PAJARO DUNES GEOHAZARD ABATEMENT DISTRICT

LONG-TERM ROCK REVETMENT OPERATIONS & MAINTENANCE PLAN (O&M)

PAJARO DUNES GEOHAZARD ABATEMENT DISTRICT

CE&G DOCUMENT: 190782-001

JULY 7, 2023

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1.0 OVERVIEW

This Operations and Maintenance (O&M) Manual has been prepared by the Pajaro Dunes Geologic Hazard Abatement District (Pajaro Dunes GHAD) with the purpose to meet the Conditions of Approval from the 1983 grading permit (Appendix A). This manual shall identify the operation and maintenance activities (O&M) needed to maintain the coastal flood and erosion protection benefits provided by the Pajaro Dunes Rock Revetment. The Rock Revtement resides along the boundary of the Pajaro dunes and beach and the homes/ developments that parallel the shoreline.

This Manual covers the portion of the erosion and flood protection facilities (rock revetment) that begins at the Palm Beach State Park in the north and ends in the south, where the sheetpile wall starts, near where the Pajaro River outflows into Monterey Bay. **Figure 1 – Location Map** shows the approximate extent of the rock revetment and the local access roads in the vicinity of the Pajaro Dunes development. This Manual and the activities described herein are necessary for the facilities to adhere to Santa Cruz County permit requirements (Appendix A- Permit Documents). See Figure 1 and **Figure 2 – Project Features** for the extent of the facilities to which this O&M Manual is applicable and for associated facilities not covered by the Manual but pertinent to O&M activities. The Manual also provides recommendations for repair and replacement, as well as recommendations for emergency procedures that can be implemented by the Pajaro Dunes GHAD to minimize flood and erosion damage and facilitate recovery efforts following a flood, tsunami, or coastal storm event (**Figure 3 -100-year flood plain, Strom waves, and Tsunami Inundation Map**)

Although the flood control facilities are not part of a federal flood control project, the Manual was prepared in general conformance with the instructions contained in USACE Engineering Regulation (ER) 1110-2-401 but was reorganized to generally conform to a format adopted by the Pajaro Dunes GHAD for the operation and maintenance of both the rock revetment.

The O&M manual is presented in the order of activities expected for the standard operations and maintenance of the rock revetment. Additional information regarding nonstandard O&M activities is presented in the rear of the Manual (Emergency scenarios and general descriptions of the project site and associated facilities.

It is anticipated that the Pajaro Dunes GHAD should update this Manual when changes occur to the facilities, O&M activities have occurred, or emergency procedures have been implemented. Proposals for significant changes to the facilities or procedures that could potentially impact the performance of the facilities or the permit status of the facilities should be developed with the concurrence of Santa Cruz County.

2.0 NORMAL OPERATION AND MAINTENANCE

The performance of shoreline protection facilities is dependent on periodic inspection and regular maintenance or repair to ensure that the facilities perform as designed and constructed. This section provides recommendations regarding the operation and maintenance of the Pajaro Dunes GHAD rock revetment structure. See Figure 2 for the location and extent of the features associated with the shoreline protection facilities.

2.1 OPERATION

The operation requirements for the Pajaro Dunes rock revetment consist of the monitoring and possible emergency measures performed as required during and following severe storm events, as described in Section 5 – Emergency Operations/Emergency Action Plan (EAP).

2.2 MAINTENANCE ACTIVITIES

The maintenance activities for the Pajaro Dunes rock revetment are described below.

2.2.1 Rock Revetment

Maintenance for the rock revetment begins with observing the existing conditions along the revetment. Observations should note changes in the apparent slope angle, i.e., flatter or steeper slope gradient, as well as displaced or translated rocks. They should also focus on embedded debris, sand cover, and vegetation cover.

Standard maintenance activities may include; restacking of rock materials to the original permitted extent and gradient (see Section 6.0).

2.2.2 Additional Facilities

The sheet pile wall and access stairways, while appurtenant to the rock revetment, do not fall under the O&M activities described in this document.

3.0 INSPECTION AND REPORTS

3.1 INSPECTION AND REPORTING FREQUENCY

Inspections of the Pajaro Dunes rock revetment are to be performed on an annual basis and after a large storm or seismic event as described in Section 5 (Appendix C- Emergency Operation Plan). Note the County only requires this to be completed every five years. A total of five annual inspections have been performed by Arup and CE&G between 2012 and 2022, which included physically inspecting the entire length of the rock revetment, photo documenting its condition, and noting any observable changes since previous monitoring events (Arup, 2012, 2013, 2014; and CE&G 2019, 2022).

Inspection activities are expected to be conducted on foot as vehicle access and use along the beach area is limited and may require permitting and approval. Observations should be recorded referencing the stationing location presented in Figure 2. Biologically sensitive areas exist along and around the rock revetment (Biotic Resources Group, 2015). Any inspection activities should avoid impacting any vegetation or zones of potential biotic resource sensitivity ("Protected Biom"- Figure 2).

While the rock revetment is the main facility requiring inspection, associated facilities should also be documented, as their upkeep may impact the rock revetment. Maintenance recommendations for the associate facilities are not required, but any damage to these features that are noted during site observations should be reported to the owner/agency in control of these facilities, see Table 5.1.

3.2 INSPECTION GUIDELINES

Based on the findings from previous monitoring events by Arup and CE&G (Appendix B- Example Inspections and Reports), future annual inspections should include the following tasks for the rock revetment:

- Physical inspection of the site features
- Photo documentation -use of UAV (Unmanned Aerial Vehicle) recommended.
- UAV Change Detection Scan (once every five years)
- Reporting

3.2.1 Physical Inspection

The rock revetment is to be inspected by an experienced engineer or geologist to document the site conditions and determine whether maintenance is required, including emergency repairs. Emergency repairs have been required in the past due to large storm events

resulting in excessive amounts of focused erosion along the rock revetment. During the inspection, notable changes, including but not limited to increases and decreases in sand dunes along the revetment, evidence of focused erosion, any damages, etc.

3.2.2 Photo Documentation

Photographs should be taken from the locations specified in Figure 2 to provide consistency with previous annual monitoring events (Appendix B- Example Inspections and Reports). The purpose of taking photographs from the same locations during each event is to facilitate the detection of changes more easily from previous inspections. A single representative photograph shall be selected for each location. Photographs can be procured by handheld device or through UAV.

3.2.3 UAV Change Detection Scan

A LiDAR scan of the rock revetment should be performed utilizing an UAV once every five years and after major seismic or storm events, as described in Section 5. Data from new LiDAR scans will be compared to data from a baseline scan (the last scan documented in January 2023, as of this manuals creation) to generate change detection maps and determine what areas have undergone significant changes, especially after major storm or seismic events.

3.2.4 Reporting

Findings from each monitoring event shall be summarized in a memorandum that includes updated site photos and associated figures. The summary should include a description of the site conditions during the time of the site visit as well as notable changes from previous site visits. The memorandum should also include repair recommendations if needed.

4.0 REPAIR AND REPLACEMENT

4.1 INTRODUCTION

This section outlines approaches to repair the rock revetment, which could include the replacement of sections depending on the severity of the damage.

4.2 ROCK REVETMENT

Rock revetment repairs should be performed if displacement or damage impairs the ability of the revetment to serve its intended function. Minor repairs may include removing debris and/or relocating displaced rock and re-establishing the design grades.

Replacement of a damaged section may be warranted if a significant amount of rock has been displaced. If this is the case, the revetment material should be removed to expose the supporting ground or undisturbed rock, whichever is shallower. The revetment section should then be reconstructed to restore it to the original design section.

4.3 PERMITTING & ACCESS FOR REPAIRS

If vehicle access is required for repair activities, the agencies listed below may require encroachment permits:

- Santa Cruz County Department of Public Works (the County may request CEQA adherence, inclusive of a new biotic report as a condition of future grading permits. There may also be work restrictions based on protected bird nesting seasons)
- California Coastal Comission, can claim jurisdiction for regions at or below the mean high tide.
- California State Parks (Palm Beach State Park-Sunset State Beach)
- Monterey Bay National Marine Sanctuary (MBNMS)- https://montereybay.noaa.gov/resourcepro/permit/permits_need.html

5.0 EMERGENCY OPERATIONS/ EMERGENCY ACTION PLAN

The following section outlines what conditions (storms, flood warnings, tsunamis) may trigger the need for an inspection independent of the annual inspections outlined in the Manual. If one of the events described below has been indicated or reported to occur in the Rock Revetment area, the annual inspection protocol should be initiated.

The emergency response/reporting structure is described in the Pajaro Dunes GHAD Emergency Action Plan (EAP). Refer to the EAP in Appendix C for information regarding the chain of responsibility, emergency communications, and local and state emergency response assistance. The EAP is included in Appendix C for reference.

5.1 SANTA CRUZ COUNTY EMERGENCY ALERTS AND WARNINGS

Santa Cruz County has implemented an emergency alert and warning system for floods, coastal storms, tsunamis, and earthquake events. The warning system provided by the County will be uploaded and subscribed to by the Pajaro Dunes GHAD, and any incidents which have impacted the rock revetment area will trigger an inspection and report at the scale of an annual review (https://www.co.santa-cruz.ca.us/OR3/Response/DigitalLibrary/EmergencyAlertsandWarnings.aspx).

The County of Santa Cruz utilizes the information and warning provided through the "Tsunami Zone" website (https://www.tsunamizone.org/). An official tsunami warning will be broadcast through local radio and television, wireless emergency alerts, NOAA Weather Radio, and NOAA websites (like Tsunami.gov). It may also come through outdoor sirens, local officials, text message alerts, and telephone notifications.

The warning system provided by the County will be uploaded and subscribed to by the Pajaro Dunes GHAD, and any incidents which have impacted the rock revetment area will trigger an inspection and report at the scale of an annual review.

5.2 STRUCTURES OR FACILITIES THAT ARE NOT OPERATED OR MAINTAINED BY THE PAJARO DUNES GHAD

Table 5-1 provides a list of structures and facilities located along or in proximity to the rock revetment that are owned, operated, and maintained by others. Contact information is also provided if needed during emergency or non-emergency situations.

Table 5-1 – Structures or Facilities Maintained by Others

Structure or Facility	Contact Information
a) Access	**Santa Cruz County, Public Works** Phone: (non-emergency) (emergency) https://www.cityofsantacruz.com/government/city-departments/public-works **Caltrans** http://www.dot.ca.gov/hq/maint/msrsubmit/ **California State Parks- Sunset Beach/ Palm Beach State Park Day Parking Area** https://www.parks.ca.gov/?page_id=544 **Pajaro Dunes GHAD- gate access** Sarah Mansergh: pdghad@gmail.com
b) Associated Facilities (Stairways & Sheet Pile Wall)	**Pajaro Dunes GHAD** Sarah Mansergh: pdghad@gmail.com

6.0 GENERAL

6.1 PROJECT DESCRIPTION

The Pajaro Dunes community includes private residences consisting of 146 single-family lots, 87 condominiums, and 23 townhouses. These buildings were constructed on a narrow strip of land bounded by the Pacific Ocean on the southwest and by the Pajaro River on the northeast and southeast. The development of the community began in the 1960s and continued into the 1970s. Following several episodes of severe coastal erosion in the 1970s and 1980s, approximately 6,000 feet of rock revetment was constructed in three segments between 1986 and 1988 along the ocean side of the development. The rock revetment is relatively linear for most of its length, except on the southern end, where it curves around the Pelican townhouses and terminates after turning inland for a distance of about 200 feet. In addition, there is a steel sheet pile wall that was constructed in 2003 that trends for about 500 feet around the Pelican townhouses, curves around the townhouses, and terminates about 200 feet up the slough. The sheet piles are 58 feet deep and extend about 5 feet above the existing adjacent ground surface on the development side of the wall. This steel sheet pile wall is referred to as the "river wall" and was placed to reduce the risk of erosion and flood impacts of the Pajaro River on the proximal homes and infrastructure.

The rock revetment is comprised of approximately 110,000 tons of riprap. The top of the revetment varies in elevation from 19.5 to 22.0 feet above mean sea level, and the base of the revetment is at an elevation of -2.0 feet below mean sea level (NGVD 1929 Datum). The revetment ranges in height from about 10 to 15 feet above the adjacent beach elevation during the majority of the year. During major storm events, much of the beach sand is typically eroded, exposing more of the rock revetment. The rock revetment has been damaged by coastal erosion, occurring during severe winter storms since its original construction at least two times: in 2002/2003 and 2004. Following each damaging storm event, emergency repairs were implemented in the form of placing new riprap in selected areas along the revetment to prevent the collapse of the revetment. The repaired area in 2003 measured a total length of approximately 420 feet of revetment using approximately 675 tons of riprap. The repaired area in 2004 measured a total length of approximately 55 feet of revetment using approximately 185 tons of riprap. Note of the 675 tons of material placed, approximately 440 tons of material was placed on Park land and is slated for removal in future works. In relation to the overall length of the revetment, both of these storm events would appear to us to have caused limited damage, affecting a total of approximately 8 percent of the overall revetment length and less than 1 percent of the

overall volume of riprap comprising the revetment. We are not aware of any storm damage to the river wall. (ARUP, 2012)

The Pajaro Dunes development has, in the past, retained the engineering services of Haro Kasunich & Associates (HKA) and Arup North America, Ltd. (Arup) for annual inspections as well as engineering design of repair alternatives. Key staff at HKA had worked on the original design and construction of the revetment before the rock revetment was constructed in the late 1980s. More recently, Arup prepared the repair and maintenance recommendations and an initial repair design for a segment of the rock revetment (ARUP, 2012). This repair design has undergone initial reviews by stakeholder agencies.

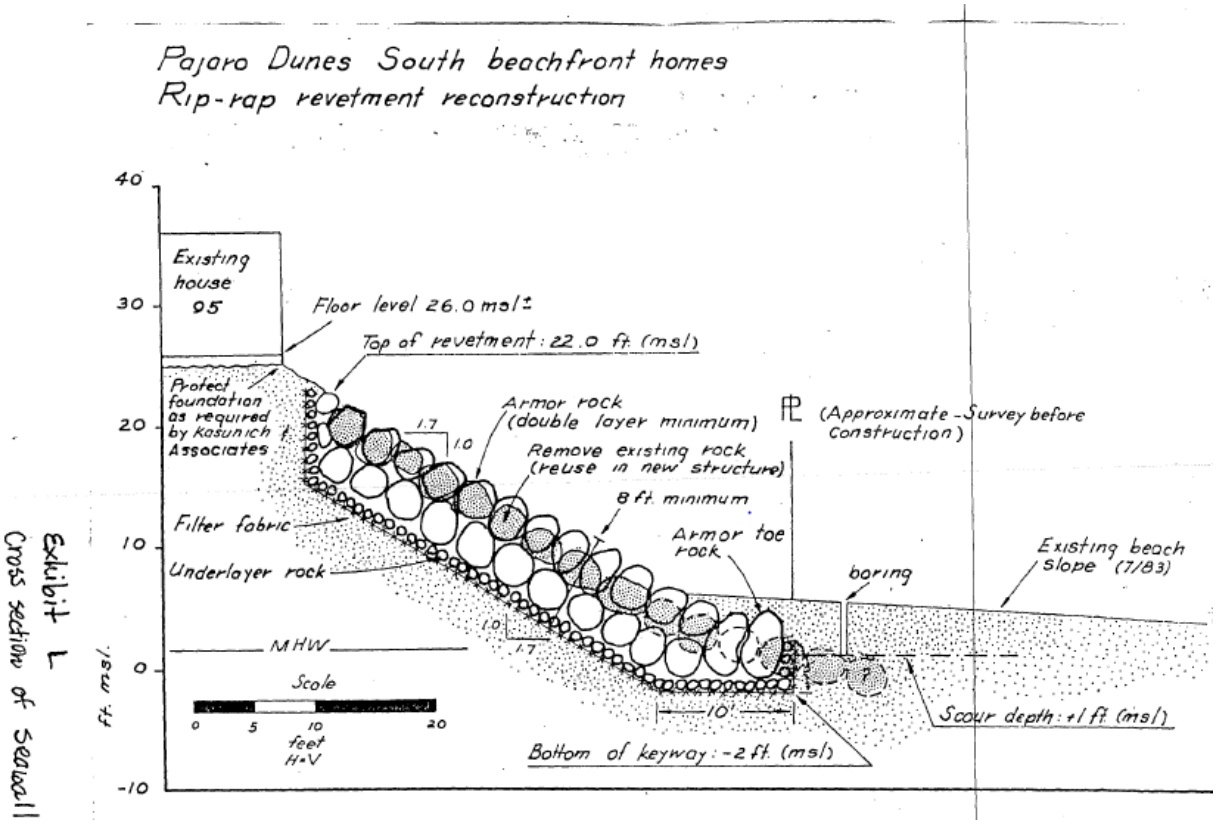
6.2 PROJECT FEATURES

6.2.1 Rock Revetment

The rock revetment (referred to as "seawall" in the original permit) extends approximately 6,000 feet along the beach and is comprised of approximately 110,000 tons of rip rap. The original design was completed by Rodgers E. Johnsen & Associates (RJ&A) and was approved under permit No. 2370, dated 6/10/1986, and the associated Santa Cruz County Use Permit Number 83-1194 (SCC, 1983). Additional Coastal Commission and County permits are associated with the rock revetment, 84-57-CZ (CCC, 1986) and 8-1194-CZ (CCC, 1988). However, Santa Cruz County refers to the base permit number for this project.). Key specifications for the approved rock revetment are listed below, and a cross-section of the original design is shown in **Inset-Figure 01- Final Sea Wall Permit Schematic**. Some specifications (e.g., slope and height) vary depending on the location along the rock revetment at the Pajaro Dunes properties. Following are some key attributes of the rock revetment:

- Revetment slopes = 1.5:1 to 2:1. (RJ&A, 1986)
- Top of revetment elevations = 19.5 to 22 feet above MSL (SCC, 1986)
- Bottom of keyway elevation = -2.0 feet below MSL (SCC, 1986)
- Length = 6,000 feet (ARUP, 2012)
- Volume of rip-rap = 110,000 tons (ARUP, 2012)
- Rip-Rap size = (based on 2.6 specific gravity) ("Revetment Specifications"- SCC, 1986)
- Armor Rock = 6,000-8,000 pounds / 2.8-4.5 feet in diameter
- Armor Toe Rock = 8,000-10,000 pounds / 4.5-4.9 feet in diameter
- Rip-Rap Type = Angular quarried granite that: must be hard, durable, sound, free from laminations and cleavage planes, and will not break during handling or disintegrate in salt air or salt water ("Revetment Specifications")

- Base of keyway width = 10 feet (SCC, 1986)
- Rip-rap thickness = min 8 feet (SCC, 1986)
- Filter fabric at the base of revetment = either plastic filter cloth or 700X "Mirafi." ("Revetment Specifications" - SCC, 1986)
- Revetment = armor rock (double layer minimum) (SCC, 1986)



Inset Figure -01 Final Sea Wall Permit Schematic (SCC,1986)

6.2.2 Sheet Pile Wall

The sheet pile wall is located on the southern edge of the Pajaro Dunes development and ties into the southern termination of the rock revetment. The general extent of the feature is as described below:

- Length = 700 feet (ARUP, 2012)
- Depth = 58 feet (ARUP, 2012)
- Stick-up = 5 feet (ARUP, 2012)

6.2.3 Stairways

There are currently 16 wooden staircases that provide beach access from the Pajaro Dunes community properties. The staircases start at the upper portions of the rock revetment and extend down the surface of the revetment and onto the beach. Aside from one private staircase that extends directly from the center of lot 144, all other staircases are located between residential lots, condominiums, and/or townhouses, as listed below (ARUP, 2008).

- Between Cypress Condominiums 10 & 14
- Between Cypress Condominiums 17 & 20
- Between Cypress Condominiums 23 & Lot 24/146
- Between Lot 144 (Private)
- Between Lots 56 & 57
- Between Lots 14 & 15
- Between Lots 10 & 11
- Between Lots 4 & 5
- Between Lots 106 & 107
- Between Lots 102 & 103
- Between Lots 98 & 99
- Between Lots 92 & 93
- Between Lots 43 & 44
- Between Lots 78 & 79
- Between Lots 74 & 75
- Between Lot 141 & Pelican Point Townhouses

6.2.4 Access

The Pajaro Dunes GHAD coastal flood and erosion control facilities (rock revetment) are located along the Pajaro Dunes and beach in Southern Santa Cruz County, California. Figure 1 highlights the public roads that can be used to access areas along the Pajaro Dunes development and adjacent State Beach. Figure 2 shows the extent of the rock revetment and the location of the vehicle access roads, gates, and stairways/ foot access adjacent to the rock revetment.

7.0 REFERENCES

ARUP, 2012. Pajaro Dunes Seawall- Seawall Assessment & Pre-Conceptual Recommendations. Prepared for Pajaro Dunes GHAD. ARUP Report # 217563, issued 5/14/2012.

ARUP, 2008. Chronology for Staircase Building Permit. Project notes and documentation provided to CE&G. Document dated 2/14/2008.

Biotic Resources Group, 2015. Pajaro Dunes Seawall-Revised Revetment Design Repair. Pajaro Dunes, Santa Cruz County. Prepared for ARUP. Dated 10/14/2015.

