



Staff Report to the Zoning Administrator

Application Number: **231230**

Applicant: RI Engineering Inc

Owner: Tzouanakis & Ajao

APN: 033-132-12

Site Address: 4790 Opal Cliff Drive, Santa Cruz

Agenda Date: September 15, 2023

Agenda Item #: 3

Time: After 9:00 a.m.

Project Description: Proposal to repair an existing seawall by constructing a concrete backfill of an existing void behind the seawall, and constructing a companion footing in front of the seawall where the existing footing is undermined.

Location: Property is located on the south side of Opal Cliff Drive approximately 200 feet west of the intersection with Portola Drive (4790 Opal Cliff Drive).

Permits Required: Coastal Development Permit

Supervisory District: First District (District Supervisor: Koenig)

Staff Recommendation:

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 231230, based on the attached findings and conditions.

Project Setting

The subject property is located on the south side of Opal Cliff Drive approximately 240 feet west of the intersection with Portola Drive. The main portion of the property, an area of around 6,900 square feet which is occupied by the dwelling and yard area, is relatively flat in topography. However, the southeastern end of the parcel, an area of around 1,900 square feet, drops away almost vertically to the beach 45 to 50 feet below. The coastal bluff, an elevated marine terrace, has been protected by a concrete seawall at its base originally constructed in 1994. The nearest access to the beach is located approximately 1,200 feet southwest of the subject parcel.

Project Background

The existing seawall that covers the base of the bluff at the rear of this property was constructed in 1994 and embedded four feet into the sandstone bedrock. Monitoring of the seawall occurred in November of 2021 and again in January of 2023. During the monitoring site visits, the wall was in relatively good condition. However, the upcoast end of the existing seawall was outflanked and a void behind the wall had developed. The void extends approximately 5 to 10

feet along the length of the wall and approximately 9.5 feet into the bluff. As outlined in their reports, the project Geotechnical Engineer and Engineering Geologist recommend implementation of the repair plan as soon as possible.

Coastal Development Permit

A coastal development permit is required for the repair of the existing seawall by filling the void behind the wall with a mixture of concrete and rebar. The proposed work is consistent with the type of maintenance and repair necessary to ensure the seawall remains functional to the extent that it protects the coastal bluff from further erosion including protection of existing single family dwelling and occupants located at the top of the bluff. As indicated in the reports prepared by the project Geotechnical Engineer and Engineering Geologist, verification of the depth of the existing footing is necessary to determine whether the footing of the existing seawall is undermined. A companion footing shall be constructed in areas where the existing footing is compromised.

Zoning & General Plan Consistency

The subject properties are approximately 8,800 square feet, located in the R-1-5 (Single Family Residential - 5,000 square foot minimum) zone district, a designation which allows residential uses and is consistent with the R-UM (Urban Medium Density Residential) General Plan designation.

The proposed seawall repair is consistent with General Plan Policy 6.2.16 (Structural Shoreline Protection Measures) in that it is necessary to ensure the safety of the home(s) located on top of the bluff, as well as to protect the life and safety of beachgoers. The project does not reduce or restrict existing beach access, adversely affect shoreline processes, increase erosion on adjacent properties or cause harmful impacts to wildlife and fish habitats, or archaeological or paleontological resources. Detailed technical studies have been reviewed and accepted which demonstrate the need for the proposed shoreline protection structure and there are no alternatives to the proposed maintenance project.

Local Coastal Program Consistency

The proposed seawall repair is in conformance with the County's certified Local Coastal Program, in that the structure is sited and designed to be visually compatible and integrated with the surrounding coastal bluff in order to minimize impacts to coastal views. The project would be conditioned to ensure the aesthetic character and structural performance of the seawall repair.

Geotechnical and Geologic Reports including Monitoring Report have been prepared and submitted to the County for review. In a letter dated August 22, 2023, County of Santa Cruz accepted the reports (Exhibit F). The project has been conditioned to ensure all work to the seawall is done in accordance with the recommendations of the project Geotechnical Engineer and Geologist.

The project site is located between the shoreline and the first public road and is not identified as a priority acquisition site in the County's Local Coastal Program. The project will not interfere with public access to the beach or ocean, in that there is currently no public access to the beach

on the subject parcel or in the immediate vicinity. The nearest existing coastal access is located approximately 1,200 feet to the southwest (Private's Beach).

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

Staff Recommendation

- Determine that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- **APPROVAL** of Application Number **231230**, based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Division, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: www.sccoplanning.com

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Exhibits

- A. Categorical Exemption (CEQA determination)
- B. Findings
- C. Conditions
- D. Project plans & Site photos
- E. Assessor's, Location, Zoning and General Plan Maps
- F. Parcel information
- G. Report review letters
- H. Comments & Correspondence

CALIFORNIA ENVIRONMENTAL QUALITY ACT

NOTICE OF EXEMPTION

The Santa Cruz County Planning Division has reviewed the project described below and has determined that it is exempt from the provisions of CEQA as specified in Sections 15061 - 15332 of CEQA for the reason(s) which have been specified in this document.

Application Number: 231230

Assessor Parcel Number: 033-132-12

Project Location: 4790 Opal Cliff Drive, Santa Cruz

Project Description: Repair existing seawall wall

Person or Agency Proposing Project: RI Engineering INC Attn Richard Irish

Contact Phone Number: (831) 425-3901

- A. ☐ The proposed activity is not a project under CEQA Guidelines Section 15378.
B. ☐ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).
C. ☐ **Ministerial Project** involving only the use of fixed standards or objective measurements without personal judgment.
D. ☐ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).
E. ☒ **Categorical Exemption**

Specify type: Class 2 - Replacement or Reconstruction (Section 15302); Class 3 - New Construction or Conversion of Small Structures (Section 15303)

F. Reasons why the project is exempt:

Repair of existing seawall.

In addition, none of the conditions described in Section 15300.2 apply to this project.

Nathan MacBeth, Project Planner

Date: _____

Coastal Development Permit Findings

1. That the project is a use allowed in one of the basic zone districts that are listed in LCP Section 13.10.170(D) as consistent with the LCP Land Use Plan designation of the site.

This finding can be made, in that the properties are zoned R-1-5 (Single Family Residential - 5,000 square foot minimum), a designation which allows residential uses and ancillary structures. The existing seawall is an allowed use within the zone district and the proposed repair work is necessary to protect the existing homes on site and ensure the safety of beachgoers below the subject properties. Detailed technical studies have been reviewed and accepted which demonstrate the need for the proposed shoreline protection structure and there are no alternatives to the proposed maintenance project. The zoning is consistent with the site's R-UM (Urban Medium Density Residential) General Plan designation. The project would not reduce or restrict existing beach access.

2. That the project does not conflict with any existing easement or development restrictions such as public access, utility, or open space easements.

This finding can be made, in that no such easements or restrictions are known to encumber the project site.

3. That the project is consistent with the design criteria and special use standards and conditions of this chapter pursuant to SCCC 13.20.130 and 13.20.140 et seq.

This finding can be made, in that the project is consistent with other bluff stabilization projects in terms of design. The finish color of the wall repair is consistent with the surrounding natural land formations. The project design minimizes potential visual impacts to the greatest extent feasible in that the backfilling of the cavity will be primarily behind the existing wall and obscured from public view. The project has been conditioned to require the structure be maintained in perpetuity to ensure the structure remains consistent with coastal design criteria.

4. That the project conforms with the public access, recreation, and visitor-serving policies, standards and maps of the LCP Land Use Plan, including Chapter 2: Section 2.5 and Chapter 7.

This finding can be made, in that the project site is located between the shoreline and the first public road however, the project will not interfere with public access to the beach, ocean, or any nearby body of water. Existing beach access (Private's Beach) exists approximately 1,200 feet west of the subject property. The project site is not identified as a priority acquisition site in the County Local Coastal Program.

5. That the project conforms to all other applicable standards of the certified LCP.

This finding can be made, in that the structure has been designed in accordance with General Plan Policy 6.2.16 (Structural Shoreline Protection Measures). Stabilization of the bluff is necessary to mitigate a geologic hazard resulting in unsafe beach conditions and threatening the existing residential uses on the subject properties which are allowed uses in the R-1-5 (Single Family Residential - 5,000 square foot minimum) zone district, as well as the General Plan and

Local Coastal Program land use designation.

The proposed coastal bluff repair is consistent with General Plan Policy 6.2.16 in that it is necessary to ensure the safety of the homes located on top of the bluff and life and safety of beachgoers. Detailed technical studies have been reviewed and accepted which demonstrate the need for the proposed shoreline protection structure and there are no alternatives to the proposed maintenance project. The project will not reduce or restrict existing beach access.

6. If the project is located between the nearest through public road and the sea or the shoreline of any body of water located within the Coastal Zone, that the project conforms to the public access and public recreation policies of Chapter 3 of the Coastal Act.

This finding can be made, in that the project site is located between the shoreline and the first public road however, the proposed repair of the existing seawall will not interfere with public access to the beach, ocean, or any nearby body of water. The proposed repair will be located behind the existing seawall and not take up additional beach space. Additionally, existing beach access is available approximately 1,200 feet west of the project site (Private's Beach). Further, the project site is not identified as a priority acquisition site in the County Local Coastal Program.

Development Permit Findings

1. 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, and will not result in inefficient or wasteful use of energy, and will not be materially injurious to properties or improvements in the vicinity.

This finding can be made, in that the project is located in an area designated for residential uses. The seawall repair will be constructed in conformance with the recommendations of the project geotechnical engineer and geologist and complies with prevailing building technology, the California Building Code, and the County Building ordinance to ensure the optimum in safety and the conservation of energy and resources. The structure will not be materially injurious to properties or improvements in the vicinity in that it has been designed to blend into the natural coastal bluff and will protect the site and adjacent parcels from future erosion processes, and will protect beachgoers from bluff collapse hazards.

2. 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.

This finding can be made, in that the location of the seawall repair and the conditions under which it would be operated and maintained will be consistent with all pertinent County ordinances and the purpose of the R-1-5 (Single-Family Residential) zone district. The primary use of the property will continue to be residential uses which necessitate installation of the seawall repair to ensure safety of the existing residential structures on the subject property and beachgoers in the vicinity.

3. 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.

This finding can be made in that the project has been designed in accordance with General Plan Policy 6.2.16 (Structural Shoreline Protection Measures). The shoreline protection structure is intended to address the immediate hazard due to the unsafe site conditions, and is not limited to protection of existing structures. Detailed technical studies have been reviewed and accepted which demonstrate the need for the proposed shoreline protection structure and there are no alternatives to the proposed maintenance project. Construction equipment will be staged at the top of the bluff, in the rear yard of the subject property. Construction of the retaining wall repair will be completed via a concrete pump boom located at the top of the bluff to ensure impacts to the beach would be minimized.

A specific plan has not been adopted for this portion of the County.

4. 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.

This finding can be made, in that the seawall repair is to be constructed on an existing developed lot and intended to protect the bluff from further erosion and potential hazard to the existing

dwellings. Beyond the construction phase, the seawall repair will not require the use of utilities and will not generate additional traffic on the streets in the vicinity.

5. 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.

This finding can be made, in that the project is located along a coastal bluff which is subject to coastal erosion. The subject parcel is developed with existing single family dwelling. In terms of design, the project is consistent with seawalls and repairs in the vicinity. Whereas the majority of the seawall repair will be located behind the existing seawall, potential impacts to visual resources will be minimized to the greatest extent possible. Construction of seawall repair, to protect the existing home and existing wall from failure, does not result in any change to the existing land use intensity and density of the neighborhood.

6. The proposed development project is consistent with the Design Standards and Guidelines (sections 13.11.070 through 13.11.076), and any other applicable requirements of this chapter.

This finding can be made, in that the repair will be situated behind and below the existing concrete seawall and visual impacts will be minimal. Consequently, the project does not result in adverse impacts to coastal views.

Conditions of Approval

Exhibit D: Project plans, prepared by RI Engineering Inc, dated February 2023.

- I. This permit authorizes the repair and maintenance of an existing seawall as indicated on the approved Exhibit "D" for this permit. This approval does not confer legal status on any existing structure(s) or existing use(s) on the subject property that are not specifically authorized by this permit. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:
 - A. Sign, date, and return to Santa Cruz County Planning one copy of the approval to indicate acceptance and agreement with the conditions thereof.
 - B. Obtain a Building Permit from the Santa Cruz County Building Official.
 1. Any outstanding balance due to Santa Cruz County Planning must be paid prior to making a Building Permit application. Applications for Building Permits will not be accepted or processed while there is an outstanding balance due.
 - C. Obtain a Grading Permit from the Santa Cruz County Building Official.
- II. Prior to issuance of a Building Permit the applicant/owner shall:
 - A. Submit final architectural plans for review and approval by Santa Cruz County Planning. The final plans shall be in substantial compliance with the plans marked Exhibit "D" on file with Santa Cruz County Planning. Any changes from the approved Exhibit "D" for this development permit on the plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:
 1. A copy of the text of these conditions of approval incorporated into the full size sheets of the architectural plan set.
 2. One elevation shall indicate materials and colors as they were approved by this Discretionary Application. If specific materials and colors have not been approved with this Discretionary Application, in addition to showing the materials and colors on the elevation, the applicant shall supply a color and material sheet in 8 1/2" x 11" format for Santa Cruz County Planning review and approval.
 3. Grading, drainage, and erosion control plans.
 - B. Meet all requirements of the County Department of Public Works, Stormwater Management. Drainage fees will be assessed on the net increase in impervious

area.

