

**CALIFORNIA COASTAL COMMISSION**

South Coast Area Office  
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Filed: November 6, 2000  
49<sup>th</sup> Day: December 25, 2000  
180<sup>th</sup> Day: May 5, 2001  
Staff: KFS-LB *[Signature]*  
Staff Report: January 25, 2001  
Hearing Date: February 13-16, 2001  
Commission Action:

**Tu15J****STAFF REPORT: REGULAR CALENDAR****RECORD PACKET COPY**

APPLICATION NUMBER: 5-00-401

| Application | Applicant(s)                   | Project Location:                                | Tract # | Lot# |
|-------------|--------------------------------|--|---------|------|
|             |                                | Trinidad Island, Huntington Beach, Orange County |         |      |
| 5-00-401    | Sutter, Susan                  | 3502 Venture Drive                               | 8636    | 1    |
|             | Baghdassarian, Ruben & Cheryl  | 3492 Venture Drive                               | 8636    | 2    |
|             | Tajima, Michiko                | 3462 Venture Drive                               | 8636    | 3    |
|             | Munoz, Frank & Nancy           | 3452 Venture Drive                               | 8636    | 4    |
|             | Kubeck, John D. & Nicolette M. | 3442 Venture Drive                               | 8636    | 5    |
|             | Goodyear, Francis & Margaret   | 3422 Venture Drive                               | 8636    | 7    |
|             | Hill, Rodney & Michelle        | 3402 Venture Drive                               | 8636    | 8    |
|             | Chen, Eric                     | 3392 Venture Drive                               | 8636    | 9    |
|             | Zacharia, Reda                 | 3372 Venture Drive                               | 8636    | 11   |
|             | Schofhauser, George F.         | 3342 Venture Drive                               | 8636    | 14   |
|             | Newfield, William              | 3332 Venture Drive                               | 8636    | 15   |
|             | Hodges, Tracey                 | 3322 Venture Drive                               | 8636    | 16   |
|             | Dawson, Harry W.A.             | 3292 Venture Drive                               | 8636    | 19   |
|             | Broido, Alan                   | 16311 Typhoon Lane                               | 8636    | 20   |
|             | Rosenthal, Yuval & Eva         | 16301 Typhoon Drive                              | 8636    | 21   |
|             | Do, Liem & Anh                 | 16291 Typhoon Lane                               | 8636    | 22   |
|             | Swain, Robert                  | 16271 Typhoon Lane                               | 8636    | 24   |
|             | Muratore, John S. & Irene D.   | 3742 Nimble Circle                               | 9168    | 43   |
|             | Jabobs, Joseph & Benita        | 3682 Escapade Circle                             | 9168    | 55   |
|             | De Gelas, Frank & Donna        | 3622 Venture Lane                                | 9168    | 68   |
|             | Kriesel, Gregory D.            | 3512 Venture Drive                               | 9335    | 40   |

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

**PROJECT DESCRIPTION:** Repair and enhancement of existing harbor bulkhead/seawall consisting of replacing portions of the timber pile foundation supports with steel jacks, installation of 134 linear feet of sheet pile 1 foot 7 inches seaward of the existing bulkhead and filling the voids between the bulkhead and sheet pile, under the bulkhead and around the jacks with concrete and grouting. In addition, place 524 cubic yards of rock slope protection against the toe of the bulkhead. Mitigation of 1173.4 square feet of impact to eelgrass habitat with 1408 square feet of eelgrass near the Anaheim Bay National Wildlife Refuge.

**SUMMARY OF STAFF RECOMMENDATION:**

The major issues of this staff report relate to construction and operation phase impacts of placing bulkhead reinforcements in the marine environment. With conditions, the project will

have no adverse construction phase impacts on water quality or marine habitat. However, the project will have direct impacts upon eelgrass which are proposed to be mitigated. In addition, since the proposed toe stone will be naturally re-colonized by marine organisms there are no permanent impacts upon soft bottom habitat. Staff recommends **APPROVAL** of the proposed development with eight 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) implementation of the proposed eelgrass mitigation; 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 eelgrass mitigation; 7) the applicant to demonstrate their legal ability to undertake the proposed off-site eelgrass mitigation; and 8) the applicant to submit an anchor management plan.

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**LOCAL APPROVALS RECEIVED:** City of Huntington Beach approvals-in-concept dated August 10, 2000; Negative Declaration No. 00-05 approved by the City of Huntington Beach Zoning Administrator on September 13, 2000.

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**SUBSTANTIVE FILE DOCUMENTS:** See Appendix A

**STAFF NOTE:**

The proposed project is part of a group of applications which have been submitted by various property owners for approval of bulkhead reinforcements in Huntington Harbour. These applications have grouped together those properties which have the same types of impacts. There are four such groups, as follows: 1) projects with no impact on eelgrass and no permanent impact upon soft bottom habitat (i.e. 5-00-402); 2) projects with impacts upon eelgrass, but no permanent impact upon softbottom habitat (i.e. this application, 5-00-401); 3) projects with no impact on eelgrass, but do have permanent impacts upon softbottom habitat (i.e. 5-00-389); and 4) projects having both impacts upon eelgrass and permanent impacts upon softbottom habitat (i.e. 5-00-390). Any projects involving impacts to eelgrass or softbottom habitat include mitigation. The eelgrass mitigation has already been undertaken under Coastal Development Permit 5-97-231. Meanwhile, a separate coastal development permit will be processed for the softbottom mitigation at a subsequent hearing.

It should also be noted that Commission staff anticipate a large number of applications in the future for similar repairs to bulkheads throughout Huntington Harbour. For instance, the Commission has already processed at least 15 applications covering 40 properties on Humboldt Island (another bulkheaded island in Huntington Harbour) for repairs to the bulkhead. The existing bulkhead system in Huntington Harbour was constructed at approximately the same time using a similar design. Therefore, the problems with the bulkheads encountered on Trinidad Island are similar to those experienced on Humboldt Island, therefore the proposed solution is similar to those repairs previously approved by the Commission.

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

**MOTION:** I move that the Commission approve Coastal Development Permit No. 5-00-401 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, or oils and liquid chemicals shall be placed or stored where it may be subject to wave erosion and dispersion;
- (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;
- (d) Sand from the beach, 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 control turbidity.

#### 3. Eel Grass Mitigation

- A. Compliance with Eelgrass Mitigation Plan. The applicant shall implement and comply with the recommendations and mitigation contained within *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 and *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, California as they pertain to the development that is the subject of this coastal development permit. The mitigation plan shall be undertaken in full compliance with the "Southern California Eelgrass Mitigation Policy"

Revision 8 (except as modified by this condition) adopted by the National Marine Fisheries Service. Any changes to the approved mitigation plan, including but not limited to changes to the monitoring program to ensure success of the eelgrass 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.

- B. Pre-construction Eelgrass Survey. A valid pre-construction eelgrass 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 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 new eelgrass survey for the review and approval of the Executive Director within five (5) working days of completion of the new eelgrass survey and in any event no later than fifteen (15) working days prior to commencement of construction. If the new survey identifies, within the proposed project area, any eelgrass which is not documented in the eelgrass survey described in Special Condition No. 3.A. above, the newly identified eelgrass shall be transplanted prior to commencement of construction at a 1.2:1 ratio at the same transplantation locations identified in the eelgrass mitigation plan described in Special Condition No. 3.A. above. The transplantation shall occur consistent with all provisions of the mitigation plan described in Special Condition 3.A.
- C. Post-construction Eelgrass Survey. After completion of project construction, the applicant shall survey the project site to determine if any eelgrass was adversely impacted. This post-construction survey shall be completed in the same month as the pre-construction survey during the next growing season immediately following the completion of construction within coastal waters. The survey shall be prepared in full compliance with the "Southern California Eelgrass Mitigation Policy" Revision 8 (except as modified by this 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 post-construction eelgrass survey for the review and approval of the Executive Director within thirty (30) days after completion of the survey. If any eelgrass has been impacted, the applicant shall replace the impacted eelgrass at a 1.2:1 ratio at the transplantation site and in accordance with the mitigation plan described in Special Condition No. 3.A. above.

4. Pre-Construction Caulerpa taxifolia Survey

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 to determine the existence of *Caulerpa taxifolia*. The survey shall be prepared in consultation with the Regional Water Quality Control Board and the California Department of Fish and Game. The applicant shall submit the survey for the review and approval of the Executive Director within five (5) business days of completion of each survey and in any event no later than fifteen (15) business days prior to

commencement of any development. If the survey identifies any *Caulerpa taxifolia* within the project area, the development shall require an amendment to this permit from the Coastal Commission or a new coastal development permit to implement measures to avoid or mitigate impacts that the proposed development would have upon dispersal of *Caulerpa taxifolia* in the project area, unless the Executive Director determines that no amendment or new permit is 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 – Eelgrass Mitigation**

This coastal development permit does not serve as a coastal development permit approval for the implementation of the proposed eelgrass mitigation contained within *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, California. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall provide evidence of an approved and valid coastal development permit for the implementation of the eelgrass mitigation plan required by Special Condition 3 above.

7. **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.

8. **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 Trinidad Island in Huntington Harbour, City of Huntington Beach, Orange County (Exhibit 1 and 2). Trinidad 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 21 bulkheaded properties, some of which are contiguous with one another and some of which are non-contiguous, which are located seaward of the first public road.

The proposed project (Exhibit 3) consists of the repair and enhancement of an existing bulkhead. The repairs and enhancements will entail replacing portions of the timber pile foundation supports with steel jacks, installing a sheet pile 1 foot 7 inches seaward of the existing bulkhead and filling the voids between the bulkhead and sheet pile, under the bulkhead and around the jacks with concrete and grouting. In addition, rock slope protection (a.k.a. toe stone) will be placed at a 2(h) to 1(v) slope seaward of the existing bulkhead. A layer of geotextile fabric will be placed beneath the proposed toe stone to prevent the toe stone from sinking into the bay mud. The applicants also propose to mitigate for impacts upon eelgrass with an eelgrass restoration project near the Anaheim Bay National Wildlife Refuge. In addition, permanent impacts to soft bottom bay habitat will be mitigated by restoring a tidal mud flat at Bolsa Chica Ecological Reserve.

The length of bulkhead involved at each property varies as does the length of 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 eelgrass and soft bottom habitat impacted and mitigated. These details are outlined in the following table:

**(Table Follows on Next Page)**

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| Site Address      | Tract # | Lot # | Bulkhead Length (ft) | Max. Sheet Pile Length (ft) | Max. Sheet Pile Footprint* (ft <sup>2</sup> ) | Adjusted Sheet Pile Footprint* (ft <sup>2</sup> ) | Qty. Toe Stone (CY) | Width of Toe Stone (ft) | Temp. Toe Stone Impact (ft <sup>2</sup> ) | Eelgrass Impacted (ft <sup>2</sup> ) | Eelgrass Mitigated (ft <sup>2</sup> ) | Softbottom Impacted (ft <sup>2</sup> ) | Softbottom Mitigated (ft <sup>2</sup> ) |
|-------------------|---------|-------|----------------------|-----------------------------|---|---|---------------------|-------------------------|---|--------------------------------------|---------------------------------------|--|---|
| 3502 Venture Dr   | 8636    | 1     | 66                   | 0                           | 0   | 0   | 18                  | 6                       | 396                                       | 12.9                                 | 15.5                                  | 0                                      | 0                                       |
| 3492 Venture Dr   | 8636    | 2     | 60                   | 0                           | 0   | 0   | 8                   | 6                       | 342                                       | 158.5                                | 190.2                                 | 0                                      | 0                                       |
| 3462 Venture Dr   | 8636    | 3     | 60                   | 0                           | 0   | 0   | 18                  | 6                       | 342                                       | 11.9                                 | 14.3                                  | 0                                      | 0                                       |
| 3452 Venture Dr   | 8636    | 4     | 60                   | 0                           | 0   | 0   | 22                  | 6                       | 360                                       | 13.3                                 | 15.9                                  | 0                                      | 0                                       |
| 3442 Venture Dr   | 8636    | 5     | 60                   | 18                          | 18.7  | 0   | 25                  | 6                       | 360                                       | 28                                   | 33.6                                  | 0                                      | 0                                       |
| 3422 Venture Dr   | 8636    | 7     | 60                   | 17                          | 17.7  | 0   | 13                  | 6                       | 360                                       | 100                                  | 120                                   | 0                                      | 0                                       |
| 3402 Venture Dr   | 8636    | 8     | 60                   | 0                           | 0   | 0   | 14                  | 6                       | 360                                       | 21.5                                 | 25.8                                  | 0                                      | 0                                       |
| 3392 Venture Dr   | 8636    | 9     | 60                   | 6                           | 6.2   | 0   | 23                  | 6                       | 360                                       | 51.1                                 | 61.3                                  | 0                                      | 0                                       |
| 3372 Venture Dr   | 8636    | 11    | 60                   | 6                           | 6.2   | 0   | 19                  | 6                       | 360                                       | 49.3                                 | 59.2                                  | 0                                      | 0                                       |
| 3342 Venture Dr   | 8636    | 14    | 60                   | 6                           | 6.2   | 0   | 28                  | 6                       | 360                                       | 16.8                                 | 19.9                                  | 0                                      | 0                                       |
| 3332 Venture Dr   | 8636    | 15    | 60                   | 24                          | 24.9  | 0   | 31                  | 6                       | 360                                       | 3.8                                  | 4.5                                   | 0                                      | 0                                       |
| 3322 Venture Dr   | 8636    | 16    | 60                   | 57                          | 59.2  | 0   | 32                  | 6                       | 342                                       | 28.6                                 | 34.3                                  | 0                                      | 0                                       |
| 3292 Venture Dr   | 8636    | 19    | 125.38               | 0                           | 0   | 0   | 51                  | 6                       | 734                                       | 1.7                                  | 2.1                                   | 0                                      | 0                                       |
| 16311 Typhoon Ln  | 8636    | 20    | 76.04                | 0                           | 0   | 0   | 25                  | 6                       | 456                                       | 11.0                                 | 13.2                                  | 0                                      | 0                                       |
| 16301 Typhoon Dr  | 8636    | 21    | 61                   | 0                           | 0   | 0   | 17                  | 6                       | 366                                       | 85.6                                 | 102.7                                 | 0                                      | 0                                       |
| 16291 Typhoon Ln  | 8636    | 22    | 60                   | 0                           | 0   | 0   | 18                  | 6                       | 360                                       | 21.5                                 | 25.8                                  | 0                                      | 0                                       |
| 16271 Typhoon Ln  | 8636    | 24    | 60                   | 0                           | 0   | 0   | 13                  | 6                       | 360                                       | 43.6                                 | 52.3                                  | 0                                      | 0                                       |
| 3742 Nimble Cir   | 9168    | 43    | 165.9                | 0                           | 0   | 0   | 67                  | 6                       | 995                                       | 88.7                                 | 106.4                                 | 0                                      | 0                                       |
| 3682 Escapade Cir | 9168    | 55    | 96.89                | 0                           | 0   | 0   | 55                  | 6                       | 563                                       | 17.8                                 | 21.4                                  | 0                                      | 0                                       |
| 3622 Venture Ln   | 9168    | 68    | 60                   | 0                           | 0   | 0   | 10                  | 6                       | 342                                       | 94.5                                 | 113.4                                 | 0                                      | 0                                       |
| 3512 Venture Dr   | 9335    | 40    | 60                   | 0                           | 0   | 0   | 17                  | 6                       | 342                                       | 313.5                                | 376.2                                 | 0                                      | 0                                       |
| <b>Total</b>      |         |       | <b>1491.21</b>       | <b>134</b>                  | <b>139.1</b>                                  | <b>0</b>  | <b>524</b>          |                         | <b>8820</b>                               | <b>1173.4</b>                        | <b>1408</b>                           | <b>0</b>                               | <b>0</b>                                |

In total, the proposed project will involve 1,491 linear feet of bulkhead. One hundred thirty four (134) linear feet of sheet pile will be installed. In some areas on Trinidad Island there is a swath of overspilled concrete in front of the bulkhead (which occurred during the original construction of the bulkhead system in the 1960's). Therefore, unlike the situation at Humboldt Island where use of sheet pile results in the loss of softbottom habitat, the proposed use of sheet piles will not result in the loss of any softbottom habitat under the proposed project. The presence of this overspilled concrete at the proposed project sites means that the use of the sheet piles will not impact any softbottom habitat. In addition, a total of 524 cubic yards of rock slope protection will be placed against the toe of the seawall resulting in 8,820 square feet of temporary soft bottom impacts. In addition, a total of 1,173.4 square feet of eelgrass will be impacted and a total of 1,408 square feet of eelgrass mitigation will occur near the Anaheim Bay National Wildlife Refuge.

The toe stone will impact 1,173.4 square feet of eelgrass in the project area. The applicant is proposing to mitigate the loss of the eelgrass by transplanting 1,408 square feet (1.2:1 mitigation to impact ratio) of eelgrass to a location near the Anaheim Bay National Wildlife Refuge (Exhibit 10). The mitigation will be carried out concurrent with the eelgrass mitigation

\* Based on original calculations using maximum 1' 7" width of sheet pile impact.

\*\* Based on average between 1'-1" and 1'- 7" (1'- 3.5") minus the unimpacted area due to corrugation of sheet pile (50% of sheet pile width = 3.5") minus area of overspilled concrete.



necessary under the other associated bulkhead reinforcement projects which have eelgrass impacts on Trinidad Island and Humboldt Island. A separate coastal development permit addresses the eelgrass mitigation project and encompass all of the eelgrass mitigation necessary for all of the coastal development permits pending for bulkhead reinforcements which have eelgrass impacts on Trinidad Island (5-00-401, 5-00-390) and Humboldt Island (5-99-030, 5-99-031, 5-99-032, 5-99-108).

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. The applicant has stated that this bulkhead was 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 has undermined the bulkhead footing, exposing the existing untreated timber piles which provide the primary vertical and lateral support for the existing bulkhead. Marine boring organisms have damaged the exposed piles and threatens to destabilize the existing bulkhead.

The proposed slope protection toe stone will consist of 8-inch diameter or less 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 an existing home. Trinidad Island is located in Huntington Harbour. On nearby properties 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 has allowed water to enter behind (i.e. landward of) the bulkhead and undermine the bulkhead foundation. Further, the gap and erosion has exposed the bulkhead's supporting timber piles to deterioration from burrowing marine organisms. The mud line at the subject sites has dropped between 3 to 27 inches below the bottom of the footing of the existing bulkhead. However, at this stage,

there are minimal voids beneath the footing of the bulkhead at the subject sites. Accordingly, the applicant has stated that the placement of protective toe stone will be adequate to prevent additional erosion and the development of voids with subsequent damage to the timber piles. If protective measures are not implemented at this stage, more extensive structural reinforcements would be necessary to protect the bulkhead.

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 structure is for the purpose of protecting existing structures. 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 establish 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 sheetpile; and 7) 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 lose structural integrity, causing the bulkhead to fail. If the bulkhead were allowed to fail, it would collapse 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 eelgrass 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 softbottom 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 a timber pile foundation 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 softbottom 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 erode from around the timber pilings exposing them to marine boring organisms. The applicant has stated that the softbottom 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 softbottom fill were used to protect the subject sites, re-nourishment of the softbottom 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.

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. Providing 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.

The fourth alternative, placement of course rock only, would also have greater environmental damage 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.

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 sheetpiles would intersect the existing battered 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 sheetpile would have to be located substantially seaward in order to avoid intersecting the battered timber piles. The proposed shallower sheet pile minimizes the seaward encroachment of the structure to 1 foot 7 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, PVC sheetpiles are not long enough to extend deep enough into the harbor bottom. Steel sheetpiles, 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 sheetpile 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 lose 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.

The seventh alternative 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, as proposed. 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 eelgrass and 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 project will result in the coverage of approximately 8,820 square feet of vegetated and unvegetated soft bottom habitat. These softbottom 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 softbottom habitat and clam beds, the toe stone will be re-colonized naturally by marine organisms within three to five years.

The California Department of Fish and Game (CDFG) has reviewed the proposed development. In their memorandum to Commission staff dated July 6, 1999 regarding the 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 applicants proposed mitigation will be adequate to address project impacts. Mitigation for impacts upon 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.

#### 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 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 Survey Report, Trinidad Island – Huntington Harbour* dated October 26, 1999, and November 18 & 19, 1999 and dated August 2000 prepared by Tetra Tech, Inc. of Pasadena, CA indicates that eelgrass is present in scattered patches around Trinidad Island and within the project area (Exhibit 4). In the project area there is approximately 3,764 square feet of eelgrass within 33 feet of the face of the bulkhead. According to the applicant's analysis, the proposed project will directly impact 1,173.4 square feet of eelgrass when the geotextile fabric and toe stone are placed to protect the bulkhead.

The applicant is proposing to mitigate for the impacts upon 1,173.4 square feet of eelgrass by transplanting 1,408 square feet of eelgrass to a location approximately 1 mile upcoast of the site near the Anaheim Bay National Wildlife Refuge (Exhibit 10). The proposed mitigation (which has already been implemented under Coastal Development Permit 5-97-231) has occurred contiguous with the eelgrass mitigation necessary to offset impacts upon eelgrass occurring from bulkhead reinforcement projects elsewhere on Trinidad Island (5-00-390) and Humboldt Island [(5-99-030, 5-99-031, 5-99-032, 5-99-108)]. In addition, the proposed eelgrass mitigation adds to eelgrass mitigation planted in the same area which was required under Coastal Development Permit 5-97-231 for the County of Orange's Sunset Harbor – Phase II Maintenance Dredging Project. The eelgrass mitigation plan is contained within *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, California which amends and builds upon the County of Orange's eelgrass mitigation plan titled *Eelgrass (Zostera marina) survey, impact assessment, and mitigation plan* dated December 1999 prepared for the County of Orange by Coastal Resources Management.

As noted above, the eelgrass impacts occurring under this project have been mitigated in conjunction with the other sites on Trinidad Island which require eelgrass mitigation. The total quantity of eelgrass to be impacted by bulkhead reinforcement projects on Trinidad Island which are pending before the Commission at this time (including the proposed project) is 1,672 square feet of impact to eelgrass [5-00-390 and 5-00-401]. Using the commonly required 1.2:1 mitigation to impact ratio for eelgrass (see Southern California Eelgrass Mitigation Policy), the total mitigation required would be 2,006.3 square feet. The applicants eelgrass mitigation plan indicates that, in total, 2,400 square feet of eelgrass were transplanted to the mitigation site. Accordingly, the applicant is providing eelgrass mitigation at a ratio of 1.4:1 rather than the normally required 1.2:1 ratio. The mitigation will be monitored for a period of 5 years including three monitoring events the first year, followed by one monitoring event for the next 4 years. The applicant will submit monitoring reports to the Commission within 30 days of each monitoring event. Mitigation success and any needed remedial planting will be done in accordance with the Southern California Eelgrass Mitigation Policy.

The applicant's eelgrass mitigation plan indicates that the proposed eelgrass mitigation has already been undertaken. According to the applicant, the mitigation was carried out through the County of Orange under Coastal Development Permit 5-97-231. According to the applicant, the County of Orange's dredging project impacted less eelgrass than anticipated, therefore, less eelgrass mitigation was planted under that permit. Since less eelgrass was

planted, there was physical space available to plant the eelgrass mitigation necessary for the Humboldt Island project. In order to assure that the proposed eelgrass mitigation plan is carried out in accordance with an approved, valid coastal development permit, the Commission imposes Special Condition 6, which requires the applicant to submit evidence of an approved valid coastal development permit for the eelgrass mitigation prior to issuance of this coastal development permit.

Mitigation for impacts to eelgrass is necessary in order for the project to be consistent with Section 30230 of the Coastal Act. Therefore, the Commission imposes Special Condition 3. Special Condition 3 requires the applicant to implement the transplantation and mitigation of eelgrass in accordance with the proposed mitigation plan (i.e. *Eelgrass Mitigation and Eelgrass Transplant Report, Humboldt Island & Trinidad Island Bulkhead Repair Project, Huntington Beach, California*) and the Southern California Eelgrass Mitigation Policy.

Also, at least 14 months have elapsed since the eelgrass survey was conducted in October and November of 1999. 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. While the applicant is proposing to conform with the Southern California Eelgrass Mitigation Policy, it is not clear from the applicants mitigation plan that a valid pre-construction eelgrass survey will be conducted. Therefore, the Commission imposes Special Condition 3.B. 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 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), and 5-99-473 (Gelbard). The pre-construction survey will confirm the location and boundary of the previously identified eelgrass beds and also locate any eelgrass beds not previously identified which will be impacted and which must be transplanted prior to the commencement of development. Such transplantation shall occur at a 1.2:1 ratio at the location identified in the eelgrass mitigation plan.

The proposed development will occur in areas adjacent to existing 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.

Even with the anchor management plan, construction activity could inadvertently impact eelgrass. Therefore, the Commission finds that a post-construction eelgrass survey must be submitted to determine whether any eelgrass not proposed to be impacted was inadvertently impacted. Therefore, the Commission imposes Special Condition 3.C. Any eelgrass inadvertently impacted which was not proposed to be impacted must be mitigated under the proposed mitigation plan in the same manner as any planned eelgrass transplantation and mitigation – i.e. the same ratio of 1.2:1, the same transplantation site, same procedures, etc. The Commission required similar post-construction eelgrass surveys and mitigation for inadvertently impacted eelgrass in coastal development permit approvals 5-97-230, 5-97-231, 5-97-071, 5-99-244.

Also, the applicant is proposing to construct the development in a manner which minimizes impacts upon eelgrass by limiting the amount of toe stone placed. For instance, if the applicant were to install an excessive quantity of toe stone in a wide swath adjacent to the bulkhead, impacts to eelgrass could occur. 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 minimization 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.

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*, has been discovered in parts of Huntington Harbour (Emergency Coastal Development Permits 5-00-403-G and 5-00-463-G). *Caulerpa taxifolia* is a type of seaweed which has been identified as a threat to California's coastal marine environment because it has the ability to displace native aquatic plant species and habitats. Information available from the National Marine Fisheries Service indicates that *Caulerpa taxifolia* can grow in large monotypic stands within which no native aquatic plant species can co-exist. Therefore, native seaweeds, seagrasses, and kelp forests can be displaced by the invasive *Caulerpa taxifolia*. This displacement of native aquatic plant species can adversely impact marine biodiversity with associated impacts upon fishing, recreational diving, and tourism. *Caulerpa taxifolia* is known to grow on rock, sand, or mud substrates in both shallow and deep water areas. Since eelgrass grows in shallow sandy areas, *Caulerpa taxifolia* could displace eelgrass in Huntington Harbour.



If present in the project area, *Caulerpa taxifolia* could be dispersed through construction of the proposed project. The placement of rock in areas where *Caulerpa taxifolia* is present, could cause pieces of the plant to break off and settle elsewhere, where it can regenerate. By causing dispersal of *Caulerpa taxifolia*, the proposed project could have adverse impacts upon marine life, especially sensitive eelgrass habitat. In order to assure that the proposed project does not cause the dispersal of *Caulerpa 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 *Caulerpa taxifolia*. If *Caulerpa taxifolia* is present in the project area, no work may commence and the applicant shall seek an amendment or a new permit to address impacts related to the presence of the *Caulerpa taxifolia*, unless the Executive Director determines that no amendment or new permit is required. The RWQCB has similarly conditioned their approval of the proposed project (Exhibit 6).

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 mitigated. Special Condition 4 assures that the project will not cause dispersal of the non-native, invasive *Caulerpa taxifolia* with subsequent displacement of eelgrass habitat. Special Condition 8 assures that eelgrass is not impacted by the placement of anchors for constructed related barges. 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 project (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 Trinidad Island in Huntington Harbour. Much of Huntington Harbour consists of private communities. However, Trinidad 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 Trinidad Lane at the entrance to Trinidad Island, as well as public fishing docks at the ends of Sundancer Lane and Typhoon Lane on Trinidad 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 30211 of the Coastal Act states:

*Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

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). The proposed development is occurring upon submerged lands in Huntington Harbour.

The CSLC has been contacted by the applicants regarding the proposed development. A letter dated March 29, 2000 from the CSLC indicates that certain properties are not located upon lands owned in fee interest by the State, therefore, no PWL is required (Exhibit 7). Meanwhile, all lots within Tracts 8636 and 9335 located on the Main Channel along Venture Drive do require a protective works lease (Exhibit 7). In order to assure compliance with Section 30601.5 of the Coastal Act, the Commission imposes Special Condition 7. Therefore, prior to issuance of the coastal development permit the applicants must provide evidence of a final approved PWL from the CSLC for those properties which require a PWL.

Comments provided in communications from CSLC indicate that their preliminary approval of the projects does not waive any potential public rights to the subject submerged lands. In addition, the comments provided by the CSLC were provided by their staff and not provided via a resolution or other action by the appointed members of the California State Lands Commission. It remains possible that the authorization of use of the submerged lands for the proposed purpose could be challenged. In order to assure that the subject Coastal Development Permit is not utilized to assert that any public rights to the land upon which the development is occurring have been waived, the Commission imposes Special Condition 5 which states that the Coastal Commission's approval is not a waiver of any public rights which exist or may exist on the property.

As conditioned the Commission finds the proposed project is consistent with Sections 30211 and 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 not contain any known sensitive marine resources, therefore the impacts arising from the proposed project will be minimal. 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 mitigate for impacts upon eelgrass; 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 eelgrass mitigation; 7) a requirement the applicant demonstrate their legal ability to undertake the development on land owned by the California State Lands Commission, and 8) 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.

Appendix A  
Substantive File Documents  
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Applicants Engineering Analyses and Letters

- 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, California
- *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
- *Eelgrass (Zostera marina) survey, impact assessment, and mitigation plan* dated December 1999 prepared for the County of Orange by Coastal Resources Management.

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, California

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

Other Agency Approvals and Correspondence

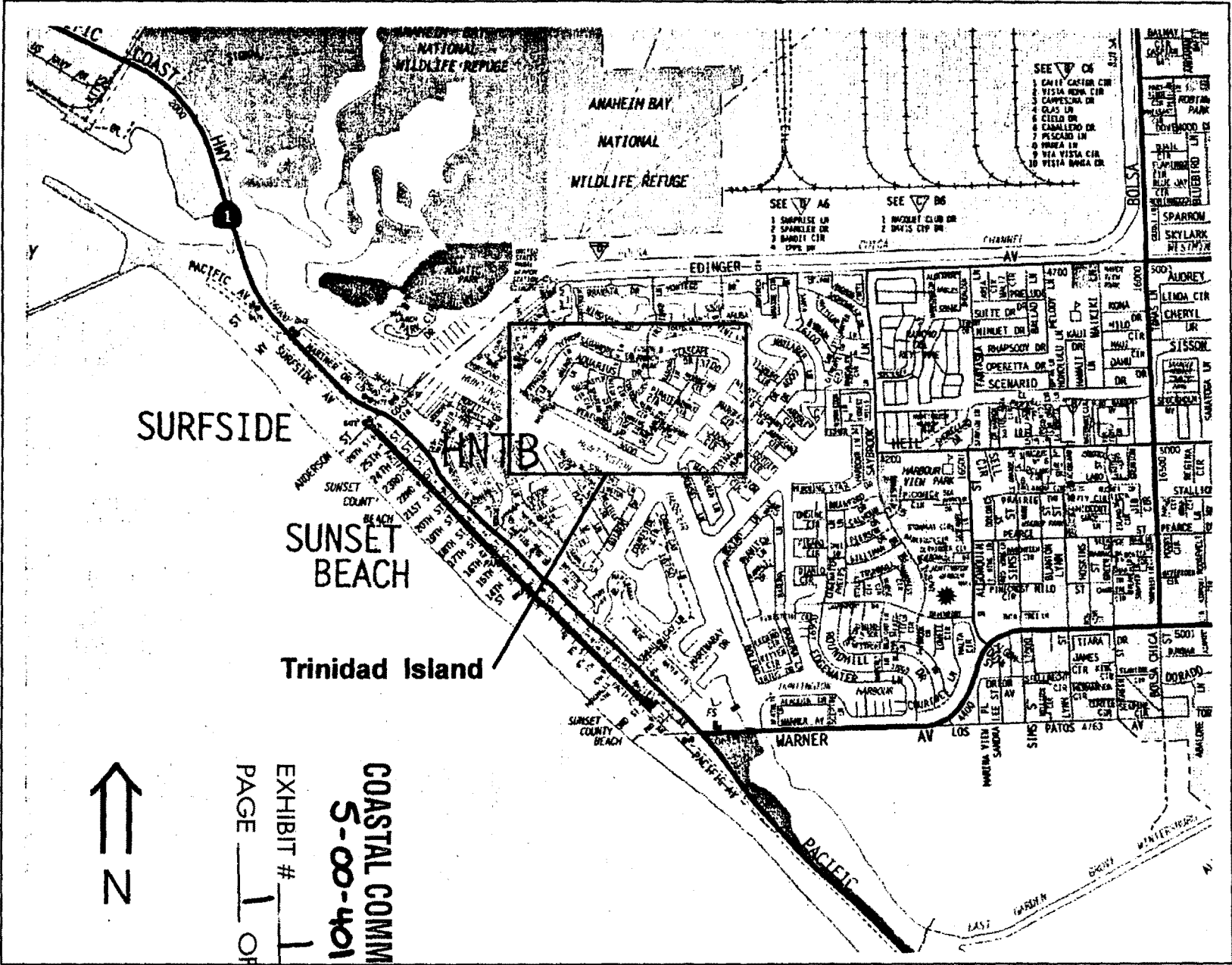
- Letter from the California State Lands Commission dated March 24, 2000 regarding *Proposed Bulkhead Repairs on 62 Residential Properties at Trinidad Island, Huntington Harbour, Orange County*
- California Regional Water Quality Control Board, Santa Ana Region, Clean Water Act Section 401 Water Quality 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

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
- 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)

Pending Coastal Development Permit Applications

- Trinidad Island: 5-00-389 (Ashby et. al.); 5-00-390 (Burggraf et. al.); 5-00-402 (Buettner et. al.)



Source: Thomas Bros. Maps

COASTAL COMMISSION  
 S-00-401  
 EXHIBIT # 1  
 PAGE 1 OF 1

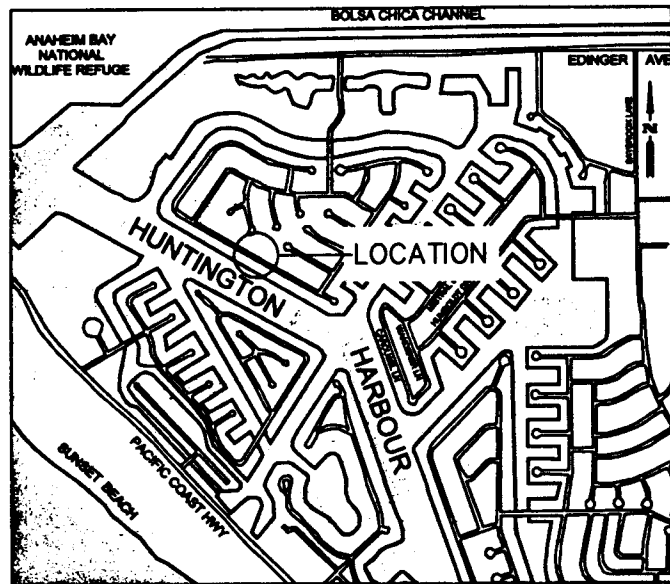
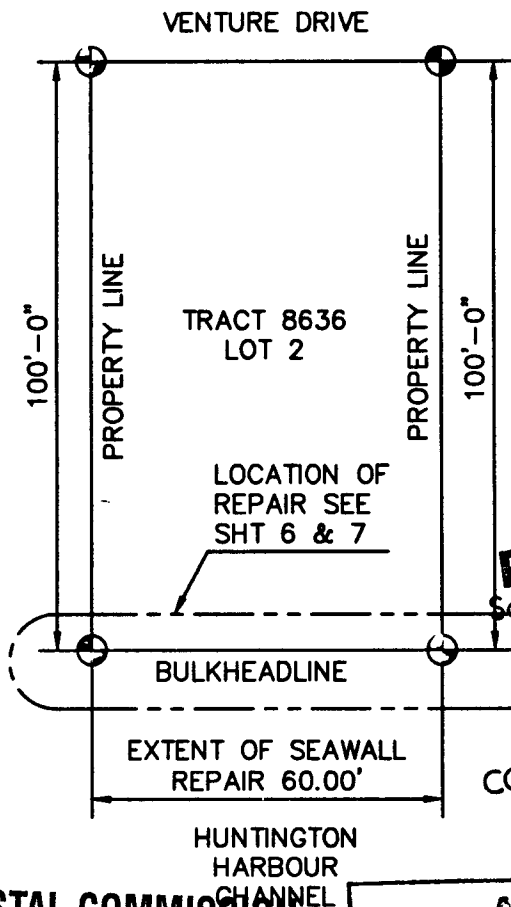
**Project Area Map**  
**Huntington Harbour Bulkhead Repair**  
**Trinidad Island Eelgrass Survey**

Tetra Tech  
 INCORPORATED

**FIGURE 1**







VICINITY MAP

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

**RECEIVED**  
South Coast Region  
OCT 4 2000

CALIFORNIA  
COASTAL COMMISSION

NOTE:  
ALL DEPTHS BASED ON  
MLLW=0.00 FT.