California Emergency Management Agency (CEMA), 2009. Tsunami Inundation Map For Emergency Planning: Watsonville West Quadrangle. Dated July 1, 2009

FEMA, 2017. Flood Insurance Study-Santa Cruz County, California, and incorporated areas. FEMA Flood Insurance Study Number 06087CV001C, Version 2.3.2.0. Dated September 29, 2017.

Haro Kasunich & Associates (HKA), 2008. Revetment Repair and Maintenance Plan - Long Term Revetment Modifications. Prepared for the -Pajaro Dunes Geologic Abatement District. Dated 12/10/2008. 14 Plan Sheets.

Santa Cruz County Planning Department (SCC), 1983. Grading permit No. 83-1194, dated 2/3/1983, and associated Santa Cruz County responses to the permit application. 30-page document set.

Santa Cruz County Planning Department (SCC), 1986. Final Grading and Costal Permit to construct seawall. Grading permit No. 2370, dated 6/10/1986, and associated Santa Cruz County Use Permit Number 84-57-CZ and 8-1194-CZ. 103-page document set.

Santa Cruz County Planning Commission (SCC), 1988. Permit to construct riprap seawall to protect 87 existing condominiums. Development permit No. 87-0644, dated 1/8/1988. 15-page document set.

Rodgers E. Johnson & Associates (RJ&A), 1986. Proposed Revetment Design. Prepared for Pajaro Dunes South Homeowners Association. Dated 2/7/1986.

FIGURES

BASEMAP REFERENCE

1. STREET CENTERLINES FROM CALTRANS CALIFORNIA ROAD SYSTEM, DOWNLOADED ON 18 FEB 2020.
2. ORTHOIMAGERY FROM ESRI (MAXAR), 2021.

VEHICLE ACCESS ROAD

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MILES

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PAJARO DUNES GEOHAZARD ABATEMENT DISTRICT
WATSONVILLE, SANTA CRUZ COUNTY, CALIFORNIA

LOCATION MAP

190782	JULY 2023	FIGURE 1

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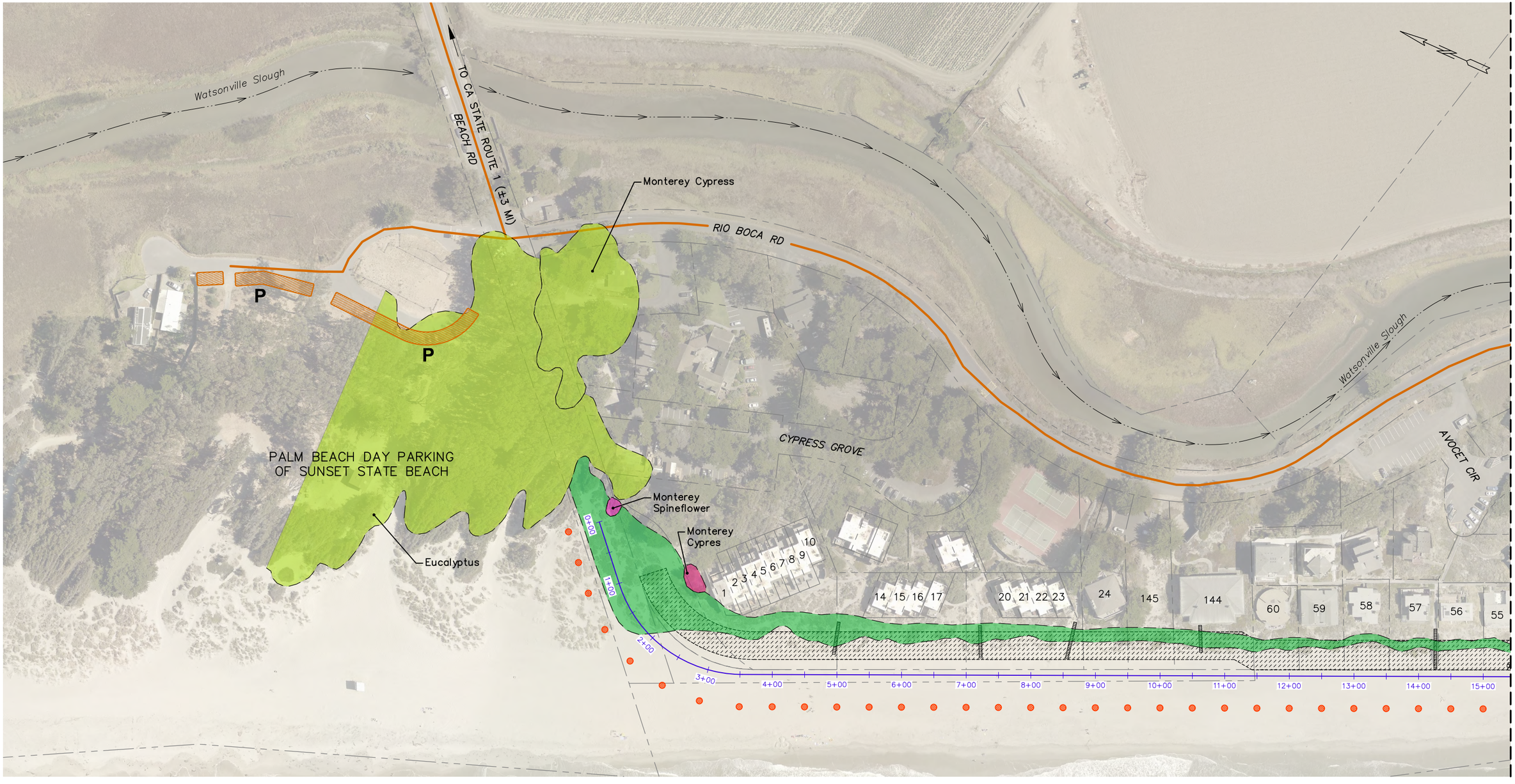

MATCHLINE – SEE FIGURE 2B

LEGEND

- EXISTING STAIRCASE/BEACH ACCESS ON FOOT
- EXISTING ROCK REVETMENT
- EXISTING ROCK REVETMENT, BURRIED
- 23 PARCEL BOUNDARY AND BUILDING NUMBERS
- EMERGENCY ROCK
- PROTECTED BIOM (DATA PENDING)
- P VEHICLE ACCESS AND PARKING
- ACTIVE WATER WAY AND FLOW DIRECTION
- 20+00 21+00 ALIGNMENT AND STATIONING TO BE USED FOR ANNUAL INSPECTIONS
- PHOTOGRAPH OBSERVATION POINTS

EXISTING HABITATS

- CENTRAL DUNE SCRUB (WITH NON–NATIVE LANDSCAPING)
- NON–NATIVE TREE GROVES

BASEMAP REFERENCE

1. ORTHOIMAGERY FROM SANTA CRUZ COUNTY, 2016.
2. PARCELS FROM SANTA CRUZ COUNTY GIS, ACCESSED ONLINE ON 8/3/2022.

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SCALE FEET

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PAJARO DUNES GEOHAZARD ABATEMENT DISTRICT
WATSONVILLE, SANTA CRUZ COUNTY, CALIFORNIA

PROJECT FEATURES (1 OF 3)

190782	JULY 2023	FIGURE 2A

MATCHLINE – SEE FIGURE 2A

MATCHLINE – SEE FIGURE 2C

LEGEND

- EXISTING STAIRCASE/BEACH ACCESS ON FOOT
- EXISTING ROCK REVETMENT
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PROJECT FEATURES (2 OF 3)

190782	JULY 2023	FIGURE 2B

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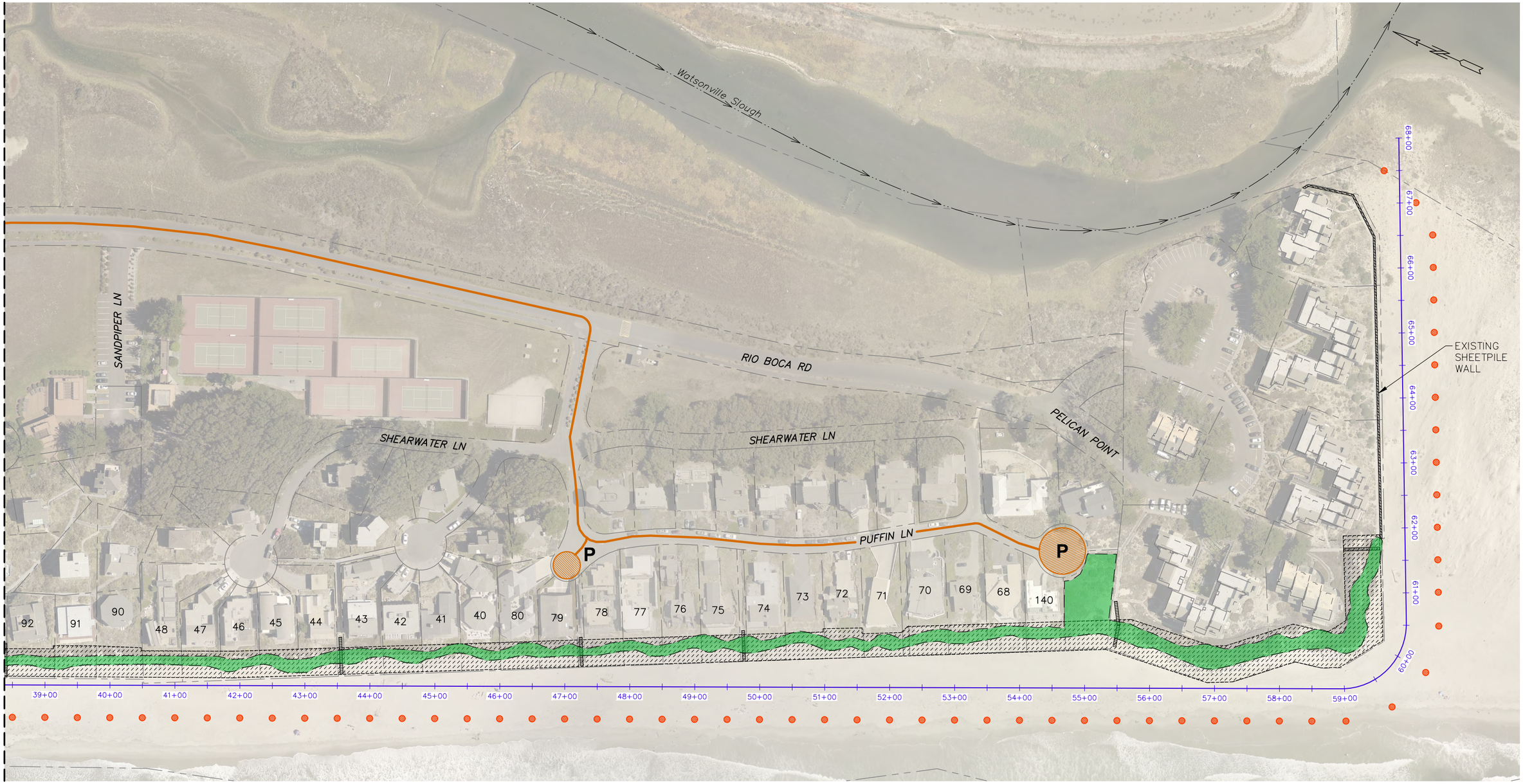

LEGEND

- EXISTING STAIRCASE/BEACH ACCESS ON FOOT
- EXISTING ROCK REVETMENT
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PROJECT FEATURES (3 OF 3)

190782	JULY 2023	FIGURE 2C

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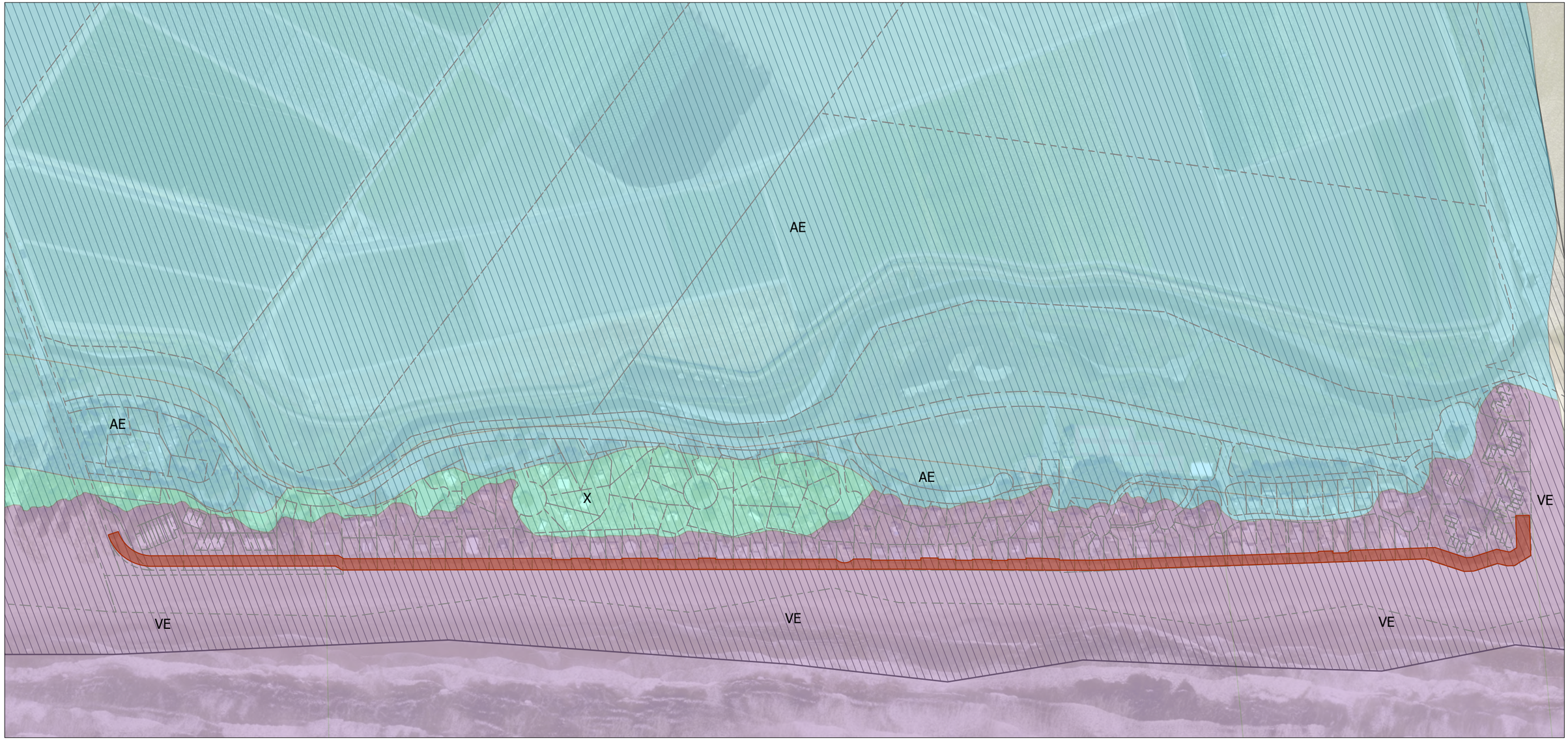

FEMA INSURANCE ZONES

A/A99/AE/AH/AO	100-YEAR FLOOD ZONES
X	500-YEAR FLOOD ZONES
VE	100-YEAR FLOOD ZONE (HIGH VELOCITY WAVE)

TSUNAMI WET AREAS

TSUNAMI INUNDATION AREA

PROJECT FEATURES

AREA OF INTEREST (ROCK REVETMENT)

BASEMAP REFERENCE

1. INSURANCE ZONES FROM "FLOOD INSURANCE STUDY" BY FEMA (DOCUMENT DATED SEPT 29, 2017); GIS DATA FROM HTTPS://GIS.SANTACRUZCOUNTY.US/GISWEB/ ACCESSED ONLINE ON 9/13/2022.
2. TSUNAMI WET AREAS FROM "TSUNAMI INUNDATION MAP FOR EMERGENCY PLANNING, WATSONVILLE WEST QUADRANGLE" DATED JULY 1, 2009. GIS DATA FROM HTTPS://GIS.SANTACRUZCOUNTY.US/GISWEB/ ACCESSED ONLINE ON 9/13/2022.

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100-YEAR FLOOD PLAIN, STROM WAVES, AND TSUNAMI INUNDATION MAP

190782	JULY 2023	FIGURE 3

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Appendix A. Santa Cruz County Grading Permit 83-1194

COUNTY OF SANTA CRUZ
EMERGENCY NO FEE PERMIT

PERMIT TYPE: EMERGENCY SHORE PROTECTION ~~Building~~, Grading DATE: 2-3-83

ASSESSOR'S PARCEL NUMBER:

SITE ADDRESS OF WORK: PAJARO DUNES

OWNER'S NAME and ADDRESS: LARRY TRAPP, REPRESENTATIVE OF HOMEOWNERS ASSOC.

TELEPHONE NUMBER: ~~#~~ 728-3641

NATURE OF DAMAGE: EROSION OF DUNES CLOSE TO FOUNDATIONS DUE TO HIGH SURF ACTIVITY FROM THE TOWNHOUSES (TO THE NORTH) TO THE PELICAN POINT UNITS (TO THE SOUTH)

EMERGENCY WORK AUTHORIZED: PLACEMENT OF RIP-RAP ALONG IMMEDIATE FACE OF DUNE SLOPE; IF NO FILTER CLOTH OR INFERIOR GRADE OF ROCK IS USED THEN THIS RIP-RAP WILL NEED TO BE REMOVED & PROPERLY PLACED AS PART OF THE PROJECT TO BE APPLIED FOR UNDER A REGULAR PERMIT.

CONDITIONS OF APPROVAL: UNITS COVERED: TOWNHOUSES (NORTH END) THROUGH PELICAN POINT (SOUTH END)

This permit authorizes only the emergency work described above. The work is considered temporary in nature and the County of Santa Cruz accepts no responsibility for any of the work done under this permit.

No additional structural work may be done on the property without a valid building permit. No other additional work may be done on the property without a valid permit. Any infractions of this condition will result in a citation.

You are directed to make application in the Planning Department within 90 days from the date of issuance of this permit with proper plans and specifications to make the work permanent.

The work authorized in this permit must be commenced within 15 days from issuance. Any work started after 15 days is not exempt from the regular permit process.

The owner of the parcel listed above must sign this permit agreeing to the conditions set forth and in signing agrees to hold the County of Santa Cruz harmless from any liabilities for damage to public or private properties and/or any personal injury which may result from said project.

Owner's Signature

NOTE: THIS IS A FEE EXEMPT PERMIT.

Exhibit D
Emergency Permit

SANTA CRUZ COUNTY PLANNING DEPARTMENT
701 Ocean Street, Room 400
Santa Cruz, CA 95060
(408) 425-2751

KRIS SCHENK
Planning Director

By:

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT

PLANNING COMMISSION MEETING

STAFF REPORT/INITIAL STUDY

Date: September 2, 1984
Time: After 1:30 p.m.
Agenda Item: 6
Staff Planner: Sue Williamson & Dieter Beermann

APPLICANT: LARRY TRAP/PAJARO DUNES SOUTH HOMEOWNERS ASSOC. APN: 52-281-02 et al
OWNER: INDIVIDUAL PROPERTY OWNERS (SEE EXHIBIT "H")
Application No: 83-1194-CZ*2 (Appealable to Coastal Commission) Supervisorial District: Second
Section: 23/24 T 12 S, R 1E
Location: Ocean side of Pajaro Dunes South development, east of Beach Road. San Andreas Area.

EXISTING SITE CONDITIONS

Parcel Size: Project area is about 5300 feet by 30 feet.
Land Use: Residential (beach)
Vegetation: Coastal dune, grasses
Slope: 0-15% 100% 16-30%____ 31-50%____ 51%____ acres/sq ft
Nearby Watercourse: Pacific Ocean
Distance To: Adjacent
Agri. Class/Type: Not designated
Rock/Soil Type: Silty sands

ENVIRONMENTAL CONCERNS

Within USL:	No	Erosion:	High potential
Road Access:	Private roads	Landslide:	None, low potential
Groundwater Supply:	Out of groundwater recharge area	Liquefaction:	High potential
Water Resource Protection:	No	Seismic:	No
Timber and Mineral:	No	Floodplain:	Yes
Wildlife:	Mapped area	Riparian Corridor:	No
Fire Hazard:	No	Solar Access:	NA
Archaeology:	No	Solar Orientation:	NA

SERVICES

Fire Protection: County/CDF
School District: Pajaro Valley Unified
Water Supply: City of Watsonville
Sewage Disposal: City of Watsonville
Drainage: Natural

New Roads Required: None

Access: Private Road system

PLANNING POLICIES

Zone District: SU — Area: San Andreas — Adopted: 1980

General Plan: Urban Low — Area: San Andreas — Adopted: 1983

Coastal Zone: Urban Low

ENVIRONMENTAL COORDINATOR'S ACTION Negative Declaration issued with conditions (see attached)

PROPOSAL

Consideration of the issuance of a grading and coastal approval for 5300 linear feet of rip-rap revetment (approximately 90,000 cubic yards).