- C. Meet all requirements of the Environmental Planning section of Santa Cruz County Planning.
 - 1. A paleontological report outlining the monitoring and mitigation of paleontological resources shall be submitted with the building permit application.
 - D. Submit 3 copies of plan review letters prepared and stamped by the project Geotechnical Engineer and project Geologist.
 - E. Submit a written statement signed by an authorized representative of the school district in which the project is located confirming payment in full of all applicable developer fees and other requirements lawfully imposed by the school district.
- III. All construction shall be performed according to the approved plans for the Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:
- A. All site improvements shown on the final approved Building Permit plans shall be installed.
 - B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.
 - C. A maintenance and monitoring agreement shall be recorded prior to final inspection.
 - D. The project must comply with all recommendations of the approved soils and geologic reports.
 - E. Submit inspection reports by the project Geotechnical Engineer and Geologist verifying the embedment depth of the footing under the seawall. Provide supplemental recommendations to extend the footing depth if warranted.
 - F. Pursuant to Sections 16.40.040 and 16.42.080 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.080, shall be observed.
- IV. Operational Conditions
- A. In the event that future County inspections of the subject property disclose

noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost of such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.

V. Indemnification

The applicant/owner shall indemnify, defend with counsel approved by the COUNTY, and hold harmless the COUNTY, its officers, employees, and agents from and against any claim (including reasonable attorney's fees, expert fees, and all other costs and fees of litigation), against the COUNTY, its officers, employees, and agents arising out of or in connection to this development approval or any subsequent amendment of this development approval which is requested by the applicant/owner, regardless of the COUNTY's passive negligence, but excepting such loss or damage which is caused by the sole active negligence or willful misconduct of the COUNTY. Should the COUNTY in its sole discretion find the applicant's/owner's legal counsel unacceptable, then the applicant/owner shall reimburse the COUNTY its costs of defense, including without limitation reasonable attorney's fees, expert fees, and all other costs and fees of litigation. The applicant/owner shall promptly pay any final judgment rendered against the COUNTY (and its officers, employees, and agents) covered by this indemnity obligation. It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California and will survive termination of this development approval.

- A. The COUNTY shall promptly notify the applicant/owner of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. The COUNTY shall cooperate fully in such defense.
- B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:
 - 1. COUNTY bears its own attorney's fees and costs; and
 - 2. COUNTY defends the action in good faith.
- C. Settlement. The applicant/owner shall not be required to pay or perform any settlement unless such applicant/owner has approved the settlement. When representing the COUNTY, the applicant/owner shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the COUNTY.
- D. Successors Bound. The "applicant/owner" shall include the applicant and/or the owner and the successor(s) in interest, transferee(s), and assign(s) of the applicant and/or the owner.

Application #: 231230
APN: 033-132-12
Owner: Tzouanakis

Minor variations to this permit which do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff in accordance with Chapter 18.10 of the County Code.

Please note: This permit expires three years from the effective date listed below unless a building permit (or permits) is obtained for the primary structure described in the development permit (does not include demolition, temporary power pole or other site preparation permits, or accessory structures unless these are the primary subject of the development permit). Failure to exercise the building permit and to complete all of the construction under the building permit, resulting in the expiration of the building permit, will void the development permit, unless there are special circumstances as determined by the Planning Director.

Approval Date: _____

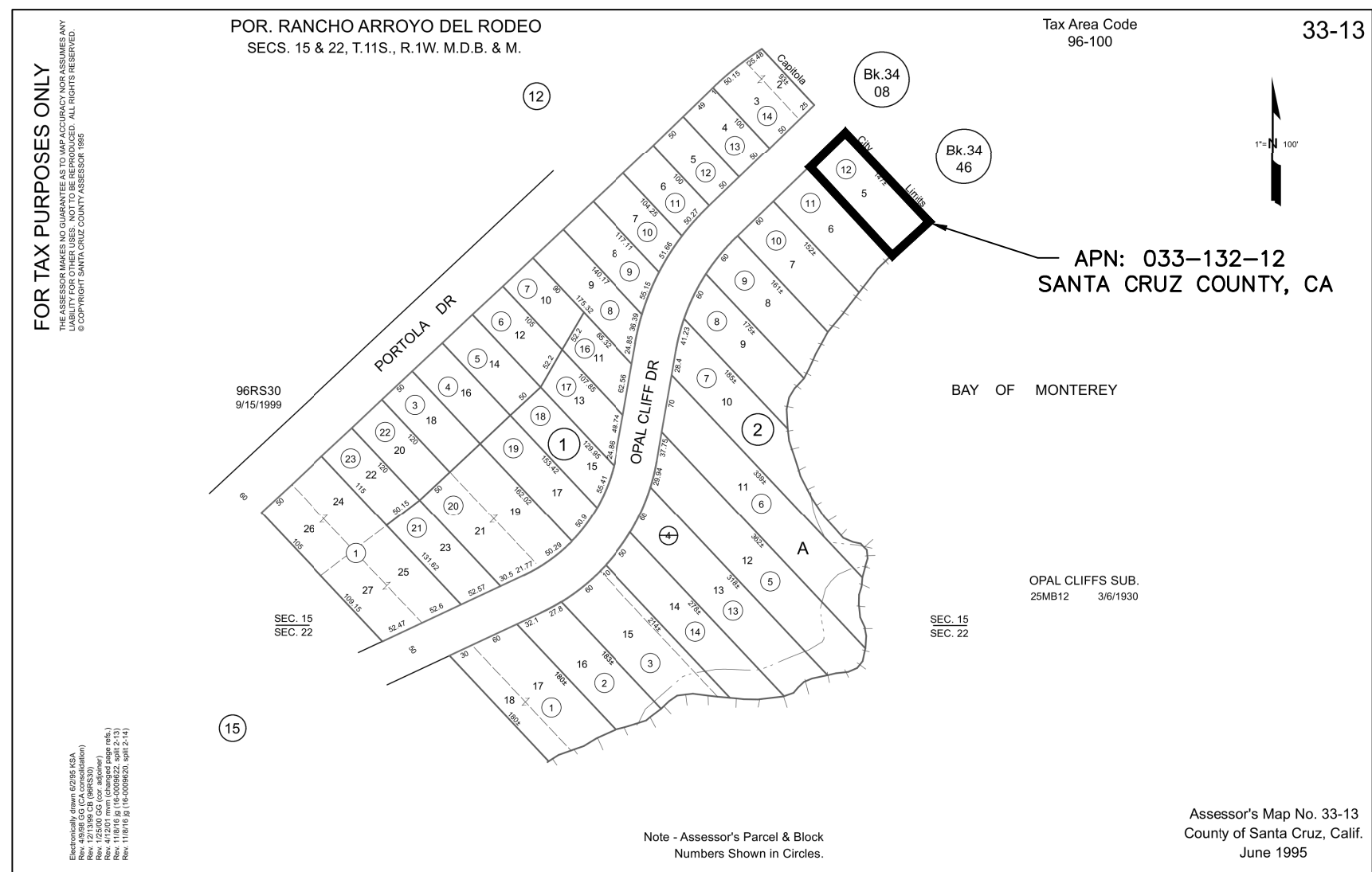
Effective Date: _____

Expiration Date: _____

Deputy Zoning Administrator

Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Code.

SEAWALL REPAIR PLAN
4790 OPAL CLIFF DRIVE
SANTA CRUZ, CA 95062
A.P.N. 033-132-12



ASSESSORS PARCEL MAP
NTS



VICINITY MAP
NTS

SHEET INDEX

SHEET C-1	TITLE SHEET
SHEET C-2	PLAN
SHEET C-3	SECTIONS & DETAILS
SHEET C-4	NOTES

PROPERTY OWNER

ADEYEMI AJAO & EMILY TZOUANAKIS
4790 OPAL CLIFF DRIVE
SANTA CRUZ COUNTY, CA
95062

PLAN PREPARER

RICHARD IRISH, PE
RI ENGINEERING
303 POTRERO STREET #42-202
SANTA CRUZ, CA 95060
(831) 425-3901

PROJECT SURVEYOR

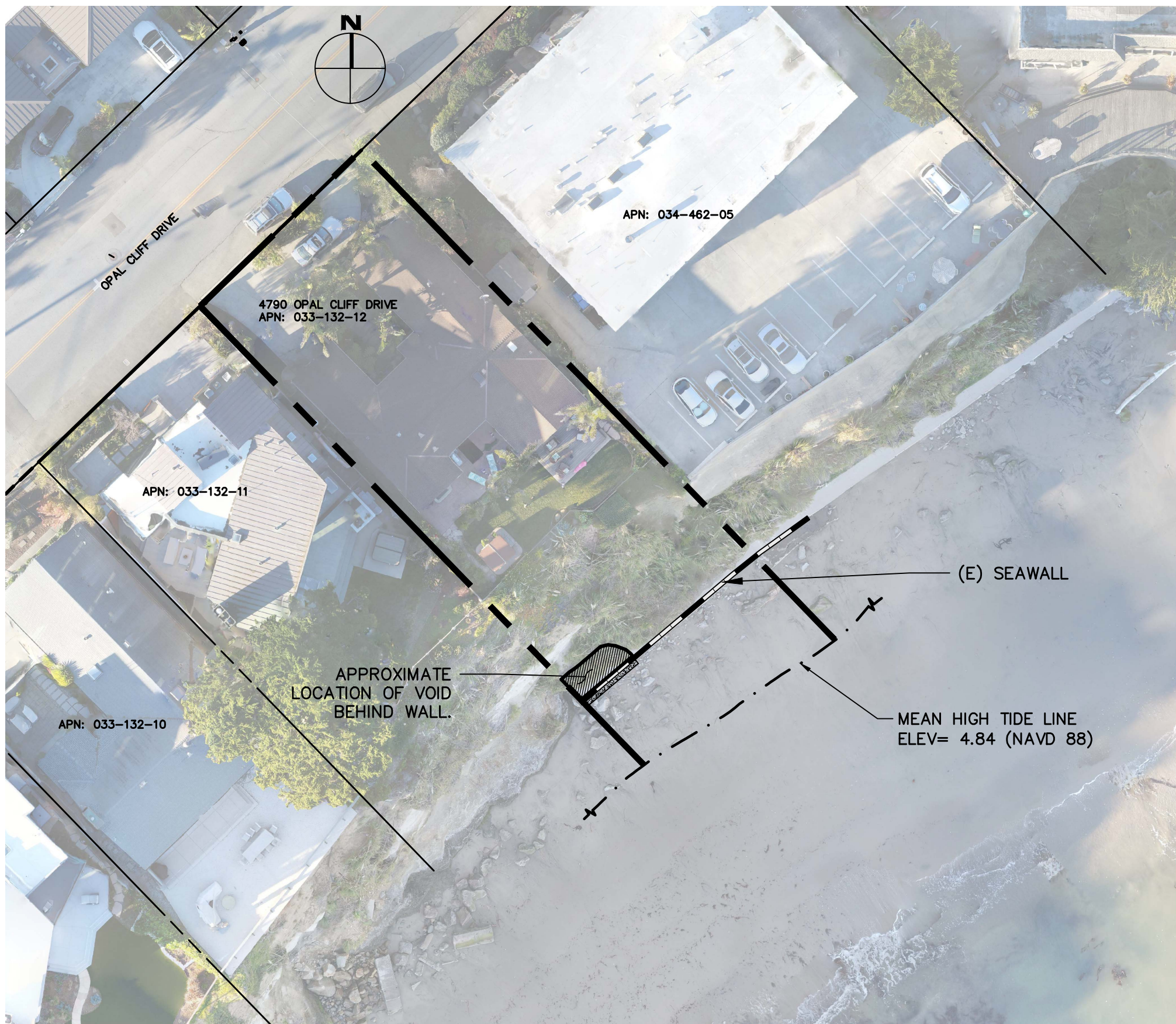
BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
AND LAND SURVEYORS
3949 RESEARCH PARK COURT, SUITE 100
SOQUEL, CA 95073
(831)426-3560

PROJECT GEOLOGIST

ERIK ZINN
PACIFIC CREST ENGINEERING, INC.
444 AIRPORT BLVD
WATSONVILLE, CA 95076
(831)722-9446

PROJECT GEOTECHNICAL ENGINEER

YVETTE M. WILSON, PE
ROCK SOLID ENGINEERING, INC.
1100 MAIN STREET, SUITE A
WATSONVILLE, CA 95076
(831)724-5868



SITE PLAN
SCALE: 1"=30'



2/24/2023



RI Engineering, Inc.