South Coast District Office

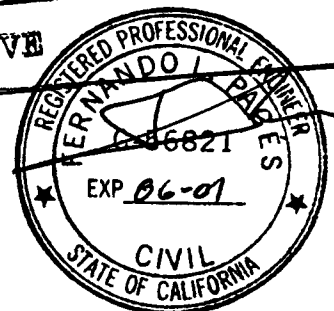
COASTAL COMMISSION  
5-00-401

EXHIBIT # 3  
PAGE 1 OF 47

**APPROVED  
IN CONCEPT**  
*RP*  
PLANNING DIVISION  
CITY OF HUNTINGTON BEACH

APPROVED  
Permit No. 5-00-401

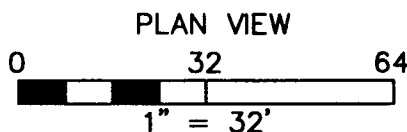
By: \_\_\_\_\_  
DATE: \_\_\_\_\_



**TETRA TECH**  
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(626)351-4864, Fax (626)351-5291

PURPOSE: Repair Existing Seawall

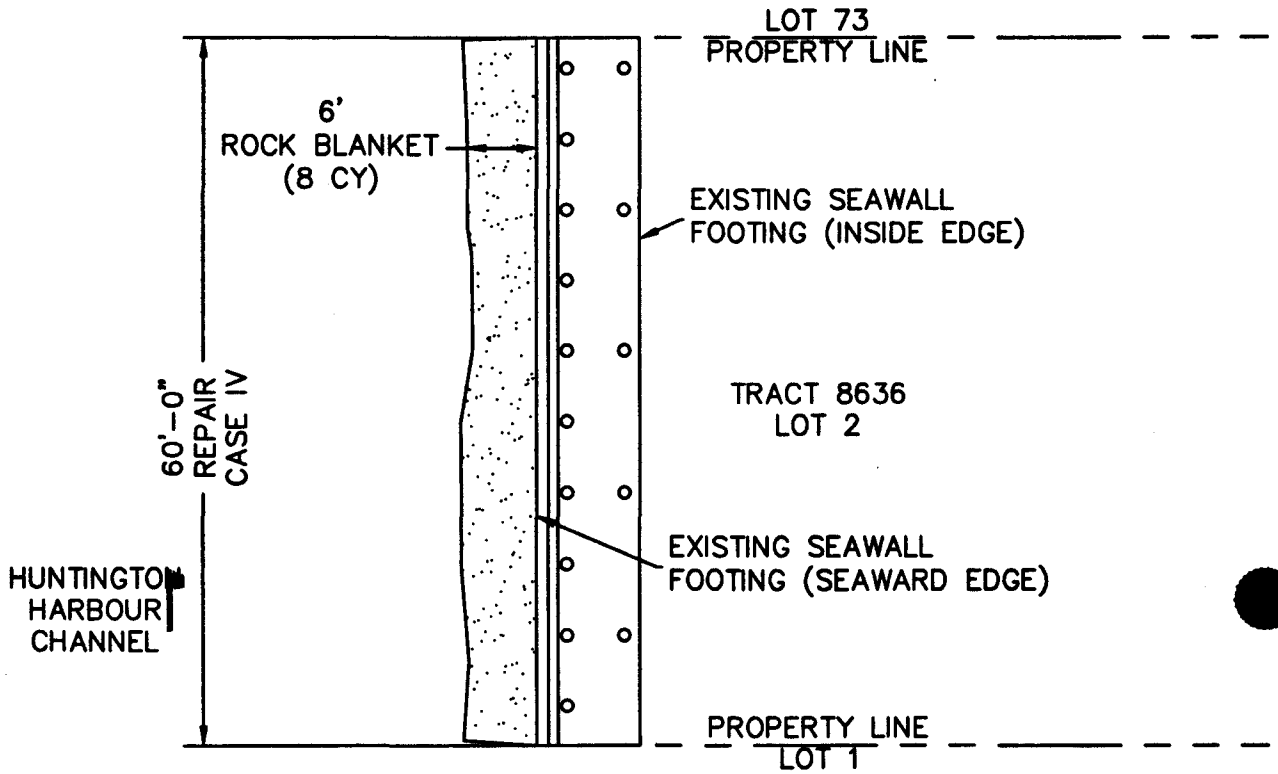
Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.



Ruben & Cheryl Baghdassarian  
3492 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island,  
Huntington Beach  
County of Orange State: CA  
Application By: Baghdassarian  
Sheet 1 of 7 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◻ GROUTED VOID
- ◻ ROCK TOE PROTECTION



**TETRA TECH**

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

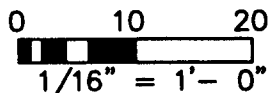
**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 2 OF 47

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

PLAN VIEW



Ruben & Cheryl Baghdassarian  
3492 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Baghdassarian  
Sheet 2 of 7 Date: 8/4/00

**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. 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 nut and washer at one end.

COASTAL COMMISSION



**TETRA TECH**

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

EXHIBIT # 3  
PAGE 3 OF 47

|  |  |  |
|--|--|--|
| <p><b>PURPOSE:</b> Repair Existing Seawall</p> <p>Datum: MLLW = 0<br/>Adj. Property Owners:<br/>1. See Attached List<br/>2.<br/>3.</p> | <p><b>SPECIFICATIONS</b></p> <p>Ruben &amp; Cheryl Baghdassarian<br/>3492 Venture Drive<br/>Huntington Beach, CA 92649</p> | <p>Proposed Repair of Existing Seawall<br/>IN: Huntington Harbour<br/>AT: Trinidad Island,<br/>Huntington Beach<br/>County of Orange State: CA<br/>Application By: Baghdassarian<br/>Sheet 3 of 7 Date: 8/4/00</p> |
|--|--|--|

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.

**4. 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.

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

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.

**6. 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.

**7. 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.

**COASTAL COMMISSION**



**TETRA TECH**

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

EXHIBIT # 3  
PAGE 4 OF 47

**PURPOSE:** Repair Existing Seawall

**SPECIFICATIONS**

Proposed Repair of Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

Ruben & Cheryl Baghdassarian  
3492 Venture Drive  
Huntington Beach, CA 92649

IN: Huntington Harbour  
AT: Trinidad Island,  
Huntington Beach  
County of Orange State: CA  
Application By: Baghdassarian  
Sheet 4 of 7 Date: 8/4/00

8. 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.

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

10. 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. When pile repair is required, 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.
3. Upon completion of all pile repair and jack assembly installation work at a given property, vinyl sheet piling and wales shall be installed. Prior to installation of first sheet pile, notify John Von Holle of the Huntington Beach Public Works Department @ (714) 536-5431.
4. 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.
5. 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.
6. 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.
7. 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.

In order to avoid construction delays, Contractor shall coordinate activities and schedule diver inspections. Certified divers shall be approved by Tetra Tech. Coastal Engineering & Construction Tech, Inc.) @ (626) 351-4664.

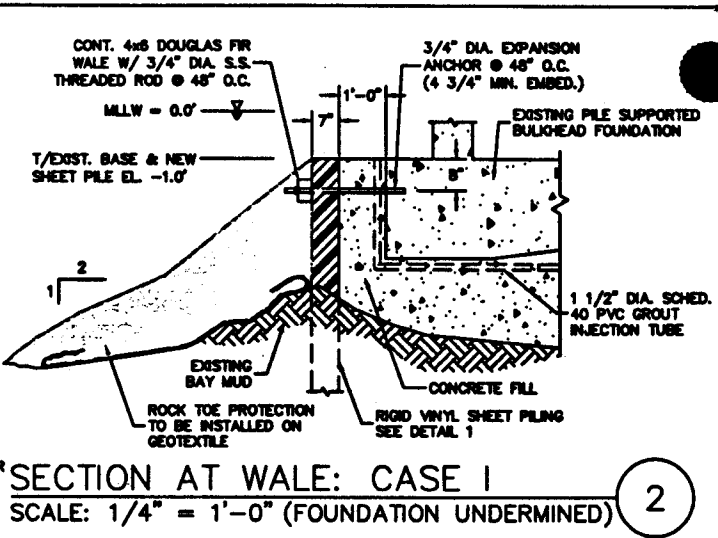
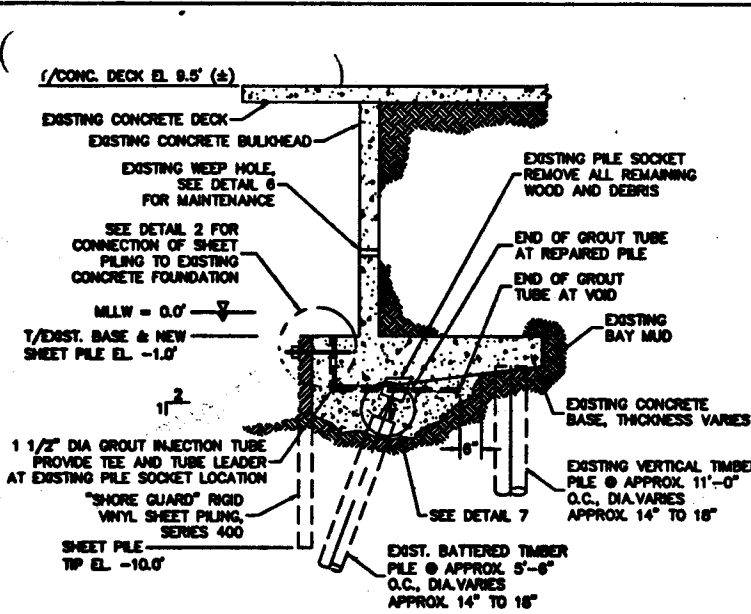
**COASTAL COMMISSION**



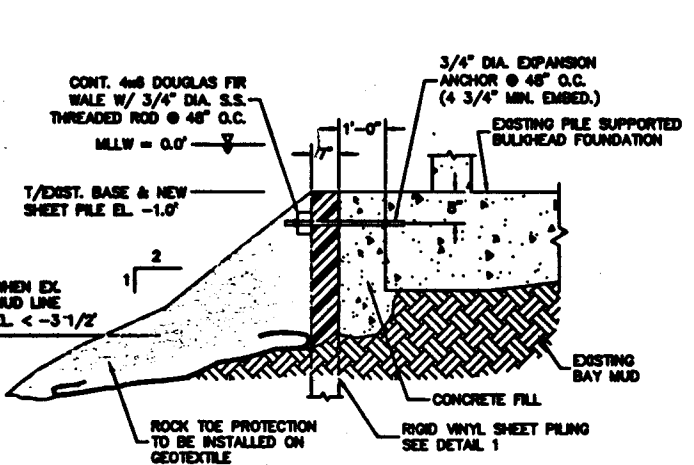
**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (626)351-4664, Fax (626)351-5291

EXHIBIT # 3  
 PAGE 5 OF 47

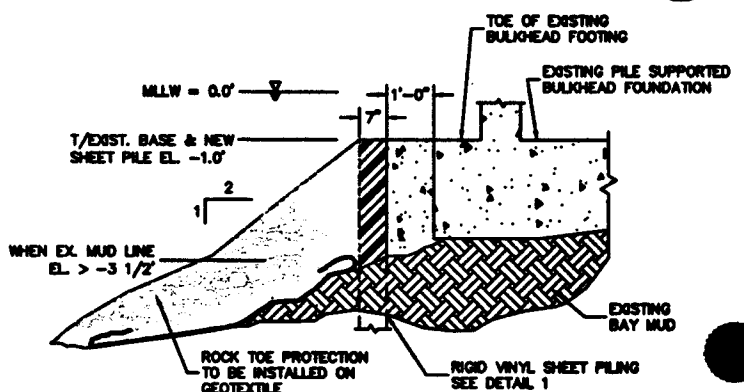
| PURPOSE: Repair Existing Seawall   | SPECIFICATIONS   | Proposed Repair of Existing Seawall  |
|--|--|--|
| Datum: MLLW = 0<br>Adj. Property Owners:<br>1. See Attached List<br>2.<br>3. | Ruben & Cheryl Baghdassarian<br>3492 Venture Drive<br>Huntington Beach, CA 92649 | IN: Huntington Harbour<br>AT: Trinidad Island,<br>Huntington Beach<br>County of Orange State: CA<br>Application By: Baghdassarian<br>Sheet 5 of 7 Date: 8/4/00 |



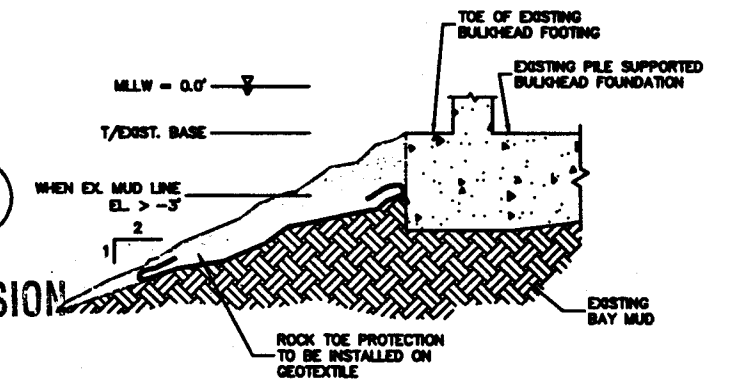
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SCALE: 1/4" = 1'-0" (FOUNDATION UNDERMINED) 2



SECTION AT WALE: CASE II  
SCALE: 1/4" = 1'-0" (FOR CANTILEVERED SPANS OF 30" OR MORE SUPPORT WALE REQUIRED) 3



SECTION AT SHEET PILE: CASE III  
SCALE: 1/4" = 1'-0" (FOR CANTILEVERED SPANS OF 30" OR LESS SUPPORT WALE NOT REQUIRED) 4



SECTION AT SHEET PILE: CASE IV  
SCALE: 1/4" = 1'-0" (RIP-RAP TOE PROTECTION ONLY) 5

COASTAL COMMISSION



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

EXHIBIT # 3  
PAGE 6 OF 47

PURPOSE: Repair Existing Seawall

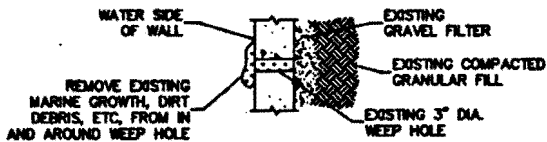
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Adj. Property Owners:  
1. See Attached List  
2.  
3.

SECTION VIEW

Ruben & Cheryl Baghdassarian  
3492 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

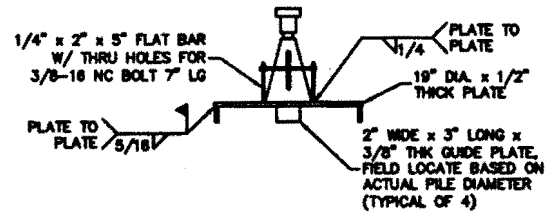
IN: Huntington Harbour  
AT: Trinidad Island,  
Huntington Beach  
County of Orange State: CA  
Application By: Baghdassarian  
Sheet 6 of 7 Date: 8/4/00



**WEEP HOLE DETAIL**

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

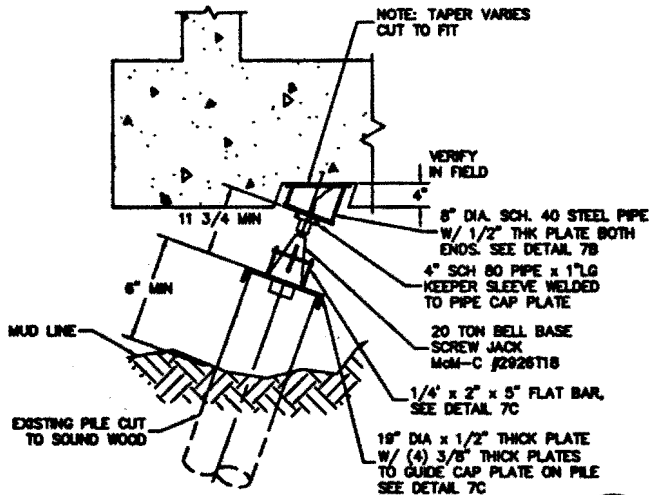
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**PILE CAP PLATE DETAIL**

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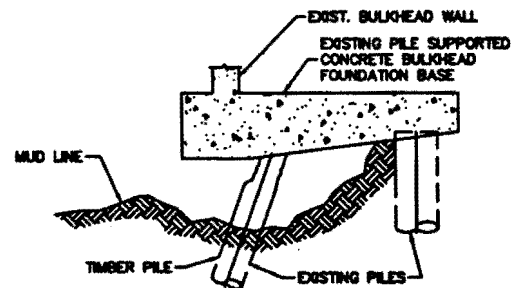
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**JACKING DETAIL**

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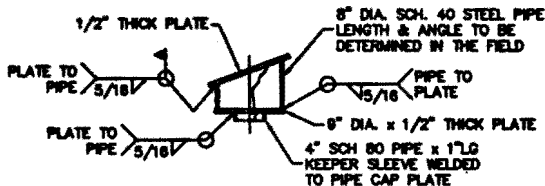
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**SECTION 25% OR LESS PILE DETERIORATION**

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

8

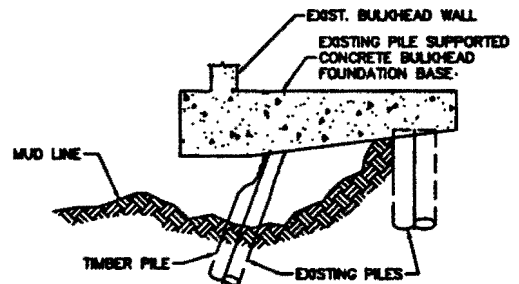


**JACKING ASSEMBLY DETAIL**

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 JACK  
 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**

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

EXHIBIT # 3

PAGE 2 OF 47

PURPOSE: Repair Existing Seawall

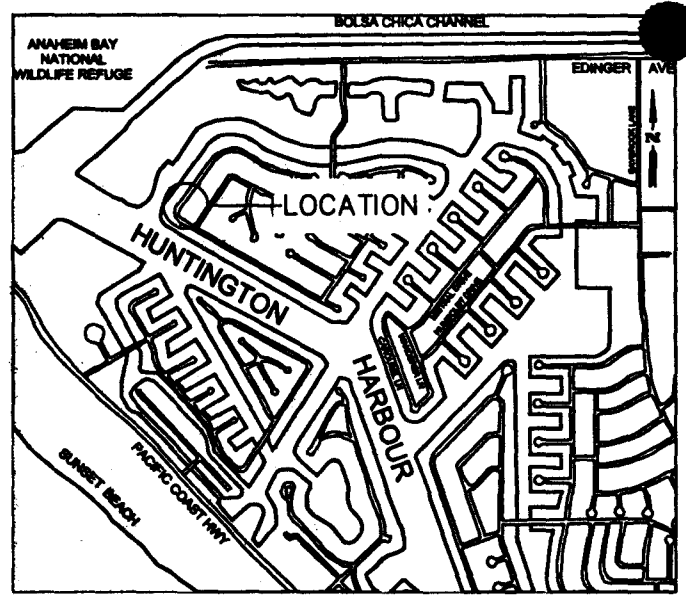
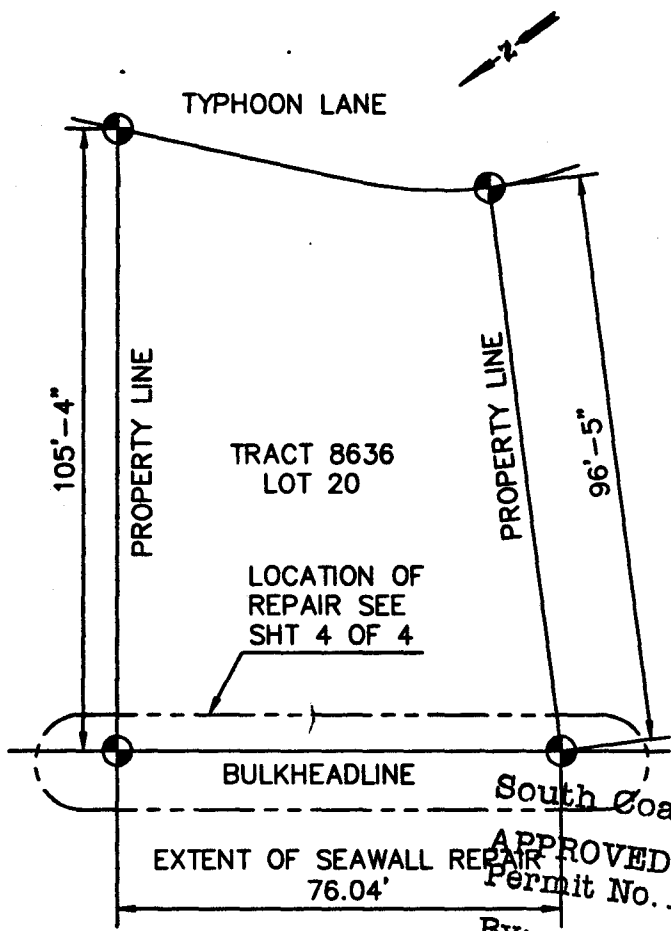
SECTION VIEW

Proposed Repair of Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Ruben & Cheryl Baghdassarian  
 3492 Venture Drive  
 Huntington Beach, CA 92649

IN: Huntington Harbour  
 AT: Trinidad Island,  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Baghdassarian  
 Sheet 7 of 7 Date: 8/4/00



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

South Coast District Office  
**APPROVED**  
 Permit No. **5-00-401**  
 NOTE: ALL DEPTHS BASED ON MLLW=0.00 FT.

**COASTAL COMMISSION**  
 HUNTINGTON HARBOUR CHANNEL

By: \_\_\_\_\_  
 EFFECTIVE Date: \_\_\_\_\_

EXHIBIT # 3  
 PAGE 8 OF 47

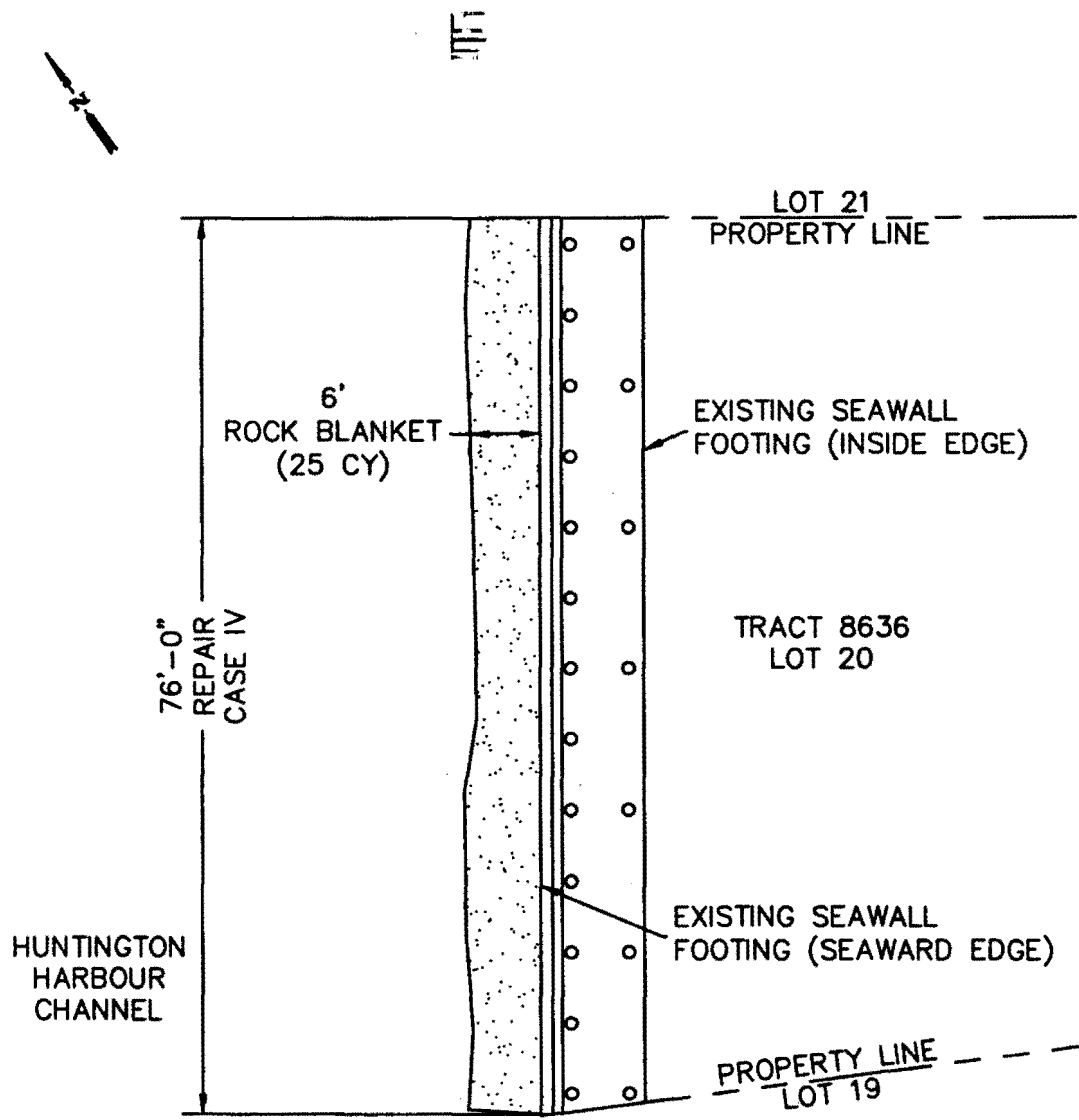
**APPROVED**  
**PROJECT**  
 8/10/00  
 PLANNING DIVISION  
 CITY OF HUNTINGTON BEACH



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

|   |   |  |
|---|---|--|
| <p>PURPOSE: Repair Existing Seawall</p> <p>Datum: MLLW = 0<br/>         Adj. Property Owners:<br/>         1. See Attached List<br/>         2.<br/>         3.</p> | <p>PLAN VIEW</p> <p>Alan Broido<br/>         16311 Typhoon Lane<br/>         Huntington Beach, CA 92649</p> | <p>Proposed Repair of Existing Seawall</p> <p>IN: Huntington Harbour<br/>         AT: Trinidad Island<br/>         Huntington Beach<br/>         County of Orange State: CA<br/>         Application By: Broido<br/>         Sheet 1 of 4 Date: 8/4/00</p> |
|---|---|--|





**LEGEND:**

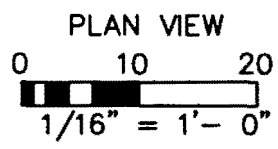
- PILES TO BE REPAIRED
- EXISTING PILES
- GROUTED VOID
- ROCK TOE PROTECTION

**COASTAL COMMISSION**

EXHIBIT # 3  
 PAGE 9 OF 47

**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4684, Fax (826)351-5291

**PURPOSE:** Repair Existing Seawall

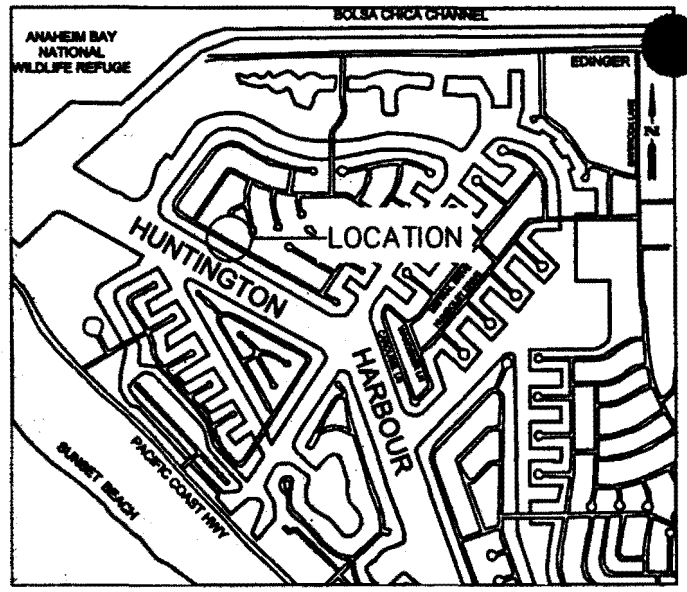
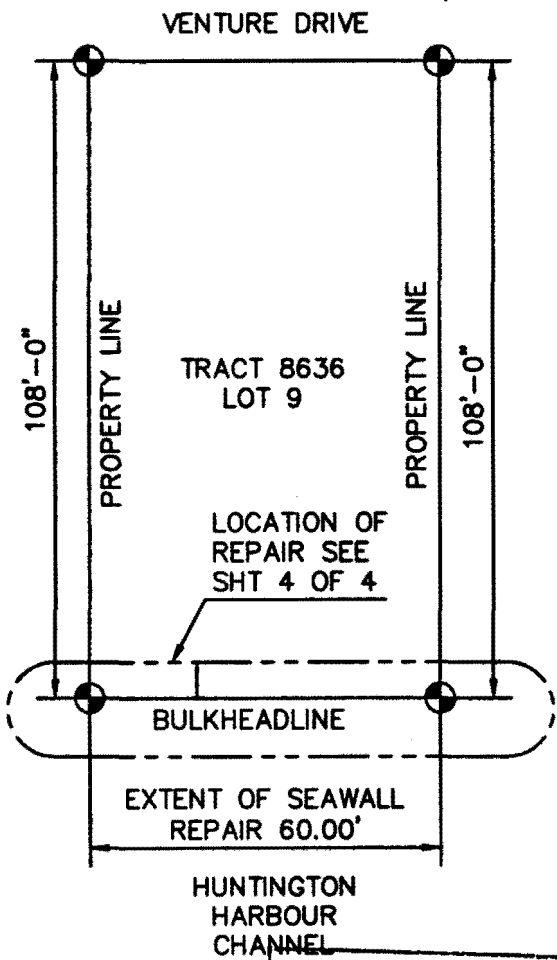


Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Alan Broido  
 16311 Typhoon Lane  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Broido  
 Sheet 2 of 4 Date: 8/4/00



VICINITY MAP

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

NOTE:  
 ALL DEPTHS BASED ON  
 MLLW=**COASTAL COMMISSION**

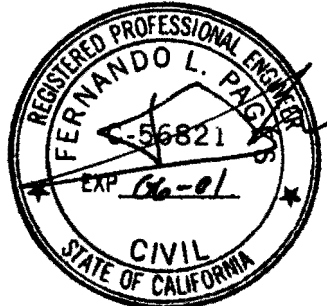
**APPROVED  
 IN CONCEPT**

*PK*                      *8/10/00*

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PLANNING DIVISION                      DATE  
 CITY OF HUNTINGTON BEACH

EXHIBIT # 3  
 PAGE 10 OF 47



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

**PURPOSE:** Repair Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

**PLAN VIEW**

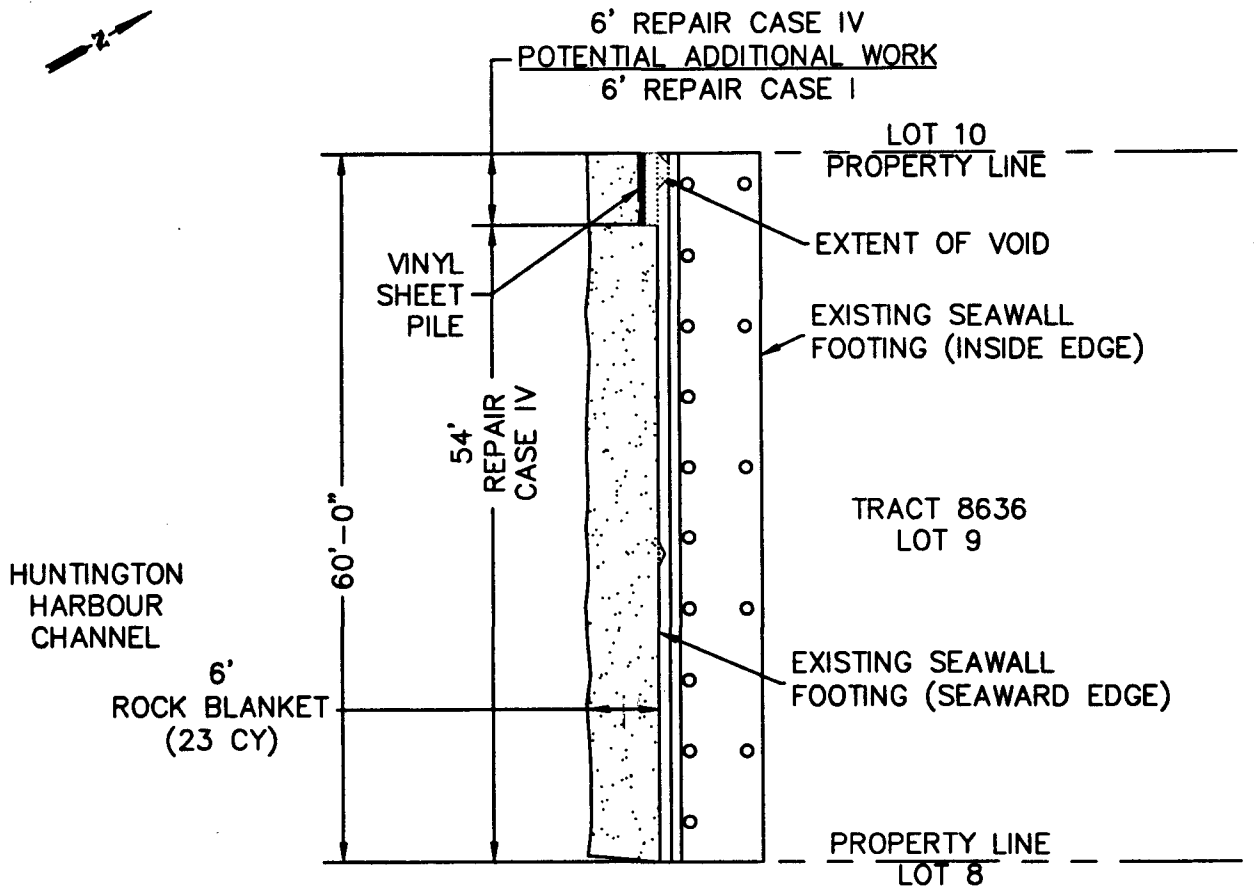
0                      32                      64

1" = 32'

Eric Chen  
 3392 Venture Drive  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange      State: CA  
 Application By: Chen  
 Sheet 1 of 4      Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◻ GROUTED VOID
- ◻ ROCK TOE PROTECTION



**TETRA TECH**

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

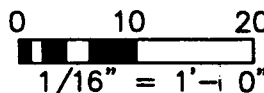
**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 11 OF 47

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
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3.

