CALIFORNIA COASTAL COMMISSION

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W9b

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Hearing Date: June 11-13, 2003
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NUMBER: 5-01-062

Application	Applicant(s)	Project Location: Humboldt Island, Huntington Beach, Orange County	Tract #	Lot#
5-01-062	Wee, Henry and Sook	16591 Ensign Circle	5481	173

AGENT: Tetra Tech, Inc.: Fernando Pagés and Sarah McFadden

PROJECT DESCRIPTION: Repair and enhancement of existing bulkhead consisting of installation of a vinyl sheet pile section totaling 74 linear feet to be placed 1 foot 3 inches seaward of footing of the existing bulkhead and filling the voids between the bulkhead and sheet pile, under the bulkhead and around the existing exposed foundation support pilings. In addition, place 58 cubic yards of rock slope protection against the toe of the seawall. Mitigation of 80 square feet of impact to soft bottom bay habitat with 160 square feet of tidal mud flat restoration at the Bolsa Chica Ecological Reserve.

SUMMARY OF STAFF RECOMMENDATION:

The major issues of this staff report relate to construction and operation phase impacts of placing bulkhead enhancements in the marine environment. With conditions, the project will have no significant adverse construction phase impacts on water quality or marine habitat. In addition, due to the absence of eelgrass in the project area, there will be no adverse impacts upon sensitive marine habitats, as conditioned. However, the project will have permanent impacts upon soft bottom habitat that will be mitigated.

Staff recommends **APPROVAL** of the proposed development with special conditions which require: 1) compliance with plans submitted by the applicant; 2) conformance with specific construction responsibilities to avoid impacts upon water quality and marine resources; 3) preparation of a pre-construction eelgrass survey to confirm the absence of eelgrass; 4) preparation of a survey to confirm the absence of Caulerpa taxifolia in the project area; 5) the applicant to acknowledge this coastal development permit is not a waiver of public rights on the property; 6) the applicant to provide evidence of an approved coastal development permit for the off site soft bottom mitigation; 7) a requirement that the applicant implement the proposed soft bottom mitigation; 8) a requirement the applicants demonstrate their legal ability to carry out the proposed project and all conditions of approval; and 9) a requirement for the submittal of an anchor management plan.

OTHER APPROVALS RECEIVED: City of Huntington Beach approval-in-concept dated February 26, 2001; Mitigated Negative Declaration No. 00-05 approved by the City of Huntington Beach Zoning Administrator on September 13, 2000; Addendum to Mitigation Negative Declaration No. 00-05 approved by the City of Huntington Beach Zoning Administrator on September 12, 2001.

SUBSTANTIVE FILE DOCUMENTS: See Appendix A

STAFF NOTE:

The proposed project is one of several applications that have been submitted over time by various property owners for approval of bulkhead reinforcements in Huntington Harbour. As of the date of this staff report, the Commission has approved approximately twenty two (22) applications covering one hundred and thirteen (113) properties for bulkhead repairs in Huntington Harbour. These repair projects generally fall within one of four categories: 1) projects with no impact on eelgrass and no permanent impact upon soft bottom habitat; 2) projects with impacts upon eelgrass, but no permanent impact upon soft bottom habitat; 3) projects with no impact on eelgrass, but which do have permanent impacts upon soft bottom habitat; and 4) projects having both impacts upon eelgrass and permanent impacts upon soft bottom habitat. The proposed project would fall within category three (projects with soft bottom impacts but no eelgrass impacts). Wetland mitigation for impacts to soft bottom habitat have already been carried out at the Bolsa Chica Ecological Reserve under a restoration plan approved by Coastal Development Permit 5-01-020.

Also, the City of Huntington Beach local coastal program ("LCP") is effectively certified. However, the proposed project is located seaward of the mean high tide line and thus is within the Coastal Commission's original permit jurisdiction area. Therefore, pursuant to Section 30519 of the Coastal Act, the LCP does not apply to the proposed project. The standard of review for the proposed development are the Chapter 3 policies of the Coastal Act.

I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION OF APPROVAL.

MOTION: I move that the Commission approve Coastal Development Permit No. 5-01-062 pursuant to the staff recommendation.

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either: 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. 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 this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. 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.

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

III. SPECIAL CONDITIONS:

1. **Compliance With Plans Submitted**

The permittee shall undertake development in strict conformance with the proposal and plans as set forth in the application for permit, subject to any special conditions set forth in this coastal development permit approval. Any proposed changes to or deviations from the approved plans shall be reported to the Executive Director. No changes to the approved plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. Construction Responsibilities and Debris Removal

The permittee shall comply with the following construction-related requirements:

(a) No construction materials, debris, waste, oil or liquid chemicals shall be placed or stored where it may be subject to wave erosion and dispersion, stormwater, or where it may contribute to or come into contact with nuisance flow;
(b) Any and all debris resulting from construction activities shall be removed from the site within 10 days of completion of construction;
(c) No machinery or construction materials not essential for project improvements shall be allowed at any time in the intertidal zone or in the harbor;
(d) Sand from the beach or harbor, cobbles, or shoreline rocks shall not be used for construction material;
(e) In order to control turbidity a geotextile fabric shall be installed in the area where the toe stone will be placed prior to placement of the toe stone;
(f) Toe stone shall be placed, not dumped, using means to minimize disturbance to bay sediments and to minimize turbidity;
(g) If turbid conditions are generated during construction a silt curtain shall be utilized to minimize and control turbidity to the maximum extent practicable;
(h) All stock piles and construction materials shall be covered, enclosed on all sides, shall be located as far away as possible from drain inlets and any waterway, and shall not be stored in contact with the soil;
(i) A protective barrier shall be utilized to prevent concrete and other large debris from falling into the harbor;
(j) All debris and trash shall be disposed of in the proper trash and recycling receptacles at the end of each construction day;
(k) The discharge of any hazardous materials into the harbor or any receiving waters shall be prohibited.

3. Pre-Construction Eelgrass Survey

A valid pre-construction eelgrass (Zostera marina) survey shall be completed during the period of active growth of eelgrass (typically March through October). The pre-construction survey shall be completed prior to the beginning of construction and shall be valid until the next period of active growth. The survey shall be prepared in full compliance with the "Southern California Eelgrass Mitigation Policy" Revision 8 (except as modified by this special condition) adopted by the National Marine Fisheries Service and shall be prepared in consultation with the California Department of Fish and Game. The applicant shall submit the eelgrass survey for the review and approval of the Executive Director within five (5) business days of completion of each eelgrass survey and in any event no later than fifteen (15) business days prior to commencement of any development. If the eelgrass survey identifies any eelgrass within the project area which would be impacted by the proposed project, the development shall require an amendment to this permit from the Coastal Commission or a new coastal development permit.

4. Pre-Construction Caulerpa taxifolia Survey

A. Not earlier than 90 days nor later than 30 days prior to commencement or re-commencement of any development authorized under this coastal development permit, the applicant shall undertake a survey of the project area and a buffer area

at least 10 meters beyond the project area to determine the presence of the invasive alga Caulerpa taxifolia. The survey shall include a visual examination of the substrate.

B. The survey protocol shall be prepared in consultation with the Regional Water Quality Control Board, the California Department of Fish and Game, and the National Marine Fisheries Service.

C. Within five (5) business days of completion of the survey, the applicant shall submit the survey:

1. for the review and approval of the Executive Director; and

2. to the Surveillance Subcommittee to the Southern California Caulerpa Action Team (SCCAT). The SCCAT Surveillance Subcommittee may be contacted through William Paznokas, California Department of Fish & Game (858/467-4218) or Robert Hoffman, National Marine Fisheries Service (562/980-4043).

D. If Caulerpa taxifolia is found within the project or buffer areas, the applicant shall not proceed with the project until 1) the applicant provides evidence to the Executive Director that all C. taxifolia discovered within the project and buffer area has been eliminated in a manner that complies with all applicable governmental approval requirements, including but not limited to those of the California Coastal Act, or 2) the applicant has revised the project to avoid any contact with C. taxifolia. No revisions to the project shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

5. Public Rights

The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that exist or may exist on the property. The permittee shall not use this permit as evidence of a waiver of any public rights that may exist on the property.

6. Coastal Development Permit – Soft Bottom Habitat Mitigation

This coastal development permit does not serve as a coastal development permit approval for the implementation of the proposed soft bottom habitat mitigation contained within Soft Bottom Mitigation Plan, Humboldt Island and Trinidad Island Bulkhead Repair Project, Huntington Beach, California dated April 2000 prepared by Tetra Tech, Inc. of Pasadena, California. The mitigation shall commence prior to or concurrent with the proposed bulkhead repair and enhancement. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit written evidence, subject to review and approval of the Executive Director, that: 1) Coastal Development Permit 5-01-020 has been issued and is valid for the implementation of the soft bottom habitat mitigation plan required by Special Condition 7 below; and 2) as required in Special Condition 7 below, the applicant demonstrates participation in the implementation of the mitigation project to be constructed under Coastal Development Permit 5-01-020.

7. Compliance with Soft Bottom Habitat Mitigation Plan

The applicant shall implement and comply with the recommendations and mitigation contained within *Soft Bottom Mitigation Plan, Humboldt Island and Trinidad Island Bulkhead Repair Project, Huntington Beach, California* dated April 2000 prepared by Tetra Tech, Inc. of Pasadena, California as they pertain to the development that is the subject of this coastal development permit. The proposed soft bottom mitigation shall be implemented prior to or concurrent with the proposed bulkhead repair and enhancement. Any changes to the approved mitigation plan, including but not limited to changes to the monitoring program to ensure success of the mitigation site, shall require an amendment to this permit from the Coastal Commission or written concurrence from the Executive Director that the changes do not require a permit amendment.

8. Legal Interest

PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, written documentation demonstrating that it has the legal ability to carry out the proposed project and all conditions of approval of this permit.

9. Anchor Management Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit, for the review and approval of the Executive Director, a plan for the avoidance of adverse impacts upon eelgrass due to the placement of anchors utilized by barges in construction of the proposed project. The plan shall be prepared by a qualified professional and shall include the following:

1. The plan shall demonstrate that the use of anchors by barges utilized in the proposed project will avoid impacts upon eelgrass beds.

2. The plan shall include, at a minimum, the following components: a map showing the proposed location of barges and anchors with respect to existing eelgrass beds.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

IV. FINDINGS AND DECLARATIONS:

The Commission hereby finds and declares:

A. Project Description and Location

The proposed project is located on Humboldt Island in Huntington Harbour, City of Huntington Beach, Orange County (Exhibit 1 and 2). Humboldt Island is an artificial island surrounded by a cast in place, concrete seawall/bulkhead constructed in the 1960's. The island is developed primarily with single family residences. The proposed project includes one bulkheaded property which is contiguous with adjacent bulkheaded properties, all of which are located seaward of the first public road.

The subject application requests permanent authorization for the emergency repair and reinforcement of an existing bulkhead carried out under Emergency Coastal Development Permit 5-00-499-G. The repair and reinforcement consisted of temporary shoring, installation of two steel H-piles driven immediately adjacent to the existing footing of the existing bulkhead and a support bracket and steel beam installed beneath the footing to support the vertical loads previously borne by timber piles that had rotted and failed. The portions of the existing timber piles that had failed or that were near failure were removed and replaced with hydraulic jacks. In addition, a plastic vinyl sheet pile was installed 1 foot 3 inches seaward of the face of the footing of the existing bulkhead. The steel H-piles and support beam are between the existing footing and the new sheetpile. The voids between the bulkhead and sheet pile, under the bulkhead, around the existing bulkhead foundation support pilings and replacement hydraulic jacks, and around the new steel piles and support beams were filled with concrete and grouting.

The subject application also requests installation of rock slope protection (a.k.a. toe stone) that would be placed at a 2(h) to 1(v) slope seaward of the existing bulkhead. The rock slope protection has not yet been installed. A layer of geotextile fabric will be placed beneath the proposed toe stone to prevent the toe stone from sinking into the bay mud (Exhibit 3). The applicant also proposes to mitigate for impacts upon soft bottom bay habitat by participating in the restoration of a tidal mud flat at the Bolsa Chica Ecological Reserve (Exhibit 10).

The following table details the length of bulkhead involved, the length of vinyl sheet pile installed, the quantity of toe stone to be placed, the width of the proposed toe stone from the existing bulkhead and the quantity of soft bottom habitat impacted and mitigated:

Site Address	Tract #	Lot #	Bulkhead Length (ft)	Max. Sheet Pile Length (ft)	Max. Sheet Pile Footprint (ft^2)	Qty. Toe Stone (CY)	Width of Toe Stone (ft)	Temp. Toe Stone Impact (ft^2)	Eelgrass Impacted (ft^2)	Eelgrass Mitigated (ft^2)	Softbottom Impacted (ft^2)	Softbottom Mitigated (ft^2)
16591 Ensign Circl	5481	173	144	74	80	58	6	864	0	0	80	160
Total (this report)			144	74	80	58		864	0	0	80.0	160
Total of all applications to date						3555		56,675	2488.7	2986.4	1730	3460

In total, the proposed project will involve 144 linear feet of bulkhead. Seventy four (74) linear feet of vinyl sheet pile have been installed under the emergency permit and would remain in place resulting in permanent impacts to 80 square feet of soft bottom habitat. In addition, a total of 58 cubic yards of rock slope protection will be placed against the toe of the seawall resulting in 864 square feet of temporary soft bottom impacts. A total of 5,358 square feet of soft bottom mitigation has occurred at the Bolsa Chica Ecological Reserve (Exhibit 10) under Coastal Development Permit 5-01-020 of which 160 square feet is proposed to be credited as mitigation for impacts caused by this project. No eelgrass is proposed to be impacted.

As noted above, the plastic vinyl sheet pile and concrete/grout backfill between the sheet pile and bulkhead will permanently impact 80 square feet of soft bay bottom habitat in the project area. The applicant is proposing to mitigate the loss of the soft bottom habitat by participating in the restoration of a tidal mud flat near the intersection of Pacific Coast Highway and Warner Avenue in the Bolsa Chica Ecological Reserve (Exhibit 10). The habitat restoration has been carried out concurrent with the soft bottom habitat mitigation necessary under the other associated Humboldt Island bulkhead reinforcement projects. A separate coastal development permit [5-01-020] has been processed for the soft bottom habitat mitigation project which encompasses all of the soft bottom mitigation necessary for the coastal development permits for bulkhead reinforcements on Humboldt Island [5-98-179, 5-98-201, 5-98-443, 5-98-444, 5-99-031, 5-99-032, 5-99-108, 5-99-473, 5-01-358; 5-01-062 (this application)] and for those at Trinidad Island [5-00-389, 5-00-390 and 5-01-359] which have been processed by the Commission to date. Additional mitigation area is available at the Bolsa Chica mitigation site for future bulkhead repair projects which may have wetland impacts and which may require wetland mitigation.

The proposed bulkhead repair and enhancement is necessary to protect the existing bulkhead and the residential structures landward of the bulkhead. The existing bulkhead is a reinforced concrete cast in place structure supported on vertical and battered (i.e. angled) timber piles built in the 1960's. In December 2000, several timber piles supporting the bulkhead failed, subsequently causing about 74 linear feet of the 144 foot long bulkhead to partially collapse into the bay. Temporary shoring was installed to prevent additional movement of the bulkhead. The new steel H-piles, support brackets, support beam, hydraulic piling jacks, sheetpiling, and concrete grouting described above were installed and the temporary shoring was removed.

It was not necessary to install the toe stone described above in order to address the emergency situation. However, the applicant has stated that the existing bulkhead system was originally designed with toe stone placed seaward of the footing at a slope of 3(h) to 1(V). Due to the size and weight of the formerly present toe stone, the protective stones have either sunk into the bay mud or migrated away from the bulkhead. In absence of the toe stone, the unconsolidated fine silty and sandy sediments have easily eroded due to tidal currents, propeller wash from recreational boats, maintenance dredging, and the activity of burrowing fish (e.g. the specklefin midshipman). This erosion undermined the bulkhead footing, exposed the existing untreated timber piles which provided the primary vertical and lateral support for the existing bulkhead. Marine boring organisms damaged the exposed piles leading to destabilization of the existing bulkhead.

The proposed slope protection toe stone will consist of 8-inch diameter or smaller quarry waste with a mixture of particles ranging from sand to stones less than 8 inches in diameter. The coastal engineer has stated that this type of toe stone will not migrate or accrete to other areas under the hydrodynamic conditions at the subject site (see Appendix A for reference to engineering study).

Therefore, the proposed solution will not replicate the problems associated with the previous protective toe stone structure.

B. Shoreline Protective Devices

Section 30235 of the Coastal Act states:

> *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.*

The proposed development involves structural reinforcements to protect an existing bulkhead necessary to protect existing homes. Humboldt Island is located in Huntington Harbour. At the subject site the slope seaward of the bulkhead has eroded, creating a gap between the footing of the bulkhead and the bottom of the harbor floor. This allowed water to enter behind (i.e. landward of) the bulkhead and undermine the bulkhead foundation. Further, the gap and erosion exposed the bulkhead's supporting timber piles to deterioration from burrowing marine organisms. Damage to the supporting timber piles caused the bulkhead to partially collapse. The work undertaken in the emergency permit addressed the immediate stability issue. However, if protective measures are not implemented at this stage, additional damage to the bulkhead would result, causing failure of the bulkhead and damage to the structures landward of the bulkhead. The proposed development is designed to shore the existing bulkhead, repair the damage, and prevent similar deterioration in the future.