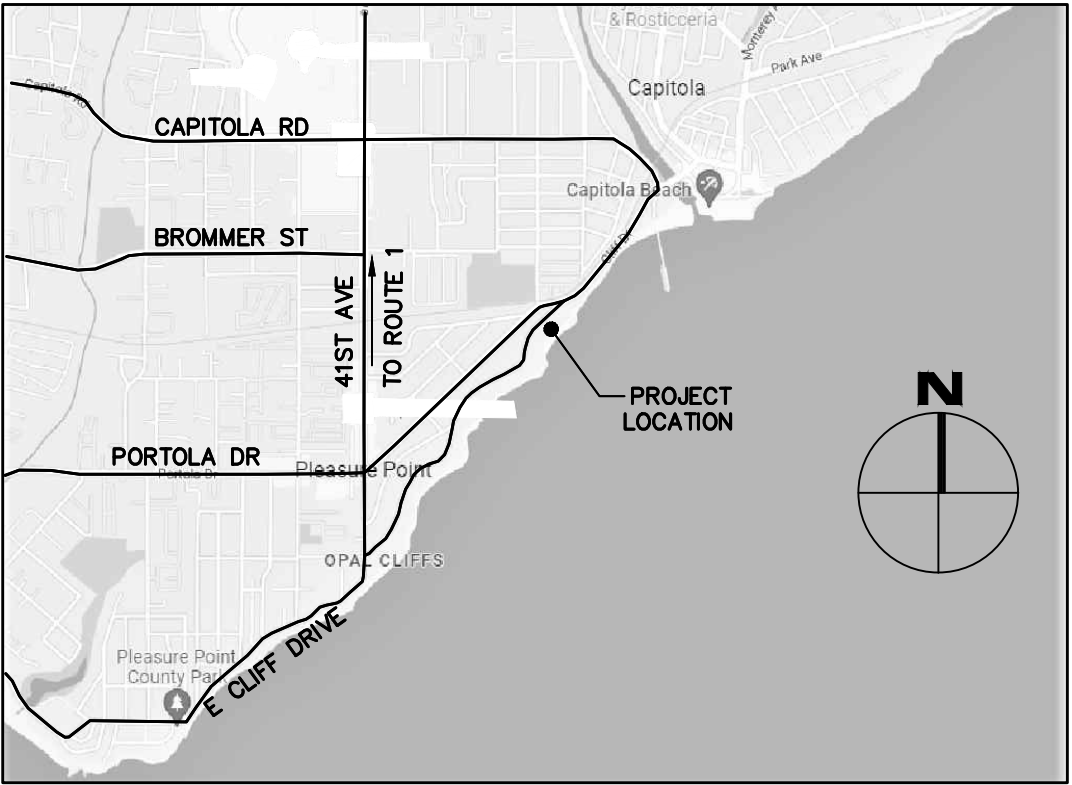
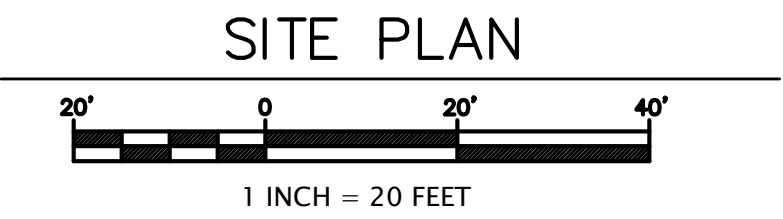
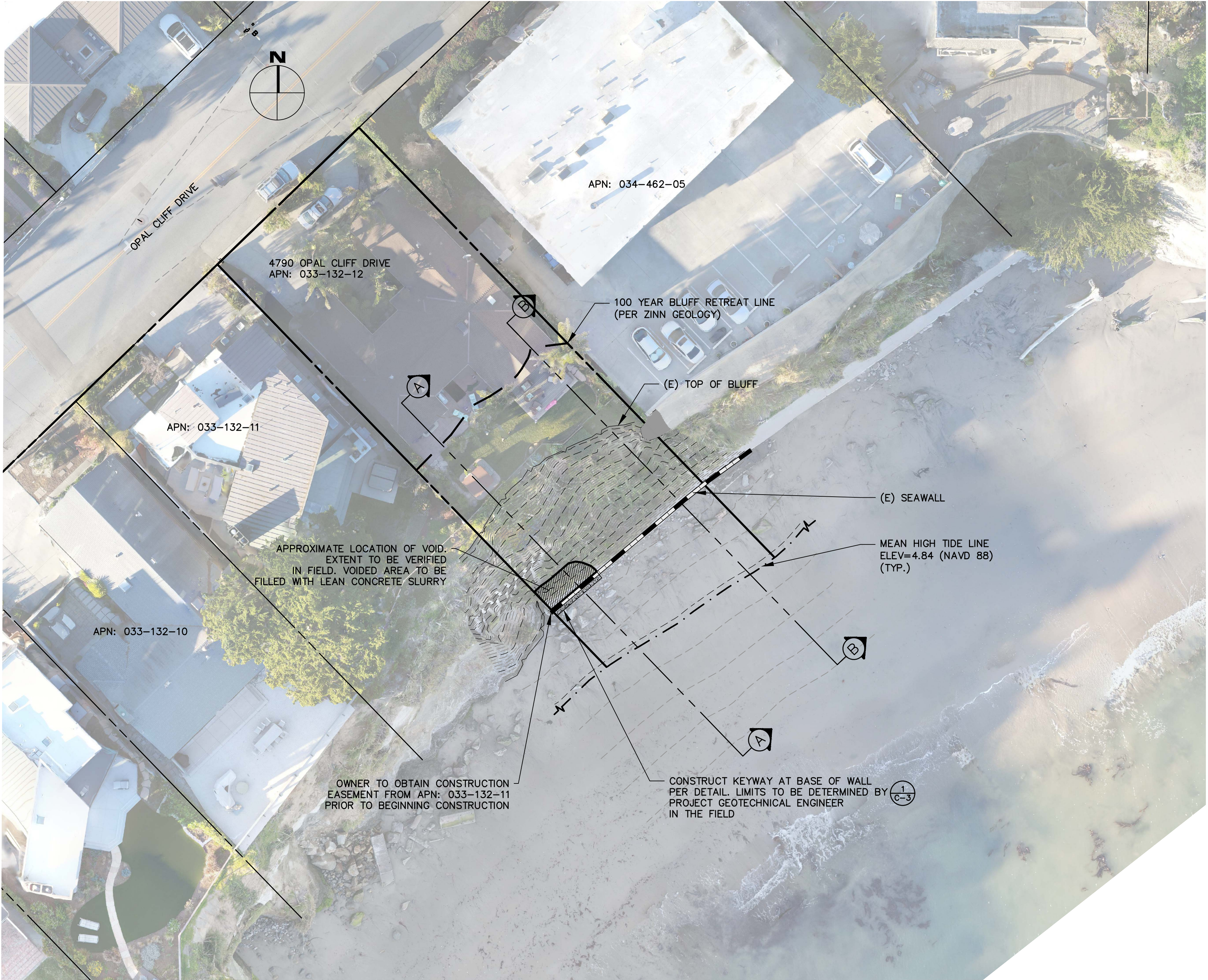
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.riengineering.com

SEAWALL REPAIR PLAN
FOR
ADEYEMI AJAO & EMILY TZOUANAKIS
4790 OPAL CLIFF DRIVE
SANTA CRUZ, CA 95062
033-132-12

TITLE SHEET

project no.
22-005-1
date
FEBRUARY 2023
scale
AS SHOWN
dwg name
CIVIL1

C-1



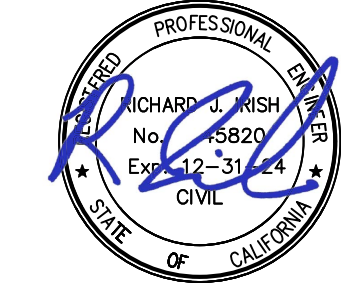
VICINITY MAP
NTS

LEGEND

- (E) AB
- (E) AC
- (E) CONCRETE
- PROPOSED AC
- (E) FLOWLINE
- (E) RETAINING WALL
- PROPERTY LINE
- (E) SEAWALL

ABBREVIATIONS

- | | |
|--------|-------------------------|
| BW | BOTTOM OF WALL |
| CB | CATCH BASIN |
| CONST | CONSTRUCT |
| DIA. | DIAMETER |
| DS | DOWNSPOUT |
| DTL | DETAIL |
| DWY | DRIVEWAY |
| (E) | EXISTING |
| EL | ELEVATION |
| EOP | EDGE OF PAVEMENT |
| FF | FINISH FLOOR |
| FG | FINISH GRADE |
| FS | FIRE SERVICE |
| HP | HIGH POINT |
| INV | INVERT |
| LF | LINEAR FEET |
| LP | LOW POINT |
| MAX | MAXIMUM |
| N.T.S. | NOT TO SCALE |
| RW | RETAINING WALL |
| RM | RIM ELEVATION |
| S | SLOPE |
| SCCO | COUNTY OF SANTA CRUZ |
| SSCO | SANITARY SEWER CLEANOUT |
| SDCO | STORM DRAIN CLEANOUT |
| TYP | TYPICAL |
| TW | TOP OF WALL |
| WS | WATER SERVICE |



RJ Engineering, Inc.
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SEAWALL REPAIR PLAN
FOR
ADEYEMI AJAO & EMILY TZOUANAKIS
4790 OPAL CLIFF DRIVE
SANTA CRUZ, CA 95062
033-132-12
PLAN

project no.
22-005-1
date
FEBRUARY 2023
scale
AS SHOWN
dwg name
CIVIL1

C-2

EXHIBIT D



SYSTEM AND OVERVIEW

1. THE PURPOSE OF THIS PROJECT IS TO REPAIR AN EXISTING SEAWALL SYSTEM AT 4790 OPAL CLIFF DRIVE, SANTA CRUZ COUNTY.
2. WHILE THE ENGINEER DOES NOT DIRECT MEANS OR METHODS OF CONSTRUCTIONS, NO MECHANIZED CONSTRUCTION EQUIPMENT, WHETHER TEMPORARY OR PERMANENT, OR CONSTRUCTION MATERIALS SHALL BE STORED ON ANY SAND AREA, BLUFF, OR ENVIRONMENTALLY SENSITIVE HABITAT AREA, OR WITHIN 20 FEET OF COASTAL WATERS.

CONSTRUCTION MANAGEMENT PLAN PROVISIONS

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION PLAN TO INCLUDE AN ACCESS PLAN SHOWING PROPOSED ROUTES OF TRAVEL, STORAGE AREAS, AND TRAFFIC CONTROL, TO BE IMPLEMENTED FOR CONSTRUCTION OF THESE IMPROVEMENTS. THIS PLAN MUST BE APPROVED BY THE OWNER AND THE SANTA CRUZ PLANNING DIRECTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

THE CONSTRUCTION PLAN APPLIES TO THE CONSTRUCTION OF REPAIR OF THE EXISTING SEAWALL. THE CONSTRUCTION PLAN SHALL INCLUDE THE FOLLOWING NOTES:

1. GRADING OF INTERTIDAL AREAS IS PROHIBITED.
2. CONSTRUCTION ACCESS SHALL BE AS DIRECTED BY OWNER. IMPACTS TO THE ACCESS ROUTE MUST BE MINIMIZED AND DISTURBANCE ALONG THE ACCESS ROUTE MUST BE RESTORED TO PRE-CONSTRUCTION CONDITIONS UPON PROJECT COMPLETION. THE FOLLOWING PROVISIONS SHALL APPLY TO THE WORK.
3. ANY DEBRIS GENERATED DURING CONSTRUCTION SHALL BE REMOVED FROM THE BEACH AND EITHER USED AS FILL LANDWARD OF THE PROPOSED SEAWALL OR HAULED OFFSITE TO AN APPROVED DUMPSITE.
4. ALL WORK SHALL TAKE PLACE DURING DAYLIGHT HOURS AND LIGHTING OF THE BEACH AREA IS PROHIBITED UNLESS THE SANTA CRUZ COUNTY PLANNING DIRECTOR OR THE EXECUTIVE DIRECTOR OF THE CALIFORNIA COASTAL COMMISSION AUTHORIZES NON-DAYLIGHT WORK AND/OR BEACH AREA LIGHTING.
5. CONSTRUCTION WORK AND EQUIPMENT OPERATIONS SHALL NOT BE CONDUCTED SEAWARD OF THE MEAN HIGH WATER LINE UNLESS TIDAL WATERS HAVE RECEDED FROM THE AUTHORIZED WORK AREA.
6. ALL CONSTRUCTION EQUIPMENT SHALL REMAIN AS FAR LANDWARD AS POSSIBLE, AND AVOID CONTACT WITH OCEAN WATERS AND INTERTIDAL AREAS.
7. ALL EROSION AND SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AS WELL AS AT THE END OF EACH WORK DAY. SILT FENCES, OR EQUIVALENT APPARATUS, MAY BE INSTALLED AT THE PERIMETER OF THE CONSTRUCTION SITE TO PREVENT CONSTRUCTION RELATED RUNOFF AND/OR SEDIMENT FROM ENTERING INTO THE PACIFIC OCEAN. FENCING MAY BE USED ON THE BEACH FOR EROSION AND SEDIMENT CONTROLS AS NECESSARY TO CONTAIN ROCK AND/OR SEDIMENTS AT THE PROJECT SITE.
8. ALL CONSTRUCTION MATERIALS AND EQUIPMENT PLACED ON THE BEACH SHALL BE STORED BEYOND THE REACH OF WAVES AND EXTREME TIDES, AND SHALL BE REMOVED FROM THE BEACH IF NECESSARY TO AVOID INUNDATION. MATERIALS THAT REMAIN ON THE BEACH OVERNIGHT MUST BE LOCATED ON THE DRY SAND BACK BEACH AREA, AS CLOSE TO THE TOE OF THE BLUFF AS POSSIBLE. THE EXTENT OF OVERNIGHT STORAGE AREAS SHALL BE KEPT TO THE MINIMUM NECESSARY, NO FUELING, OR FUEL STORAGE SHALL BE ALLOWED ON THE BEACH AT ANY TIME.
9. THE CONTRACTOR (AND PERMITEE) SHALL MONITOR WEATHER FORECASTS AND MOVE ALL CONSTRUCTION EQUIPMENT AND MATERIALS OFF OF THE BEACH IN ADVANCE OF STORM OR EXTREME TIDAL EVENTS.
10. CONSTRUCTION (INCLUDING BUT NOT LIMITED TO CONSTRUCTION ACTIVITIES, AND MATERIALS AND/OR EQUIPMENT STORAGE) IS PROHIBITED OUTSIDE OF THE DEFINED CONSTRUCTION, STAGING, AND STORAGE AREAS SHOWN HEREON.
11. NO WORK SHALL OCCUR ON THE BEACH DURING WEEKDAYS OR HOLIDAYS UNLESS, DUE TO EXTENUATING CIRCUMSTANCES (SUCH AS TIDAL ISSUES OR OTHER ENVIRONMENTAL CONCERNS), AND THE SANTA CRUZ COUNTY PLANNING DIRECTOR OR THE EXECUTIVE DIRECTOR OF THE CALIFORNIA COASTAL COMMISSION AUTHORIZES SUCH WORK.
12. ALL HEAVY EQUIPMENT USED FOR CONCRETE POURING SHALL BE SET AT LEAST 25 FEET LANDWARD OF THE BLUFFTOP AND SHALL USE FLEXIBLE HOSES OR ARTICULATED BOOMS TO DELIVER CONCRETE TO THE PROJECT SITE. OTHER HEAVY EQUIPMENT MAY BE USED PERIODICALLY ATOP THE COASTAL BLUFF, BUT SHALL BE REMOVED FROM THE BLUFF EDGE WHEN NOT IN USE. ALL HEAVY EQUIPMENT AND PROJECT CONSTRUCTION MATERIALS SHALL BE STORED ON DRY LAND ALONG THE ROAD OR DRIVEWAY AREAS ADJACENT TO THE PROJECT SITE.
13. EQUIPMENT WASHING SHALL NOT TAKE PLACE ON THE BEACH. REFUELING AND/OR SERVICING OF EQUIPMENT SHALL BE ALLOWED ONLY AT DESIGNATED LOCATION AS NOTED ON THE PLAN. APPROPRIATE BEST MANAGEMENT PRACTICES SHALL BE USED TO ENSURE THAT NO SPILLS OF PETROLEUM PRODUCTS OR OTHER CHEMICALS TAKE PLACE DURING ACTIVITIES.
14. PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WILL BE KEPT ON PUBLIC ROADS OR A DISTANCE OF AT LEAST 100 FEET FROM THE SHORELINE AND SHALL BE STORED OFFSITE.
15. THE CONSTRUCTION SITE SHALL MAINTAIN GOOD CONSTRUCTION SITE HOUSEKEEPING CONTROLS AND PROCEDURES (E.G., CLEAN UP ALL LEAKS, DRIPS, AND OTHER SPILLS IMMEDIATELY, KEEP MATERIALS COVERED AND OUT OF THE RAIN (INCLUDING COVERING EXPOSED PILES OF SOIL AND WASTES) DISPOSE OF ALL WASTES PROPERLY, PLACE TRASH RECEPTACLES ON SITE FOR THAT PURPOSE, COVER OPEN TRASH RECEPTACLES DURING WET WEATHER, AND REMOVE ANY CONSTRUCTION DEBRIS FROM THE BEACH).
16. ALL AREAS OF BEACH DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO THEIR ORIGINAL PRE-CONSTRUCTION CONDITION. UPON COMPLETION OF CONSTRUCTION OF THE SEAWALL, THE ACCESS ROUTE AND STAGING AREA SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
17. AT ALL TIMES DURING PROJECT CONSTRUCTION ACTIVITIES, COPIES OF EACH OF THE FOLLOWING SHALL BE MAINTAINED IN A CONSPICUOUS LOCATION AT THE CONSTRUCTION JOB SITE AND ALL PERSONS INVOLVED WITH THE CONSTRUCTION SHALL BE BRIEFED ON THE CONTENT AND MEANING OF EACH PRIOR TO COMMENCEMENT OF CONSTRUCTION: THE APPROVED FINAL PLANS, AND THE APPROVED CONSTRUCTION PLAN.
18. THE PERMITEES SHALL NOTIFY SANTA CRUZ ENVIRONMENTAL PLANNING DEPARTMENT AND BUILDING DEPARTMENT AT LEAST THIRTY DAYS IN ADVANCE OF COMMENCEMENT OF CONSTRUCTION OR MAINTENANCE ACTIVITIES, AND IMMEDIATELY UPON COMPLETION OF CONSTRUCTION OR MAINTENANCE ACTIVITIES.
19. THE EMBEDMENT OF THE EXISTING FOOTING IS TO BE FIELD VERIFIED. KEYWAY TO BE ADDED AS NEEDED.

ALL REQUIREMENTS ABOVE AND ALL REQUIREMENTS OF THE APPROVED CONSTRUCTION PLAN SHALL BE ENFORCEABLE COMPONENTS OF THIS EMERGENCY DEVELOPMENT PERMIT. THE PERMITEES SHALL UNDERTAKE DEVELOPMENT IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLAN. ANY PROPOSED SIGNIFICANT CHANGES TO THE CONSTRUCTION PLAN SHALL BE REPORTED TO THE COUNTY'S REPRESENTATIVE. NO CHANGES TO THE APPROVED CONSTRUCTION PLAN SHALL OCCUR WITHOUT A CHANGE ORDER APPROVED BY THE SANTA CRUZ COUNTY PLANNING DIRECTOR, UNLESS THEY DETERMINE THAT NO AMENDMENT IS LEGALLY NECESSARY.

MINOR ADJUSTMENTS TO THE FOLLOWING CONSTRUCTION REQUIREMENTS MAY BE APPROVED IF SUCH ADJUSTMENTS: (1) ARE DEEMED REASONABLE AND NECESSARY; AND (2) DO NOT ADVERSELY IMPACT COASTAL RESOURCES.

EXAMINATION OF JOBSITE PLANS AND SPECIFICATIONS

A. THE CONTRACTOR SHALL EXAMINE CAREFULLY THE SITE OF WORK AND THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE EVIDENCE THAT THE CONTRACTOR HAS INVESTIGATED AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED, AS TO THE CHARACTER, QUALITY, AND SCOPE OF WORK TO BE PERFORMED, THE QUANTITIES OF MATERIALS TO BE FURNISHED AND AS TO THE REQUIREMENTS OF THE GEOTECHNICAL AND COASTAL ENGINEERING INVESTIGATION AND PLANS AND THESE SPECIFICATIONS. THE PLANS CONSIST OF 4 SHEETS.

B. ADEYEMI AJAO & EMILY TZOUANAKIS ARE THE OWNERS OF 4790 OPAL CLIFF DRIVE. RI ENGINEERING INC. IS THE ENGINEERING FIRM FOR THE PROJECT AND WILL REPRESENT THE OWNER DURING DESIGN AND CONSTRUCTION OF THE PROJECT. ROCK SOLID ENGINEERING IS THE GEOTECHNICAL ENGINEER FOR THE PROJECT. ZINN GEOLOGY IS THE PROJECT GEOLOGIST.

C. THE CONTRACTOR SHALL RECOGNIZE THAT THE PLANS USED FOR THE DRAWINGS OF THE SEAWALL STRUCTURES MAY DIFFER FROM THE ACTUAL PHYSICAL SITE. DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH THE WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK THE SITE IN RELATION TO THE DRAWINGS AND SPECIFICATIONS. REPORT ANY DISCREPANCIES TO THE OWNER AND THE ENGINEER.

D. THE CONTRACTOR MUST ATTEND A PRE-BID MEETING WITH THE ENGINEER PRIOR TO SUBMITTING A PROPOSAL TO COMPLETE THE PROPOSED WORK. THE CONTRACTOR MAY BE REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE PURPOSE OF THESE MEETINGS IS SO THE CONTRACTOR MAY ASK QUESTIONS CONCERNING THE WORK AND TO MAKE SURE THE CONTRACTOR UNDERSTANDS THE PERMIT CONDITIONS AND ENVIRONMENTAL CONSTRAINTS.

COMPLIANCE WITH CODES

A. ALL CONSTRUCTION AND MATERIALS SHALL BE AS SPECIFIED AND AS REQUIRED BY THE 2022 CALIFORNIA BUILDING CODE, THE BUILDING CODE STANDARDS, LOCALLY ENFORCED CODES AND AUTHORITIES. ALL ARTICLES, MATERIALS AND EQUIPMENT SHALL BE INSTALLED, APPLIED AND CONNECTED AS DIRECTED BY THE MANUFACTURER'S LATEST WRITTEN SPECIFICATIONS EXCEPT WHERE OTHERWISE NOTED.

B. THE CONTRACTOR SHALL KEEP HIMSELF FULLY INFORMED OF ALL APPLICABLE CODES, LAWS, ORDINANCES AND REGULATIONS OF ANY JURISDICTION OR AUTHORITY, AND SHALL ADHERE STRICTLY THERETO. COMPLIANCE WITH ALL LAWS, ORDINANCES AND REGULATIONS OF FEDERAL, STATE, COUNTY AND LOCAL AGENCIES SHALL TAKE PRECEDENCE OVER ALL OTHER CONTRACT DOCUMENTS.

TIMETABLE

THESE PLANS SHOW THE PROPOSED WORK, TO BE IMPLEMENTED AS SOON AS POSSIBLE.

INSPECTION AND MAINTENANCE

THE OWNER SHALL HAVE THE RIGHT TO INSPECT ANY MATERIAL BROUGHT TO THE JOB SITE AND SHALL HAVE THE RIGHT TO REJECT ANY MATERIALS DEEMED DEFECTIVE OR NOT CONFORMING TO THE SPECIFICATIONS. THE REGISTERED GEOTECHNICAL ENGINEER AND/OR THEIR REPRESENTATIVE SHALL BE CALLED TO PERFORM CONSTRUCTION OBSERVATION AND TO MAKE A FINAL INSPECTION OF THE DRAINAGE AND EROSION CONTROL FACILITIES TO ASSURE THAT THE WORK IS COMPLETED ACCORDING TO PLAN. WINTER STORM INSPECTIONS SHALL BE CONDUCTED TO IDENTIFY PROBLEM AREAS AND ASSESS THEN IMPLEMENT CORRECTIVE ACTIONS. WRITTEN DOCUMENTATION SHOULD BE MAINTAINED THAT NOTES INSPECTION DATES, CORRECTIVE ACTIONS NEEDED AND CORRECTIVE ACTIONS TAKEN.

NOTIFICATION OF ENGINEER

THE OWNER SHOULD BE NOTIFIED AT LEAST FOUR (4) WORKING DAYS PRIOR TO ANY SITE CLEARING OR GRADING SO THAT THE WORK IN THE FIELD CAN BE COORDINATED WITH THE GRADING CONTRACTOR, AND ARRANGEMENTS FOR SURVEYING, TESTING AND OBSERVATION CAN BE MADE.

ACCESS

THE CONTRACTOR SHALL USE ACCESS ROUTES AND STAGING AREAS AS DIRECTED BY THE OWNER AND SHALL REPAIR ACCESS ROUTES AND STAGING AREAS TO PRE-PROJECT CONDITION OR BETTER AS DIRECTED BY THE OWNER, AND VERIFIED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL NOT CLOSE OR OBSTRUCT STREETS, WALKS, DRIVES OR OTHER OCCUPIED OR USED SPACES OR FACILITIES WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

SITE DISTURBANCE

DISTURBANCE OF THE PROPERTY BEYOND THE LIMITS OF THE NECESSARY WORK AREA SHALL BE AVOIDED. SENSITIVE HABITAT EXISTS IMMEDIATELY ADJACENT TO THE WORK AREA. THE CONTRACTOR SHOULD EXPECT REGULATORY AGENCIES TO BE PARTICULARLY CONCERNED ABOUT ANY IMPACTS OUTSIDE THE WORK AREA.