SW:DB:km

Exhibit E
Initial Study

CONDITIONS OF APPROVAL
PAJARO DUNES SOUTH
BY LARRY TRAPP
83-1194-CZ

~~Prior to permit issuance the applicants shall:~~

1. Record notices of potential geologic hazards in a form reviewed and approved by County Counsel and the Planning staff geologist;

2. Obtain all necessary permits including construction and maintenance easements from State Parks;

3. Submit a long-term seawall maintenance plan for review and approval of County Planning Staff.

'C Added 1/26/84

4. *Power of Attorney for all 89 property owners to be filed with County Counsel in a form acceptable to the County.*

As a part of the construction operations the applicants representatives shall:

5. ~~4.~~ Not remove sand from the public beach.

'C Amended 1/26/84

6. ~~5.~~ Conduct operations only on weekdays. *Hours of operation to be compatible with those of the State.*

7. ~~6.~~ Meet all recommendations of the geologic report.

Prior to final inspection of the project the applicant shall:

8. ~~7.~~ Provide a survey of the seaward property line and an as-built plan prepared by the project engineer showing the relationship of th seawall to the property line;

9. ~~8.~~ Obtain building permits for all access stairways.

SW:DB:km

Exhibit F
Conditions of the Planning Commission Approval

SANTA CRUZ COUNTY PLANNING COMMISSION MEETING MINUTES OF SEPTEMBER 26, 1984
HELD IN THE BOARD OF SUPERVISORS CHAMBERS, ROOM 525, FIFTH FLOOR, COUNTY
GOVERNMENTAL CENTER, 701 OCEAN STREET, SANTA CRUZ, CALIFORNIA

COMMISSIONERS PRESENT: 1:30 PM	BURNAP, BARR, BRITTON, EBERLY, HOLBERT
COMMISSIONERS ABSENT:	NONE
STAFF MEMBERS PRESENT:	NIEBANCK, WILLIAMSON, LEGGETT, BEERMANN, BUSSEY, MAXWELL
~~CHIEF DEPUTY CO COUNSEL:~~	~~OBERHELMAN III~~

All legal requirements for items set for public hearings on the Santa Cruz County Planning Commission agenda for the meeting of September 26, 1984 have been fulfilled before the hearing as follows: Legal notice published in the newspaper as required by law for a public hearing; Supervisors of the districts notified; Property owners within a radius of 300 feet notified of the proposals; and the property posted where applicable.

3. Application by the PAJARO DUNES SOUTH HOMEOWNER'S ASSOCIATION to construct 5300 linear feet of rip-rap seawall, including the placement of 90,000 cubic yards of rock. The project was started under an emergency permit granted January 27, 1983. Property located east of the intersection of Beach Road and the beach. (Continued from 9/12/84) WATSONVILLE AREA.

Application No.: 83-1194-CZ*2,GP
APNS:
52-281-02 thru -22, -24 thru -30, -32 thru -39
52-291-01 thru -17, -20 thru -22, -24 thru -27, -29 thru -32, -34 thru -35, -37 thru -38, -43 thru -44
52-292-01 thru -09
52-301-02 thru -05, -07 thru -16, -18 thru -20, -23 thru -25, -28 thru -31, -33 thru -34, -36 thru -38, -40 thru -49
52-321-01 thru -50

Supervisorial District: Fourth
Staff Planner: Dieter Beermann

Before the hearing on Pajaro Dunes Association South began, Chairman Burnap asked County Counsel Oberhelman if, in his opinion, the hearing could proceed even though the Commission had not received written approval from the needed number of property owners. It was the Commission's understanding that the needed number of property owners had approved of the hearing, it was just a matter of signatures arriving in the mail. County Counsel Oberhelman thought they could proceed, with the understanding that the Commission's decision is conditional. Commissioner Eberly stated that the Commission could have heard this item at the last meeting, as he had so argued at that time. Ms. Linda Niebanck stated that as per Sue Williamson, the last meeting could not have proceeded because State approval had not been obtained.

Sue Williamson read the agenda description into the record, correcting the ~~Supervisorial District from the Fourth to the Second.~~ Dieter Beermann's presentation consisted of six parts: 1) slides 2) history 3) technical matters 4) dune restoration 5) planning concerns and 6) correspondence received.

Exhibit G
Minutes of 10-23-84 Planning Commission Hearing

PLANNING COMMISSION MEETING
PAJARO DUNES SOUTH HOMEOWNER'S ASSOCIATION

1) The slides included the vicinity map, aereal photographs, the plan prepared by the project engineer, land use map, constraint map, and a photograph of the Pelican Point rip-rap project.

2) In the Winter of '82/83 wave action threatened houses on the beach. An emergency permit was issued in February of 1983. The work was not done up to technical standards. Settlement of approximately 10 feet occurred. A regular permit was required and application was made in the spring of 1984.

3) 5300 linear feet (approximately 90,000 cubic yards) of rip-rap revetment was placed at a slope of 1.7 to 2.1, with filter fabric underlaying rock and armor rock with appropriate key to compensate for scouring of the beach. The slope of rip-rap and height were engineered. It is the largest project of its kind in the county.

4) The dune restoration plans submitted are for restoration of the dunes in front of the condominiums and on State property. The sand used will come from the excavation, with additional sand to be imported as needed. The dunes will be revegetated with European Dune grass.

5) The planning concerns are for a) vertical and b) lateral access. The project is surrounded on the east by the Pajaro Valley River, on the north by the Watsonville slough, and the west by a state park.

   a) vertical access - the nearest vertical access is through the state park. LCP requires vertical access every 1/2 mile. To meet that LCP requirement, access would be needed half way through the project. There is access on the west through a private locked gate and the right to have the locked gate has previously been recognized thrcugh planning, building and coastal permits. The road system and gate is controlled by the entire Homeowners Association, and only a portion of the Homeowners Association is concerned with this application. The applicant does not have the right of determination on lands controlled by the entire Association.

   b) lateral access - previous permits asked for dedication from the base of the sewall to the mean high water line. This wall is right on the property line, therefore no dedication can be made.

6) Correspondence was received from a) the State, dated September 26, 1984, agreeing to the restoration of the Dunes and b) the Coastal Commission, dated August 24, 1984, citing concerns with habitat and access.

Staff recommendation is for approval of the grading and coastal permits subject to conditions.

Commissioner Britton stated that apparently the seawall and access are different matters; building the seawall will require that people not directly benefitted by the seawall, provide public access to the beach.

Commissioner Eberly asked if there was beach access from the Pajaro River. Mr. Beermann answered that he did not know and added that the County is not requiring vertical access. Commissioner Eberly suggested that Parks and Recreation investigate whether the County has a right-of-way along the Pajaro River.

Commissioner Britton asked how the dunes will impact the beach. Mr. Beermann responded that they should not effect the lateral drift of the beach, as protection is parallel to the ocean.

Mr. Beerman stated that the lateral access requirement usually asks for a dedication of beach from the seawall to the mean high tide line. In this case the base of the wall is directly at the property line, therefore the County is not asking for such a dedication. Commissioner Britton stated that if the beach washes away, there will be no public beach. Mr. Beermann responded that the applicant has no land left to dedicate.

Commissioner Eberly questioned the need for condition number 8, if there is no required vertical access. ("8. Obtain building permits for all access stairways.") Ms. Williamson responded that the stairways are private, however building permits are a requirement of reconstruction.

Commissioner Britton was concerned that we were asking for less than the state requirement for access.

THE PUBLIC HEARING WAS OPENED

John Lundell, the President of the Board of Directors of the Pajaro Dunes Association, stated that since the units in the Association are not condominiums, the power of the Association is limited. There is a funding problem with trying to establish an assessment district to finance the needed work. The association must have 60% approval for such a plan, and only 30% of the association members have front-row homes.

John Kasunich, the engineer for the seawall, made himself available to answer the Commission's questions. Commissioner Eberly asked why a 17 foot wave could not get over a 20 foot wall. Mr. Kasunich responded that when a swell comes to shore, it has broken 1, 2, and 3 times, and is 4 - 7 feet high. 17 feet is the projected wave run-up, not the height of the wave itself. Commissioner Eberly stated that during the storm, the swell was to the bottom of the Capitola wharf itself. Mr. Kasunich responded that through observation and calculation, they have determined that 17 feet is the highest "run up" of waves. During a storm it will rise 7 to 9 feet, but at the height of the wall, the waves will have dissipated.

THE PUBLIC HEARING WAS CLOSED

Chairman Burnap questioned whether the conditions of the letter of 9/26/84 from the State Department of Parks and Recreation, were in conflict with County requirements. Ms. Williamson responded that she did not think so, State concerns seem to be the same as the County's. Regarding the hours of work, the County will amend its conditions to conform with those of State Parks and Recreation, since they have more knowledge of peak hour usage of public facilities than does the Planning Department.

Commissioner Eberly congratulated Mr. Beermann on his staff report. He can vote approval of the project, with no reservations. Commissioner Holbert stated that she had a problem with the vertical public access question, and asked if the item will go to the Board automatically. Ms. Williamson responded that it will not. It could, however be appealed to the Board and the Coastal Commission. Commissioner Britton stated that she did not want to set a precedent of having private projects on public beaches. Commissioner Eberly agreed that should be the case for new projects, however, Pajaro Dunes is not a new project.

Mr. Beermann stated that the Coastal Commission was consulted by staff regarding public access during various meetings. Mr. Trapp stated that he welcomes pedestrian visitors. Commissioner Britton stated that apparently access is an unadvertised right.

A MOTION WAS MADE BY CHAIRMAN BURNAP AND SECONDED BY COMMISSIONER EBERLY TO:

Approve 83-1194-CZ*2, GP with findings and conditions of staff as amended. A new condition #4 was added. Condition #6 was amended.

4. Power of Attorney for all 89 property owners to be filed with County Counsel in a form acceptable to the County.

6. Conduct operations only on weekdays. Hours of operation to be compatible with those of the State.

THE MOTION PASSED BY THE FOLLOWING VOTE:

AYES: CHARIMAN BURNAP, COMMISSIONERS EBERLY AND BARR
NOES: COMMISSIONERS HOLBERT AND BRITTON
ABSENT: NONE

KAREN MAXWELL
RECORDING SECRETARY

Pajaro Dunes Association
2661 Beach Road Watsonville Ca. 95076
(408) 728-3641

November 5, 1984

County of Santa Cruz
Department of Planning
701 Ocean Street
Santa Cruz, CA. 95060-4069
(Attn: Chris Schenk)

Dear Chris:

Reference application No.83-1194-CZ*2 pertaining to the seawall vicinity Pajaro Dunes South filed on behalf of 89 owners.

To date 87 of the 89 property owners concerned have signed and returned a power of attorney authorizing the Manager of Pajaro Dunes Association (the undersigned) to submit an application for the seawall on their behalf. These Power of Attorneys have been forwarded to County Counsel.

Pajaro Dunes Association is not the applicant for the seawall permit. I am the applicant acting on behalf of the property owners involved pursuant to the authorities outlined in each power of attorney on file with County Counsel.

To avoid confusion I recommend that the name of the applicant be changed to Lawrence R. Trapp (on behalf of 89 beachfront homeowners) as the Pajaro Dunes Beachfront Protection Committee.

Attached hereto is a listing of all the property owners involved showing lot number, Assessor's parcel number, name, address and whether or not a power of attorney has been executed.

Please advise if something more is needed.

Sincerely,

Lawrence R. Trapp
Manager
Pajaro Dunes Association

Exhibit H
Letter of Larry Trapp, Status of Application, 11-5-84

99	052-321-10	Mr. Ted Reed	2661 Beach Road H-24	Watsonville	CA.	95076	Y
100	052-321-11	Mr. & Mrs. Richard Hammond	2661 Beach Road H-100	Watsonville	CA.	95076	Y
101	052-321-12	Mr. Edward Donaghy	2363 South Cedar	Fresno	CA.	93725	N
103	052-321-14	Mr. & Mrs. Richard Bell	156 University Avenue	Palo Alto	CA.	94301	Y
104	052-321-15	Mr. & Mrs. David Niederauer	16260 Los Berenos Robles	Los Gatos	CA.	95030	Y
105	052-321-16	Mr. & Mrs. Verne Freeman	3582 Arbutus Street	Palo Alto	CA.	94303	Y
106	052-321-17	Mr. & Mrs. William Schroeder	18295 Lexington Drive	Monte Sereno	CA.	95030	Y
107	052-321-18	Mr. & Mrs. Curtis Reed	1342 Santa Luisa Drive	Solano Beach	CA.	92075	Y
144	052-301-18	Mr. Ryland Kelley	305 Lytton Avenue	Palo Alto	CA.	94301	Y
145	052-301-19	Hare Brewer & Kelley	305 Lytton Avenue	Palo Alto	CA.	94301	Y
146	052-301-20	Mr. John Arrillaga	1950 Cowper Street	Palo Alto	CA.	94300	Y
141	052-291-38	Mr. Leo Pelliciotti	14101 Marlyn	Saratoga	CA.	95070	Y
140	052-291-37	Mr. Alfred Corduan	10531 Magdalena Road	Los Altos	CA.	94022	Y
68	052-291-20	Mr. Martin Katz	5 Whitney Court	Menlo Park	CA.	94025	Y
C-1	052-301-49	Hare, Brewer & Kelley	305 Lytton Ave.	Palo Alto	CA.	94301	Y
C-2	052-301-48	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-3	052-301-47	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-4	052-301-46	Mrs. Sylvia Galli	7183 Blue Hill Drive	San Jose	CA.	95129	Y
C-5	052-301-45	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-6	052-301-44	Mr. Steven Kucklinca	1633 Swift Ct.	Sunnyvale	CA.	94087	Y
C-7	052-301-43	Mr. Robert Roeser	620 Chesley Ave.	Mt. View	CA.	94040	Y
C-8	052-301-42	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-9	052-301-41	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-10	052-301-40	Mr. Michael Bruno	545 Pine Lane,	Los Altos	CA.	94022	Y
C-11	052-301-38	Mr. Fedelle Bauccio	20555 Ashley Way	Saratoga	CA.	95070	Y
C-12	052-301-37	Mr. Douglas Broyles	6057 Vera Cruz Drive	San Jose	CA.	95125	Y
C-13	052-301-36	Mr. Ivan Owen	26185 Fairview Ave.	Hayward	CA.	94541	Y
C-14	052-301-31	Mr. Edwin VanBronkhorst	714 Los Trancos Road	Portola Valley	CA.	94025	Y
C-15	052-301-34	Mr. Ronald Fujimoto	3601 Echo Springs Road	Lafayette	CA.	94549	Y
C-16	052-301-33	Mr. Robert Krandel	1816 Monte Carlo Way	San Jose	CA.	95125	Y
C-17	052-301-30	Mr. Kenneth Oshman	215 Atherton Ave.	Atherton	CA.	94025	Y
C-18	052-301-29	Mr. Thomas Wilson	19646 Via Grande Drive	Saratoga	CA.	95070	Y
C-19	052-301-28	Mr. John Stern	1849 Webster Street	Palo Alto	CA.	94301	Y
C-20	052-301-26	Mr. Kent Hobert	5258 Alhambra Valley Road	Martinez	CA.	94553	Y
C-21	052-301-25	Mr. George Korpontinos	3020 Country Club Ct.	Palo Alto	CA.	94304	Y
C-22	052-301-24	Mr. Roderick Young	855 Hamilton Ave.	Palo Alto	CA.	94301	Y
C-23	052-301-23	Mr. Richard Kelley	305 Lytton Ave.	Palo Alto	CA.	94301	Y

Exhibit I
List of Pajaro Dunes
Beachfront Homeowners

LOT NUMBER	PARCEL NUMBER	NAME	ADDRESS	CITY	STATE	ZIP	POWER OF ATTY YES/NO
1	052-281-05	Mr. & Mrs. Terry Chandler	13916 Chester Ave.	Saratoga	CA.	95070	Y
2	052-281-06	Mr. & Mrs. Norman Bernic	632 Fairway Circle	Hillsborough	CA.	94010	Y
3	052-281-07	Mr. & Mrs. John Spreiter	1250 Sandalwood Lane	Los Altos	CA.	94022	Y
4	052-281-08	Mr. & Mrs. George Kelly	444 Washington Avenue	Palo Alto	CA.	94301	Y
5	052-281-09	Dr. & Mrs. Robert Kendall	1097 Enderby Way	Sunnyvale	CA.	94087	Y
6	052-281-10	Mr. George Richardson,	1322 Martin Avenue	Palo Alto	CA.	94301	Y
7	052-281-11	Mr. Paul Irwin	2720 Greenhill Lane	Lynchburg	VA.	24503	Y
8	052-281-12	Dr. & Mrs. Marvin Small	390 San Domingo	Los Altos	CA.	94022	Y
9	052-281-13	Mr. & Mrs. James Kemp	2661 Beach Road H-9	Watsonville	CA.	95076	Y
10	052-281-14	Mr. & Mrs. James Lawson	220 Durazno Way	Menlo Park	CA.	94025	Y
11	052-281-15	Mr. & Mrs. Stanley Lynn	2661 Beach Road H-11	Watsonville	CA.	95076	Y
12	052-281-16	Mr. Roland Ewell	4325 W. Shaw Ave	Fresno	CA.	93711	N
13	052-281-17	Mr. & Mrs. Anton Swanson	241 Durazno Way	Portola Valley	CA.	94025	Y
14	052-281-18	Mr. Stewart Morton	1060 Francisco Street	San Francisco	CA.	94109	Y
15	052-281-19	Peery/Arrillaga	2560 Mission College #101	Santa Clara	CA.	95050	Y
40	052-291-03	Mr. & Mrs. Albert Spaulding	541 East Crescent Drive	Palo Alto	CA.	94301	Y
41	052-291-04	Mrs. Barbara Barrett	2661 Beach Road H-41	Watsonville	CA.	95076	Y
42	052-291-05	Mrs. Esther Durante	1035 Alta Mesa Drive	Moraga	CA.	94556	Y
43	052-291-06	Mr. Craig Hunt	1 Market Plaza Suite #2210	San Francisco	CA.	94105	Y
44	052-291-07	Mr. & Mrs. Wilfred Cavier	240 Golden Oak Drive	Portola Valley	CA.	94025	Y
45	052-291-08	Mr. David Stone	217 Town & Country Village	Palo Alto	CA.	94305	Y
46	052-291-09	Mrs. George Redington	19831 Robin Way	Saratoga	CA.	95070	Y
47	052-291-10	Mr. & Mrs. Brett Stauffer	1300 Ethan Way #555	Sacramento	CA.	95825	Y
48	052-291-11	Mrs. Dianne Feinstein	2030 Lyons Street	San Francisco	CA.	94115	Y
54	052-301-10	Mr. & Mrs. L. E. Alford	9 Cragmont Court	San Mateo	CA.	94403	Y
55	052-301-11	Dr. William McCormack	408 Read Drive	Lafayette	CA.	94549	Y
56	052-301-12	Mrs. Patricia Hamrick	36 Slater Lane	Berkeley	CA.	94705	Y
57	052-301-13	Mr. & Mrs. Alford Pacheco	45-445 Delgado Drive	Indian Wells	CA.	92260	Y
58	052-301-14	Dr. & Mrs. Daniel Martin	9001 McGurrin Dr.	Oakland	CA.	94605	Y
59	052-301-15	Mr. & Mrs. Fred Rabe	P.O. Box 1822	Watsonville	CA.	95077	Y
60	052-301-16	Mr. & Mrs. John O'Malley	7 Bay Tree Lane	Los Altos	CA.	94022	Y
69	052-291-21	Ms. Anadel Law	27 Berenda Way	Portola Valley	CA.	94025	Y
70	052-291-22	Mrs. Virginia Lahey	3652 Happy Valley Road	Lafayette	CA.	94549	Y
71	052-291-24	Mr. & Mrs. John Warriner	2661 Beach Road H-79	Watsonville	CA.	95076	Y
72	052-291-25	Dr. & Mrs. Paul Rosen	17681 Foster Road	Los Gatos	CA.	95030	Y
73	052-291-26	Mr. & Mrs. Dean Burton	119 Via De Tesoros	Los Gatos	CA.	95030	Y
74	052-291-27	Mr. & Mrs. Robert Haase	164 Selby Lane	Atherton	CA.	94025	Y
75	052-291-29	Mr. & Mrs. George Liddle	595 Oakfield Lane	Menlo Park	CA.	94025	Y
76	052-291-30	Ms. Antha Crawford	501 Portola Road Box 8043	Portola Valley	CA.	94025	Y
77	052-291-31	Mr. & Mrs. Robert Manfre	2661 Beach Road H-77	Watsonville	CA.	95076	Y
78	052-291-32	Mr. & Mrs. Martin Locke	2661 Beach Road H-78	Watsonville	CA.	95076	Y
79	052-291-34	Mr. & Mrs. John Warriner	2661 Beach Road H-79	Watsonville	CA.	95076	Y
80	052-291-35	Mr. & Mrs. A. C. Markkula	P.O. Box 620170	Woodside	CA.	94062	Y
90	052-321-01	Mr. & Mrs. Robert Johnson	230 Erica Way	Menlo Park	CA.	94025	Y
91	052-321-02	Mr. & Mrs. Raymond Bagley	39 Greenwood Bay Drive	Tiburon	CA.	94920	Y
92	052-321-03	Mr. & Mrs. George Santana	19376 Portos Court	Saratoga	CA.	95070	Y
93	052-321-04	Mr. & Mrs. John Leland	12694 La Cresta Drive	Los Altos Hills	CA.	94022	Y
94	052-321-05	Mr. Peter Frazier	1260 Medfield Road	Lafayette	CA.	94549	Y
95	052-321-06	Mr. & Mrs. Richard Olson	566 Washington Avenue	Palo Alto	CA.	94301	Y
96	052-321-07	Dutra Construction	P.O. Box 338	Rio Vista	CA.	94571	Y
97	052-321-08	Mr. & Mrs. Harold Eden	16211 Parkside Lane #147	Hunting Beach	CA.	92647	Y
98	052-321-09	Mr. & Mrs. John Traynor	1190 W. Vanderbilt Court	Sunnyvale	CA.	94087	Y

