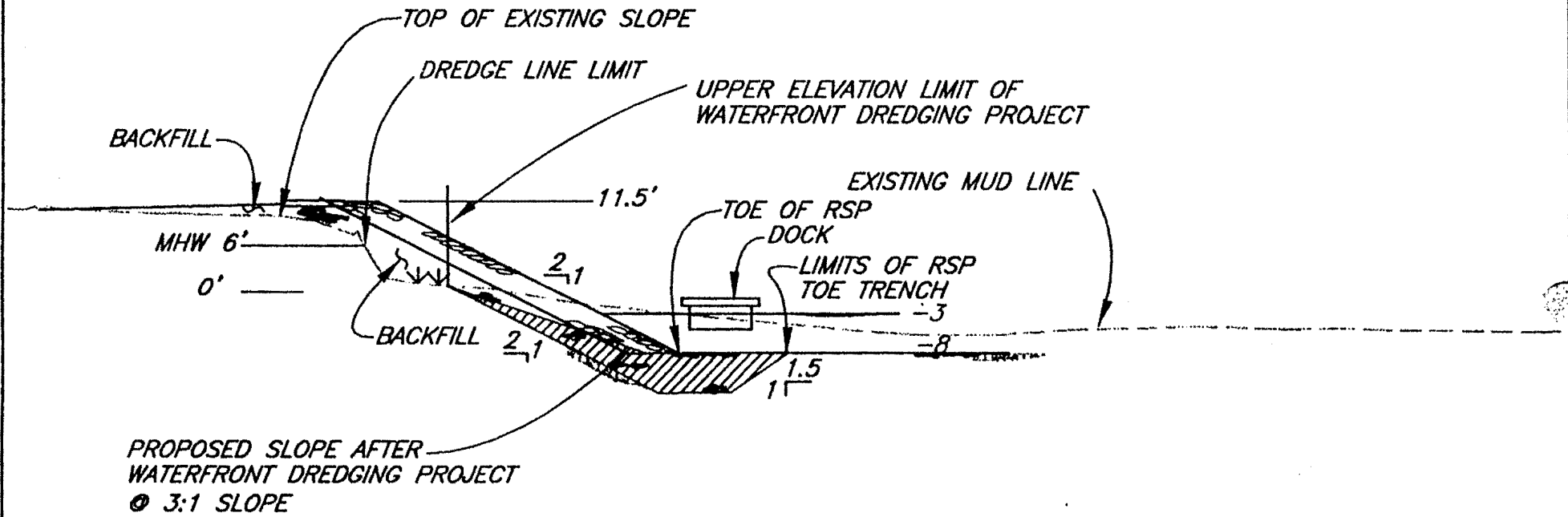
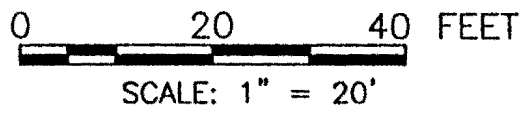


EXHIBIT NO. 6
APPLICATION NO. I-98-28
Revetment Sections (4 of 6)

SECTION C

- EXPLANATION**
- PROJECT DREDGING
  - ZONE OF EEL GRASS HABITAT
  - FILL:
    - QUARRY RUN ROCK
    - ARMOR ROCK

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD



CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA  
 SHEET: 7      DATE: MARCH, 1998

M-02

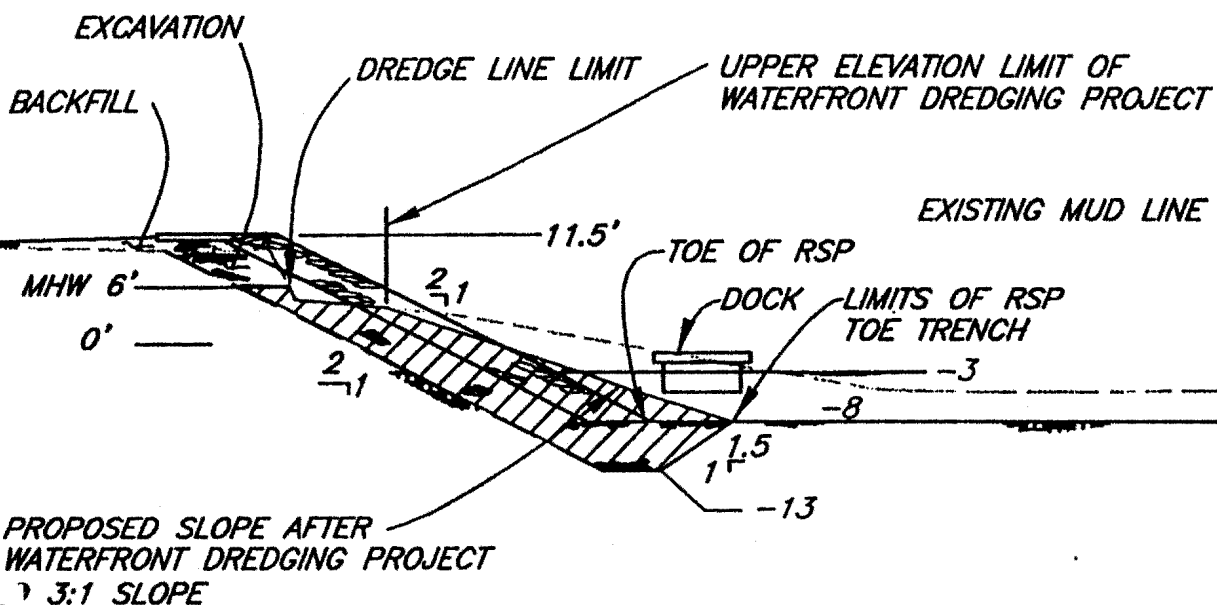






EXHIBIT NO. 6
APPLICATION NO. 1-98-28
Revetment Sections (5 of 6)