STAKING AND LOCATION

1. REFERENCE POINTS WILL BE ESTABLISHED BY THE ENGINEER OR BY THE SURVEYOR. THESE REFERENCE POINTS WILL BE USED TO CONTROL PLACEMENT OF THE STRUCTURES RELATIVE TO CULTURAL FEATURES AND TO ELEVATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND SET SUCH ADDITIONAL MARKS AND STAKES AS IS DETERMINED NECESSARY TO ESTABLISH LINES AND GRADES REQUIRED FOR THE COMPLETION OF THE WORK SPECIFIED, AS SHOWN ON THE PLANS. ALL ELEVATIONS FOR THE IN-PLACE IMPROVEMENTS SHALL BE VERIFIED BY THE PROJECT SURVEYOR.
2. LOCATIONS OF EXISTING DRAIN FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY LOCATIONS AND PROTECT IN PLACE, IF WITHIN THE LIMITS OF WORK. THE CONTRACTOR SHALL PLUG, CAP, OR RECONNECT/REINSTALL EXISTING DRAINAGE FACILITIES DAMAGED DURING CONSTRUCTION, AS DIRECTED BY ENGINEER
3. LOCAL SURVEY CONTROL: SPIKES WILL BE SET FOR USE AS ELEVATION CONTROL POINTS. DO NOT DISTURB SPIKES. THE VERTICAL ELEVATION DATUM IS NAVD1988
4. FINAL CONFIRMATION OF THE IMPROVEMENTS SHALL BE SURVEYED BY A CALIFORNIA LICENSED SURVEY AND AN "AS-BUILT" MAP OF THE IMPROVEMENTS SHALL BE PREPARED AT THE CLOSE OF CONSTRUCTION.

BASIS OF ELEVATION

ALL ELEVATIONS SHOWN HEREIN ARE BASED ON THE NAVD 88 DATUM AND TOPOGRAPHIC MAP BY BOWMAN & WILLIAMS CIVIL ENGINEERS & LAND SURVEYORS. POINTS FROM THIS SURVEY WERE USED AS GROUND CONTROL TO ESTABLISH VERTICAL DATUM.

AERIAL PHOTOGRAMMETRY SURVEY

THE ELEVATIONS SHOWN AND CROSS SECTION DATA WAS OBTAINED BY RI ENGINEERING THROUGH A AERIAL PHOTOGRAMMETRY SURVEY USING GROUND CONTROL POINTS BASED ON THE TOPOGRAPHIC SURVEY PROVIDED BY BOWMAN & WILLIAMS CIVIL ENGINEERS & LAND SURVEYORS. THE AERIAL SURVEY WAS COMPLETED ON FEBRUARY 2, 2022.

RI ENGINEERING INC. MAKES NO GUARANTEE AS TO THE ACCURACY OF TOPOGRAPHIC INFORMATION SHOWN. RI ENGINEERING IS NOT A LICENSED SURVEYOR OF RECORD. THE AERIAL DATA IS USED FOR PLANNING PURPOSES AND EVALUATION OF THE EXISTING SEAWALL.

ANY CONTRACTOR SHALL VERIFY THE BOUNDARY LOCATION AND TOPOGRAPHIC INFORMATION PRIOR TO COMMENCING WORK.

DRAIN PIPES AND UNDERGROUND UTILITIES

EXISTING DRAINPIPPES AND UNDERGROUND UTILITIES WITHIN THE WORK AREA SHALL BE LOCATED BY THE CONTRACTOR AND AVOIDED AND/OR PROTECTED DURING CONSTRUCTION.

A. THE CONTRACTOR SHALL LOCATE, IDENTIFY, AND PROTECT UTILITIES FROM DAMAGE. LOCATION OF EXISTING UTILITIES SHOWN ON PLANS IS APPROXIMATE. THE EXISTING UNDERGROUND UTILITY LOCATIONS ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO STARTING WORK AND PROTECTING UTILITIES THROUGHOUT COURSE OF WORK.

B. THE CONTRACTOR SHALL NOT INTERRUPT UTILITIES SERVING OCCUPIED OR USED FACILITIES WITHOUT THE WRITTEN PERMISSION OF THE OWNER AND AUTHORITIES HAVING JURISDICTION. IF NECESSARY, PROVIDE TEMPORARY UTILITIES

C. THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 24 HOURS PRIOR TO SHUT-OFF OF EXISTING UTILITIES.

MARINE PROTECTION

TO PREVENT ANY IMPACTS UPON THE MARINE HABITAT, NO OVERBURDEN OR WET CEMENT MAY BE ALLOWED TO ADVERSELY IMPACT THE BEACH OR ENTER THE TIDAL ZONE. UNDER NO CIRCUMSTANCES SHALL USE OF EQUIPMENT BE ALLOWED SEAWARD OF THE MEAN HIGH TIDE LINE WHEN SEAWATER IS PRESENT. ANY AREAS OF LOOSE OR UNSTABLE SOIL MUST BE STABILIZED IMMEDIATELY AFTER OTHER PORTIONS OF THE PROJECT ARE FINISHED. ANY HEAVY EQUIPMENT OPERATION MUST BE CONDUCTED WITH CARE NEAR THE EDGE OF THE BLUFF TO PREVENT THE DESTABILIZATION OF THE SUBSTRATE AND ADDITIONAL EROSION. CARE MUST BE TAKEN SO THE COASTAL BLUFFS OUTSIDE THE WORK AREA ARE NOT DAMAGED DURING CONSTRUCTION.

MAINTENANCE

THE COASTAL BLUFF PROTECTION SYSTEM DEPICTED HEREIN MUST BE CONSISTENTLY INSPECTED ON A ROUTINE BASIS AND MAINTAINED AS NECESSARY. THE OWNER(S) SHOULD RETAIN A LICENSED CIVIL ENGINEER, EXPERIENCED IN COASTAL PROTECTION STRUCTURES, TO INSPECT THE SYSTEM AT LEAST ONCE EVERY FIVE YEARS FOR THE LIFE OF THE STRUCTURE. THIS INSPECTION MUST CONFIRM THAT THE COASTAL BLUFF PROTECTION SYSTEM IS PERFORMING ADEQUATELY OR ANY NOTED DEFICIENCY MUST BE CORRECTED WITHIN SIX MONTHS.

CONSTRUCTION COORDINATOR

CONTRACTOR SHALL PROVIDE A CONSTRUCTION COORDINATOR WHO CAN BE CONTACTED DURING CONSTRUCTION, SHOULD QUESTIONS ARISE DURING CONSTRUCTION. (IN CASE OF BOTH REGULAR INQUIRIES AND IN EMERGENCIES). THEIR CONTACT INFORMATION (24 HOUR PHONE NUMBERS) SHALL BE CONSPICUOUSLY POSTED AT THE JOB SITE IN A MANNER SO THAT THE CONTACT INFORMATION IS READILY VISIBLE FOR PUBLIC VIEWING. THE POSTING SHALL INDICATE THAT THE CONSTRUCTION COORDINATOR SHOULD BE CONTACTED TO ANSWER QUESTIONS THAT ARISE DURING CONSTRUCTION. (IN CASE OF BOTH REGULAR INQUIRIES AND IN EMERGENCIES). THE CONSTRUCTION COORDINATOR SHALL RECORD THE NAME, PHONE NUMBER AND NATURE OF ALL COMPLAINTS (IF ANY) RECEIVED DURING CONSTRUCTION, AND SHALL INVESTIGATE COMPLAINTS AND TAKE REMEDIAL ACTION, IF NECESSARY, WITHIN 24 HOURS OF RECEIPT OF THE COMPLAINT OR INQUIRY.

RESIDENTIAL ACCESS PROTECTION

IMPACTS TO BEACH ACCESS AND RESIDENTIAL ACCESS ROUTES MUST BE MINIMIZED. APPROPRIATE SIGNAGE SHALL BE USED TO MAKE SURE THAT BEACH USERS KNOW WHAT TO DO AS THEY APPROACH THE WORK SITES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF THE ACCESS ROUTE AND STAGING AREA TO ITS ORIGINAL CONDITION.

PROJECT DURATION

1. THE DURATION OF CONSTRUCTION WILL BE APPROXIMATELY 30 WORKING DAYS.
2. WORK AT THE BEACH CONSTRUCTION ZONE WILL TAKE PLACE ONLY DURING PERIODS OF LOW TIDE WHEN THE WORK SITE AND CONSTRUCTION ROUTE ARE ACCESSIBLE.

PROBABLE CONSTRUCTION EQUIPMENT

BEACH CONSTRUCTION ZONE:

1. REBAR SAW
2. CONCRETE SAW
3. CONCRETE FORMS
4. JACKHAMMER/DRILL WITH COMPRESSOR
5. MISCELLANEOUS CONCRETE HAND TOOLS
6. HAND HELD DRILL
7. WELDER
8. SAND BLASTER
9. CONCRETE PUMPER
10. EXCAVATION WITH ROCK CLAW

SPECIFICATIONS

1. ALL WORK SHALL BE IN CONFORMANCE WITH THE 2022 CALIFORNIA BUILDING CODE.
2. VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
3. CONCRETE USED FOR GENERAL SITE WORK SHALL HAVE A 28-DAY COMPRESSION STRENGTH OF 4000 PSI OR BETTER.
- A. SHOTCRETE SHALL MEET THE REQUIREMENTS OF SECTION – "SHOTCRETE" OF THE CALTRANS STANDARD SPECIFICATIONS. COMPRESSION STRENGTH OF SHOTCRETE SHALL BE 4000 PSI MIN.
5. STEEL REINFORCING SHALL BE EPOXY COATED AND SHALL CONFORM TO ASTM DESIGNATION A614, GRADE 60.
6. LAP REINFORCEMENT BARS A MINIMUM OF 48 x BAR AREA AT ALL SPLICES, CORNERS, AND INTERSECTIONS (12" MIN).
7. CEMENT GROUT
A. CEMENT SHALL BE TYPE II CONFORMING TO ASTM C-150. THE 28-DAY COMPRESSIVE STRENGTH OF THE GROUT SHALL BE 4000 PSI.
- B. ACCELERATING ADMIXTURES WHICH CAN BE SHOWN NOT TO CORRODE THE SPECIFIED STEEL AND WHICH PREVENT BLEED AND SHRINKAGE MAY BE SUBMITTED FOR APPROVAL FOR THE GROUT USED TO FILL BOND LENGTH ENCAPSULATING SHEATHS AND THE TRUMPETS.
8. TEXTURING AND STAINING SHALL REPRODUCE TO THE EXTENT PRACTICABLE THE TEXTURE, RELIEF, STRATIGRAPHY, INCLUSIONS, CONTOURS AND COLORING OF THE TERRACE DEPOSITS OR PURISMA FORMATION OVER WHICH THE FACING IS PLACED.
- A. CONTRACTOR SHALL SUBMIT 3 18" x 18" SAMPLES OF COLORED/TEXTURED SURFACE TO THE OWNER FOR APPROVAL PRIOR TO PLACEMENT.

GRADING

EXCAVATION: SANDY MATERIALS EXCAVATED ON THE BEACH SHALL BE LEFT ON THE BEACH. IF ANY DEBRIS IS ENCOUNTERED, IT SHALL BE DISPOSED OF AT A COUNTY-APPROVED DUMPSITE. MUDSTONE SOILS FROM THE KEYWAY SHALL BE PLACED AGAINST THE BASE OF THE BLUFF, OR IN A LOCATION APPROVED BY THE ENGINEER.

PROTECTION OF IMPROVEMENTS: IMPROVEMENTS ON SITE SHALL BE PROTECTED FROM DAMAGE. WHERE IMPROVEMENTS (SUCH AS FENCES, RAILINGS, PAVING, OR SIGNAGE) NEED TO BE REMOVED TO ALLOW ACCESS OR CONSTRUCTION, THEY SHALL BE REMOVED AND REPLACED WITH IMPROVEMENTS OF EQUAL QUALITY.

FILL PLACEMENT: THE PLACEMENT AND SPREADING OF FILL MATERIALS AND THE PROCESSING AND COMPACTION OF FILL MATERIALS BY FLOODING, PONDING, OR JETTING SHALL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEER. FILLS SHOULD BE KEYED AND BENCHED INTO FIRM SOIL. THE FILL SHALL BE PLACED IN 8 INCH LIFTS (COMPACTED LAYERS), MOISTURE CONDITIONED AS REQUIRED AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION AS PER ASTM TEST PROCEDURE D1557. FIELD DENSITY TESTS SHALL BE MADE BY THE GEOTECHNICAL ENGINEER TO ENSURE PROPER COMPACTION. FIELD DENSITY TESTS WILL BE PERFORMED IN ACCORDANCE WITH ASTM D1557. THE NUMBER OF TESTS AND THEIR LOCATION SHALL BE AT THE SOLE DISCRETION OF THE GEOTECHNICAL ENGINEER.