The proposed project involves the fill of coastal waters with a sheet pile, concrete/grout backfill between the sheet pile and the bulkhead, and with toe stone. The purpose of the proposed fill is to protect existing structures, which is not one of the eight allowable uses enumerated under section 30233 of the Coastal Act. However, as stated in the policy above, Section 30235 of the Coastal Act requires the Commission to approve revetments and other similar structures provided that such structures are for the purpose of protecting existing structures and provided that the structures are designed to eliminate or mitigate adverse impacts on local shoreline sand supply. The proposed reinforcements to the existing bulkhead/seawall are the types of structures described in Section 30235 because they are protective devices that minimize shoreline erosion (a natural shoreline process) that is for the purpose of protecting existing structures (the single family residence located landward of the bulkhead). In addition, the proposed project is occurring within an urban harbor at a location isolated from the nearest open coastal shoreline and longshore littoral sand transport mechanisms. The proposed sheet pile and backfill have been designed to minimize the amount of fill of coastal waters. Furthermore, bathymetric conditions were evaluated at the site in order to es.ablish the minimum amount of toe stone necessary to protect the bulkhead and to minimize the amount of soft bay bottom covered which may contribute to shoreline sand supply. Therefore, in this case, by minimizing the area of soft bay bottom covered, the proposed project mitigates adverse impacts on local shoreline sand supply. Accordingly, the proposed project is approvable under section 30235 of the Coastal Act rather than section 30233 of the Coastal Act.

The applicant's coastal engineer indicates that the proposed project is the least environmentally damaging feasible alternative. Section 30108 of the Coastal Act states that "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking

into account economic, environmental, social, and technological factors. Alternatives considered were: 1) no project; 2) soft bottom fill; 3) placement of cement slurry to form a protective concrete shield; 4) placement of course rock; 5) installation of a deepened plastic sheet pile which would extend below the depth of scour, instead of the proposed toe stone, to prevent the formation of voids underneath the bulkhead; 6) landward placement of a sheet pile; 7) replacement of the bulkhead in the same location; and 8) minimizing the amount of toe stone placed in front of the bulkhead.

According to the applicant, the no project alternative would not be the least environmentally damaging feasible alternative because without the project the bulkhead at the subject site would loose structural integrity, causing the bulkhead to completely fail. If the bulkhead were allowed to fail, it would have collapsed into the harbor. Debris from the collapsed bulkhead would likely fall upon sensitive marine habitat resulting in impacts upon that habitat. In addition, sediment released from behind the collapsed bulkhead would enter the water column causing turbidity and potentially smothering eelgrass beds which exist in the project area. Furthermore, debris from the collapsed bulkhead would result in the fill of coastal waters, covering soft bottom habitat. The proposed project would have less impact than the no project alternative because impacts upon nearby eelgrass would be avoided and any permanent impacts upon soft bottom habitat will be controlled and mitigated under the proposed project while such impacts from the no project alternative would be uncontrolled and much more extensive.

The second alternative is to use soft bottom fill to fill in the gap forming at the base of the bulkhead/seawall. Such soft bottom fill could come from dredging projects undertaken in the harbor, similar to the routine dredging projects in Newport Bay which dispose of suitable dredge material in front of the bulkheads in Newport Bay to protect those bulkheads. In Newport Bay, the bulkheads are designed without the timber pile foundation used in Huntington Harbor which must be protected using toe stone. Unlike in Huntington Harbour, the bulkhead/seawalls in Newport Bay are not reliant upon a protective swath of toe stone. Therefore, the use of soft bottom fill in Newport Bay provides adequate protection to the bulkhead. Meanwhile, the threat of damage to the bulkhead/seawall system in Huntington Harbour due to erosion and undermining is much greater at the project sites than in Newport Bay due to the differences in the design of the bulkhead systems in each harbor. The bulkheads in Huntington Harbour were designed with timber piles which provide the foundation for the concrete bulkhead/seawall. A protective swath of toe stone at the base of the bulkhead/seawall was part of the design. The protective toe stone is necessary to ensure that soil does not further erode and further expose the timber pilings to marine boring organisms. The applicant has stated that the soft bottom fill alternative is not a feasible solution in Huntington Harbour because it would replicate the existing condition. Once placed against the footing, erosive forces would rapidly erode the unconsolidated fine silty and sandy sediments in the same fashion that the existing sediment has eroded. In addition, if soft bottom fill were used to protect the subject sites, re-nourishment of the soft bottom fill would need to occur frequently. This frequent re-nourishment would cause frequent disturbance to marine habitat and any eelgrass which may exist in the vicinity of the project site. Whereas, the use of toe stone is anticipated to provide protection for several decades, thus reducing the frequency of disturbance to the site. Therefore, the proposed solution is less environmentally damaging than the second alternative. Furthermore, the placement of soft bottom fill only would not provide the shoring that is necessary to stabilize the existing bulkhead, thereby leading to the negative impacts associated with the no project alternative, as discussed above.

The third alternative, placement of cement slurry for slope protection, would not be less environmentally damaging than the proposed solution. It is anticipated that the proposed toe stone

will provide a suitable substrate for colonization by marine organisms. In addition, over time it is anticipated by the applicant that sediment will settle upon the proposed toe stone. Provided that there is adequate sunlight, it is also anticipated by the applicant that conditions may allow colonization of the toe stone by eelgrass. However, the use of a cement slurry for slope protection would not provide a suitable substrate for colonization by marine organisms. Therefore, the proposed solution is less environmentally damaging than the third alternative. Furthermore, the placement of cement slurry only would not provide the shoring that is necessary to stabilize the existing bulkhead, thus leading to the negative impacts associated with the no project alternative, as discussed above.

The fourth alternative, placement of course rock only, would also have greater environmental impact than the proposed solution. The placement of course rock, instead of the proposed mixture of 8-inch diameter or smaller quarry waste, would replicate the problems associated with the previous protective structure. Due to the presence of unconsolidated fine silty bay mud and existing hydrodynamic conditions, course rock would tend to sink into the bay mud or migrate from the slope targeted for protection. Accordingly, the course rock would need to be replaced over time, with the attendant construction related impacts upon the marine environment. Therefore, the proposed solution is less environmentally damaging than the fourth alternative. Furthermore, the placement of course rock only would not provide the shoring that is necessary to stabilize the existing bulkhead, thus leading to the negative impacts associated with the no project alternative, as discussed above.

The fifth alternative, placement of a deepened sheet pile in place of the proposed shallower sheet piles and toe stone, is not feasible for several reasons. First, deepened sheet piles would intersect the existing battered (i.e. angled) timber piles which angle seaward under the bulkhead below the harbor floor, cutting into those support piles (see Exhibit 9 for view of existing bulkhead and timber pile configuration). To avoid this, the deepened sheet pile would have to be located substantially seaward in order to avoid intersecting the battered timber piles. The proposed shallower vinyl sheet pile minimizes the seaward encroachment of the structure to 1 foot 3 inches seaward of the footing of the existing bulkhead. This distance is the minimum necessary to clear the footing and to provide structural mass to shore the existing bulkhead. Second, vinyl sheet piles are not long enough to extend deep enough into the harbor bottom. Steel sheet piles, which are long enough, would be subject to corrosion. Therefore, the fifth alternative is not a feasible solution to the present problem nor is it the least environmentally damaging alternative.

The sixth alternative would involve the installation of a sheet pile landward of the face of the existing bulkhead and then removing the portion of the existing bulkhead seaward of the newly installed sheet pile. The applicant has stated that this alternative is not technically feasible because the foundation slab for the existing bulkhead extends at least 10 feet landward of the face of the existing bulkhead to a point underneath existing patios and houses which are built upon the lot. If a sheet pile were installed landward of the existing bulkhead the sheet pile would need to penetrate through the foundation slab of the existing bulkhead. First, a plastic or steel sheet pile is not strong enough to penetrate the concrete foundation slab of the bulkhead. In addition, even if a strong material could be found to penetrate the concrete foundation slab, the portion of the existing bulkhead seaward of the newly installed sheet pile would loose structural integrity and collapse into the harbor. Any methods used to temporarily stabilize the bulkhead seaward of the sheet pile would require the placement of structures in the water, resulting in impacts similar or greater than the proposed project. Therefore, the sixth alternative is neither technically feasible or the least environmentally damaging feasible alternative.

Similar to the sixth alternative, the seventh alternative -replacement of the existing bulkhead in the same location- would require extensive shoring both in the water and on land to prevent the damage and/or collapse of the residential structure located immediately landward of the bulkhead. The in-water shoring mechanisms would disturb soft bottom habitat and impact eelgrass beds, similar to or greater than the proposed project. In addition, the wholesale replacement of the bulkhead would involve a much larger scale construction project. Demolition of the existing bulkhead would pose a significant risk of upset to adjacent properties. In addition, with such a large scale project, there would be a significant risk of release of demolition and construction debris to the aquatic environment with associated impacts. Therefore, the seventh alternative is not the least environmentally damaging feasible alternative.

The eighth alternative, which is the proposed project, is to minimize the impact of the proposed design by minimizing the seaward encroachment of the bulkhead and by minimizing the amount of toe stone placed in front of the bulkhead. Minimizing the seaward encroachment of the bulkhead and the width of the toe stone from the bulkhead also minimizes permanent impacts upon soft bottom habitat and eelgrass in the project vicinity. In addition, the applicant is proposing to mitigate for the loss of soft bottom habitat. Therefore, the proposed project is the least environmentally damaging feasible alternative.

The proposed bulkhead repair and reinforcement is necessary to protect an existing bulkhead and single family residences. In addition, the proposed development mitigates adverse impacts upon shoreline sand supply and is the least environmentally damaging feasible alternative. Therefore, the Commission finds that the proposed project is consistent with Section 30235 of the Coastal Act.

C. Marine Habitat

Section 30230 of the Coastal Act requires that marine resources shall be maintained, enhanced, and where feasible, restored. Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30230 of the Coastal Act requires that marine resources be protected and that the use of the marine environment be carried out in a manner that will sustain the biological productivity of coastal waters. The proposed deposition of material above and below the mean high tide line may impact marine resources. Therefore, mitigation measures are necessary to protect the biological productivity of coastal waters.

1. Soft Bottom Habitat

The proposed development is occurring in the waters of Huntington Harbour. Except at extreme low tides, the development area would be underwater. The proposed placement of toe stone will result in the coverage of approximately 864 square feet of unvegetated soft bottom habitat. These soft bottom areas contain infaunal clam beds consisting of wavy chione, California chione, and common littlenecks. The applicant estimates that while the toe stone will bury the existing soft

bottom habitat and clam beds, the toe stone will be re-colonized by marine organisms within three to five years.

The California Department of Fish and Game (CDFG) has reviewed the kind of bulkhead repair proposed at the subject site. In their memorandum to Commission staff dated July 6, 1999 regarding a similar project at Humboldt Island, CDFG stated that the proposed impact upon unvegetated soft bottom habitat will be short term and will not be significant (see Exhibit 5). Another letter from CDFG dated August 31, 2000, states that the habitat mitigation proposed would be adequate to address the kinds of impacts occurring under the proposed project. Mitigation for impacts upon any vegetated soft bottom habitat are discussed below. Further, the subject site is not designated in the certified local coastal program as an environmentally sensitive habitat area.

In addition to the temporary impact upon soft bottom caused by placing the toe stone, the proposed project will have permanent impacts upon soft bottom habitat resulting from the installation of the vinyl sheet pile and backfilling the gap between the sheet pile and bulkhead with concrete and grout. The applicant is proposing to mitigate for the permanent loss of this soft bottom habitat. The proposed mitigation plan is contained within the document submitted with the application titled *Soft Bottom Mitigation Plan, Humboldt Island and Trinidad Island Bulkhead Repair Project, Huntington Beach, California* dated April 2000 prepared by Tetra Tech, Inc. of Pasadena, California. As it pertains to the development that is the subject of this staff report, the proposed project will permanently fill 80 square feet of soft bay bottom. The applicants are proposing to mitigate this impact with 160 square feet of tidal wetlands that have been restored in the Bolsa Chica Ecological Reserve at a location near the intersection of Warner Avenue and Pacific Coast Highway in Huntington Beach (Exhibit 10). This mitigation site is approximately 1 mile southwest of the proposed impact area at Humboldt Island. The proposed ratio of mitigation is 2:1 mitigation to impact.

On-site wetland restoration is not feasible because the impact area is a bulkheaded harbor area where there are no opportunities to create new wetlands or restore former wetlands. Meanwhile, the proposed restoration site, located approximately one mile away, is within the Bolsa Chica Ecological Reserve which is an open space area managed as a passive recreation and wildlife habitat area. The impact site and restoration site are hydraulically connected to one another via Huntington Harbour and the Bolsa Chica wetlands complex. Therefore, the impact site and restoration site are geographically close and are part of the same ecological system. The Bolsa Chica Ecological Reserve area contains wetlands and historic wetland habitat that has been impacted over time by human development. Restoration of the wetlands within this area would increase the function and value of the habitat within the reserve.

As noted above, the habitat to be impacted at the subject site consists of soft bottom containing infaunal clam beds consisting of wavy chione, California chione, and common littlenecks. These species are common to soft bottom habitat throughout the harbor. No sensitive wildlife species are known to occur within this habitat at the site. Meanwhile, the proposed restoration would restore wetland habitat in an area known to be high in plant and animal species diversity, including rare and endangered species. Therefore, the restoration of habitat at Bolsa Chica Ecological Reserve would be beneficial to a wide variety of wildlife. Any restored wetland habitat in a bulkheaded harbor area similar to the impact area would not be expected to attract the diversity and abundance of wildlife that the proposed restoration site would. The applicant anticipates a high probability of successful restoration at the Bolsa Chica site because the project would restore former and degraded wetland areas. Commission staff have reviewed the restoration plan and agree with the applicant's expectation of success. Accordingly, the Commission is requiring a

mitigation to impact ratio of 2:1 for the proposed impacts. This mitigation ratio is similar to that required by CDPs 5-98-179, 5-98-201, 5-98-443, 5-98-444, 5-99-031, 5-99-032, 5-99-108, 5-99-473, 5-00-389, 5-00-390, 5-01-358 and 5-01-359. A higher mitigation ratio, such as 4:1, has not been required due to the anticipated success of the restoration and the high habitat value that the restored wetland area will have compared with the impact area.

The proposed mitigation will occur in conjunction with other soft bottom mitigation required due to wetlands impacts caused by bulkhead reinforcement projects elsewhere on Trinidad Island [5-00-389, 5-00-390 and 5-01-359] and Humboldt Island [5-98-179, 5-98-201, 5-98-443, 5-98-444, 5-99-031, 5-99-032, 5-99-108, 5-99-473, 5-01-358, 5-01-062 (this application)] which have been approved or are pending approval by the Commission. In total, 1,363.6 square feet of soft bottom habitat will be impacted by the bulkhead reinforcement projects on Humboldt Island [5-98-179, 5-98-201, 5-98-443, 5-98-444, 5-99-031, 5-99-032, 5-99-108, 5-99-473, 5-01-358, 5-01-062 (this application)] and 366.4 square feet of soft bottom will be impacted on Trinidad Island [5-00-389, 5-00-390 and 5-01-359 (pending)] for a total of 1,730 square feet of impact. In total 3,460 square feet of mitigation will be implemented in the Bolsa Chica Ecological Reserve for the proposed impacts by projects on Trinidad and Humboldt Islands.

The proposed mitigation at the Bolsa Chica Ecological Reserve consisted of removing concrete debris from a former wetland, grading the area to match site elevations of adjacent functioning wetlands, and restoring tidal influence to the graded area to create a tidal wetland by replacing and enlarging culverts that provide a connection to the Bolsa Chica channel. The Commission has approved Coastal Development Permit 5-01-020 for the construction of 5,358 square feet of wetland mitigation. This quantity, 5,358 square feet, exceeds the amount of total mitigation presently required (3,460 square feet) by the coastal development permits noted above. Subject to a coastal development permit, and in accordance with the procedures and the restrictions outlined in CDP 5-01-020, the remainder area will continue to be available as mitigation for future bulkhead reinforcement projects in Huntington Harbour which cause wetland impacts. As approved by CDP 5-01-020, the mitigation must be undertaken prior to or concurrent with the commencement of the bulkhead reinforcement project. The mitigation program includes a 5 year monitoring period, with yearly monitoring and reporting during that period. The proposed soft bottom mitigation has been reviewed and approved by the California Department of Fish and Game (Exhibit 5).

The proposed mitigation is necessary to mitigate permanent losses to soft bottom habitat. Therefore, the Commission imposes Special Condition 7 which requires the applicants to implement the proposed soft bottom mitigation plan. The mitigation must occur prior to or concurrent with commencement of construction of the bulkhead reinforcements. Any deviations from the plan must be reported to the Executive Director and may require an amendment to the coastal development permit.