PLAN VIEW



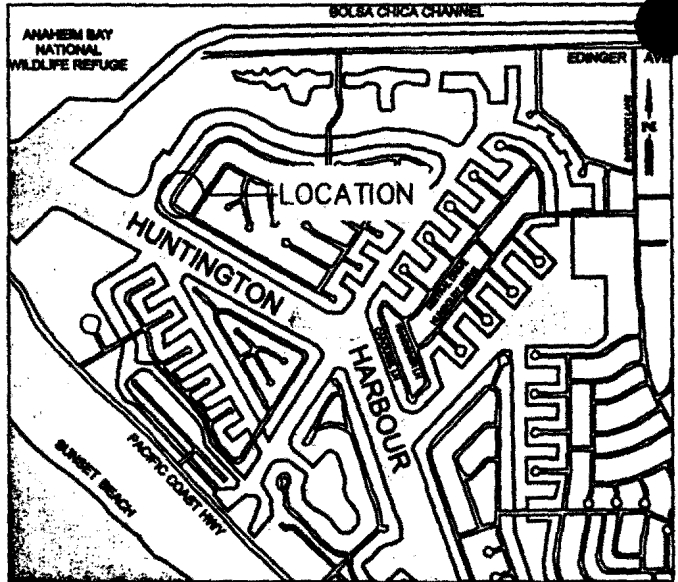
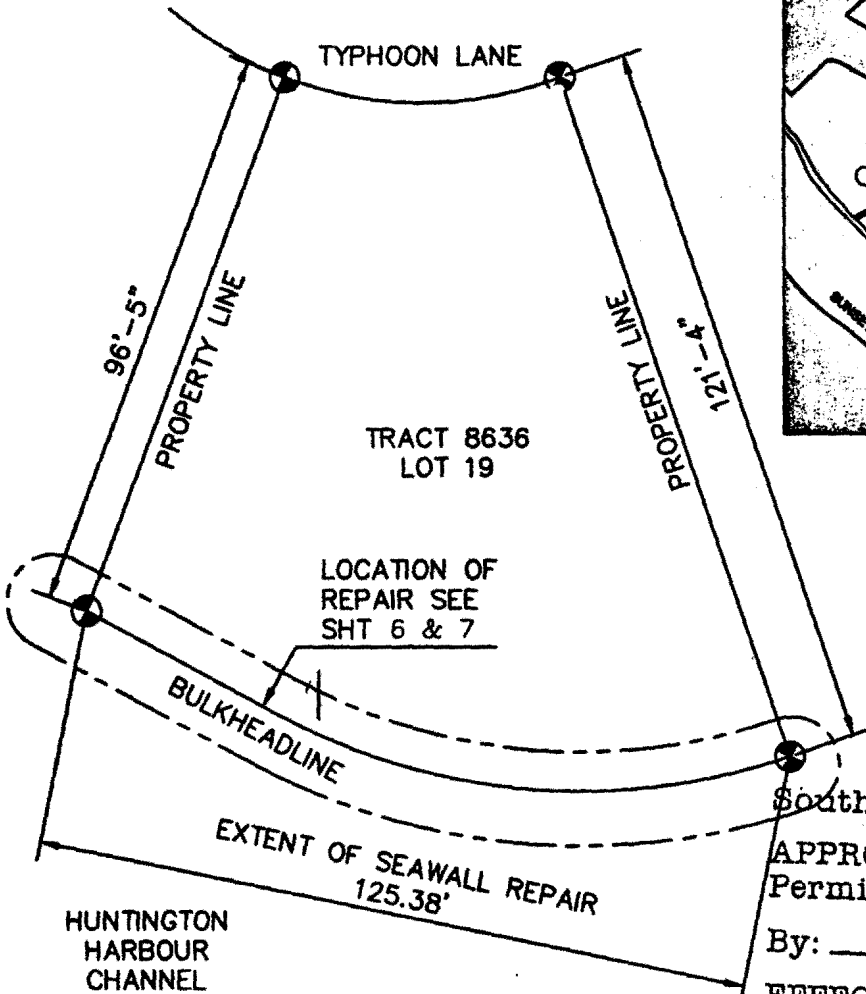
Eric Chen  
3392 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Chen  
Sheet 2 of 4 Date: 8/4/00

COASTAL COMMISSION

EXHIBIT # 13  
PAGE 12 OF 47



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

**RECEIVED**  
South Coast Region

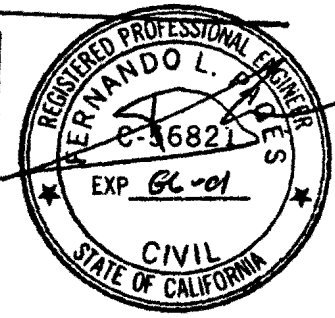
OCT 4 2000

NOTE: ALL DEPTHS BASED ON CALIFORNIA SOUTH COAST DISTRICT OFFICE OF THE COASTAL COMMISSION  
APPROVED MLLW = 0.00 FT.  
Permit No. **5-00-401**

By: \_\_\_\_\_  
EFFECTIVE Date: \_\_\_\_\_

OWNER HAS CHANGED TO:  
Harry W. A. Dawson

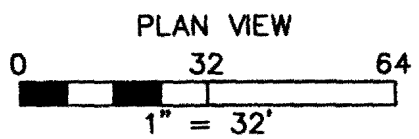
**APPROVED IN CONCEPT**  
PLANNING DIVISION DATE 8/10/00  
CITY OF HUNTINGTON BEACH



**TETRA TECH**  
870 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

PURPOSE: Repair Existing Seawall

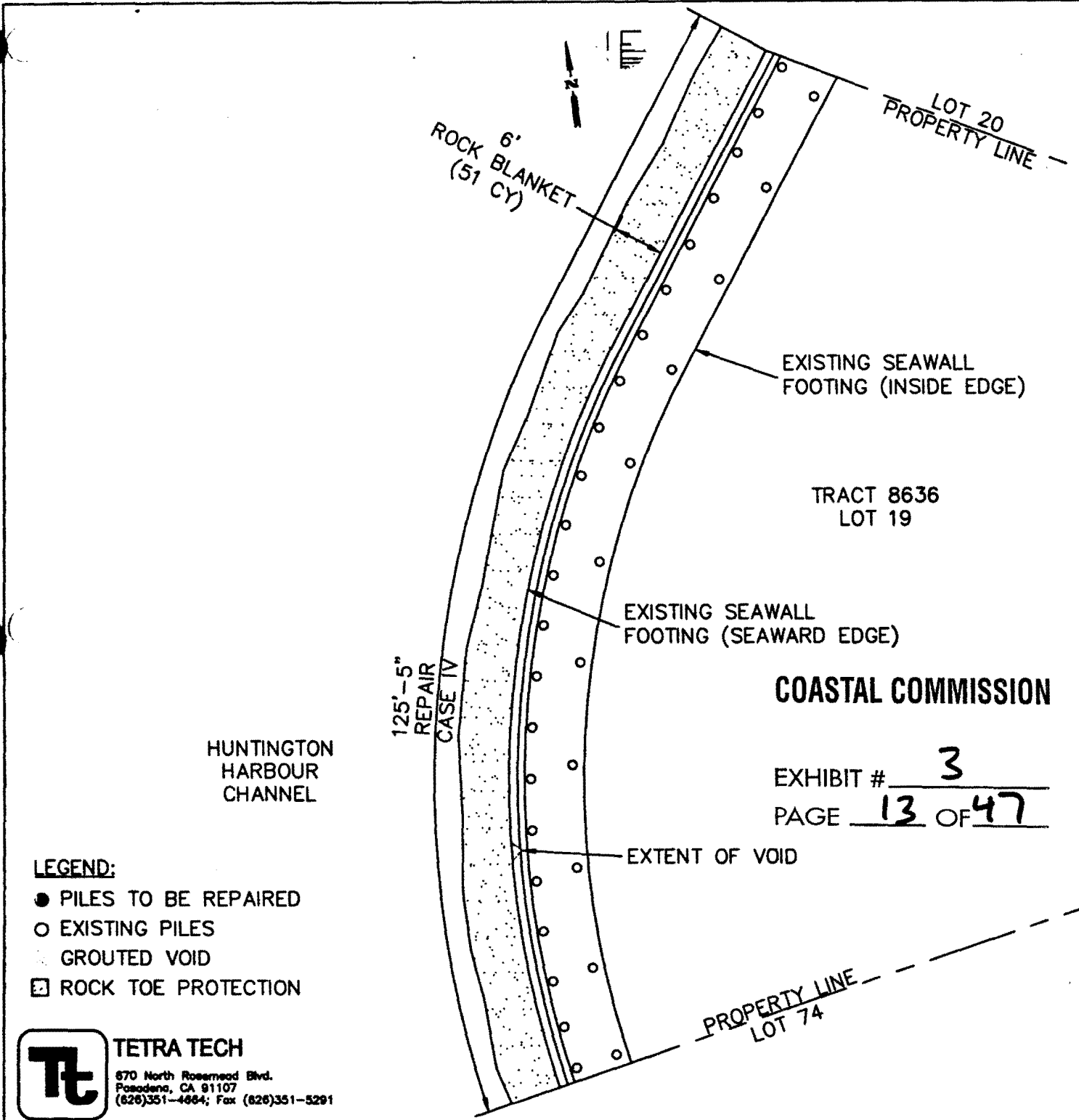
Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.



Raymond Ponce  
3292 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Ponce  
Sheet 1 of 7 Date: 8/4/00



HUNTINGTON HARBOUR CHANNEL

LOT 20  
PROPERTY LINE

TRACT 8636  
LOT 19

COASTAL COMMISSION

EXHIBIT # 3  
PAGE 13 OF 47

PROPERTY LINE  
LOT 74

**LEGEND:**

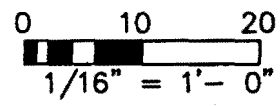
- PILES TO BE REPAIRED
- EXISTING PILES
- GROUTED VOID
- ▣ ROCK TOE PROTECTION



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

PURPOSE: Repair Existing Seawall

PLAN VIEW

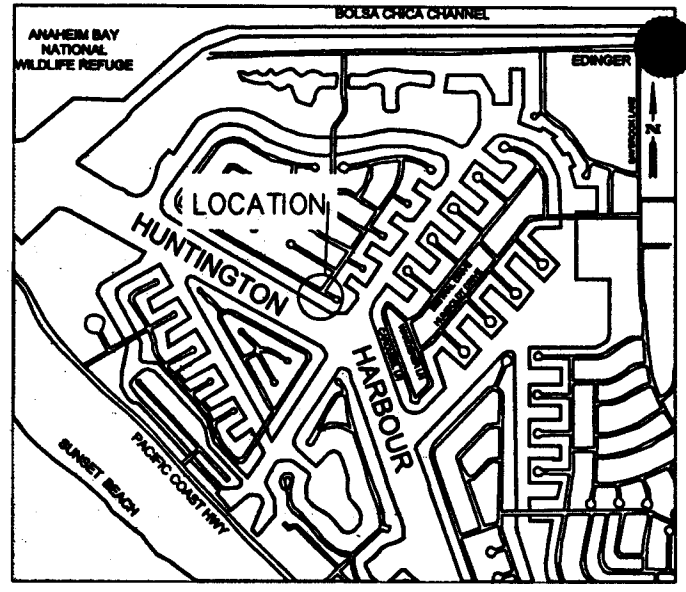
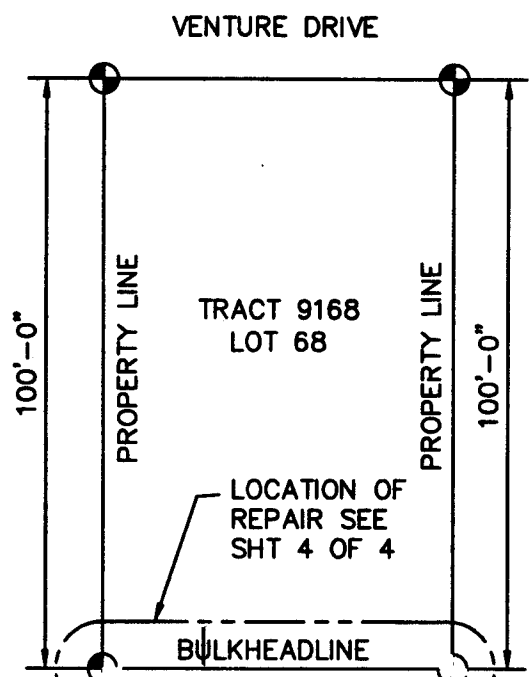


Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

Raymond Ponce  
3292 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Ponce  
Sheet 2 of 7 Date: 8/4/00



VICINITY MAP

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

South Coast District Office

EXTENT OF SEAWALL REPAIR APPROVED

Permit No. 5-00-101

By: \_\_\_\_\_

EFFECTIVE Date: \_\_\_\_\_

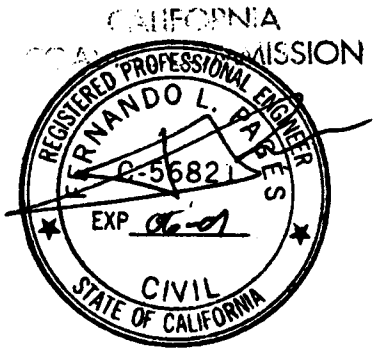
NOTE:  
 ALL DEPTHS BASED ON  
 MLLW=0.00 FT

COASTAL COMMISSION

EXHIBIT # 3  
 PAGE 14 OF 47

**RECEIVED**  
 South Coast Region  
 OCT 4 2000

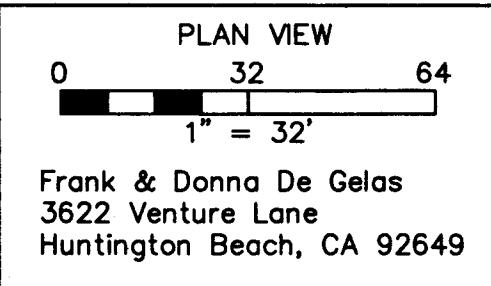
**APPROVED  
 IN CONCEPT**  
 PR 8/10/00  
 PLANNING DIVISION DATE  
 CITY OF HUNTINGTON BEACH



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (828)351-4664, Fax (828)351-5291

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0 |  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

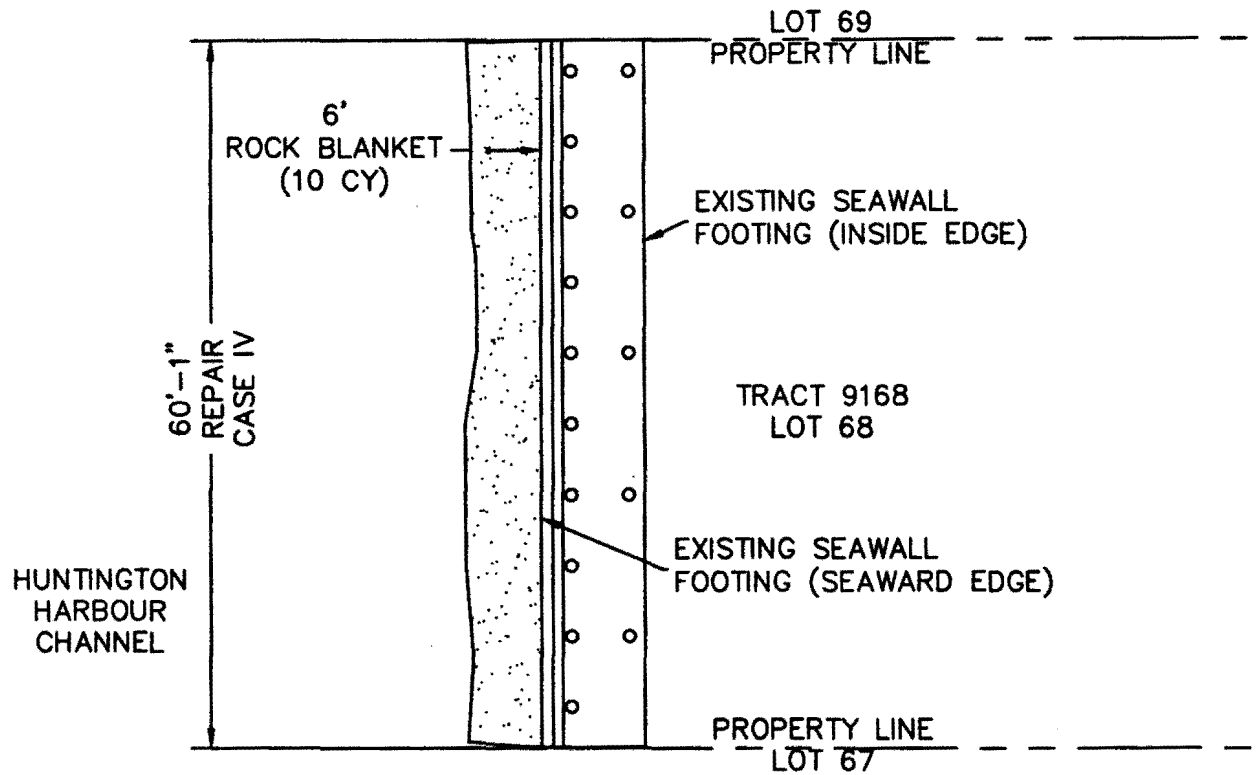


Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: De Gelas  
 Sheet 1 of 4 Date: 8/4/00



111  
RVA



**LEGEND:**

- ▶ PILES TO BE REPAIRED
- EXISTING PILES
- ◻ GROUDED VOID
- ◻ ROCK TOE PROTECTION

**COASTAL COMMISSION**

EXHIBIT # 3

PAGE 15 OF 47

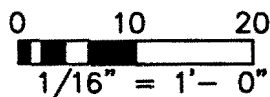


**TETRA TECH**

670 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

PURPOSE: Repair Existing Seawall

**PLAN VIEW**



Proposed Repair of Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Frank & Donna De Gelas  
 3622 Venture Lane  
 Huntington Beach, CA 92649

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: De Gelas  
 Sheet 2 of 4 Date: 8/4/00

HUNTINGTON HARBOUR CHANNEL

EXTENT OF SEAWALL REPAIR 60.00'

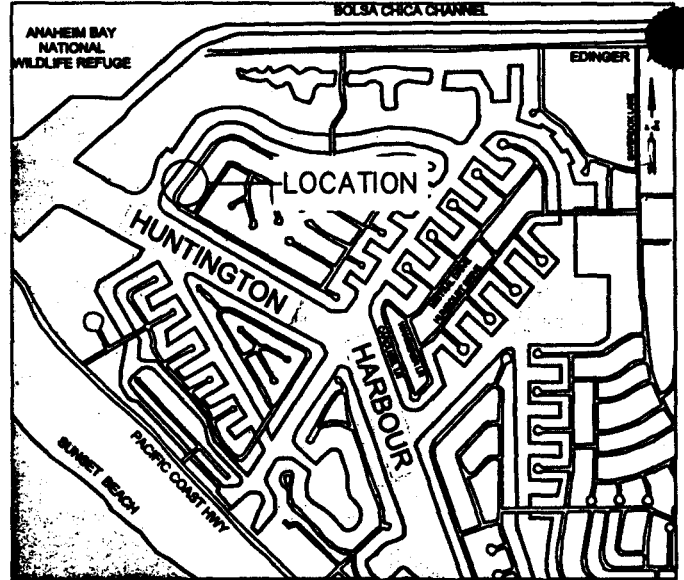
BULKHEADLINE

LOCATION OF REPAIR SEE SHT 4 OF 4

TRACT 8636 LOT 22

PROPERTY LINE 108'-0"

PROPERTY LINE 108'-0"



VICINITY MAP

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

South Coast District Office APPROVED

Permit No. 00-401

By: \_\_\_\_\_

EFFECTIVE Date: \_\_\_\_\_

NOTE: COASTAL COMMISSIC.

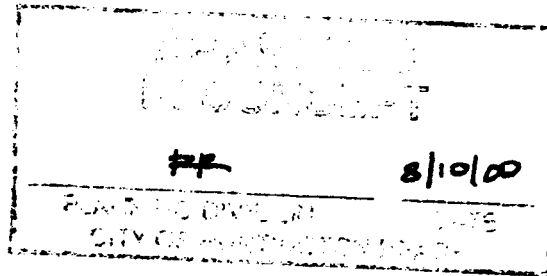
ALL DEPTHS BASED ON MLLW=0.00 FT.

EXHIBIT # 3 PAGE 16 OF 47

RECEIVED South Coast Region

OCT 4 2000

CALIFORNIA COASTAL COMMISSION

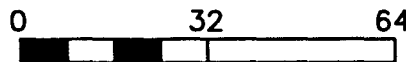


TETRA TECH

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

PURPOSE: Repair Existing Seawall

PLAN VIEW



1" = 32'

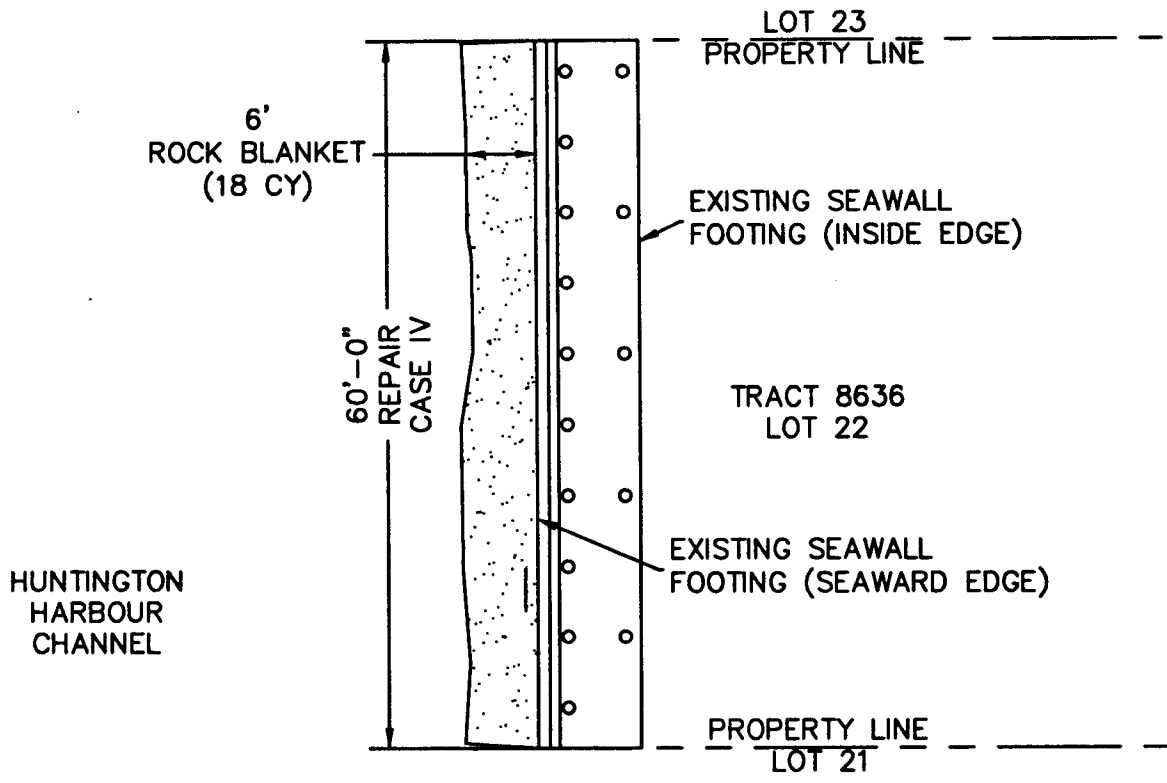
Proposed Repair of Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

Liem & Anh Do  
16291 Typhoon Lane  
Huntington Beach, CA 92649

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Do  
Sheet 1 of 4 Date: 8/4/00





**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ⊠ GROUTED VOID
- ▣ ROCK TOE PROTECTION

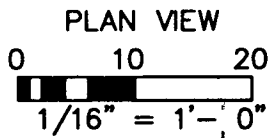
**COASTAL COMMISSION**

EXHIBIT # 3  
 PAGE 17 OF 47



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

**PURPOSE:** Repair Existing Seawall

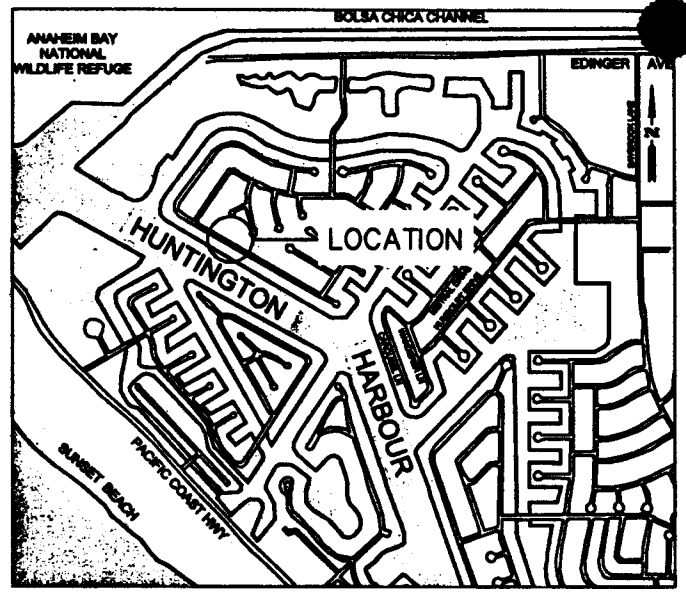
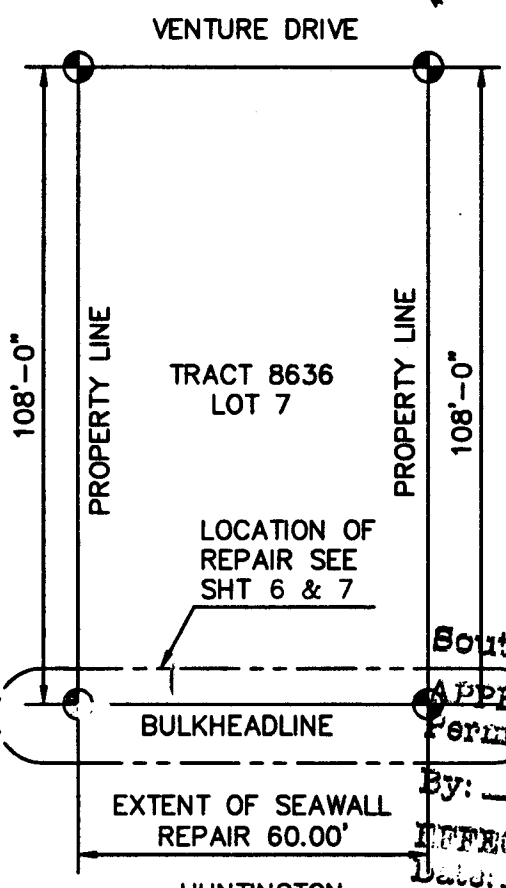


Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Liem & Anh Do  
 16291 Typhoon Lane  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Do  
 Sheet 2 of 4 Date: 8/4/00



VICINITY MAP

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

South Coast District Office

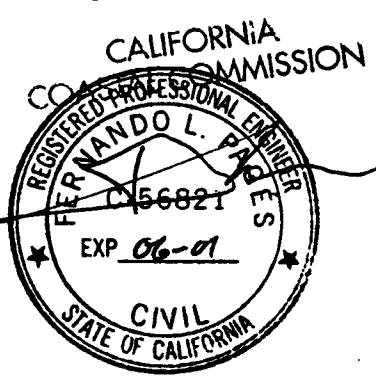
APPROVED Permit No. 5-00-1074

By: \_\_\_\_\_  
 EFFECTIVE Date: \_\_\_\_\_

NOTE: ALL DEPTHS BASED ON MLLW=0.00 FT

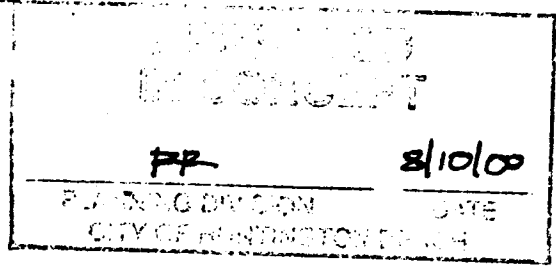
**RECEIVED**  
 South Coast Region

OCT 4 2000



**COASTAL COMMISSION**

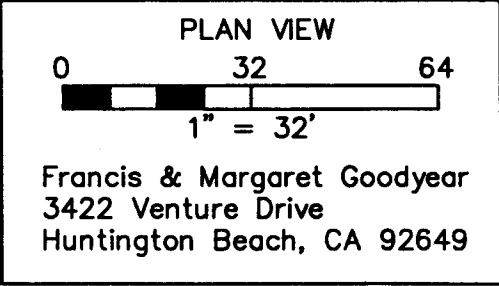
EXHIBIT # 3  
 PAGE 16 OF 47



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

PURPOSE: Repair Existing Seawall

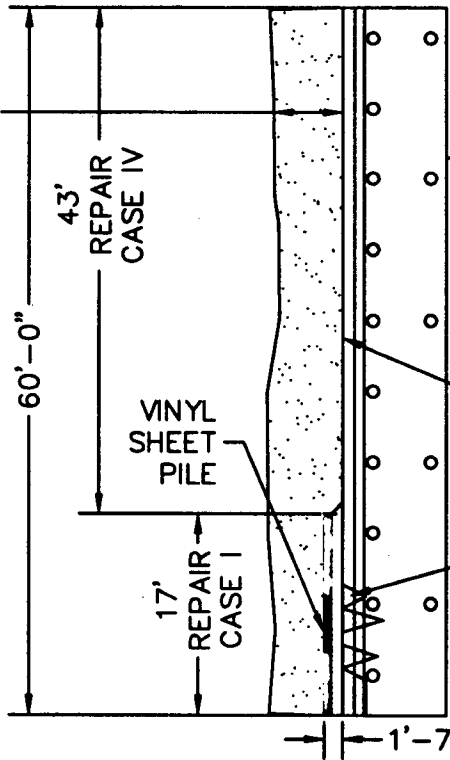
Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.



Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Goodyear  
 Sheet 1 of 7 Date: 8/4/00

6'  
ROCK BLANKET  
(13 CY)



LOT 8  
PROPERTY LINE

EXISTING SEAWALL  
FOOTING (INSIDE EDGE)

TRACT 8636  
LOT 7

EXISTING SEAWALL  
FOOTING (SEAWARD EDGE)

HUNTINGTON  
HARBOUR  
CHANNEL

VINYL  
SHEET  
PILE

EXTENT OF VOID

17'  
REPAIR  
CASE I

PROPERTY LINE  
LOT 6

1'-7"

**LEGEND:**

- ⊙ PILES TO BE REPAIRED
- EXISTING PILES
- ▨ GROUTED VOID
- ▣ ROCK TOE PROTECTION



**TETRA TECH**

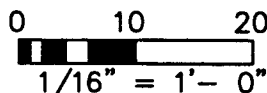
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(626)351-4664, Fax (626)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 19 OF 47

PURPOSE: Repair Existing Seawall

PLAN VIEW

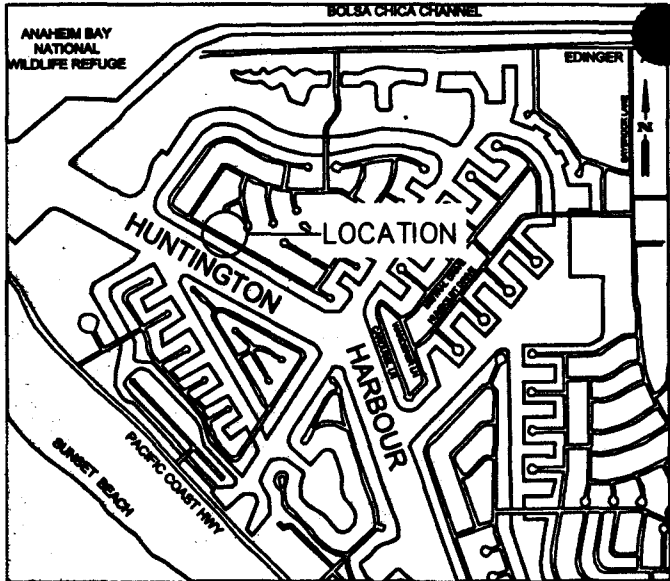
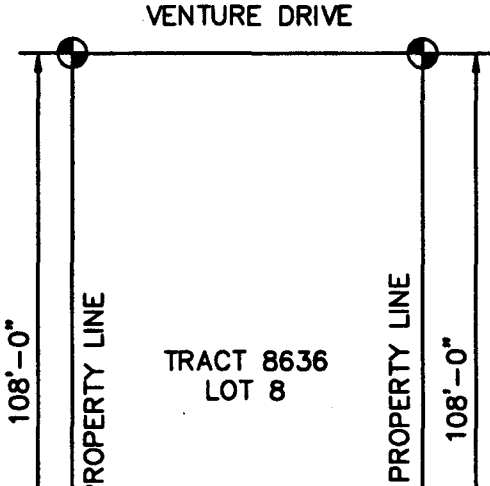


Francis & Margaret Goodyear  
3422 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing  
Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Goodyear  
Sheet 2 of 7 Date: 8/4/00

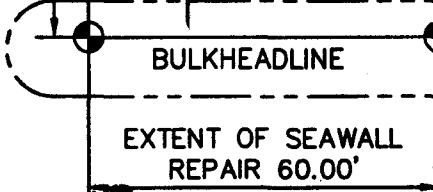
Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.



VICINITY MAP

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

LOCATION OF REPAIR SEE SHT 4 OF 4



BULKHEADLINE

EXTENT OF SEAWALL REPAIR 60.00'

South Coast District Office

APPROVED 5-00-4  
Permit No.

By: \_\_\_\_\_

EFFECTIVE Date: \_\_\_\_\_

NOTE: ALL DEPTHS BASED ON MLLW = 0.00 FT. CALIFORNIA COASTAL COMMISSION

**RECEIVED**  
South Coast Region  
OCT 4 2000

CALIFORNIA COASTAL COMMISSION

HUNTINGTON HARBOUR CHANNEL

EXHIBIT # 3  
PAGE 20 OF 47

**APPROVED IN CONCEPT**  
*PR*      *8/10/00*  
PLANNING DIVISION      DATE  
CITY OF HUNTINGTON BEACH

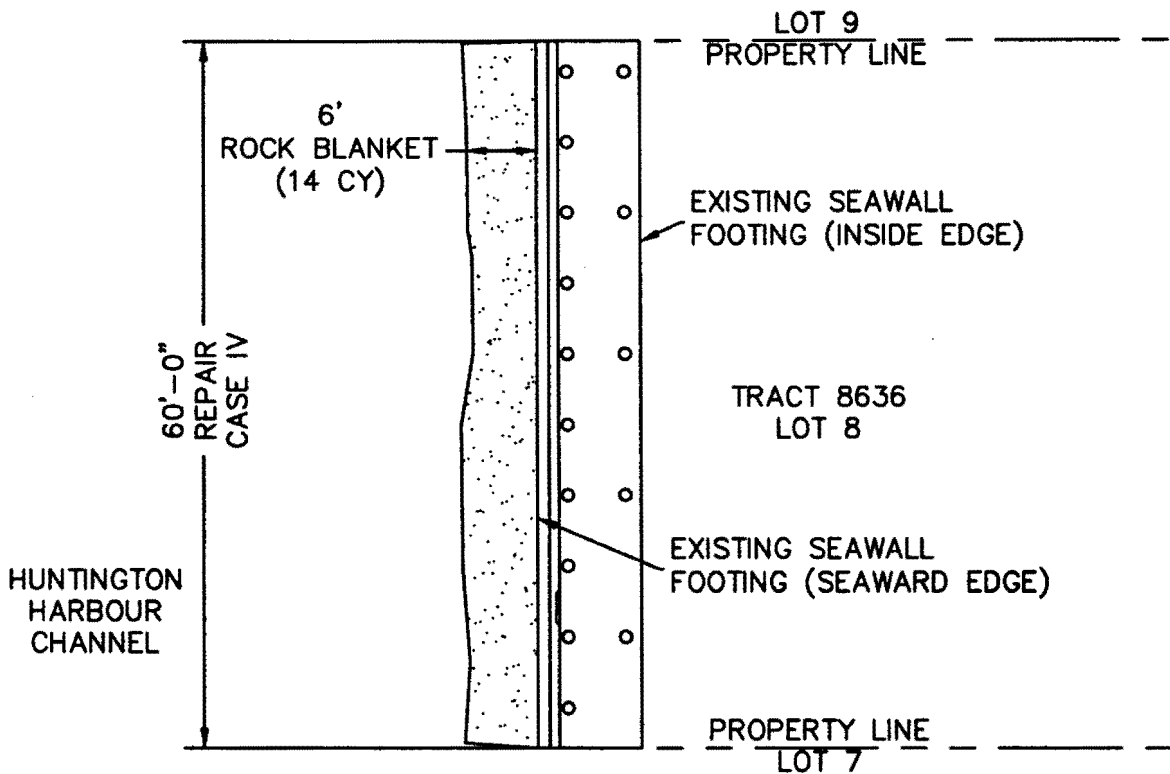


**TETRA TECH**  
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(626)351-4664, Fax (626)351-5291

PURPOSE: Repair Existing Seawall  
  
Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

PLAN VIEW  
0      32      64  
1" = 32'  
  
Rodney & Michelle Hill  
3402 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall  
  
IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange      State: CA  
Application By: Hill  
Sheet 1 of 4      Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ▨ GROUDED VOID
- ▣ ROCK TOE PROTECTION



**TETRA TECH**

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

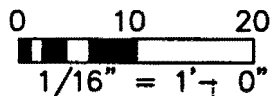
**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 21 OF 47

**PURPOSE:** Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

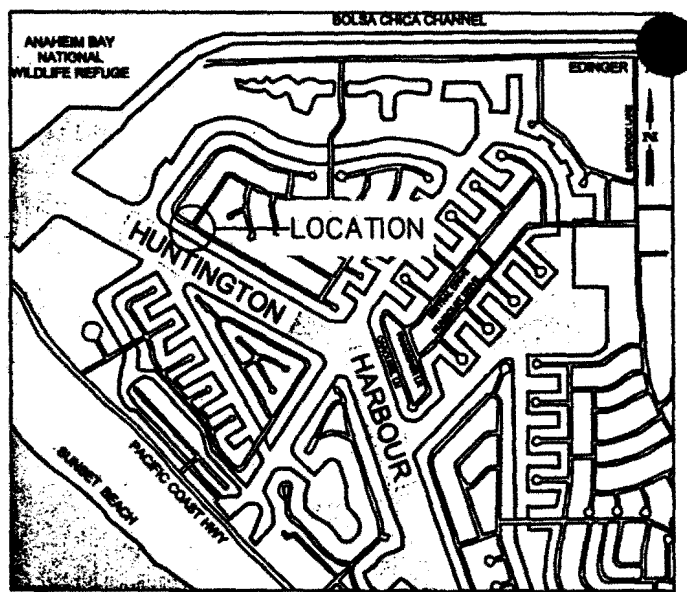
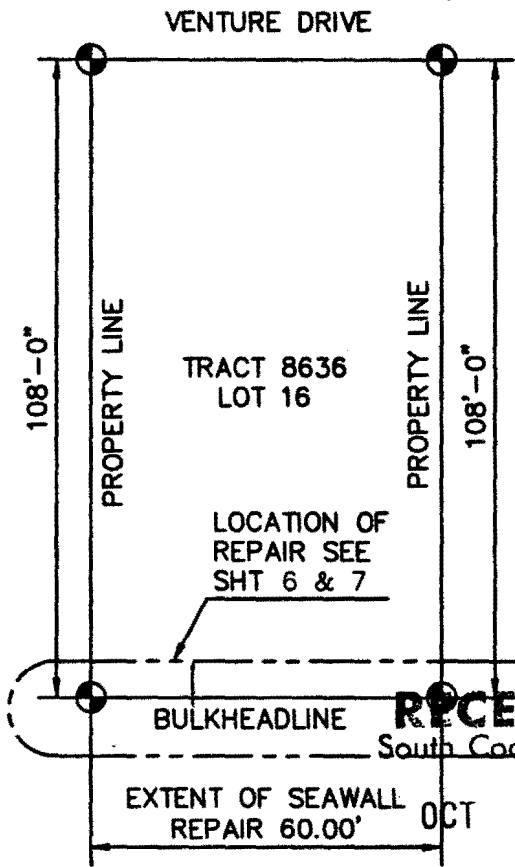
**PLAN VIEW**



Rodney & Michelle Hill  
3402 Venture Drive  
Huntington Beach, CA 92649

**Proposed Repair of Existing Seawall**

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Hill  
Sheet 2 of 4 Date: 8/4/00



