Staff Report to the Zoning Administrator

Application Number: 111267

Applicant: John Kasunich
Owner: Frank Minuti Co-Trustees
APN: 038-151-42

Agenda Date: June 14, 2013
Agenda Item #: 2
Time: After 9:00 a.m.

Project Description: Proposal to recognize the removal of approximately 230 cubic yards of scarp from a bluff failure and the construction of a tie back compression plate retaining wall at the top of a coastal bluff. Work performed under Emergency Coastal Permit (issued Oct 19, 2011) and Building Permit #113353.

Location: Property located on the southwest side of Oakhill Road at about 300 feet west of Seacliff Drive (753 Oakhill Rd.)

Supervisorial District: 2nd District (District Supervisor: Zack Friend)

Permits Required: Coastal Development

Technical Reviews: Geotechnical and Geologic Report Review

Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 111267, based on the attached findings and conditions.

Exhibits

A.	Categorical Exemption (CEQA determination)	E.	Assessor's, Location, Zoning and General Plan Maps
B.	Findings	F.	County Geologist's Review Letter
C.	Conditions	G.	Geotechnical and Geologic Reports (excerpts)
D.	Project plans		

Parcel Information

Parcel Size:	0.43 acres
Existing Land Use - Parcel:	Residential
Existing Land Use - Surrounding:	Residential
Project Access:	Oakhill Rd.

Planning Area:	Aptos
Land Use Designation:	R-UL (Urban Low Residential)
Zone District:	R-1-10 (Single-family residential - 10,000 square foot minimum net site area)
Coastal Zone:	_X_ Inside __ Outside
Appealable to Calif. Coastal Comm.	_X_ Yes __ No

Environmental Information

Geologic Hazards:	Instability associated with coastal bluff
Soils:	N/A
Fire Hazard:	Not a mapped constraint
Slopes:	Steep slopes associated with coastal bluff
Env. Sen. Habitat:	Not mapped/no physical evidence on site
Grading:	Removal of approx. 230 cubic yards unstable scarp
Tree Removal:	No trees proposed to be removed
Scenic:	Mapped Scenic Resource
Drainage:	Existing drainage adequate
Archeology:	Not mapped/no physical evidence on site

Services Information

Urban/Rural Services Line:	_X_ Inside __ Outside
Water Supply:	Soquel Creek Water District
Sewage Disposal:	Public
Fire District:	Aptos-La Selva Fire Protection District
Drainage District:	Zone 6

Project Setting and History

The subject parcel is located atop an 85-foot high coastal bluff overlooking Las Olas Drive in Aptos. The parcel is developed with an existing single-family dwelling, which was constructed in 1965 and sits at the edge of the coastal bluff. Historically, the coastal bluffs in the vicinity of the project site have been unstable, with localized failures occurring below the subject dwelling.

In March and April 2011, after a winter storm, two relatively large landslides occurred directly below the deck, seaward of the residence. The landslides occurred within the upper 25 feet of the bluff, leaving a 20-foot high vertical scarp, with the slide material deposited onto Las Olas Drive. The slides caused partial blocking of Las Olas Road. The slides left the deck with no setback from the vertical scarps and the ongoing instability began to undermine the concrete apron and deck supports. The residence is set back between 7 to 16 feet from the vertical scarps.

The consulting Geotechnical Engineer determined that the deck and residence were threatened by imminent bluff failure and an Emergency Coastal Permit was approved on October 19, 2011 for the purpose of removing the slide scarp and constructing a tie back compression plate retaining structure along the top 22 feet of the coastal bluff.

The emergency work has been completed under Building Permit B-113353 and was performed under the guidance of the consulting Geotechnical Engineer and Engineering Geologist. The County Geologist has also inspected the wall and found it to be in conformance with the accepted report recommendations.

Emergency Coastal Permit

The project site is located within the appeals jurisdiction of the Coastal Zone. Section 13.20.090 of the County Code states that Emergency Coastal Zone approvals may be granted at the discretion of the Planning Director for projects normally requiring a Coastal Zone Approval, which must be undertaken as emergency measures to prevent loss of or damage to life, health, or property. The work authorized under this approval has been limited to the removal of slide material and the construction of a retaining structure.

Retaining Wall

The retaining wall that was constructed under the Emergency Coastal Permit and Building Permit is approximately 80 feet in length and 12 feet in height, laid back against the slope. The wall is secured to the bluff face by 25 to 40 foot long soils nails installed at 3 to 4 feet on center, supported by helical anchors. 1 ½" to 3" of shotcrete has been applied to the face of the structure.

To keep surface and subsurface drainage away from the bluff face, drainage improvements were installed to collect all surface and subsurface runoff and direct it back to a catch basin on Oakhill Drive.

Zoning & General Plan Consistency

The subject property is a parcel of approximately 0.43 acres, located in the R-1-10 (Single-family residential - 10,000 square foot minimum net site area) zone district, a designation which allows residential uses and the retaining walls can be permitted in any district. The zoning is consistent with the site's (R-UL) Urbal Low Residential General Plan designation.

Local Coastal Program Consistency

The retaining wall is in conformance with the County's certified Local Coastal Program, in that the structure is sited and designed to be visually compatible, in scale with, and integrated with the character of the surrounding neighborhood. Portions of the coastal bluff in the vicinity of the project site are protected by several different types of retaining/protection structures. The subject retaining wall has been designed to be compatible with the natural background of the bluff, with surrounding development and the project is conditioned to require plantings in order to provide additional vegetative screening from ocean and beach views.

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

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.

- **APPROVAL** of Application Number **111267,** 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 Department, 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.co.santa-cruz.ca.us

Report Prepared By: Robin Bolster-Grant
Santa Cruz County Planning Department
701 Ocean Street, 4th Floor
Santa Cruz CA 95060
Phone Number: (831) 454-5357
E-mail: robin.bolster@co.santa-cruz.ca.us

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF EXEMPTION

The Santa Cruz County Planning Department 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: 111267
Assessor Parcel Number: 038-151-42
Project Location: 753 Oakhill Road, Aptos, Ca 95003

Project Description: Proposal to recognize the removal of approximately 230 cubic yards of bluff material and the construction of a tie back compression plate retaining wall at the top approximately 22 feet of the coastal bluff. (Emergency Coastal Permit issued October 19, 2011)

Person or Agency Proposing Project: John Kasunich

Contact Phone Number: (831) 722-4175

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. __X__ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).

Specify type:15269 Emergency Projects

E. _____ **Categorical Exemption**

Specify type:

F. Reasons why the project is exempt:

This project involves the construction of a retaining wall, which is necessary to prevent the failure of the coastal bluff and significant damage to a nearby residence and residential structures below the bluff. Therefore, the construction of the replacement wall constitutes an emergency projectIn addition, none of the conditions described in Section 15300.2 apply to this project.

_____ Date:_____

Robin Bolster-Grant, Project Planner

Coastal Development Permit Findings

1. That the project is a use allowed in one of the basic zone districts, other than the Special Use (SU) district, listed in section 13.10.170(d) as consistent with the General Plan and Local Coastal Program LUP designation.