A valid coastal development permit must be in place for the wetland restoration project so that the restoration can take place prior to or concurrent with commencement of the proposed bulkhead repair and reinforcement. The applicant is proposing to participate in the wetland mitigation project constructed under CDP 5-01-020 (which implements the wetland restoration project described in Special Condition 7). Hence, there is presently a valid coastal development permit [5-01-020] to implement the proposed restoration project. However, there are procedures outlined in the special conditions of CDP 5-01-020 which describe how the applicant must demonstrate participation in the wetland mitigation project. For instance, the applicant must make arrangements with Tetra Tech, Inc. to reserve 160 square feet of the 5,358 square foot mitigation area as mitigation for the impacts to wetlands that will occur under this project. Then Tetra Tech, Inc. must notify the

Executive Director of the Commission that 160 square feet have been so reserved. In order to assure that the applicant undertakes the work in accordance with the requirements of CDP 5-01-020, the Commission imposes Special Condition 6.

2. Eelgrass

Eelgrass (Zostera marina) is an aquatic plant consisting of tough cellulose leaves which grows in dense beds in shallow, subtidal or intertidal unconsolidated sediments. Eelgrass is considered worthy of protection because it functions as important habitat and foraging area for a variety of fish and other wildlife, according to the Southern California Eelgrass Mitigation Policy (SCEMP) adopted by the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG). For instance, eelgrass beds provide areas for fish egg laying, juvenile fish rearing, and water fowl foraging. Sensitive species, such as the California least tern, a federally listed endangered species, utilize eelgrass beds as foraging grounds.

An eelgrass survey titled *Eelgrass & Caulerpa Taxifolia Survey in Huntington Harbour at 16591 Ensign Circle, Huntington Beach, Ca* dated January 2, 2001 prepared by Tetra Tech, Inc. of Pasadena, CA indicates that eelgrass is not present in the project area (Exhibit 4). According to the applicant's analysis, the proposed project will have no direct impacts upon eelgrass.

Although no eelgrass beds have been documented at the project site, the proposed development will occur in an area of Huntington Harbor known to contain eelgrass beds. The proposed toe stone will be placed using a 40 foot by 50 foot barge mounted crane which will retrieve the material for placement from a nearby 40 foot by 60 foot barge upon which the material is staged. Construction activity, including barge anchoring, vessel propeller wash, and propeller contact with the harbor bottom could cause scarring to eelgrass beds. The applicant has stated that the anchors for the barges will be placed to avoid eelgrass. However, no anchor management plan was submitted. Therefore, Special Condition 8 requires the applicant to submit, prior to issuance of the permit, an anchor management plan for the review and approval of the Executive Director, which documents the location where anchors will be placed to avoid eelgrass beds.

Meanwhile, if too little toe stone were installed the needed protection would not be achieved. In this case, the applicant has designed the development with the optimal quantity of toe stone (i.e. enough to provide protection while minimizing the quantity and footprint). The applicant has provided drawings depicting the development with the minimized footprint, resulting in avoidance of eelgrass impacts. If the applicant were not to construct the development in accordance with the plans submitted, additional impacts upon marine resources could occur. Therefore, the Commission imposes Special Condition 1 which requires the applicant to construct the development in accordance with the plans submitted. If any changes to the plans are necessary, Special Condition 1 requires the applicant to report the change to the Executive Director and to obtain an amendment to the coastal development permit or obtain a new coastal development permit, unless the Executive Director determines that no amendment or new permit is required.

According to eelgrass surveys conducted by the applicant, eelgrass was not present at the project site in early 2001 (See Appendix A for references). However, approximately 2.5 years have elapsed since the eelgrass survey was conducted. In addition, pursuant to Standard Condition 2, the coastal permit will be valid for 24 months. Due to the ephemeral nature of eelgrass, the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game recommends that eelgrass surveys be conducted during the active growth phase

of eelgrass (typically March through October in southern California). In addition, the resource agencies state that any eelgrass survey performed is only valid until the beginning of the next growing season (see Exhibit 8, "Southern California Eelgrass Mitigation Policy"). Therefore, based on this criteria, the eelgrass survey provided is outdated and no new eelgrass survey is proposed. If eelgrass is present in the project area which could be impacted, measures to avoid or minimize such impacts must be utilized in order for the project to be consistent with Section 30230 of the Coastal Act. Therefore, the Commission imposes Special Condition 3 which requires that a valid pre-construction eelgrass survey be conducted within the boundaries of the proposed project be undertaken during the period of active growth of eelgrass (typically March through October). The pre-construction survey shall be completed prior to the beginning of construction and shall be valid until the next period of active growth. The pre-construction survey will identify any eelgrass beds which could be impacted and which must be avoided. If the eelgrass survey identifies any eelgrass within the project area which would be impacted by the proposed project, the development shall require an amendment to this permit from the Coastal Commission or a new coastal development permit. An amendment or new permit is required in order to address any eelgrass impacts. The Commission previously imposed similar conditions for pre-construction eelgrass surveys on Coastal Development Permits 5-97-230 and 5-97-230-A1 (City of Newport Beach), 5-97-231 (County of Orange), 5-97-071 (County of Orange), 5-99-244 (County of Orange-Goldrich-Kest-Grau), 5-98-179 (Kompaniez), 5-98-201 (Anderson), 5-98-443 (Whyte), 5-98-444 (Barrad), 5-99-005 (Dea), 5-99-006 (Fernbach & Holland), 5-99-007 (Aranda et al.), 5-99-008 (Yacoel et. al.), 5-99-030 (Johnson), 5-99-031 (Lady Jr., et. al.), 5-99-032 (Appel et. al.), 5-99-108 (Pineda), 5-98-471 (Maginot), 5-99-472 (Bjork), 5-99-473 (Gelbard), 5-00-389 (Ashby et. al.), 5-00-390 (Burggraf et. al.), 5-00-401 (Baghdassarian et. al.), 5-00-402 (Buettner et. al.), 5-01-358 (Rayhanabad), 5-01-359 (Azoulay), and 5-02-095 (Chang et. al.).

3. Caulerpa taxifolia

Also, as noted above, eelgrass is a sensitive aquatic plant species which provides important habitat for marine life. Eelgrass grows in shallow sandy aquatic environments which provide plenty of sunlight. Recently, a non native and invasive aquatic plant species, Caulerpa taxifolia (herein C. taxifolia), has been discovered in parts of Huntington Harbour (Emergency Coastal Development Permits 5-00-403-G and 5-00-463-G) which occupies similar habitat. C. taxifolia is a tropical green marine alga that is popular in the aquarium trade because of its attractive appearance and hardy nature. In 1984, this seaweed was introduced into the northern Mediterranean. From an initial infestation of about 1 square yard it grew to cover about 2 acres by 1989, and by 1997 blanketed about 10,000 acres along the coasts of France and Italy. Genetic studies demonstrated that those populations were from the same clone, possibly originating from a single introduction. This seaweed spreads asexually from fragments and creates a dense monoculture displacing native plant and animal species. In the Mediterranean, it grows on sand, mud and rock surfaces from the very shallow subtidal to about 250 ft depth. Because of toxins in its tissues, C. taxifolia is not eaten by herbivores in areas where it has invaded. The infestation in the Mediterranean has had serious negative economic and social consequences because of impacts to tourism, recreational diving, and commercial fishing[1].

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[1] References

Meinesz, A. (Translated by D. Simberloff) 1999. Killer Algae. University of Chicago Press

Chisholm, J.R.M., M. Marchioretti, and J.M. Jaubert. Effect of low water temperature on metabolism and growth of a subtropical strain of Caulerpa taxifolia (Chlorophyta). Marine Ecology Progress Series 201:189-198

Ceccherelli, G. and F. Cinelli. 1999. The role of vegetative fragmentation in dispersal of the invasive alga Caulerpa taxifolia in the Mediterranean. Marine Ecology Progress Series 182:299-303

Because of the grave risk to native habitats, in 1999 C. taxifolia was designated a prohibited species in the United States under the Federal Noxious Weed Act. In addition, in September 2001 the Governor signed into law AB 1334 which made it illegal in California for any person to sell, possess, import, transport, transfer, release alive in the state, or give away without consideration various Caulerpa species including C. taxifolia.

In June 2000, C. taxifolia was discovered in Aqua Hedionda Lagoon in San Diego County, and in August of that year an infestation was discovered in Huntington Harbor in Orange County. Genetic studies show that this is the same clone as that released in the Mediterranean. Other infestations are likely. Although a tropical species, C. taxifolia has been shown to tolerate water temperatures down to at least 50°F. Although warmer southern California habitats are most vulnerable, until better information if available, it must be assumed that the whole California coast is at risk. All shallow marine habitats could be impacted.

In response to the threat that C. taxifolia poses to California's marine environment, the Southern California Caulerpa Action Team, SCCAT, was established to respond quickly and effectively to the discovery of C. taxifolia infestations in Southern California. The group consists of representatives from several state, federal, local and private entities. The goal of SCCAT is to completely eradicate all C. taxifolia infestations.

If C. taxifolia is present, any project that disturbs the bottom could cause its spread by dispersing viable tissue fragments. The proposed project would place sheet piling and rock in the harbor which would disturb the harbor bottom. In order to assure that the proposed project does not cause the dispersal of C. taxifolia, the Commission imposes Special Condition 4. Special Condition 4 requires the applicant, prior to commencement of development, to survey the project area for the presence of C. taxifolia. If C. taxifolia is found within the project or buffer areas, the applicant shall not proceed with the project until 1) the applicant provides evidence to the Executive Director that all C. taxifolia discovered within the project and buffer area has been eliminated in a manner that complies with all applicable governmental approval requirements, including but not limited to those of the California Coastal Act, or 2) the applicant has revised the project to avoid any contact with C. taxifolia. No revisions to the project shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

Smith C.M. and L.J. Walters. 1999. Fragmentation as a strategy for Caulerpa species: Fates of fragments and implications for management of an invasive weed. Marine Ecology 20:307-319.

Jousson, O., J. Pawlowski, L. Zaninetti, A. Meinesz, and C.F. Boudouresque. 1998. Molecular evidence for the aquarium origin of the green alga Caulerpa taxifolia introduced to the Mediterranean Sea. Marine Ecology Progress Series 172:275-280.

Komatsu, T. A. Meinesz, and D. Buckles. 1997. Temperature and light responses of the alga Caulerpa taxifolia introduced into the Mediterranean Sea. Marine Ecology Progress Series 146:145-153.

Gacia, E. C. Rodriquez-Prieto, O. Delgado, and E. Ballesteros. 1996. Seasonal light and temperature responses of Caulerpa taxifolia from the northwestern Mediterranean. Aquatic Botany 53:215-225.

Belsher, T. and A. Meinesz. 1995. Deep-water dispersal of the tropical alga Caulerpa taxifolia introduced into the Mediterranean. Aquatic Botany 51:163-169.

4. Conclusion

Special Condition 1 requires the applicant to conform with plans submitted, assuring that impacts upon marine resources are known, avoided, minimized and mitigated, as necessary. Special Condition 3 assures that impacts to eelgrass are avoided and, if necessary, mitigated. Special Condition 4 assures that the proposed project will not disperse non-native, invasive Caulerpa taxifolia resulting in displacement of eelgrass habitat. Special Conditions 6 and 7 assure that impacts to soft bottom habitat are mitigated in accordance with a coastal development permit. As conditioned, the Commission finds that the proposed project is consistent with Section 30230 of the Coastal Act.

D. Water Quality

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

The proposed project will involve the placement of toe stone consisting of 8-inch diameter or smaller quarry waste in coastal waters. If such materials are not placed in an appropriate manner, unconsolidated bay sediments may be disturbed causing turbidity in the water column. The applicant has stated that turbidity will be addressed by first installing the proposed geotextile fabric in the area where the toe stone will be placed and by placing, not dumping, the toe stone at the target location. The applicant has additionally stated that a silt curtain will be used in the event that turbid conditions are generated during construction. Since the proposed methods are required to assure compliance with Section 30231 of the Coastal Act, the Commission imposes Special Condition 2.

The proposed development will occur within and adjacent to coastal waters. Construction will require the use of heavy machinery and require the stockpiling of construction materials. In order to protect the marine environment from degradation, Special Condition 2 requires that all construction materials and machinery shall be stored away from the water. In addition, no machinery or construction materials not essential for the project improvements shall be placed in coastal waters. Local sand, cobbles, or shoreline rocks, not presently used in the existing development, shall not be used for backfill or construction material.

The proposed development has been reviewed by the California Regional Water Quality Control Board (RWQCB), Santa Ana Region. The RWQCB has waived waste discharge requirements for the projects (Exhibit 6).

Therefore, as the conditioned, the Commission finds the proposed development is consistent with Section 30231 of the Coastal Act.

E. Public Access

Section 30212 of the Coastal Act states in relevant part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> *(2) adequate access exists nearby, or,*
>
> *(b) For purposes of this section, "new development" does not include:*
>
> *(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.*

The subject site is located on Humboldt Island in Huntington Harbour. Much of Huntington Harbour consists of private communities. However, Humboldt Island is publicly accessible via a bridge from the mainland. On-street parking is the major source of public parking. In addition, the City of Huntington Beach certified LCP shows a public beach flanking Humboldt Drive at the entrance to Humboldt Island.

The proposed development involves structural reinforcements to an existing bulkhead which would result in seaward encroachment of the structure. Therefore, the proposed project is considered new development for the purposes of Coastal Act section 30212. However, the proposed project would be underwater. There is no beach area which provides lateral public access on-site upon which the proposed project would encroach. Further, there is no beach area off-site which provides public access that could be eroded as a result of changes in shoreline processes due to the proposed project.

Therefore, the Commission finds that no public access is necessary with the proposed development and that the proposed project is consistent with section 30212 of the Coastal Act.

F. Legal Ability to Undertake Development

Section 30601.5 of the Coastal Act requires states in part,

> *...prior to the issuance of a coastal development permit, the applicant shall demonstrate the authority to comply with all conditions of approval.*

Certain portions of submerged lands within Huntington Harbour are owned in fee by the State of California ("State") and certain portions are not owned in fee by the State but are subject to the public trust easement. Any construction of protective devices upon submerged lands in Huntington Harbour that are owned in fee interest by the state requires a Protective Works Lease (PWL) from the California State Lands Commission (CSLC). In this case, the State does not have fee ownership of the land, however, they do assert a public trust easement. In a letter dated May 17, 2001, CSLC staff state that the project is not inconsistent with current public trust needs in the area and they have no objection to the project as proposed.

According to information submitted by the City of Huntington Beach to the Commission, the City owns the submerged lands adjacent to the project site. In accordance with Section 30601.5 of the Coastal Act, the City has been invited to join as co-applicant. In a letter dated May 13, 2003, the City declined to join as co-applicant. Although the City has not joined as co-applicant, they must still grant the applicant the legal ability to undertake the work authorized by this permit and to comply with the conditions of the permit. In order to assure such authorization is granted prior to issuance of the permit, the Commission imposes Special Condition 8. Special Condition 8 requires the applicant to submit written evidence to the Executive Director that the City has granted the applicant the legal ability to carry out the proposed project on their land including compliance with all conditions of approval of this permit.

As conditioned the Commission finds the proposed project is consistent with Section 30601.5 of the Coastal Act.

G. Local Coastal Program

The City of Huntington Beach local coastal program ("LCP") is effectively certified. However, the proposed project is located seaward of the mean high tide line and thus is within the Coastal Commission's original permit jurisdiction area. Therefore, pursuant to Section 30519 of the Coastal Act, the LCP does not apply to the proposed project. However, the certified LCP may be used for guidance in evaluating the proposed project for consistency with the Chapter 3 policies of the Coastal Act.

The City's LCP contains policies regarding the protection of water quality and marine resources, including incorporation of Sections 30230, 30231, 30233 and 30235 of the Coastal Act. In addition, the City's LCP has policies protecting environmentally sensitive habitat areas. The Commission has found that the project, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act. Since the same policies are incorporated in the City's LCP, the project as conditioned is consistent with the LCP.

H. California Environmental Quality Act

Section 13096 of the Commission's 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 project is located in an existing harbor in an urbanized area. Development already exists on the subject site. The project site does contain sensitive marine resources which will be impacted by the proposed project. However, the applicant has minimized the impact and will provide mitigation. In addition, the proposed development has been conditioned to assure the proposed project is consistent with the resource protection policies of the Coastal Act. The conditions also serve to mitigate significant adverse impacts under CEQA. The conditions are: 1) a requirement that the applicant comply with plans submitted with the application; 2) a requirement that the applicant conform with specific construction responsibilities to avoid impacts upon water quality and marine resources; 3) a requirement that the applicant perform a pre-construction eelgrass survey to assure that eelgrass is not present when construction commences; 4) a requirement that

the applicant prepare of a survey to confirm the absence of Caulerpa taxifolia in the project area; 5) a requirement that the applicant acknowledge that this coastal development permit is not a waiver of any public rights which may exist on the property; 6) a requirement that the applicant demonstrate that a coastal development permit has been approved for the off site soft bottom mitigation; 7) a requirement that the applicant implement the soft bottom mitigation; 8) a requirement that the applicant demonstrate their legal ability to undertake the development; and 9) a requirement for the submittal of an anchor management plan. There are no other feasible alternatives or mitigation measures available which will lessen any significant adverse impact the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, can be found consistent with the requirements of CEQA.