VICINITY MAP

FROM U.S.G.S. SEAL BEACH QUADRANGLE CALIFORNIA  
 South Coast District Office

APPROVED PERMIT NO. **5-00-401**

**RECEIVED**  
 South Coast Region  
 EFFECTIVE

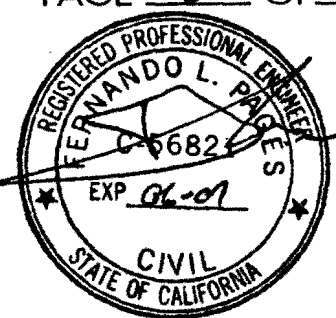
NOTE:  
 ALL DEPTHS BASED ON MLLW=  
**COASTAL COMMISSION**

OCT 4 2000

HUNTINGTON CALIFORNIA  
 HARBOUR COASTAL COMMISSION  
 CHANNEL

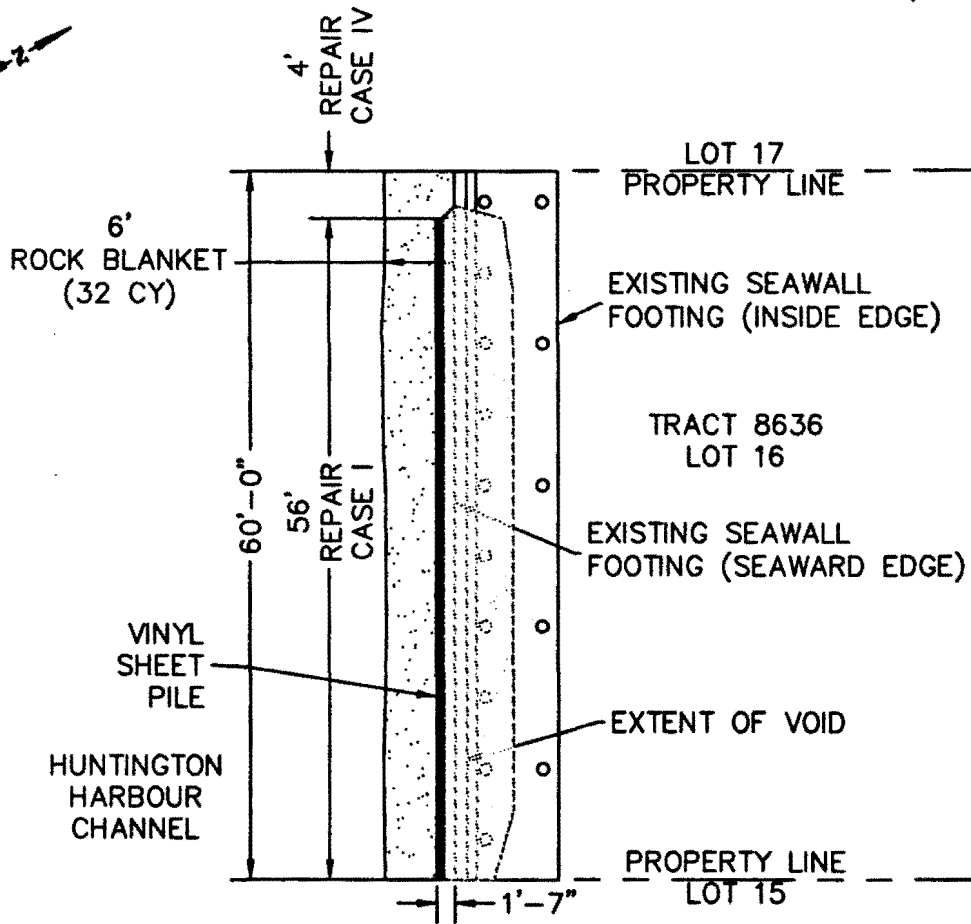
EXHIBIT # 3  
 PAGE 22 OF 47

**APPROVED  
 IN CONCEPT**  
 PR DATE 8/10/00  
 PLANNING DIVISION DATE  
 CITY OF HUNTINGTON BEACH



**TETRA TECH**  
 570 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4864, Fax (826)351-5291

|   |   |  |
|---|---|--|
| <p>PURPOSE: Repair Existing Seawall</p> <p>Datum: MLLW = 0<br/>         Adj. Property Owners:<br/>         1. See Attached List<br/>         2.<br/>         3.</p> | <p>PLAN VIEW</p> <p>Tracey Hodges<br/>         3322 Venture Drive<br/>         Huntington Beach, CA 92649</p> | <p>Proposed Repair of Existing Seawall</p> <p>IN: Huntington Harbour<br/>         AT: Trinidad Island<br/>         Huntington Beach<br/>         County of Orange State: CA<br/>         Application By: Hodges<br/>         Sheet 1 of 7 Date: 8/4/00</p> |
|---|---|--|



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◐ GROUDED VOID
- ◑ ROCK TOE PROTECTION



**TETRA TECH**

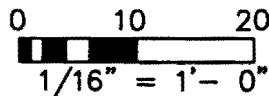
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(626)351-4664, Fax (626)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 23 OF 47

PURPOSE: Repair Existing Seawall

PLAN VIEW

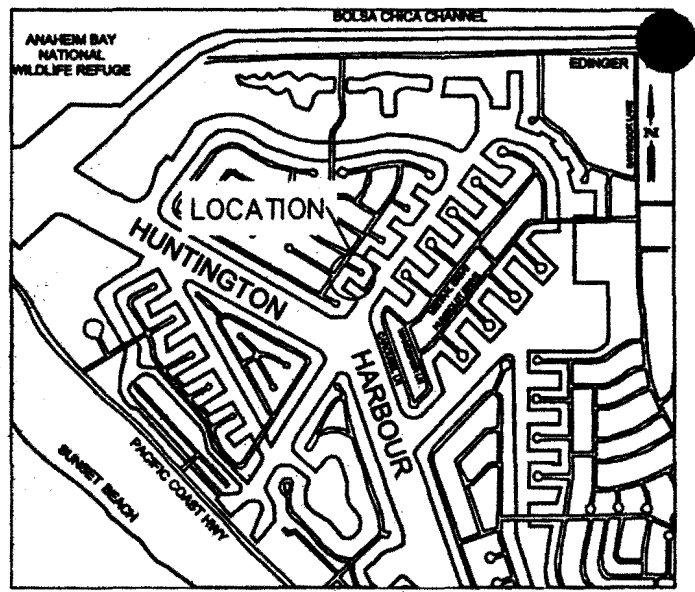
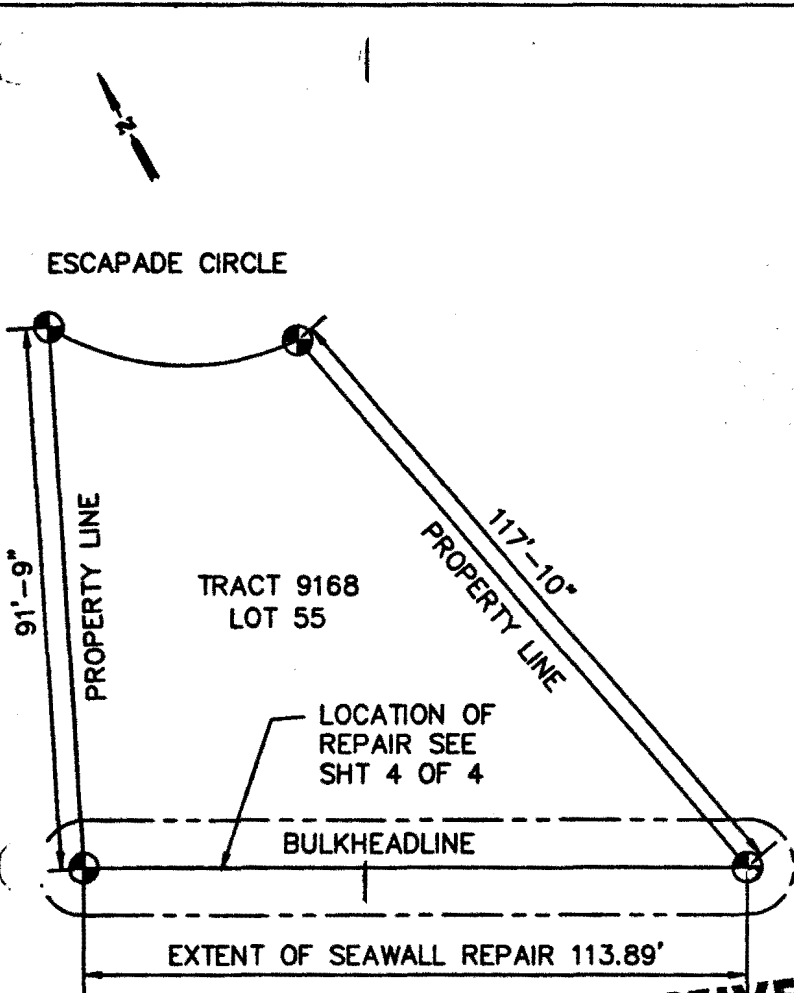


Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

Tracey Hodges  
3322 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Hodges  
Sheet 2 of 7 Date: 8/4/00



VICINITY MAP

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

HUNTINGTON  
 HARBOUR  
 CHANNEL  
**COASTAL COMMISSION**

**RECEIVED**  
 South Coast Region  
 OCT 4 2000

NOTE:  
 ALL DEPTHS BASED ON  
 MLLW=0.00 FT.

EXHIBIT # 3  
 PAGE 24 OF 47

CALIFORNIA  
 COASTAL COMMISSION

South Coast District Office  
**APPROVED 5-00-401**  
 Permit No.

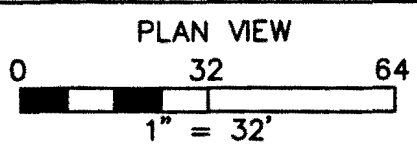
**APPROVED IN CONCEPT** By: \_\_\_\_\_  
 EFFECTIVE 8/1/00  
 PLANNING DIVISION DATE  
 CITY OF HUNTINGTON BEACH



**TETRA TECH**  
 570 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4684, Fax (826)351-5291

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.



Dr. Joseph & Benita Jacobs  
 3682 Escapade Circle  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Jacobs  
 Sheet 1 of 4 Date: 8/4/00



LOT 56  
PROPERTY LINE

6' ROCK  
BLANKET  
(55 CY)

EXISTING SEAWALL  
FOOTING (INSIDE EDGE)

TRACT 9168  
LOT 55

EXISTING SEAWALL  
FOOTING (SEAWARD EDGE)

113'-11"  
REPAIR  
CASE IV

HUNTINGTON  
HARBOUR  
CHANNEL

**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◐ GROUTED VOID
- ▣ ROCK TOE PROTECTION



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

PROPERTY LINE  
LOT 54

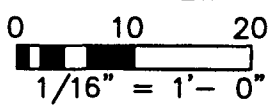
**COASTAL COMMISSION**

EXHIBIT # 3

PAGE 25 OF 47

PURPOSE: Repair Existing Seawall

PLAN VIEW



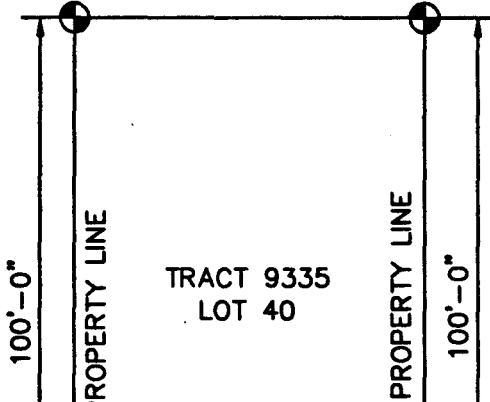
Proposed Repair of Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Dr. Joseph & Benita Jacobs  
 3682 Escapade Circle  
 Huntington Beach, CA 92649

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Jacobs  
 Sheet 2 of 4 Date: 8/4/00

VENTURE DRIVE



TRACT 9335  
LOT 40

LOCATION OF  
REPAIR SEE  
SHT 4 OF 4

100'-0"

PROPERTY LINE

PROPERTY LINE

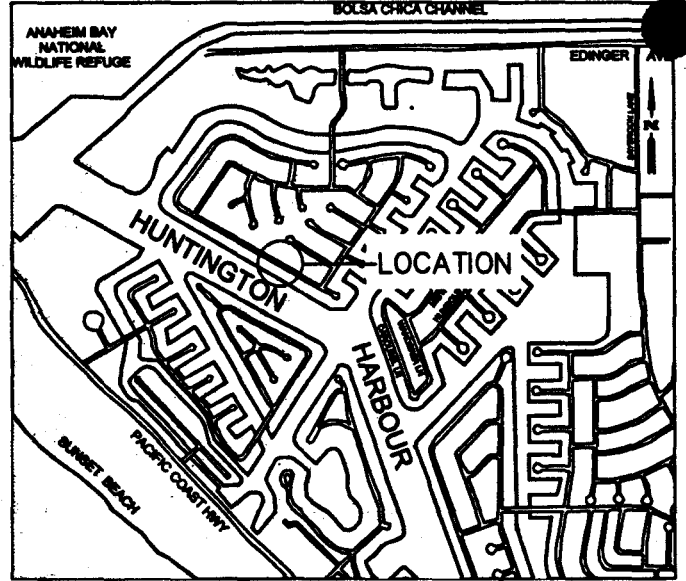
100'-0"

South Coast District Office

EXTENT OF SEAWALL  
REPAIR 60.00

APPROVED IN CONCEPT  
Permit No. **5-00-401**

By: \_\_\_\_\_  
HUNTINGTON  
HARBOUR EFFECTIVE  
CHANNED Date: \_\_\_\_\_



VICINITY MAP

FROM U.S.G.S. SEAL BEACH  
QUADRANGLE, CALIFORNIA  
SCALE 1:24,000

COASTAL COMMISSION

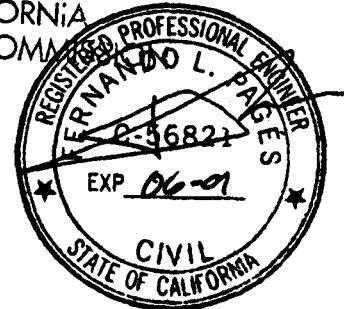
EXHIBIT # 3  
PAGE 26 OF 47

NOTE:  
ALL DEPTHS BASED ON  
MLLW=0.00 FT.

**RECEIVED**  
South Coast Region

OCT 4 2000

CALIFORNIA  
COASTAL COMMISSION

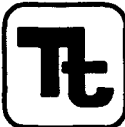


**APPROVED  
IN CONCEPT**

*PR*                      *8/10/00*

---

PLANNING DIVISION                      DATE  
CITY OF HUNTINGTON BEACH

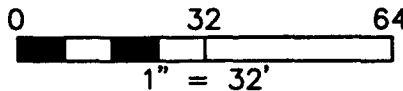


**TETRA TECH**

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

PURPOSE: Repair Existing Seawall

PLAN VIEW

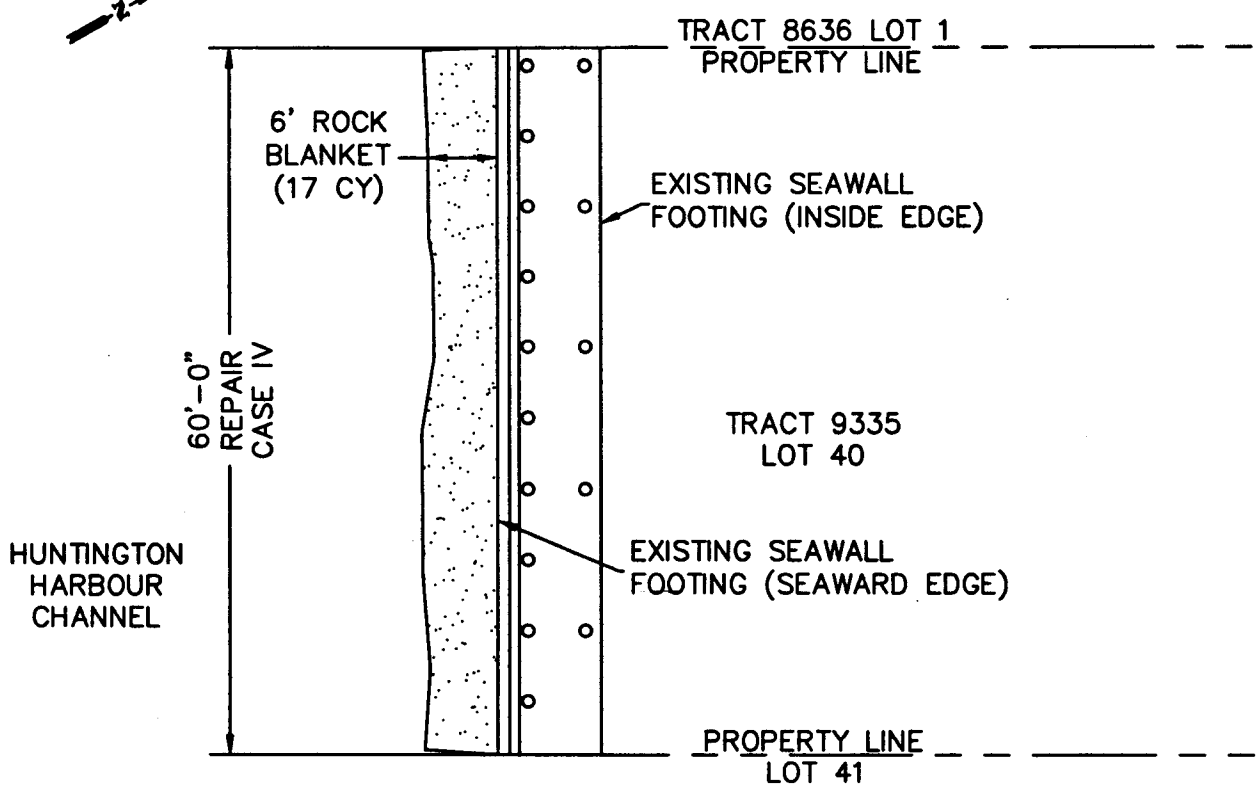


Gregory D. Kriesel  
3512 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing  
Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Kriesel  
Sheet 1 of 4 Date: 8/4/00

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ⊠ GROUTED VOID
- ▣ ROCK TOE PROTECTION

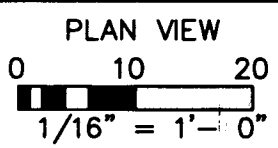


**TETRA TECH**  
 570 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (626)351-4664, Fax (626)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
 PAGE 27 OF 47

PURPOSE: Repair Existing Seawall

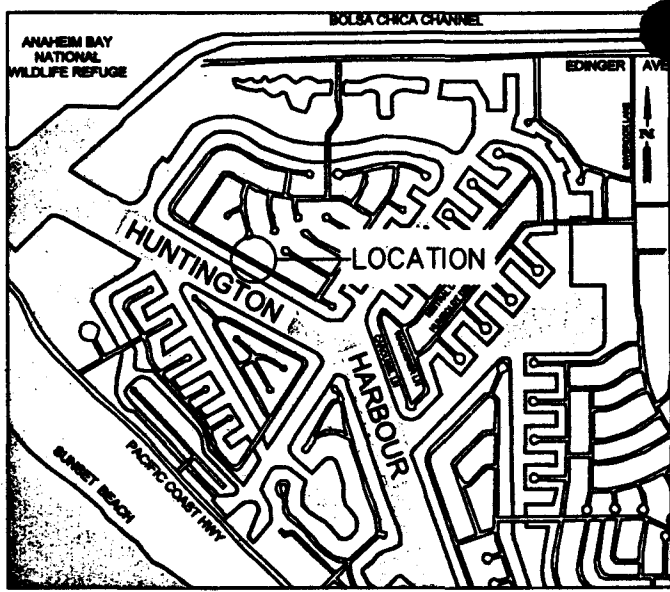
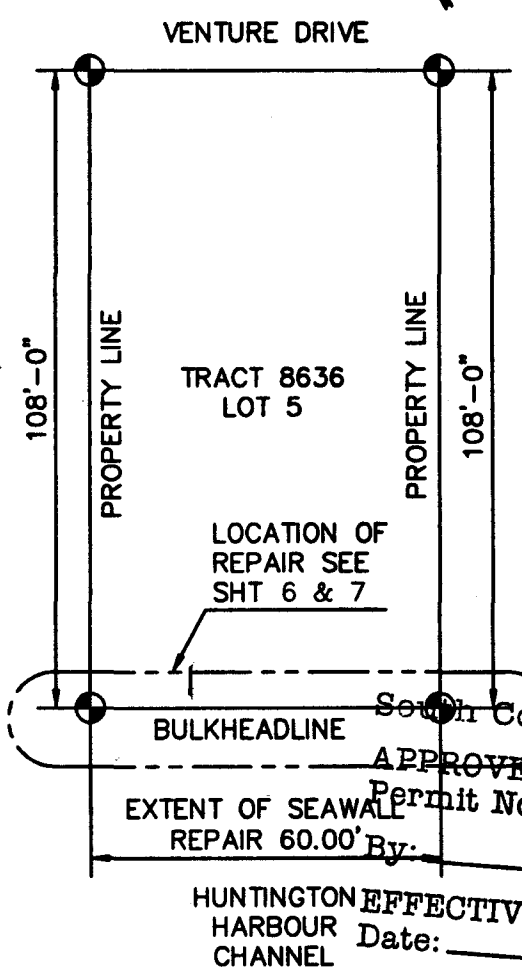


Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Gregory D. Kriesel  
 3512 Venture Drive  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Kriesel  
 Sheet 2 of 4 Date: 8/4/00



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

**RECEIVED**  
South Coast Region

OCT 4 2000

South Coast District Office

APPROVED Permit No. **5-00-401**

NOTE: CALIFORNIA ALL DEPTHS BASED ON MLLW - 0. COASTAL COMMISSION

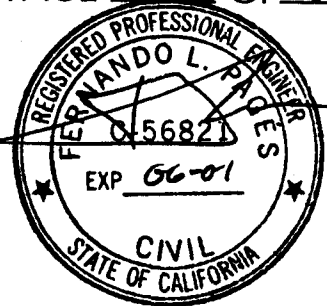
EFFECTIVE Date: \_\_\_\_\_

EXHIBIT # 3  
PAGE 28 OF 47

APPROVED IN CONCEPT

PP 8/10/00

PLANNING DIVISION DATE  
CITY OF HUNTINGTON BEACH



**TETRA TECH**  
570 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

PLAN VIEW

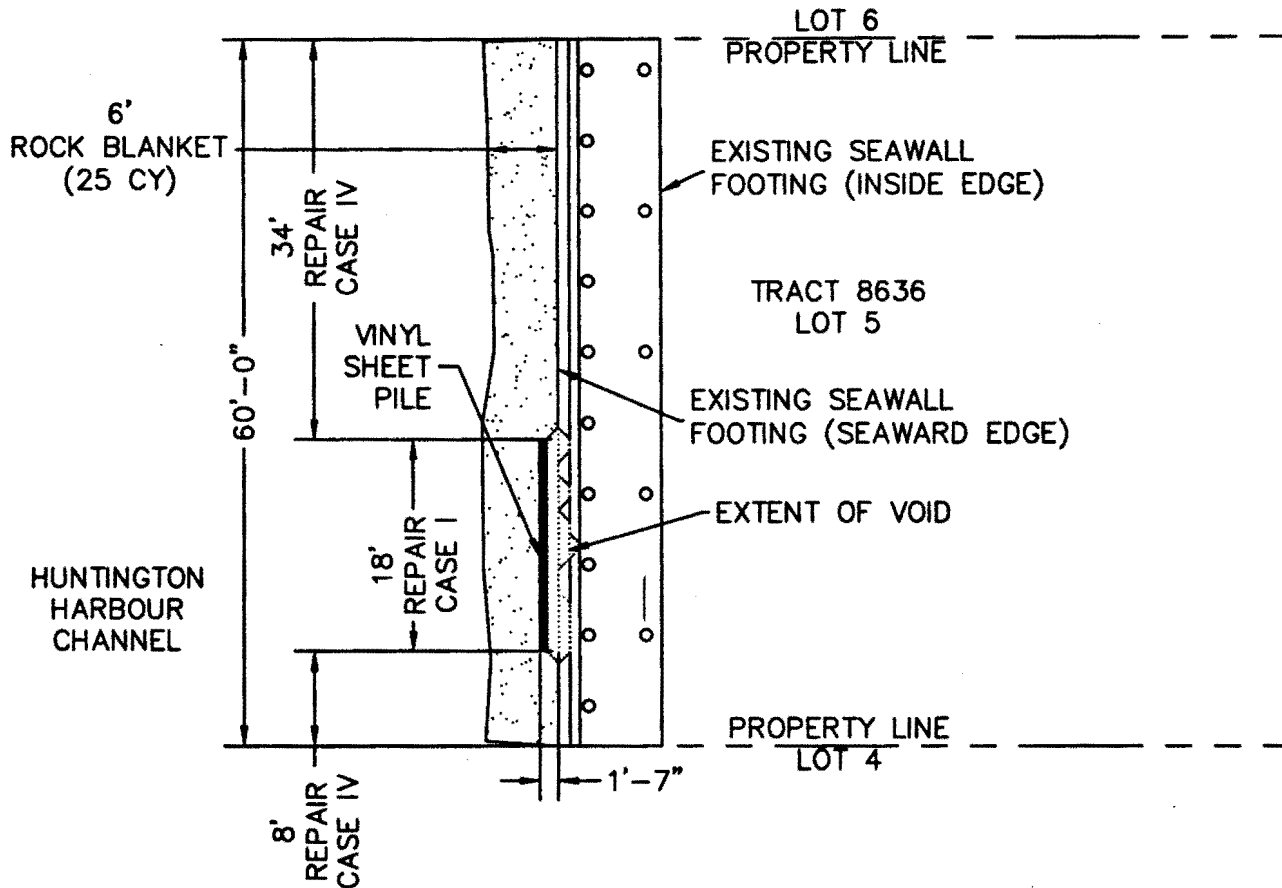
0 32 64

1" = 32'

John D. & Nicolette M. Kubeck  
3442 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Kubeck  
Sheet 1 of 7 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ▭ GROUDED VOID
- ▣ ROCK TOE PROTECTION

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 29 OF 47

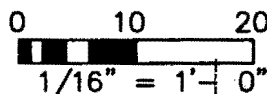


**TETRA TECH**

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

PURPOSE: Repair Existing Seawall

PLAN VIEW

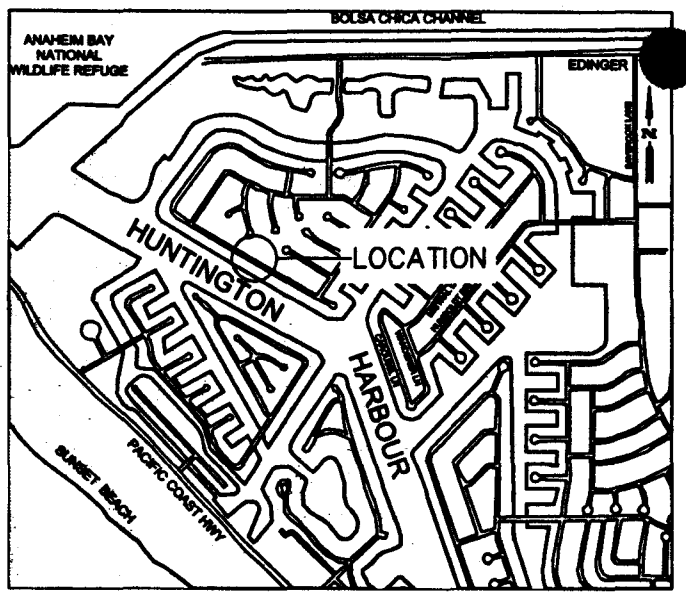
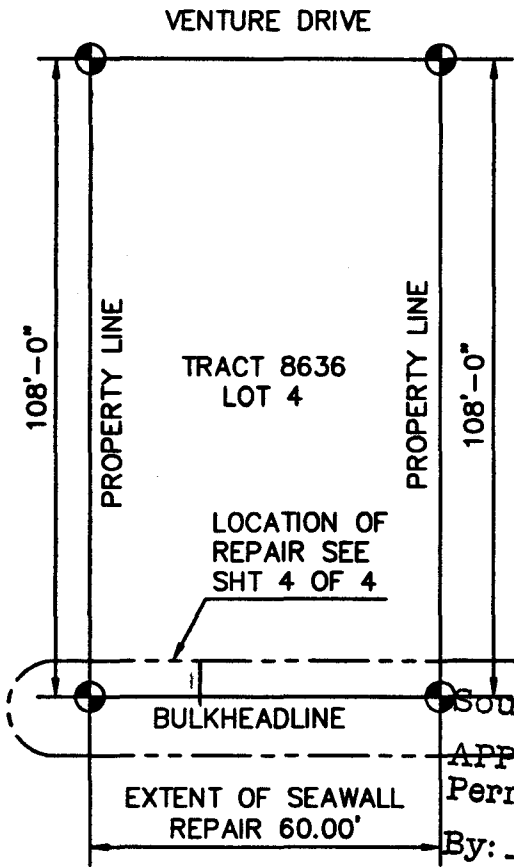


Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

John D. & Nicolette M. Kubeck  
 3442 Venture Drive  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Kubeck  
 Sheet 2 of 7 Date: 8/4/00



VICINITY MAP

FROM U.S.G.S. SEAL BEACH QUADRANGULAR MAP  
**COASTAL COMMISSION**  
 SCALE 1:24000

EXHIBIT # 3  
 PAGE 30 OF 47

South Coast District Office

APPROVED Permit No.

By: 5-00-401

NOTE: ALL DEPTHS BASED ON MLLW - 0.00 FT.  
**RECEIVED**  
 South Coast Region

OCT 4 2000

CALIFORNIA COASTAL COMMISSION

**APPROVED IN CONCEPT**  
 PR 8/10/00  
 PLANNING DIVISION DATE  
 CITY OF HUNTINGTON BEACH



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

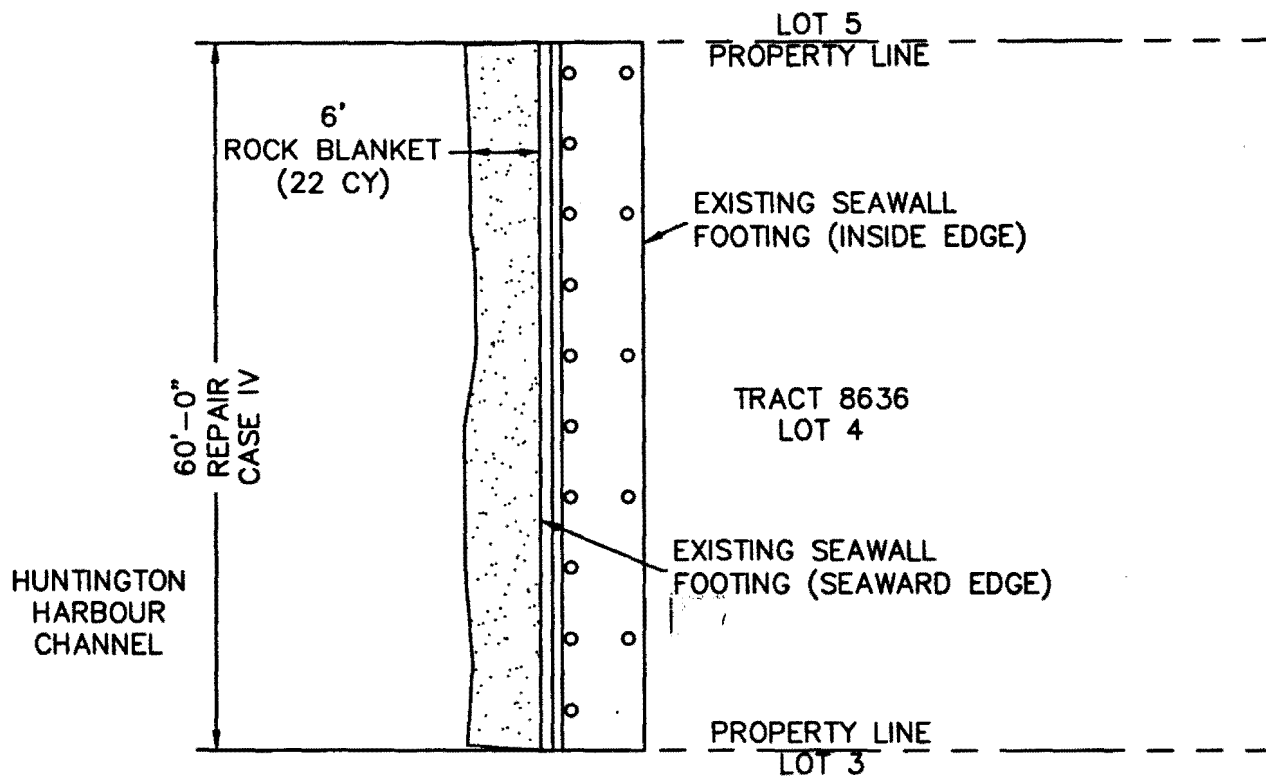
PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

PLAN VIEW

Frank & Nancy Munoz  
 3452 Venture Drive  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall  
 IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Munoz  
 Sheet 1 of 4 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ⊗ GROUTED VOID
- ▣ ROCK TOE PROTECTION

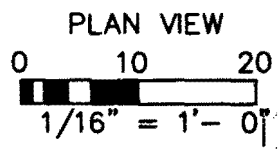
**COASTAL COMMISSION**

EXHIBIT # 3  
 PAGE 31 OF 47



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax: (826)351-5291

**PURPOSE:** Repair Existing Seawall

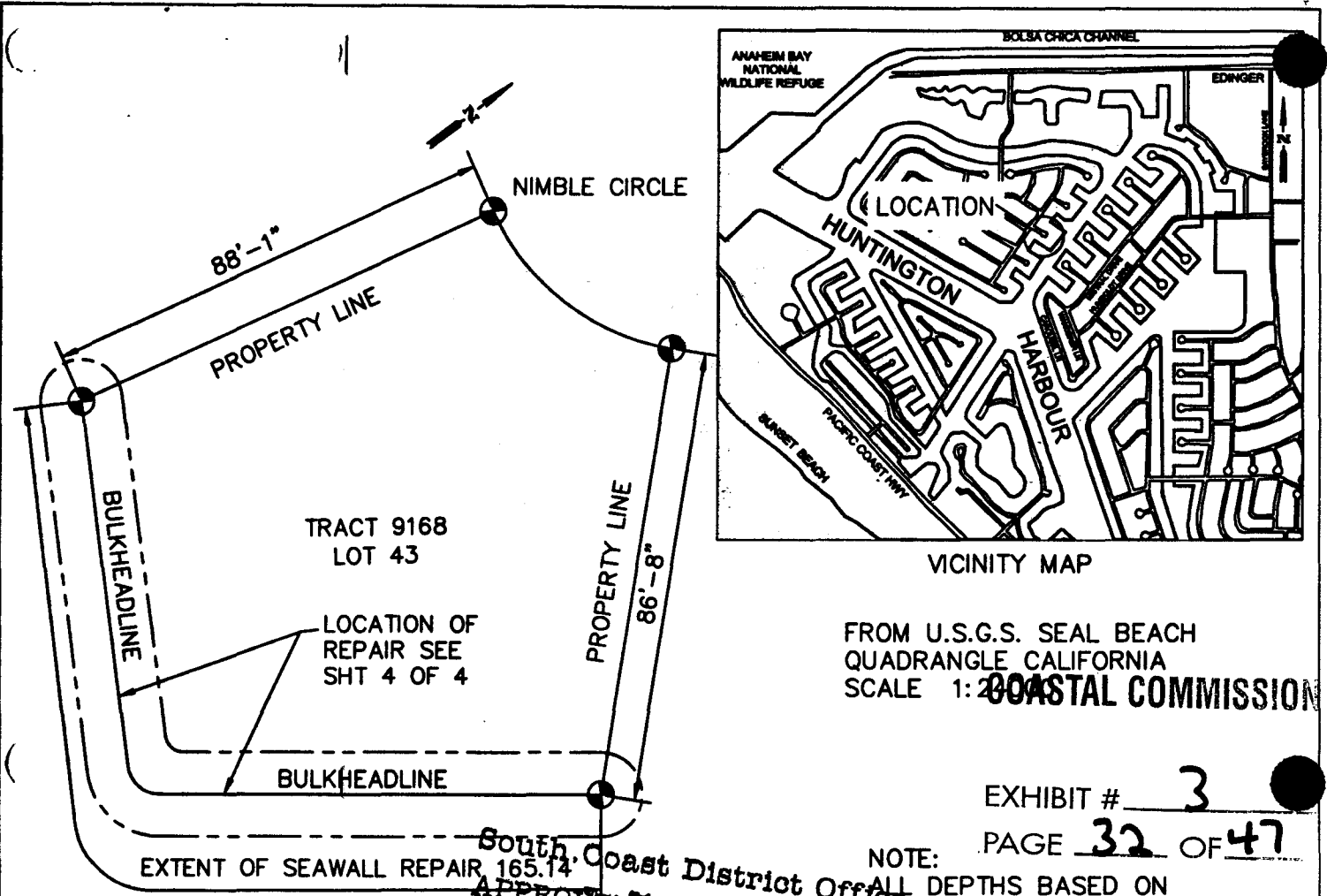


Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Frank & Nancy Munoz  
 3452 Venture Drive  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Munoz  
 Sheet 2 of 4 Date: 8/4/00



HUNTINGTON HARBOUR CHANNEL

TRACT 9168  
LOT 43

LOCATION OF REPAIR SEE  
SHT 4 OF 4

FROM U.S.G.S. SEAL BEACH  
QUADRANGLE CALIFORNIA  
SCALE 1:20,000

EXHIBIT # 3  
PAGE 32 OF 47

South Coast District Office  
APPROVED  
Permit No. 5-00-401

By: \_\_\_\_\_  
EFFECTIVE  
Date: \_\_\_\_\_

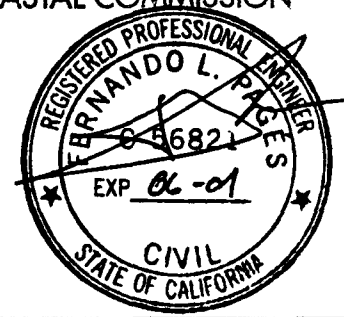
NOTE: ALL DEPTHS BASED ON  
MLLW=0.00  
**RECEIVED**  
South Coast Region