### SECTION D

#### EXPLANATION

-  PROJECT DREDGING
-  ZONE OF EEL GRASS HABITAT
- FILL:
-  QUARRY RUN ROCK
-  ARMOR ROCK

PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD



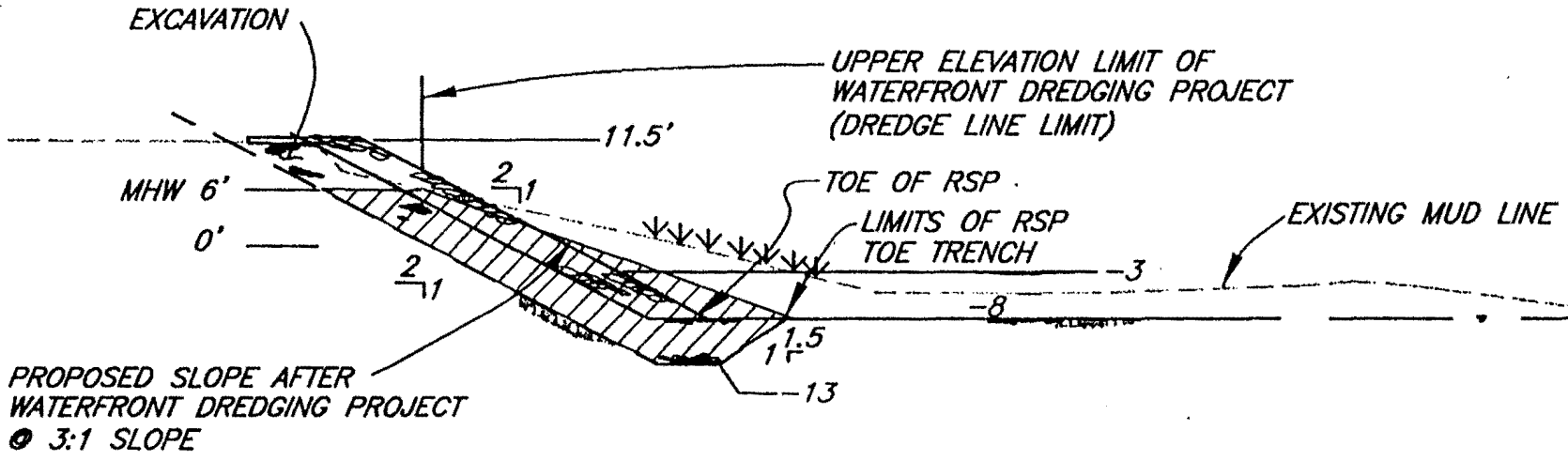
SCALE: 1" = 20'

CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA

SHEET: 8      DATE: MARCH, 1998

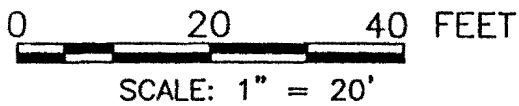
M-02



Revetment Sections (6 of 6)	EXHIBIT NO. 6
	APPLICATION NO. 1-98-28

- EXPLANATION**
- PROJECT DREDGING
  - ZONE OF EEL GRASS HABITAT
  - FILL:
    - QUARRY RUN ROCK
    - ARMOR ROCK

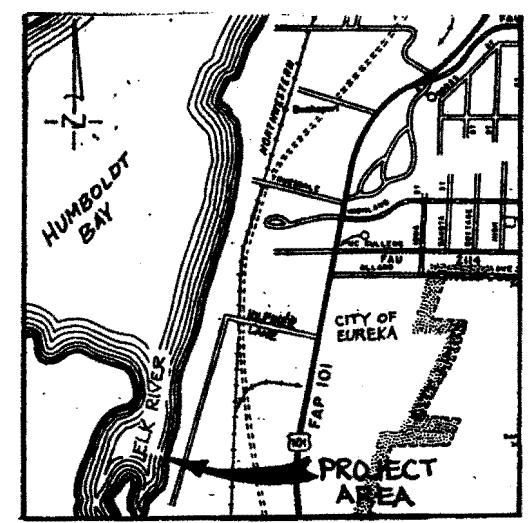
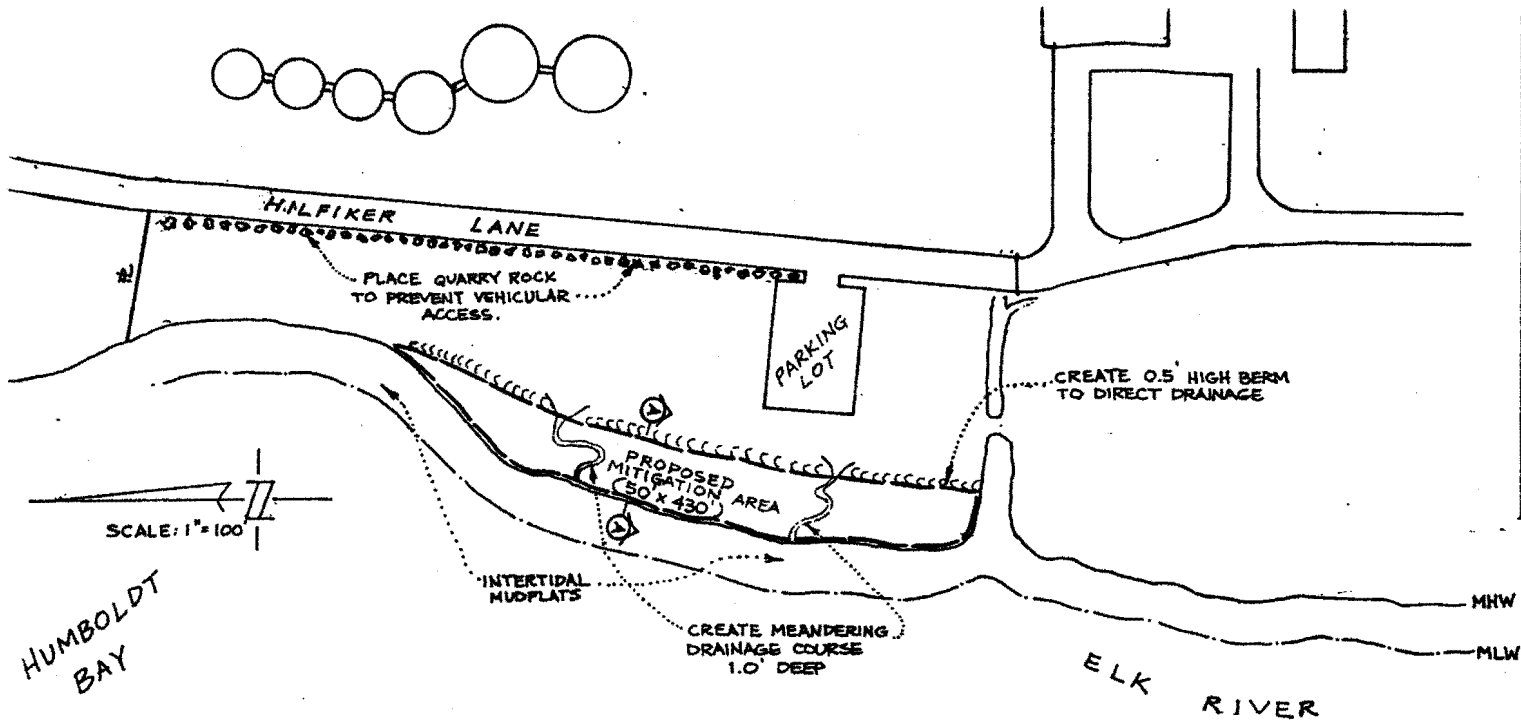
### SECTION E



PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD

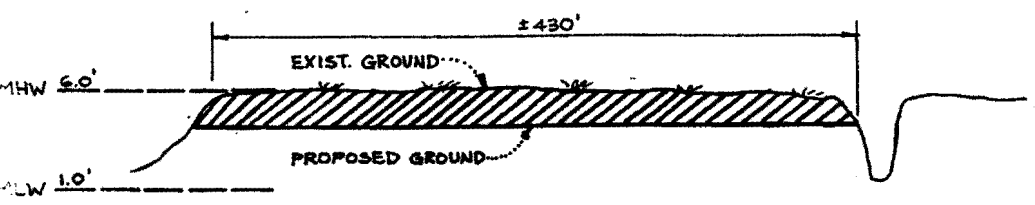
CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA  
 SHEET: 9      DATE: MARCH, 1998

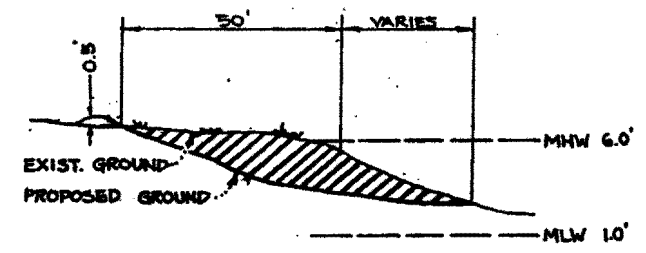


**LOCATION MAP**  
 Scale: 1" = 1/2 MILE  
 FROM HUMBOLDT COUNTY ROAD SYSTEM MAPPING

SCALE: 1" = 100'



**PROFILE**  
 NO SCALE



**SECTION "A-A"**  
 NO SCALE

PURPOSE: MITIGATION FOR SMALL BOAT BASIN REHABILITATION

DATUM: MLLW

ADJACENT PROPERTY OWNERS:

- 1. CITY OF EUREKA



CITY OF EUREKA  
 521 K STREET  
 EUREKA, CALIFORNIA

EXHIBIT NO. 7
APPLICATION NO. 1-98-28
Mudflat Restoration

IN: HUMBOLDT BAY  
 AT: HILFIKER LANE AT THE MOUTH OF ELK RIVER  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA

SHEET 1 DATE: APRIL 1998



## Small Boat Basin Mitigation Plan

### I. PROJECT BACKGROUND

The City of Eureka is undertaking a project to rehabilitate the existing Small Boat Basin, a 144 slip 40+ year old marina which has been added to and patched over the last decades. The project consists of the upgrading and modernization of the existing facility in the City of Eureka. A 132 slip mixed use marina serving both commercial and recreational interests, replacing the existing 130 slip facility, is envisioned by this project. The scope of the project includes removal of the existing dock systems and the installation of new concrete floats and docks; the demolition and removal of two structures overhanging the water, the 644 sq. ft. Wharfinger Building and the 1512 sq. ft. Yacht Club; the installation of 1480 lineal feet of rock slope protection at a 2:1 ratio and 1.5:1 where practical; construction of public rest rooms and private tenant rest rooms; and the construction of a two story Wharfinger building with a total building footprint of 5885 sq. ft (including leaseable space and decks) constructed on a adjacent headland overlooking the new facility at the southerly end of the project site. No portion of the proposed structure will overhang the water nor affect wetland areas.

The installation of the rock slope protection (RSP) at the 2:1 and 1.5:1 slopes will affect 21,600 square feet of intertidal mudflat habitat for which mitigation will be proposed at an off-site location.

The proposed Wharfinger Building will be constructed on piles, and has been relocated to an adjacent upland area, out of the jurisdiction of the Corps of Engineers, and not affecting wetland areas, mud flat, nor eel grass.

The existing site conditions in the area of the proposed rock slope protection include bay mud and sediment deposited by Bay currents which have filled an area parallel to the shore over the last 10 year dredging cycle. The area within a little cove at the southern end of the project site is degraded mud flat, contaminated with chunks of concrete, rusting cable, and rubble.

### II. SUMMARY OF AREAS IMPACTED BY THE PROJECT

A. Intertidal Mudflat. Approximately 21,600 square feet of intertidal mudflat will be converted to rocky intertidal habitat by the installation of the proposed RSP.

EXHIBIT NO. 8
APPLICATION NO. 1-08-28
Mitigation Plan
(1 of 15)