This finding can be made, in that the property is zoned R-1-10 (Single-family residential - 10,000 square foot minimum net site area), a designation which allows residential uses. Retaining walls can be permitted in any zone district and the zoning is consistent with the site's (R-UL) Urbal Low Residential General Plan designation.

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 the only easement known to encumber the site is a 10-foot drainage easement, which will not be impacted by the construction of the retaining wall.

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

This finding can be made, in that the development is consistent with the surrounding neighborhood in terms of color and material. The wall has been tinted to be natural in appearance and complementary to the site; and a landscape plan has been submitted, showing a variety of plantings at the top of the wall, which are designed to provide additional vegetative screening

4. That the project conforms with the public access, recreation, and visitor-serving policies, standards and maps of the General Plan and Local Coastal Program land use plan, specifically Chapter 2: figure 2.5 and Chapter 7, and, as to any development between and nearest public road and the sea or the shoreline of any body of water located within the coastal zone, such development is in conformity with the public access and public recreation policies of Chapter 3 of the Coastal Act commencing with section 30200.

This finding can be made, in that while the project site is located between the shoreline and the first public road, there is no access in the vicinity of the project site. Consequently, the retaining wall will not interfere with public access to the beach, ocean, or any nearby body of water. Further, the project site is not identified as a priority acquisition site in the County Local Coastal Program.

5. That the proposed development is in conformity with the certified local coastal program.

This finding can be made, in that the structure is sited and designed to be visually compatible, in scale, and integrated with the character of the surrounding neighborhood. Additionally, residential uses are allowed uses in the R-1-10 (Single-family residential - 10,000 square foot minimum net site area) zone district, as well as the General Plan and Local Coastal Program land use designation. Developed parcels in the area contain single family dwellings and a variety of bluff protection structures in a range of styles.

Conditions of Approval

Exhibit A: Project Plans, 3 sheets, prepared by Haro, Kasunich and Associates, Inc., dated 1/5/12.

I. This permit authorizes the recognition of the removal of 230 cubic yards of sloughed soils and the construction of a tie back compression plate and shotcrete retaining wall, approximately 80 feet in length and 12 feet in height. 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 the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.

B. Obtain a Final for Building Permit 113353 from the Santa Cruz County Building Official.

1. Any outstanding balance due to the Planning Department 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. Submit proof that these conditions have been recorded in the official records of the County of Santa Cruz (Office of the County Recorder) within 30 days from the effective date of this permit.

II. 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. All landscaping shall be installed and the wall shall be tinted to match the surrounding bluff. A site inspection shall be conducted by the Project Planner to ensure that the wall will be adequately screened from view to the largest extent practicable.

D. The project must comply with all recommendations of the approved soils and geology reports.

E. Complete and record a Declaration of Geologic Hazards for the work on the coastal bluff. **You may not alter the wording of this declaration**. Follow the instructions to record and return the form to the Planning Department.

F. Provide Environmental Planning Staff with final observation letters from project Engineering Geology and Geotechnical Engineer, if required.

III. 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.

IV. As a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, it officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.

A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.

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 Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder 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. "Development Approval Holder" shall include the applicant

and the successor'(s) in interest, transferee(s), and assign(s) of the applicant.

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.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Wanda Williams	Robin Bolster-Grant
Deputy Zoning Administrator	Project Planner

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.

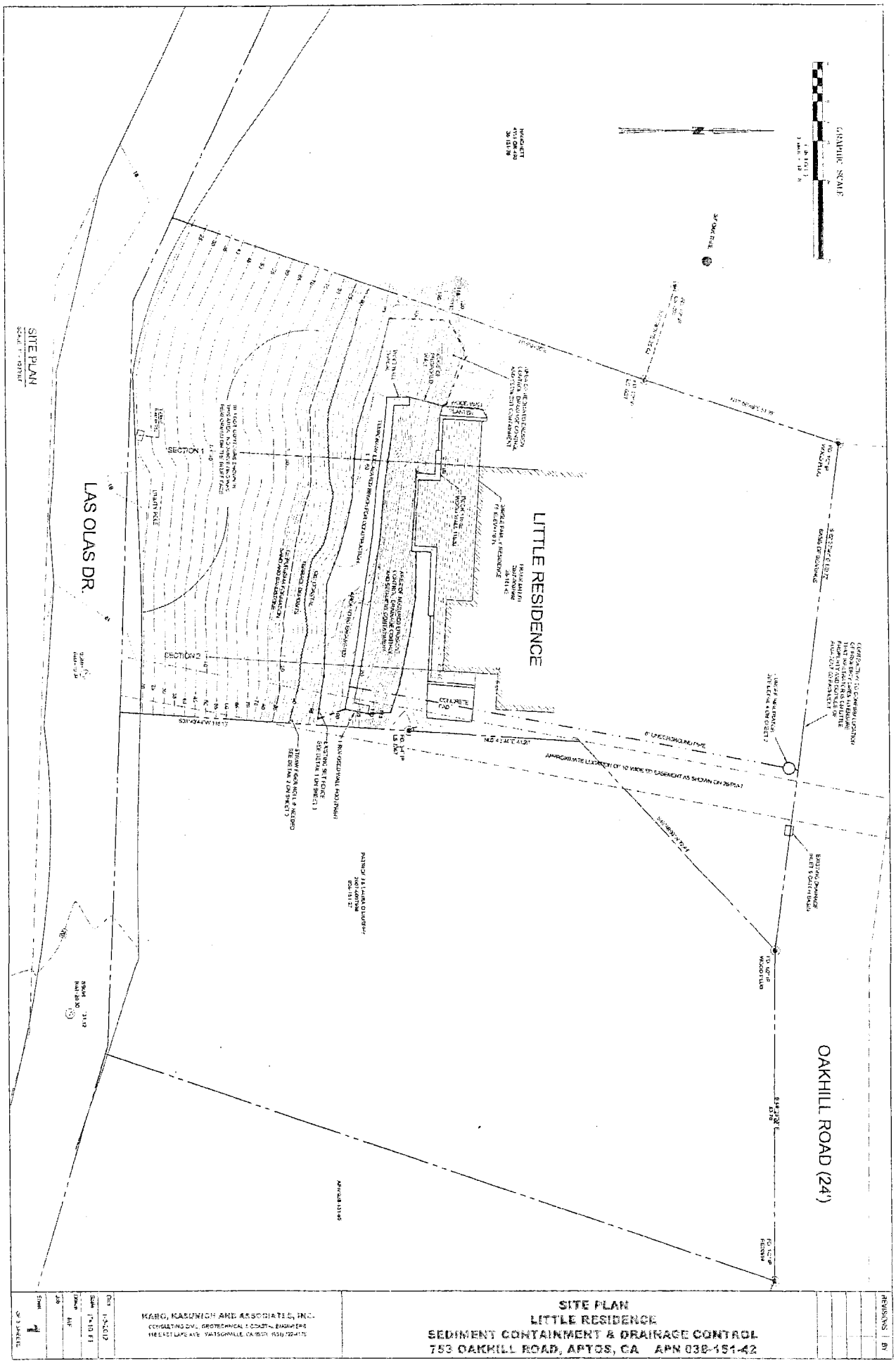
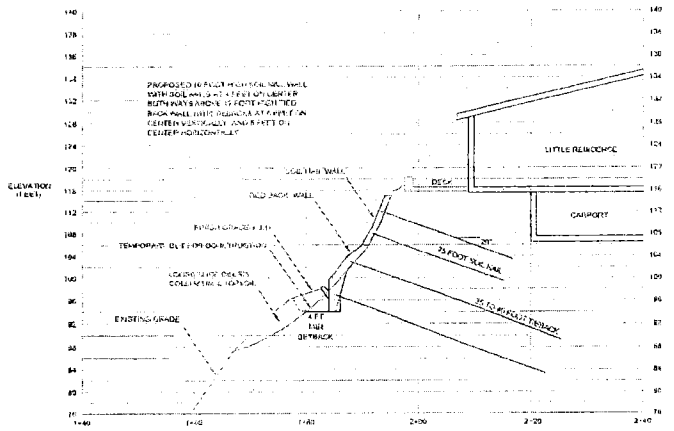
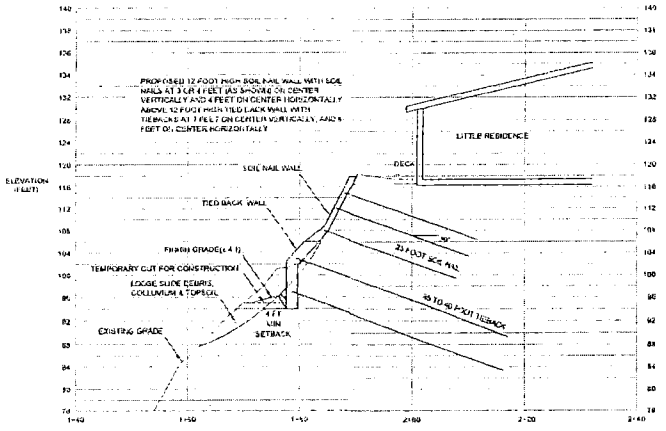