OCT 4 2000

CALIFORNIA  
COASTAL COMMISSION

**Tt** **TETRA TECH**  
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

APPROVED  
IN CONCEPT  
PP 8/10/00  
PLANNING DIVISION DATE  
CITY OF HUNTINGTON BEACH



PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

PLAN VIEW

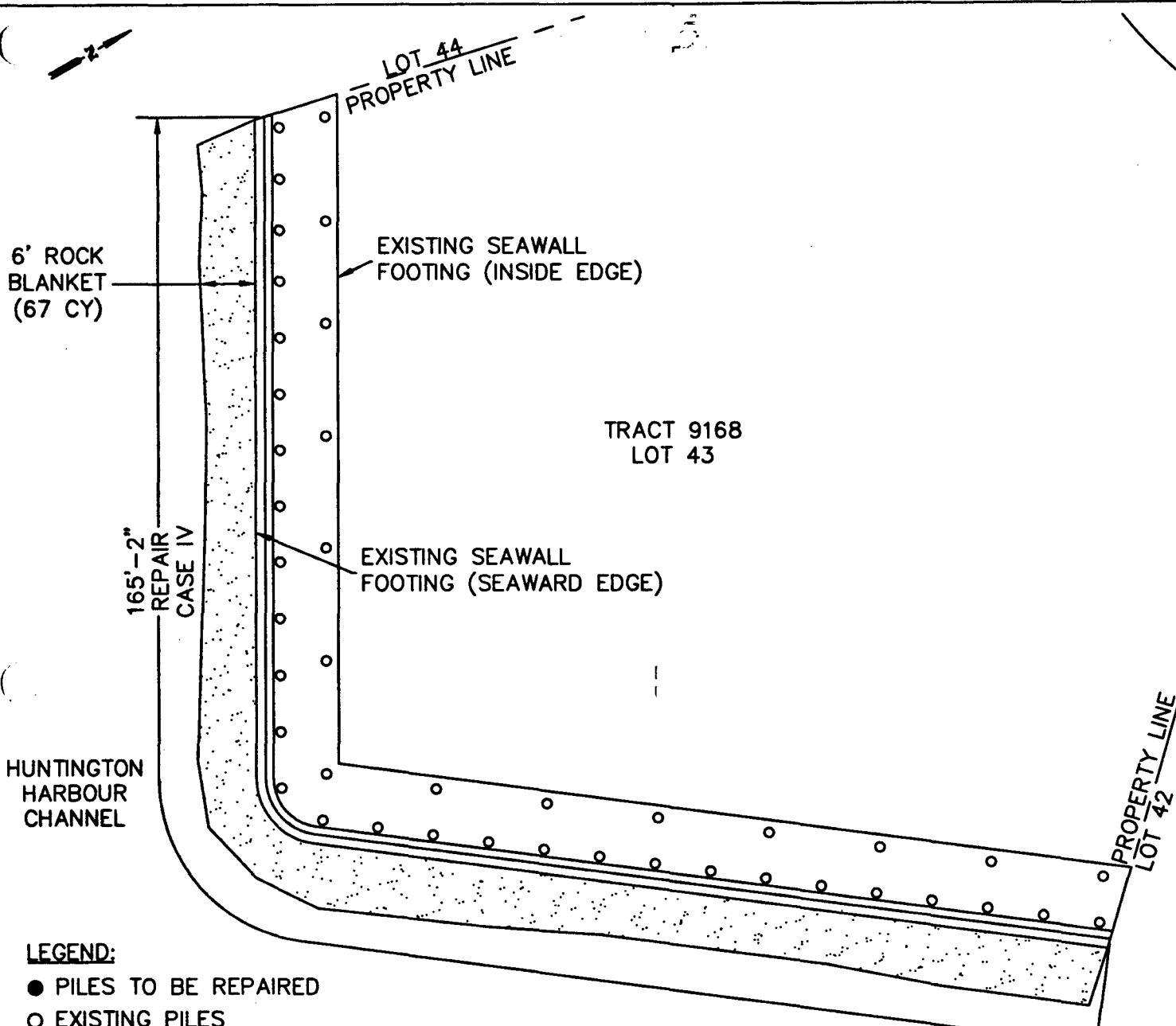
0 32 64  
1" = 32'

John S. & Irene D. Muratore  
3742 Nimble Circle  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Muratore  
Sheet 1 of 4 Date: 8/4/00





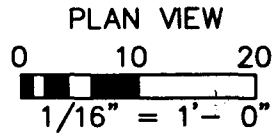
- LEGEND:**
- PILES TO BE REPAIRED
  - EXISTING PILES
  - ⊗ GROUTED VOID
  - ▣ ROCK TOE PROTECTION

**COASTAL COMMISSION**

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

EXHIBIT # 3  
 PAGE 33 OF 47

**PURPOSE:** Repair Existing Seawall

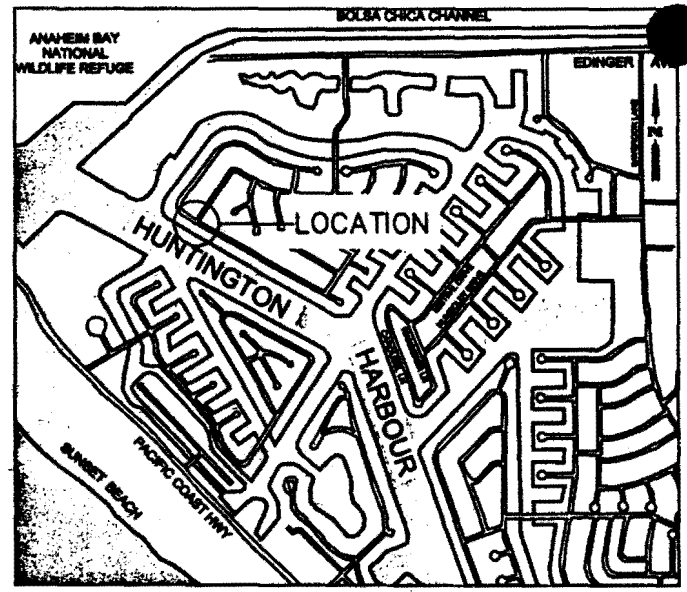
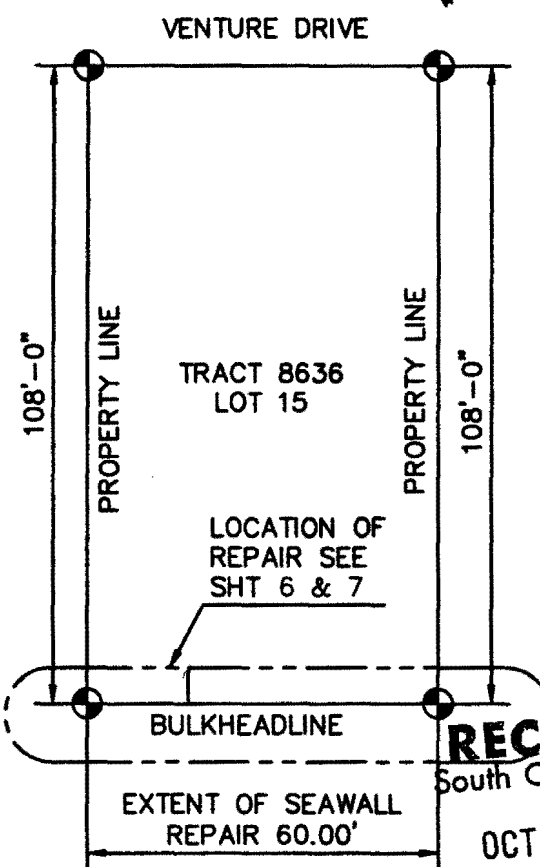


Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

John & Irene Muratore  
 3742 Nimble Circle  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Muratore  
 Sheet 2 of 4 Date: 8/4/00



VICINITY MAP

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

EXHIBIT # 3  
 PAGE 34 OF 37

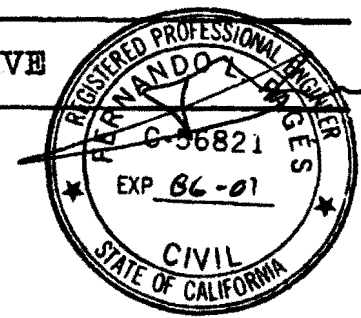
**RECEIVED**  
 South Coast Region  
 OCT 4 2000

NOTE:  
 ALL DEPTHS BASED ON  
 MLLW=0.00 FT.

HUNTINGTON HARBOUR CHANNEL

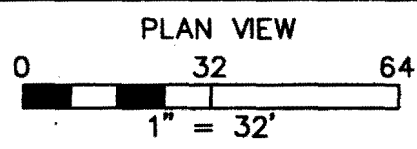
CALIFORNIA COASTAL COMMISSION  
 South Coast District Office  
 APPROVED  
 Permit No. **5-00-401**

**APPROVED IN CONCEPT**  
 By: \_\_\_\_\_  
 EFFECTIVE Date: 3/10/00  
 PLANNING DIVISION DATE  
 CITY OF HUNTINGTON BEACH



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

PURPOSE: Repair Existing Seawall



William Newfield  
 3332 Venture Drive  
 Huntington Beach, CA 92649

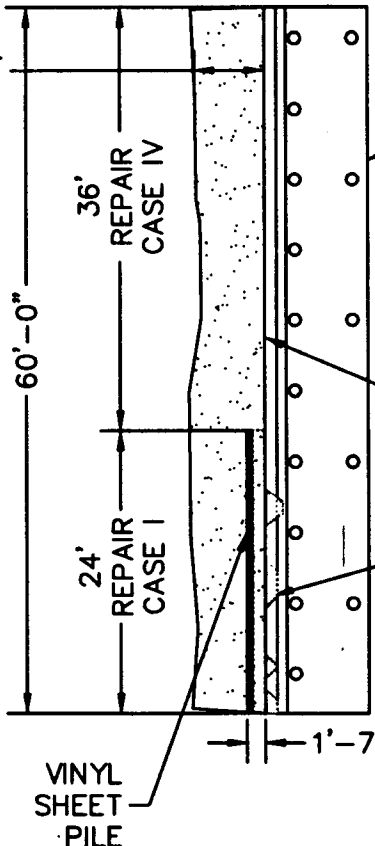
Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Newfield  
 Sheet 1 of 7 Date: 8/4/00

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.



6'  
ROCK BLANKET  
(31 CY)



LOT 16  
PROPERTY LINE

EXISTING SEAWALL  
FOOTING (INSIDE EDGE)

TRACT 8636  
LOT 15

EXISTING SEAWALL  
FOOTING (SEAWARD EDGE)

EXTENT OF VOID

PROPERTY LINE  
LOT 14

HUNTINGTON  
HARBOUR  
CHANNEL

60'-0"

36'  
REPAIR  
CASE IV

24'  
REPAIR  
CASE I

VINYL  
SHEET  
PILE

1'-7"

**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ▨ GROUTED VOID
- ▣ ROCK TOE PROTECTION

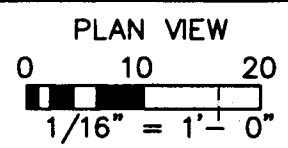
**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 35 OF 47



**TETRA TECH**  
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

**PURPOSE:** Repair Existing Seawall

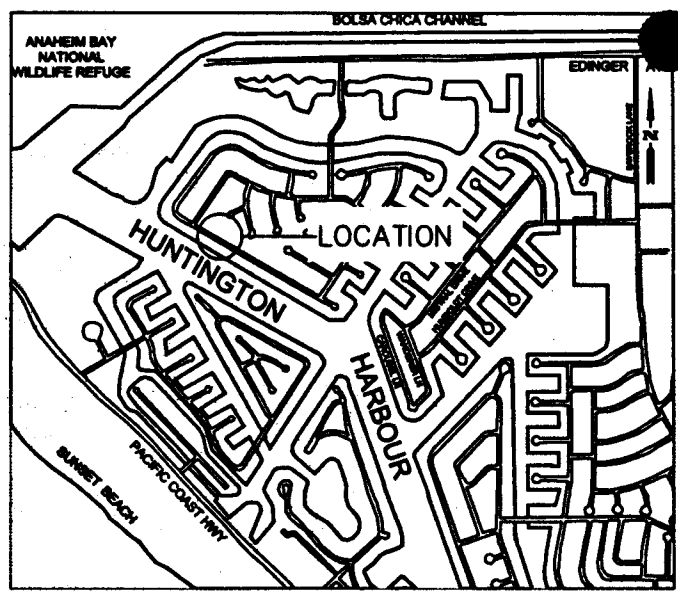
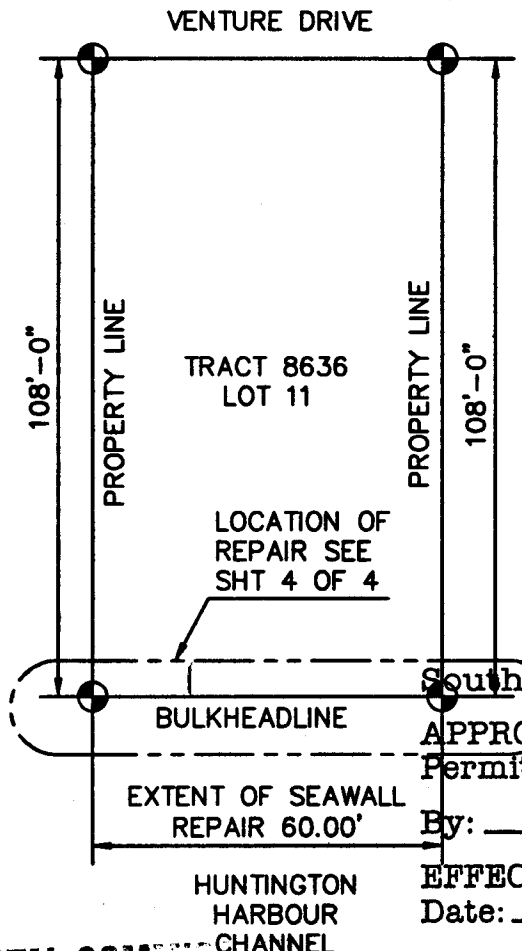


William Newfield  
3332 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Newfield  
Sheet 2 of 7 Date: 8/4/00

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.



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

South Coast District Office  
 APPROVED Permit No. **3-00-401**  
 By: \_\_\_\_\_  
 EFFECTIVE Date: \_\_\_\_\_

NOTE:  
 ALL DEPTHS AS SHOWN  
 MLLW = 0.00'

**RECEIVED**  
 South Coast Region  
 OCT 4 2000  
 CALIFORNIA  
 COASTAL COMMISSION

**COASTAL COMMISSION**

EXHIBIT # 3  
 PAGE 36 OF 47

**ATTACHED IN CONCEPT**  
 PP 2/10/00  
 PLANNING DIVISION  
 CITY OF ANAHEIM

**REGISTERED PROFESSIONAL ENGINEER**  
 ERNANDO L. PAGES  
 8-5682  
 EXP 06-01  
 CIVIL  
 STATE OF CALIFORNIA

**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

**PURPOSE:** Repair Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

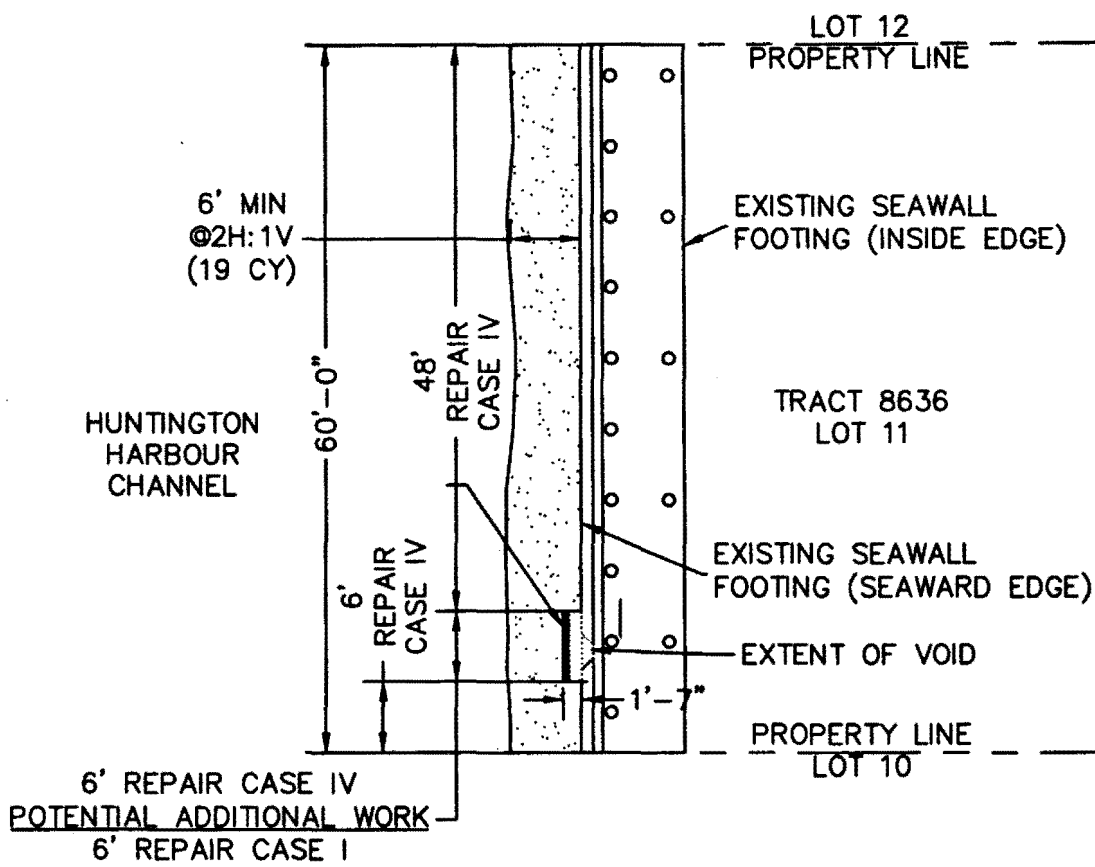
**PLAN VIEW**

0 32 64  
 1" = 32'

Zacharia Reda  
 3372 Venture Drive  
 Huntington Beach, CA 92649

**Proposed Repair of Existing Seawall**

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Reda  
 Sheet 1 of 4 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◐ GROUDED VOID
- ▣ ROCK TOE PROTECTION



**TETRA TECH**

670 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

**COASTAL COMMISSION**

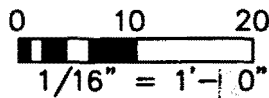
EXHIBIT # 3

PAGE 37 OF 47

**PURPOSE:** Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

**PLAN VIEW**



Zacharia Reda  
3372 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Reda  
Sheet 2 of 4 Date: 8/4/00

HUNTINGTON HARBOUR CHANNEL

EXTENT OF SEAWALL REPAIR 61.00'

BULKHEADLINE

LOCATION OF REPAIR SEE SHT 4 OF 4

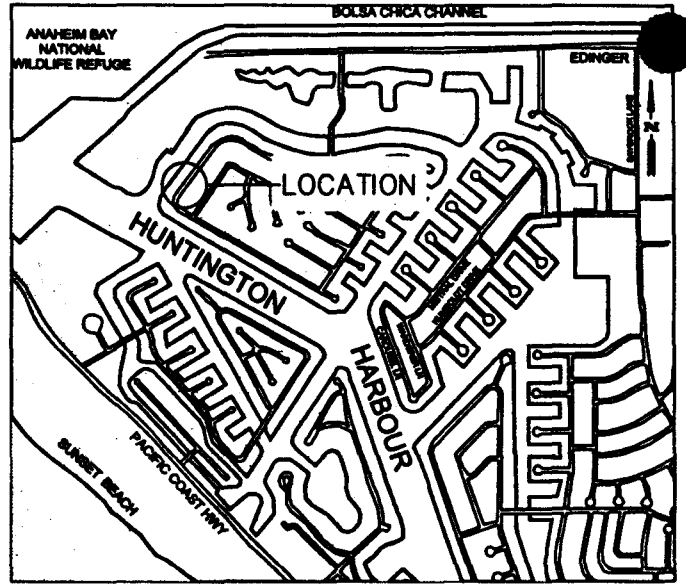
TRACT 8636 LOT 21

105'-4"

PROPERTY LINE

PROPERTY LINE

108'-0"



VICINITY MAP

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

Coast District Office  
APPROVED 5-00-401  
Permit No. 5-00-401

RECEIVED  
ALL DEPTHS BASED ON Region  
MLLW = 0.00 South Coast Region

OCT 4 2000

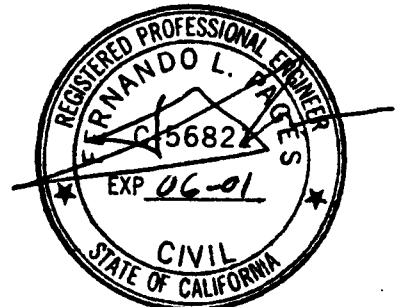
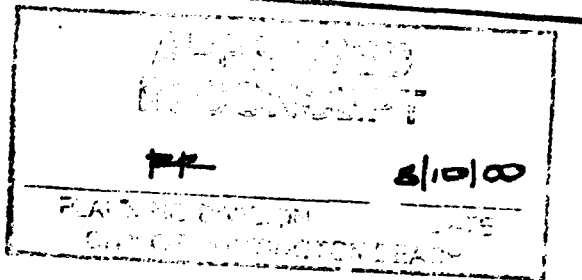
CALIFORNIA COASTAL COMMISSION

TYPHOON LANE

PROJECTIVE

COASTAL COMMISSION

EXHIBIT # 3  
PAGE 38 OF 47



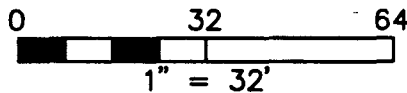
TETRA TECH

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

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

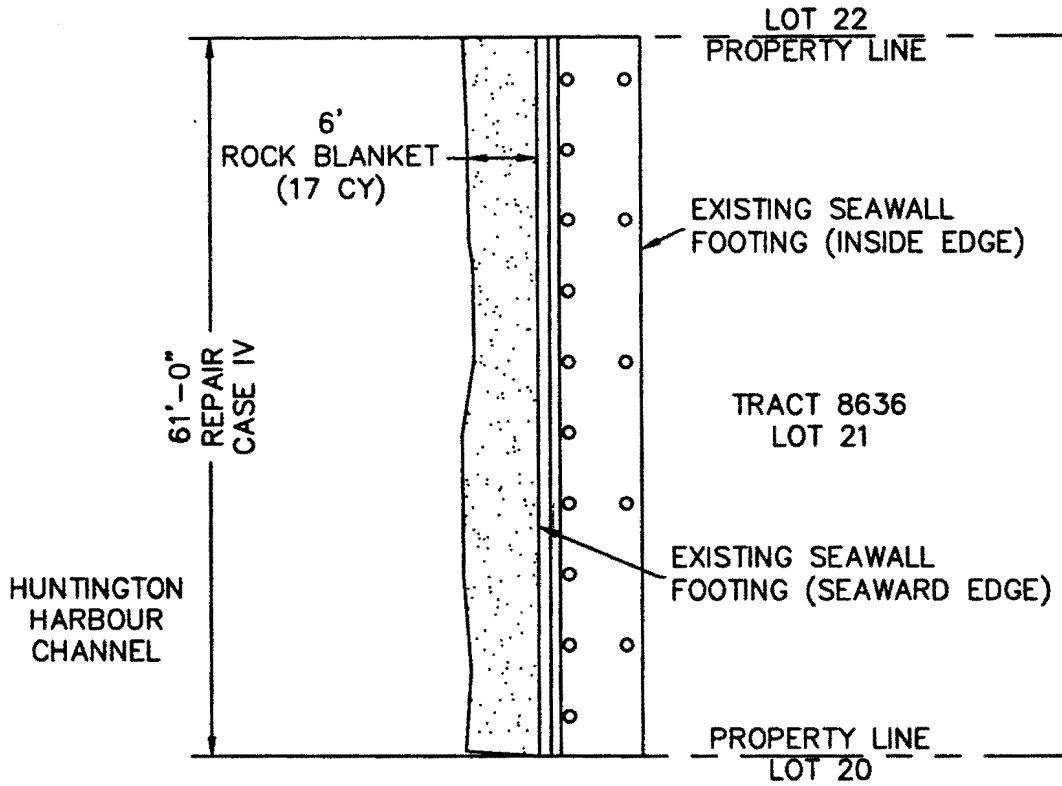
PLAN VIEW



Yuval & Eva Rosenthal  
16301 Typhoon Lane  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Rosenthal  
Sheet 1 of 4 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ⊙ GROUTED VOID
- ▣ ROCK TOE PROTECTION



**TETRA TECH**

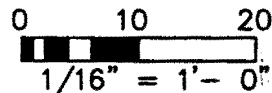
570 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 39 OF 47

PURPOSE: Repair Existing Seawall

PLAN VIEW

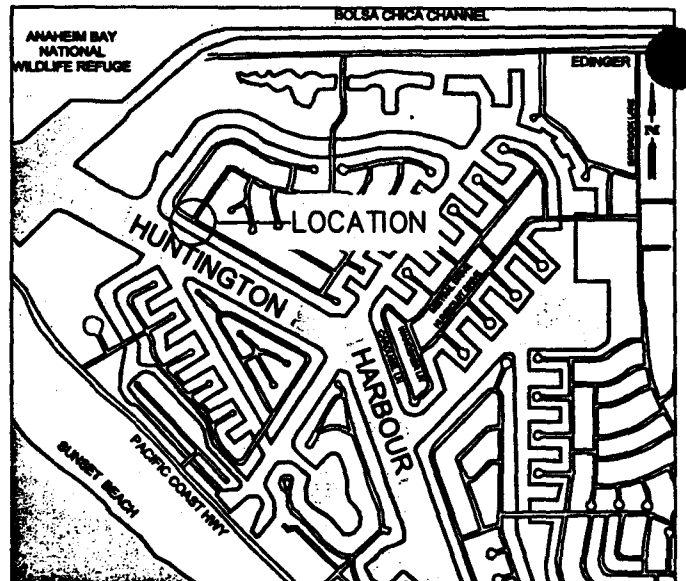
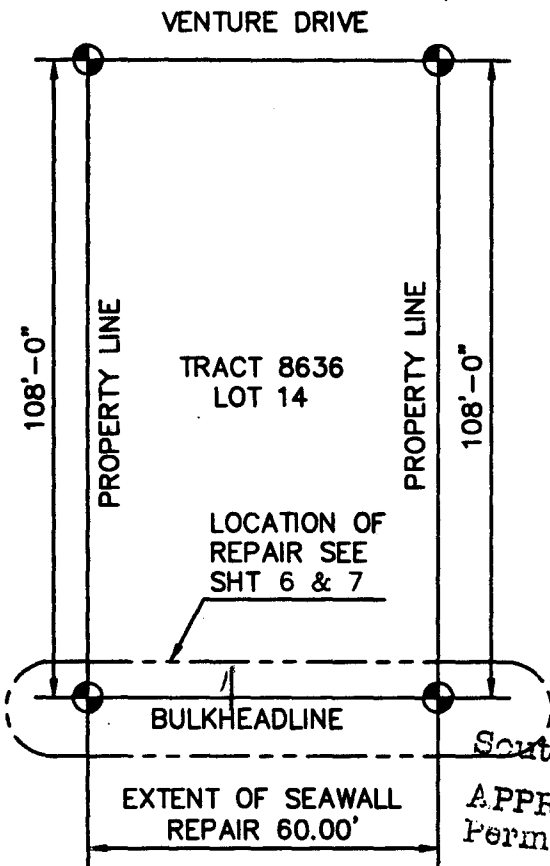


Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

Yuval & Eva Rosenthal  
16301 Typhoon Lane  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Rosenthal  
Sheet 2 of 4 Date: 8/4/00



VICINITY MAP

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

COASTAL COMMIS

HUNTINGTON  
 HARBOUR  
 CHANNEL

South Coast District Office  
 APPROVED  
 Permit No. **5-00-401**

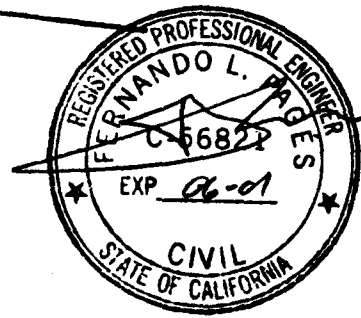
**RECEIVED**  
 South Coast Region

OCT 4 2000

CALIFORNIA  
 COASTAL COMMISSION

EXHIBIT # 3  
 PAGE 40 OF 47

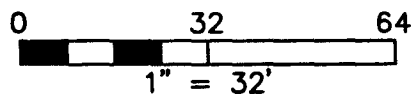
By: \_\_\_\_\_  
 EFFECTIVE  
 Date: \_\_\_\_\_  
 PR 8/10/00



**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (626)351-4884, Fax (626)351-5291

PURPOSE: Repair Existing Seawall

PLAN VIEW



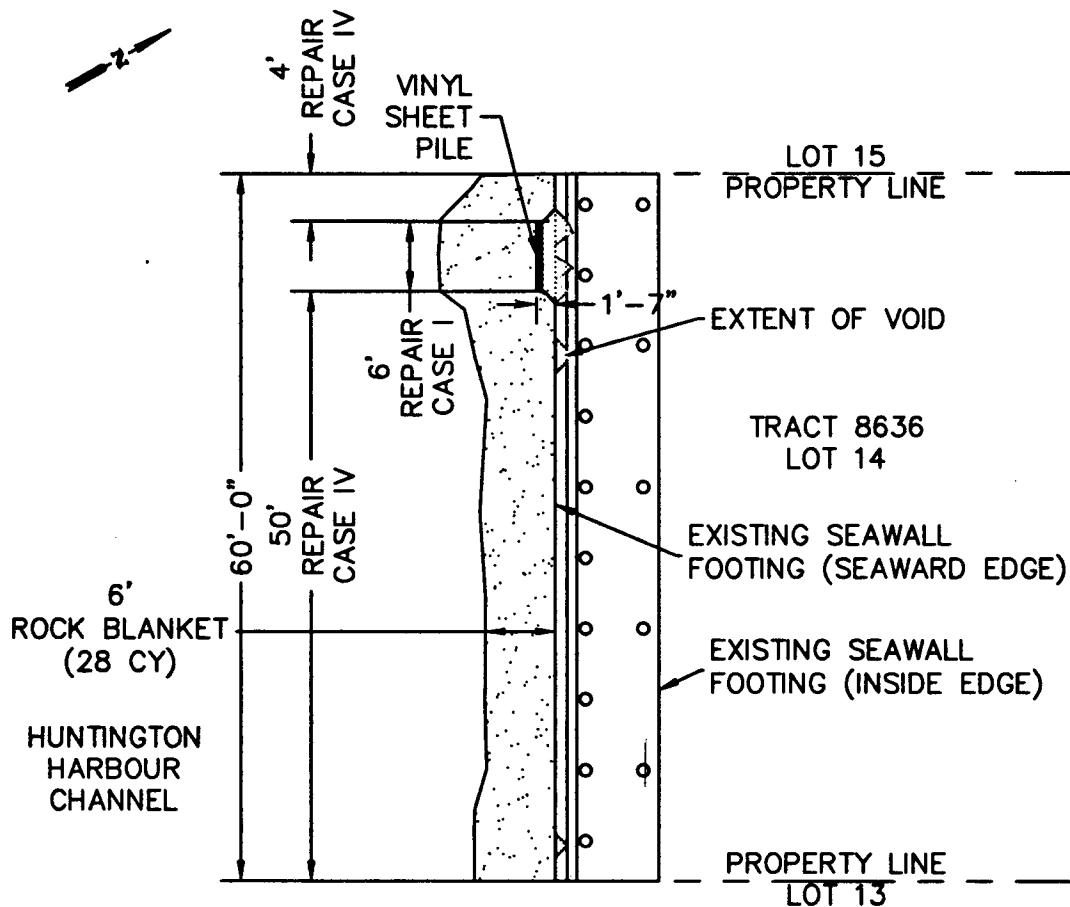
George F. Schofhauser  
 3342 Venture Drive  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Schofhauser  
 Sheet 1 of 7 Date: 8/4/00

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.





**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◐ GROUDED VOID
- ▣ ROCK TOE PROTECTION



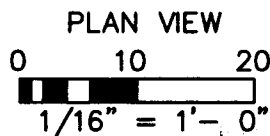
**TETRA TECH**

570 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 41 OF 47

PURPOSE: Repair Existing Seawall

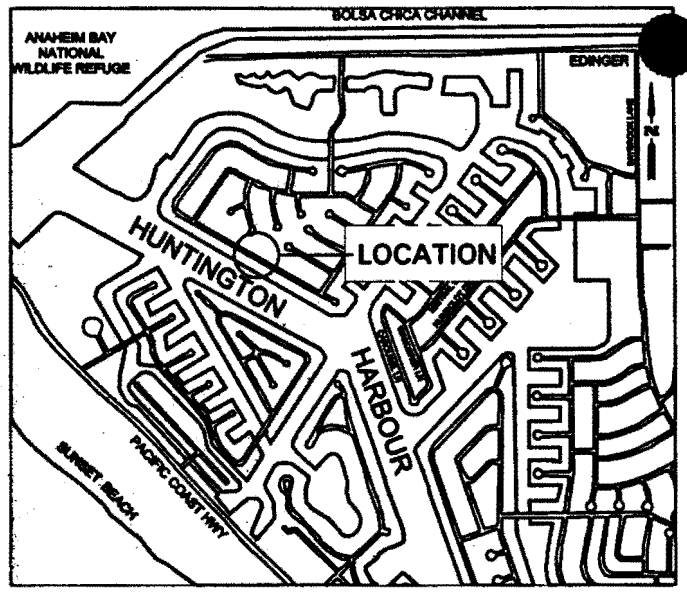
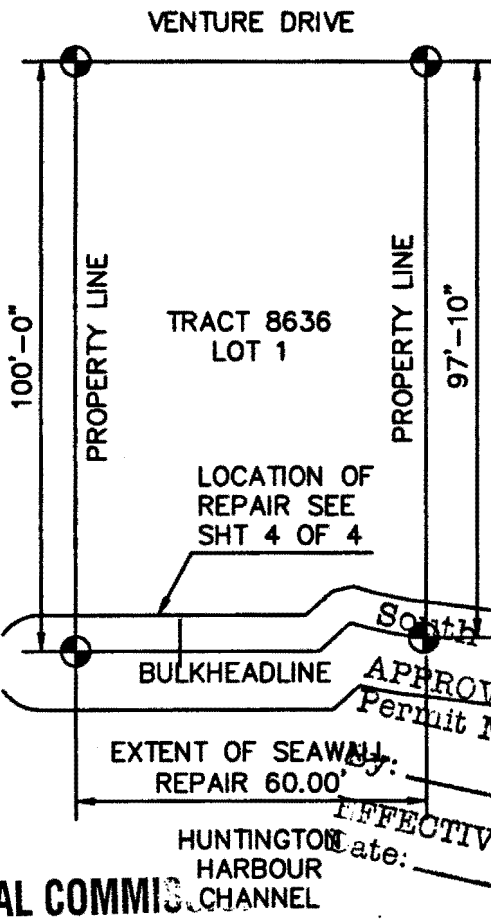


Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

George F. Schofhauser  
3342 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Schofhauser  
Sheet 2 of 7 Date: 8/4/00



VICINITY MAP

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

South Coast District Office  
**APPROVED**  
Permit No. 5-00-401

**RECEIVED**  
OCT 4 2000  
CALIFORNIA  
COASTAL COMMISSION

NOTE:  
ALL DEPTHS BASED ON  
MLLW = 0.00 FT.