CITY OF EUREKA  
SMALL BOAT BASIN PROJECT

INDIAN ISLAND

ROBERTS ISLAND

DEER ISLAND

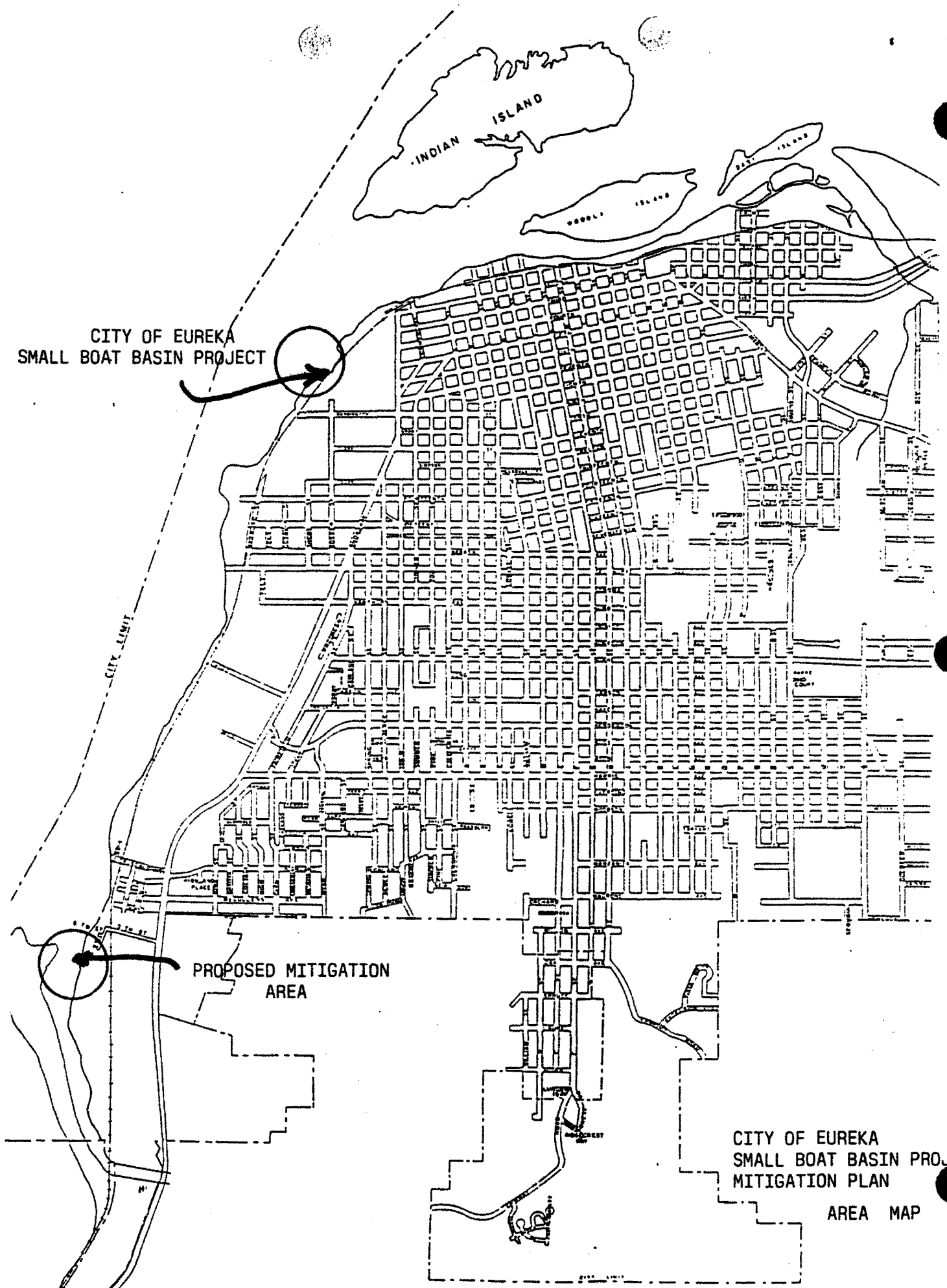
CITY LIMIT

PROPOSED MITIGATION  
AREA

CITY OF EUREKA  
SMALL BOAT BASIN PROJECT  
MITIGATION PLAN

AREA MAP

COMMUNITY DEVELOPMENT



### III. MITIGATION PLAN

#### A. Goal and Objectives

The goal of the mitigation plan is to establish habitat of like value and proportional amounts to those areas impacted by the project. Additionally, the City of Eureka proposes to create an additional area of eel grass habitat to increase the biological productivity of the project site. To accomplish these goals, four objectives have been formulated:

- 1) removal of debris, concrete, and iron, and the excavation of 21,600 square feet from an off-site upland area converting it to intertidal mudflat to compensate for the overcovering of intertidal mudflat at the project site.
- 2) creation of 7,900 square feet of eel grass habitat by relinquishing the permit authority to dredge a small cove in the project site, and instead excavating and transplanting eel grass clumps to the site.
- 3) the City also proposes to upgrade existing mudflat areas at the Small Boat Basin project site which exhibit sparse to no vegetation nor animal life, by removing non-native intertidal muds, soils, and debris. These areas exist adjacent to the westerly edge of the land mass at the southerly end of the Small Boat Basin project area, and have been degraded by 10 years of erosion of the upland fill into the intertidal zone. The wrack zone at the base of toe of the bank has been extended and steepened due to shoreline erosion. The upper layers of sediments in the wrack zone are a mixture of natural bay muds and silts with considerable amounts of gravel-sized rubble that has washed down from the eroding shoreline. Some large pieces of concrete slabs and metal scraps in the intertidal area will be removed as part of the proposed mitigation. Rehabilitation of this area at the base of the proposed RSP will consist of the excavation of one foot of the eroded upland soils for a distance of two feet bayward from the toe of the RSP, and the removal of the concrete slabs, metal, and debris, thereby upgrading 1,000 square feet of intertidal mudflat. Lowering the elevation of area will provide intertidal mudflat habitat of more value to invertebrates and shorebirds.
- 4) the City will remove two structures overcovering and shading intertidal mudflat ; the 644 sq. ft. Wharfinger Building and the 1512 sq. ft. structure housing the Humboldt Yacht Club. Removal of these

structures will re-expose 2,152 square feet of rocky intertidal habitat to sunlight, and return this area to productive levels.

It is recognized by the City That some aspects of the proposed Mitigation Plan are experimental, particularly the planting of eel grass. While eel grass planting has met with varying degrees of success along the Pacific Coast, past attempts in Humboldt Bay have not been totally successful. It is also noted the experience that some transplanted beds have survived into the monitoring phase, only to be swept away by natural storm and tidal forces.

The City's eel grass planting effort will be undertaken from an experimental perspective, and as a additive bonus beyond the mitigation required to mitigate the effects of the project.

#### B. Location

**Intertidal Mudflat.** The area proposed for mitigation of the intertidal mudflat impacts is an elongated piece of land adjacent to the Elk River spit, off of Hilfiker Lane, in the vicinity of the Elk River Sewage Treatment Plant. The area has been the dumping ground for concrete products, iron, and other types of trash for decades. The entire area to be restored is landward of the 1859 and 1870 Mean Low Water lines, having accreted from the natural process actions of the Elk River.