SITE PLAN
LAS OLAS DR.
LITTLE RESIDENCE
OAKHILL ROAD (24')
GRAPHIC SCALE
SECTION 1
SECTION 2
KASO, KASUNICH AND ASSOCIATES, INC.
SITE PLAN
LITTLE RESIDENCE
SEDIMENT CONTAINMENT & DRAINAGE CONTROL
753 OAKHILL ROAD, APTOS, CA APN 038-151-42

EXHIBIT D

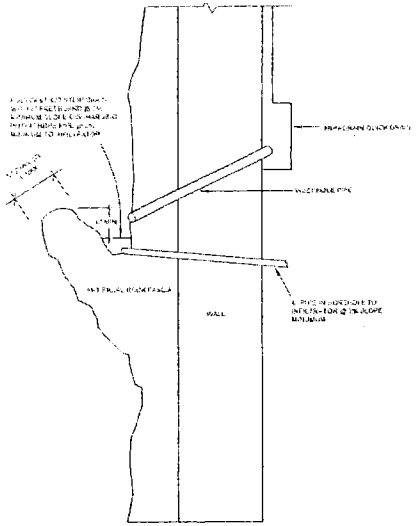


1/2 CROSS SECTION 1
SCALE: 1" = 5 FEET

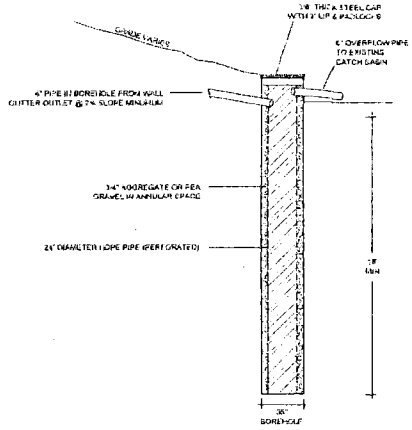
GRAPHIC SCALE



2/2 CROSS SECTION 2
SCALE: 1" = 5 FEET



3/2 WALL GUTTER & STRIP DRAIN DETAIL
SCALE: 1" = 1 FT



4/2 RUNOFF INFILTRATOR DETAIL
SCALE: 1" = 4 FT

REVISIONS | BY

CROSS SECTIONS & DETAILS
LITTLE RESIDENCE
SEDIMENT CONTAINMENT & DRAINAGE CONTROL
753 OAKHILL ROAD, AFTOS, CA APN 038-151-42

Date 1-5 2012
Scale AS SHOWN
Drawn MF
Job
Sheet
OF 5 SHEETS

EXHIBIT D

CONSTRUCTION MANAGEMENT PLAN PROVISIONS

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

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. At a minimum, silt fences, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction related runoff and/or sediment from impacting Las Olas Drive. Fencing may be used on the bluff face for erosion and sediment controls (e.g., a silt fence at the base of the work area and bluff) as necessary to contain rock and/or sediments at the project site

All construction materials and equipment placed on the bluff face shall be stored above the protective fencing. No fueling, or fuel storage shall be allowed on the bluff at any time

The Contractor shall monitor weather forecasts and install and maintain sediment containment structures in advance of storm events.

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

All heavy equipment used for concrete pouring located on the coastal terrace 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 top when not in use.

Equipment washing, refueling, and/or servicing shall not take place on the bluff face.

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, remove all construction debris from the site).

All areas of the site disturbed by construction activities shall be restored to their original pre-construction condition. Upon completion of construction of the wall, the access route and staging area shall be restored to their original condition.

To prevent any impacts upon the marine habitat, no overburden or wet cement may be allowed to adversely impact the downslope properties. Any areas of loose or unstable soil must be stabilized immediately after other portions of the project are finished. Any 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.

GENERAL NOTES

1. Disturbance of the site should be kept to a minimum to prevent erosion. Unnecessary grading and disturbing of soil shall be avoided
2. During the winter grading period (after October 15th and prior to April 15th), the erosion control measures shown here shall be in place at all times in areas where soils are stockpiled, areas that have been disturbed by grading or are downslope from those areas. During the remainder of the year (after April 15th and prior to October 15th), these erosion control measures shall be put in place whenever the start of any rain causes overland flow across or along the disturbed surface, or when the National Weather Service forecast calls for a greater than 30% chance of rain, a flash flood warning, or a flash flood watch, and when directed by the Engineer or Owner.
3. Erosion control Best Management Practices (BMP's), including straw bale barriers, silt fences, fiber rolls (wattles), gravel bag sediment barriers and/or other means shall be employed to prevent turbid runoff from discharging onto adjacent properties.
4. During construction, dust control by the contractor will be necessary.
5. During construction, straw bale barriers, fiber rolls (wattles), or silt fences, as shown on these plans, or as directed by the Engineer
6. Unnecessary grading and disturbing of soil shall be avoided. Any material stockpiled during construction shall be covered with plastic
7. During construction no turbid site water shall be permitted to sheet flow over recently graded slopes. Silt traps, filter berms, or hay bales may be used to prevent such discharge
8. During winter operations and when rain is forecast, temporary straw mulch may be used to cover bare soils and control erosion. Straw mulch should be applied at a thickness adequate to cover the soil (approximately 2 inches thick)
9. Plastic sheeting that is adequately anchored to prevent it from being dislodged by the wind shall be used to cover bare soils and prevent erosion
10. Paths created to provide access to the construction area site should be returned to their original condition following construction.
11. Earthmoving equipment shall be inspected prior to leaving the site and, if necessary, cleaned to prevent sediment transport off-site.
12. Upon completion of grading, all exposed areas shall be protected with temporary erosion control measures and permanently re-vegetated in accordance with the landscaping and planting plan for the project.