Applicants Engineering Analyses and Letters

- Letter from Tetra Tech, Inc. to California Coastal Commission dated January 17, 2003 titled *Supplemental Information for California Coastal Commission CDP No. 5-01-062, 16591 Ensign Circle, Huntington Beach, CA 92649*
- Letter from Tetra Tech, Inc. to California Coastal Commission titled *Response to May 12, 1999 Letter Regarding Follow-Up Notice of Incomplete Applications* dated May 24, 1999
- Letter from Tetra Tech, Inc. to California Department of Fish and Game dated July 29, 1999
- Letter from Tetra Tech, Inc. to California Coastal Commission titled *Coastal Development Permit Applications for Humboldt Island Bulkhead Repairs* dated August 18, 1999
- Letter from Tetra Tech, Inc. to California Coastal Commission titled *Coastal Development Permit Applications for Humboldt Island Bulkhead Repairs* dated August 25, 1999

Biological Surveys and Mitigation Plans

- *Eelgrass Survey Report, Trinidad Island – Huntington Harbour* conducted October 26, 1999, and November 18 & 19, 1999 and dated August 2000 prepared by Tetra Tech, Inc. of Pasadena, CA
- *Eelgrass Mitigation and Eelgrass Transplant Report, Humboldt Island & Trinidad Island Bulkhead Repair Project, Huntington Beach, California* dated August 2000 prepared by Tetra Tech, Inc. of Pasadena, CA
- *Soft Bottom Mitigation Plan, Humboldt Island and Trinidad Island Bulkhead Repair Project, Huntington Beach, California* dated April 2000 prepared by Tetra Tech, Inc. of Pasadena, CA
- *Eelgrass (Zostera marina) survey, impact assessment, and mitigation plan* dated December 1999 prepared for the County of Orange by Coastal Resources Management.
- *Eelgrass & Caulerpa taxifolia survey in Huntington Harbour at 16591 Ensign Circle, Huntington Beach, California* dated January 2, 2001, prepared by Tetra Tech, Inc. of Pasadena, CA.

Local Government Approvals

- *Negative Declaration No. 00-05 for the Humboldt Island and Trinidad Island Seawall (Bulkhead) Repairs* prepared by the City of Huntington Beach and Tetra Tech, Inc. of Pasadena, CA
- Addendum to Mitigation Negative Declaration No. 00-05 approved by the City of Huntington Beach Zoning Administrator on September 12, 2001;
- Notice of Exemption by the City of Huntington Beach dated January 9, 2001.

California Department of Fish and Game Letters and Approvals

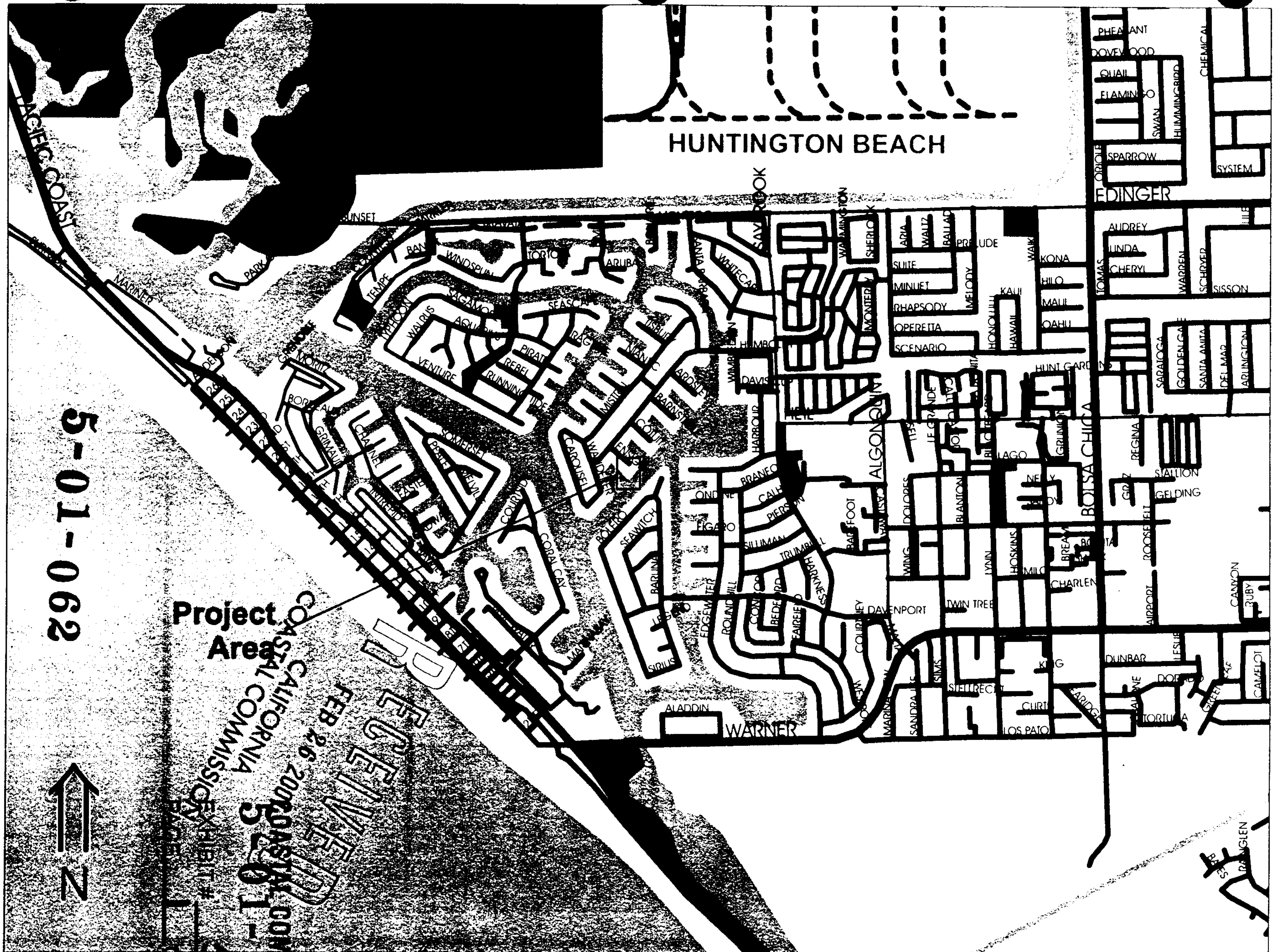
- Memorandum from California Department of Fish and Game to the California Coastal Commission titled *Humboldt Island Homeowners Association Bulkhead Repair* dated July 6, 1999
- Letter from California Department of Fish and Game to City of Huntington Beach dated August 31, 2000 approving the Soft Bottom Mitigation Plan and Eelgrass Mitigation and Eelgrass Transplant Report cited above
- Letter from California Department of Fish and Game to the City of Huntington Beach dated February 22, 2002

Other Agency Approvals and Correspondence

- Letter from the California Regional Water Quality Control Board, Santa Ana, dated December 6, 2001 acknowledging submittal of application requesting 401 water quality standards certification.
- Letter from the California State Lands Commission dated March 24, 2000 regarding *Proposed Bulkhead Repairs on 62 Residential Properties at Trinidad Island, Huntington Harbour, Orange County*
- Letter from California State Lands Commission dated May 17, 2001 regarding *Humboldt Island Bulkhead Repair Adjacent to 16591 Ensign Circle*
- California Regional Water Quality Control Board, Santa Ana Region, Clean Water Act Section 401 Water Quality Certification for the Proposed Trinidad Island Bulkhead Repair on Properties Containing Eelgrass and Soft Bottom Habitat, City of Huntington Beach (ACOE Reference #200100038-YJC) dated December 8, 2000
- California Regional Water Quality Control Board, Santa Ana Region, Emergency Clean Water Act Section 401 Water Quality Certification for the Proposed Humboldt Island Bulkhead Repair dated February 9, 2001
- California Regional Water Quality Control Board, Santa Ana Region, Order for Technically Conditioned Clean Water Act Section 401 Water Quality Standards Certification for the Proposed Five Bulkhead Repairs at Huntington Harbour, City of Huntington Beach, Orange County dated July 18, 2001
- U.S. Army Corps of Engineers, Los Angeles District, Department of the Army Permit 200200382-DPS

Coastal Development Permits

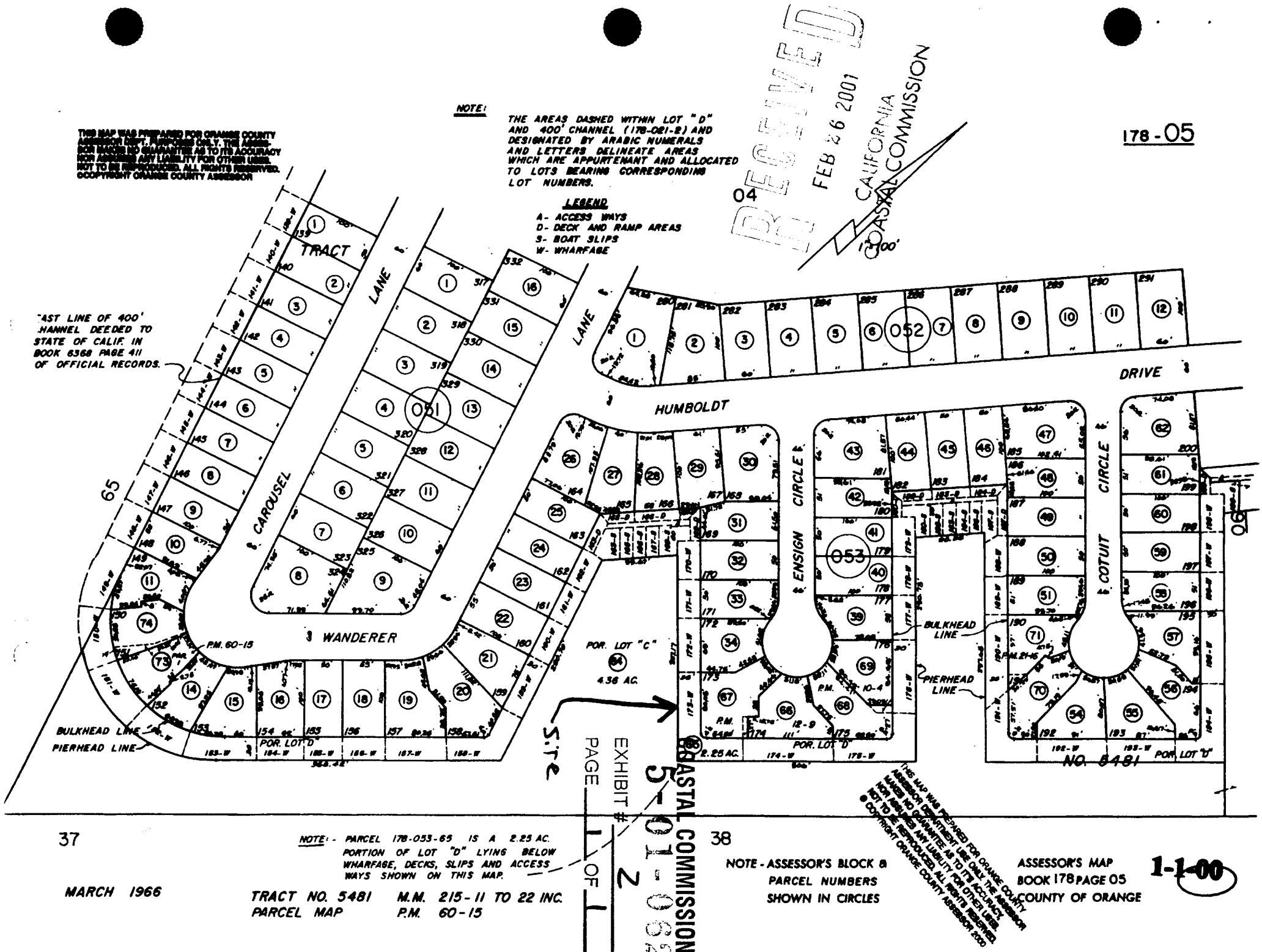
- Eelgrass Impacts: 5-97-230 and 5-97-230-A1 (City of Newport Beach), 5-97-231 (County of Orange), 5-97-071 (County of Orange), and 5-99-244 (County of Orange-Goldrich-Kest-Grau)
- Emergency Coastal Development Permit 5-00-403-G; 5-00-499-G (Wee)
- Humboldt Island Bulkhead Reinforcements: 5-97-223 (Shea/Albert);5-98-179 (Kompaniez), 5-98-201 (Anderson), 5-98-443 (Whyte), 5-98-444 (Barrad), 5-99-005 (Dea), 5-99-006 (Fernbach & Holland), 5-99-007 (Aranda et al.), 5-99-008 (Yacoel et. al.), 5-99-030 (Johnson), 5-99-031 (Lady, Jr./Zlatko/Woods), 5-99-032 (Yacoel et al), 5-99-108 (Pineda), 5-98-471 (Maginot), 5-99-472 (Bjork), 5-99-473 (Gelbard); 5-02-095 (Chang et. al.)
- Trinidad Island Bulkhead Reinforcements: 5-00-389 (Ashby et. al.); 5-00-390 (Burggraf et. al.); 5-00-401 (Baghdassarian et. al.); 5-00-402 (Buettner et. al.); 5-01-359 (Azoulay)



Tetra Tech
INCORPORATED

Site Vicinity Map
Henry & Sook Wee Bulkhead Repair
Project Area

TC 11500-01
FIGURE 1


178-05
THIS MAP WAS PREPARED FOR ORANGE COUNTY ASSESSOR DEPT. PURPOSES ONLY. THE ASSESSOR MAKES NO GUARANTEE AS TO ITS ACCURACY NOR ASSUMES ANY LIABILITY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED. ©COPYRIGHT ORANGE COUNTY ASSESSOR
NOTE:
THE AREAS DASHED WITHIN LOT "D" AND 400' CHANNEL (178-081-2) AND DESIGNATED BY ARABIC NUMERALS AND LETTERS DELINEATE AREAS WHICH ARE APPURTENANT AND ALLOCATED TO LOTS BEARING CORRESPONDING LOT NUMBERS.
LEGEND
A- ACCESS WAYS
D- DECK AND RAMP AREAS
S- BOAT SLIPS
W- WHARFAGE
RECEIVED
FEB 26 2001
CALIFORNIA COASTAL COMMISSION
"AST LINE OF 400' HANNEL DEEDED TO STATE OF CALIF. IN BOOK 6368 PAGE 411 OF OFFICIAL RECORDS.
TRACT
LANE
CAROUSEL
WANDERER
HUMBOLDT
DRIVE
ENSIGN CIRCLE
COTUIT CIRCLE
BULKHEAD LINE
PIERHEAD LINE
P.M. 60-15
P.M. 21-15
POR. LOT "C"
4.36 AC.
2.25 AC.
POR. LOT "D"
NO. 5481
EXHIBIT # 1
PAGE 1 OF 2
5-01-082
COASTAL COMMISSION
NOTE:- PARCEL 178-053-65 IS A 2.25 AC. PORTION OF LOT "D" LYING BELOW WHARFAGE, DECKS, SLIPS AND ACCESS WAYS SHOWN ON THIS MAP.
NOTE - ASSESSOR'S BLOCK & PARCEL NUMBERS SHOWN IN CIRCLES
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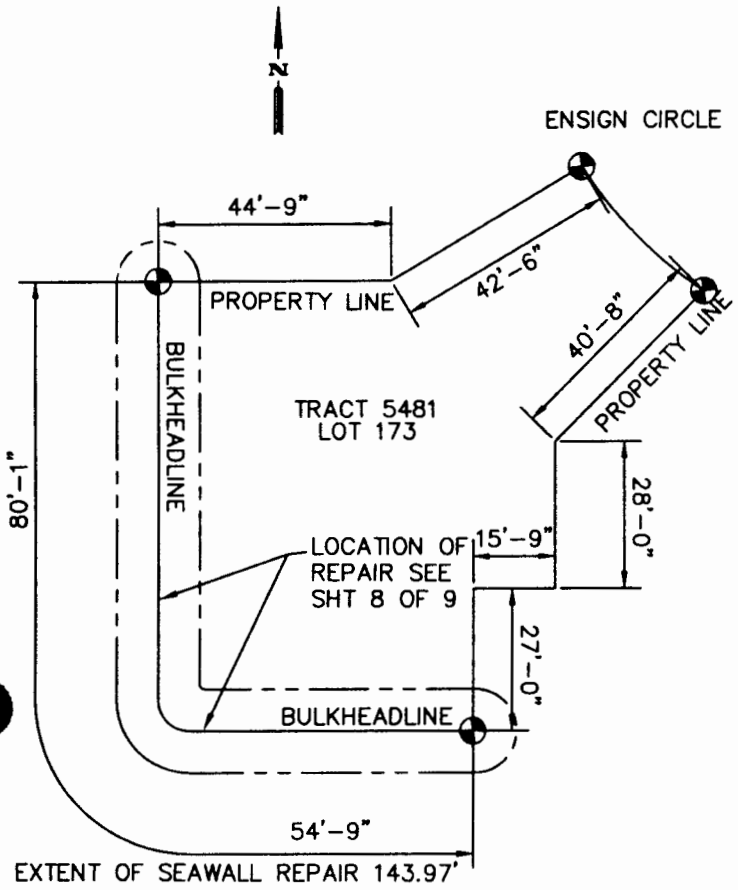
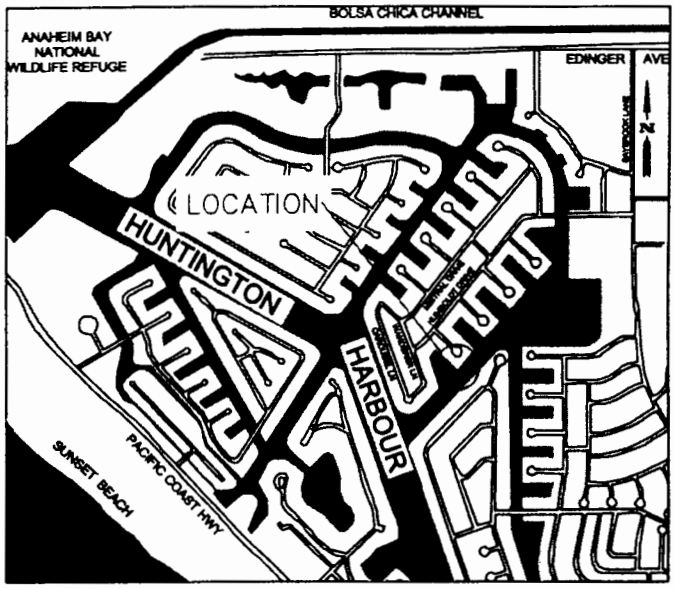
MARCH 1966
TRACT NO. 5481 M.M. 215-11 TO 22 INC.
PARCEL MAP P.M. 60-15
ASSESSOR'S MAP BOOK 178 PAGE 05 COUNTY OF ORANGE
1-1-00
37
38





VICINITY MAP

FROM U.S.G.S. SEAL BEACH
QUADRANGLE CALIFORNIA
SCALE 1:24000

NOTE:
ALL DEPTHS BASED ON
MLLW=0.00 FT.