This site has been chosen for mitigation and restoration for the following reasons:

- the site is adjacent to existing intertidal mudflat areas ; and
- the characteristics of the site and adjacent lands are such that in-kind mitigation is possible with a high degree of potential success; and
- it is a publicly accessible area which will benefit greatly by the removal of deleterious debris; and
- it is an upland area with typical upland vegetation, the removal of which will not adversely affect biological functioning of the area.

**Eel Grass.** The location for the bonus eel grass habitat creation was selected for the following reasons:

- it is an area where eel grass has historically located due to the cyclic in-filling and shoaling of lands in the Small Boat Basin between dredging cycles; and

- it is an area where the public could enjoy the biologic diversity and wildlife that eel grass habitat brings to an area; and
- it is an area which has historically been dredged, yet the design of the new Marina does not require its use for marina operations.
- the site is protected from strong northwesterly and southeasterly winds and waves by the berthed vessels, existing groin, and dock systems.

#### IV. CHARACTERISTICS OF THE MITIGATION SITE

##### A. Substrate

The proposed mitigation area has been filled over the years with varying amounts of commercial debris. This consists of concrete chunks and slabs, metal automobile parts and frames, slash, and household trash. Much of this debris has been placed adjacent to the shoreline in misguided attempts at shoreline stabilization. A site review of the area revealed upland soils beneath the debris, and no sand areas were encountered.

##### B. Hydrology

The northerly and westerly portions of the proposed mitigation area are bounded by a broad intertidal mudflat, the elevations of which will be mirrored by this project to create a seamless, continuous intertidal mudflat area. This mudflat extends uniformly from the shoreline to the lower tide levels, and no dendritic channels were observed. The Elk River hydrology was observed on March 18, 1998 during a 1.0 foot tide. The Elk River is braided in this area, and the river segment closest to the proposed mitigation area appeared to be narrow channel, with the entire area being subject to tidal fluctuations.

##### C. HABITATS

Those habitats which would be directly affected by the implementation of the proposed mitigation for intertidal mudflat include only upland soils, with no particular significance to the biologic functioning of the area

The intertidal area proposed for the eel grass habitat has historically been dredged for navigation purposes. In fact, the dredging of this area is a part of the approved Corps of Engineers permit for the current dredging cycle. The revisions made to the plans for the docks in the proposed marina have indicated to the City that the dredging of the small cove is not required for the functioning of the Marina, and this formerly degraded

intertidal mudflat will be cleared of debris, concrete chunks, metal cable, a concrete boat launch ramp, and gravels eroded from the banks, and an eel grass site will be created from the currently marginally productive area. The City proposes to enhance intertidal mudflat habitat by removing non-native intertidal muds, soil, and debris, and lowering the elevation of some intertidal areas to provide more value of intertidal habitat to shorebirds and invertebrates. The removal of the of the existing two marginal boat launch ramps (in favor of a single two lane ramp) will uncover additional lands in the small cove, which is proposed for the creation of eel grass habitat.

#### D. SENSITIVE SPECIES

No protected fish species are expected to utilize the mitigation area due to lack of habitat.

Protected avian species which could potentially utilize the mitigation site include the American peregrine falcon (*Falco peregrinus anatum*) foraging on shorebirds and waterfowl, and the Long-billed curlew (*Numenius americanus*) foraging in the intertidal mudflats.

No protected mammalian species are expected to utilize the mitigation area due to lack of suitable habitat.

No protected plant species were observed during field observation nor are any expected due to the lack of preferred suitable habitat.

#### E. IMPACTS OF MITIGATION ON EXISTING CONDITIONS

1. Substrate. Approximately 43,000 cubic yards of material will be excavated from the mitigation site. Recovered concrete will be recycled at the Cummings road landfill, used either as crushed as road base or pads. Metals and other debris will be transported to the Cummings Road landfill for disposal. Excavated earth will be transported to the Cummings Road landfill and used as alternative daily cover at the site.
2. Hydrology - It is anticipated that the local hydrologic regime should not be altered substantially by the implementation of the Mitigation Plan, provided the elevations and grades of the finished areas approximate the existing ones on the adjacent areas.

3. Habitats to be replaced - Implementation of the mitigation plan will result in the removal of about 21,600 square feet of upland area and fill.
4. Sensitive Species - No impacts are anticipated to any of the sensitive species known or expected to utilize the mitigation site.

## V. MITIGATION DETAILS

### A. Creation of Intertidal Mudflat

Debris in the proposed mitigation area will be removed by mechanized equipment working from upland areas. The mitigation area will be excavated to the elevation of the adjacent intertidal mudflats, and will slope from about 7.0 ft. MLLW to +2 ft. MLLW to create a seamless transition to the existing mudflats to the west and north of the mitigation area. Excavation will proceed from the landward reaches of the mitigation site to the bayward portions; in this fashion the existing shoreline will remain as a dike during the major portion of the excavation in order to minimize the dispersal of silt and other fines into Bay waters. All material excavated and removed from the mitigation area will be transported and disposed of as previously discussed. The area will then be fenced to prevent vehicles from accessing the area to stop illegal dumping in the intertidal zone. No planting of vegetation is proposed as a part of this plan.

### B. Creation of Eel Grass Habitat

No eel grass will be removed as a part of the Small Boat Basin upgrading project. Cyclical dredging efforts for navigational safety in the Small Boat Basin have periodically removed eel grass populations adjacent to the existing sea wall, which had colonized in areas in-filled by tidal and deposition processes.

Nevertheless, the City proposes to create a 7,900 square foot eel grass bed within the project site as a biologic amenity for the project. A small cove in the southern portion of the project area, adjacent to the existing groin, is the site chosen for this component of the Mitigation Plan. This small cove has been approved for dredging to -9 feet MLLW, as authorized by the Corps of Engineers, Permit No. 22215N. Due to the revisions in the project, the City feels this dredging is no longer needed for the navigational functioning of the facility. A component of this plan therefore proposes to relinquish authorization to dredge this section of the project area, and instead create an eel grass habitat.

Efforts at transplanting eel grass on the Pacific Coast have been successful in the Pacific Northwest and in southern California, but limited success has occurred in Humboldt Bay.

Previous efforts in Humboldt Bay were at a variety of sites on the east side of the Bay and on Indian Island. These sites were chosen based on proximity to existing eel grass beds and on apparent site conditions. While the transplanting efforts initially appeared successful, it is believed they eventually failed due to a combination of wave action and currents (Newton, 1988; Warner, Department of Fish and Game.)