EROSION CONTROL SEEDING

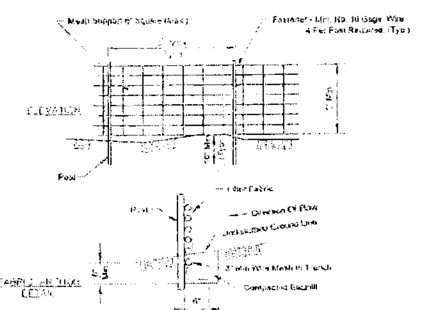
The area of soil disturbed during construction of the retaining wall will need to be seeded with a temporary erosion control seed mix, in order to control erosion prior to establishment of the permanent landscaping. To ensure proper erosion control, a seeding plan has been devised that will provide initial cover. In order to help control erosion on the freshly graded slope, the disturbed soil area will be broadcast seeded following final grading, and then will be mulched with straw, to prevent erosion. Seed types shall be Common Annual Barley (Hordeum Vulgare) at a rate of 4.5 Lbs. Per 1000 SF, or Cereal Annual Rye (Secale Cereal) at a rate of 2 Lbs. Per 1000 SF, or Red Fescue (Festuca Rubra) at a rate of 4 Lbs. Per 1000 SF or as selected by the owner. Seeding shall take place between October 1 and November 15. Seeding at this time will allow seedlings to grow before the oncoming winter low temperatures slow growth. Seeding may need to be done more than once. Seeds may be applied by broadcasting. Fertilizing may be applied by broadcasting in areas of infertile soils. The recommended fertilizer is ammonium phosphate with sulfur (16-20-0) applied at a rate of 400-500 pounds per acre. The fertilizer should not be applied more than 15 days prior to seeding. The straw mulch is to be applied after seeding and fertilizing. The straw is to be applied at a rate that will provide ground coverage (approximately 2" thick). The project site should be seeded and straw mulched between October 1 and November 15, after slope grading work is complete and prior to the onset of winter rains. Slope grading and soil preparation should be scheduled to ensure this work is completed in time to apply seed during this optimum window.

EROSION CONTROL FABRIC

Erosion control fabric may be used in lieu of straw mulch. If used it should be placed on the disturbed soil area. The erosion control fabric will consist of 100% coconut fiber matrix with natural fiber netting (North American Green SC150 BN or equivalent). 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 placed at the appropriate areas of work as directed by the Engineer.

INSPECTION

The site shall be inspected no more than 14 days after the first rain. If the inspection reveals that the slopes need to be repaired because the seed has not taken or erosion has taken place, the slopes shall be re-seeded and/or repaired.

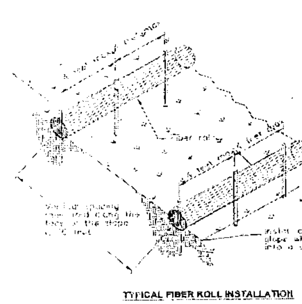


NOTES

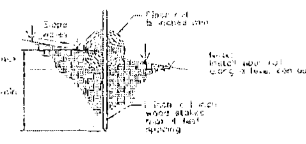
1. [illegible] 12
2. Temporary sediment fences shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
3. [illegible]
4. Fence posts shall be either wood post with a minimum cross-sectional area of 3.0 sq. in. or a standard steel post.

1/3 SILT FENCE DETAILS & NOTES

NO SCALE



TYPICAL FIBER ROLL INSTALLATION



ENTRENCHMENT DETAIL

NOTES.

1. Place fiber rolls at 10 foot spacing on 2:1 (H:V) or steeper slopes
2. Place rolls into key trench 3 inches deep
3. Place excavated soil on uphill or flow side of the roll.
4. Rolls should be abutted at the ends, not overlapped
5. Alternate stakes on both sides of the roll, every six inches
6. Eroded sediment that accumulates against the fiber roll shall be removed prior to the fiber roll being overtopped

2/3 FIBER ROLL DETAILS & NOTES

NO SCALE

REVISIONS	BY

EROSION CONTROL & CONSTRUCTION MANAGEMENT DETAILS
LITTLE RESIDENCE
SEDIMENT CONTAINMENT & DRAINAGE CONTROL
753 OAKHILL ROAD, APTOS, CA APN 038-151-42

HARO, KASUNICH AND ASSOCIATES, INC.
CONSULTING CIVIL, GEOTECHNICAL & COASTAL ENGINEERS
116 EAST LAKE AVE., WATSONVILLE, CA