WEATHER: NO FILL MATERIAL SHALL BE PLACED, SPREAD OR COMPACTED DURING UNFAVORABLE WEATHER CONDITIONS. WHEN WORK IS INTERRUPTED BY HEAVY RAINS, FILL OPERATIONS SHALL NOT RESUME UNTIL FIELD DENSITY TESTS TAKEN BY THE GEOTECHNICAL ENGINEER INDICATE THAT THE MOISTURE CONTENT AND DENSITY OF THE FILL MEET THE SPECIFIED REQUIREMENTS.

EARTHWORK AND GRADING

1. WORK SHALL CONSIST OF ALL CLEARING, GRUBBING, STRIPPING, PREPARATION OF LAND TO BE FILLED, EXCAVATION, SPREADING, COMPACTION AND CONTROL OF FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING TO CONFORM TO THE LINES, GRADES, AND SLOPES, AS SHOWN ON THE APPROVED PLANS.
2. REFERENCE IS MADE TO THE GEOTECHNICAL INVESTIGATIONS BY ROCK SOLID ENGINEERING INC., ENTITLED "SEAWALL MONITORING REPORT," DATED FEBRUARY 28, 2023. THE CONTRACTOR SHALL MAKE A THOROUGH REVIEW OF THIS REPORT AND SHALL FOLLOW ALL RECOMMENDATIONS THEREIN. THE CONTRACTOR SHALL CONTACT ROCK SOLID ENGINEERING INC. FOR ANY CLARIFICATIONS NECESSARY PRIOR TO PROCEEDING WITH THE WORK.
3. THE GEOTECHNICAL ENGINEER SHOULD BE NOTIFIED AT LEAST FOUR (4) DAYS PRIOR TO ANY SITE CLEARING AND GRADING OPERATIONS.
4. STRIPPED AREAS SHOULD BE SCARIFIED TO A DEPTH OF ABOUT 6". WATER-CONDITIONED TO BRING THE SOILS WATER CONTENT TO ABOUT 2% ABOVE THE OPTIMUM, AND COMPACTED TO A DENSITY EQUIVALENT TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY OF THE SOIL ACCORDING TO ASTM D1557 (LATEST EDITION).

OBSERVATION BY THE GEOTECHNICAL ENGINEER & PROJECT GEOLOGIST

SHALL BE CONDUCTED AS REQUIRED BY THE GEOTECHNICAL INVESTIGATION & GEOLOGIC INVESTIGATION

EROSION CONTROL

DURING CONSTRUCTION, EROSION CONTROL MEASURES SHALL BE IN PLACE. THESE CONSTRUCTION MEASURES SHALL BE IN THE FORM OF DUST CONTROL, STRAW MULCH, STRAW BALES AND WATTLES PLACED AT THE APPROPRIATE AREAS OF WORK AS DIRECTED BY THE ENGINEER.

SUPPLEMENTAL RECOMMENDATIONS

IF UNDESIRABLE CONDITIONS ARE ENCOUNTERED DURING CONSTRUCTION, OR IF THE PROPOSED CONSTRUCTION WILL DIFFER FROM THAT PLANNED AT THIS TIME, RI ENGINEERING SHALL BE NOTIFIED IN A TIMELY MANNER SO THAT SUPPLEMENTAL RECOMMENDATIONS CAN BE GIVEN.

INSPECTIONS AND MAINTENANCE

THE REGISTERED GEOTECHNICAL AND CIVIL ENGINEER AND/OR HIS REPRESENTATIVE SHALL BE CALLED TO PERFORM CONSTRUCTION OBSERVATION AND TO MAKE A FINAL INSPECTION OF THE SITE TO ASSURE THAT THE WORK IS COMPLETED ACCORDING TO PLAN. WINTER STORM INSPECTIONS SHALL BE CONDUCTED TO IDENTIFY PROBLEM AREAS AND ASSESS THE NEED FOR CORRECTIVE ACTIONS. WRITTEN DOCUMENTATION SHOULD BE MAINTAINED THAT NOTES INSPECTION DATES, CORRECTIVE ACTIONS NEEDED AND CORRECTIVE ACTIONS TAKEN.

WALL BACKFILL: RETAINING WALLS SHALL BE BACKFILLED WITH GRAVEL WHERE INDICATED BY THE ENGINEER. GRAVEL SHALL BE CALTRANS PERMEABLE MATERIAL CLASS I, TYPE A (CALTRANS SPECIFICATION 68-1.025) OR APPROVED EQUAL. GRAVEL BACKFILL SHALL BE COMPLETED IN LIFTS NOT EXCEEDING TWO FEET THICK. GRAVEL SHALL BE PLACED TO WITHIN TWO VERTICAL FEET OF FINISH GRADE. DRAIN PIPES TO ALLOW SEEPAGE THAT ACCUMULATES IN THE GRAVEL TO PASS THROUGH THE WALL SHALL BE INSTALLED AS DESIGNED BY THE ENGINEER

DELETERIOUS MATERIALS: THE CONTRACTOR SHALL CAREFULLY EXCAVATE ALL MATERIALS NECESSARY, OF WHATEVER NATURE, FOR CONSTRUCTION OF THE WORK. ANY MATERIAL OF AN UNSUITABLE OR DELETERIOUS NATURE DISCOVERED BELOW THE FOOTING OF THE PROPOSED RETAINING WALLS SHALL BE BROUGHT TO THE ATTENTION OF THE GEOTECHNICAL ENGINEER BEFORE PROCEEDING WITH THE WORK.

VOIDS: ANY VOIDS EXPOSED DURING EXCAVATION WORK SHALL BE BACK FILLED AS DIRECTED BY THE ENGINEER.

PROTECTION OF IMPROVEMENTS: IMPROVEMENTS ON SITE SHALL BE PROTECTED FROM DAMAGE. WHERE IMPROVEMENTS (SUCH AS FENCES, RAILINGS, PAVING, OR SIGNAGE) NEED TO BE REMOVED TO ALLOW ACCESS OR CONSTRUCTION, THEY SHALL BE REMOVED AND REPLACED WITH IMPROVEMENTS OF EQUAL QUALITY.

EXCAVATION: SANDS, SOILS AND BEDROCK MATERIALS EXCAVATED TO CONSTRUCT THE KEYWAYS SHALL BE CONTAINED ON THE SLOPE AND EITHER USED AS A CAP OVER THE GRANULAR BACKFILL, OR EXPORTED TO AN APPROVED DUMPSITE, AS DIRECTED BY THE ENGINEER

SPOILS: EXCAVATED SPOILS SHALL BE DISPOSED OF WHERE DIRECTED BY OWNER.

TEMPORARY CUT SLOPES: MAXIMUM GRADIENTS SHALL NOT EXCEED 1:1 (H:V), EXCEPT IN HARD BEDROCK. TEMPORARY CUT SLOPES MUST BE INSPECTED BY THE ENGINEER DURING EXCAVATION, TO DETERMINE THE NEED FOR TEMPORARY SHORING OR TEMPORARY UNDERPINNING OF ADJACENT RETAINING STRUCTURE AND/ OR IMPROVEMENTS. THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT SAFEGUARDS DURING CONSTRUCTION IN CONFORMANCE WITH CBC CHAPTER 33.

DUST CONTROL:

FOR DUST CONTROL PURPOSES, WATERING OF EXPOSED SURFACES DURING CLEARING , EXCAVATION, STOCK PILING AND GRADING, AND IN THE LATE MORNING AND THE END OF EACH WORK DAY SHALL BE DONE. GRADING ACTIVITIES SHALL BE PROHIBITED DURING PERIODS OF HIGH WINDS GREATER THAN 30 MILES AN HOUR.

EROSION CONTROL:

DURING CONSTRUCTION, EROSION CONTROL MEASURES SHALL BE IN PLACE IN AREAS TO BE GRADED, AS WELL AS AROUND THE STOCKPILED SOILS. THESE CONSTRUCTION MEASURES SHALL BE IN THE FORM OF DUST CONTROL, STRAW MULCH, STRAW BALES AND WATTLES, AND/OR SILT FENCES PLACED AT THE APPROPRIATE AREAS OF WORK AS DIRECTED BY THE ENGINEER.

NOISE CONTROL:

ALL EQUIPMENT THAT WILL OPERATE FOR EXTENDED PERIODS OF TIME AT THE PROJECT SITE SHALL BE EQUIPPED WITH MUFFLERS.

EXHIBIT D

 2/24/2023				
 RJ Engineering, Inc.				
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060 831-425-3901 www.rjengineering.com				
SEAWALL REPAIR PLAN FOR: ADEYEMI AJAO & EMILY TZOUANAKIS 4790 OPAL CLIFF DRIVE SANTA CRUZ, CA 95062 033-132-12	NOTES			
project no. 22-005-1				
date FEBRUARY 2023				
scale AS SHOWN				
dwg name CIVIL1				
				
PERMIT SUBMITTAL				

SITE PHOTOS – Beach View of 4790 Opal Cliff Drive



Seawall below 4790 Opal Cliff Drive



Westside of seawall at 4790 Opal Cliff Drive



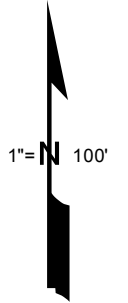
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POR. RANCHO ARROYO DEL RODEO
SECS. 15 & 22, T.11S., R.1W. M.D.B. & M.

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96-100

33-13



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Rev. 11/8/16 Jg (16-0009622, split 2-13)
Rev. 11/8/16 Jg (16-0009620, split 2-14)

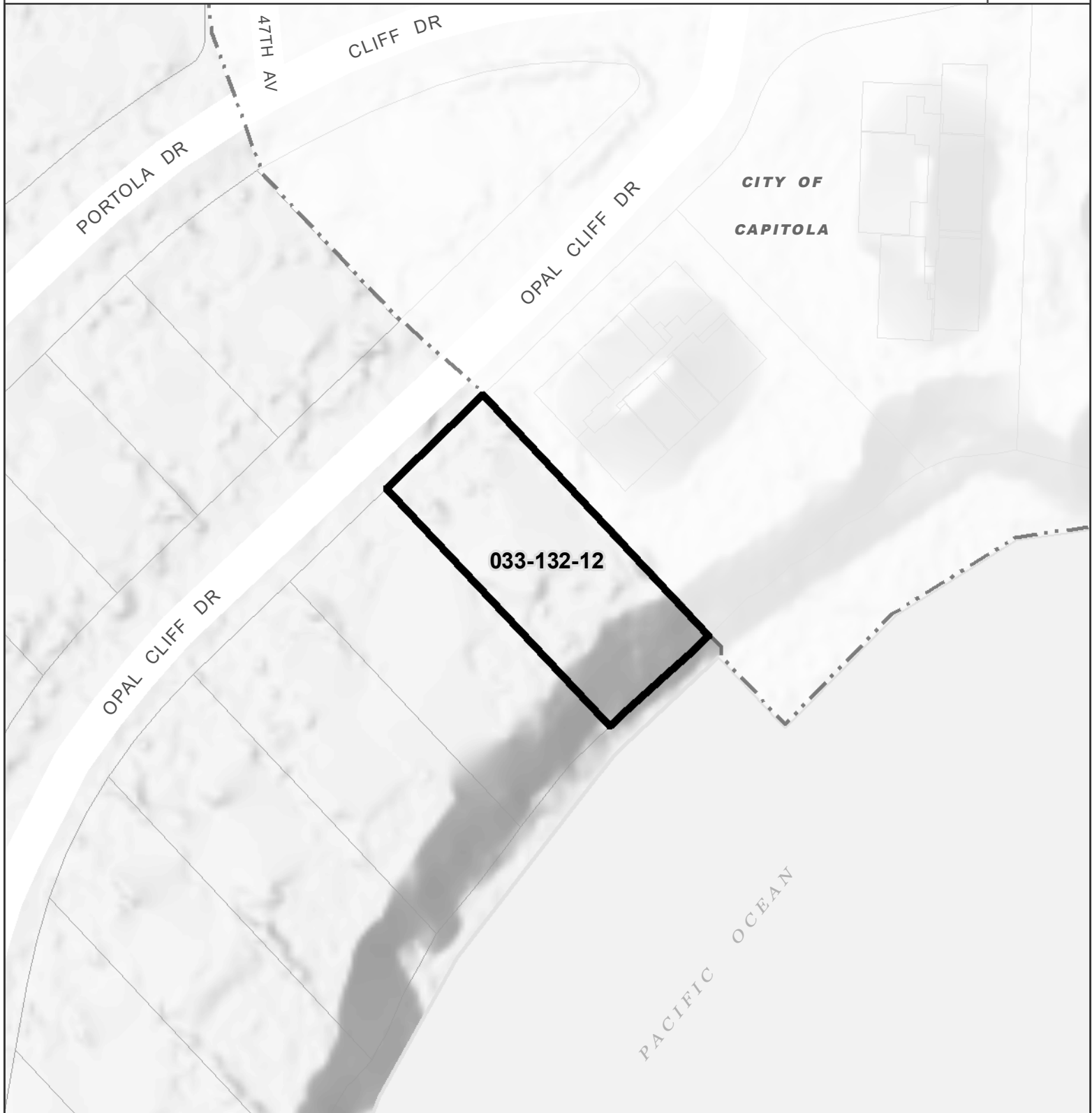
Note - Assessor's Parcel & Block
Numbers Shown in Circles.