Eel grass growth is highly dependent upon environmental conditions. The following conditions, taken from Phillips (1984), are recommended to ensure a high potential for success of eel grass transplantation:

1. temperature range of 10-20degrees C;
2. salinity range of 10-30 ppt (parts per thousand);
3. moderate current velocity, not exceeding 0.6 to 0.8 knots;
4. protection from direct and/or regular wave shock;
5. consolidated mud/substrate;
6. sufficient light penetration during winter months;
7. protection from desiccation.

This site was chosen to create an eel grass meadow based on the fact there is an extensive eel grass meadow at the tip of the existing rock and dirt groin, and a narrow band of eel grass has colonized within this small cove due to in-filling of tidal muds and sediments. It can be deduced, therefore, that conditions 1 through 4 above exist in the general and immediate vicinity. The conditions which need to be created by excavation and back-fill, therefore, must be those which provide appropriate substrate as well as allow for sufficient light penetration and protection from desiccation at low tide.

This is proposed to be accomplished in the following manner:

1. Beneath the proposed dock and floats in this area, dredging will occur to a depth of -13 MLLW, continuing the toe trench proposed for the RSP on the adjacent shoreline.
2. In the proposed eel grass bed, removal of wrack, eroded soils from the banks, debris, cable, chunks of concrete, and the old concrete boat launch ramp will take place, and the area will be excavated to -1 feet MLLW.
3. An underwater retaining wall will be installed under the dock and float in this area, continuing the 2:1 RSP line proposed to stabilize the shoreline adjacent to the cove. The top of this under water retaining wall will be approximately -1 MLLW.
4. This area will be backfilled with some muds from the excavation of the RSP toe trench, to an elevation of between +1 and -2 feet MLLW, to create elevations beneficial for the establishment of eel grass.



5. This retaining wall will create an intertidal raised bed to accept transplanted clumps of eel grass harvested from the project site prior to dredging operations, or harvested from another area. Transplanting in clumps and retaining established mud and root wads is proposed instead of the traditional method of planting eel grass plugs, to test the theory that the transplanting of established clumps will yield a greater success rate for eel grass in Humboldt Bay. And the use of the raised bed will reduce the chances of this area sloughing off into the dredged area or in-filling as a result of tidal action.

This creative effort is proposed to test the transplanting theory, and in the hope of gaining knowledge for future anticipated mitigation efforts to offset development impacts in other areas of Humboldt Bay.

Recognizing that past local efforts have not met with great success, all planting will be undertaken from an experimental perspective. It is proposed to harvest eel grass clumps from the project site ahead of dredging efforts, and nursery these until transplanting can occur. Alternatively, harvesting from approved meadows of dense eel grass growth off the tip of groin at the project site or from other parts of the North Bay can occur with direct consultation from the biologists at the Eureka office of the Department of Fish and Game.

Collection and transplanting should be undertaken during the spring months. All work should be completed by mid-June to allow for sufficient vegetative growth prior to next winter.

## VI. MONITORING PROGRAM

A monitoring procedure shall be implemented to document the success of the mitigation program. At each field visit, notes shall be made of apparent hydrologic conditions, overall site conditions, and any factors which may contribute to or deter from the potential success of the mitigation program. A monitoring report/letter will be prepared following each site visit which will detail the results of the field review as well as address specific permit requirements. Recommendations will be made as necessary for changes that may be warranted to enhance the potential for success of the mitigation.

## VII. SUCCESS STANDARDS

### A. Habitat areas

Standards for success for mitigation will be based on creation of a habitat similar to that impacted. The final area of each kind of habitat established at the mitigation site shall not vary by more than 10% from the amount of such habitat proposed to be established, except that the eel grass habitat may vary by up to 50%. Following are the proposed success standards based in existing conditions:

- establishment of 21,600 square feet of intertidal mudflat, supporting benthic and epibenthic biota similar in composition to adjacent undisturbed areas; the epibenthic biota may be measured by direct quantitative methods while benthic biota may be measured indirectly by censusing bird use and comparing with use on adjacent mudflats.
- creation of 7,900 square feet of eel grass, with an average overall density of 5.2 turions/0.1 square meter; plants shall be healthy and well established.

#### B. Reproductive success

The eel grass established at the proposed site should have demonstrated reproduction at least once in three years.

#### C. Food Chain Support

The food chain support provided to birds shall be similar to that provided by similar habitats within the immediate project area.

#### D. Exotics

The important functions of the intertidal habitat shall not be impaired by exotic species. The exotics will be recorded and then removed from each of the created habitats during the routine monitoring events.

#### E. Topography

The intertidal habitat created shall not undergo major topographic degradation (such as excessive erosion or sedimentation). Several elevation monitoring pins will be set within the created intertidal and adjacent intertidal habitat area and referenced to project monumented bench marks. Substrate elevations will be measured relative to the pins throughout the created habitat and adjacent areas. Topographic change shall be recorded and evaluated to track erosion or sedimentary trends. The relative success and growth of the eel grass habitat shall be the goal of the effort, and should not be extended, or determined to be suspect due to a possible interpretation of the

term "excessive" in regard to erosion or sedimentation. Success of the eel grass experiment will be related to many factors. Erosion, or sedimentation rates will be evaluated along with all other aspects of the eel grass monitoring in determining the long-term success of the effort.

#### F. Water Quality

Water quality variables, specifically temperature, salinity, dissolved oxygen, suspended solids, and turbidity, shall be similar to those exhibited in similar habitats as in the immediate project area.

### VIII. MONITORING AND REPORTING SCHEDULE

#### A. Construction and Planting Monitoring

Each phase of the mitigation procedure will be administered by City staff in conjunction with representatives of the Department of Fish and Game, and/or by a qualified biologist familiar with construction and planting techniques. The staff responsible for overseeing the activities undertaken to create and restore habitats and associated values, will not be responsible for general construction management or inspection as routinely undertaken by registered civil engineers and/or persons certified by the International Conference of Building Officials (ICBO).

An initial monitoring report will be prepared following completion of each phase of the mitigation program. These reports will be submitted to the City of Eureka Environmental Programs Division of the Community Services Department, which will then forward them to the appropriate authorizing agencies. The initial reports will be completed and submitted within thirty (30) days of the completion of each phase in order to demonstrate progress with the mitigation program as well as compliance with permit requirements.