Date 1-9-2012
Scale NONE
Drawn MF
Job
Sheet 3
OF 3 SHEETS

EXHIBIT D

EXHIBIT E

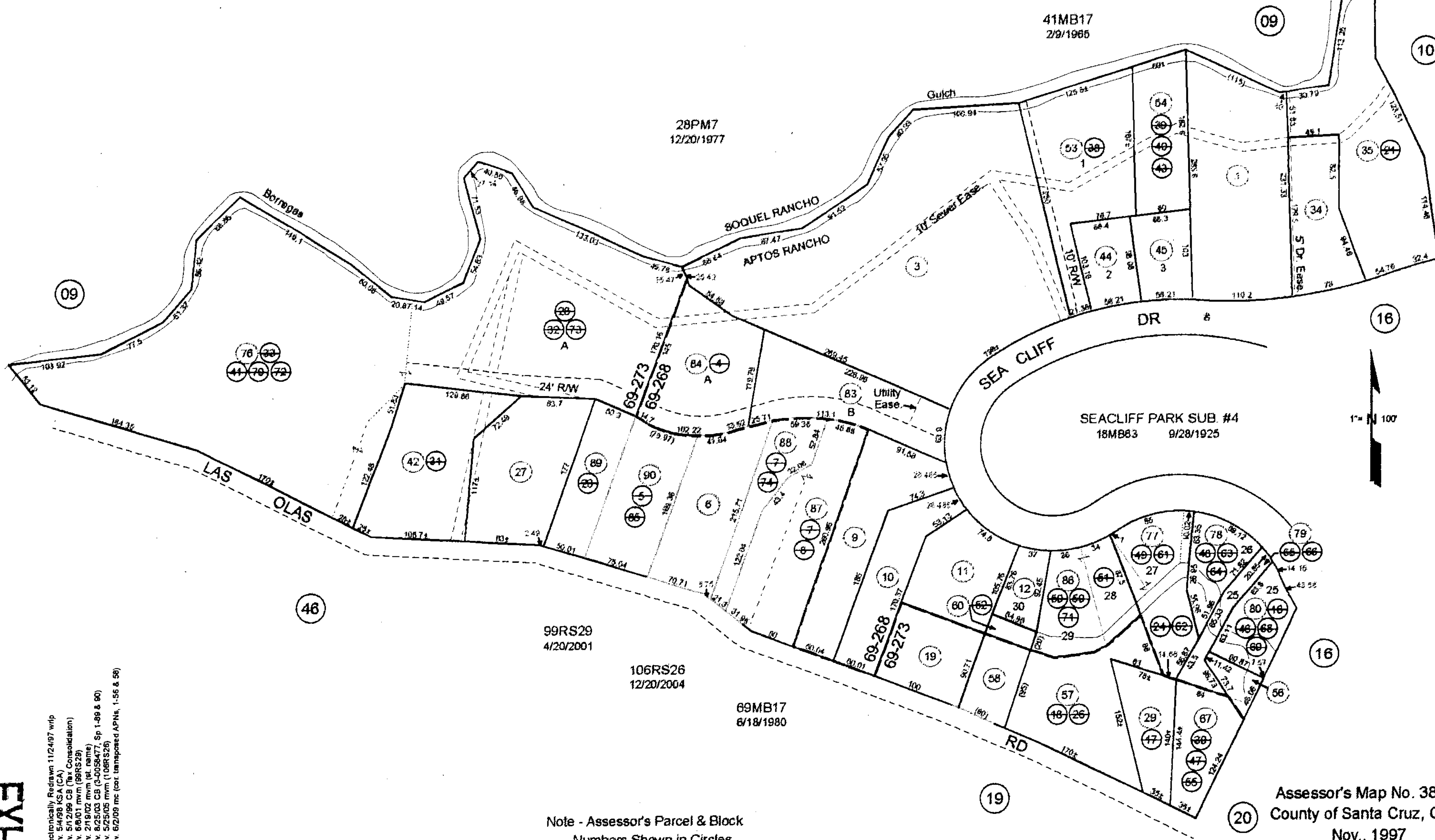
FOR TAX PURPOSES ONLY

APTOS RANCHO

POR. N.W. 1/4 SEC. 13, T.11S., R.1W., M.D.B. & M.

Tax Area Code
69-268 69-273

38-15



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

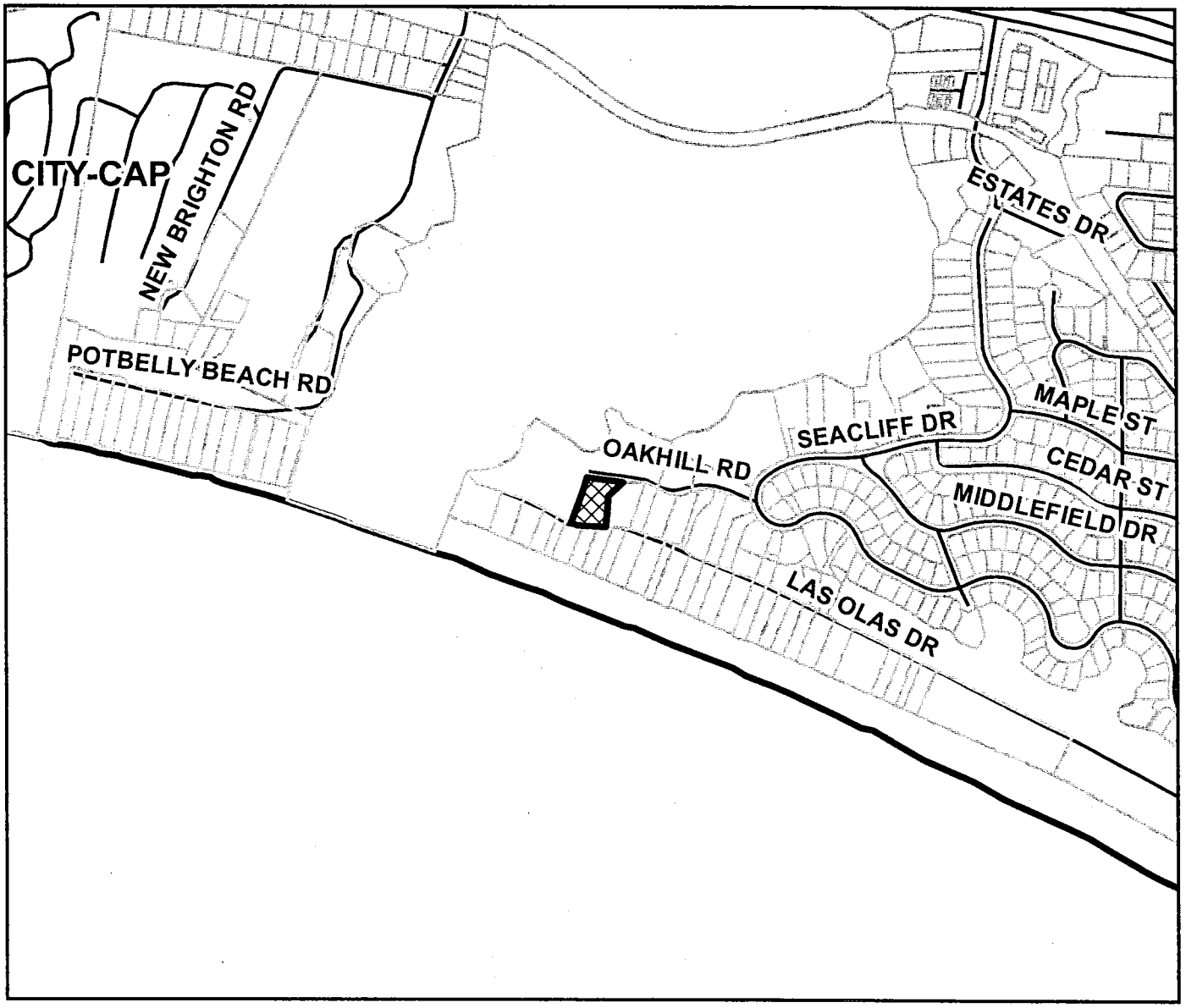
Assessor's Map No. 38-15
County of Santa Cruz, Calif.
Nov., 1997

Electronically Redrawn 11/24/97 wrip
Rev. 5/4/98 KSA (CA)
Rev. 5/12/99 CB (Tax Consolidation)
Rev. 6/8/01 mvm (99RS29)
Rev. 2/19/02 mvm (st. name)
Rev. 8/25/03 CB (3-0058477, Sp 1-89 & 90)
Rev. 5/25/05 mvm (106RS26)
Rev. 6/2/09 mc (cor. transposed APNs, 1-56 & 58)