COASTAL COMMISSION
5-01-062
EXHIBIT # 3
PAGE 1 OF 9

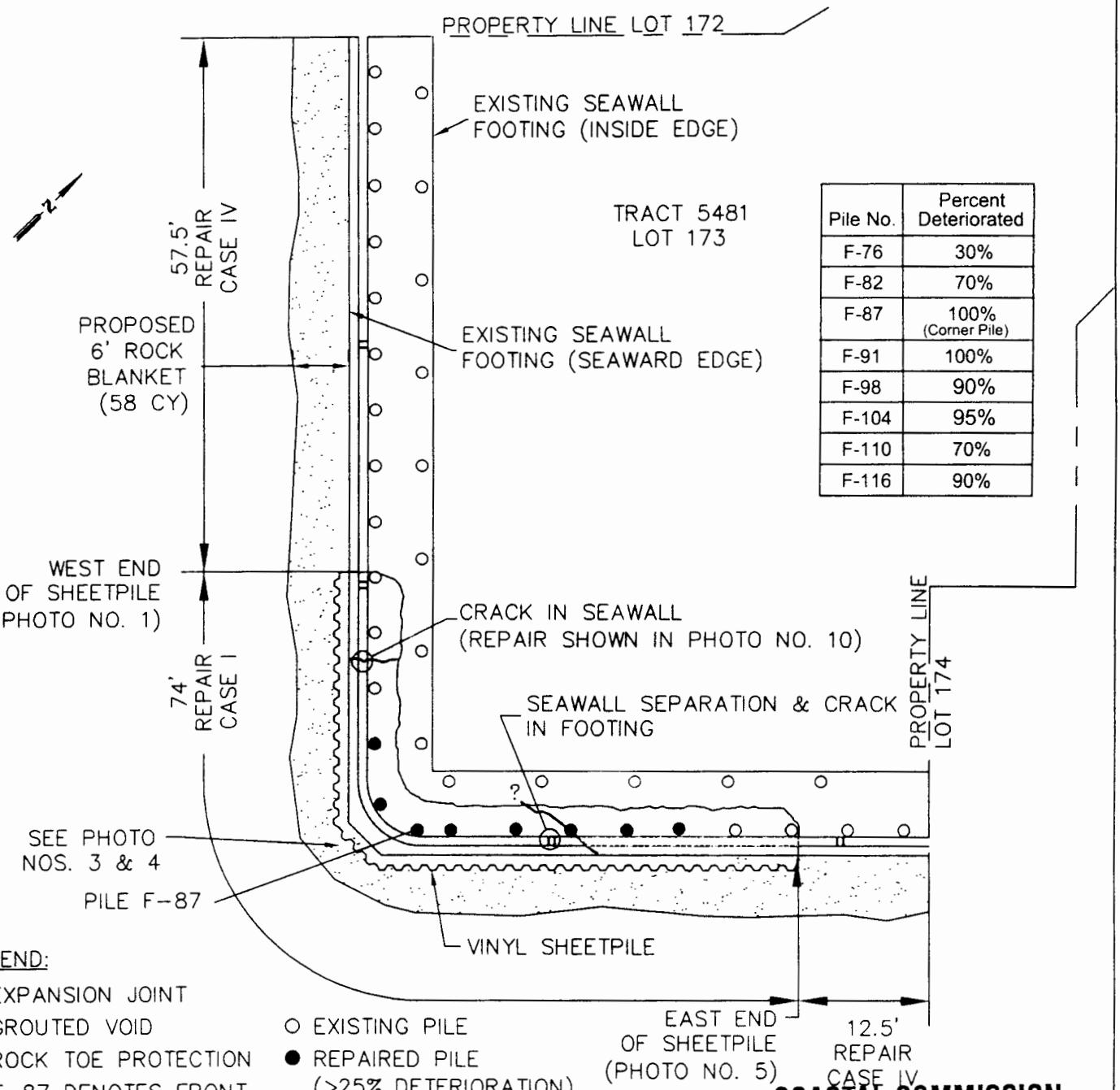
TETRA TECH
401 East Ocean Blvd., Suite 810
Long Beach, CA 90802
(562) 495-0495, Fax (562) 495-5029

PLAN VIEW
0 36 72
1" = 36'

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

Repair of Existing Seawall

IN: Huntington Harbour
AT: Humboldt Island
Huntington Beach
County of Orange State: CA
Application By: Wee
Sheet 1 of 9 Date: 1/17/03



Pile No.	Percent Deteriorated
F-76	30%
F-82	70%
F-87	100% (Corner Pile)
F-91	100%
F-98	90%
F-104	95%
F-110	70%
F-116	90%

LEGEND:

- EXPANSION JOINT GROUTED VOID
- ROCK TOE PROTECTION F-87 DENOTES FRONT PILE @ 87' MARK
- EXISTING PILE
- REPAIRED PILE (>25% DETERIORATION)

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LONG BEACH, CA 90802
(562)495-0495, Fax (562)495-5029

PLAN VIEW

0 10 20

1/16" = 1'- 0"

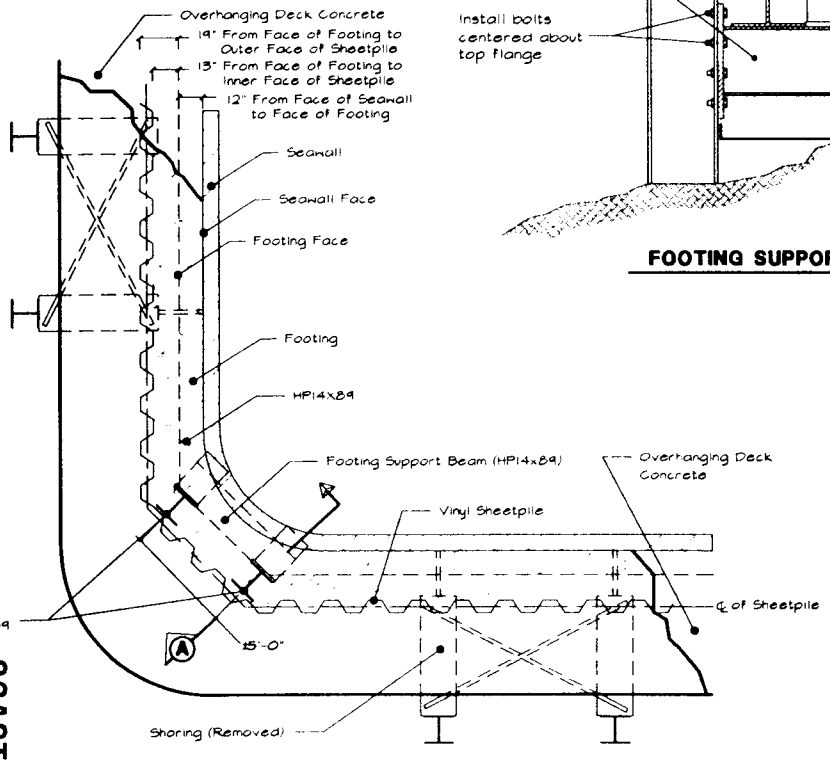
Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

Repair of Existing Seawall

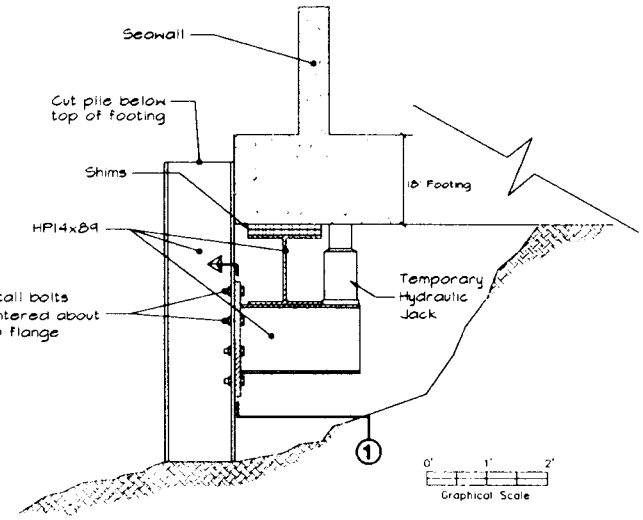
IN: Huntington Harbour
AT: Humboldt Island
Huntington Beach
County of Orange State: CA
Application By: Wee
Sheet 2 of 9 Date: 1/17/03

Notes:

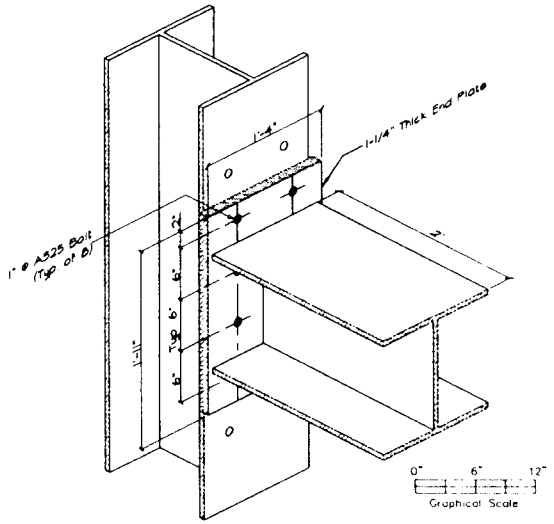
1) Drive HP14x89 piles as close to footing as possible.
2) Install footing support assembly to allow for footing support beam.
3) Install steel shims as required.
4) Contractor shall take precaution not to damage the integrity of the footing as a result of jacking.
5) All exposed steel shall be epoxy coated and cast in concrete to prevent corrosion.



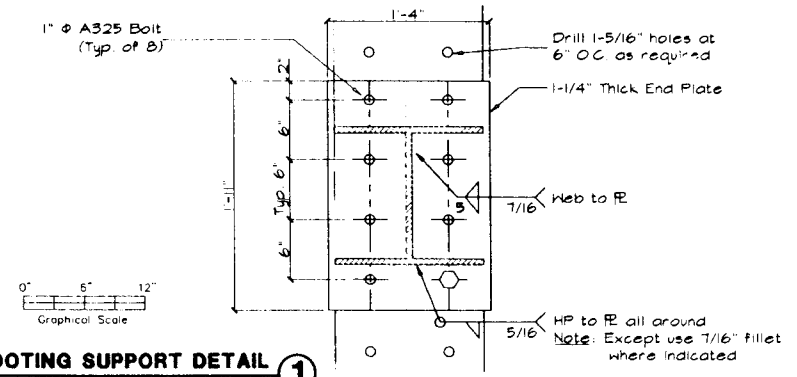
FOOTING SUPPORT PLAN VIEW
SCALE: 1" = 5'



FOOTING SUPPORT SECTION (A)
SCALE: 1" = 2'



FOOTING SUPPORT ASSEMBLY
SCALE: 1" = 1'



FOOTING SUPPORT DETAIL (1)
SCALE: 1" = 1'

TETRA TECH INC. Pasadena, California	HENRY & SOOK WEE SEAWALL				REVISIONS: No. / DATE / SHEET	NO. R-
	EMERGENCY REPAIR SUPPORT DETAIL					JOB NO. 11500-01
						SHEET 3 OF 9
DRAWN BY: CSH	DESIGN BY: FLP	PAGE	SCALE: AS NOTED	DATE: 11/22/02	AS-BUILT: 1/17/03	DRAWING NO. bracketdetail4.dwg

COASTAL COMMISSION
5-01-092
EXHIBIT # 3
PAGE 3 OF 9

1. GENERAL CONDITIONS & EXISTING CONSTRUCTION: Contractor shall verify the existing conditions shown on the drawings prior to installation of the work and shall notify the owner immediately of any discrepancies between the existing conditions and the conditions shown on the drawings.

Dimensions of the existing construction shown on the drawings are for information and estimating purposes only. Contractor is responsible for field verification of all dimensions relating to the existing construction prior to the installation of the work. Existing construction shall not be drilled, cut, or altered in any way except as specifically shown on the drawings. Contractor shall protect the existing construction from damage during the installation of the work shown. Contractor shall be responsible for the repair of any damage to the existing construction which may occur during the installation of the work shown, and shall restore any damaged area, at his expense, to its original condition.

It shall be the Contractor's responsibility to obtain and pay for all necessary permits and approvals prior to commencement of the work. The Contractor shall comply with all applicable requirements of the State Safety Orders and OSHA, and all work shall conform to the applicable requirements of the current edition of the Uniform Building Code (UBC).

Contractor shall supply, transport to the site, and install all items required for completion of the work shown in accordance with the drawings and the manufacturer's written recommendations.

2. MONITORING & CONTINGENCY PLAN: Prior to start of construction the Contractor shall establish monuments at locations selected by the Engineer and Contractor for the purpose of monitoring wall movements during the construction period. These monuments shall be surveyed at least three times per day by the Contractor, and if any wall movement is detected, the Contractor shall immediately inform the Engineer.

It shall be the Contractor's responsibility to ensure workers' safety and to make every reasonable effort to prevent wall movements during construction of the repairs. Prior to commencing work, the Contractor shall submit a brief written plan at each property, which details the required repairs and specific precautions to be taken to allow safe completion of the work. For cases where more than one adjacent pile requires repair by jack installation, or in the case where the wall exhibits fracture across its section and where displacement is evident, the Contractor shall provide temporary shoring, bracing, etc. as he deems necessary, to allow safe access to the repair area.

As a contingency plan, the Contractor shall have two helical anchors, Chance model #C110-0235-SS175, on site with sufficient rod extensions to install a 30-foot long earth anchor which can be installed in the event significant wall movement is noted during the daily monitoring. All equipment needed for chance anchor installation shall also be on site with accompanying certifications that equipment gauges have been properly calibrated.

3. FOOTING SUPPORT STRUCTURE MATERIALS:

TETRA TECH
401 East Ocean Blvd., Ste. 810
Long Beach, CA 90802
(562)495-0495, Fax (562)495-5029

	SPECIFICATIONS Henry & Sook Wee 16591 Ensign Circle Huntington Beach, CA 92649	Repair of Existing Seawall IN: Huntington Harbour AT: Humboldt Island, Huntington Beach County of Orange State: CA Application By: Wee Sheet 4 of 9 Date: 1/17/03

PILES: Steel HP 14x89 piles shall be driven vertically as close to the fooring as possible. The HP-14x89 measures 14.695 inches at the flange and 11.25 inhes at the web. The HP-14x89 is constructed of 5/8 inch thick steel throughout.
BRACKETS: The brackets shall be constructed using a 2-foot length of HP-14x89 welded to a 1.25-inch thick steel end plate
BRACKET WELDS: The 2-foot HP-14x89 section shall be welded to the steel end plate using 7/16-inch fillet weld on the top 5 inches of web and 5/16-inch fillet weld all around the remaining web and the flanges.
BOLTS: The bracket shall be mounted on the vertical HP-14x89 using 1-inch diameter A325 steel bolts.
FOOTING SUPPORT BEAM: The cross beam that sits atop the brackets shall be a HP-14x89 steel pile.

4. MISCELLANEOUS MATERIALS: Expansion anchors shall be Kwik Bolt II by Hilti Corporation or approved equal. Provide anchors made of Type 316 stainless steel with rod couplings.

Threaded rod shall be Type 316 stainless steel threaded rod. Provide rod with thread spacing and of diameter to match rod coupling provided with expansion anchors and with nut and washer at one end.

Provide continuous wales of size indicated on the drawings and fabricated from number 1 grade Douglas fir. Wales shall be cut and drilled and then coated with polyurethane base coat Elasto-Deck 5001 and top coated with Elasto-Glaze 6001 AL, by Pacific Polymers. Apply and touch up damaged areas of wood coatings in accordance with the manufacturer's written instructions.