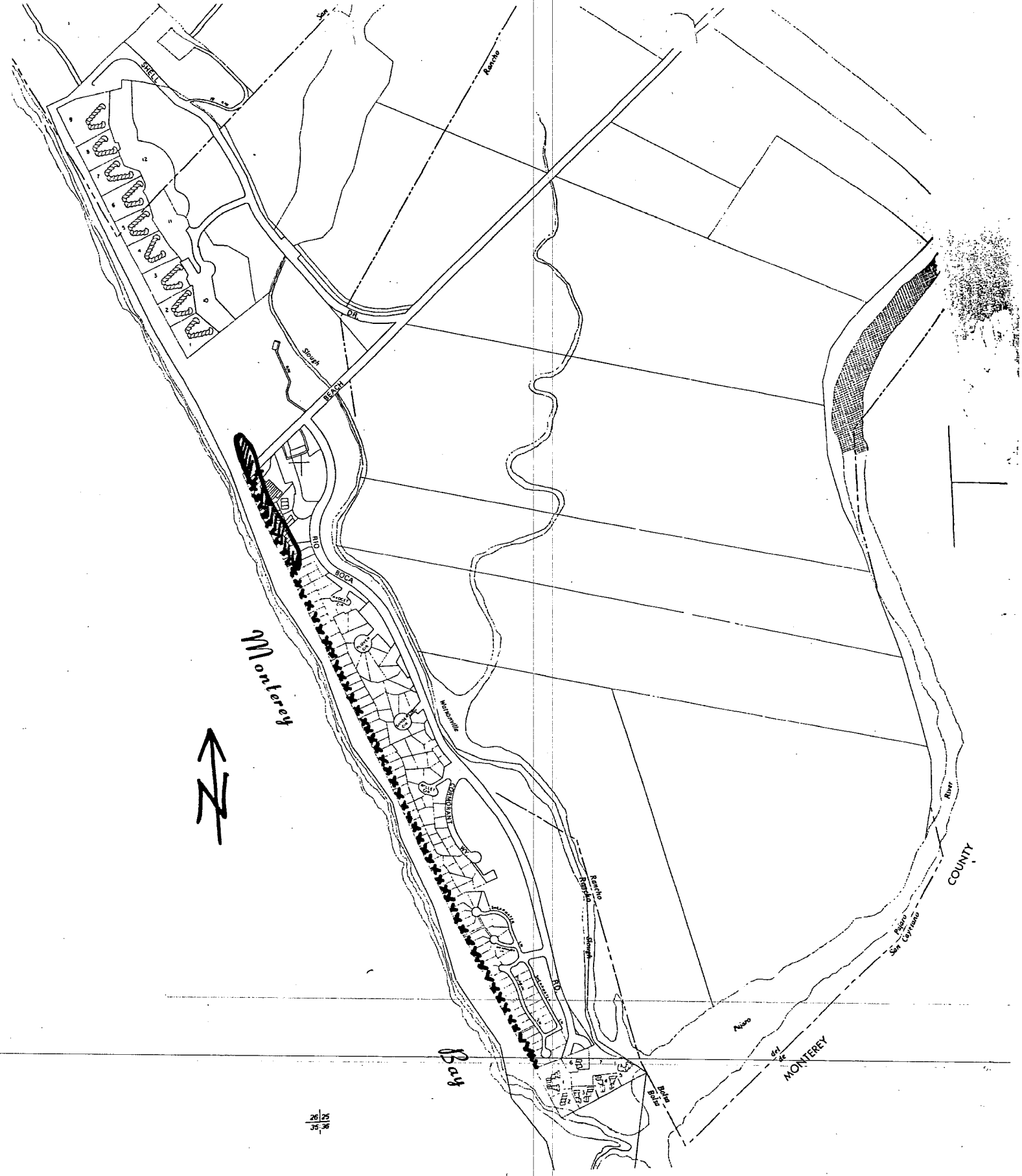

Exhibit J
Sketch of Seawall

seawall location xxxxx
dune restoration
1" = 1000'

STATE OF CALIFORNIA—THE RESOURCES AGENCY GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF PARKS AND RECREATION

Pajaro Coast District
7500 Soquel Drive
Aptos, CA 95003
(408) 688-3241

September 26, 1984

Planning Commission
County of Santa Cruz
701 Ocean Street
Santa Cruz, CA 95060

Re: App. No. 83-1194-022, GP
Pajaro Dunes South Homeowner's Association

Attn: Sue Williamson

Dear Ms. Williamson:

Please be advised that the State Department of Parks and Recreation, Pajaro Coast District, agrees to the Dune Restoration concept on State Park property as proposed by Mr. Larry Trapp, Manager, Pajaro Dunes Association, at a meeting in this office Tuesday, September 25, 1984.

Basic agreements included:

- use of sand native to Sunset State Beach as excavated from the Pajaro Dunes Association rip-rap project
- replanting with plants approved by the Department of Parks and Recreation
- work times approved by the Department of Parks and Recreation
- configuration of restored dunes as approved by the Department of Parks and Recreation

Project details will be determined at a future date prior to start of project.

Sincerely,

Richard L. Menefee
District Superintendent
Pajaro Coast District

RLM:rk

cc: L. Trapp
R. Felty

Exhibit K
Letter of Dick Menefee
10-26-84

Pajaro Dunes South beachfront homes
Rip-rap revetment reconstruction

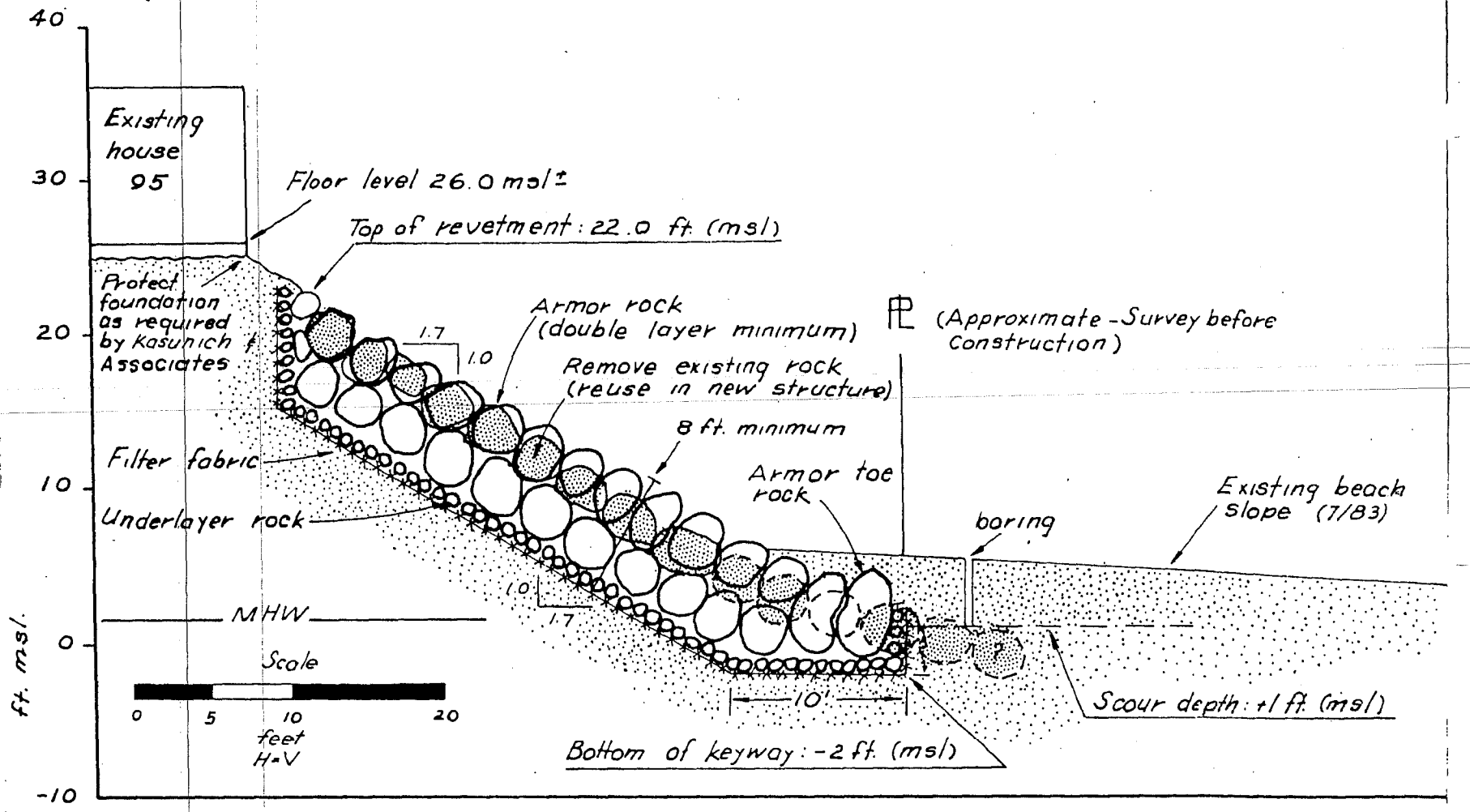

Exhibit L
Cross section of seawall

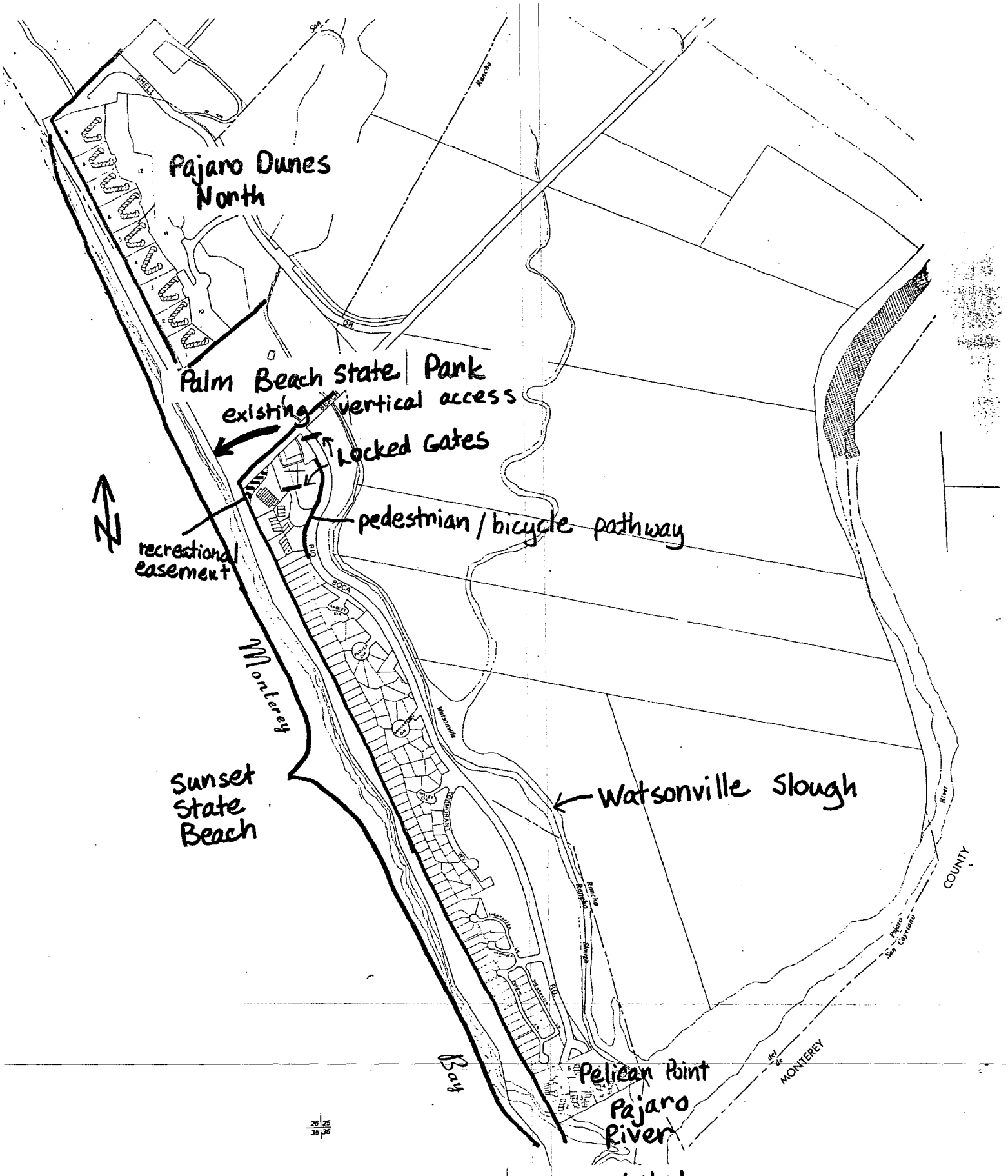

Exhibit M

Diagram of Existing Public Access

1" = 2000

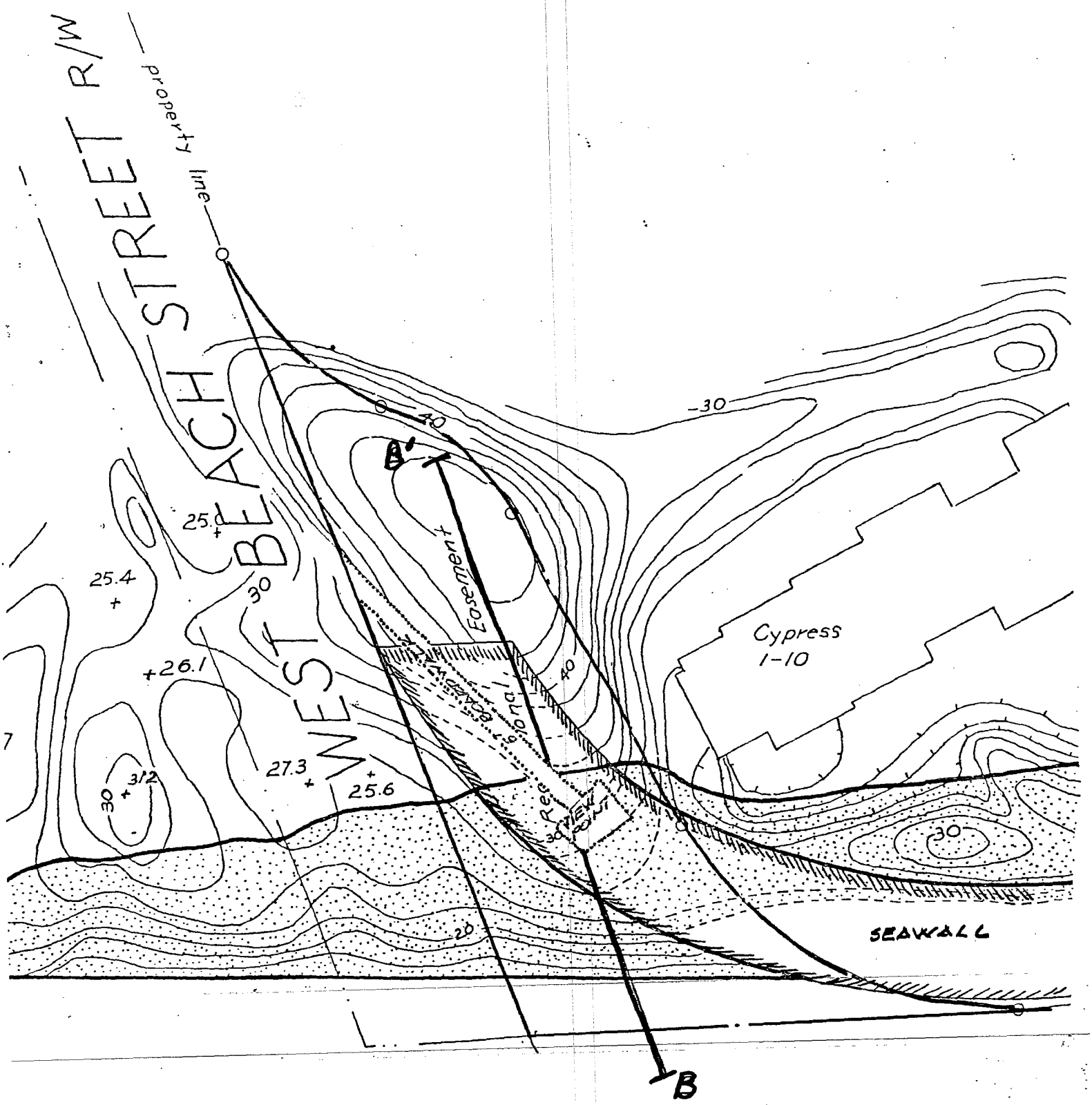

Exhibit N
Map of Recreational Easement and Viewpoint

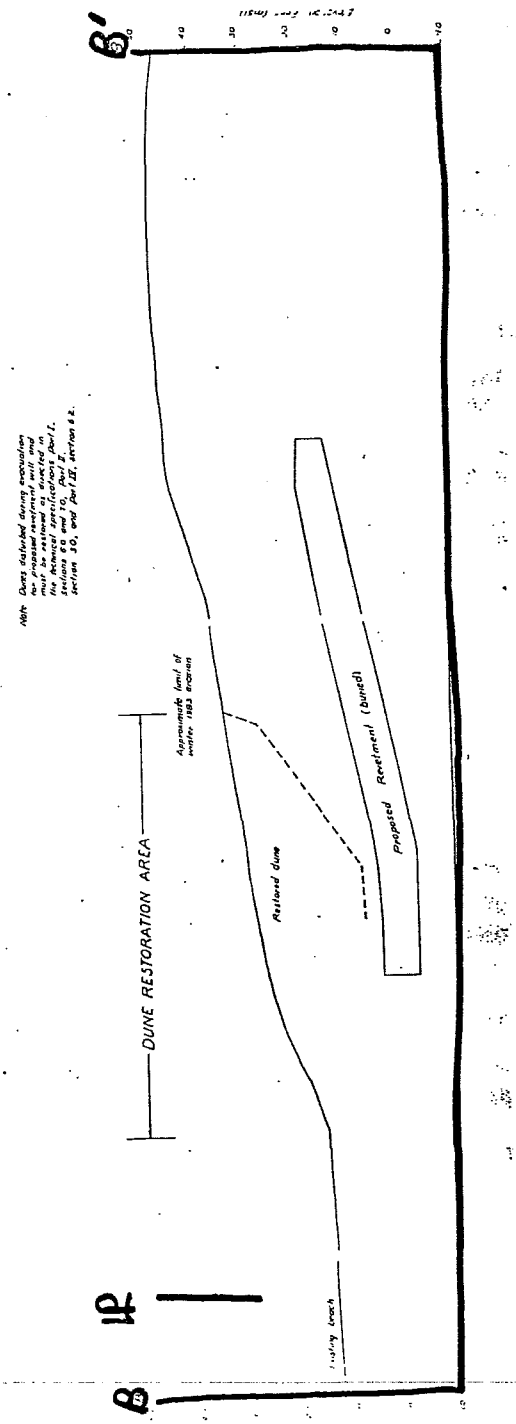

Exhibit O
Cross section of seawall within easement

EXHIBIT P

NEGATIVE DECLARATION AND NOTICE OF DETERMINATION

1. PAJARO DUNES SOUTH

Placement of engineered rip-rap for the approximate length of 5,300 feet along the beach for the protection of existing residences. Located at Pajaro Dunes South.
PARCEL: 52-281-02

(D. Beermann)

Telephone:
425-2853

Findings;
This project, if conditioned to comply with required mitigation measures or conditions shown below, will not have a significant effect on the environment. The expected environmental impacts of the project are documented in the Initial Study on this project attached to the original of this notice on file with the Planning Department, County of Santa Cruz 701 Ocean Street, Santa Cruz, California.

Required Mitigation Measures or Conditions:

1. Obtain all necessary permits and maintenance easements from the state prior to the commencement of any construction activities. No weekend operations are allowed.
2. Sand removal from the public beach is prohibited.
3. Applicant must submit to staff for review and approval a dune maintenance and reconstruction plan. The plan must be submitted prior to further hearing.
4. All requirements and recommendations of the geologic report and project engineer must be met.
5. Applicant must record Notices of Geologic Hazard. This notices must be reviewed and approved by County Counsel and the County Geologist prior to recording and must be recorded prior to permit issuance.
6. The rip-rap must not be located on State Beach property. An as-built plan indicating the project location must be submitted to staff prior to final inspection. The plan must be engineered.
7. Prior to issuance of the permit, the plans must be amended to indicate the rip-rap height 22 feet or the existing dune height, whichever is greater.

Date Approved By Environmental Coordinator 8/24/84. Appeal Period Ends 9/3/84

Environmental Coordinator
Tom Burns

~~If this project is approved, complete and file this notice with the Clerk of the Board:~~

NOTICE OF DETERMINATION

The Final Approval of This Project was Granted by Board of Supervisors
(Decision-Making Body)

on _____. No EIR was prepared under CEQA.