EXHIBIT E

pln028

Location Map



810 405 0 810 1,620 2,430 3,240

Feet

LEGEND

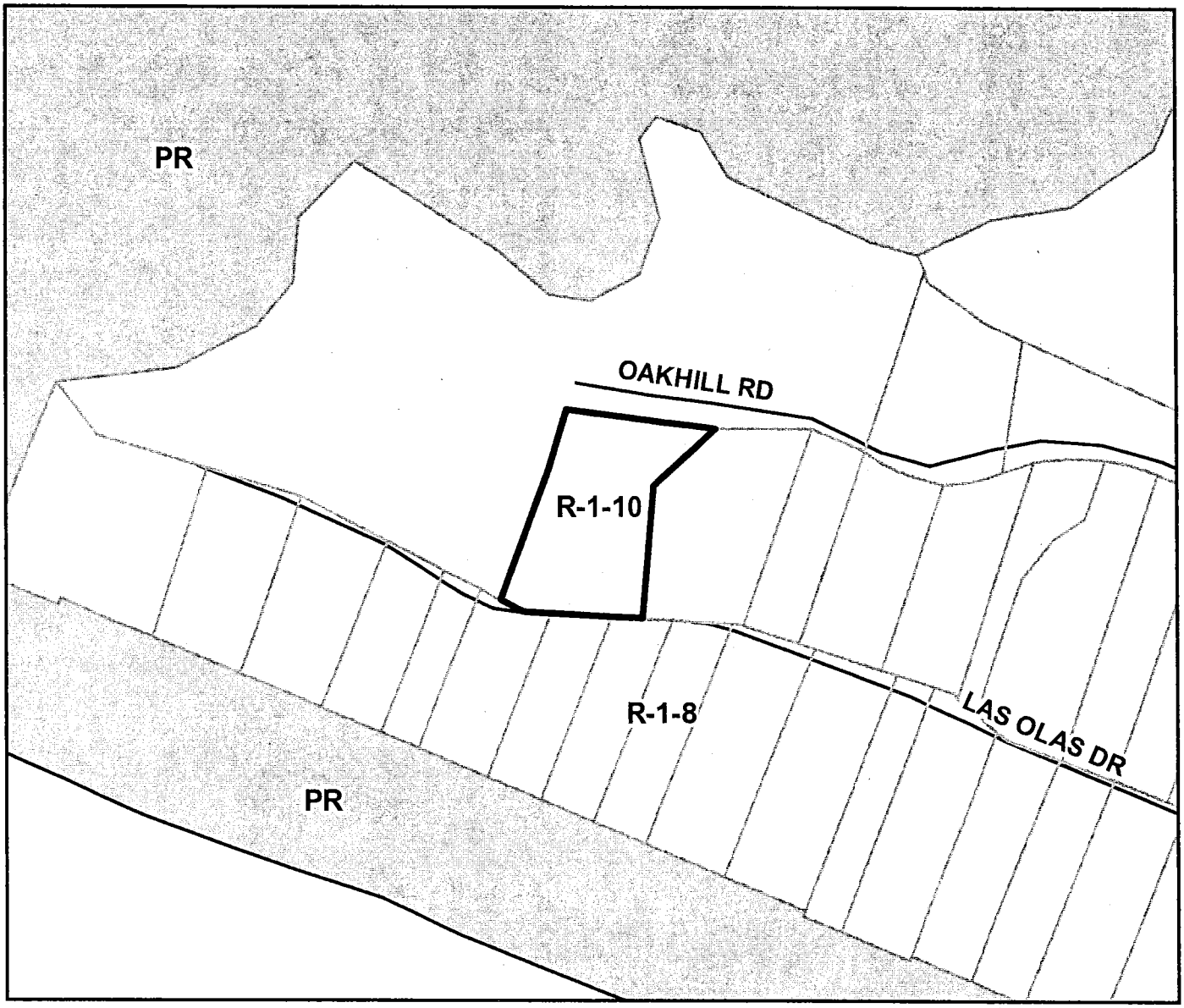
- APN: 038-151-42
- Assessors Parcels
- Streets
- CAPITOLA
- County Boundary

N
W E
S

Map Created by
County of Santa Cruz
Planning Department
November 2011

EXHIBIT E

Zoning Map



LEGEND

- APN: 038-151-42
- Assessors Parcels
- Streets
- County Boundary
- RESIDENTIAL-SINGLE FAMILY
- PARK

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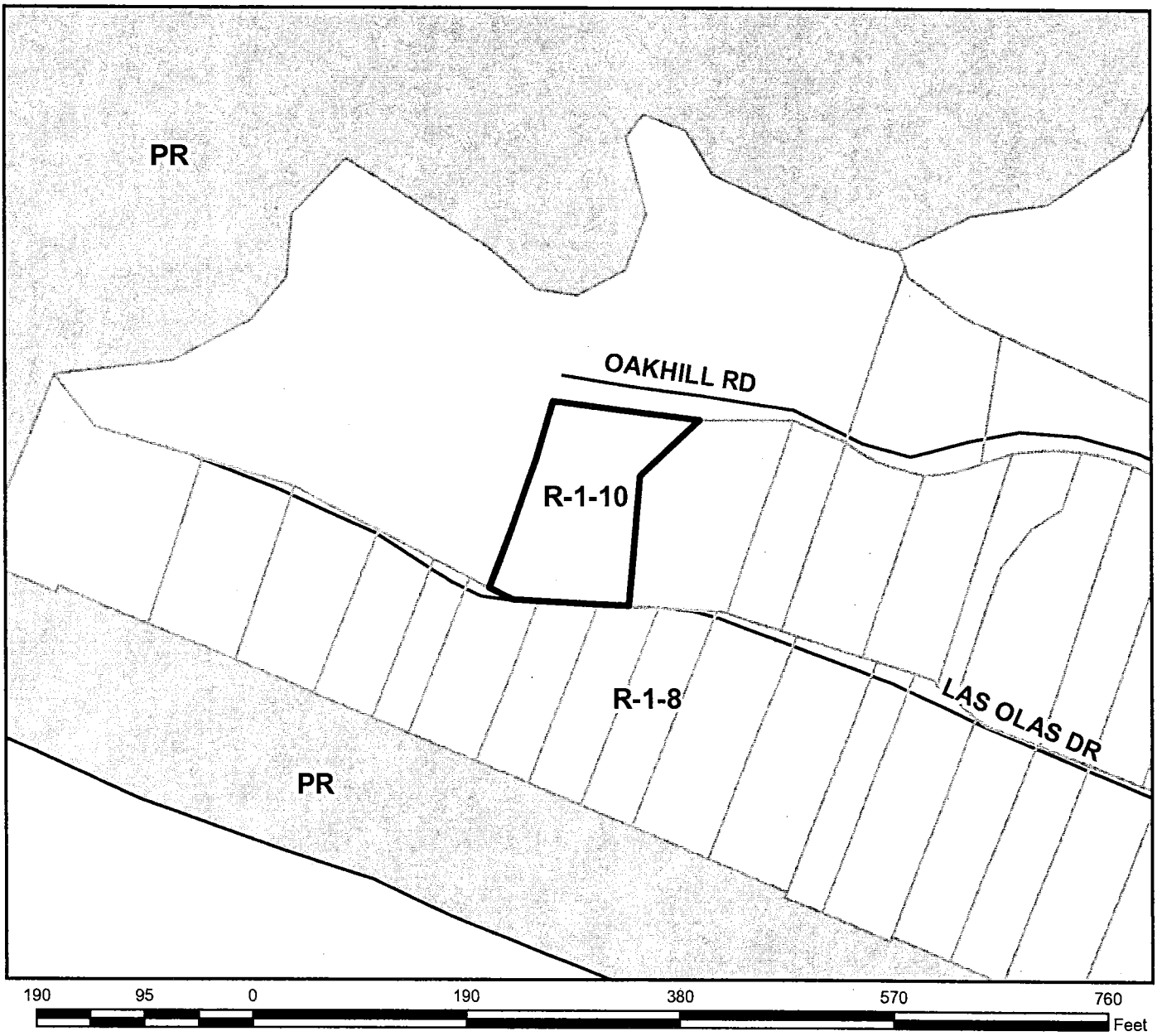
Planning Department
November 2011