EXHIBIT E




Assessor's Map No. 33-13
County of Santa Cruz, Calif.
June 1995



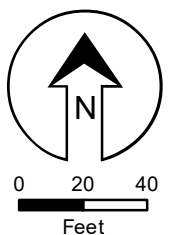
Parcel Location Map



Parcel: 03313212

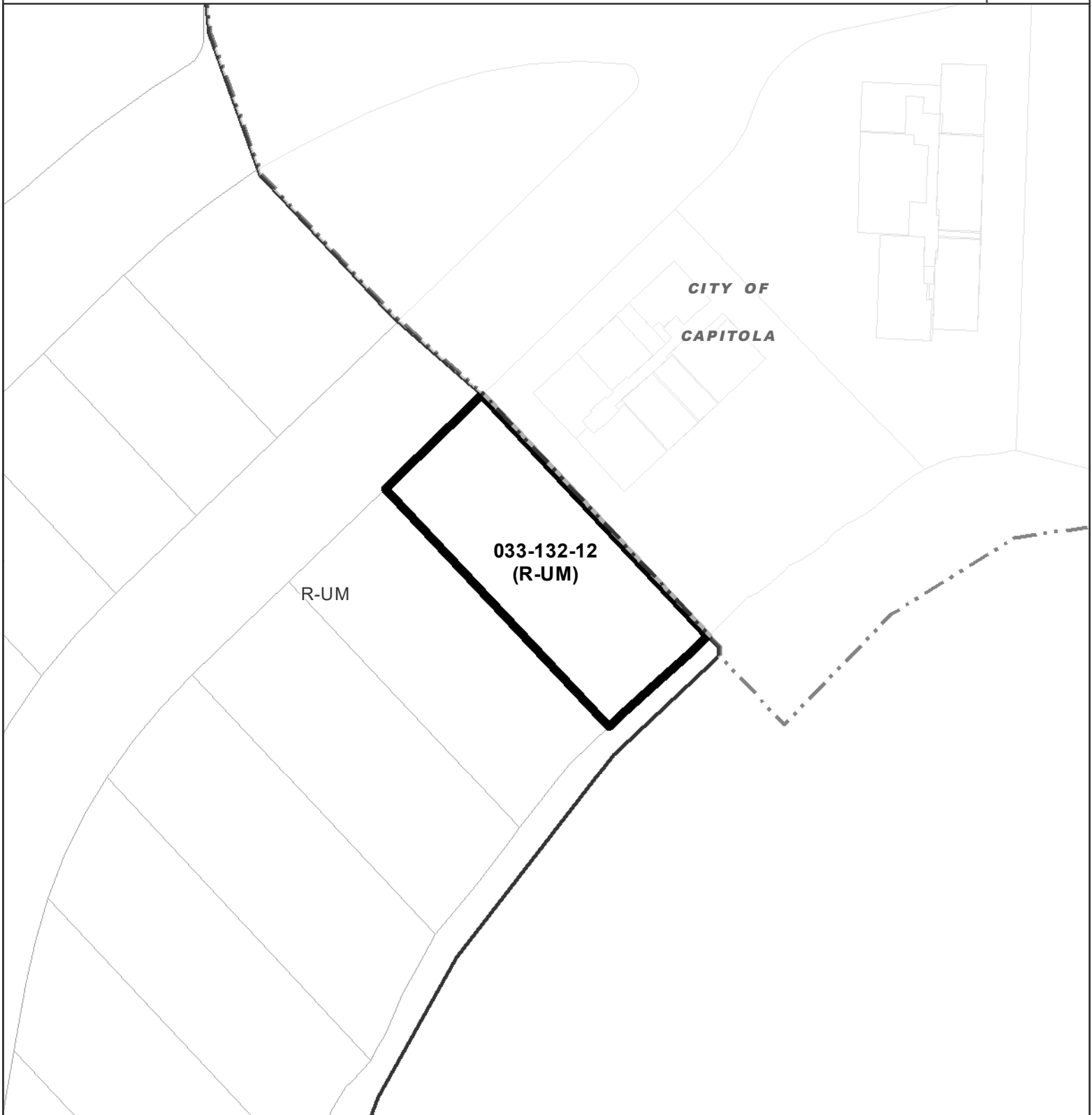
-  Study Parcel
-  Assessor Parcel Boundary
-  City Limits


Map printed: 23 Aug. 2023

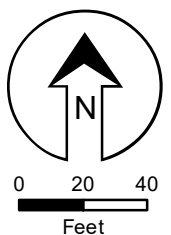




Parcel General Plan Map



 R-UM *Res. Urban Medium Density*

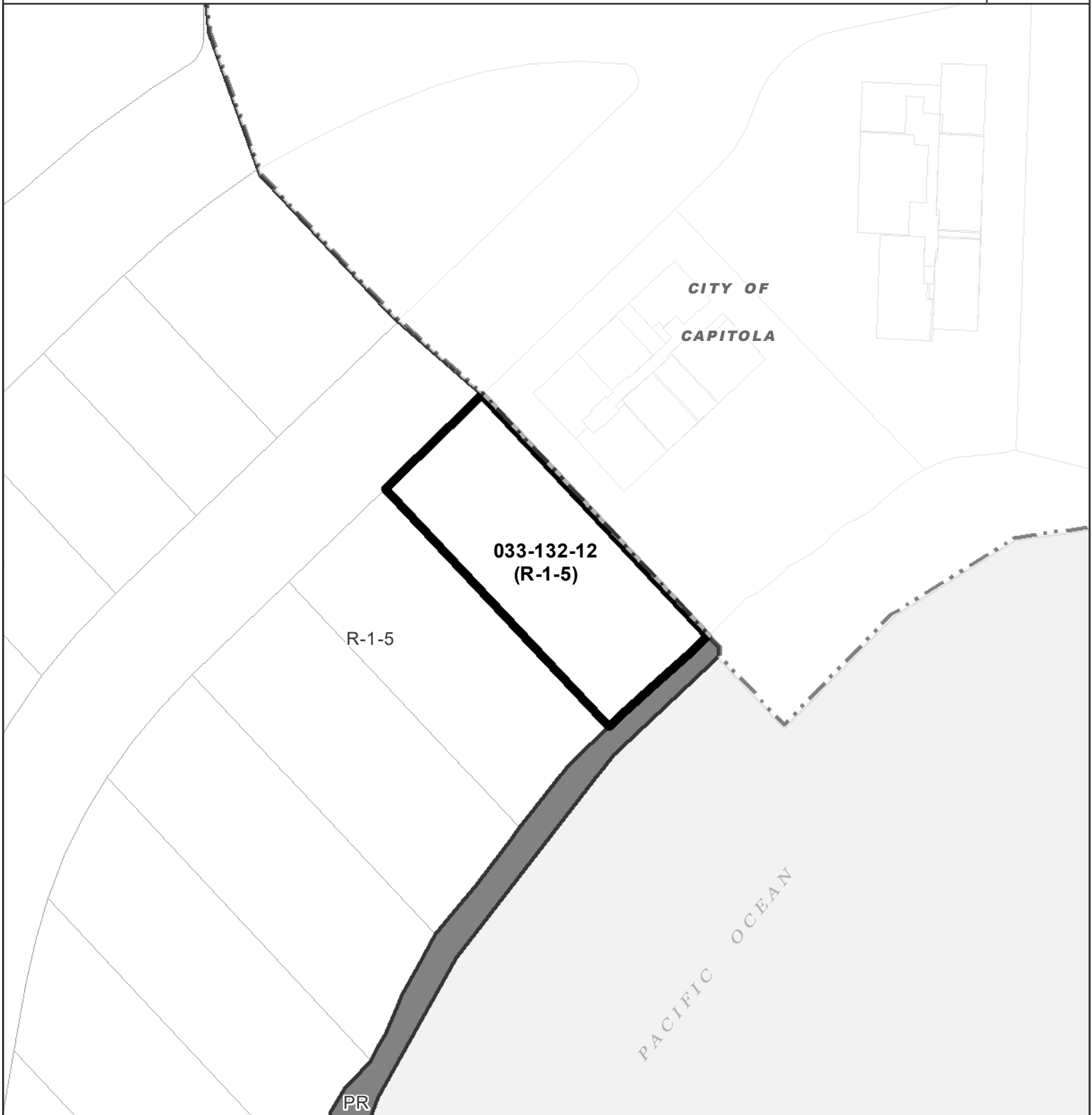




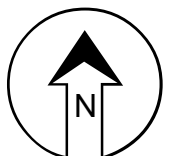
Parcel Zoning Map



Mapped
Area



- PR Parks, Recreation, & Open Space
- R-1 Single-Family Residential



0 20 40
Feet

Parcel Information

Services Information

Urban/Rural Services Line: X Inside Outside
Water Supply: City of Santa Cruz Water District
Sewage Disposal: County Sanitation District
Fire District: Central Fire Protection District
Drainage District: Flood Control District 5

Parcel Information

Parcel Size: Approximately 8,800 square feet (gross)
Existing Land Use - Parcel: Residential
Existing Land Use - Surrounding: Residential/Parks Recreation and Open Space
Project Access: Opal Cliff Drive
Planning Area: Live Oak
Land Use Designation: R-UM (Urban Medium Residential Density)
Zone District: R-1-5 (Single Family Residential (5,000 square foot minimum parcel))
Coastal Zone: X Inside Outside
Appealable to Calif. Coastal Comm. X Yes No

Technical Reviews: Combined Geotechnical and Geologic Report (REV231082)

Environmental Information

Geologic Hazards: Coastal bluff erosion/flood plain
Fire Hazard: Not a mapped constraint
Slopes: Coastal bluff
Env. Sen. Habitat: No physical evidence on site
Grading: Site preparation/backfill behind seawall.
Tree Removal: No trees proposed to be removed
Scenic: Not a mapped resource
Archeology: Not mapped



County of Santa Cruz

Department of Community Development and Infrastructure

701 Ocean Street, Fourth Floor, Santa Cruz, CA 95060
Planning (831) 454-2580 Public Works (831) 454-2160
sccoplanning.com dpw.co.santa-cruz.ca.us

22 August 2023

Emily Tzouanakis and Adeyemi Ajao <emily.tzouanakis@gmail.com>
4790 Opal Cliff Drive
Santa Cruz, CA 95062

Subject: Review of Geologic Letter Supporting Repair of Void Behind Seawall Plan by R.I. Engineering, 4790 Opal Cliff Drive, Santa Cruz, CA 95062, County of Santa Cruz APN 033-132-12 dated 7 March 2023 by Pacific Crest Engineering Inc. Project No. 2279; and

Review of Seawall Monitoring Report, 4790 Opal Cliff Drive Santa Cruz, California 95062 APN: 033-132-12 dated 28 February 2023 by Rock Solid Engineering, Inc. Project No. 22062.

Project Site: 4790 Opal Cliff Drive
APN: 033-132-12
Application No: REV231082

Dear Applicants:

The purpose of this letter is to inform you that the Planning Division has accepted the subject reports and the following items shall be required:

1. All project design and construction shall comply with the recommendations of the reports.
2. Final plans shall reference the reports by titles, authors, and dates. Final Plans should also include a statement that the project shall conform to the reports' recommendations.
3. After plans are prepared that are acceptable to all reviewing agencies, please submit a completed Soils (Geotechnical) Engineer Plan Review Form and a completed Geologist Plan Review Form to Environmental Planning. The authors of the soils and geology reports shall sign and stamp their respective completed forms. Please note that the plan review forms must reference the final plan set by last revision date.

Any updates to report recommendations necessary to address conflicts between the reports and plans must be provided via a separate addendum to the soils report and/or geology report.

Electronic copies of all forms required to be completed by the Geotechnical Engineer may be found on our website: www.sccoplanning.com, under "Environmental", "Geology & Soils", and "Assistance & Forms".

After building permit issuance the soils engineer and engineering geologist *must remain involved with the project* during construction. Please review the Notice to Permits Holders (attached).

Our acceptance of the reports is limited to its technical content. Other project issues such as zoning, fire safety, septic or sewer approval, etc. may require resolution by other agencies.

Please note that this determination may be appealed within 14 calendar days of the date of service. Additional information regarding the appeals process may be found online at: <https://www.sccoplanning.com/PlanningHome/ZoningDevelopment/Appeals/PlanningAppealsforDiscretionaryPermits.aspx>

Please contact Rick Parks at (831) 454-3168/email: Rick.Parks@santacruzcounty.us or Jeff Nolan at (831) 454-3175/Jeffrey.Nolan@santacruzcounty.us if we can be of any further assistance.