An initial monitoring report will be prepared following the completion of each of the following activities. Critical planting periods are noted where appropriate. The timing of the remaining activities shall be determined by the contractor, with the schedule submitted to the City of Eureka and the Coastal Commission for their information and approval.

1. creation of intertidal mudflat to include methods, equipment, and personnel employed and the disposition of waste material;
2. removal of old shoreline to include timing with regard to the tidal cycle as well as the methods, equipment and personnel used;

3. planting of eel grass to include equipment and personnel employed, source of material, method of gathering and transport, and methods of planting and planting elevation; planting of eel grass should occur in May or early June.

#### B. Subsequent Monitoring

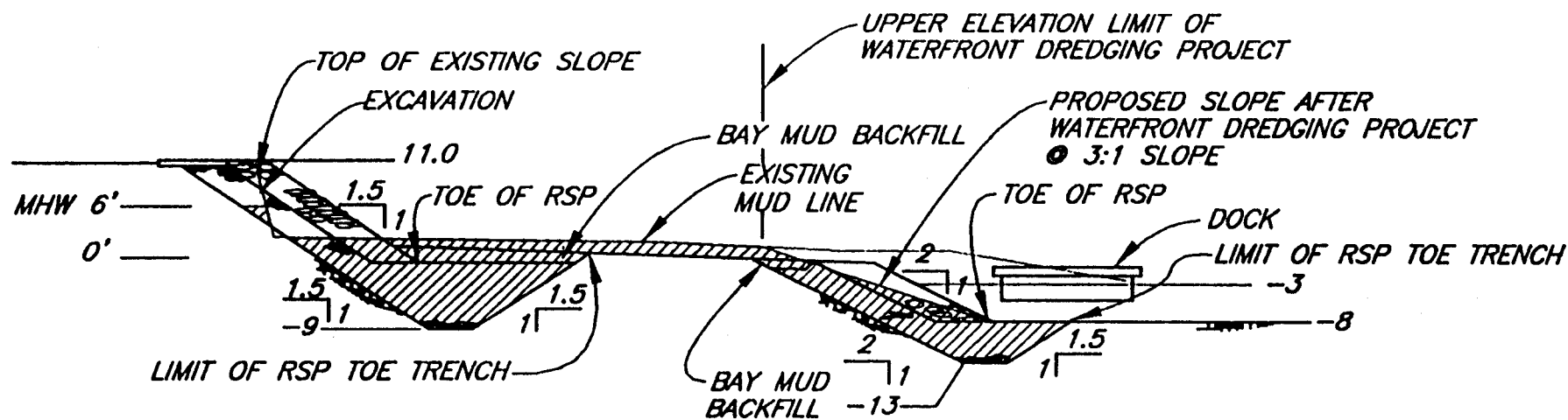
Each phase of the mitigation program shall be monitored once per year for five years following the completion. Year one shall begin the growing year following completion of the habitat construction and planting as applicable. All planted areas will be investigated during the peak of the growing season. An annual, comprehensive biological report will be prepared following completion of all monitoring activities, and will be submitted to all permitting agencies by November 1 of the monitoring year. The annual report shall address each of the habitats created as part of the mitigation, and shall include, at a minimum, the following information:

- results of quantitative measurements of growth and density;
- comparison of results with prior years(s)' results;
- apparent progress toward achieving the target success standards for each habitat;
- observations of the health and vigor of the individual species and the area in general;
- discussion of invasion by exotic species; and
- a proposal, if warranted, for remedial action for areas showing die-off or insufficient rate of growth.





#### VIII. REMEDIAL ACTION

If monitoring data indicate that the success standards in one or more areas for the intertidal mudflat mitigation may not be achieved within the five year time period, the City of Eureka and biological consultants shall consult with local representatives of the Department of Fish and Game. The data will be evaluated and the site examined to determine of modifications can be made to achieve success. If it is determined that habitat modifications will not likely result in the attainment of mitigation goals, alternative site(s) will be investigated and chosen within the Humboldt Bay area for habitat creation. Details of the mitigation strategy on the alternate sites(s) shall be developed in consultation with agency staff and implemented in a timely manner.

The permittee shall be fully responsible for any failure to meet the success standards of the revised mitigation and monitoring plan. Upon a determination by the Executive Director of the Coastal Commission, after review of the required monitoring reports, that the standards have not been achieved, the permittee shall submit a corrective action plan prepared by a qualified biologist, for the review and approval of the Executive Director. The corrective action plan shall prescribe remedial measures that can reasonably be expected to achieve the success standards of the permit. The corrective action plan shall also prescribe a new monitoring report and remedial program to ensure the success of the remediation measures in achieving the success standards. Upon approval of the corrective action plan, the permittee shall apply to the Coastal Commission for any necessary amendment to this permit for the corrective actions and shall immediately implement the plan after the necessary approvals have been obtained. If the permittee does not agree that remediation is necessary or objects to any conditions imposed by the Executive Director for approval of the corrective action plan, the matter may be set for hearing and disposition by the Coastal Commission.