EXHIBIT E

plno28

Zoning Map



LEGEND

- APN: 038-151-42
- Assessors Parcels
- Streets
- County Boundary
- RESIDENTIAL-SINGLE FAMILY
- PARK

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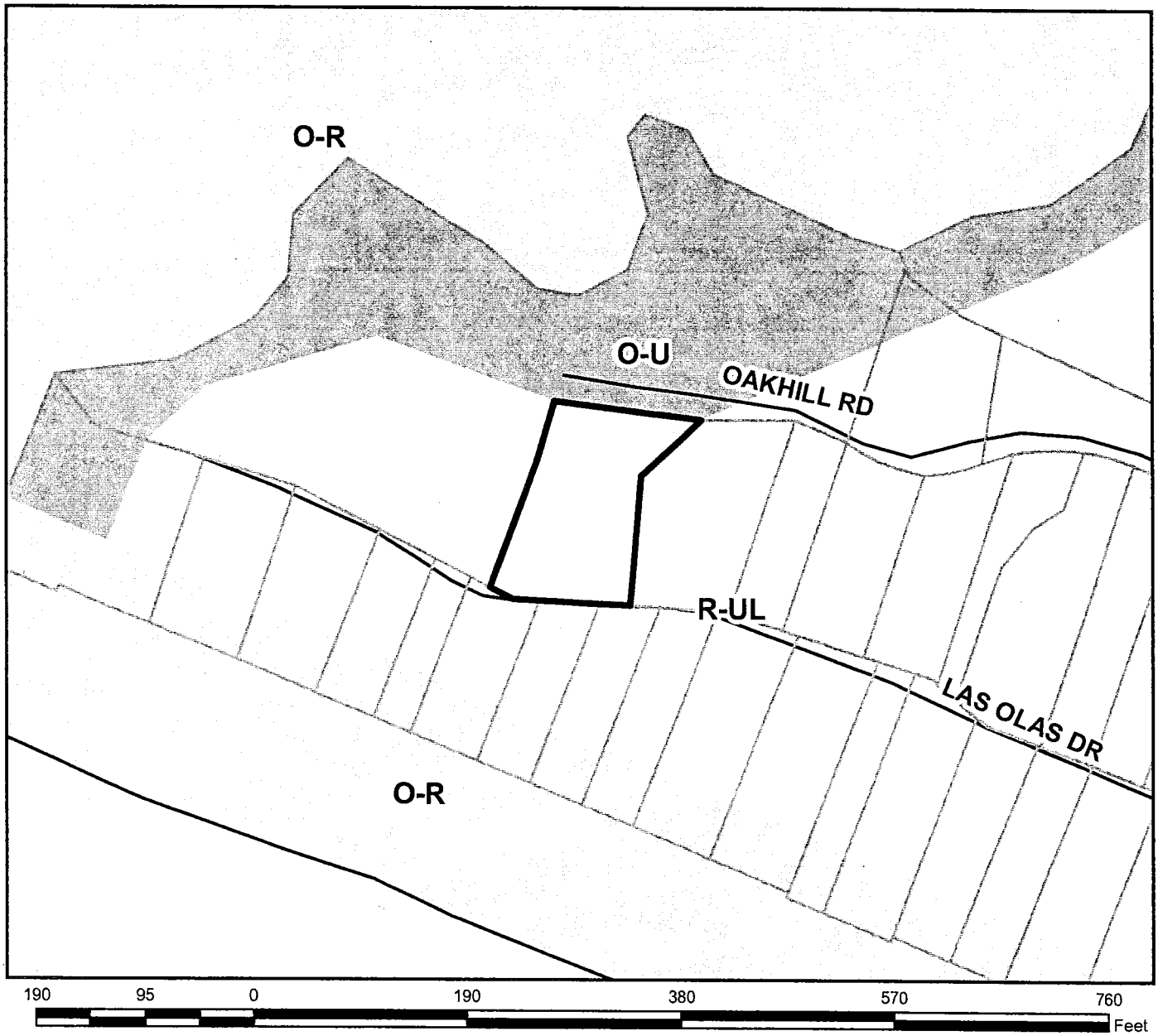
EXHIBIT E

pln028

General Plan Designation Map



LEGEND

- APN: 038-151-42
- Assessors Parcels
- Streets
- County Boundary
- Residential - Urban Low Density
- Parks and Recreation
- Urban Open Space

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November 2011

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COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

November 28, 2011

John Kasunich
c/o Haro, Kasunich, and Associates
116 East Lake Avenu
Watsonville, CA 95076

Subject: Review of Combination Engineering Geology and Geotechnical Engineering Report by Haro, Kasuich, and Associates Dated November 8, 2011: Project: SC2561
APN 038-151-42, Application #: REV111081

Dear John Kasunich c/o Haro, Kasunich, and Associates,

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

1. All construction shall comply with the recommendations of the report.

2. Final plans shall reference the report and include a statement that the project shall conform to the report's recommendations.

3. Prior to building permit issuance a *plan review letters* shall be submitted to Environmental Planning. After plans are prepared that are acceptable to all reviewing agencies, please submit a plan review letter that states the project plans conform to the recommendations of the report. *Please note that the plan review letter must reference the final plan set by last revision date.* The authors of the report shall write the *plan review letter.*

4. Prior to the final inspection of the report a letter shall be submitted by the Project designer and civil engineer indicating that the project has been completed.

5. The project geotechnical engineer shall photograph the site before the start of work, before the pouring of concrete, and after landscaping. These photographs shall be both from the property and from the toe of the slope.

6. A Sediment Containment Plan must be submitted to the County before the start of work. The intent of the plan is both the protection of the site from erosion, and the prevention of debris from leaving the site.

7. If work will occur during the winter, the Sediment Containment Plan must include a temporary drainage plan that prevents uncontrolled releases of drainage.

8. The geotechnical engineer shall inspect the site before and after each storm to assure that the sediment control plan is working correctly. If there is a need for corrections, the work to correct the problems must take place within 24 hours.