Sincerely,



Rick Parks, GE 2603
Civil Engineer – Environmental Planning
County of Santa Cruz



Jeffrey Nolan, CEG 2247
County Geologist – Environmental Planning
County of Santa Cruz

Cc: Jessica deGrassi
Pacific Crest Engineering, Attn: Erik Zinn, CEG
Rock Solid Engineering, Attn: Yvette Wilson, PE
Applicant: Richard Irish, PE

Attachments: Notice to Permit Holders

**NOTICE TO PERMIT HOLDERS WHEN SOILS AND GEOLOGY REPORTS HAVE BEEN
PREPARED, REVIEWED AND ACCEPTED FOR THE PROJECT**

The County requires your soils engineer and engineering geologist to be involved during construction.

1. **At the completion of construction,** a *Soils (Geotechnical) Engineer Final Inspection Form* and a *Geologist Final Inspection Form* are required to be submitted to Environmental Planning that includes copies of all observations made during construction and is stamped and signed, certifying that the project was constructed in conformance with the recommendations of the soils and geology reports.

If the *Final Inspection Form* identifies any portions of the project that were not observed by the soils engineer and/or geologist, you may be required to perform destructive testing in order for your permit to obtain a final inspection. The soils engineer and/or geologist then must complete and initial an *Exceptions Addendum Form* that certifies that the features not observed will not pose a life safety risk to occupants.

Nathan MacBeth

From: Clark, Nolan@Coastal <nolan.clark@coastal.ca.gov>
Sent: Wednesday, July 12, 2023 4:16 PM
To: Nathan MacBeth
Cc: Graeven, Rainey@Coastal; Jessica deGrassi; Richard Irish; emily.tzouanakis@gmail.com
Subject: CDP Application 231230 - First Routing
Attachments: Beach Sand Loss worksheet.pdf

Hi Nate,

Thank you for the opportunity to comment on the above-referenced Coastal Permit application. Please include these comments as part of the administrative record for this project, and distribute to the applicant and appropriate staff.

Project Description:

The project proposes to fill a void behind the upcoast end of an outflanked vertical seawall, approximately 10 feet long and 9 feet deep, with concrete slurry, and to construct an additional keyed-in 2-foot wide concrete footing into the bedrock (at a minimum of 3 feet deep into bedrock) seaward of the base of the existing seawall foundation located at the base of the coastal bluff fronting 4790 Opal Cliff Drive in the Live Oak Area (APN 033-132-12).

Comments:

1. **Construction Access, Staging, and Storage.** IP Section 16.10.070(H)(3)(h) requires that applications for shoreline protection structures include a construction and staging plan that minimizes disturbance to the beach and specifies the access and staging areas. The project plans do not clearly denote construction site access, staging, and storage. Please update the project plans and narrative to clearly describe access routes, equipment staging, and storage including in relation to the MHTL. Additionally, the MHTL as shown on the project plan differs across the plan set. Accordingly, please update the plans to consistently display the MHTL in relation to all activities.
2. **Jurisdiction.** Elements of the proposed project appear to bisect Coastal Commission original jurisdiction. This includes the proposed keyway into bedrock (the depth of which is to be field verified, according to the project plans), which appears to drop below the Mean High Tide elevation (4.84 feet NAVD 88), as well as construction access routes. Any proposed development within Coastal Commission retained jurisdiction will require a Coastal Development Permit (CDP) directly from the Coastal Commission in addition to a County CDP. Alternatively, a single consolidated CDP can be processed by the Coastal Commission pursuant to Coastal Act Section 30601.3. The Applicant should apply for a formal boundary determination from the Coastal Commission to determine the jurisdictions implicated by the project.
3. **Eligibility for Armoring.** LUP Policy 6.2.16 (Structural Shoreline Protection Measures) limits the use of structural shoreline protection measures to protect existing structures from a significant threat. IP Section 16.10.070(H)(3) furthers this limitation by only allowing shoreline protection structures, and specifically seawalls, when there is a significant threat to an existing structure. Thus, the LCP requires that 1) the residence constitute an "existing" structure in order to be eligible for shoreline armoring, and 2) that there is a demonstration of a significant threat to the structure in question. An existing structure is a structure which has not been substantially redeveloped (i.e., replacement or modification of more than 50% of any major structural component, such as the structural elements of the roof, foundation, or exterior load-bearing walls) since the implementation of the Coastal Act on January 1, 1977. First, the development history of the subject residence is not clearly described in the application materials, and it is unclear whether the residence can be considered existing pursuant to the Coastal Act and LCP. Second, the project application materials do not clearly demonstrate that the subject residence is susceptible to a significant threat (i.e., in danger of erosion within the next 2-3 storm cycles). Please

update the project materials to clarify whether the residence constitutes an existing structure, and if so, whether it is in danger of erosion within the next 2-3 storm cycles as set forth in LUP Policy 6.2.16 and IP Section 16.10.070(H)(3).

4. **Alternatives Analysis.** If the site is eligible for shoreline protection because there is an existing structure and it is in danger of erosion within the next 2-3 storm cycles, then LUP Policy 6.2.16 and IP Section 16.10.070(H)(3)(c) set forth requirements for a robust analysis of alternatives. Specifically, IP Section 16.10.070(H)(3)(C) requires any shoreline armoring proposal, including modifications that expand the armoring footprint such as is the case here, to “include a “thorough analysis of all reasonable alternatives to such structures, including but not limited to relocation or partial removal of the threatened structure, protection of only the upper bluff area or the area immediately adjacent to the threatened structure, beach nourishment, and vertical walls. Structural protection measures on the bluff and beach shall only be permitted where nonstructural measures, such as relocating the structure or changing the design, are infeasible from an engineering standpoint or are not economically viable”. Please submit an alternatives analysis for the project, which includes consideration of both nonstructural measures and other structural alternatives including but not limited to relocation/removal of the threatened portion of the structure, beach nourishment of the void/outflanked area, a thinner tieback wall that occupies a significantly smaller footprint, and a cavity fill that makes use of erodible concrete and/or low-density fill or more natural earthen fill with a concrete face, etc.
5. **Public Recreational Access/Shoreline Processes/Visual Resource Impacts and Mitigation.** IP Section 16.10.070(H)(3)(e) states that shoreline protection structures “shall not reduce or restrict public beach access, adversely affect shoreline processes and sand supply, adversely impact recreational resources, increase erosion on adjacent property, create a significant visual intrusion, or cause harmful impacts to wildlife or fish habitat, archaeological or paleontological resources” and “shall minimize visual impacts by employing materials that blend with the color of natural materials in the area”. The current seawall at the site appears to contribute to accelerated erosion at its upcoast end as evidenced by this application, and there are currently no mitigation measures in place to offset these impacts. Also, the current seawall occupies public recreational space, and the proposal will extend the seawall footprint seaward in this public area, further impacting recreational resources. Finally, the current seawall does not incorporate materials or design elements which blend the color and texture of the wall to simulate natural bluff/bedrock in the area. The project application materials do not propose any mitigation measures with respect to adverse effects to shoreline processes and sand supply, adverse impacts to recreational access, increased erosion on adjacent properties, and significant visual resource impacts. Accordingly, the project application materials should be updated to include mitigation strategies, such as: 1) direct sand nourishment for accelerated erosion of the adjacent property and loss of sand supply; 2) assessment of in-lieu fees for the impacts to recreational resources and sand supply from the entire wall (should the cutoff wall component of the project continue to be proposed); and 3) design elements and materials to minimize impacts to visual resources that blend the wall with the surrounding natural bluff materials. Attached is the Coastal Commission’s sand supply and public recreation in-lieu fee assessment worksheet as an example. Also, please see County CDPs 151321 and 171261, which both assessed in-lieu fees for impacts to public recreational access and sand supply and included design elements to minimize impacts to visual resources. Finally, see CDP findings in CDP 3-16-0446 that explain how cutoff walls extend the life of seawalls and render seawalls redeveloped, thus triggering re-evaluation of mitigation requirements for the entire seawall.

Please feel free to contact me with any questions you may have regarding these comments.

Thank you,

Nolan Clark
Coastal Planner, Central Coast District
California Coastal Commission

Beach Sand Loss
In-lieu Fee Worksheet
Address
CDP #

$V_e =$ Volume of sand to rebuild the area of beach lost due to encroachment by the seawall; based on the seawall design and beach and nearshore profiles (cubic yards)

$$V_e = A_e \times v$$

$A_e =$ The encroachment area which is equal to the width of the properties which are being protected (W) times the seaward encroachment of the protection (E)

$$A_e = W \times E$$

$W =$ Width of property to be armored (ft.)

$E =$ Encroachment by seawall, measured from the toe of the bluff or back beach to the seaward limit of the protection (ft.)

$v =$ Volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall; based on the vertical distance from the top of the beach berm to the seaward limit of reversible sediment movement (cubic yards/ft. of width and ft. of retreat). The value of v is often taken to be 1 cubic yard per square ft. of beach. If a vertical distance of 40 feet is used for the range of reversible sediment movement, v would have a value of 1.5 cubic yards/square ft. (40 feet x 1 foot x 1 foot/27 cubic feet per cubic yard). If the vertical distance for a reversible sand movement is less than 40 feet, the value of v would be less than 1.5 cubic yards per square foot. The value of v would be less than 1.5 cubic yards per square foot. The value of v will vary from one coastal region to another. A value of 0.9 cubic yards per square foot has been suggested for the Oceanside Littoral Cell (Oceanside Littoral Cell Preliminary Sediment Budget Report, December 1997, prepared as part of the Coast of California Storm and Tide Wave Study)

$V_w =$ Volume of sand to rebuild the area of beach lost due to long-term erosion (V_w) of the beach and near-shore, resulting from stabilization of the bluff face and prevention of landward migration of the beach profile; based on the long-term regional bluff retreat rate, and beach and nearshore profiles (cubic yards)

$$V_w = A_w \times v$$

A_w = The area of beach lost due to long-term erosion is equal to the long-term average annual erosion rate (R) times the number of years that the back beach or bluff will be fixed (L) times the width of the property that will be protected (W) (ft./yr.)

$$A_w = R \times L \times W$$

R = The retreat rate which must be based on historic erosion, erosion trends, aerial photographs, land surveys, or other acceptable techniques and documented by the applicant. The retreat rate should be the same as the predicted retreat rate used to estimate the need for shoreline armoring

L = The length of time the back beach or bluff will be fixed or the design life of the armoring without maintenance (yr.). For repair and maintenance projects, the design life should be an estimate of the additional length of time the proposed maintenance will allow the seawall to remain without further repair or replacement

V_b = Amount of beach material that would have been supplied to the beach if natural erosion continued, or the long-term reduction in the supply of bluff material to the beach, over the life of the structure; based on the long-term average retreat rate, design life of the structure, percent of beach quality material in the bluff, and bluff geometry (cubic yards)

$$V_b = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$$

S = Fraction of beach quality material in the bluff material, based on analysis of bluff material to be provided by the applicant

h_s = Height of the seawall from the base of the bluff to the top (ft.)

h_u = Height of the unprotected upper bluff, from the top of the seawall to the crest of the bluff (ft.)

R_{cu} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, assuming no seawall were installed (ft./yr.). This value can be assumed to be the same as R unless the applicant provides site specific geotechnical information supporting a different value

R_{cs} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, assuming the seawall has been installed (ft./yr.). This value will be assumed to be zero unless the applicant provides site specific geotechnical information supporting a different value

V_t = Total volume of sand required to replace losses due to the structure, through reduction in material from the bluff, reduction in nearshore area and loss of available beach area (cubic yards). Derived from calculations provided above

$$V_t = V_b + V_w + V_e$$

$$M = V_t \times C$$

C = Cost, per cubic yard of sand, of purchasing and transporting beach quality material to the project vicinity (\$ per cubic yard). Derived from the average of three written estimates from sand supply companies within the project vicinity that would be capable of transporting beach quality material to the subject beach, and placing it on the beach or in the near shore area

W =
E =
v =
R =
L =
S =
hs =
hu =
Rcu =
Rcs =
C =

$$V_e = A_e \times v$$

$$V_e = \underline{\text{XXX}} \times \underline{\text{XX}} = \underline{\text{XX cubic yards}}$$

$$V_w = A_w \times v$$

$$V_w = \underline{\text{XX}} \times \underline{\text{XX}} = \underline{\text{XX cubic yards}}$$

$$V_b = (S \times W \times L) \times [(R \times h_s) + (1/2 h_u \times (R + (R_{cu} - R_{cs})))]/27$$

$$V_b = (\underline{\text{XX}} \times \underline{\text{XX}} \times \underline{\text{XX}}) \times [(\underline{\text{XX}} \times \underline{\text{XX}}) + (\underline{\text{XX}}/2 \times (\underline{\text{XX}} + (\underline{\text{XX}} - \underline{\text{XX}})))]/27 = \underline{\text{XX cubic yards}}$$

$$V_t = V_b + V_w + V_e$$

$$V_t = \underline{\text{XXX}} + \underline{\text{XXX}} + \underline{\text{XXX}} = \underline{\text{XXX cubic yards}}$$

$$M = V_t \times C$$

$$M = \underline{\text{XXX}} \times \underline{\text{\$XXX}} = \underline{\text{\$XXX.XX}}$$