Jacks shall be McMaster-Carr bell base screw jack model no. 2926T18 or approved equal. Jack capacity shall be 20 tons or greater.

5. HIGH PRESSURE GROUT: Provide MasterBuilder 212 grout, mixed and placed in accordance with manufacturer's written instructions. After concrete has hardened, place grout at recommended pressure through 1-1/2" diameter schedule 40 PVC grout tubes to fill remaining voids. Grout tubes shall be placed as shown on the drawings where the foundation base slab has been undermined and pile repair is required. Placement of grout shall continue at one location until grout exits grout tubes at adjacent pile repair locations. If adjacent pile locations do not require pile repair, two grout tubes shall be installed and grout shall be placed through one tube until it begins exiting the second tube. Elevation of feed ends of grout tubes shall be maintained above maximum high water level and grout shall be placed to the top of the tube, until grout has hardened.

6. PORTLAND CEMENT CONCRETE: Provide normal weight concrete to fill voids beneath the foundation base slab with the following properties:

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	SPECIFICATIONS Henry & Sook Wee 16591 Ensign Circle Huntington Beach, CA 92649	Repair of Existing Seawall IN: Huntington Harbour AT: Humboldt Island, Huntington Beach County of Orange State: CA Application By: Wee Sheet 5 of 9 Date: 1/17/03

Minimum ultimate compressive strength of 3,000 psi at 28 days.
Portland Cement: ASTM C150, Type V
Aggregate : ASTM C33 (Coarse Aggregate shall conform to requirements of Size #8, Table 2)
Water: Potable
Slump: 7 inches

Materials shall be mixed, transported, fabricated, placed, consolidated, and finished in accordance with the requirements of the current edition of the American Concrete Institute Building Code Requirements for Reinforced Concrete (ACI 318) and (ACI 304R). Specifically, concrete placement shall conform to the requirements of Chapter 8 "Concrete Placed Under Water", utilizing either the direct pumping or tremie methods. Contractor shall take care to maintain the end of the pipe or tremie in the concrete mass at all times during concrete placement.

7. STEEL PLATES & PIPE: Structural steel plates shall conform to the requirements of ASTM A36. Steel pipe shall conform to the requirements of ASTM A53 Type B. All welding shall be performed by welders certified to perform the indicated types of welding and shall be in accordance with the current edition of the American Welding Society (AWS) Structural Welding Code for steel. L.A. welding certificates shall be provided.

8. SHEET PILING: Shall be Shore Guard Rigid Vinyl Sheet piling by Materials International, Atlanta, Georgia 800-256-8857, or equal. Provide size shown on drawings and install in accordance with manufacturer's written instructions.

9. SLOPE PROTECTION: Slope protection shall be 8 inch minus quarry waste placed as shown. Contractor shall submit certified gradation curves from material supplier. Slope protection shall be installed in accordance with CALTRANS placement method B (Section 72) from a distance not exceeding 2 ft.

10. GEOTEXTILE: Shall be MIRAFI 700X woven polypropylene fabric with 135lb. or better puncture rating or approved equivalent

11. CONSTRUCTION SEQUENCE: Construction shall be completed and inspected in accordance with the following:

1. Prior to start of construction, a diver certified in the State of California will inspect the existing foundation and piles and determine repair requirements. Screw jacks shall be installed if batter pile deterioration exceeds 25% of its original net diameter, or as directed by Engineer.

2. Dislocated corner section of the seawall shall be shored per Contractor's temporary shoring plan.

3. Two new steel piles shall be installed at the dislocated corner section where original piles cannot

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	SPECIFICATIONS Henry & Sook Wee 16591 Ensign Circle Huntington Beach, CA 92649	Repair of Existing Seawall IN: Huntington Harbour AT: Humboldt Island, Huntington Beach County of Orange State: CA Application By: Wee Sheet 6 of 9 Date: 1/17/03

acheive the sufficient bearing capacity. The piles shall be located in accordance with the drawing, and driven until a sufficient blow count, determined by the Engineer, is reached.

4. The pre-fabricated brackets shall be positioned and mounted on the vertical piles by the Contractor's diver using bolts as specified in the drawing and these notes.

5. Hydraulic jacks shall be positioned on the brackets between the bracket and the bottom of the footing to facilitate the placement of shims to support the footing.

6. The footing support beam shall be installed on top of the brackets spanning the distance between the two new piles. The load of the corner section will be transfered to the footing support beam and the hydraulic jackes removed. The other screw jacks will be adjusted to accommodate this transfer.

7. During pile repair, no more than one pile shall be cut and the jack assembly installed prior to beginning work on the next pile. Upon completion of jack assembly installation, grout tubes shall be hung from the bottom of the base slab. After placement of jack assembly, jack shall be adjusted to its maximum capacity, but not greater than 20 tons. Jack adjustment shall be completed during high tide. Prior to concrete placement, pile repair work and jack assembly installation shall be inspected and approved.

8. Upon completion of all pile repair and jack assembly installation work at a given property, vinyl sheet piling and wales shall be installed. The sheet pile will Prior to installation of first sheet pile, notify John Von Holle of the Huntington Beach Public Works Department @ (714) 536-5431.

9. After installation of sheet piling and wales is completed at a given property, placement of concrete fill shall be completed in accordance with the drawings and these notes.

10. After concrete has cured for a minimum of 48 hours, all remaining voids shall be filled with grout in accordance with these notes and the grout manufacturer's written instructions. After completion of concrete and grout placement, work shall be inspected and certified by the Contractor.

11. Contractor shall place the appropriate width of geotextile for the slope protection with an additional 2ft. min. overhang at each side. Overhang to be folded back over 1st layer of rock and covered by subsequent layers or rock until specified slope is achieved. All sheet splices shall have a min. 18 inches of overlap and shall be secured together by staples or other approved means.

12. Contractor shall locate all existing weep holes in bulkhead walls, remove marine growth and clean out weep holes from the water side to the earth side of the wall.

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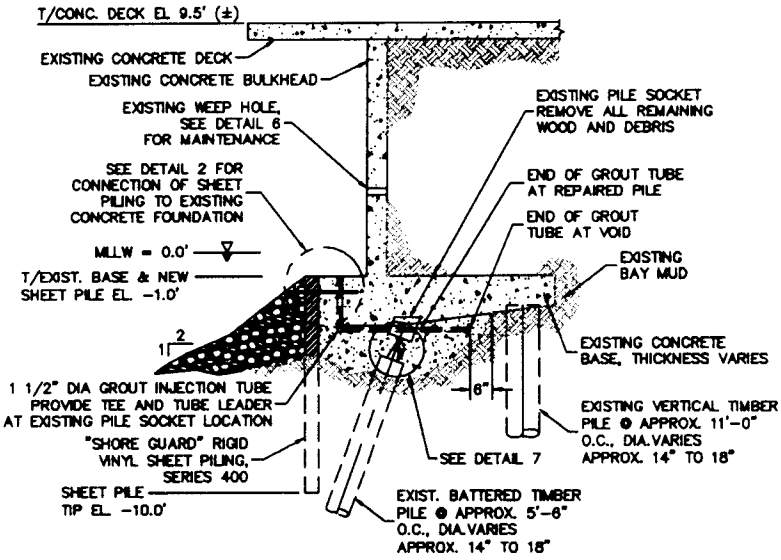
SPECIFICATIONS

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

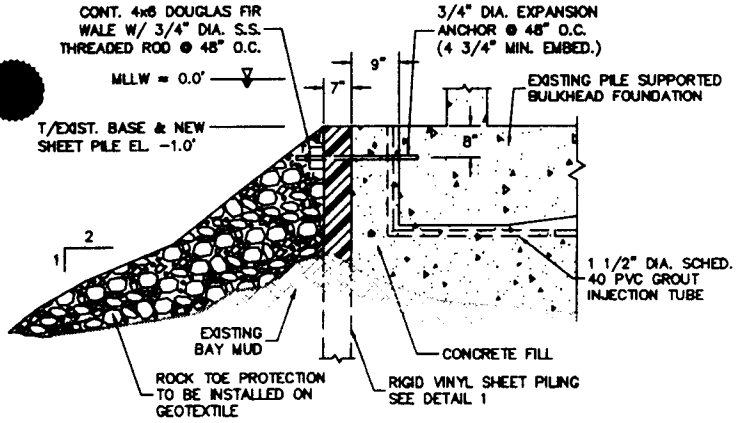
Repair of Existing Seawall

IN: Huntington Harbour
AT: Humboldt Island,
Huntington Beach
County of Orange State: CA
Application By: Wee
Sheet 7 of 9 Date: 1/17/03



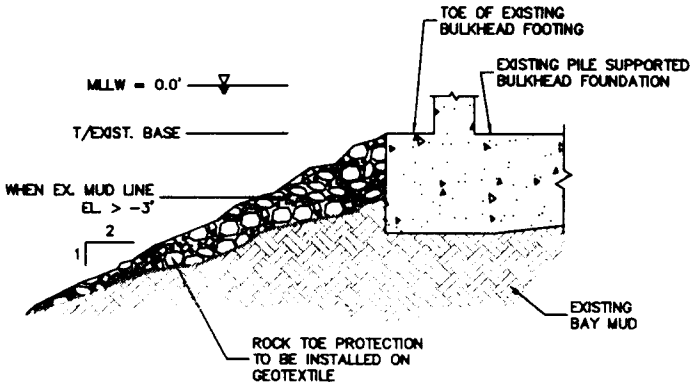
SECTION AT TIMBER PILE REPAIR (1)

SCALE: 1/8" = 1'-0"



SECTION AT WALE: CASE I (2)

SCALE: 1/4" = 1'-0" (FOUNDATION UNDERMINED)



SECTION AT SHEET PILE: CASE IV (5)

SCALE: 1/4" = 1'-0" (RIP-RAP TOE PROTECTION ONLY)

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5-01-062

EXHIBIT # 3

PAGE 8 OF 9

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(562) 495-0495, Fax (562) 495-5029

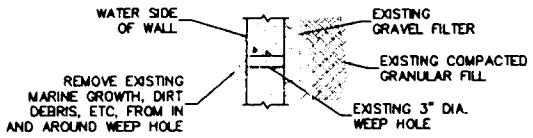
Datum: MLLW = 0

SECTION VIEW

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

Repair of Existing Seawall

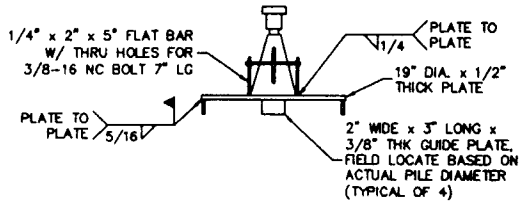
IN: Huntington Harbour
AT: Humboldt Island, Huntington Beach
County of Orange State: CA
Application By: Wee
Sheet 8 of 9 Date: 1/17/03



WEEP HOLE DETAIL

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

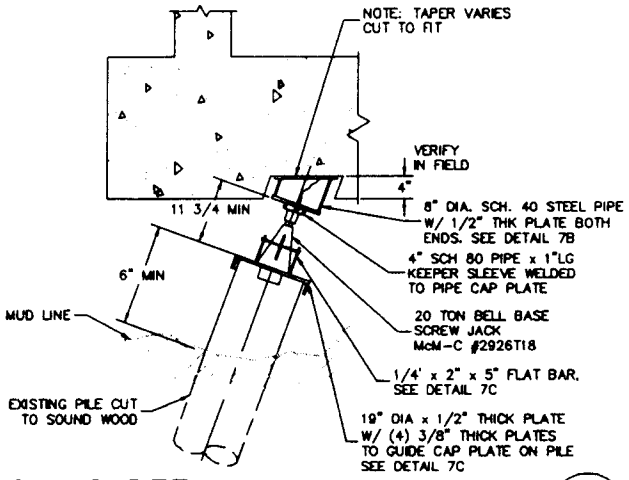
6



PILE CAP PLATE DETAIL

SCALE: N.T.S.

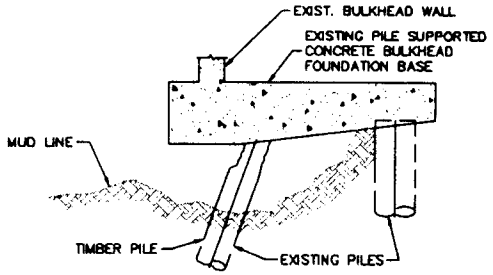
7C



JACKING DETAIL

SCALE: 3/4" = 1'- 0"

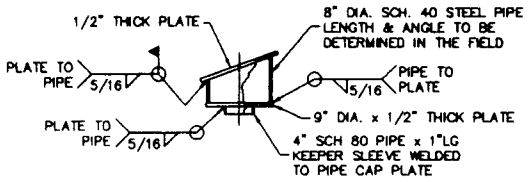
7



SECTION 25% OR LESS PILE DETERIORATION

SCALE: N.T.S. PILE REPAIR NOT REQUIRED
SEE DETAIL 2

8

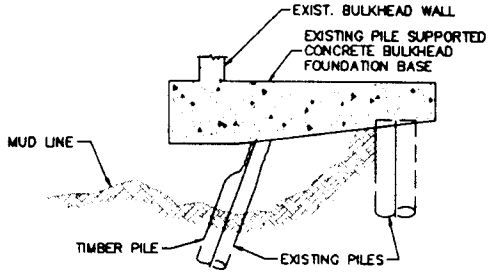


JACKING ASSEMBLY DETAIL

SCALE: N.T.S.

NOTES: FIELD MEASURE EXISTING PILE SOCKET IN CONCRETE BASE SLAB AND CUT TOP PLATE TO FIT SOCKET.
CENTERLINE TOP PLATE = CENTERLINE PIPE
CENTERLINE PIPE = CENTERLINE JACK

7B



SECTION 25% OR MORE PILE DETERIORATION

SCALE: N.T.S. PILE REPAIR REQUIRED
SEE DETAILS: 1 & 2

9

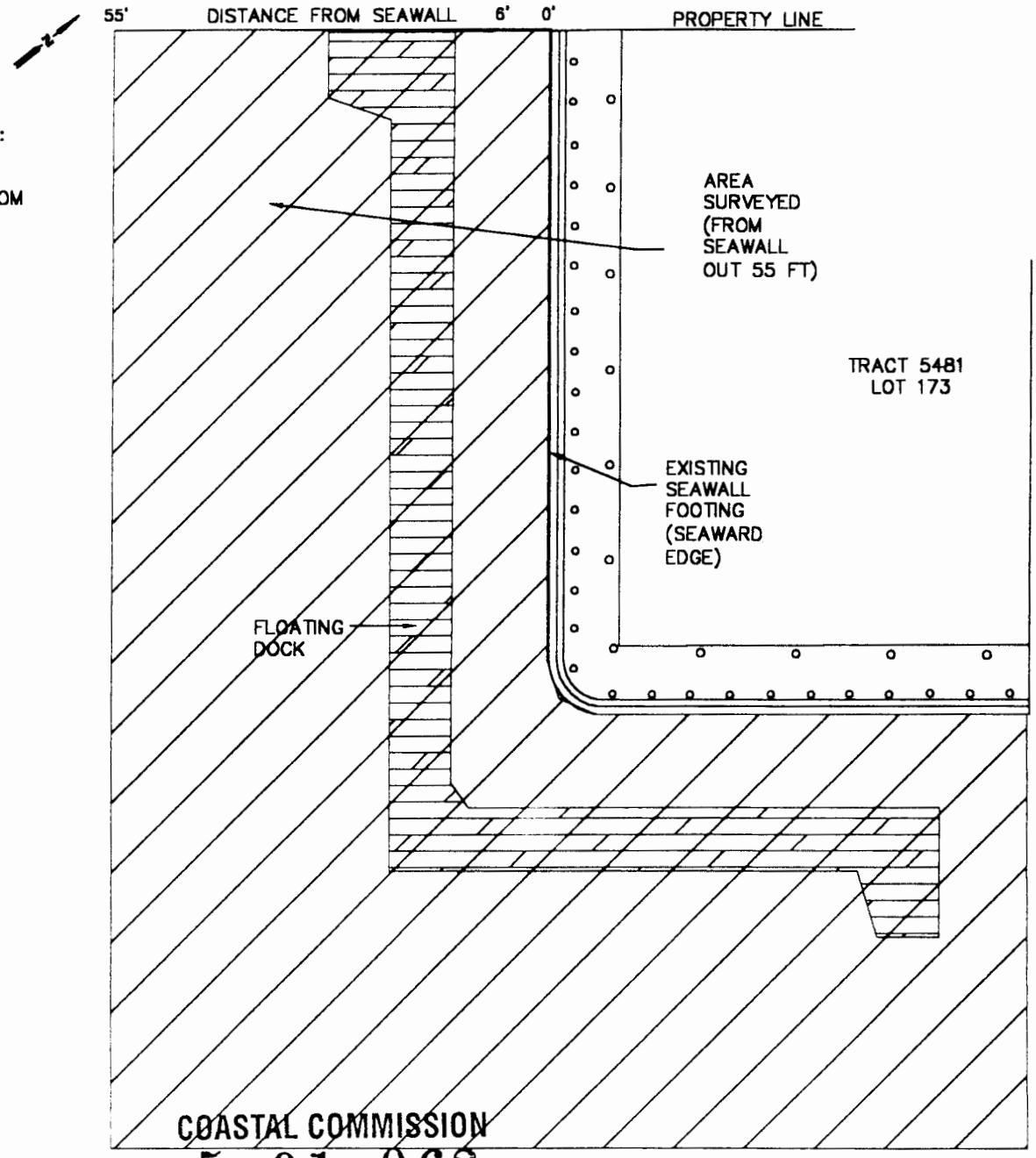
TETRA TECH
401 East Ocean Blvd., Suite 810
Pasadena, CA 91107
(562) 495-0495, Fax (562) 495-5029