COASTAL COMMISSION

EXHIBIT # 3  
PAGE 42 OF 47

**APPROVED  
IN CONCEPT**  
PLANNING DIVISION DATE 8-18-00  
CITY OF HUNTINGTON BEACH

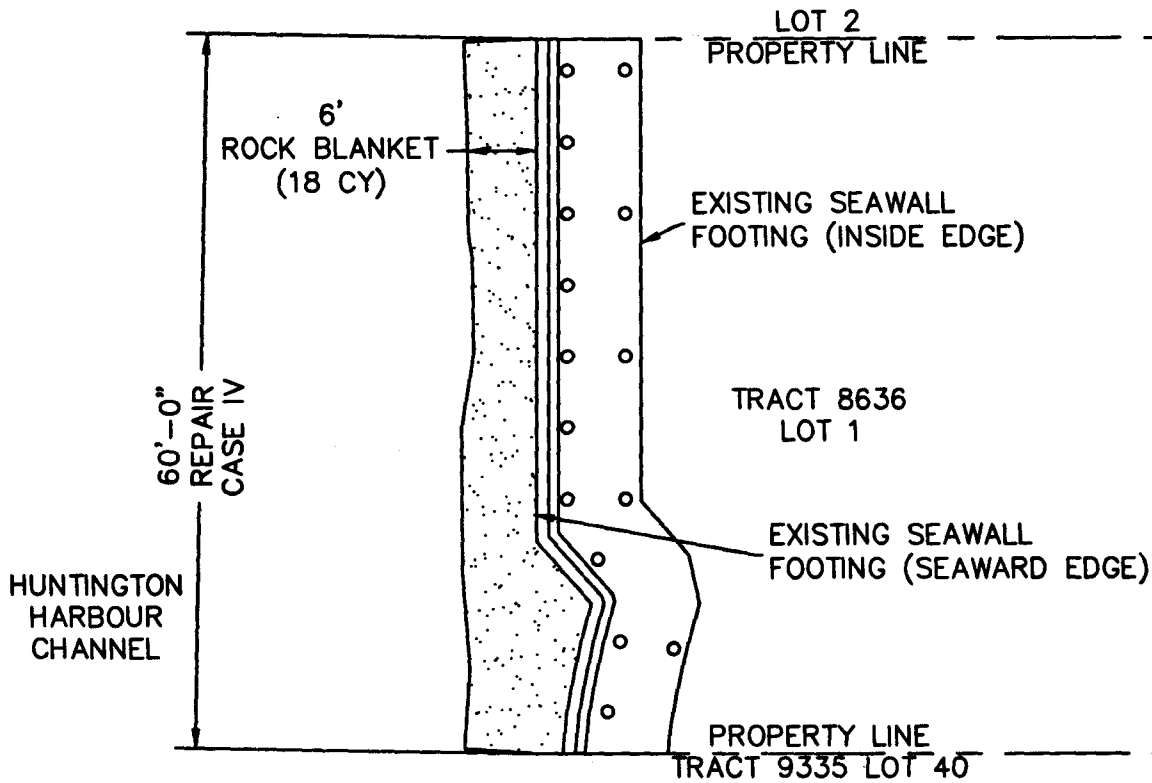
REGISTERED PROFESSIONAL ENGINEER  
FERNANDO L. PALER  
C 36821  
EXP 6-01  
CIVIL  
STATE OF CALIFORNIA

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

**PURPOSE:** Repair Existing Seawall  
  
Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

**PLAN VIEW**  
0 32 64  
1" = 32'  
  
Susan Sutter  
3502 Venture Drive  
Huntington Beach, CA 92649

**Proposed Repair of Existing Seawall**  
  
IN: Huntington Harbour  
AT: Trinidad Island,  
Huntington Beach  
County of Orange State: CA  
Application By: Sutter  
Sheet 1 of 4 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- GROUTED VOID
- ▣ ROCK TOE PROTECTION



**TETRA TECH**

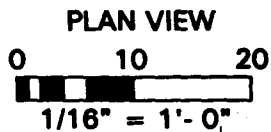
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 43 OF 47

**PURPOSE:** Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.



Susan Sutter  
3502 Venture Drive  
Huntington Beach, CA 92649

**Proposed Repair of Existing Seawall**

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Sutter  
Sheet 2 of 4 Date: 8/4/00

HUNTINGTON HARBOUR CHANNEL

EXTENT OF SEAWALL REPAIR 60.00'

BULKHEADLINE

LOCATION OF REPAIR SEE SHT 4 OF 4

TRACT 8636 LOT 24

PROPERTY LINE 108'-0"

PROPERTY LINE 108'-0"

South Coast District Office  
APPROVED  
Permit No. 300-401

EFFECTIVE DATE: \_\_\_\_\_

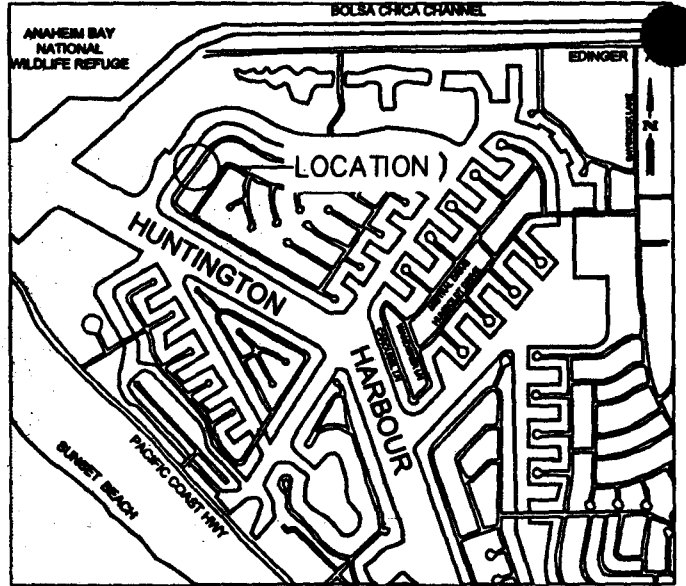
TYPHOON LANE

COASTAL COMMISSION

EXHIBIT # 3  
PAGE 44 OF 47

APPROVED  
IN CONCEPT  
PR 8/10/00  
PLANNING DIVISION DATE  
CITY OF HUNTINGTON BEACH

**Tt** TETRA TECH  
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(826)351-4664, Fax (826)351-5291



VICINITY MAP

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

NOTE: ALL DEPTHS BASED ON MLLW=0.00 FT  
RECEIVED South Coast Region  
OCT 4 2000

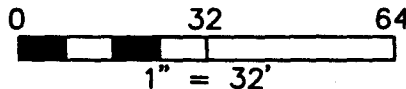
CALIFORNIA COASTAL COMMISSION



PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

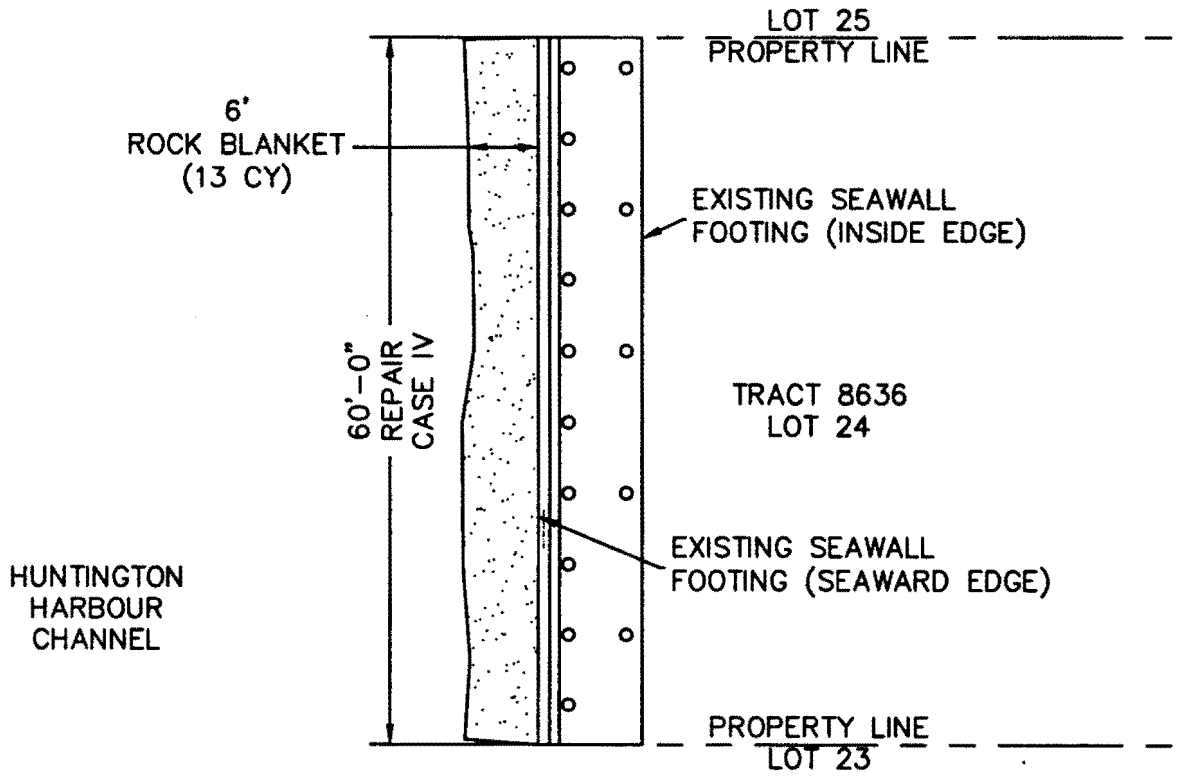
PLAN VIEW



Robert Swain  
16271 Typhoon Lane  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Swain  
Sheet 1 of 4 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- ◻ GROUTED VOID
- ◻ ROCK TOE PROTECTION

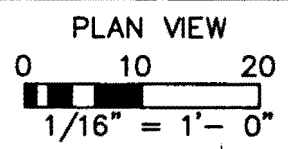
**COASTAL COMMISSION**

EXHIBIT # 3  
 PAGE 45 OF 47

**Tt TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

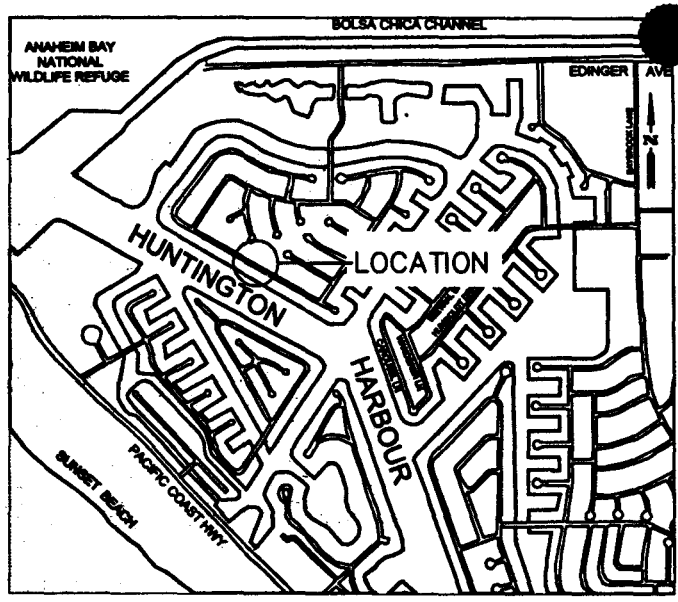
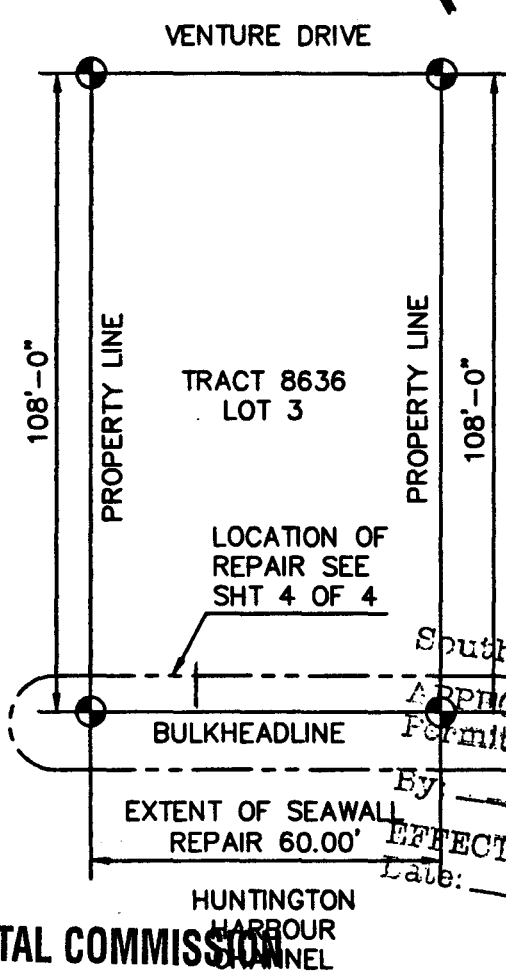
**PURPOSE:** Repair Existing Seawall

**Datum:** MLLW = 0  
**Adj. Property Owners:**  
 1. See Attached List  
 2.  
 3.



Robert Swain  
 16271 Typhoon Lane  
 Huntington Beach, CA 92649

**Proposed Repair of Existing Seawall**  
 IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Swain  
 Sheet 2 of 4 Date: 8/4/00



VICINITY MAP

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

South Coast District Office  
**APPROVED**  
 Permit No. **5-00-401**

NOTE:  
 ALL DEPTHS BASED ON  
 MLLW=0.00 FT  
**RECEIVED**  
 South Coast Region

**COASTAL COMMISSION**

OCT 4 2000

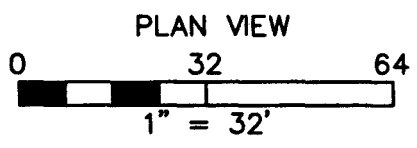
EXHIBIT # 3  
 PAGE 46 OF 47

**APPROVED  
 IN CONCEPT**  
 PLANNING DIVISION DATE 2/10/00  
 CITY OF HUNTINGTON BEACH

CALIFORNIA  
 COASTAL COMMISSION  
 REGISTERED PROFESSIONAL ENGINEER  
**FERNANDO L. PAGES**  
 C-56821  
 EXP 6-01  
 CIVIL  
 STATE OF CALIFORNIA

**TETRA TECH**  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107  
 (826)351-4664, Fax (826)351-5291

PURPOSE: Repair Existing Seawall

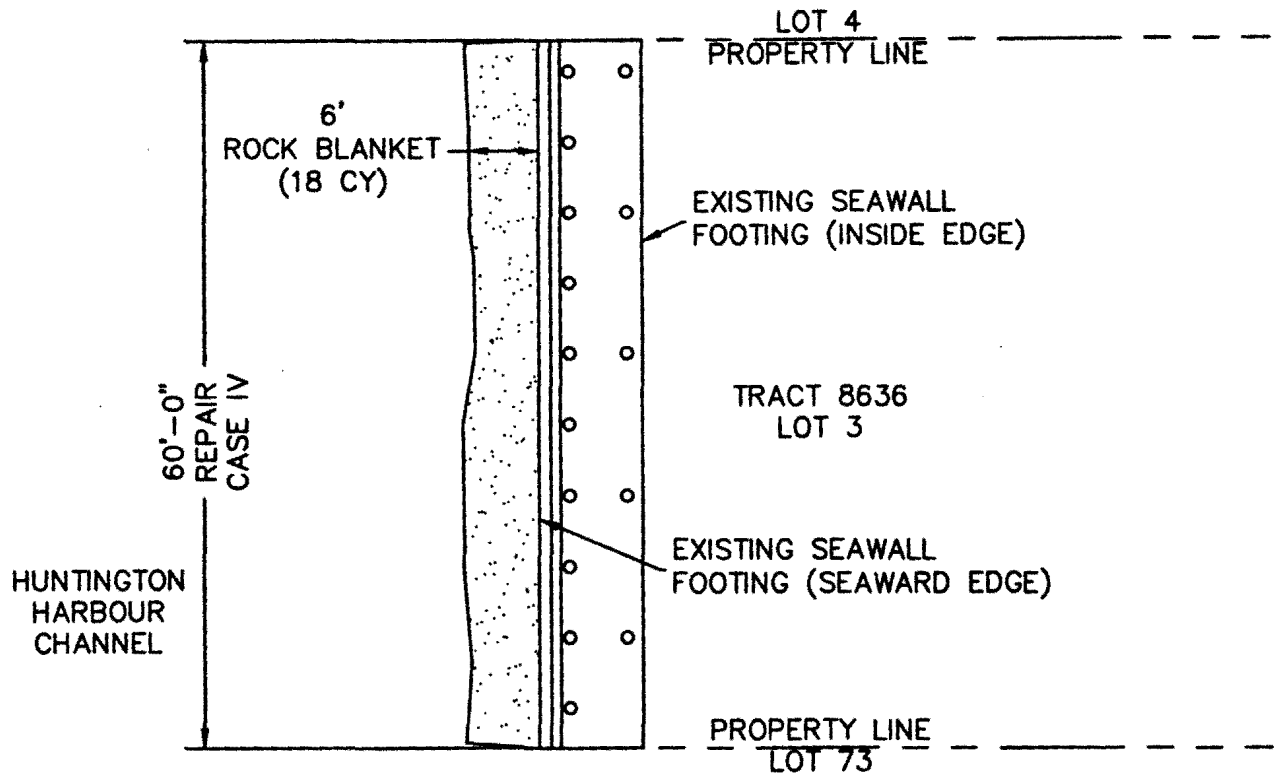


Proposed Repair of Existing Seawall

Datum: MLLW = 0  
 Adj. Property Owners:  
 1. See Attached List  
 2.  
 3.

Michiko Tajima  
 3462 Venture Drive  
 Huntington Beach, CA 92649

IN: Huntington Harbour  
 AT: Trinidad Island  
 Huntington Beach  
 County of Orange State: CA  
 Application By: Tajima  
 Sheet 1 of 4 Date: 8/4/00



**LEGEND:**

- PILES TO BE REPAIRED
- EXISTING PILES
- GROUDED VOID
- ROCK TOE PROTECTION



**TETRA TECH**

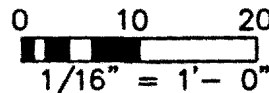
570 North Rosemead Blvd.  
Pasadena, CA 91107  
(626)351-4664, Fax (626)351-5291

**COASTAL COMMISSION**

EXHIBIT # 3  
PAGE 47 OF 47

PURPOSE: Repair Existing Seawall

PLAN VIEW



Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

Michiko Tajima  
3462 Venture Drive  
Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

IN: Huntington Harbour  
AT: Trinidad Island  
Huntington Beach  
County of Orange State: CA  
Application By: Tajima  
Sheet 2 of 4 Date: 8/4/00

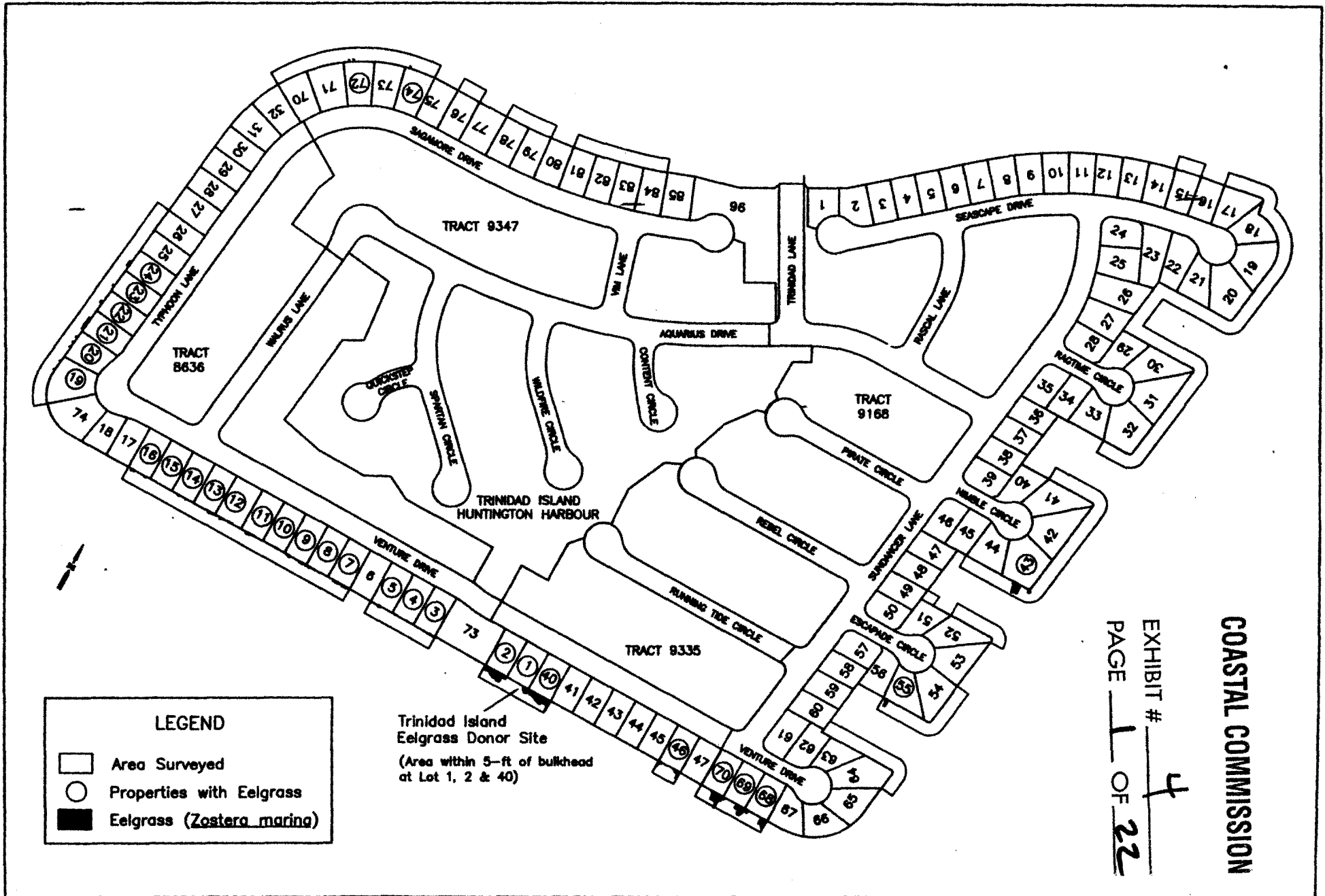
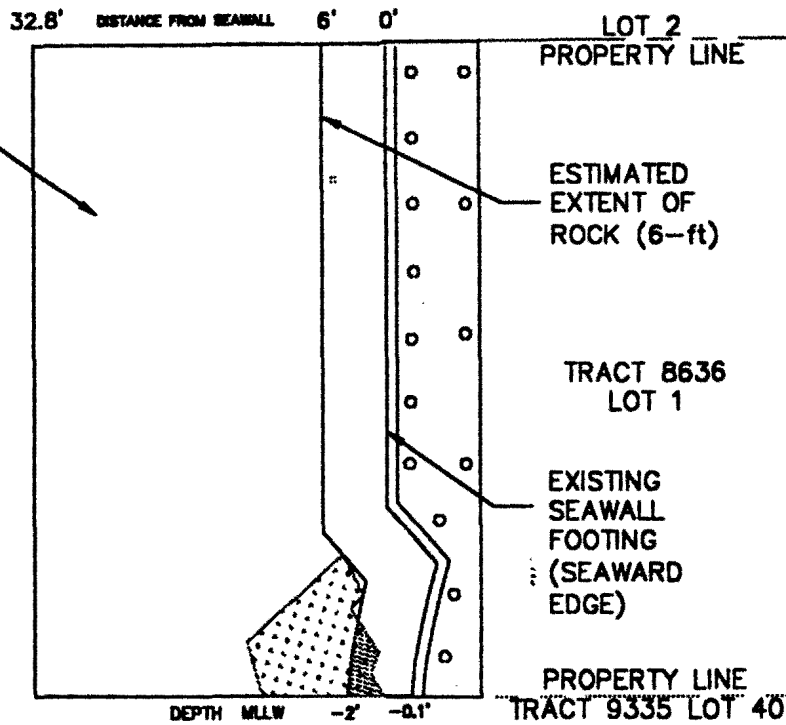


FIGURE 3. Trinidad Island Eelgrass Transplant Donor Site, Huntington Beach California, June 2000.





HUNTINGTON HARBOUR CHANNEL

AREA SURVEYED (FROM SEAWALL OUT 10m)



| 8636-01            | Area                       |  | Eelgrass Area  |                 |
|--------------------|----------------------------|--|----------------|-----------------|
|                    | Surveyed (m <sup>2</sup> ) |  | m <sup>2</sup> | ft <sup>2</sup> |
| Within 6' of wall: | 36.8                       |  | 1.2            | 12.9            |
| Total Area         | 201.2                      |  | 9.6            | 103.7           |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact

COASTAL COMMISSION



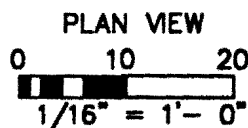
TETRA TECH

670 North Raymond Blvd.  
Pasadena, CA 91107  
(800) 251-4224, Fax (800) 251-2221

EXHIBIT # 4  
PAGE 2 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

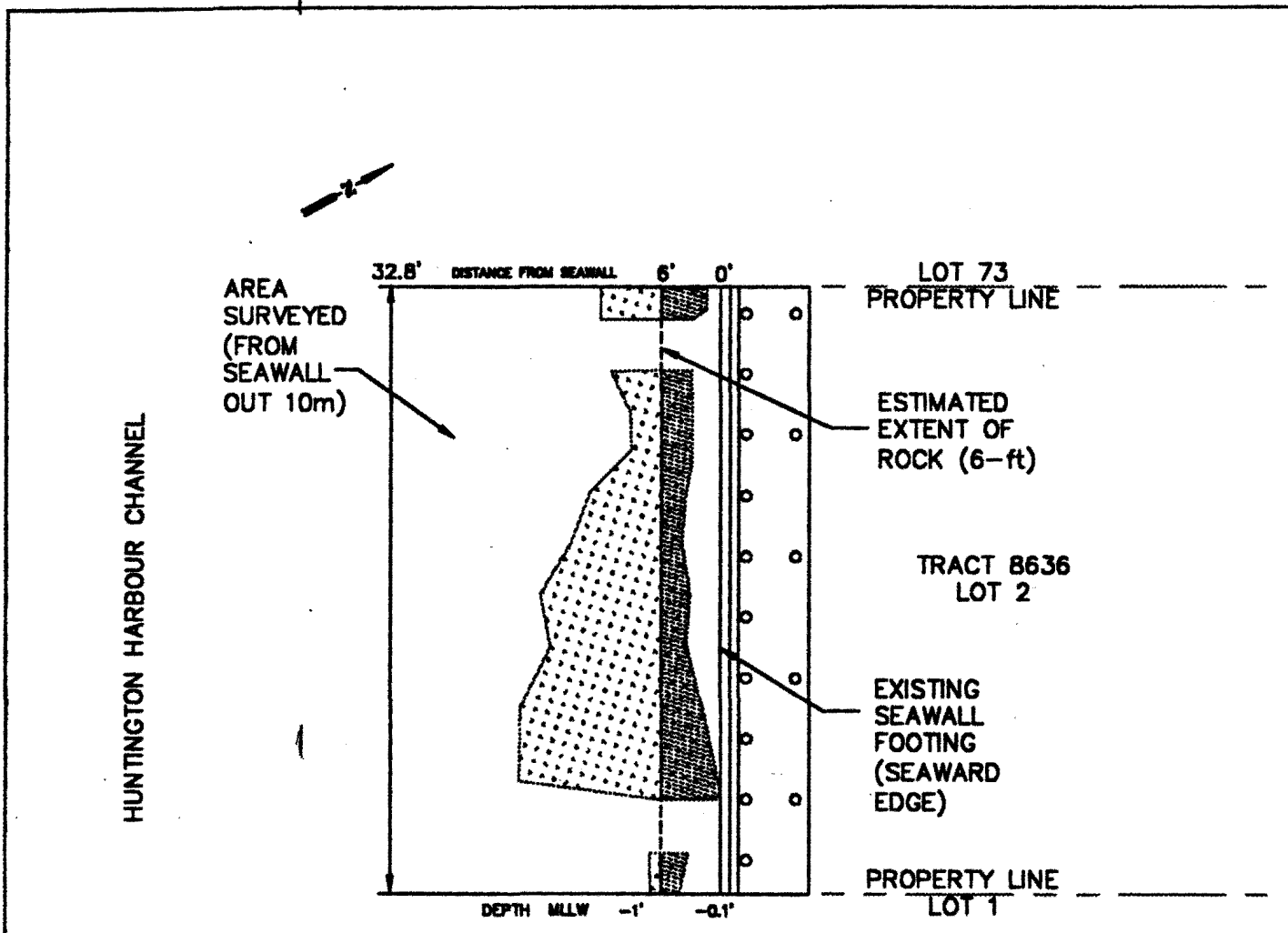


Susan Sutter  
3502 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA

Sheet 1 of 1



| 8636-02            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 14.7    158.5                                   |
| Total Area         | 182.9                         | 54.2    583.1                                   |

**LEGEND:**

- Eelgrass (*Zostera marina*)
- Eelgrass Impact Area

**COASTAL COMMISSION**



**TETRA TECH**  
 870 North Beachwood Blvd.  
 Pasadena, CA 91107  
 (818) 351-4884, Fax (818) 351-8881

EXHIBIT # 4  
 PAGE 3 OF 22

**PURPOSE:** Repair Existing Seawall

**Datum:** MLLW = 0

**PLAN VIEW**

0      10      20  
  
 1/16" = 1' - 0"

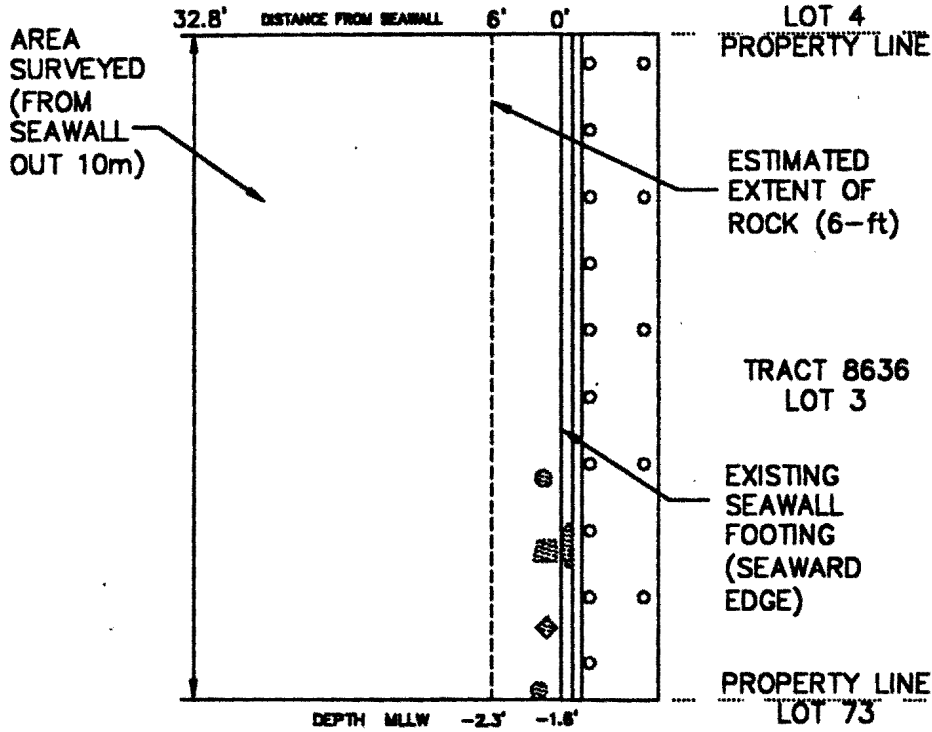
Ruben & Cheryl Baghdassarian  
 3492 Venture Drive  
 Huntington Beach, CA 92649

**Eelgrass Survey Results**

Survey Conducted: 11/18/99  
 IN: Huntington Harbour  
 AT: Huntington Beach  
 County of Orange    State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-03            | Area                          |  | Eelgrass Area  |                 |
|--------------------|-------------------------------|--|----------------|-----------------|
|                    | Surveyed<br>(m <sup>2</sup> ) |  | m <sup>2</sup> | ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          |  | 1.1            | 11.9            |
| Total Area         | 182.9                         |  | 1.1            | 11.9            |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



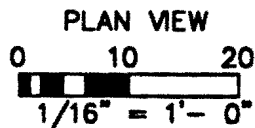
TETRA TECH

670 North Rosemead Blvd.  
Pasadena, CA 91107  
(820) 351-4884, Fax (820) 351-8881

EXHIBIT # 4  
PAGE 4 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0



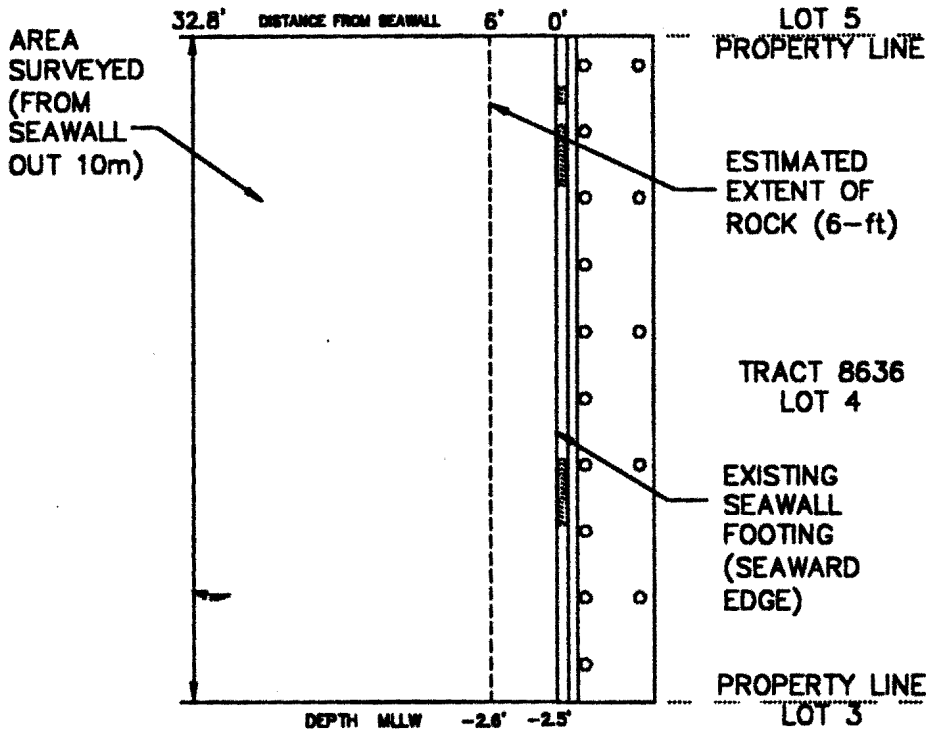
Michiko Tajima  
3462 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-04            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 1.2 13.3  |
| Total Area         | 182.9                         | 1.2 13.3  |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



TETRA TECH

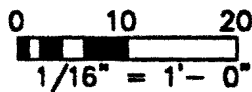
670 North Rosewood Blvd.  
Folsom, CA 95107  
(916) 351-4004, Fax (916) 351-0001

EXHIBIT # 4  
PAGE 5 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



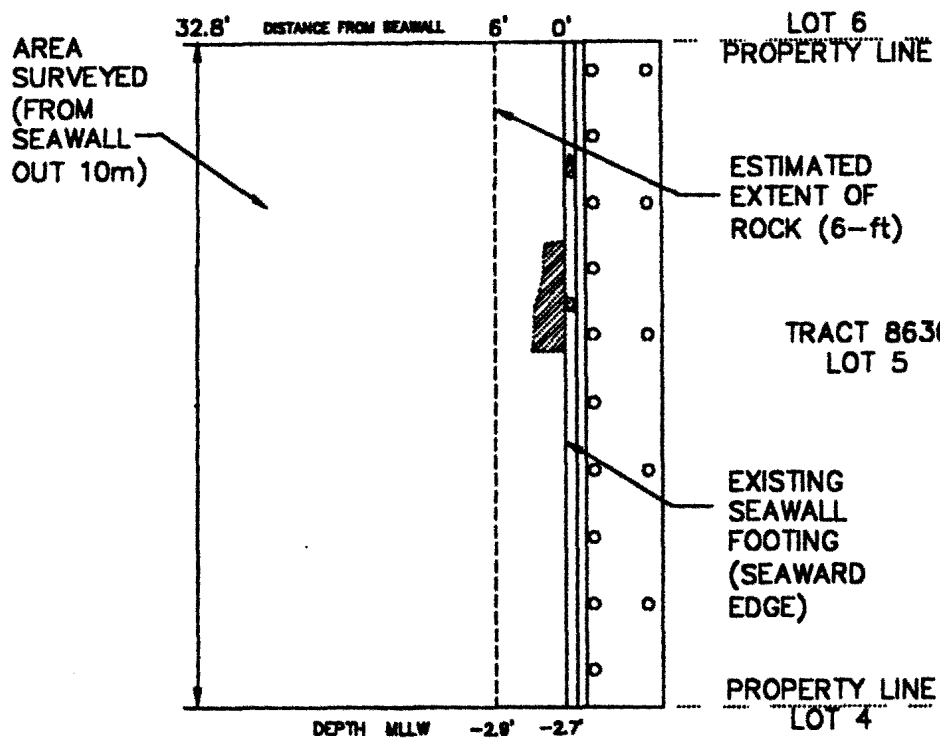
Frank & Nancy Munoz  
3452 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



|                    | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 2.6 28.0  |
| Total Area         | 182.9                         | 2.6 28.0  |

**LEGEND:**

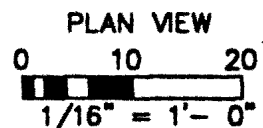
-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION

**TETRA TECH**  
 870 North Riverwood Blvd.  
 Pasadena, CA 91107  
 (818) 251-4884, Fax (818) 251-8881

EXHIBIT # 4  
 PAGE 6 OF 20

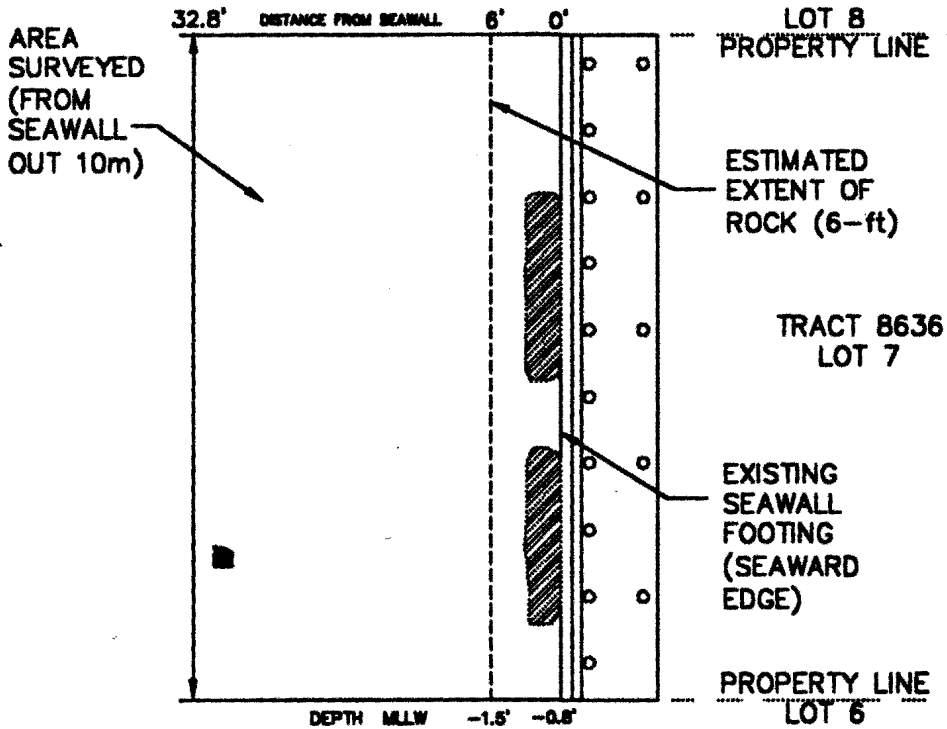
PURPOSE: Repair Existing Seawall  
 Datum: MLLW = 0



Raymond A. Infantino  
 3442 Venture Drive  
 Huntington Beach, CA 92649



Eelgrass Survey Results  
 Survey Date: 11/18/99  
 IN: Huntington Harbour  
 AT: Huntington Beach  
 County of Orange State: CA  
 Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-07            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 9.3    100.0                                    |
| Total Area         | 182.9                         | 9.3    100.0                                    |

**LEGEND:**

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

**COASTAL COMMISSION**



**TETRA TECH**  
270 North Riverwood Blvd.  
 Pasadena, CA 91107  
 (800) 381-4884, Fax (800) 381-8881

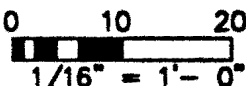
EXHIBIT # 4  
 PAGE 7 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

2.  
3.