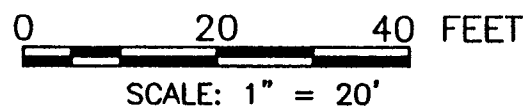


**EXPLANATION**

-  PROJECT DREDGING
-  ZONE OF EEL GRASS HABITAT
- FILL:
-  QUARRY RUN ROCK
-  ARMOR ROCK

**SECTION A**  
**EEL GRASS HABITAT**

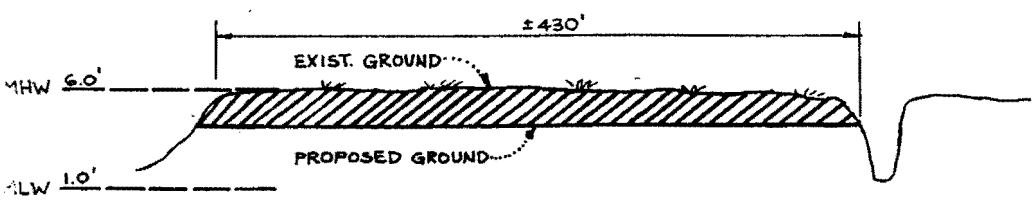
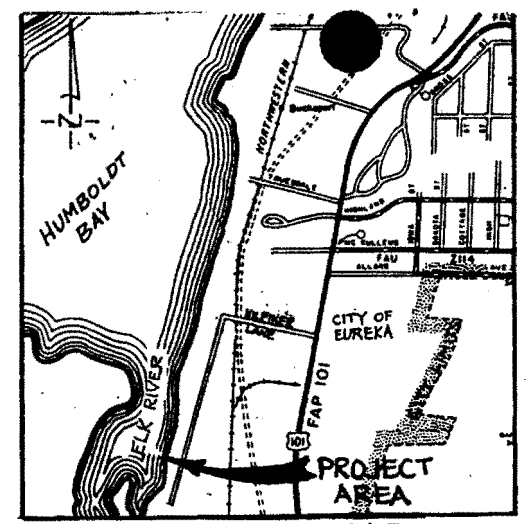
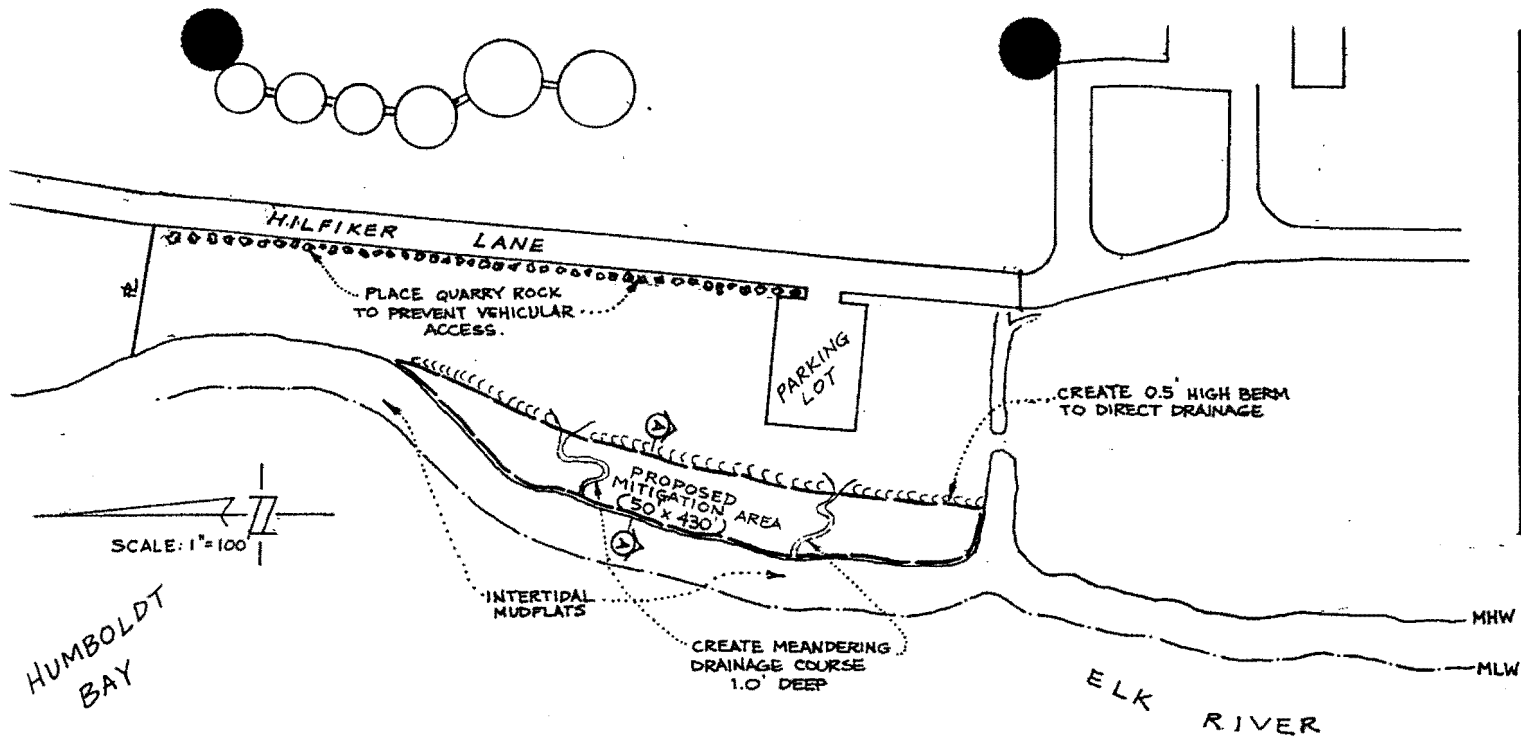
PURPOSE: EUREKA SMALL BOAT BASIN REHABILITATION  
 DATUM: MLLW  
 ADJACENT PROPERTY OWNERS:  
 1. CITY OF EUREKA  
 2. SOUTHERN PACIFIC TRANS. CO.  
 3. NORTH COAST RAILROAD



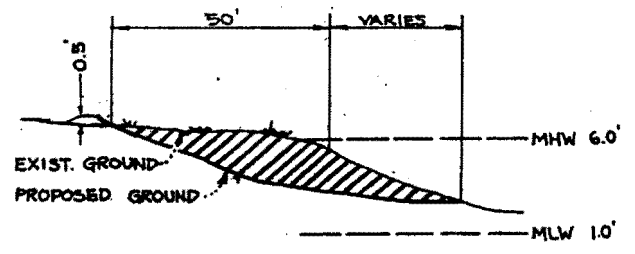
CITY OF EUREKA  
 531 K STREET  
 EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
 AT: EUREKA SMALL BOAT BASIN  
 COUNTY OF: HUMBOLDT  
 STATE: CALIFORNIA  
 APPLICATION BY: CITY OF EUREKA

SHEET: 4 DATE: AUGUST 1997



**PROFILE**  
NO SCALE



**SECTION "A-A"**  
NO SCALE



PURPOSE: MITIGATION FOR SMALL BOAT BASIN REHABILITATION

DATUM: MLLW

ADJACENT PROPERTY OWNERS:

1. CITY OF EUREKA

CITY OF EUREKA  
521 K STREET  
EUREKA, CALIFORNIA

IN: HUMBOLDT BAY  
AT: HILFIKER LANE AT THE MOUTH OF ELK RIVER  
COUNTY OF: HUMBOLDT  
STATE: CALIFORNIA  
APPLICATION BY: CITY OF EUREKA

SHEET 1 DATE: APRIL 1998