Datum: MLLW = 0

SECTION VIEW

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

Repair of Existing Seawall
IN: Huntington Harbour
AT: Humboldt Island,
Huntington Beach
County of Orange State: CA
Application By: Wee
Sheet 9 of 9 Date: 1/17/03



COASTAL COMMISSION
5-01-062
EXHIBIT # 4
PAGE 1 OF 1

5481-173	Area Surveyed (m^2)	Eelgrass Area ft^2	Caulerpa taxifolia Area ft^2
Total Area	1030.5	0.0	0.0
Within 10' of wall:	134.7	0.0	0.0
Within 8' of wall:	107.8	0.0	0.0
Within 1' 7" of wall	21.3	0.0	0.0

TETRA TECH
670 North Rosemead Blvd.
Pasadena, CA 91107
(626) 351-4664, Fax (626) 351-5291

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW

0 15 30

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

Eelgrass & Caulerpa taxifolia Survey Results
Survey Date: 12/29/00
IN: Huntington Harbour
AT: Huntington Beach
County of Orange State: CA

Sheet 1 of 1

State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
Marine Region
20 Lower Ragsdale Drive, Suite #100
Monterey, CA 93940
(831) 649-2870

GRAY DAVIS, *Governor*

Flex your POWER

February 22, 2002

Ms. Marybeth Broeren
Senior Planner
City of Huntington Beach
2000 Main Street
Huntington Beach, CA 92648

Dear Ms. Broeren:

Department of Fish and Game (Department) personnel have reviewed the proposed bulkhead repairs to nine additional properties in Huntington Harbour, Huntington Beach, California at the request of Ms. Sarah McFadden, Tetra Tech, Inc., the property owners' authorized agent. Eight of the properties are located on Humboldt Island (Lots 34, 167, 169, 172, 174, 175, 177, and 218), and one property is on Trinidad Island (Lot 51). The nine bulkhead repairs will involve placement of a protective rip-rap footing consisting of 8-inch minus quarry rock along the bulkhead. The protective rock footings will extend approximately 6 feet out from the bulkheads and will be placed at a 2:1 slope. No sheetpile installation is planned. All of the properties have been surveyed for eelgrass (*Zostera marina*) and *Caulerpa taxifolia*. No eelgrass or *Caulerpa* was found.

The Department acknowledges the importance of toe protection in maintaining bulkhead stability, and hopes that these actions will prevent future bulkhead failure and subsequent repair in the future. We recognize that placement of quarry rock at the nine properties would result in an initial loss of ecological benefits to species associated with soft-bottom habitat. However, the soft-bottom habitat at the nine properties is un-vegetated, consequently, the loss would likely be short-term, as different organisms would re-colonize the quarry rock. Thus, we believe that placement of quarry rock on un-vegetated soft bottom habitat would not have a significant adverse impact upon the existing marine environment. In contrast, impacts to vegetated soft-bottom habitat, i.e. eelgrass, from placement of rip-rap are considered significant. It is well documented that eelgrass habitat provides forage, cover, and reproductive opportunities, and other benefits to various fish species, and may be used by these species as permanent residence or nursery habitat. Impacts to eelgrass habitat have significant impacts on the environment, and eelgrass loss must be mitigated.

Ms. McFadden's letter (dated January 24, 2002) stated that additional properties will be participating in the bulkhead repair program. According to Tetra Tech Inc., the cumulative totals for quarry rock placement (including the nine properties discussed in this letter) will result in the conversion of approximately 54,450 square feet or 1.25 acres of soft bottom habitat to quarry rock habitat. Although we do not know the total acreage of marine habitat in Huntington Harbour, we assume that 1.25 acres represents an insignificant amount of available soft-bottom habitat. Additionally, it should be mentioned that the quarry rock habitat could be improved by placement of larger rock, 16-inch, or a mixture of 8-inch and 16-inch.

As always, Department personnel are available to discuss our comments, concerns, and recommendations in greater detail. To arrange for a discussion, please contact Ms. Marilyn Fluharty, Environmental Scientist, California Department of Fish and Game, 4949 Viewridge Avenue, San Diego, CA 92123, telephone (858) 467-4231.

Sincerely,

COPY ORIGINAL SIGNED BY ROBERT N. TASTO

Robert N. Tasto, Supervisor
Project Review and Water Quality Program
Marine Region

cc: Ms. Marilyn Fluharty
Department of Fish and Game
San Diego, California

Ms. Sarah McFadden
Tetra Tech, Inc.
670 North Rosemary Blvd.
Pasadena, CA 91107

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State of California

Memorandum

To : Mr. Karl Schwing
California Coastal Commission
200 Oceangate Avenue Suite 1000
Long Beach, California 90802

Date : July 6, 1999

From : Department of Fish and Game

Subject : Humboldt Island Homeowners Association Bulkhead Repair

This memo is in response to a request from Ms. Sarah McFadden, Tetra Tech Inc., representing the Humboldt Island Homeowners Association, concerning proposed project plans to repair and renovate existing bulkheads for 36 residences on southern Humboldt Island, Huntington Harbor, Huntington Beach, Orange County, California. Damaged piles will be removed and/or repaired at three properties. At 19 properties, vinyl sheet-pile will be installed 1 foot 7 inches seaward of the bulkheads. At all 36 properties a protective rip-rap footing, comprised of quarry waste material ranging from sand to 8 inch fragments, will be placed at the bulkheads. The footing will extend a maximum of 11 feet from the bulkheads.

The proposed project will impact hardscape, the water column, and soft bottom habitat. Impacts to hardscape (i.e., existing bulkheads and structures) and the water column are considered temporary, as the water quality will return to pre-construction conditions and the new structures will eventually be colonized by attachment organisms. However, impacts to soft bottom habitat will not be temporary. Based on information provided to the Department by Tetra Tech Inc., "expansion" of 19 bulkheads will result in a permanent loss of approximately 1,581 square feet of marine soft bottom bay habitat. In addition, approximately 17,700 square feet of soft bottom habitat will be buried by placement of rip-rap. Approximately 780 square feet of this soft bottom substrate is eelgrass (*Zostera marina*) habitat.

The permanent loss of marine soft bottom bay habitat is of concern to the Department. The Department strongly recommends that bulkhead projects be designed to eliminate or minimize loss of marine bay habitat. To accomplish this goal, we recommend that each property owner strive to construct its bulkhead either in place of the existing bulkhead or immediately in front of the existing bulkhead so that installation results in no net loss of intertidal habitat when measured at the Mean Higher High Water line. The Humboldt Island Homeowners' project has proposed sheet piling to be placed 1 foot 7 inches seaward of those bulkheads in need of repair. The sheet piling retains concrete and grout which is pumped in to fill existing voids in the bulkhead. Presumably the 1 foot 7 inch distance is necessary to allow sufficient clearance for concrete and grout piping, and to enable a pneumatic hammer to clear the bulkhead footing. It is the Department's position that bulkhead projects be constructed in such a manner to be the least environmentally damaging practicable alternative. Thus, we recommend the project proponent investigate alternative methodologies for filling voids in bulkheads. If this is deemed structurally unfeasible, then any incurred loss of marine soft bottom bay habitat should be mitigated.

Memo from California Dept. of Fish and Game Describing Biological Resource Impact Issues Associated with Bulkhead Repair/Reinforcements in Huntington Harbor

The Department recognizes that placement of rip-rap at the bulkheads would result in an initial loss of ecological benefits to species associated with soft bottom habitat. However, in the case of unvegetated soft bottom habitat this loss would likely be short-term, as different organisms would recolonize the rip-rap. Thus, we believe that placement of rip-rap on unvegetated soft bottom habitat would not have a significant impact on the environment.

In contrast, impacts to vegetated soft bottom habitat, i.e., eelgrass, from placement of rip-rap are significant. It is well documented that eelgrass habitat provides forage, cover, reproductive opportunities, and other benefits to various fish species, and may be used by these species as permanent residence or nursery habitat. Impacts to eelgrass habitat have significant impacts on the environment, and eelgrass loss must be mitigated.

The project proponents plan to offset the loss of eelgrass in a manner consistent with the Southern California Eelgrass Policy, as amended. However, a specific eelgrass mitigation plan identifying the mitigation site has not been detailed at this time. In addition, the project proponent has not proposed a mitigation plan, nor recognized the necessity to compensate for the loss of 1,581 square feet of marine soft bottom bay habitat. The location and plans for mitigation sites are the responsibility of the project proponent. Therefore, until appropriate mitigation plans both for eelgrass loss and loss of soft bottom habitat have been developed and provided to the Department for review and approval, we cannot support this project.

As always, Department personnel are available to discuss our comments, concerns, and recommendations in greater detail. To arrange for a discussion, please contact Ms. Marilyn Fluharty, Environmental Specialist, California Department of Fish and Game, 4949 Viewridge Avenue, San Diego, California 92123, or by telephone at (619) 467-4231.

Sincerely,

DeWayne Johnston

DeWayne Johnston
Regional Manager
Marine Region

cc: Ms. Marilyn Fluharty
Department of Fish and Game
San Diego, California

California Regional Water Quality Control Board
Santa Ana Region

Internet Address: http://www.swrcb.ca.gov/rwqcb8
3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (909) 782-4130 - FAX (909) 781-6288

Alston H. Hickox
Secretary for
Environmental
Protection

Gray Davis
Governor

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.swrcb.ca.gov/rwqcb8.

July 18, 2001

Sharon Zimmerman
3798 Humboldt Drive
Huntington Beach, CA 92649

Joseph & Rosann Hetherington
11532 East End Avenue
Chino, CA 91710

Michael Chang
16432 Barnstable Circle
Huntington Beach, CA 92649

Robert A. Mah
16585 Ensign Circle
Huntington Beach, CA 92649

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

ORDER FOR A TECHNICALLY CONDITIONED CLEAN WATER ACT SECTION 401 WATER QUALITY STANDARDS CERTIFICATION FOR THE PROPOSED FIVE BULKHEAD REPAIRS AT HUNTINGTON HARBOUR , CITY OF HUNTINGTON BEACH, ORANGE COUNTY (NO ACOE REFERENCE NUMBER)

Dear Humboldt and Trinidad Island Homeowners:

On May 29, 2001, we received a request for 401 Water Quality Standards Certification dated May 24, 2001, for the above-referenced project. We received all requested materials for a complete application as of May 29, 2001.

This letter responds to your request for certification, pursuant to Clean Water Act Section 401 that the proposed project described below will comply with State water quality standards outlined in the Basin Plan (1995):

Project Description

The bulkhead footing along five separate properties within Humboldt and Trinidad Islands in Huntington Harbour have been scoured of sediment. Further undermining of the bulkheads could result in exposing the supporting timber piles to marine organisms. This condition threatens the integrity of the protective bulkhead. The proposed project is designed to restore and protect the existing bulkhead footing and prevent future scouring and erosion. Protective riprap will be installed and extended out approximately six feet from the bulkhead toe at a 2:1 (horizontal:vertical) slope. The riprap will range from sand particle size to 8" diameter rocks. The riprap will be hauled to the construction site by barge for placement onto a geotextile fabric lain on the sediment.

- Receiving water(s) affected: Huntington Harbour, Orange County
- Fill/excavation area: Ocean: 0.05acre (2,316 square feet) permanent impact
- Dredge volume: N/A
- Federal permit: U. S. Army Corps of Engineers (USACOE) Nationwide Permit 3
- Fill/excavation and dredge mitigation: N/A

- Water quality impacts mitigation: N/A

There is no eelgrass vegetation in the project area. The proposed project is not expected to impact state- or federally-listed endangered species or their habitat.

The project's description indicates that stream diversion or dewatering will not be necessary during construction.

You have submitted an application for Nationwide Permit 3 to the U.S. Army Corps of Engineers in compliance with Section 404 of the Clean Water Act and have filed for a Coastal Development Permit with the California Coastal Commission. A Categorical Exemption (Class 1; Section 15301) for Repairing Existing Seawalls (certified May 24, 2001) was submitted with your 401 water quality certification application.

This order for 401 Certification is contingent upon the execution of the following conditions:

1. Any discharge from the above-referenced project must comply with applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law.
2. Best Management Practices shall be implemented during project construction to ensure that there is not excessive erosion or turbidity, and to prevent pollutant discharges during project construction.
3. No material shall be discharged into Waters of the U.S.
4. Adhere to the requirements proposed by the ACOE and the California Coastal Commission.
5. Construction equipment shall not be stored within any waterways. There shall be no fueling, lubrication, or maintenance of construction equipment within 500 feet of waters of the State.

Regional Board staff has determined that your proposed project, if constructed in accordance with the conditions of the 401 Water Quality Standards Certification, will be in compliance with the State of California's Anti-degradation Policy.

Caulerpa taxifolia Stipulation:

In June 2000, *Caulerpa taxifolia*, an invasive marine seaweed, was reportedly found in a lagoon off Huntington Harbour. Since then, it has been located within Huntington Harbour itself. The Regional Board, California Department of Fish and Game (CDFG), and other agencies are involved in extensive efforts to eradicate this seaweed and prevent its transport to other areas. On December 20, 2000 and March 13, 2001, Tetra Tech, Inc. conducted underwater surveys for *Caulerpa taxifolia* adjacent to the proposed project sites. Tetra Tech, Inc. informed staff of the Regional Board that there were no signs of *Caulerpa* at the surveyed sites. If *Caulerpa* is found prior to, or during implementation of, the project, it is not to be disturbed, and the Regional Board must be notified immediately of the alga's location and date of discovery. No work should begin or continue at that location until authorized by Regional Board staff.

Should no *Caulerpa* be observed during the bulkhead repair, please notify the Regional Board of this fact when all property repairs at Humboldt and Trinidad Islands have been completed. Your response will help us establish a database of *Caulerpa's* occurrence or absence to prevent the spread of this invasive seaweed, which has severe adverse effects on the ecosystem.

Under California Water Code, Section 1058, and Pursuant to 23 CCR §3860, the following shall be included as conditions of all water quality certification actions:

(a) Every certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the Water Code and Article 6 (commencing with Section 3867) of this Chapter.

(b) Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to Subsection 3855(b) of this Chapter and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

(c) Certification is conditioned upon total payment of any fee required under this Chapter and owed by the applicant.

This letter constitutes a technically conditioned water quality standards certification. Although we anticipate no further regulatory involvement, if the above stated conditions are changed, any of the criteria or conditions as previously described are not met, or new information becomes available that indicates a water quality problem, we may formulate Waste Discharge Requirements. Please notify our office five (5) days before construction begins on this project.

Should there be any questions, please contact Stephanie M. Gasca at (909) 782-3221.

Sincerely,

GERARD J. THIBEAULT
Executive Officer

CC: U.S. Environmental Protection Agency, Director of Water Division (WTR-1) – Alexis Strauss
U.S. Army Corps of Engineers, Los Angeles District – Jae Chung
State Water Resources Control Board, Division of Water Quality, Water Quality Certification Unit – Oscar Balaguer, Chief
California Coastal Commission, Long Beach Branch – Karl Schwing
Tetra Tech – Sarah McFadden

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California Regional Water Quality Control Board
Santa Ana Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/rwqcb8
3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (909) 782-4130 - FAX (909) 781-6288

Gray Davis
Governor

February 9, 2001

Henry & Sook Wee
16591 Ensign Circle
Huntington Beach, CA 92649

EMERGENCY CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION FOR THE PROPOSED HUMBOLDT ISLAND BULKHEAD REPAIR, CITY OF HUNTINGTON BEACH (NO ACOE REFERENCE NUMBER)

Dear Humboldt Island Homeowner:

This is in response to the December 22, 2000 transmittals we received on December 27, 2000 and additional information received on January 2, 2001 and January 18, 2001, requesting 401 water quality standards certification under section 401 of the Clean Water Act for the above referenced project.

1. Project Description:	A Humboldt Island homeowner is proposing to repair and restore the foundation of an existing bulkhead that confines a portion of Humboldt Island in Huntington Beach. The footing of the bulkhead has been undermined and as a result, the supporting timber piles in the corner have failed. The corner section of the bulkhead has collapsed and this unexpected condition poses an imminent threat of further collapse, which could result in potential loss or damage to life, health, property or essential public services. The proposed construction work will include removing damaged timber and replacing it with steel jacks. The voids within the repaired structure will be pressure-filled with concrete and grout to protect the steel surfaces from corrosion. A fiberglass reinforced plastic sheet will be placed 1'7" in front of the bulkhead face to retain the concrete pumped to fill the existing voids beneath the wall footing and to provide structural integrity for the bulkhead. The construction activities will result in the loss of a small amount of soft bottom habitat.
2. Receiving water:	Huntington Harbour, Orange County
3. Fill area:	Ocean: 0.002 acres of permanent impact. No wetlands will be impacted.
4. Dredge volume:	N/A
5. Federal permit:	U. S. Army Corps of Engineers, Individual Permit
6. Compensatory mitigation:	None

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No discharge of material will occur during construction. The work will be consistent with the requirements of the California Coastal Act 1976. The emergency repair phase of the work to be done is considered temporary repair until a regular Coastal Commission Permit is obtained. As the work is considered temporary repair, no rock or any other fill shall be placed seaward of the sheetpile wall. Upon consulting with the California Department of Fish and Game, Tetra Tech performed a comprehensive survey that indicated there was no *Caulerpa taxifolia* in the area adjacent to the project site. In addition, no eelgrass was found at the site.