PLAN VIEW



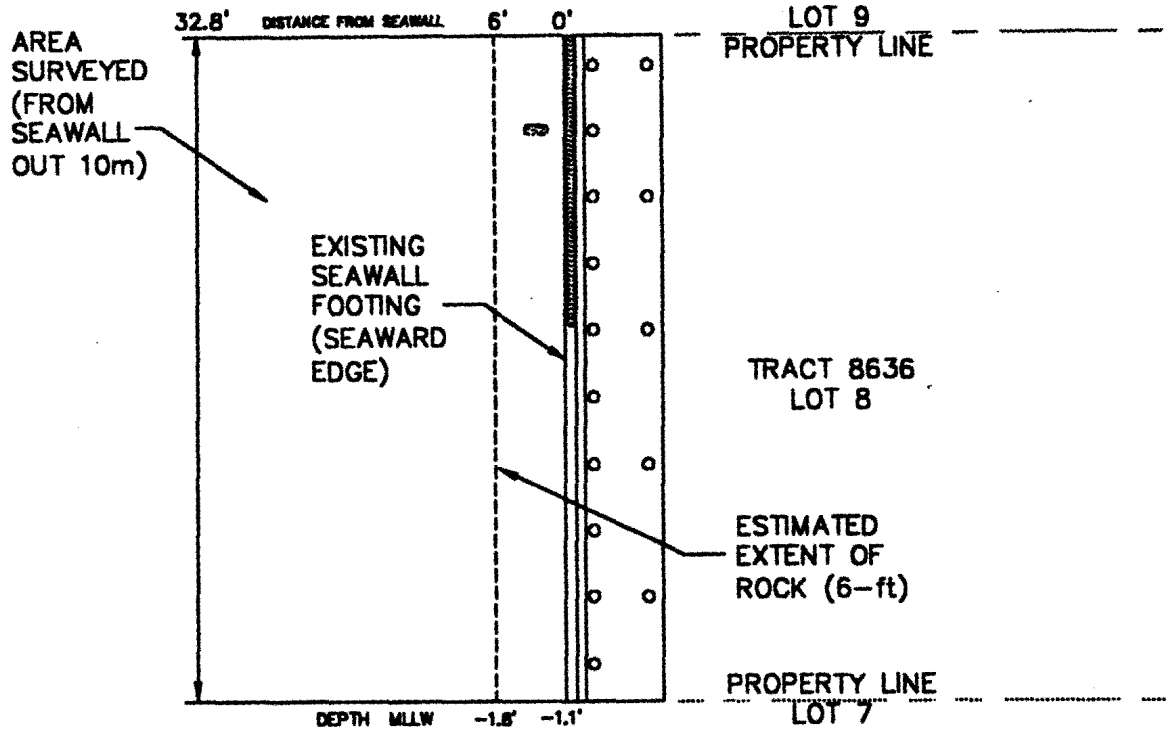
Francis & Margaret Goodyear  
 3422 Venture Drive  
 Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
 IN: Huntington Harbour  
 AT: Huntington Beach  
 County of Orange    State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-08            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 2.0 21.5  |
| Total Area         | 182.9                         | 2.0 21.5  |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



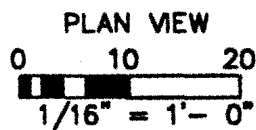
TETRA TECH

270 North Riverwood Blvd.  
Fremont, CA 91107  
(510) 351-4444, Fax (510) 351-4201

EXHIBIT # 4  
PAGE 8 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0



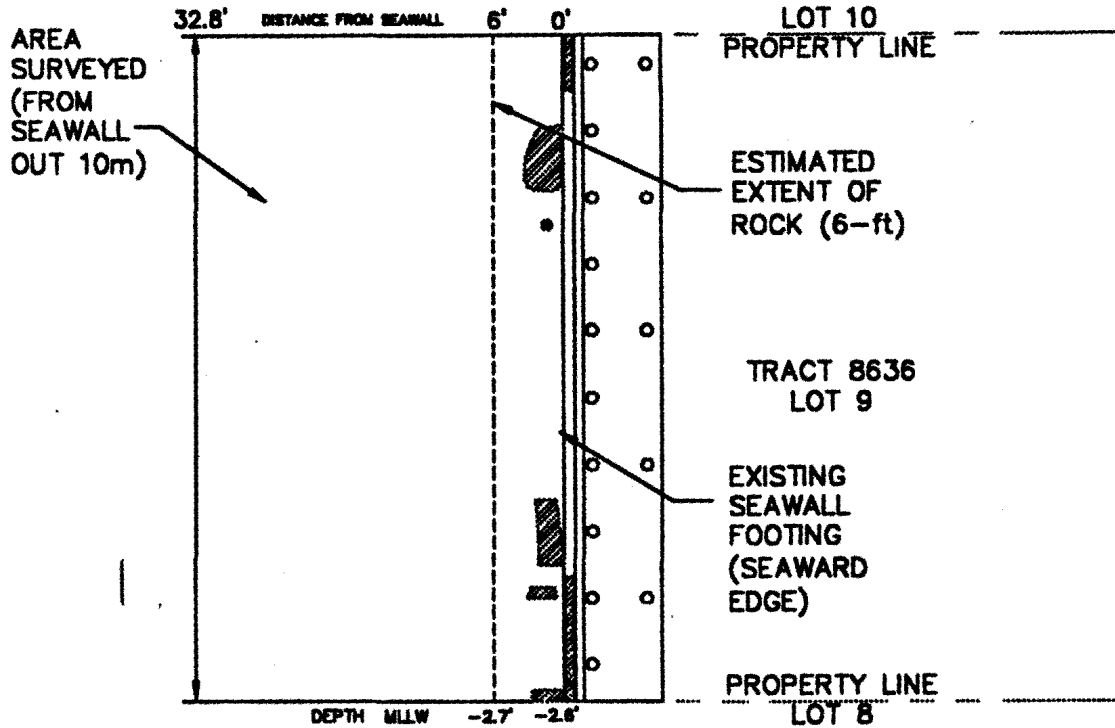
Rodney & Michelle Hill  
3402 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results


Survey Date 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA

Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



**LEGEND:**

 Eelgrass (*Zostera marina*)

 Eelgrass Impact Area

**COASTAL COMMISSION**

| 8636-09            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 4.7    51.1                                     |
| Total Area         | 182.9                         | 4.7    51.1                                     |



**TETRA TECH**

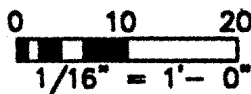
670 North Rosemead Blvd.  
Pasadena, CA 91107  
(800) 361-4864, Fax (626) 361-6881

EXHIBIT # 4  
PAGE 9 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



Eric Chen  
3392 Venture Drive  
Huntington Beach, CA 92649

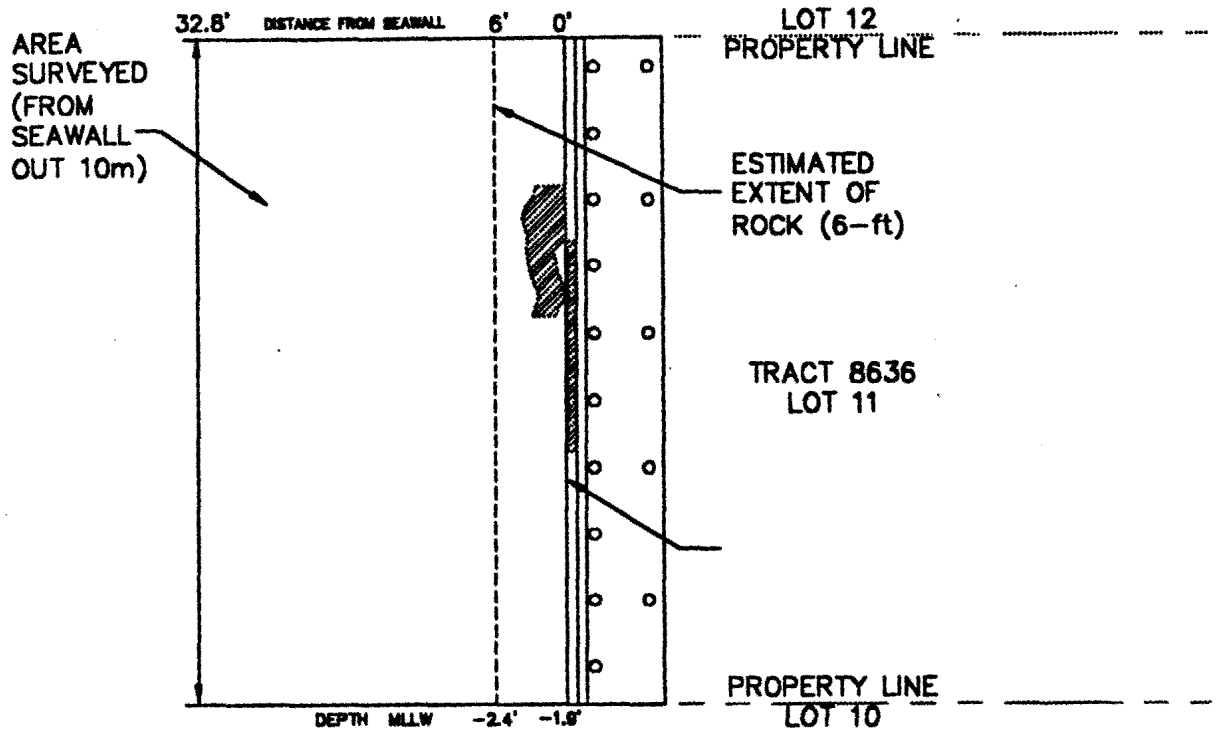
Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange    State: CA

Sheet 1 of 1





HUNTINGTON HARBOUR CHANNEL



| 8636-11            | Area                          |  | Eelgrass Area  |                 |
|--------------------|-------------------------------|--|----------------|-----------------|
|                    | Surveyed<br>(m <sup>2</sup> ) |  | m <sup>2</sup> | ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          |  | 4.6            | 49.3            |
| Total Area         | 182.9                         |  | 4.6            | 49.3            |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



TETRA TECH

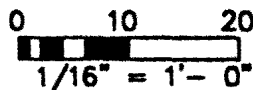
870 North Serrano Blvd.  
Palo Alto, CA 94307  
(650) 351-4804, Fax (650) 351-8801

EXHIBIT # 4  
PAGE 10 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



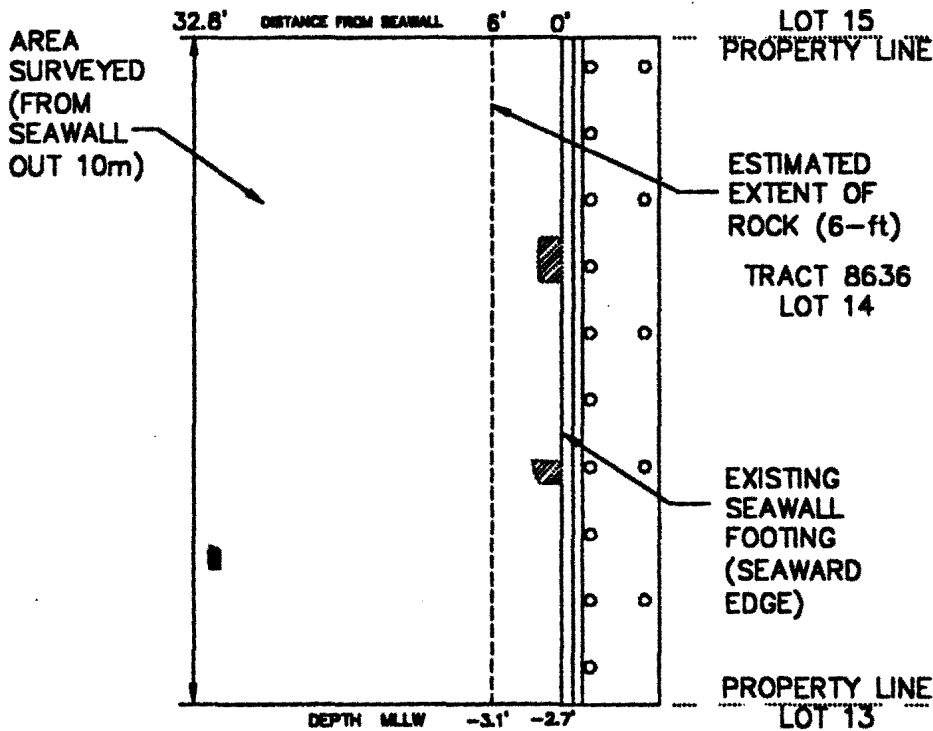
Zacharia Reda  
3372 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-14            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 1.5    16.6                                     |
| Total Area         | 182.9                         | 1.5    16.6                                     |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



TETRA TECH

670 North Rosemead Blvd.  
Pasadena, CA 91107  
(626) 381-4884, Fax (626) 381-8881

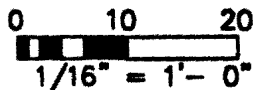
EXHIBIT # 4

PAGE 11 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



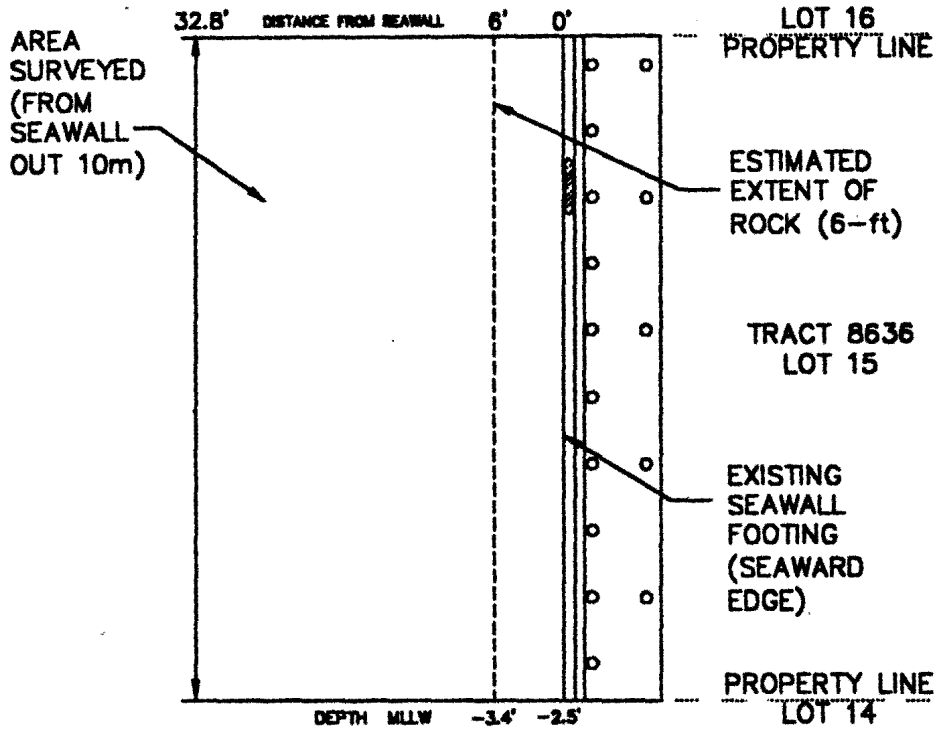
George F. Schofhauser  
3342 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange    State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-15            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 0.3    3.8                                      |
| Total Area         | 182.9                         | 0.3    3.8                                      |

**LEGEND:**

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

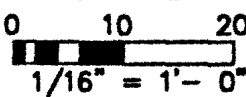
**COASTAL COMMISSION**



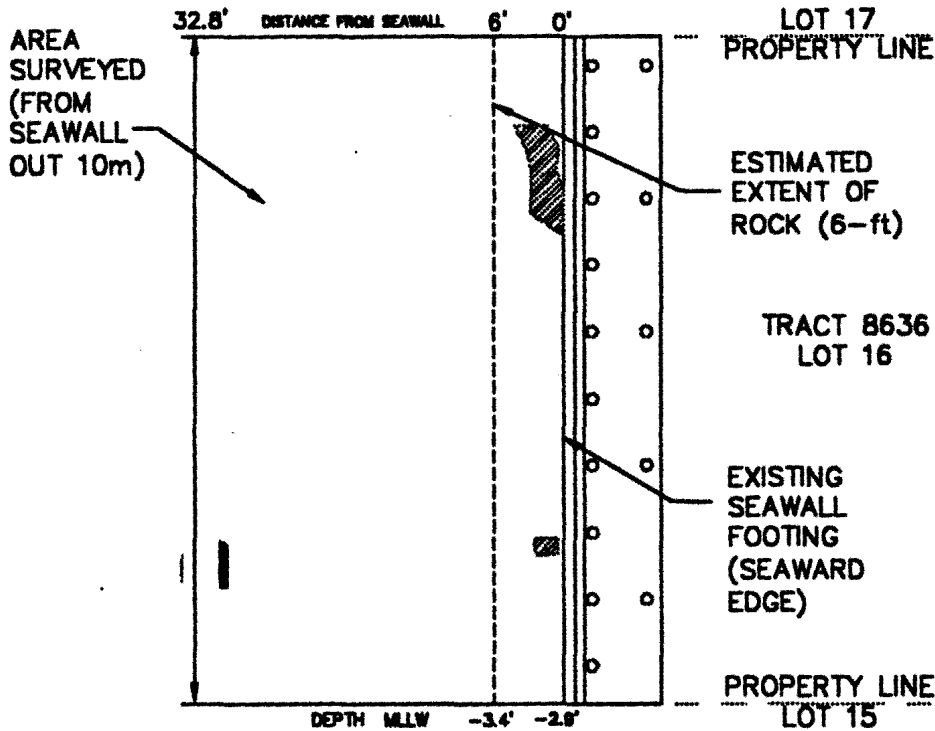
**TETRA TECH**

670 North Riverwood Blvd.  
Pasadena, CA 91107  
(826) 351-4004, Fax (826) 351-6881

EXHIBIT # 4  
PAGE 12 OF 22



|  |  |   |
|--|--|---|
| <p>PURPOSE: Repair Existing Seawall</p> <p>Datum: MLLW = 0</p> | <p>PLAN VIEW</p>  <p>William Newfield<br/>3332 Venture Drive<br/>Huntington Beach, CA 92649</p> | <p>Eelgrass Survey Results</p> <p>Survey Date: 11/18/99<br/>IN: Huntington Harbour<br/>AT: Huntington Beach<br/>County of Orange    State: CA</p> <p>Sheet 1 of 1</p> |
|--|--|---|

HUNTINGTON HARBOUR CHANNEL



| 8636-16            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 2.7 28.6  |
| Total Area         | 182.9                         | 2.7 28.6  |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



TETRA TECH

676 North Raymond Blvd.  
Pasadena, CA 91107  
(626) 351-4224, Fax (626) 351-4221

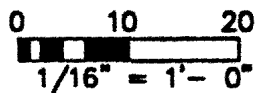
EXHIBIT # 4

PAGE 13 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0  
Adj. Property Owners:  
1. See Attached List  
2.  
3.

PLAN VIEW



Tracy Hodges  
3322 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA

Sheet 1 of 1



AREA SURVEYED (FROM SEAWALL OUT 10m)

HUNTINGTON HARBOUR CHANNEL



LOT 20 PROPERTY LINE

ESTIMATED EXTENT OF ROCK (6-ft)

TRACT 8636 LOT 19

EXISTING SEAWALL FOOTING (SEAWARD EDGE)

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

| 8636-19            | Area                       |  | Eelgrass Area  |                 |
|--------------------|----------------------------|--|----------------|-----------------|
|                    | Surveyed (m <sup>2</sup> ) |  | m <sup>2</sup> | ft <sup>2</sup> |
| Within 6' of wall: | 69.9                       |  | 0.2            | 1.7             |
| Total Area         | 382.2                      |  | 0.2            | 1.7             |

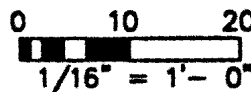
**TETRA TECH**  
 570 North Rosewood Blvd.  
 Pasadena, CA 91107  
 (626) 351-2664, Fax (626) 351-2201

COASTAL COMMISSION  
PROPERTY LINE LOT 74

EXHIBIT # 4  
PAGE 14 OF 22

PURPOSE: Repair Existing Seawall

PLAN VIEW



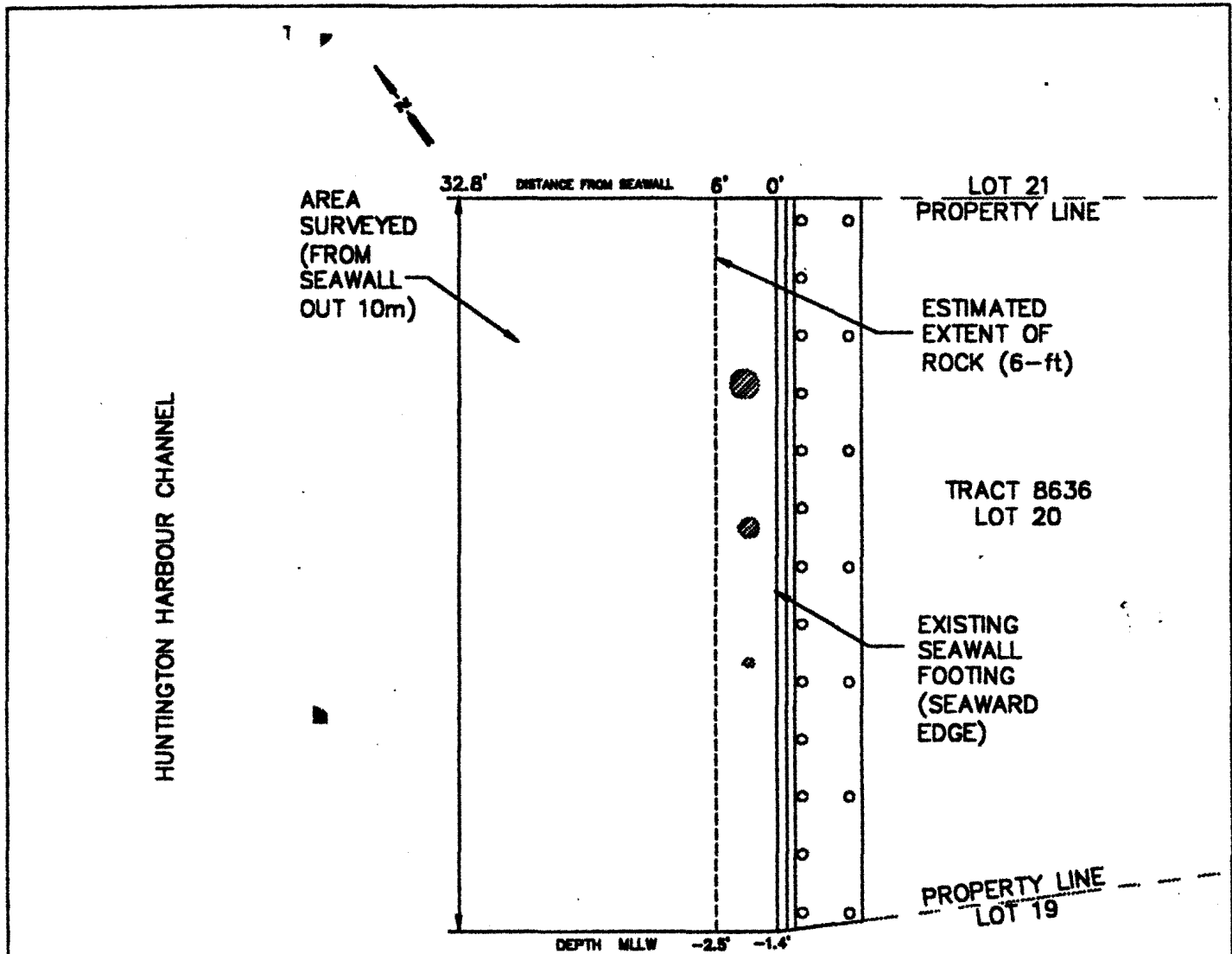
Datum: MLLW = 0

Raymond Ponce  
3292 Venture Drive  
Huntington Beach, CA 92649

Eelgrass Survey Results



Survey Date: 10/26/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA

Sheet 1 of 1



| 8636-20            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 42.4                          | 1.0    11.0                                     |
| Total Area         | 231.8                         | 1.0    11.0                                     |

**LEGEND:**

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

**COASTAL COMMISSION**



**TETRA TECH**

670 North Riverwood Blvd.  
Fremont, CA 91107  
(510) 351-4884, Fax (510) 351-8881

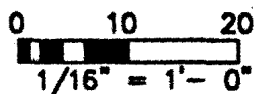
EXHIBIT # 4

PAGE 15 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



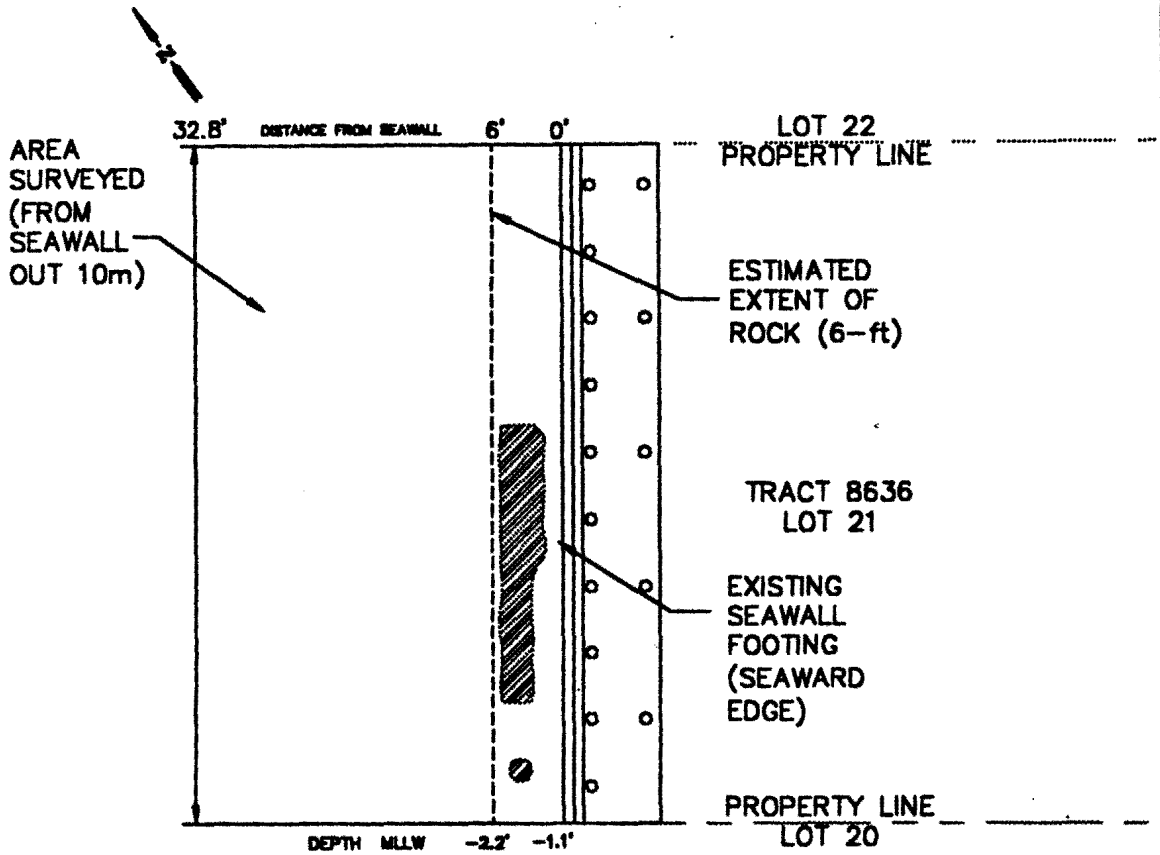
Alan Broido  
16311 Typhoon Lane  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 10/26/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange    State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-21            | Area                          |  | Eelgrass Area  |                 |
|--------------------|-------------------------------|--|----------------|-----------------|
|                    | Surveyed<br>(m <sup>2</sup> ) |  | m <sup>2</sup> | ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          |  | 8.0            | 85.6            |
| Total Area         | 182.9                         |  | 8.0            | 85.6            |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



TETRA TECH

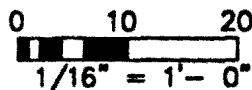
670 North Rosewood Blvd.  
Folsom, CA 95107  
(916) 381-4884, Fax (916) 381-8881

EXHIBIT # 4  
PAGE 16 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



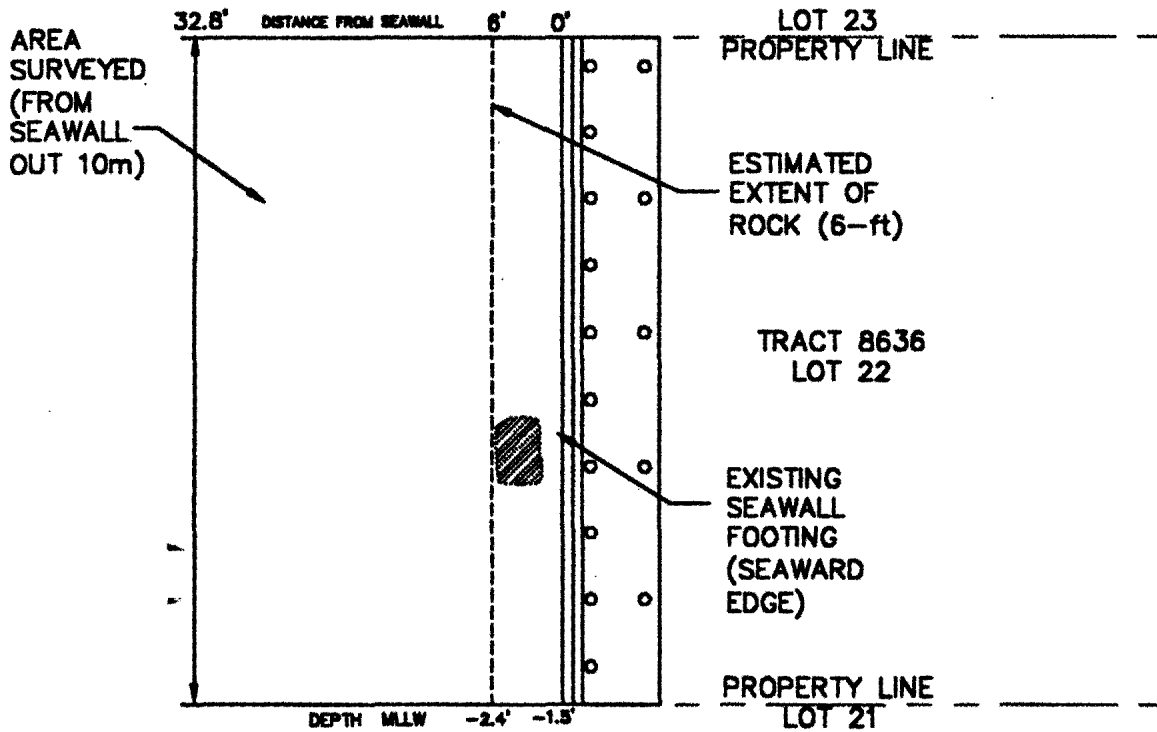
Yuval & Eva Rosenthal  
16301 Typhoon Lane  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 10/26/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA


Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 8636-22            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 2.0    21.5                                     |
| Total Area         | 182.9                         | 2.0    21.5                                     |

**LEGEND:**

 Eelgrass (*Zostera marina*)

 Eelgrass Impact Area

**COASTAL COMMISSION**

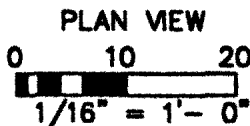


**TETRA TECH**  
 250 The City Parkway West, Suite 200  
 Orange, CA 92668  
 (714)442-0100, Fax (714)442-0101

EXHIBIT # 4  
 PAGE 17 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0



Liem Do  
 16291 Typhoon Lane  
 Huntington Beach, CA 92649

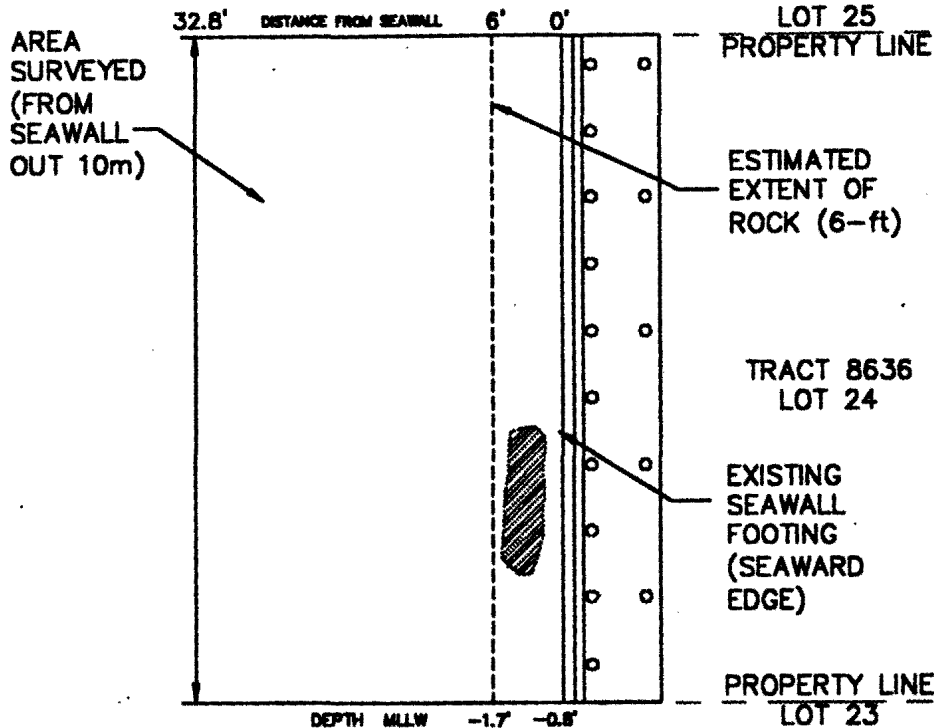
Eelgrass Survey Results

Survey Date: 10/26/99  
 IN: Huntington Harbour  
 AT: Huntington Beach  
 County of Orange State: CA

Sheet 1 of 1





HUNTINGTON HARBOUR CHANNEL



| 8636-24            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 4.1    43.6                                     |
| Total Area         | 182.9                         | 4.1    43.6                                     |

**LEGEND:**

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



**TETRA TECH**

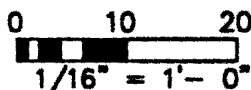
870 North Euclid Blvd.  
Folsom, CA 95107  
(916) 381-4884, Fax (916) 381-8281

EXHIBIT # 4  
PAGE 18 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

**PLAN VIEW**



Robert Swain  
16271 Typhoon Lane  
Huntington Beach, CA 92649

**Eelgrass Survey Results**

Survey Date: 10/26/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange    State: CA

Sheet 1 of 1

DISTANCE FROM SEAWALL 6' 0'

LOT 44  
PROPERTY LINE



AREA  
SURVEYED  
(FROM  
SEAWALL  
OUT 10m)

ESTIMATED  
EXTENT OF  
ROCK (6-ft)

TRACT 9168  
LOT 43

EXISTING  
SEAWALL  
FOOTING  
(SEAWARD  
EDGE)

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

| 9168-43          | Area                          |   |
|------------------|-------------------------------|---|
|                  | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wal | 92.5                          | 8.2 88.7  |
| Total Area       | 505.7                         | 32.8 353.1                                      |

HUNTINGTON HARBOUR CHANNEL

COASTAL COMMISSION

PROPERTY LINE  
LOT 42

DEPTH MLLW  
-1'  
-3.2'



TETRA TECH

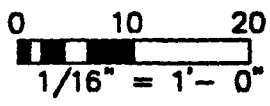
800 The City Parkway West, Suite 300  
Orange, CA 92668  
(714)466-0188, Fax (714)466-0181

EXHIBIT # 4  
PAGE 19 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



John & Irene Muratore  
3742 Nimble Circle  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 10/26/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA

Sheet 1 of 1

32.8' DISTANCE FROM SEAWALL 6' 0'

LOT 56  
PROPERTY LINE

AREA SURVEYED  
(FROM SEAWALL  
OUT 10m)

ESTIMATED  
EXTENT OF  
ROCK (6-ft)

HUNTINGTON HARBOUR CHANNEL

TRACT 9168  
LOT 55



EXISTING  
SEAWALL  
FOOTING  
(SEAWARD  
EDGE)

| 9168-55          | Area                          |  | Eelgrass Area  |                 |
|------------------|-------------------------------|--|----------------|-----------------|
|                  | Surveyed<br>(m <sup>2</sup> ) |  | m <sup>2</sup> | ft <sup>2</sup> |
| Within 6' of wal | 54.0                          |  | 1.7            | 17.8            |
| Total Area       | 295.3                         |  | 5.8            | 62.3            |

PROPERTY LINE  
LOT 54  
COASTAL COMMISSION

EXHIBIT # 4  
PAGE 20 OF 22

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area



TETRA TECH

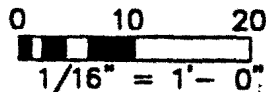
670 North Riverwood Blvd.  
Folsom, CA 95107  
(916) 361-4664, Fax (916) 361-8881

DEPTH MLLW -3.8' -0.1'