THE PROJECT WAS DETERMINED TO NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

Date completed notice filed with Clerk of the Board: _____

By: _____
(Decision-Making Body)

Title: _____

DEVELOPMENT PERMIT FINDINGS:

Required Findings:

(a) That the proposed location of the project and the conditions under which it would be operated or maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood or the general public, or be materially injurious to properties or improvements in the vicinity.

(a) The engineered placment of the rip-rap and annual maintenance inspection by the project engineer should protect the public from unstable rock rip-rap.

(b) That the proposed location of the project and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

(b) The proposed location of the seawall is consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

(c) That the proposed use is consistent with all elements of the County General Plan and with any Specific Plan which has been adopted for the area.

(c) The construction of the seawall is consistent with all elements of the County General Plan.

(d) That the proposed use will not overload utilities and will not generate more than the acceptable level of traffic on the streets in the vicinity.

(d) Additional use of utilities and long-term increase of traffic cannot be expected. Short-term increase of traffic due to rock delivery will be limited to the duration of construction.

(e) That the proposed project will complement and harmonize with the existing and proposed land uses in the vicinity and will be compatible with the physical design aspects, land use intensities, and dwelling unit densities of the neighborhood.

(e) The seawall will be covered with sand and replanted and should blend in with the natural terrain of the area.

Exhibit Q
Coastal Zone and Development Permit Findings

COASTAL ZONE PERMIT FINDINGS

Remarks:

(a) That the project is consistent with the Local Coastal Program Land Use Plan.

(a) The project as conditioned is consistent with the Local Coastal Program Land Use Plan.
Requirement for notification of geologic hazard is met through condition 1. and approval of the submitted technical data insures compliance with the technical standards.

(b) That the project is a use allowed in one of the basic zone districts, other than the Special Use (SU) District, listed as consistent with the LUP designation in Section 13.10.120.

(b) The project is a use allowed in the zone district.

(c) That the project complies with all existing development restrictions and easements.

(c) The project complies with all existing development restrictions and easements. Vertical access requirements via the closed gate cannot be required at this time because the use permit grants the applicant the right in perpetuity to prohibit public access through the closed gate.

(d) That the project complies with the standards and regulations of all of the applicable ordinances.

(d) The project, as conditioned, is consistent with the standards and regulations of all applicable ordinances.
Chapter 16.10.070(3) IV Condition 1.
Chapter 16.10.070(6) Condition 3, 4, 5, 6, & 7.

Exhibit Q

EXHIBIT R

PERMIT CONDITIONS

A. Prior to permit issuance the applicants, and each property owner individually where appropriate, shall:

1. Record notices of potential geologic hazards in a form reviewed and approved by County Counsel and the Planning staff geologist;

2. Obtain all necessary permits including construction and maintenance easements from State Parks; protected by the seawall;

3. Submit a long-term seawall and dune maintenance plan for review and approval of County Planning Staff; said plan shall provide for continuing maintenance of dune restoration area.

4. Power of Attorney for all 89 property owners to be filed with County Counsel in a form acceptable to the County. (Get by from CB)

Submit and record a document in a form approved by C.C. to

B. As a part of the construction operations the applicants, representative and their shall:

Import any sand needed for con of seawall.

5. ~~Not~~ No sand shall be removed sand from the public beach.

6. Conduct operations only on weekdays. Hours of operation shall be acceptable to compatible ~~with those of~~ the State. Parks & Rec

7. Meet all recommendations of the geologic report.

C. Prior to final inspection of the project the applicant shall:

8. Provide a survey of the seaward property line and an as-built plan prepared by the project engineer showing the relationship of the seawall to the property line;

9. Obtain building permits for all private access stairways.

10. Construct a 5 foot boardwalk from the Palm Beach access boardwalk to the view platform located in the recreational easement. The view platform shall be 10 feet by 10 feet minimum and shall have provisions for seating. Design and appropriate signing shall be approved by staff.

√ w/ CB

COUNTY OF SANTA CRUZ

INTER-OFFICE CORRESPONDENCE

DATE: November 13, 1984

TO: Planning Department, Environmental Planning
Attention: Susan Williamson

FROM: County Counsel, Jonathan Wittwer

SUBJECT: BOARD OF SUPERVISORS CONSIDERATION OF SEAWALL AT PAJARO DUNES SOUTH

You have requested that this Office provide a response (for inclusion in the Staff Report) to several items concerning the Pajaro Dunes Seawall application. Our response follows.

Item 1: Who is the Applicant?

The "SIGNATURE OF APPLICANT" portion of the Application for seawall and revetment construction was signed by "GERALD E. WEBER, Agent for Pajaro Dunes Homeowners Assocation, South" (copy attached). The Planning Commission considered that same application under public notices which included "Pajaro Dunes South Homeowners Association" as Applicant.

The County Code requires that an applicant submit evidence that he/she/it is the owner, purchaser, or lessee of the property in question or has the written permission of the owner to make application (Co.Code Sec. 18.10.210(a)2. Pajaro Dunes South Homeowners Association has sought to qualify as Applicant on the basis of written permission of the owners of the property in question (in the form of powers of attorney). Those powers of attorney are granted to "the manager of Pajaro Dunes Association" (copy attached) and authorize Association to submit all application forms. Thus, the Applicant is required to be "Pajaro Dunes Association".

At the first hearing date before the Planning Commission, this Office advised that the Commission was without jurisdiction to grant a permit because evidence was presented that fifteen or more powers of attorney had not been executed and forwarded to the applicant. The matter was therefore continued and at the continued hearing evidence was presented that 87 of the 89 powers of attorney had been received and the other two were "in the mail". On the basis of that evidence, the Planning Commission proceeded to hear the matter. The Planning Commission granted the necessary permits for the seawall and revetment subject to the condition that the powers of attorney be received from all property owners. To date this condition has not been satisfied.

Re: Board of Supervisors Consideration of Seawall at Pajaro Dunes South

A Request for Special Consideration by the Board of Supervisors (pursuant to Co.Code Sec. 18.10.350) has resulted in the matter being set for public hearing and de novo consideration by the Board of Supervisors on November 20, 1984. On November 5, 1984, the Planning Department received a letter from "Lawrence R. Trapp, Manager, Pajaro Dunes Association" stating that:

(1) "To date 87 of the 89 property owners concerned have signed and returned a power of attorney authorizing the Manager of the Pajaro Dunes Association to submit an application for the seawall on their behalf."

(2) "Pajaro Dunes Association is not the applicant for the seawall permit. I am the applicant acting on behalf of the property owners involved."

(3) "I recommend that the name of the applicant be changed to Lawrence R. Trapp (on behalf of 89 beach front homeowners) as the Pajaro Dunes Beachfront Protection Committee."

The effect of these statements is discussed below.

Given the evidence currently available the Board of Supervisors will apparently be without jurisdiction to grant a permit for the entire seawall as proposed because the Applicant does not have the written permission of all property owners. Unless the two remaining powers of attorney are filed with the Planning Department or the Board of Supervisors at or prior to the scheduled hearing, this Office will advise that there is insufficient evidence that the Applicant has the written permission of the owners.

Pajaro Dunes Association, by its manager, is and must be the Applicant. The Application does not mention either Lawrence A. Trapp or the Pajaro Dunes Beachfront Protection Committee.

If the Pajaro Dunes Association continues as Applicant, and obtains a permit, it or any successor, must be able to meet any and all conditions of such a permit.

Item 2: Is it legally possible that the seawall and revetment project could be carried out by an Assessment District?

Under the Improvement Act of 1911 (Sts.& Hwys.C. Sec. 5000 et seq.), whenever (in the opinion of the Board of Supervisors) the public interest or convenience may require, there may be constructed breakwaters, levees, bulkheads, groins, and walls of rock or other material to protect property from overflow by water,

to prevent beach erosion, or to promote accretion to beaches (Sts.& Hwys.C. Sec. 5101). Such work may be performed upon all streets, places, public ways, or property, or rights-of-way, or tidelands, or submerged lands owned by a municipal corporation, open or dedicated to public use (Sts.& Hwy.C. Sec. 5100). The Board of Supervisors is authorized to create an assessment district of property benefitted by such a seawall to be assessed the cost and expense thereof (Sts.& Hwys.C. Sec. 5180).

This Office has previously advised the Board of Supervisors of the general rule that assessment district proceedings may not be used for the improvement of private property (see attached County Counsel letter dated December 12, 1983, re Moore Ranch Road Assessment District, and citations therein). Such advice is further supported by the requirement underscored above that any assessment district improvement be situated upon publicly owned property (fee title or an easement) open or dedicated to public use.

Therefore, under the prevailing circumstances with regard to the seawall at Pajaro Dunes South, it is our conclusion that assessment district proceedings for the seawall improvement are not legally available.

Please advise if you have any questions with regard to the above.

DWIGHT L. HERR, COUNTY COUNSEL

By _____
JONATHAN WITTWER
Chief Deputy CountyCounsel

JW:meg

Attachments

APPLICATION
FOR
GRADING, SHORE PROTECTION,
SLIDE REPAIRS, BRIDGES AND
LAND CLEARING

OWNER PAJARO DUNES SOUTH HOMEOWNERS ASSOC.

ADDRESS 2661 BEACH ROAD
WATSONVILLE, CA 95076

TELEPHONE 728-3641

APPLICANT PAJARO DUNES [illegible] HOMEOWNERS

ADDRESS 2661 BEACH ROAD
WATSONVILLE, CA 95076

TELEPHONE 728-3641

DESCRIPTION OF PROPOSED PROJECT:

a. Project Location: PAJARO DUNES - ON MONTEREY BAY

b. APN: VARIOUS

c. Type of Work Proposed: SEAWALL AND REVETMENT RECONSTRUCTION

d. Other Applications or Permits: COASTAL ZONE PERMIT

SIGNATURE OF OWNER

SIGNATURE OF APPLICANT
Agent for Pajaro Dunes Homeowners Association, South

GENERAL INFORMATION

#702-251-05

LIMITED POWER OF ATTORNEY

House #1

I, as the/an owner of Lot _____, located in Pajaro Dunes Development in Santa Cruz County, California, hereby authorize the manager of Pajaro Dunes Association (hereinafter the Association) to make an application to the County of Santa Cruz and any other governmental agency or entity for the necessary approvals to construct a permanent seawall at Pajaro Dunes. This limited power of attorney authorizes the Association to submit all application forms and information any governmental agency may require for the approval of the seawall and further authorizes the Associaiton to act on my behalf relating to all proceeddings referring to the seawall application or hearings thereon.

This limited power of attorney does not authorize the Association to grant any form of public access, either vertical or horizontal, which may be required by any governmental entity, nor does it authorize the Association to incur any financial liability or obligations of any nature whatsoever on my behalf.

This power of attorney shall continue until revoked in writing by the undersigned with notice thereof given to the Associaton. The undersigned shall hold the Association and all of its employees and agents free and harmless from all liability while acting hereunder and shall indemnify the Association, its employees and agents for all loss or damage arising hereunder.

This power of attorney shall not be affected by my subsequent disability or incapacity.

T E Chandler Linda Claire Chandler

Signature

9/9/84

Date

Pajaro Dunes Association
2661 Beach Road Watsonville Ca. 95076
(408) 728-3641

November 5, 1984

County of Santa Cruz
Department of Planning
701 Ocean Street
Santa Cruz, CA. 95060-4069
(Attn: Chris Schenk)

Dear Chris:

Reference application No.83-1194-CZ*2 pertaining to the seawall vicinity Pajaro Dunes South filed on behalf of 89 owners.

To date 87 of the 89 property owners concerned have signed and returned a power of attorney authorizing the Manager of Pajaro Dunes Association (the undersigned) to submit an application for the seawall on their behalf. These Power of Attorneys have been forwarded to County Counsel.

Pajaro Dunes Association is not the applicant for the seawall permit. I am the applicant acting on behalf of the property owners involved pursuant to the authorities outlined in each power of attorney on file with County Counsel.

To avoid confusion I recommend that the name of the applicant be changed to Lawrence R. Trapp (on behalf of 89 beachfront homeowners) as the Pajaro Dunes Beachfront Protection Committee.

Attached hereto is a listing of all the property owners involved showing lot number, Assessor's parcel number, name, address and whether or not a power of attorney has been executed.

Please advise if something more is needed.

Sincerely,

Lawrence R. Trapp
Manager
Pajaro Dunes Association

LOT NUMBER	PARCEL NUMBER	NAME	ADDRESS	CITY	STATE	ZIP	POWER OF ATTY YES/NO
1	052-281-05	Mr. & Mrs. Terry Chandler	13916 Chester Ave.	Saratoga	CA.	95070	Y
2	052-281-06	Mr. & Mrs. Norman Bernie	632 Fairway Circle	Hillsborough	CA.	94010	Y
3	052-281-07	Mr. & Mrs. John Spreiter	1250 Sandalwood Lane	Los Altos	CA.	94022	Y
4	052-281-08	Mr. & Mrs. George Kelly	444 Washington Avenue	Palo Alto	CA.	94301	Y
5	052-281-09	Dr. & Mrs. Robert Kendall	1097 Enderby Way	Sunnyvale	CA.	94087	Y
6	052-281-10	Mr. George Richardson,	1322 Martin Avenue	Palo Alto	CA.	94301	Y
7	052-281-11	Mr. Paul Irwin	2720 Greenhill Lane	Lynchburg	VA.	24503	Y
8	052-281-12	Dr. & Mrs. Marvin Small	390 San Domingo	Los Altos	CA.	94022	Y
9	052-281-13	Mr. & Mrs. James Kemp	2661 Beach Road H-9	Watsonville	CA.	95076	Y
10	052-281-14	Mr. & Mrs. James Lawson	220 Durazno Way	Menlo Park	CA.	94025	Y
11	052-281-15	Mr. & Mrs. Stanley Lynn	2661 Beach Road H-11	Watsonville	CA.	95076	Y
12	052-281-16	Mr. Roland Ewell	4325 W. Shaw Ave	Fresno	CA.	93711	N
13	052-281-17	Mr. & Mrs. Anton Swanson	241 Durazno Way	Portola Valley	CA.	94025	Y
14	052-281-18	Mr. Stewart Morton	1060 Francisco Street	San Francisco	CA.	94109	Y
15	052-281-19	Peery/Arrillaga	2560 Mission College #101	Santa Clara	CA.	95050	Y
40	052-291-03	Mr. & Mrs. Albert Spaulding	541 East Crescent Drive	Palo Alto	CA.	94301	Y
41	052-291-04	Mrs. Barbara Barrett	2661 Beach Road H-41	Watsonville	CA.	95076	Y
42	052-291-05	Mrs. Esther Durante	1035 Alta Mesa Drive	Moraga	CA.	94556	Y
43	052-291-06	Mr. Craig Hunt	1 Market Plaza Suite #2210	San Francisco	CA.	94105	Y
44	052-291-07	Mr. & Mrs. Wilfred Cavier	240 Golden Oak Drive	Portola Valley	CA.	94025	Y
45	052-291-08	Mr. David Stone	217 Town & Country Village	Palo Alto	CA.	94305	Y
46	052-291-09	Mrs. George Redington	19831 Robin Way	Saratoga	CA.	95070	Y
47	052-291-10	Mr. & Mrs. Brett Stauffer	1300 Ethan Way #555	Sacramento	CA.	95825	Y
48	052-291-11	Mrs. Dianne Feinstein	2030 Lyons Street	San Francisco	CA.	94115	Y
54	052-301-10	Mr. & Mrs. L. E. Alford	9 Cragmont Court	San Mateo	CA.	94403	Y
55	052-301-11	Dr. William McCormack	408 Read Drive	Lafayette	CA.	94549	Y
56	052-301-12	Mrs. Patricia Hamrick	36 Slater Lane	Berkeley	CA.	94705	Y
57	052-301-13	Mr. & Mrs. Alford Pacheco	45-445 Delgado Drive	Indian Wells	CA.	92260	Y
58	052-301-14	Dr. & Mrs. Daniel Martin	9001 McGurrin Dr.	Oakland	CA.	94605	Y
59	052-301-15	Mr. & Mrs. Fred Rabe	P.O. Box 1822	Watsonville	CA.	95077	Y
60	052-301-16	Mr. & Mrs. John O'Malley	7 Bay Tree Lane	Los Altos	CA.	94022	Y
69	052-291-21	Ms. Anadel Law	27 Berenda Way	Portola Valley	CA.	94025	Y
70	052-291-22	Mrs. Virginia Lahey	3652 Happy Valley Road	Lafayette	CA.	94549	Y
71	052-291-24	Mr. & Mrs. John Warriner	2661 Beach Road H-79	Watsonville	CA.	95076	Y
72	052-291-25	Dr. & Mrs. Paul Rosen	17681 Foster Road	Los Gatos	CA.	95030	Y
73	052-291-26	Mr. & Mrs. Dean Burton	119 Via De Tesoros	Los Gatos	CA.	95030	Y
74	052-291-27	Mr. & Mrs. Robert Haase	164 Selby Lane	Atherton	CA.	94025	Y
75	052-291-29	Mr. & Mrs. George Liddle	595 Oakfield Lane	Menlo Park	CA.	94025	Y
76	052-291-30	Ms. Antha Crawford	501 Portola Road Box 8043	Portola Valley	CA.	94025	Y
77	052-291-31	Mr. & Mrs. Robert Manfre	2661 Beach Road H-77	Watsonville	CA.	95076	Y
78	052-291-32	Mr. & Mrs. Martin Locke	2661 Beach Road H-78	Watsonville	CA.	95076	Y
79	052-291-34	Mr. & Mrs. John Warriner	2661 Beach Road H-79	Watsonville	CA.	95076	Y
80	052-291-35	Mr. & Mrs. A. C. Markkula	P.O. Box 620170	Woodside	CA.	94062	Y
90	052-321-01	Mr. & Mrs. Robert Johnson	230 Erica Way	Menlo Park	CA.	94025	Y
91	052-321-02	Mr. & Mrs. Raymond Bagley	39 Greenwood Bay Drive	Tiburon	CA.	94920	Y
92	052-321-03	Mr. & Mrs. George Santana	19376 Portos Court	Saratoga	CA.	95070	Y
93	052-321-04	Mr. & Mrs. John Leland	12694 La Cresta Drive	Los Altos Hills	CA.	94022	Y
94	052-321-05	Mr. Peter Frazier	1260 Medfield Road	Lafayette	CA.	94549	Y
95	052-321-06	Mr. & Mrs. Richard Olson	566 Washington Avenue	Palo Alto	CA.	94301	Y
96	052-321-07	Dutra Construction	P.O. Box 338	Rio Vista	CA.	94571	Y
97	052-321-08	Mr. & Mrs. Harold Eden	16211 Parkside Lane #147	Hunting Beach	CA.	92647	Y
98	052-321-09	Mr. & Mrs. John Traynor	1190 W. Vanderbilt Court	Sunnyvale	CA.	94087	Y

99	052-321-10	Mr. Ted Reed	2661 Beach Road H-24	Watsonville	CA.	95076	Y
100	052-321-11	Mr. & Mrs. Richard Hammond	2661 Beach Road H-100	Watsonville	CA.	95076	Y
101	052-321-12	Mr. Edward Donaghy	2363 South Cedar	Fresno	CA.	93725	N
103	052-321-14	Mr. & Mrs. Richard Bell	156 University Avenue	Palo Alto	CA.	94301	Y
104	052-321-15	Mr. & Mrs. David Niederauer	16260 Los Berenos Robles	Los Gatos	CA.	95030	Y
105	052-321-16	Mr. & Mrs. Verne Freeman	3582 Arbutus Street	Palo Alto	CA.	94303	Y
106	052-321-17	Mr. & Mrs. William Schroeder	18295 Lexington Drive	Monte Sereno	CA.	95030	Y
107	052-321-18	Mr. & Mrs. Curtis Reed	1342 Santa Luisa Drive	Solano Beach	CA.	92075	Y
144	052-301-18	Mr. Ryland Kelley	305 Lytton Avenue	Palo Alto	CA.	94301	Y
145	052-301-19	Hare Brewer & Kelley	305 Lytton Avenue	Palo Alto	CA.	94301	Y
146	052-301-20	Mr. John Arrillaga	1950 Cowper Street	Palo Alto	CA.	94300	Y
141	052-291-38	Mr. Leo Pelliciotti	14101 Marlyn	Saratoga	CA.	95070	Y
140	052-291-37	Mr. Alfred Corduan	10531 Magdalena Road	Los Altos	CA.	94022	Y
68	052-291-20	Mr. Martin Katz	5 Whitney Court	Menlo Park	CA.	94025	Y
C-1	052-301-49	Hare, Brewer & Kelley	305 Lytton Ave.	Palo Alto	CA.	94301	Y
C-2	052-301-48	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-3	052-301-47	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-4	052-301-46	Mrs. Sylvia Galli	7183 Blue Hill Drive	San Jose	CA.	95129	Y
C-5	052-301-45	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-6	052-301-44	Mr. Steven Kucklinca	1633 Swift Ct.	Sunnyvale	CA.	94087	Y
C-7	052-301-43	Mr. Robert Roeser	620 Chesley Ave.	Mt. View	CA.	94040	Y
C-8	052-301-42	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-9	052-301-41	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-10	052-301-40	Mr. Michael Bruno	545 Pine Lane	Los Altos	CA.	94022	Y
C-11	052-301-38	Mr. Fedelle Bauccio	20555 Ashley Way	Saratoga	CA.	95070	Y
C-12	052-301-37	Mr. Douglas Broyles	6057 Vera Cruz Drive	San Jose	CA.	95125	Y
C-13	052-301-36	Mr. Ivan Owen	26185 Fairview Ave.	Hayward	CA.	94541	Y
C-14	052-301-31	Mr. Edwin VanBronkhorst	714 Los Trancos Road	Portola Valley	CA.	94025	Y
C-15	052-301-34	Mr. Ronald Fujimoto	3601 Echo Springs Road	Lafayette	CA.	94549	Y
C-16	052-301-33	Mr. Robert Krandel	1816 Monte Carlo Way	San Jose	CA.	95125	Y
C-17	052-301-30	Mr. Kenneth Oshman	215 Atherton Ave.	Atherton	CA.	94025	Y
C-18	052-301-29	Mr. Thomas Wilson	19646 Via Grande Drive	Saratoga	CA.	95070	Y
C-19	052-301-28	Mr. John Stern	1849 Webster Street	Palo Alto	CA.	94301	Y
C-20	052-301-26	Mr. Kent Hobert	5258 Alhambra Valley Road	Martinez	CA.	94553	Y
C-21	052-301-25	Mr. George Korpontinos	3020 Country Club Ct.	Palo Alto	CA.	94304	Y
C-22	052-301-24	Mr. Roderick Young	855 Hamilton Ave.	Palo Alto	CA.	94301	Y
C-23	052-301-23	Mr. Richard Kelley	305 Lytton Ave.	Palo Alto	CA.	94301	Y

ICE OF THE
UNTY COUNSEL

COUNTY OF SANTA CRUZ

RUMENTAL CENTER

701 OCEAN STREET SANTA CRUZ, CALIFORNIA 95060-4068

429-2011

R A. CARLSON
UNTY COUNSEL

JAMES M. RITCHEY
JONATHAN WITTWER
DEBORAH HOPKINS
MABLE M. COSTA
ASSISTANTS

HEL L. HERR
IEF DEPUTY COUNTY COUNSEL

December 12, 1983

Board of Supervisors
County of Santa Cruz
701 Ocean Street
Santa Cruz, CA 95060

Re: Moore Ranch Road Assessment District

Honorable Board:

This is to submit to you the above proposed establishment of an assessment district for the purposes of funding the construction of a new bridge and related improvements on a privately owned right-of-way. Attached is the request for the initiation of the assessment proceedings and the proposed resolutions for that purpose.