Humboldt Island Homeowners have received an individual permit and a Letter of Permission from the U.S. Army Corps of Engineers in compliance with Section 404 of the Clean Water Act. In addition, a California Coastal Commission Emergency Permit (# 5-00-499-G) was certified on December 28, 2000. A Notice of Exemption was received for this project on January 18, 2001.

Resolution No. 96-9 (copy enclosed) provides that waste discharge requirements for certain types of discharges are waived provided that criteria and conditions specified in the Resolution are met. Provided that the criteria and conditions for Minor Dredging Projects specified on page 1 (of Attachment "A" to the Resolution), Other Insignificant Discharges of Wastewater to Land specified on page 4, and the general conditions specified on page 4 are met, waste discharge requirements are waived for this project.

Caulerpa taxifolia Stipulation:

In June 2000, *Caulerpa taxifolia*, an invasive marine seaweed, was reported to be found in a lagoon off Huntington Harbour. Since then, it has been located within Huntington Harbour itself. The regional Board, California Department of Fish and Game (CDFG), and other agencies are involved in extensive efforts to eradicate this seaweed and prevent its transport to other areas. Regional Board staff has contacted Tetra Tech, Inc. regarding this matter, and Tetra Tech, Inc. informed us that there were no signs of Caulerpa at the proposed project site. If Caulerpa is found prior to or during implementation of the project, no work should begin or continue at that location until authorized by Regional Board staff. Upon discovery of the invasive seaweed, which must not be disturbed, the Regional Board must be notified immediately, reporting the location and date of discovery. In addition, should no Caulerpa be observed during the bulkhead repair, please notify the Regional Board of this fact when all property repairs at Humboldt Island have been completed. This will help us to establish a database of infestation or the occurrence or absence of Caulerpa. In turn, this will help us to locate and prevent the spread of this invasive seaweed, which has severe adverse effects on the ecosystem.

Pursuant to California Water Code, Section 1058, and Pursuant to 23 CCR §3860, the following shall be included as conditions of all water quality certification actions:

(a) Every certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the Water Code and Article 6 (commencing with Section 3867) of Chapter 28. Certification of 23 CCR.

(b) Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to Subsection 3855(b) of Chapter 28 of 23 CCR and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

(c) Certification is conditioned upon total payment of any fee required under Chapter 28 of 23 CCR and owed by the applicant.

If the above stated conditions are changed, any of the criteria or conditions as previously described are not met, or new information becomes available that indicates a water quality problem, we may formulate additional Waste Discharge Requirements.

Please notify the Santa Ana Regional Board before construction on this project begins. Should there be any questions, please contact Wanda Smith at (909) 782-4468 or Stephanie M. Gasca at (909) 782-3221.

Sincerely,

GERARD J. THIBEAULT
Executive Officer

Attachment

cc (with attachment):
Tetra Tech- Sarah McFadden

cc (w/out attachment):
U.S. Environmental Protection Agency, Director of Water Division (WTR-1) – Alexis Strauss
U.S. Army Corps of Engineers, Los Angeles District – Jae Chung
U.S. Fish and Wildlife Service, Carlsbad Office - Christine Moen
California Department of Fish and Game – Marilyn Fluharty
California Department of Fish and Game – Erick Burres
California Coastal Commission, Long Beach Branch – Karl Schwing
State Water Resources Control Board, Watersheds Project Support Section – William R. Campbell, Chief

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

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

Contact Phone: **(916) 574-1892**
Contact FAX: **(916) 574-1925**

May 17, 2001

File Ref: SD 2001-04-26.3

Ms. Sarah McFadden
Environmental Scientist
Tetra Tech, Inc.
670 North Rosemead Blvd.
Pasadena CA 91107

Mr. Karl Schwing
California Coastal Commission
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302

Dear Ms. McFadden and Mr. Schwing:

SUBJECT: Humboldt Island Bulkhead Repair Adjacent to 16591 Ensign Circle

This will confirm that staff of the California State Lands Commission (CSLC) has reviewed the proposed bulkhead repair project adjacent to Lot 173 in Tract 5481. The water-covered area adjacent to this lot is not subject to the leasing jurisdiction of the CSLC. The State does, however, retain a Public Trust easement over much of the area within Huntington Harbour. It is CSLC staff's opinion that the project is not inconsistent with current Public Trust needs in the area and we have no objection to the project as proposed.

Sincerely,

Jane E. Smith

Jane E. Smith
Public Land Management Specialist
Southern California Region

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SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

(Adopted July 31, 1991)

Eelgrass (Zostera marina) vegetated areas function as important habitat for a variety of fish and other wildlife. In order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources, the following policy has been developed by the Federal and State resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game). This policy should be cited as the Southern California Eelgrass Mitigation Policy (revision 8).

For clarity, the following definitions apply. "Project" refers to work performed on-site to accomplish the applicant's purpose. "Mitigation" refers to work performed to compensate for any adverse impacts caused by the "project". "Resource agencies" refers to National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

1. **Mitigation Need.** Eelgrass transplants shall be considered only after the normal provisions and policies regarding avoidance and minimization, as addressed in the Section 404 Mitigation Memorandum of Agreement between the Corps of Engineers and Environmental Protection Agency, have been pursued to the fullest extent possible prior to the development of any mitigation program.

2. **Mitigation Map.** The project applicant shall map thoroughly the area, distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. This includes areas immediately adjacent to the project site which have the potential to be indirectly or inadvertently impacted as well as areas having the proper depth and substrate requirements for eelgrass but which currently lack vegetation.

Protocol for mapping shall consist of the following format:

1) Coordinates

Horizontal datum - Universal Transverse Mercator (UTM), NAD 83, Zone 11

Vertical datum - Mean Lower Low Water (MLLW), depth in feet.

2) Units

Transects and grids in meters.

Area measurements in square meters/hectares.

All mapping efforts must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 120 days with the exception of surveys completed in August - October.

A survey completed in August - October shall be valid until the resumption of active growth (i.e., March 1). After project construction, a post-project survey shall be completed within 30 days. The actual area of impact shall be determined from this survey.

3. **Mitigation Site.** The location of eelgrass transplant mitigation shall be in areas similar to those where the initial impact occurs. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that should be considered in evaluating potential sites.

4. **Mitigation Size.** In the case of transplant mitigation activities that occur concurrent to the project that results in damage to the existing eelgrass resource, a ratio of 1.2 to 1 shall apply. That is, for each square meter adversely impacted, 1.2 square meters of new suitable habitat, vegetated with eelgrass, must be created. The rationale for this ratio is based on, 1) the time (i.e., generally three years) necessary for a mitigation site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years. An exception to the 1.2 to 1 requirement shall be allowed when the impact is temporary and the total area of impact is less than 100 square meters. Mitigation on a one-for-one basis shall be acceptable for projects that meet these requirements (see section 11 for projects impacting less than 10 square meters).

Transplant mitigation completed three years in advance of the impact (i.e., mitigation banks) will not incur the additional 20% requirement and, therefore, can be constructed on a one-for-one basis. However, all other annual monitoring requirements (see sections 8-9) remain the same irrespective of when the transplant is completed.

Project applicants should consider increasing the size of the required mitigation area by 20-30% to provide greater assurance that the success criteria, as specified in Section 9, will be met. In addition, alternative contingent mitigation must be specified, and included in any required permits, to address situation where performance standards (see section 9) are not met.

5. **Mitigation Technique.** Techniques for the construction and planting of the eelgrass mitigation site shall be consistent with the best available technology at the time of the project. Donor material shall be taken from the area of direct impact whenever possible, but also should include a minimum of two additional distinct sites to better ensure genetic diversity of the donor plants. No more than 10% of an existing bed shall be harvested for transplanting purposes. Plants harvested shall be taken in a manner to thin an existing bed without leaving any noticeable bare areas. Written permission to harvest donor plants must be obtained from the California Department of Fish and Game.

Plantings should consist of bare-root bundles consisting of 8-12 individual turions. Specific spacing of transplant units shall be at the discretion of the project applicant. However, it is understood that whatever techniques are employed, they must comply with the stated requirements and criteria.

6. **Mitigation Timing.** For off-site mitigation, transplanting should be started prior to or concurrent with the initiation of in-water construction resulting in the impact to the eelgrass bed. Any off-site mitigation project which fails to initiate transplanting work within 135 days following the initiation of the in-water construction resulting in impact to the eelgrass bed will be subject to additional mitigation requirements as specified in section 7. For on-site mitigation, transplanting should be postponed when construction work is likely to impact the mitigation. However, transplanting of on-site mitigation should be started no later than 135 days after

initiation of in-water construction activities. A construction schedule which includes specific starting and ending dates for all work including mitigation activities shall be provided to the resource agencies for approval at least 30 days prior to initiating in-water construction.

7. **Mitigation Delay.** If, according to the construction schedule or because of any delays, mitigation cannot be started within 135 days of initiating in-water construction, the eelgrass replacement mitigation obligation shall increase at a rate of seven percent for each month of delay. This increase is necessary to ensure that all productivity losses incurred during this period are sufficiently offset within five years.

8. **Mitigation Monitoring.** Monitoring the success of eelgrass mitigation shall be required for a period of five years for most projects. Monitoring activities shall determine the area of eelgrass and density of plants at the transplant site and shall be conducted at 3, 6, 12, 24, 36, 48, and 60 months after completion of the transplant. All monitoring work must be conducted during the active vegetative growth period and shall avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 3 and 6 month surveys shall be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60 month period may be required in those instances where stability of the proposed transplant site is questionable or where other factors may influence the long-term success of transplant.

The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program.

A monitoring schedule that indicates when each of the required monitoring events will be completed shall be provided to the resource agencies prior to or concurrent with the initiation of the mitigation.

Monitoring reports shall be provided to the resource agencies within 30 days after the completion of each required monitoring period.

9. **Mitigation Success.** Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the project and mitigation sites. Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the control or transplant bed. Specific criteria are as follows:

a. a minimum of 70 percent area of eelgrass bed and 30 percent density after the first year.

b. a minimum of 85 percent area of eelgrass bed and 70 percent density after the second year.

c. a sustained 100 percent area of eelgrass bed and at least 85 percent density for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.

A_t = transplant deficiency or excess in area of coverage criterion (%).

D_t = transplant deficiency in density criterion (%).

A_c = natural decline in area of control (%).

D_c = natural decline in density of control (%).

Four conditions apply:

1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.

2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.

3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.

4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 7.

10. **Mitigation Bank.** Any mitigation transplant success that, after five years, exceeds the mitigation requirements, as defined in section 9, may be considered as credit in a "mitigation bank". Establishment of any "mitigation bank" and use of any credits accrued from such a bank must be with the approval of the resource agencies and be consistent with the provisions stated in this policy. Monitoring of any approved mitigation bank shall be conducted on an annual basis until all credits are exhausted.

11. **Exclusions.**

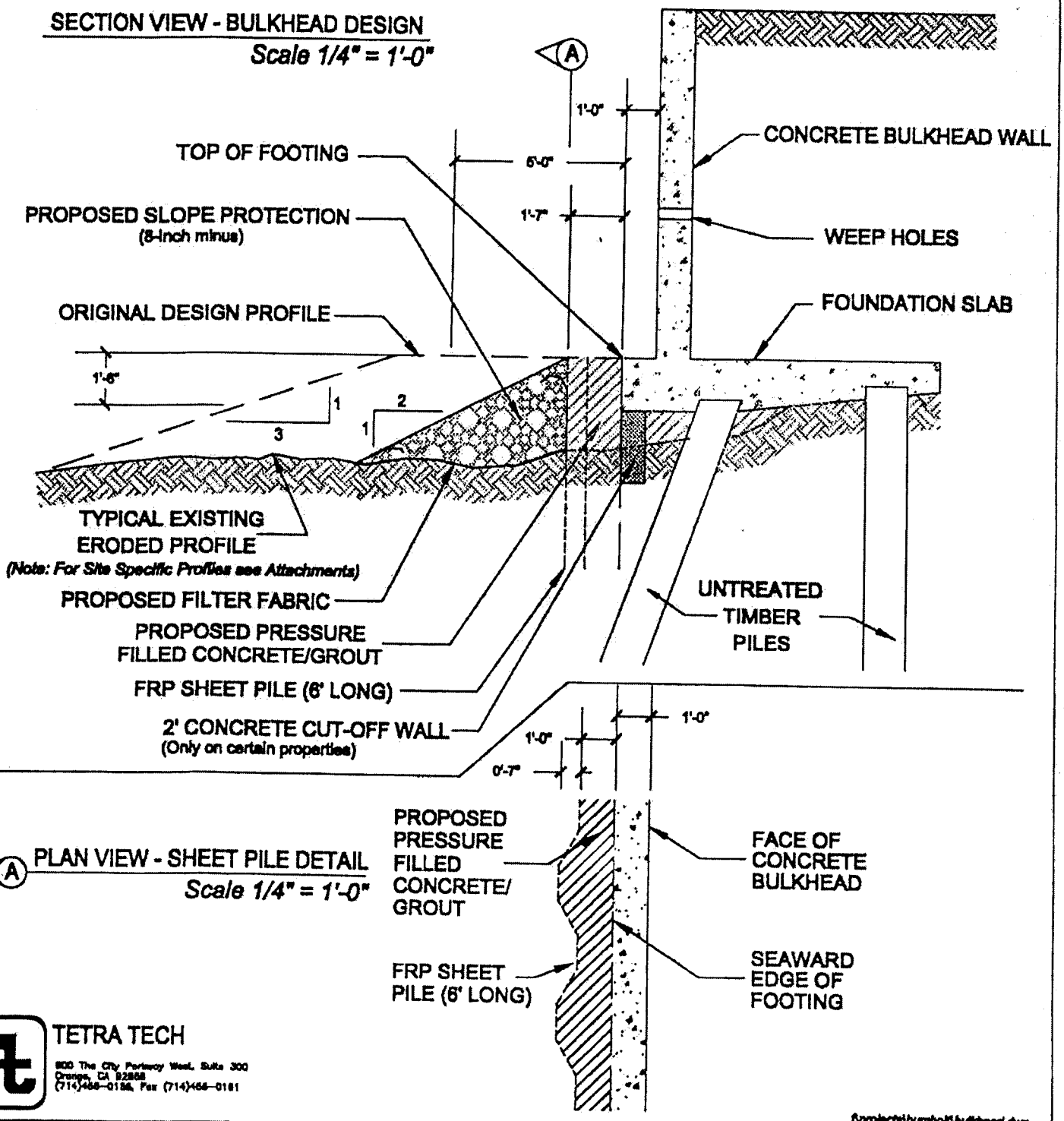
1) Placement of a single pipeline, cable, or other similar utility line across an existing eelgrass bed with an impact corridor of no more than ½ meter wide may be excluded from the provisions of this policy with concurrence of the resource agencies. After project construction, a post-project survey shall be completed within 30 days and the results shall be sent to the resource agencies. The actual area of impact shall be determined from this survey. An additional survey shall be completed after 12 months to insure that the project or impacts attributable to the project have not exceeded the allowed ½ meter corridor width. Should the post-project or 12 month survey demonstrate a loss of eelgrass greater than the ½ meter wide corridor, then mitigation pursuant to sections 1-11 of this policy shall be required.

2) Projects impacting less than 10 square meters. For these projects, an exemption may be requested by a project applicant from the mitigation requirements as stated in this policy, provided suitable out-of-kind mitigation is proposed. A case-by-case evaluation and determination regarding the applicability of the requested exemption shall be made by the resource agencies.

(last revised 2/2/99)

SECTION VIEW - BULKHEAD DESIGN

Scale 1/4" = 1'-0"



PLAN VIEW - SHEET PILE DETAIL

Scale 1/4" = 1'-0"

TETRA TECH
800 The City Parkway West, Suite 300
Orange, CA 92868
(714)456-0186, Fax (714)456-0181

f:\projects\humboldt\bulkhead.dwg

PURPOSE: Repair Existing Seawall Datum: MLLW = 0 Adj. Property Owners: 1. See Attached List	FIGURE 4. ORIGINAL BULKHEAD DESIGN AND SHEET PILE DETAIL Humboldt Island & Trinidad Island Huntington Beach, CA 92649	Proposed Repair of Existing Seawall Supplemental Info. Report California Coastal Commission Date: 3/18/99

Original Bulkhead Design with Repairs to
Bulkhead Shown when Erosion at the
Base of the Existing Bulkhead is Moderate to Severe

EXHIBIT#9
Page 1 of 1
Application Number:
5-01-062
California Coastal Commission