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW



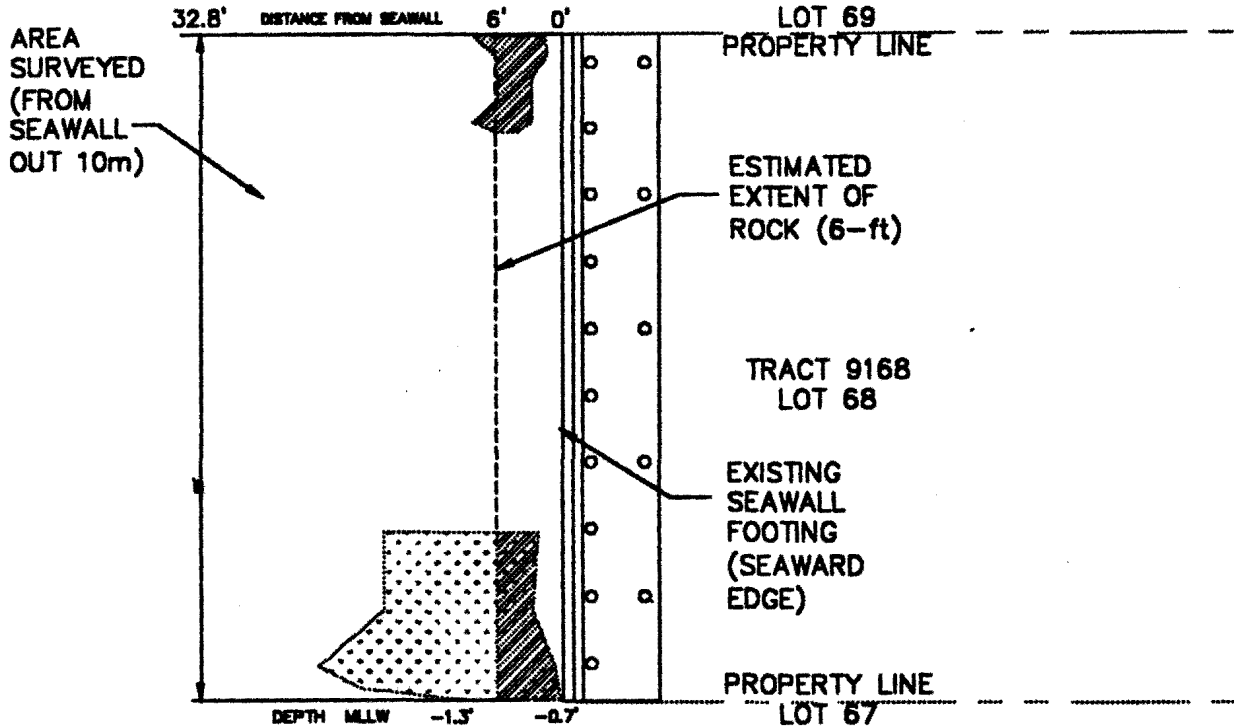
Dr. Joseph & Benita Jacobs  
3682 Escapade Circle  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/18/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 9168-88            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 8.8    94.5                                     |
| Total Area         | 182.9                         | 25.2    271.6                                   |

**LEGEND:**

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION



**TETRA TECH**

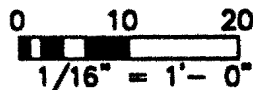
676 North Main Street  
Pasadena, CA 91107  
(626) 391-4884, Fax (626) 391-8881

EXHIBIT # 4

PAGE 21 OF 22

PURPOSE: Repair Existing Seawall

PLAN VIEW



Datum: MLLW = 0

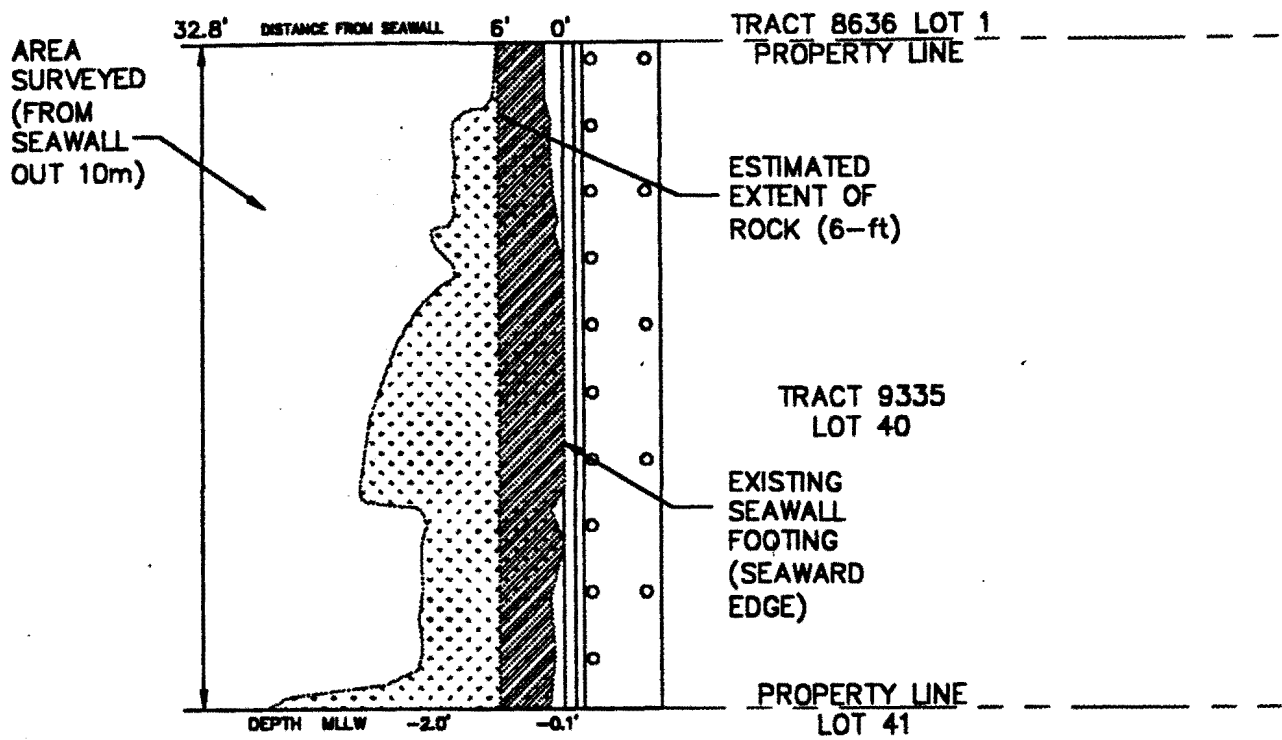
Frank & Donna De Gelas  
3622 Venture Lane  
Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/19/99  
IN: Huntington Harbour  
AT: Huntington Beach  
County of Orange    State: CA



Sheet 1 of 1

HUNTINGTON HARBOUR CHANNEL



| 9335-40            | Area                          |   |
|--------------------|-------------------------------|---|
|                    | Surveyed<br>(m <sup>2</sup> ) | Eelgrass Area<br>m <sup>2</sup> ft <sup>2</sup> |
| Within 6' of wall: | 33.4                          | 29.1 313.5                                      |
| Total Area         | 182.9                         | 69.3 746.3                                      |

LEGEND:

-  Eelgrass (*Zostera marina*)
-  Eelgrass Impact Area

COASTAL COMMISSION

**TETRA TECH**  
 670 North Rosewood Blvd.  
 Pasadena, CA 91107  
 (818) 351-4004, Fax (818) 351-0301

EXHIBIT # 4  
 PAGE 22 OF 22

PURPOSE: Repair Existing Seawall

Datum: MLLW = 0

PLAN VIEW

Gregory D. Kiesel  
 3512 Venture Drive  
 Huntington Beach, CA 92649

Eelgrass Survey Results

Survey Date: 11/19/99  
 IN: Huntington Harbour  
 AT: Huntington Beach  
 County of Orange State: CA

Sheet 1 of 1

**DEPARTMENT OF FISH AND GAME**

MARINE REGION,  
411 BURGESS DRIVE  
MENLO PARK, CA 94025  
(650) 688-6340

August 31, 2000

**RECEIVED**

SEP 05 2000

Department of Planning

Ms. Mary Beth Broeren  
Senior Planner  
City of Huntington Beach  
2000 Main Street  
Huntington Beach, California 92648

Dear Ms. Broeren:

Department of Fish and Game (Department) personnel have reviewed the Draft Negative Declaration/ Environmental Assessment No. 00-05 for the Humboldt Island and Trinidad Island Seawall Repairs (No. 00-05). The proposed project will repair and renovate existing bulkheads at 40 properties on Humboldt Island and 64 properties on Trinidad Island, Huntington Harbor, Huntington Beach, Orange County, California. It is anticipated that 24 properties will require removal and/or repair of damaged piles. At 44 properties, vinyl sheet-pile will be installed 1-foot, 7-inches seaward of the bulkhead. At all 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. Sheet-pile installation will eliminate soft bottom habitat while slope protection will impact eelgrass (*Zostera marina*) habitat.

Tetra Tech, Inc., the property owners' authorized agents, have prepared two separate mitigation plans to compensate for loss of soft bottom habitat and impacts to eelgrass. The "Soft Bottom Mitigation Plan," describes procedures to restore and create tidal influence to existing wetland areas located in the Bolsa Chica Ecological Reserve, managed by the Department, in an area bordered by Pacific Coast Highway and Warner Avenue, approximately 0.5- to 1.2-miles southwest of the bulkhead projects. The "Eelgrass Mitigation and Eelgrass Transplant Report," describes procedures for eelgrass transplant at a site delineated for eelgrass mitigation by Orange County, approximately 1 mile northwest of the impact area. Tetra Tech, Inc., transplanted 3,600 square feet of eelgrass in June 2000.

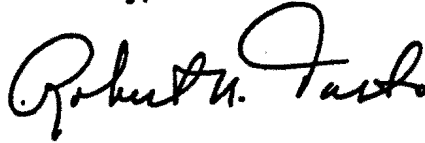
The Department has reviewed the mitigation plans and finds them adequate compensation for project induced losses. Thus, we conclude that the project, as currently proposed, would not have a significant adverse impact upon the existing marine environment provided the described mitigation plans are carried out in full.

**COASTAL COMMISSION**

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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, CA 92123, telephone (858) 467-4231.

Sincerely,



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

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

**COASTAL COMMISSION**

EXHIBIT # 5  
PAGE 2 OF 4

# Memorandum

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

RECEIVED  
South Coast Region

Date : July 6, 1999

JUL 14 1999

CALIFORNIA  
COASTAL COMMISSION

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.

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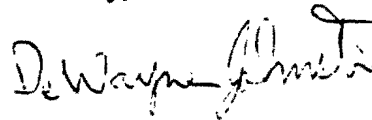
The Department recognizes that placement of rip-rap at the bulkheads would result in an initial loss of ecological benefits to species associated with soft bottom habitat. However, in the case of unvegetated soft bottom habitat this loss would likely be short-term, as different organisms would recolonize 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  
Regional Manager  
Marine Region

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

**COASTAL COMMISSION**

EXHIBIT # 5  
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# California Regional Water Quality Control Board

Santa Ana Region



Winston H. Flicker  
Secretary for  
Environmental  
Protection

Internet Address: <http://www.rwqcb.ca.gov/rwqcb>  
3737 Main Street, Suite 300, Riverside, California 92501-3348  
Phone (909) 782-4130 - FAX (909) 781-6288

**REGENT**  
CALIFORNIA  
COASTAL COMMISSION  
DEC 12 2000

December 8, 2000

Richard K. Ashby  
3751 Nimble Circle  
Huntington Beach, CA 92649

Bradley J. Buzman  
3132 Seacape Drive  
Huntington Beach, CA 92649

R.L. Olf  
3802 Seacape Drive  
Huntington Beach, CA 92649

Douglas & La Rae ...  
3602 Venture Drive  
Huntington Beach, CA 92649

William B. & Christine A.  
Devidan  
3401 Sagamore Drive  
Huntington Beach, CA 92649

Mark & Regina Dentel  
3491 Sagamore Drive  
Huntington Beach, CA 92649

James R. Or-  
3842 Seacape Drive  
Huntington Beach, CA 92649

H. Henry Hinck  
3732 Nimble Circle  
Huntington Beach, CA 92649

Arthur Jan, Jr.  
3431 Sagamore Drive  
Huntington Beach, CA 92649

Nicholas Kosta  
3362 Venture Drive  
Huntington Beach, CA 92649

William M. McClure  
3791 Regaine Circle  
Huntington Beach, CA 92649

Elizabeth Meadows  
3692 Escapade Circle  
Huntington Beach, CA 92649

John S. & Irene D. Marston  
3742 Nimble Circle  
Huntington Beach, CA 92649

Beverly Newhall  
3841 Seacape Drive  
Huntington Beach, CA 92649

John M. & Patricia Pranzo  
3822 Seacape Drive  
Huntington Beach, CA 92649

Ruben & Cheryl Bagdasarian  
3492 Venture Drive  
Huntington Beach, CA 92649

Robert & Mestito Burggraf  
16281 Typhoon Lane  
Huntington Beach, CA 92649

Eric Olan  
3392 Venture Drive  
Huntington Beach, CA 92649

Alan B. Dwyer  
3801 Regaine Circle  
Huntington Beach, CA 92649

Harry W. A. Dreyman  
3292 Venture Drive  
Huntington Beach, CA 92649

Liam & Ann B. Do  
16291 Typhoon Lane  
Huntington Beach, CA 92649

Aurita L. Green  
16272 Sandancer Lane  
Huntington Beach, CA 92649

Clarence D. Hodges  
3322 Venture Drive  
Huntington Beach, CA 92649

Robert M. & Helen M. Johnson  
3521 Sagamore Drive  
Huntington Beach, CA 92649

Gregory D. Krieland  
3512 Venture Drive  
Huntington Beach, CA 92649

Thomas & Lynn T. McNulty  
3382 Venture Drive  
Huntington Beach, CA 92649

James P. Morley  
3651 Venture Drive  
Huntington Beach, CA 92649

Lanette G. Nevrans  
3691 Escapade Circle  
Huntington Beach, CA 92649

Huang Van Ong  
3441 Sagamore Drive  
Huntington Beach, CA 92649

Syris Raylan  
3612 Venture Drive  
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Alan E. Brooks  
16311 Typhoon Lane  
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Paul C. Byrne, Jr.  
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Huntington Beach, CA 92649

Fredrick & Ellen Olan  
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Huntington Beach, CA 92649

Alan B. Dwyer  
3582 Venture Drive  
Huntington Beach, CA 92649

Frank & Donna DeOle  
3622 Venture Drive  
Huntington Beach, CA 92649

Francis E. Goodyear  
3422 Venture Drive  
Huntington Beach, CA 92649

Rodney C. Hill  
3402 Venture Drive  
Huntington Beach, CA 92649

Joseph & Benita Jacobs  
3682 Escapade Circle  
Huntington Beach, CA 92649

Preston King  
3671 Venture Drive  
Huntington Beach, CA 92649

John D. & Nicolette M. Katsch  
3442 Venture Drive  
Huntington Beach, CA 92649

Thomas L. Jr. & Janet McKinn  
3661 Venture Drive  
Huntington Beach, CA 92649

Frank T. & Nancy C. Menozz  
3452 Venture Drive  
Huntington Beach, CA 92649

William Newfield  
3332 Venture Drive  
Huntington Beach, CA 92649

Gery Pizzoni  
16262 Sandancer Lane  
Huntington Beach, CA 92649

Zacharia Reza  
3372 Venture Drive  
Huntington Beach, CA 92649

CONSISTAL COMMISSION

California Environmental Protection Agency



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Trinidad Island Homeowners  
Huntington Beach, CA

- 2 -

December 8, 2000

James Riddet  
3812 Seascape Drive  
Huntington Beach, Ca 92649

Brian & Rose Sayfin  
3561 Sagamore Drive  
Huntington Beach, Ca 92649

Linda Silverman  
3461 Sagamore Drive  
Huntington Beach, Ca 92649

George & Irene Streisfield  
3531 Sagamore Drive  
Huntington Beach, Ca 92649

Preste D. Taddeo  
16251 Typhoon Lane  
Huntington Beach, Ca 92649

Trifone & Esther A. Uva  
3421 Sagamore Drive  
Huntington Beach, Ca 92649

Lincoln S. Yee  
3761 Nimble Circle  
Huntington Beach, Ca 92649

Yuval Rosenthal  
16301 Typhoon Lane  
Huntington Beach, Ca 92649

George F. Schoffmaier  
3342 Venture Drive  
Huntington Beach, Ca 92649

Steve Slusser  
16305 Niantic Circle  
Huntington Beach, Ca 92649

Susan Satter  
3502 Venture Drive  
Huntington Beach, Ca 92649

Hisakazu Tajima  
3462 venture Lane  
Huntington Beach, Ca 92649

Ralph B. & Marine M. Weaver  
16261 Typhoon Lane  
Huntington Beach, Ca 92649

Yeghoub Younessi  
3352 Venture Drive  
Huntington Beach, Ca 92649

Harry M. Ross  
3831 Seascape Drive  
Huntington Beach, Ca 92649

R. James Schaffer  
16412 Sundancer Lane  
Huntington Beach, Ca 92649

Howard E. Stein  
3541 Sagamore Drive  
Huntington Beach, Ca 92649

Robert Swain  
16271 Typhoon Lane  
Huntington Beach, Ca 92649

Stanley S. Tseng  
3411 Sagamore Drive  
Huntington Beach, Ca 92649

Kenneth L. Yaryan  
3782 Ragtime Circle  
Huntington Beach, Ca 92649

**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)**

Dear Trinidad Island Homeowners:

This is in response to the October 9, 2000 transmittals we received on October 11, 2000 and additional information received on November 21, 2000, requesting 401 water quality standards certification under section 401 of the Clean Water Act for the above referenced project.

**I. Project Description:**

Sixty-four Trinidad Island homeowners are proposing to repair and restore the foundation of an existing bulkhead confining a portion of Trinidad Island in Huntington Beach. In locations of severe bulkhead erosion, the proposed construction will involve removing damaged timber and replacement 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 at a maximum distance of 1'7" in front of the bulkhead face to retain the pumped concrete and provide structural integrity for the bulkhead. A blanket of coarse material over filter fabric will be applied seaward of the sheet pile at a 2:1 slope from the top of the footing, and extend out a maximum of 8 feet from the bulkhead (dependent on existing slope and erosion conditions). The blanket will help prevent seawall footing scour, as well as prevent fish from burrowing under the wall.

In locations of minimal erosion, coarse material will be backfilled over filter fabric as slope protection.

The proposed construction activities may cause significant permanent impact to eelgrass, a sensitive plant species, and/or may also result in the loss of soft bottom habitat. Thirty properties will permanently impact eelgrass habitat, and

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**California Environmental Protection Agency**

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- 17 properties will permanently impact soft bottom habitat.
2. Receiving water: Huntington Harbour, Orange County
3. Fill area: Ocean: 0.69 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 # 200100038-YJC
6. Compensatory mitigation: Eelgrass Habitat Mitigation  
The proposed bulkhead repair at Trinidad Island will permanently impact 1671.9 square feet of eelgrass habitat. The mitigation for this site will require transplanting eelgrass at a 1.2:1 ratio. On October 16, 2000, Regional Board staff received an Eelgrass Mitigation Report and Eelgrass Transplant Report from Tetra Tech, Inc. The report indicated that a Memorandum of Understanding between the City of Huntington Beach and the County of Orange stipulates that Trinidad Island residents will adhere to the Eelgrass Mitigation Report and Eelgrass Transplant Report. The mitigation project, including monitoring and evaluation, must also be consistent with the Southern California Eelgrass Mitigation Policy developed by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and game (February 2, 1999).

The residents have already conducted the eelgrass transplant program under the guidance of the California Department of Fish and Game in June of 2000. The total mitigation volume of 1671.9 square feet of eelgrass was transplanted in Huntington Harbour approximately one mile northwest of the impacted properties. The mitigation program is currently in the monitoring and evaluation phase, which is required for a minimum of five years. In addition, the permittee must identify and mark the eelgrass areas to be avoided during bulkhead construction.

#### Soft Bottom Habitat Mitigation

Each homeowner is responsible to mitigate for the loss of soft bottom habitat as a result of the bulkhead repairs. Tetra Tech, Inc., the consulting firm representing the Trinidad Island Homeowners, has prepared a Soft Bottom Mitigation Plan (Plan) that has been accepted by the California Department of Fish and Game (CDFG). The mitigation site is in the Bolsa Chica Wetlands area, 0.5 - 1.2 miles southwest of the impacted properties. The Plan proposes to compensate for impacts to 340.4 square feet of soft bottom by requiring: repair of an existing conduit; removal of concrete debris; regrading of the mitigation area to an elevation similar to an adjacent wetland area; monitoring surveys; and evaluating the success of the mitigation site. The mitigation plan proposes to regrade a total of 680.8 square feet (based on a 2:1 mitigation ratio) within the Bolsa Chica Wetlands to compensate for impacts from this project.

Best Management Practices will be implemented at the mitigation site to minimize impacts to surrounding areas. The pickleweed on site will be protected and/or salvaged. Any disturbed pickleweed will be replaced with pickleweed from an adjacent location or from a nursery. The planting will be performed under the direction of the CDFG.

Adherence to the Soft Bottom Mitigation Plan, submitted April 2000 is required. In addition, the mitigation site must be monitored for a minimum of five years.

COASTAL COMMISSION

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| Trinidad Island Residents and Associated Eelgrass/Soft Bottom Impacts |                        |            |                |
|---|------------------------|------------|----------------|
| Applicants Name   | Project Street Address | Lot Number | Habitat Impact |
| Richard K. Ashby  | 3751 Nimble Circle     | 41         | SB             |
| Ruben & Cheryl Baghdassarian  | 3492 Venture Drive     | 2          | E              |
| Alan E. Broido  | 16311 Typhoon Lane     | 20         | E              |
| Bradley J. Buerner  | 3832 Seascapes Drive   | 20         | E              |
| Robert & Masako Burggraf  | 16281 Typhoon Lane     | 23         | E, SB          |
| Paul C. Byrne, Jr.  | 3811 Seascapes Drive   | 15         | E              |
| R.L. Call   | 3802 Seascapes Drive   | 23         | E, SB          |
| Eric Chen   | 3392 Venture Drive     | 9          | E              |
| Frederick & Ellen Chia  | 3501 Sagamore Drive    | 79         | SB             |
| Douglas & La Rae Daniels  | 3602 Venture Drive     | 70         | E              |
| Alan B. Dauger  | 3801 Ragtime Circle    | 31         | SB             |
| Alan B. Dauger  | 3582 Venture Drive     | 46         | E, SB          |
| William B. & Christine A. Davidson                                    | 3401 Sagamore Drive    | 70         | E, SB          |
| Harry W. A. Dawson  | 3292 Venture Drive     | 19         | E              |
| Frank & Donna DeGelas   | 3622 Venture Drive     | 68         | E              |
| Mark & Regina Denietolis  | 3491 Sagamore Drive    | 78         |                |
| Liem & Anh B. Do  | 16291 Typhoon Lane     | 22         | E              |
| Francis E. Goodyear   | 3422 Venture Drive     | 7          | E              |
| James R. Grace  | 3842 Seascapes Drive   | 19         | E              |
| Austin L. Green   | 16272 Sundancer Lane   | 27         |                |
| Rodney C. Hill  | 3402 Venture Drive     | 8          | E              |
| H. Henry Hirsch   | 3732 Nimble Circle     | 44         | SB             |
| Clarence D. Hodges  | 3322 Venture Drive     | 16         | E              |
| Joseph & Benita Jacobs  | 3682 Escapade Circle   | 55         | E              |
| Arthur Jan, Jr.   | 3431 Sagamore Drive    | 73         | SB             |
| Robert M. & Helen M. Johnson  | 3521 Sagamore Drive    | 81         | SB             |
| Preston K. J  | 3671 Venture Drive     | 64         | SB             |
| Nicholas Kosta  | 3362 Venture Drive     | 12         | E, SB          |
| Gregory D. Kriesel  | 3512 Venture Drive     | 40         | E              |
| John D. & Nicolette M. Kuback   | 3442 Venture Drive     | 5          | E              |
| William M. McCune   | 3791 Ragtime Circle    | 30         |                |
| Thomas & Lynn T. McNally  | 3382 Venture Drive     | 10         | E, SB          |
| Thomas I. Jr. & Janet McKnew  | 3661 Venture Drive     | 63         |                |
| Elizabeth Meadows   | 3692 Escapade Circle   | 54         |                |
| James P. Morley   | 3651 Venture Drive     | 62         |                |
| Frank T. & Nancy C. Mazon   | 3452 Venture Drive     | 4          | E              |
| John S. & Irene D. Muratore   | 3742 Nimble Circle     | 43         | E              |
| Lamonte G. Navarro  | 3691 Escapade Circle   | 52         |                |
| William Newfield  | 3332 Venture Drive     | 15         | E              |
| Beverly Newhall   | 3841 Seascapes Drive   | 18         |                |
| Huang Van Ong   | 3441 Sagamore Drive    | 74         | E, SB          |
| Gary Pazornik   | 16262 Sundancer Lane   | 26         |                |
| John M. & Patricia Pratto   | 3822 Seascapes Drive   | 21         | E              |
| Syrus Rayhan  | 3612 Venture Drive     | 69         | E              |
| Zacharia Reda   | 3372 Venture Drive     | 11         | E              |
| James Riddet  | 3812 Seascapes Drive   | 22         | E              |
| Yurval Rosenthal  | 16301 Typhoon Lane     | 21         | E              |
| Harry M. Ross   | 3831 Seascapes Drive   | 17         |                |
| Brian & Rose Saylin   | 3561 Sagamore Drive    | 84         |                |
| George F. Schoffman   | 3342 Venture Drive     | 14         | E              |
| R. James Schaffler  | 16412 Sundancer Lane   | 49         |                |
| Linda Silverman   | 3461 Sagamore Drive    | 76         |                |
| Steve Slusser   | 16305 Niantic Circle   | 70         | E, SB          |
| Howard E. Stein   | 3541 Sagamore Drive    | 83         |                |
| George & Irene Strainfield  | 3531 Sagamore Drive    | 82         | SB             |
| John Suter  | 3502 Venture Drive     | 1          | E              |
| Robert Swain  | 16271 Typhoon Lane     | 24         | E              |
| Preste D. Taddeo  | 16251 Typhoon Lane     | 26         |                |
| Hisakazu Tajima   | 3462 venture Lane      | 3          | E              |
| Stanley S. Tseng  | 3411 Sagamore Drive    | 71         |                |
| Trifone & Esther A. Uva   | 3421 Sagamore Drive    | 72         | E, SB          |

COASTAL COMMISSION

EXHIBIT # 6

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|                             |                     |    |       |
|-----------------------------|---------------------|----|-------|
| Ralph B. & Marine M. Weaver | 16261 Typhoon Lane  | 25 |       |
| Kenneth L. Yaryan           | 3782 Ragtime Circle | 32 |       |
| Lincoln S. Yee              | 3761 Nimble Circle  | 42 |       |
| Yaghoub Younessi            | 3352 Venture Drive  | 13 | E, SB |

E = Eelgrass      SB = Soft Bottom

Trinidad Island Homeowners propose to implement Best Management Practices (BMP) to ensure that there is not excessive erosion and to prevent pollutant discharges during project construction. Turbidity will be minimized by installing a filter fabric between the fine sediments and the coarse materials.

Trinidad Island Homeowners have received an individual permit (#200100038-YJC) and a Letter of Permission from the U.S. Army Corps of Engineers in compliance with Section 404 of the Clean Water Act. A certified Negative Declaration was received for this project on October 19, 2000.

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 sites. This must be confirmed prior to any repair/restoration efforts since those efforts would likely contribute to the dispersal of this alga, if it is present. Therefore, coordination with CDFG regarding an extensive survey of the project site for *Caulerpa* is required prior to initiation of the project. A letter indicating that CDFG has been contacted and clearance from them has been obtained stating that the properties that will be impacted do not have *Caulerpa* must be submitted to the Regional Board prior to the start of the project. 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 Trinidad 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

**COASTAL COMMISSION**

EXHIBIT # 6  
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**California Environmental Protection Agency**

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 Waste Discharge Requirements.

Please notify Stephanie M. Gasca with the Santa Ana Regional Board staff before project 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

COASTAL COMMISSION

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PAGE 6 OF 6

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



**PAUL D. THAYER, Executive Director**  
 (916) 574-1800  
 California Relay Service From TDD Phone  
 from Voice Phone 1-81

Contact Phone: (916)  
 Contact FAX: (916)

March 24, 2000  
**RECEIVED**  
 In Coast Region  
 APR 3 - 2000  
 CALIFORNIA  
 COASTAL COMMISSION

File Ref: W 256:  
 W 2544

Fernando Pages  
 Tetra Tech Inc.  
 670 North Rosemead Blvd.  
 Pasadena, CA 91107

Dear Mr. Pages:

**SUBJECT: Proposed Bulkhead Repairs on 62 Residential Properties at Trinidad Island, Huntington Harbour, Orange County**

This is in response to your request on behalf of your clients, 62 residential property owners at Trinidad Island in Huntington Harbour, for a determination by the California State Lands Commission (CSLC) whether it asserts a sovereign title interest in the properties that the subject projects will occupy and whether it asserts that the projects will intrude into an area that is subject to the public easement in navigable waters.

The facts pertaining to your clients' projects, as we understand them, are these:

Your clients are proposing to repair existing bulkheads located adjacent to various residential properties throughout Trinidad Island in Huntington Harbour. The repairs will involve further waterward reinforcement of the bulkheads. Pursuant to two agreements entered into in 1961 and 1962, BLA 18 and SLL 34, the CSLC settled certain property (boundary and title) ownership issues with the Huntington Harbour Corporation involving Huntington Harbour. The CSLC's area of leasing jurisdiction extends over the state's fee title ownership including the areas that are referred to as the Main and Midway Channels. The state retains a Public Trust easement over additional within Huntington Harbour. Specifically with regard to Trinidad Island, the 20 lots located within Tracts 8636 and 9335 (Venture Drive) are located adjacent to the north fork of the Main Channel. The bulkheads are assumed to be located on privately-owned lots adjacent to the boundary between the private upland and the state's fee ownership.

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Based on our review of the information you provided, the proposed repair projects within Tracts 8636 and 9335 are located in the Main Channel and will include sovereign lands lying waterward of the existing bulkheads, and therefore require CSLC authorization. An application(s) will need to be submitted for the 20 lots along Venture Drive. One application may be submitted for all 20 lots, along with a filing fee of \$25 per lot and a processing deposit of \$3000, for a total of \$3500. The homeowners may wish to consider having one individual represent them during the application process. However, all of the homeowners will need to be signatories to the lease documents.

For your information, back in 1997, I reviewed plans from Moffatt & Nichol Engineers relative to bulkhead repairs at 3302 and 3312 Venture Drive. In mid-1998, I was subsequently advised by M & N that the property owners (Shea and Albert) would be included as part of an application to be submitted on behalf of many other property owners for bulkhead repairs throughout this area of Huntington Harbour. Please advise if your firm will be handling the projects for these two properties as part of the larger Trinidad Island projects you are proposing.

I have enclosed information relative to the CSLC's application process. Please have the application completed and returned to me, along with the necessary fees, as soon as possible. In addition, the projects are subject to environmental review by the CLSC's staff. Standard for this review are set forth in the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and the Public Resources Code.

It is our understanding that a significant number of property owners in Huntington Harbour in addition to your clients are proposing Bulkhead repairs and that before these projects are considered by the California Coastal Commission, the State Department of Fish and Game is requesting that a Mitigation Plan be prepared to mitigate impacts to soft-bottom habitat. As to all of the bulkhead repair projects being proposed by your clients, whether subject to the CSLC's leasing jurisdiction and/or the Public Trust Easement, we will be reviewing that Mitigation Plan as part of our consideration of your clients' projects.

Upon receipt of the application and fees, your clients or their designated representative will be provided a reimbursement agreement. An executed reimbursement agreement to cover the CSLC's cost to process these transactions is required as part of a complete application. If the actual staff costs of processing this transaction are less than the deposited amount, the difference will be refunded.

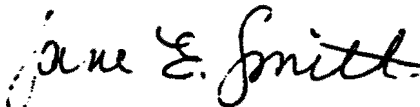
On a somewhat related matter, our files indicate that seven of the lots on Venture Drive (Tract 8636, Lots 1 and 2; Tract 9168, Lots 68, 69, 70; and Tract 9335, Lots 40 and 46) have existing recreational pier leases for boat docks. Our files also indicate that thirteen of the lots proposed for bulkhead repairs (Tract 8636, Lots 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16) do not currently have recreational pier leases for boat

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docks. To the extent that any or all of these thirteen lots have existing boat docks, recreational pier lease(s) are required. Please confirm the status of these thirteen lots with regard to this issue.

Sincerely,



Jane E. Smith  
Public Land Management Specialist  
Southern California Region

Enclosure

cc: Marilyn Fluharty, DFG  
Karl Schwing, CCC/Long Beach

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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.

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2) **Units**

Transects and grids in meters.

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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, trans

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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.

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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:

$$STA = MTA \times (|A_1 + D_1| - |A_c + D_c|)$$

MTA = mitigation transplant area.

$A_1$  = transplant deficiency or excess in area of coverage criterion (%).

$D_1$  = 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 1/2 meter wide may be excluded from the provisions of this policy with concurrence of the resource agencies. After project construction, a post-project survey

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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.

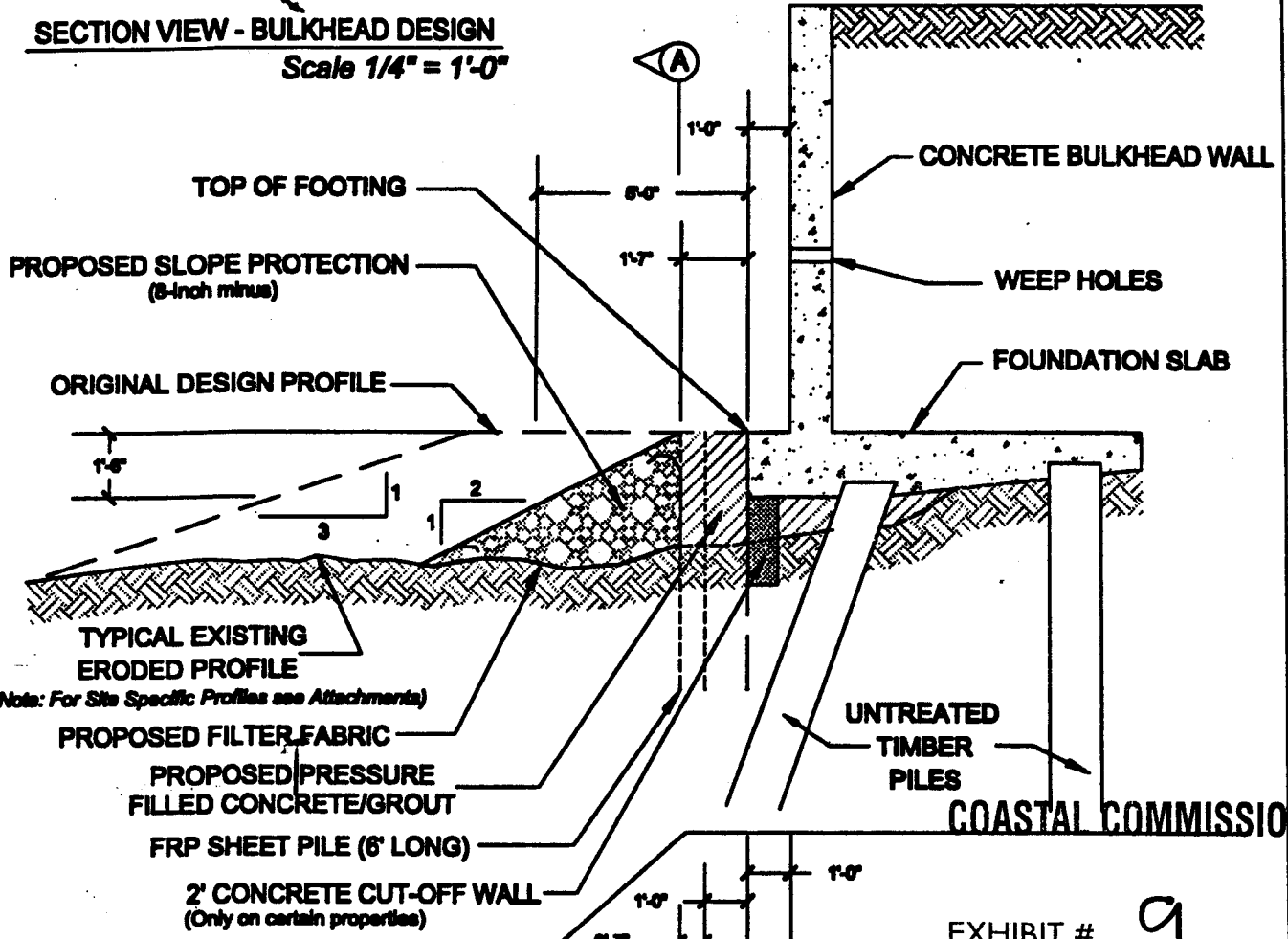
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**SECTION VIEW - BULKHEAD DESIGN**

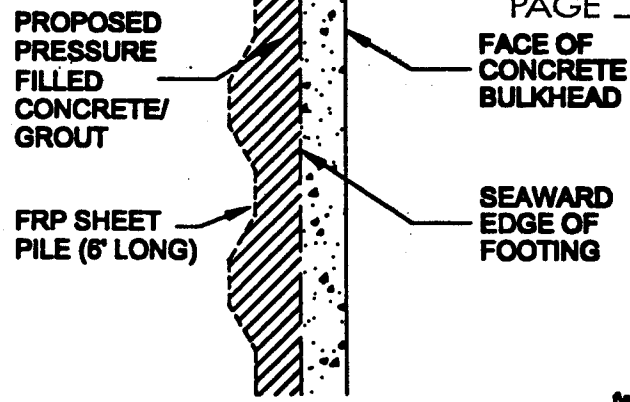
Scale 1/4" = 1'-0"



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**PLAN VIEW - SHEET PILE DETAIL**  
Scale 1/4" = 1'-0"



**TETRA TECH**  

 620 The City Parkway West, Suite 200  
 Orange, CA 92668  
 (714) 966-0188, Fax (714) 966-0181

*Project\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

Humbolt Island & Trinidad Island  
 Huntington Beach, CA 92649

Proposed Repair of Existing Seawall

Supplemental Info. Report

California Coastal Commission  
 Date: 3/18/99