This matter was submitted to this office by Public Works for review and is presented for your special consideration in that it is a request for the use of assessment district proceedings to make improvements on privately owned property. Under present policy and practice, County assessment district proceedings have been limited to publicly owned improvements. At one time, the County did authorize the use of assessment district proceedings for the construction of subdivision improvements which were constructed by a subdivider and dedicated to the County upon completion; however, that use of assessment districts was eliminated by Board policy approximately 15 years ago.

The general rule is that special assessment district proceedings for street improvements may not be used for the improvement of private property. 37 Cal. Jur. 3d 103; 39 Ops. Atty. Gen. 159(1962; and St. John v. King (1933) 130 C.A. 356, 360. This office has been unable to find any legal precedent for the use of special assessment district proceedings to improve privately owned roads. (There is limited authority for the County to fund the improvement of privately owned roads as contained in Streets & Highways Code §969.5, a copy of which is enclosed, in consideration of the grant or lease of a right-of-way to the County for its own use or for the use of other public agencies for public purposes specified in the resolution.)

As discussed in the attached letter of Attorney Robert M. Haight of November 16, 1983, who has prepared the proposed resolutions to initiate the assessment district proceedings, there is to some extent a public interest in making Moore Ranch Road passable to the public at large and to emergency vehicles. However, it is questionable whether that public interest is sufficient to justify the use of the assessment district proceedings and the sale of tax exempt bonds to finance these improvements on private property. It would seem that the same rationale as presented for the Moore Ranch Road could also be used for the repair and maintenance of numerous private roads in the County. Such a use of assessment district proceedings would not only be without legal precedent but would appear to be contrary to the intent of the law to restrict the use of tax exempt financing through the sale of assessment district bonds to publicly owned improvements.

Based on the foregoing, it is recommended that the Board deny the use of assessment district proceedings for the improvement of Moore Ranch Road.

Very truly yours,

CLAIR A. CARLSON, COUNTY COUNSEL

BY Dwight L. Herr
DWIGHT L. HERR
Chief Deputy County Counsel

DLH:ss
cc: Public Works
Robert M. Haight
CAO
Auditor

Appendix B. Example Inspection Report

CE&G
Pragmatic Expertise™

CAL ENGINEERING & GEOLOGY
785 Ygnacio Valley Rd. | Walnut Creek | CA 94596
6455 Almaden Expwy., Suite 100 | San José | CA 95120
23785 Cabot Blvd., Suite 321 | Hayward | CA 94545
www.caleng.com

MEMORANDUM

Red strike through- Santa Cruz County requested omitted text.

To: Sarah Mansergh, Clerk of the Board
Pajaro Dunes GHAD
2661 West Beach Road
Watsonville, California 95076

From: Dan Peluso, P.E., G.E., & Kevin Loeb, P.G., C.E.G.
Cal Engineering & Geology, Inc.
6455 Almaden Expressway, Suite 100
San Jose, California 95120

Date: August 29, 2022

RE: Annual Inspection of Rock Revetment ~~and River Wall~~
Pajaro Dunes Resort
Santa Cruz County, California
CE&G Document 190780.006

1.0 INTRODUCTION

This report presents the results of observations from our annual inspection of the rock revetment (seawall) ~~and river wall~~ at the subject property. The inspection services presented in this report were undertaken at the request of the Pajaro Dunes Geologic Hazards Abatement District (PDGHAD). This report presents a summary of our Second inspection report of the rock revetment ~~and river wall.~~ Our first inspection results are presented in our previous inspection memo, dated September 6, 2019. In addition, three previous inspections were performed by Arup. The results of Arup's previous annual inspections are presented in their reports, dated January 9, 2012; April 29, 2013; and November 7, 2014.

2.0 DEVELOPMENT DESCRIPTION AND BACKGROUND

The Pajaro Dunes community includes private single-family residences, including detached single-family residences, as well as groups of townhouses and condominiums. These buildings were constructed along a narrow strip of land bounded by the Pacific Ocean on the southwest, the Watsonville Slough on the northeast, Palm Beach State Park on the northwest, and the Pajaro River on the southeast (Figure 1). We understand the

development of the community began in the 1960s and continued into the 1970s. Following several episodes of severe coastal erosion in the 1970s and 1980s, approximately 6,000 feet of rock revetment was constructed in three segments between 1986 and 1988 along the ocean-side of the development. The rock revetment is relatively straight for most of its length, except on the south end, where it curves around the Pelican townhouses and terminates after turning inland for a distance of about 200 feet. In addition, there is a steel sheet pile wall that was constructed in 2003 that begins near the terminus of the rock revetment and trends for about 500 feet around the Pelican townhouses, curves around the townhouses, and terminates about 200 feet up the Watsonville Slough. The sheet piles are approximately 58 feet deep, with about the upper 5 feet exposed above the ground surface. ~~This steel sheet pile wall is referred to as the "river wall".~~

The rock revetment is comprised of approximately 110,000 tons of riprap. The top of the revetment varies in elevation from 19.5 to 22.0 feet above mean sea level and the base of the revetment is at an elevation of -2.0 feet below mean sea level (NGVD 1929 Datum). The revetment ranges in height from about 10 to 15 feet above the current beach level at the toe of the revetment. The rock revetment has been repeatedly damaged by coastal erosion, occurring during relatively severe winter storms since its original construction at least two times: in 2002/2003 and 2004. Following each damaging storm event, emergency repairs were implemented in the form of placing riprap in selected areas along the revetment. The repaired area in 2003 measured a total length of approximately 420 feet of revetment using approximately 675 tons of riprap. The repaired area in 2004 measured a total length of approximately 55 feet of revetment using approximately 185 tons of riprap. Relative to the overall length of the revetment, both of these storm events appear to us to have caused limited damage, affecting a total of approximately 8 percent of the overall revetment length and less than 1 percent of the overall volume of riprap comprising the revetment. ~~We are not aware of any storm damage to the river wall.~~

The Pajaro Dunes development has, in the past, utilized the engineering services of Haro Kasunich & Associates (HKA) and Arup North America, Ltd. (Arup) for periodic inspections as well as engineering design of repair alternatives. Key staff at HKA had worked on the original design and construction of the revetment before the rock revetment was constructed in the late 1980s. More recently, Arup prepared repair and maintenance recommendations and an initial repair design for a segment of the rock revetment. This repair design has undergone initial reviews by stakeholder agencies. More recent reviews by the California Coastal Commission have indicated that a permit cannot be issued for the repair design originally developed by Arup and that any repairs or maintenance to the rock

revetment must not extend outside of the geometry of the rock revetment documented under the original development permit.

3.0 SUMMARY OF OBSERVATIONS

3.1 GENERAL

A California Coastal Commission letter dated May 9, 2007, notes their request for a photographic record of the revetment, which should at a minimum include photographs of the entire length of the revetment. We consider this request as guidance for the scope of our annual inspections.

The purpose of the annual inspection is to observe and document the condition of the existing rock revetment (seawall) ~~and river wall~~ adjacent to the Pajaro Dunes Resort property. This provides a basis for evaluating the impact of future coastal erosion. The current report contains the most recent inspection results for the rock revetment and ~~the river wall.~~

We performed our inspection on July 14, 2022. Our site observations included taking photographs of the rock revetment ~~and river wall~~ at the Pajaro Dunes development and documenting observable changes from our last monitoring event. Our inspection generally included observing and photographing the revetment ~~and river wall~~ from the beach-side of the residences, as well as photographing other features of the revetment ~~and river wall~~. A site plan showing the approximate location of the photos (referenced by photograph number) is presented in Figures 2A and 2B. Selected photos are appended to this memorandum. Photographs were taken at similar locations and scales as our previous inspection, dated September 6, 2019, to observe changes more easily. Photo numbers in each inspection report also remain the same.

3.2 SITE OBSERVATIONS

Evidence of erosion/sand loss from prior storm events is no longer observable in the vicinity of previous emergency repairs to the rock revetment. These emergency repairs consisted of the placement of riprap at the exposed toe of the seawall to help stabilize the seawall during severe coastal erosion events. As previously discussed by Arup (2014), the revetment wall near various lots including lots 15, 54, 55, 56, 59, 98, and 99 was either more prone to erosion or was already showing signs of erosion. During our site reconnaissance, lots 15, 54, 55, 56, 59, 98, and 99 as well as most others showed an increase in sand cover from our previous inspection in 2019. The increase in the sand has covered the lower and mid portions of most of the rock revetment, and in some areas (lots

4, 70, 71, 72, 99) has developed small sand dunes on the beach in front of the lots, also resulting in sandy swales separating the dunes from the base of the rock revetment. Minimal to no changes were observed along the rock revetment for lots 44, 73, 74, 75, 77, 90, 96, 97, and 106.

~~We did not observe damage to the river wall adjacent to the Pelican Point townhouses. In each of the site visits, both recent and past years, the condition of the river wall and adjacent beach area has remained relatively constant, as shown in the photos appended. However, as shown in the photos, we understand that this accumulation of sand at the mouth of the Pajaro River has created a flooding hazard in some years by impeding high winter river flows from reaching the Pacific Ocean.~~

3.3 MONITORING

We recommend the condition of the revetment be monitored on an annual basis and/or after major storm events, especially after significant changes are noted by residents.

We recognize some houses are in a more vulnerable position due to their proximity to the top of the revetment. Thus, if the revetment is severely damaged by coastal erosion during a storm event or other natural hazards, such as a tsunami or earthquake, the homes that are closest to or directly over the revetment will likely have a higher probability of being damaged.

3.4 CONCLUSIONS AND DISCUSSION

During the inspection, we did not identify areas along the rock revetment ~~and river wall~~ requiring immediate maintenance or corrective action. However, control of runoff discharged from downspouts for residences adjacent to the rock revetment should be considered to minimize seepage below the rock revetment that may cause migration of the finer soils below the revetment. This is considered a relatively small expense.

As noted in previous inspection reports, the revetment adjacent to Lots 97 thru 104 and Lots 15, 54, and 55, inclusive, should receive maintenance at the discretion of PDGHAD in the form of re-stacking the rock revetment to its original slope configuration where it has become over-steepened. This work is not urgent and can be done in the normal course of business. The reconstruction of the existing rock revetment in this area will require, as a minimum, approval from the California Coastal Commission, Santa Cruz County, and access permission from the State of California Parks Department. In addition, design plans and specifications have been prepared, which may require updates. In terms of previous

expenditures that we are aware of by PDGHAD for seawall maintenance, this is considered a small to moderate expense.

4.0 LIMITATIONS

CE&G has performed its services in a manner consistent with the level of care and skill ordinarily exercised by a member of the same profession currently practicing in the same location under similar circumstances. No warranty or representation, either expressed or implied, is included or intended hereunder.

This report was prepared by CE&G at the request of and for the benefit of Pajaro Dunes GHAD ("PDGHAD") in CE&G's contractual capacity as geotechnical engineer. The limited purpose of the report is to present CE&G's observations of the condition of the existing rock revetment and steel sheet pile river wall at the subject site. This report is limited to this purpose and does not address the structural stability of the buildings; the serviceability of the buildings; or the current or intended functions of the buildings. CE&G did not conduct geotechnical or structural reviews of the buildings. This report shall not expand CE&G's liability to parties outside of its contractual obligations.

5.0 CLOSURE

We trust this report provides you with the information necessary to proceed. If you have any questions, please contact us

Sincerely,

CAL ENGINEERING & GEOLOGY, INC.

Dan Peluso, C.E. 49562, G.E. 2367
Senior Principal Engineer

Kevin Loeb, P.G. 9665, C.E.G. 2763
Senior Geologist

BASEMAP REFERENCE

1. ORTHOIMAGERY FROM SANTA CRUZ COUNTY, 2020.
2. STREET CENTERLINES FROM CALTRANS CALIFORNIA ROAD SYSTEM, DOWNLOADED ON 15 MAY 2016.

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MILES

CE&G
CAL ENGINEERING & GEOLOGY

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San Jose, CA 95120
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PAJARO DUNES SEAWALL
ANNUAL INSPECTION OF ROCK REVETMENT AND RIVER WALL
SANTA CRUZ COUNTY, CALIFORNIA

SITE LOCATION MAP

190780	AUGUST 2022	FIGURE 1

\\granite\CEG Master Files\2019\190780-PajaroDunesGHAD-SeawallMonitoring\GIS\ArcGIS\190780.007-Fig1-SiteLocation.mxd; 7/28/2022; kdrozynska

BASEMAP REFERENCE

1. PHOTOGRAPHS TAKEN ON 07/14/2022.
2. PARCEL DATA FROM COUNTY OF SANTA CRUZ GEOGRAPHIC INFORMATION SERVICES, ACCESSED ONLINE ON 08/03/2018.
3. ORTHOIMAGERY FROM SANTA CRUZ COUNTY (2020).

LEGEND

86 PHOTO NUMBER AND LOCATION

0 100 200 400
FEET

CE&G
CAL ENGINEERING & GEOLOGY
6455 Almaden Expwy.
Suite 100
San Jose, CA 95120
Phone: (408) 440-4542

PAJARO DUNES SEAWALL
ANNUAL INSPECTION OF ROCK REVETMENT AND RIVER WALL
SANTA CRUZ COUNTY, CALIFORNIA

PHOTO LOCATION MAP (1 OF 2)

190780	AUGUST 2022	FIGURE 2A

MATCHLINE - SEE FIGURE 2A

Rio Bioca Rd
Sandpiper Ln
Puffin Ln
Pelican Pl
Shearwater Ln
Willet Cir
Cormorant Way

BASEMAP REFERENCE

1. PHOTOGRAPHS TAKEN ON 07/14/2022.
2. PARCEL DATA FROM COUNTY OF SANTA CRUZ GEOGRAPHIC INFORMATION SERVICES, ACCESSED ONLINE ON 08/03/2018.
3. ORTHOIMAGERY FROM SANTA CRUZ COUNTY (2020).

LEGEND

86 PHOTO NUMBER AND LOCATION

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ANNUAL INSPECTION OF ROCK REVETMENT AND RIVER WALL
SANTA CRUZ COUNTY, CALIFORNIA

PHOTO LOCATION MAP (2 OF 2)

190780	AUGUST 2022	FIGURE 2B

Attachment A. Photo Documentation

Photo 1D: Sand dunes northwest of 1 Cypress Lane.

Photo 2D: Sand dunes northwest of 1 Cypress Lane.

Photo 3D: Sand dunes northwest of 1 Cypress Lane.

Photo 4D: Sand dunes northwest of 1 Cypress Lane.

Photo 5D: Sand dunes northwest of 1 Cypress Lane.

Photo 6D: Sand dunes northwest of 1 Cypress Lane.

Photo 1: Units 1 - 10 Cypress Lane

Photo 2: Units 8 - 14 Cypress Lane

Photo 3: Units 14 - 17 Cypress Lane

Photo 4: Units 17 - 20 Cypress Lane

Photo 5: Units 20 - 23 Cypress Lane

Photo 6: Lot 24/146

Photo 7: Lot 145

Photo 8: Lot 144

Photo 9: Lot 60

Photo 10: Lot 59

Photo 11: Lot 58

Photo 12: Lot 57

Photo 13: Lot 56

Photo 14: Lot 55

Photo 15: Lot 54

Photo 16: Lot 15

Photo 17: Lot 14

Photo 18: Lot 13

Photo 19: Lot 12

Photo 20: Lot 11

Photo 21: Lot 10

Photo 22: Lot 9

Photo 23: Lot 8

Photo 24: Lot 7

Photo 25: Lot 6

Photo 26: Lot 5

Photo 27: Lot 4

Photo 28: Lot 3

Photo 29: Lot 2

Photo 30: Lot 1

Photo 31: Lot 107

Photo 32: Lot 106

Photo 33: Lot 105

Photo 34: Lot 104

Photo 35: Lot 103

Photo 36: Lot 102

Photo 37: Lot 101

Photo 38: Lot 100

Photo 39: Lot 99

Photo 40: Lot 98

Photo 41: Lot 97

Photo 42: Lot 96

Photo 43: Lot 95

Photo 44: Lot 94

Photo 45: Lot 93

Photo 46: Lot 92

Photo 47: Lot 91

Photo 48: Lot 90

Photo 49: Lot 48

Photo 50: Lot 47

Photo 51: Lot 46

Photo 52: Lot 45

Photo 53: Lot 44

Photo 54: Lot 43

Photo 55: Lot 42

Photo 56: Lot 41

Photo 57: Lot 40

Photo 58: Lot 80

Photo 59: Lot 79

Photo 60: Lot 78

Photo 61: Lot 77

Photo 62: Lot 76

Photo 63: Lot 75

Photo 64: Lot 74

Photo 65: Lot 73

Photo 66: Lot 72

Photo 67: Lot 71

Photo 68: Lot 70

Photo 69: Lot 69

Photo 70: Lot 68

Photo 71: Lot 140

Photo 72: Lot 141

Photo 73: Pelican Drive - Complex A

Photo 74: Pelican Drive - Complex A

Photo 75: Pelican Drive - Complex A

Photo 76: Pelican Drive - Complex B

Photo 76.5: Pelican Drive - Complex B

Photo 77: Pelican Drive - Complex B

Photo 77.5: Pelican Drive - Complex B & C

Photo 78: Pelican Drive - Complex B & C

Photo 79: Pelican Drive - Complex C & Sheetpile Wall

Photo 80: Sheetpile wall south of Pelican Drive - Complex C

Photo 80.5: Sheetpile wall south of Pelican Drive - Complex C

Photo 81: Sheetpile wall south of Pelican Drive - Complex C & D

Photo 82: Sheetpile wall south of Pelican Drive - Complex D

Photo 83 : Sheetpile wall south of Pelican Drive - Complex E

Photo 83.5: Sheetpile wall & dunes south of Pelican Drive - Complex D & E

Photo 84: Sheetpile wall southeast of Pelican Drive - Complex E

Photo 85: Sheetpile wall east of Pelican Drive - Complex E

Photo 86 Sheetpile wall northeast of Pelican Drive - Complex E

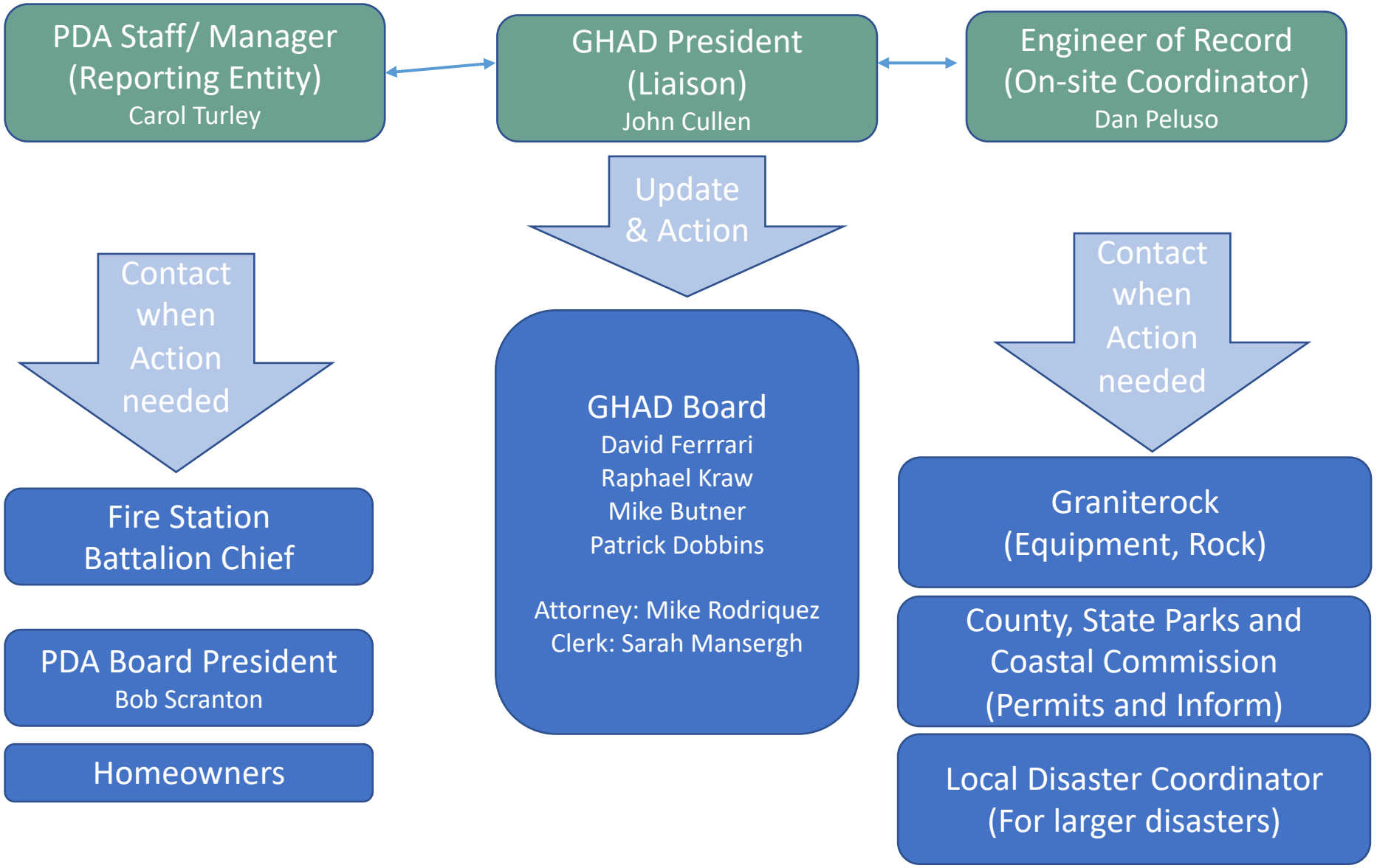
Appendix C. Emergency Action Plan

PDGHAD

Pajaro Dunes Geologic Hazard Abatement District

Emergency Action Plan

Contact Tree



Responsibilities

PDA Staff/ Manager (Reporting Entity)	1) Identifies event 2) Locate and document (pics, video) 3) Contact GHAD President (or other active member) 4) Contact Board President and Fire Station 5) Provide access for Engineer and work teams 6) Contact Homeowners after decisions
GHAD President (Liaison)	1) Assesses and chooses action 2) Consults with the EofR and determines actions needed. 3) Calls Emergency GHAD Board meeting or Updates GHAD Board 4) Communicates with PDA Staff/Manager and or Board President during incident 5) Releases Emergency Funds
Engineer of Record (On-site Coordinator)	1) Coordinates with GHAD President 2) Determines urgency and severity of the incident 3) Acts as on-site coordinator 4) Determines contractors, supplies, equip needed and coordinates delivery etc. 5) Assess if permits needed and coordinates applications 6) Informs PDA Gatehouse of List of contractors coming on-site, and PDA staff on any other issues.

Appendix D. Biotic Resources Report, 2015

Pajaro Dunes Seawall
Revised Revetment Design Repair
Pajaro Dunes, Santa Cruz County

Biotic Report

Biotic Resources Group

Biotic Assessments ◆ Resource Management ◆ Permitting

Biotic Resources Group

Biotic Assessments ◆ Resource Management ◆ Permitting

Pajaro Dunes Seawall
Revised Revetment Design Repair
Pajaro Dunes, Santa Cruz County

Biotic Report

Prepared for

Arup North America, Ltd.

560 Mission Street, Suite 700

San Francisco CA 94105

Prepared by:

Biotic Resources Group

Kathleen Lyons, Plant Ecologist

With

Dana Bland & Associates

Dana Bland, Wildlife Biologist

October 14, 2015

2551 South Rodeo Gulch Road #12 ◆ Soquel, Californica 95073 ◆ (831) 476-4803 ◆ brg@cruzio.com

INTRODUCTION

This project is located at Pajaro Dunes at the terminus of Beach Road in an unincorporated portion of southern Santa Cruz County (Figure 1). The proposed revetment repair work area is located within Lots 1, 3, 6, 8, 9, 94 – 104 and 107 along the ocean side of the Pajaro Dunes residential development. The revetment repair area extends approximately 1,500 linear feet along the ocean side of these properties.

The proposed project is the repair of an existing rock riprap revetment. For the repair, the toe of the existing revetment will be deepened by 4 feet and additional rock will be added to the face of the revetment to create a 1.5H: 1.0V slope. Approximately 1,500 linear feet of seawall, encompassing approximately 111,400 square feet, will be affected. New rock will be used (in addition to the current rock revetment) to repair the revetment. The footprint of the revetment will not change. Work activities will include excavation of sand to expose the existing revetment and the addition of new rock to the deepened toe and to the face. The project will temporarily impact the beach area up to 30 feet seaward of the toe of the existing revetment. Phase 1 of the project will be the seawall repair on Lots 97 through 104; construction is expected to occur in 2016 and last approximately six weeks. Construction will need to be timed to occur during the lowest tides to facilitate site access. Phase 2 of the project will be repair work on the remaining eight lots. If repair work on all lots is conducted together, Phase 2 construction is expected to last approximately six weeks, with construction timed to occur during the lowest tides to facilitate site access.

Four potential construction access ways have been identified. These are: 1) access to beach from West Beach Road through State Park lands, using an existing gravel road, 2) access to beach from West Beach Road along the undeveloped West Beach Road right-of-way, 3) access to beach from Willet Circle through Pajaro Dunes common area and Lot 101, and 4) access to beach from Puffin Lane through Lot 141 and Pelican Point common area. To accommodate construction equipment and materials (i.e., large rock) a 16-20 foot wide access road is expected. In areas that require grading and sloping from the bluff top to the beach, such as in the Willet Circle and Puffin Lane access areas, a 40-60-foot wide disturbance area is expected.

The Biotic Resources Group and Dana Bland & Associates assessed the biotic resources of the proposed work area in fall 2015 on behalf of Arup North America, Ltd (Arup). This work was supplemented by site surveys conducted in winter 2013 for a smaller repair design project. The proposed revetment repair work area and the four proposed construction access areas were the focus of the biological evaluation. Specific tasks conducted for this study include: characterize and map the major plant communities within the work area; identify sensitive biotic resources, including plant and wildlife species of concern, within the work area; and evaluate the potential effects of the proposed project on sensitive biotic resources and recommend measures to avoid or reduce such impacts.

INTENDED USE OF THIS REPORT

The findings presented in this biological report are intended for the sole use of the Arup and Pajaro Dunes Geologic Hazard Abatement District, their representatives, and the County of Santa Cruz in evaluating the proposed project. The findings presented by the Biotic Resources Group in this report are for information purposes only; they are not intended to represent the interpretation of any State, Federal or County laws or ordinances pertaining to permitting actions within sensitive habitat or endangered species. The interpretation of such laws and/or ordinances is the responsibility of the applicable governing body.

EXISTING BIOTIC RESOURCES

METHODOLOGY

The biotic resources of the proposed revetment project area were assessed through literature review and field observations. The project area was surveyed by Kathleen Lyons (plant ecologist) and Dana Bland (wildlife biologist) in October 2015. Previous data gathered in 2013 and 2008 for different seawall repair projects were also reviewed. The revetment repair work area and the potential construction access areas were walked to ascertain the dominant community features and species occurrences.

Vegetation mapping of the project area was conducted from a review of aerial photos and the field survey. The major plant communities within the project area, based on the classification system developed by CNDDB's *California Terrestrial Natural Communities (*CDFG 2010) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and as amended to reflect site conditions, were identified during the field survey. Modifications to the classification system's nomenclature were made, as necessary, to accurately describe the sites resources. The plant communities within the proposed work area, surrounding areas, and the potential construction access areas were mapped onto aerial photo base map (source: Santa Cruz County GIS) (Figures 2 and 3) and a Google image (Figure 4). Plant nomenclature follows The *Jepson Manual* (2012).

To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2015), and California Department of Fish & Wildlife (CDFW) RareFind database (CDFW, 2015) for the Watsonville West U.S.G.S. quadrangle and surrounding quadrangles.

This report summarizes the findings of the biotic assessment for the proposed revetment repair project area. The potential impacts of the proposed project on sensitive resources are discussed below. Measures to reduce significant impacts to a level of less-than-significant are recommended, as applicable.

Figure 1. Project Location

Figure 2. Existing Habitats, North

Figure 3. Existing Habitats, South

EXISTING BIOTIC RESOURCES

The Pajaro Dunes project area lies within the outer Central Coast geographic region (Sawyer and Keeler-Wolf, 1995). The greater project area supports row crop agriculture, public park facilities, and residential development, including single-family homes and condominiums; the Pajaro Dunes development is situated between Monterey Bay (Pacific Ocean) and Watsonville Slough. Sunset State Beach (Palm Beach) is located immediately north of the Pajaro Dunes development; the State Park property begins across from the residential entrance on Beach Road. Other state lands are also present; these lands are located along the beach immediately west of the Pajaro Dunes development as well as beach lands to the north and south. Due to the close proximity of the ocean, the project area supports a sand-dune dominated ecosystem, comprised of beach and foredunes. On nearby state lands, the foredunes are generally vegetated with native dune scrub vegetation; although a large grove of non-native eucalyptus trees grow in the Beach Road area. Within the Pajaro Dunes facility, the open areas between the residential development support remnant stands of native dune scrub (including large stands of non-native European dune grass and iceplant), residential landscaping, groves of non-native cypress trees, and combinations thereof.

The distribution of vegetation types within the project area is depicted on Figures 2 and 3, based on the field surveys in 2008, 2013, 2015 and review of the aerial photographs. Three habitat types were observed within the revetment repair project area: beach, coastal dune scrub (including stands of European dune grass and residential landscaping), and non-native tree groves. The majority of the revetment work area is bare sand (sandy beach) or bare rock revetment, as depicted in Figures 4 through 6.

The revetment repair work area is sparsely vegetated; where vegetation is present, invasive, non-native plant species are prevalent. The work area is located within the active beach zone; the beach is defined as the expanse of sandy substrate between mean tide and the foredune or, in the absence of a foredune, to the furthest inland reach of storm waves (Barbour and Major, 1988). Little vegetation persists due to the tidal activity which periodically scours away and then re-deposits sand onto the beach.

The exposed portion of the existing rock revetment (and nearby residential development) is located within the historical foredune; this area is typically inland of the furthest reach of storm waves. Small pockets of vegetation were observed amid the exposed portions of the existing revetment, as well as on inland areas along the top of the revetment (adjacent to the residences). Although these areas support native sandy substrate suitable for native dunce scrub vegetation, the areas are dominated by non-native dune-adapted plant species, particularly stands of European dune grass, iceplant, sea rocket, and other residential landscaping. The general character of the revetment repair work area, the existing exposed revetment and vegetation at the top of slope is depicted in Figures 4 through 6.

Figure 4. Aerial photograph of Project Area, showing extent of vegetation, exposed revetment and open sand, aerial image dated March 28, 2015

Upper portion of revetment with dune –adapted vegetation, dominated by European dune grass, iceplant, and residential landscaping.

Existing exposed revetment with little to no vegetation.

Approximate location of toe of existing revetment; revetment repair work area to occur at toe of existing revetment; temporary beach access/construction area to extent up to 30 feet outward of toe; little vegetation present due to surf/tidal activity (iceplant and sea rocket).

Figure 5. View of revetment repair project area, looking north from Lot 94, October 2015.

Beach

The land between the existing revetment and the ocean is active beach. This area is devoid of vegetation as it is the area between mean tide and the furthest inland reach of storm waves. During the October 2015 field survey sand covered most of the lower portion of the existing revetment. As depicted on Figure 5, only the upper portion of the revetment is exposed; the remainder of the revetment is under the sand.

The wildlife value of the active beach area is primarily foraging habitat for shorebirds that seek invertebrates in the sand for food. Because the area is regularly inundated during high tide, the area provides little value to wildlife for resting or overnight roosting habitat. In addition, the high human use of this narrow strip of beach reduces it value to wildlife. Gulls and shorebirds are expected to utilize this area as open sand and foraging opportunities are available.

Central Dune Scrub, Including Stands of European Dune Grass

The foredunes within the revetment repair work areas (adjacent to residences) support areas of dune scrub. This dune scrub vegetation is dominated by non-native species such as European dune grass (*Ammophila arenaria)* and iceplant (*Carpobrotus sp.)*. Other species include sea rocket (*Cakile maritima)*, myoporum (*Myoporum sp.)*, bur clover (*Medicago polymorpha)*, slender-leaved iceplant (*Mesembryanthem nodiflorum)*, cat's ear (*Hypochaeris sp.)*, and ripgut brome (*Bromus diandrus),* as depicted in Figure 6.

Figure 6. View of dune vegetation (dominated by iceplant) along top of revetment on Lot 3; looking north from beach, October 2015.

Dune scrub is present along the West Beach Road right-of-way (potential construction access way) and at the proposed construction access ways from Willet Circle and Puffin Lane. In these areas, the scrub is a mixture of native and non-native dune species. Native species include mock heather (*Ericameria ericoides)*, beach sagewort (*Artemisia pycnocephala)*, lizard tail (*Eriophyllum staechadifolium)*, beach primrose (*Camissonia cheiranthifolia)*, sea lettuce (*Dudleya sp.)*, yellow bush lupine (*Lupinus arboreus),* and beach bur (*Ambrosia chamissonis)*. At the Puffin Lane construction access area, coastal gum plant (*Grindelia stricta)*, Monterey paintbrush (*Castilleja latifolia)*, dune tansy (*Tanacetum camphoratum),* and alkali heath (*Frankenia salina)* were also observed. The dune scrub within the West Beach Road right-of-way also supports patches of silky beach pea (*Lathyrus littoralis)*, telegraph weed (*Heterotheca*

grandiflora), and Monterey spineflower (*Chorizanthe pungens var. pungens)*. Monterey spineflower is a special status plant species (please see additional discussion on this species under Sensitive Biotic Resources).

Figures 7 through 10 depict the vegetation along the four potential proposed construction access ways.

Figure 7. View westward from Willet Circle to beach, showing potential construction access area through Lot 101, October 2015.

Figure 8. View westward from Puffin Lane to beach, showing potential construction access area through Lot 141, October 2015.

Approximate location of colony of Monterey spineflower in 2008, 2013, and 2015

Figure 9. View westward from along West Beach Road right-of-way to beach, showing proposed construction access area and colony of Monterey spineflower, October 2015.

In general, the berries of shrubs and the seeds of herbaceous plants in the coastal dune scrub habitat provide forage for wildlife. Wildlife may perch on the outer perimeter of scrub to take advantage of hunting opportunities in adjacent openings, and take cover in the denser shrub patches as needed. The value of the dune scrub to native wildlife at this site is low due to the predominance of non-native plants such as iceplant and European dune grass, the low amount of wildlife cover that these plant provide, the lack of nest sites provided by these plants, and the low diversity of invertebrate prey associated with dense cover of these non-native plants. Common species such as sparrows and goldfinch may seasonally forage in these areas, but no nesting habitat for birds is expected to occur here. The high human presence of the surrounding development and beach access areas is also a deterrent to native wildlife in these areas.

Non-Native Tree Groves

The project area supports several groves of non-native trees. A large grove of blue gum eucalyptus (*Eucalyptus globulus)* grows along West Beach Road (within State Park land) and along the West Beach Road right-of way (as depicted in Figure 10). This area also supports groves of Monterey cypress (*Cupressus macrocarpa)*. A smaller Monterey cypress grove also occurs near Willet Circle. A portion of the existing gravel road within State Park property traverses through a blue gum eucalyptus tree grove. No other trees occur within the proposed revetment repair work area or construction access ways.

Understory vegetation within the trees groves is limited due to the dense shade and accumulation of bark peels and leaf litter; however iceplant, wild oat (*Avena sp.)*, ripgut brome, myoporum, jubata grass, curly dock (*Rumex crispus)*, and sea rocket were observed.

Eucalyptus is not native to California, and does not support a very diverse wildlife assemblage. Common wildlife species that utilize eucalyptus groves include alligator lizard (*Gerrhonotus multicarinatus*) and Anna's hummingbird (*Calypte anna*). Eucalyptus trees are locally important as they provide potential wintering habitat for monarch butterflies (*Danaus plexippus).* The large eucalyptus grove at the proposed Beach Street access area provides potential monarch roosting habitat, but none have been reported in the CNDDB (CDFW, 2015) nor in multiple surveys conducted by State Parks (Chris Spohrer, State Parks, pers. com. 2008).

Figure 10. View westward along West Beach Road right-of-way to beach, showing potential construction access within eucalyptus and cypress tree groves, October 2015.

SENSITIVE BIOTIC RESOURCES

Sensitive Habitats

Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Sensitive habitats are also defined by Santa Cruz County Code (Section 16.32 Sensitive Habitat Protection, 16.32.040 Definitions). Areas within the project area that are designated as sensitive habitats by the County are the sandy beach and dune plant habitats. The CNDDB also lists central dune scrub as a plant community of limited distribution and worthy of consideration during environmental review. Areas that provide habitat for rare species are also considered sensitive, such as nesting habitat for the western snowy plover and areas occupied by special status plant species (i.e., Monterey spineflower). The proposed revetment repair work areas, as well as a portion of the construction access areas, occur within sandy beach habitat, a County-designated sensitive habitat. Three of the four potential construction access ways support coastal dune scrub, a County-designated sensitive habitat.

Tidal waters, up to the high tide line, are under federal jurisdiction. Section 10 of the Rivers and Harbors Act requires a permit for any work in, over, or under navigable waters of the United States. Examples of work include piers, docks, breakwaters, and dredging. Navigable waters are defined as those waters subject to the ebb and flow of the tide to the Mean High Water mark (tidal areas) or below the Ordinary High Water mark (freshwater areas). Navigable waters may be used currently, in the past, or in the future, to transport interstate or foreign commerce. Section 404 of the Clean Water Act (CWA, 1977, as amended) requires a permit for discharge of dredged or fill material into Waters of the United States. Under Section 404, Waters of the United States is defined as all waters which are used currently, or were used in the past, or may be used in the future for interstate or foreign commerce, including waters subject to the ebb and flow of the tide up to the high tide line. Portions of the construction access ways and the revetment repair work will be within the limits of Mean High Water; the toe of the existing revetment is founded at

approximately 2 feet below mean sea level; the top of the revetment is at approximately 20 feet above mean sea level (Haro, Kasunich and Associates, Inc., 2008).

Special Status Plant Species

Plant species of concern include those listed by the Federal or State resource agencies as well as those identified as rare by CNPS (List 1B). The search of the CNPS and CNDDB inventories resulted in several special status species with potential to occur in the project area, based on an evaluation of site conditions. These species are listed on Table 1. No species status species have been recorded from the revetment repair area, although Monterey spineflower has been documented from other areas within the Pajaro Dunes residential area. Colonies are known from dune scrub along the West Beach Road right-of-way and on private properties north of Willet Circle. The location of the colony of Monterey spineflower along the West Beach Road right-of-way is depicted on Figure 2, based on observations in 2008, 2013, and 2015. No other plant species of concern were observed or are expected to occur within the revetment repair project area.

Monterey spineflower (*Chorizanthe pungens* var. *pungens*). This species is federally listed as endangered. This species is also listed as rare (List 1B) by the California Native Plant Society and is considered rare by the County of Santa Cruz and California Department of Fish and Wildlife. The species is not listed under the California Endangered Species Act. Similar in habitat conditions as the robust spineflower, the Monterey spineflower grows in sandy soils within portions of Santa Cruz County; the closest known locations to the project work area are from dune scrub habitat near Plover Circle and Willet Circle (Lot 109) within the Pajaro Dunes development. Another colony is known from Sunset State Beach. The spineflower is characterized by its whitish flowers, low-growing habit and spiny bracts surrounding the flowers. The species occurs in open, sandy areas. A colony of Monterey spineflower was documented along the West Beach Road right-of-way in 2008 and was re-observed in February 2013 and October 2015. The colony encompasses an area approximately 20 feet by 20 feet, occurring on a dune slope amid mock heather, lizard tail and beach primrose. The location of this colony is depicted on Figure 2.

Table 1. List of Special Status Plant Species with Potential to Occur in the Vicinity of the Revetment Repair Project Area, Pajaro Dunes, Watsonville, October 2015.

Species	CNPS	State Status	Federal Status	Habitat Preference Observed on Site?
Watsonville West Quadrangle				
Hooker's manzanita *(Arctostaphylos hookeri*)	List 1B.2	None	None	Sandy slopes, often intermixed with oak woodland; known from Buena Vista area No
Pajaro manzanita *(Arctostaphylos pajaroensis*)	List 1B.1	None	None	Sandy slopes, often intermixed with oak woodland; recorded from NW of Watsonville and in Prunedale area No
Monterey spineflower *(Chorizanthe pungens var. pungens)*	List 1B.2	None	Threatened	Sandy slopes, can be intermixed with oak woodland/maritime chaparral; recorded from Manresa and Sunset State beaches; Day Valley area; Pajaro Dunes Yes, one colony within West Beach Road right-of-way (see Figure 2)
Robust spineflower *(Chorizanthe robusta var. robusta)*	List 1B.1	None	Endangered	Sandy slopes, often intermixed with oak woodland/maritime chaparral; recorded from Manresa State Beach; NE of Ellicott Pond, Aptos HS area No
Sand-loving wallflower *(Erysimum ammophilium)*	List 1B.2	None	None	Coastal dunes; recorded from Sunset State Beach, along Shell Road No
Sand gilia *(Gilia tenuiflora ssp. arenaria)*	List 1B.2	Threatened	Endangered	Coastal dunes; recorded from Sunset State Beach No
Santa Cruz tarplant *(Holocarpha macradenia)*	List 1B.1	Endangered	Threatened	Grasslands, often on coastal terrace deposits; recorded from Harkins Slough area and Watsonville area No
Kellogg's horkelia *(Horkelia cuneata ssp. sericea)*	List 1B.1	None	None	Oak woodland and edges of grasslands; recorded from NW of Watsonville No
Dudley's lousewort *(Pedicularis dudleyi)*	List 1B.2	None	None	Woodlands; historic (1884) occurrence from Aptos No
Choris's popcorn flower *(Plagiobothrys chorisianus var. chorisianus)*	List 1B.2	None	None	Mesic grasslands, often on coastal terrace deposits; recorded from Watsonville Airport No
Surrounding Quadrangles (Laurel, Loma Prieta, Watsonville East, Prunedale, Mt. Madonna, Soquel and Moss Landing)				
Bent-flowered fiddleneck (*Amsinckia lunaris)*	List 1B.2	None	None	Grassland; recorded from Scotts Valley and Davenport No
Anderson's manzanita	List 1B.2	None	None	Chaparral and forests; recorded from UCSC area

Table 1. List of Special Status Plant Species with Potential to Occur in the Vicinity of the Revetment Repair Project Area, Pajaro Dunes, Watsonville, October 2015.

Species	CNPS	State Status	Federal Status	Habitat Preference Observed on Site?
(*Arctostaphylos andersonii)*				and Bonny Doon No
King's Mountain manzanita (*Arctostaphylos regismontana)*	List 1B.2	None	None	Chaparral and forests; recorded from Skyline area No
Bonny Doon manzanita *(Arctostaphylos silvicola)*	List 1B.2	None	None	Ponderosa pine and chaparral in Zayante sands; known from Felton and Ben Lomond area No
Santa Cruz Mountains pussypaws *(Calyptridium parryi var. hesseae)*	List 1B.1	None	None	Ponderosa pine and chaparral in Zayante sands; known from Felton and Ben Lomond area No
Deceiving sedge (*Carex saliniformis)*	List 1B.2	None	None	Mesic areas, marshes; historic record from Scotts Valley No
Coyote ceanothus (*Ceanothus ferrisiae)*	List 1B.1	None	Endangered	Chaparral, on serpentine; recorded from Anderson Reservoir and Uvas Canyon area No
Congdon's tarplant (*Centromadia parryi ssp. congdonii)*	List 1B.1	None	None	Mesic grassland, heavy clay; recorded from Salinas area No
Ben Lomond spineflower *(Chorizanthe pungens var. hartwegiana)*	List 1B.1	None	Endangered	Ponderosa pine and chaparral in Zayante sands; recorded from Bonny Doon and Felton areas No
Scotts Valley spineflower *(Chorizanthe robusta var. hartwegii)*	List 1B.1	None	Endangered	Grassland on sandstone outcrops; known only from Scotts Valley area No
Seaside birds-beak (*Cordylanthus rigidus ssp. littoralis)*	List 1B.1	Endangered	None	Maritime chaparral and closed cone forests; recorded from Monterey Co. No
Santa Clara Valley dudleya (*Dudleya abramsii ssp. setchellii)*	List 1B.1	None	Endangered	Serpentine chaparral and rock outcrops No
Eastwood's goldenbush (*Ericameria fasciculata)*	List 1B.1	None	None	Chaparral and coastal scrub; recorded from Monterey Co. No
Hoover's button-celery *(Eryngium aristulatum var. hooveri)*	List 1B.1	None	None	Vernal pools No
Ben Lomond wallflower *(Erysimum teretifolium)*	List 1B.1	Endangered	Endangered	Ponderosa pine and chaparral in Zayante sands; known from Felton and Ben Lomond area No
Minute pocket moss (*Fissidens pauperculus)*	List 1B.2	None	None	Sandstone outcrops in grassland and oak woodland; recorded from Scotts Valley region No

Table 1. List of Special Status Plant Species with Potential to Occur in the Vicinity of the Revetment Repair Project Area, Pajaro Dunes, Watsonville, October 2015.

Species	CNPS	State Status	Federal Status	Habitat Preference Observed on Site?
Fragrant fritillary *(Fritillaria liliacea)*	List 1B.2	None	None	Moist serpentine areas in grassland; recorded from Santa Clara Co. No
Loma Prieta hoita *(Hoita strobilina)*	List 1B.1	None	None	Talus in chaparral and woodlands; 1936 herbarium record from Santa Cruz No
Smooth lessingia *(Lessingia micradenia var. glabrata)*	List 1B.2	None	None	Serpentine soils in chaparral and grasslands; recorded from Santa Clara Co. No
Arcuate bush-mallow *(Malacothamnus arcuatus)*	List 1B.2	None	None	Serpentine chaparral No
Hall's bush-mallow *(Malacothamnus hallii)*	List 1B.2	None	None	Serpentine chaparral No
Woodland woollythreads *(Monolopia gracilens)*	List 1B.2	None	None	Serpentine forest, woodland, chaparral, and grassland No
Santa Cruz Mtns. beards tongue *(Penstemon rattanii var. kleei)*	List 1B.2	None	None	Woodland and chaparral; herbarium collections from Ben Lomond Mtn. No
White-rayed pentachaeta *(Pentachaeta bellidiflora)*	List 1B.1	None	None	Serpentine grasslands No
Yadon's piperia (*Piperia yadonii)*	List 1B.1	None	Endangered	Coastal scrub and oak woodland, often an talus/rocky areas No
San Francisco popcorn flower (*Plagiobothrys diffusus)*	List 1B.1	Endangered	None	Mesic grasslands, often on coastal terrace deposits No
Scotts Valley polygonum (*Polygonum hickmanii)*	List 1B.1	None	Endangered	Grasslands, on coastal terrace deposits No
Pine rose (*Rosa pinetorum)*	List 1B.2	None	None	Closed cone pine forests No
Most-beautiful jewel-flower (*Streptanthus albidus ssp. peramoenus)*	List 1B.2	None	None	Serpentine grassland No
Santa Cruz Clover *(Trifolium buckwestiorum)*	List 1B.1	None	None	Mesic grasslands No
Saline clover (*Trifolium hydrophilum)*	List 1B.2	None	None	Mesic grasslands, alkaline No

Special Status Wildlife Species

Special status wildlife species include those listed as threatened or endangered by either the Federal or State resource agencies, as well as those identified as State species of special concern. In addition, all raptor nests are protected under Fish and Game Code, and migratory birds are protected by the Migratory Bird Treaty Act. The text below summarizes the current status and occurrence of sensitive wildlife species that are potential inhabitants of the property. Table 2 lists the special status wildlife species evaluated for the project area.

Table 2. Special status wildlife species and their predicted occurrence in the vicinity of the Seawall Revetment Project Area, Pajaro Dunes, Watsonville, CA, October 2015.

SPECIES	STATUS[1]	HABITAT	POTENTIAL OCCURRENCE ON SITE
Invertebrates			
Monarch butterfly *Danaus plexippus*	*	Eucalyptus, acacia and pine trees groves provide winter habitat when they have adequate protection from wind and nearby source of water	Possible in dense Eucalyptus grove at proposed access road adjacent to Palm Beach; no other suitable habitat on site. No reports of wintering monarchs at this site.
Fish			
Steelhead *Oncorhynchus mykiss*	FT	Perennial creeks and rivers with gravels for spawning.	None, no suitable habitat on site.
Tidewater goby *Eucyclogobius newberryi*	FE, CSC	Coastal lagoons and associated creeks up to 1 mile inland	None, no suitable habitat on site.
Amphibians			
California tiger salamander *Ambystoma californiense*	FT, CSC	Freshwater ponds, vernal pools for breeding, grasslands with burrows for upland habitat	None, no suitable habitat on site.
Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*)	FE, SE	Freshwater ponds for breeding with water at least into June. Riparian, oak woodland, dense coastal scrub for upland habitat.	None, no suitable habitat on site.
California red-legged frog *Rana aurora draytonii*	FT, CSC	Riparian, marshes, estuaries and ponds with still water at least into June.	None, no suitable habitat on site. Watsonville Slough at this site too saline for the species.
Reptiles			
Southwestern pond turtle *Clemmys marmorata pallida*	CSC	Creeks and ponds with water of sufficient depth for escape cover, and structure for basking; grasslands or bare areas for nesting.	None, no suitable freshwater habitat.
Black legless lizard *Anniella pulchra nigra*	CSC	Sand dunes with native vegetation	Possible in equipment access areas at end of Beach Street and Puffin Lane, but not at repair site due to lack of native scrub.
Birds			
Western snowy plover *Charadrius alexandrinum nivosus*	ST, CSC	Nests on sandy beach, shores of salt ponds	Yes, occurs at Pajaro River mouth near access site at end of Puffin Lane, but not at repair site.
Tricolored blackbird *Agelaius tricolor*	CSC	Dense bulrush and/or cattail vegetation adjacent to freshwater marshes	None, no suitable habitat on site.
Mammals			
American badger *Taxidea taxus*	CSC	Grasslands with friable soils for digging dens	None, no suitable habitat on site.

[1] Key to status:

FE = Federally listed as endangered species
FT = Federally listed as threatened species; SE= State listed as endangered species
CSC = California species of special concern; * = Species of local concern under County LCP

Black legless lizard (*Anniella pulchra nigra*). The black legless lizard is a California species of special concern. It was proposed for federal listing as endangered in 1995 (USFWS 1995), but it was subsequently determined that listing was not warranted based primarily on the preservation of a large section of the former Fort Ord where this lizard occurs (USFWS 1998). The black legless lizard inhabits coastal dunes in Monterey County between the Salinas and Carmel Rivers (USFWS 1998). This lizard burrows into loose sand under plants including bush lupine, mock heather, and mock aster (Jennings and Hayes 1994). It hunts for its insect prey while concealed in the leaf litter below the plants, and is rarely observed on the ground surface.

The dune scrub habitat within the equipment access way at the end of Beach Street and end of Puffin Lane provides only marginal habitat for the black legless lizard, due to the sparse occurrence of native vegetation which this species is usually associated with, and the predominance of dense mats of non-native plants such as iceplant. However, this lizard may occur in these areas in small numbers where loose sand, leaf litter and adequate prey base exists. This species is not expected to occur at the top of the revetment within the repair sites due to lack of native scrubs and dense cover of European dune grass and iceplant.

Western snowy plover (*Charadrius alexandrinum nivosus*) is federally listed as a threatened species and is a California species of special concern. The population segment of western snowy plover that is protected by the Federal Endangered Species Act is described as the Pacific Coast Population and includes nesting populations along the coast of California, Oregon, and Washington in areas adjacent to tidal waters, including the mainland cost, peninsulas, offshore islands, adjacent bays, estuaries, and coastal rivers (USFWS 1999). The breeding season for snowy plovers on the Central California coast extends from early March to mid-September, and there is some overlap of wintering birds from northern areas arriving in mid to late summer. Nests are built in loosely arranged colonies, eggs are laid in a shallow depression scraped in the sand, chicks hatch after an average 27 day incubation period, and juveniles are able to fly within 31 days of hatching (Warriner et al. 1986). Snowy plovers forage on invertebrates along intertidal areas. The primary threats to the species include loss and degradation of nesting and foraging habitat, human disturbances at nesting, wintering, and forging areas, and predation of eggs and chicks by mammals (e.g., red fox) and other birds (e.g., ravens).

Western snowy plovers are known to nest on the beach at the mouth of the Pajaro River (CNDDB 2015), and in 2008 there were an estimated 20 nesting pairs (R. Warriner, pers. comm.). Each spring, the California Department of Parks places stakes and flagging with signs around the nesting colony to deter beach users from entering the nesting colony, and if necessary, individual nests are fenced to exclude predators (Chris Spohrer, pers. comm.). The Point Reyes Bird Observatory has been monitoring and studying this population of snowy plovers for over a decade. This nesting colony is within designated critical habitat for the snowy plover, Unit 1 (Sunset Beach) of Site CA-7 (USFWS 1999).

IMPACT AND MITIGATION DISCUSSION

IMPACT CRITERIA

The thresholds of significance presented in Appendix G the California Environmental Quality Act (CEQA) were used to evaluate project and to determine if the proposed revetment modifications and sheetpile wall work poses significant impacts to biological resources.

For this analysis, significant impacts are those that substantially affect either:

- Directly or through habitat modifications, any species identifies as a candidate, sensitive, or species status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (e.g., Monterey spineflower, western snowy plover);
- Any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS (e.g., sandy beaches, central dune scrub);
- Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, costal, etc.) through direct removal, filling, hydrological interruption, or other measures;
- The movement of any native resident of migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (e.g., western snowy plover);
- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed revetment repair on the private lots and the four potential construction access areas were evaluated for potential direct and indirect impacts to biotic resources. Impacts to sensitive habitats (sandy beach, central dune scrub) and special status species (western snowy plover, black legless lizard, and Monterey spineflower) were considered potentially significant. Impacts to botanical resources within the tree groves (e.g., vegetation removal, tree limb removal, tree removal) are considered less than significant. This is due to the non-native status of the trees and the lack of native dune scrub vegetation within the understory of the tree groves.

Impacts to Sandy Beach Habitat

As depicted on the project plans (Arup, March 2015), the revetment repair work will occur on open, sandy beach areas and existing revetment areas. Santa Cruz County considers sandy beach areas to be sensitive habitat. Some work and construction access will occur with Waters of the U.S. (below Mean High Water)

Because the existing revetment is partially covered with sand, construction work will require removal of sand overlying the existing revetment, deepening the revetment toe by four feet, and adding new rock to the deepened toe and face of the revetment. Temporary impacts to the sandy beach will also occur during construction. These impacts include construction access and stockpiling of sand and other materials. Due to

the lack of vegetation and the temporary nature of the construction, the impact to botanical resources on the sandy beach is less than significant.

The majority of the work along the sandy beach habitat is not expected to cause significant impacts to sensitive wildlife species. Most of the sandy beach habitat is regularly inundated by high tide, and does not provide suitable haul out, resting or roosting habitat for protected wildlife species such as seals or pelicans. However, if the construction access way at the end of Puffin Lane is used, this construction access would be located within 1,000 feet of the snowy plover nesting colony, and construction activities have the potential to cause significant impacts to nesting birds from noise and vibration, which may cause adults to abandon eggs or chicks, or interfere with normal adult and chick foraging activities within the colony. Such impacts may result in direct impacts to the species, including death of eggs if the parent bird abandons the nest during certain critical incubation periods, increased predation of eggs or chicks by predators if the adult leaves the nest for prolonged periods due to construction noise, and disruption of normal foraging behavior by adults, chicks or fledglings due to noise.

No construction activities are proposed to occur within the actual snowy plover nesting area at the mouth of the Pajaro River. All construction equipment access activities that will be conducted within 1,000 feet of the snowy plover nesting colony will be temporary activities during the non-nesting season, and will not result in permanent impediments to movement, foraging or future nesting activities of the snowy plovers. The existing rock revetment along the beach will be replaced as necessary where portions have failed; no new areas of natural beach will be covered with revetment. Assuming the project will not result in changes to beach transport of sand that may affect the sand spit at the mouth of the Pajaro River where snowy plovers nest, this project may affect, but is unlikely to adversely affect, the federally listed western snowy plover, and will not adversely modify the designated critical habitat for this species.

Successful implementation of the following mitigation measures will reduce the potential impacts to nesting snowy plovers to a less-than significant level.

> **Mitigation Measure BIO-1.** Schedule the equipment access to the beach at the end of Puffin Lane (if this construction access way is used) to occur between September 1 and March 1 of any given year to avoid potential disturbance to western snowy plovers in the colony adjacent to the Pajaro River mouth. Because this nesting colony is monitored annually by the biologists for PRBO, construction equipment access may begin earlier than September 1 at the northern reach of this 1,000 foot buffer zone, if biologists determine that all juveniles are fully fledged at an earlier date. In such case, the biologists will notify the U. S. Fish and Wildlife Service when all young are fledged and able to forage on their own, and the contractor may proceed into the buffer zone after written confirmation has been obtained from the Service. This 1,000 foot area is depicted on Figure 3.

Impacts to Central Dune Scrub

Depending upon the construction access way selected, native dune scrub vegetation could be affected by grading and compaction, as follows: 1) from Puffin Lane (through Lot 141 and Pelican Point common area) to the beach (approximately 3,600 square feet), 2) from Willet Circle to the beach (through Lot 101) (approximately 3,600 square feet), and 3), and 3) straight to the beach along the Beach Street Road right-of-way (approximately 5,000 square feet). Use of the existing road through State Park land will not affect dune scrub vegetation.

Revetment repair will also affect small areas of dune scrub vegetation that grows along the upper edge of the revetment and adjacent to the residences. Up to approximately 30,000 square feet of dune scrub vegetation adjacent to the residences may be affected by the revetment repair work. As previously mentioned, the majority of this vegetation is comprised of invasive, non-native plant species and other residential landscaping.

Santa Cruz County considers dune scrub to be a sensitive habitat. While most of the dune scrub vegetation within the revetment repair area is comprised of invasive, non-native plant species (e.g., iceplant and European dune grass), native dune plant species are present within the construction access ways and would be affected by grading and related construction access use. In addition, black legless lizard, a State special of special concern, may occur within the dune scrub of the access areas. Due to the presence of native dune scrub vegetation and the potential presence of black legless lizard, impacts to the dune scrub are considered significant.

Successful implementation of the following mitigation measures will reduce the impacts to dune scrub to a less-than significant level.

> **Mitigation Measure BIO-2.** The proposed project shall be designed to minimize impacts to native dune scrub to the greatest extent feasible. Prior to construction, temporary construction fencing shall be installed along the limit of the construction access areas to avoid inadvertent equipment access in dune scrub vegetation that that will be retained. Areas outside of the construction access areas shall not be disturbed by construction activities. All storage of construction materials, parking of vehicles and related equipment, shall be prohibited within the dune scrub that is to be retained.
>
> **Mitigation Measure BIO-3.** As compensation for the removal of native dune scrub vegetation for construction access, the applicant shall implement dune scrub revegetation within the common areas disturbed and on other suitable areas to meet a 1:1 impact to revegetation ratio. The revegetation area(s) shall be revegetated with locally obtained native plant species typical to central dune scrub. Retain a qualified botanist to monitor the progress of the revegetated areas for a minimum of 3 years, with annual reporting to the County of Santa Cruz.
>
> **Mitigation Measure BIO-4.** The applicant shall hire a qualified biologist to monitor the initial ground stripping and grading of the construction access ways at either end of Beach Street or end of Puffin Lane for black legless lizards. If any black legless lizards are observed during the work, the biologist shall capture the lizards by hand or net, place the individuals in a bucket with sand, and relocate the individuals to an adjacent area of suitable habitat outside the construction zone.

Impacts to Monterey Spineflower Colony

Construction access to the beach along the Beach Street Road right-of-way may impact a colony of Monterey spineflower, a special status plant species. Santa Cruz County considers habitat supporting special status species to be a sensitive habitat. Due to the status of this species (federally listed as threatened), impacts to this species at its habitat are considered significant.

Successful implementation of the following mitigation measure will reduce the impact to Monterey spineflower to a less-than significant level.

Mitigation Measure BIO-5. In conjunction with Mitigation Measure BIO-3, develop and implement a revegetation plan to re-establish a colony of Monterey spineflower with dune scrub vegetation. In the summer prior to construction collect all available Monterey spineflower seed from the impact area. Store this seed and utilize it in the revegetation plan; hand broadcast seed of this annual species into designated open sandy areas. Retain a qualified botanist to monitor the progress of the Monterey spineflower revegetation for a minimum of 3 years, with annual reporting to the County of Santa Cruz.

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