(over)

EXHIBIT F

9. If there is any release of material from the site, the County must be notified within 24 hours of the release, and the problem that caused the release must be corrected as soon as possible.

10. The landscaping shall be completed as soon as possible after the completion of work.

11. Before the final inspection, the geotechnical engineer must develop a maintenance and monitoring plan for the project. Please also include a short description of the purpose of the retaining wall, and the engineering documents that were developed to correct the slope instability. This combined letter report shall be recorded with The County Recorder's Office before the final inspection of the proposed wall.

12. Please submit an electronic copy of the soils report in .pdf format via compact disk or email to: pln829@co.santa-cruz.ca.us. Please note that the report must be generated and/or sent directly from the soils engineer of record.

After building permit issuance the consultants *must remain involved with the project* during construction. Please review the *Notice to Permits Holders* (attached).

Our acceptance of the report 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: http://www.sccoplanning.com/html/devrev/plnappeal_bldg.htm

Please call the undersigned at (831) 454-3175 if we can be of any further assistance.

Sincerely,

Joe Hanna
County Geologist

Cc: Antonella Gentile, Environmental Planning
Haro, Kasuich, and Associates

EXHIBIT E

Project No. SC2561
8 November 2011

CITY NATIONAL BANK AND FRANK MINUTI,
CO-TRUSTEES FOR THE HENRY B. LITTLE TRUST
C/O CITY NATIONAL BANK
555 South Flower Street, 10th Floor
Los Angeles, California 90071

Attention: Farzaneh Tofighi
Farzaneh.tofighi@cnb.com

Subject: Combined Geologic and Geotechnical Investigation Report

Reference: Proposed Bluff Top Retaining Wall
753 Oakhill Road
APN 038-151-42
Aptos, California

Dear Ms. Tofighi:

At your request, our firm has prepared this limited geologic and geotechnical report for the proposed bluff top retaining wall at the referenced site. This report presents; 1) a geologic evaluation of the area of the site where the retaining wall is proposed, 2) seismic soil site class in relation to the 2010 California Building Code; 3) static and pseudo-static slope stability analysis with respect to the proposed retaining wall; and 4) geotechnical recommendations for the proposed retaining wall system.

Project Description:

The site is located at the top of a 95 foot high coastal bluff above Las Olas Drive up coast of Seacliff State Beach in the community of Aptos (See Site Location Map, Appendix A, figure 1). The existing home was built about 1965 at the edge of the coastal bluff on the seaward side of Oakhill Road overlooking the gated community along Las Olas Drive. Las Olas Drive runs parallel to the toe of the coastal bluff and Las Olas homes front the beach seaward of Las Olas Drive. These beach front homes, Las Olas Drive and base of the coastal bluff are protected from coastal processes with a rip rap rock revetment. Historically, the bluffs above Las Olas Drive and below the referenced home have been unstable, and that instability continues. Clearing of soil debris off of Las Olas Drive from bluff instability (erosion and landsliding) above is a common occurrence, especially during the winter months.

Based on our experience, the bluff is composed of about 25 to 30 feet of medium dense to dense silty and clayey sandy soils over 65 feet of weakly cemented dense sand. The most frequent failures occur in the upper 25 to 30 feet after a rain storm. However, the

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EXHIBIT G

entire bluff (top to bottom) has the potential to fail catastrophically during intense rainfall and/or intense ground shaking.

Our firm has been providing geotechnical engineering services for the referenced property since February 1990. Prior to 2011, our involvement has been limited to site visits to perform cursory inspections of the coastal bluff below the home and cursory evaluations of the potential for instability to impact the bluff top home. Up until this winter (2010/2011) impacts to the home have been low and bluff erosion and shallow sliding has been arrested by constructing "soft" improvements on the bluff face like short (1 or 2 foot high) stepped landscaped retaining wall curbs, installing erosion control fabric and planting vegetation.

In March and April 2011, after a winter storm, two relatively large landslides occurred directly below the deck seaward of the residence within the upper 25 feet of the bluff. The downcoast slide is about 20 feet wide and left a 20 foot high vertical scarp. Almost all of the slide material fell off the bluff onto Las Olas Drive, partially blocking the road. The upcoast slide is about 15 feet wide and left a 10 foot tall vertical scarp exposed. Most of the slide material was left hanging on the bluff and had a high potential of falling down on Las Olas Drive. Currently, the deck has no setback from these vertical scarps and in spots the instability is starting to undermine the concrete apron and deck supports. The residence is set back between 7 to 16 feet back from the vertical scarps. See Geologic Map figure 20 in Appendix B.

In our opinion, the deck and residence are threatened by bluff instability and it is imperative a "hard" fix like a tie back compression plate retaining structure be constructed to stabilize the upper bluff materials supporting the home and deck, and reduce the risk of future damage to the home and deck. It is important to note that a bluff top retaining wall will not prevent future landslide debris from falling onto Las Olas Drive as a result of landslides occurring seaward and down slope of an upper bluff retaining wall. If you wish to prevent future landslide debris from falling onto Las Olas Drive, a much larger, more extensive, deeper and costly retaining structure would be required.

On your behalf, our firm obtained an emergency grading permit from the County of Santa Cruz Planning Department on 5 July 2011 that permitted removal of the excess material hanging on the bluff and to excavate a pad to accommodate the emergency retaining wall. Sunstone Construction subsequently removed about 230 cubic yards of landslide debris and loose surficial soil from the bluff face and hauled it off site.

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seismic factor of safety greater than 1.2. For illustrative purposes, we utilized the slope stability analysis program to calculate the minimum tieback loads required to stabilize the slope. Tieback loads of 4400 to 7000 pounds per linear foot are required to achieve a seismic factor of safety greater than 1.2 for these particular design surfaces. These tie back loads should not be used directly for structural design of the retaining wall, since additional safety factors will apply to that design.

It must be cautioned that slope stability analysis is an inexact science; and that the mathematical models of the slopes and soils contain many simplifying assumptions, not the least of which is homogeneity. Density, moisture content and shear strength may vary within a soil type. There may be localized areas of low strength or perched ground water within a soil. Slope stability analyses and the generated factors of safety should be used as indicating trend lines. A slope with a safety factor less than one will not necessarily fail, but the probability of slope movement will be greater than a slope with a higher safety factor. Conversely, a slope with a safety factor greater than one may fail, but the probability of stability is higher than a slope with a lower safety factor.

Discussions, Conclusions and Recommendations

Based on the results of our work, the proposed compression plate tieback retaining wall is feasible from a geotechnical stand point as long as the recommendations presented in this report are followed during the design and construction of the project.

Based on meetings with you and the design team, we have pursued relatively specific retaining wall designs in relation to the physical site restraints. These site restraints consist of limited access to the bluff face in relation to construction; and the location and elevation of the existing partial basement in relation to the bluff face. We understand from the general engineering contractor (Sunstone Construction) that helical tieback anchors using hand held installation equipment can physically be installed at the site, along with rebar and shotcrete. Since the back of the basement is setback 25 to 28 feet horizontally from the face of the bluff and design failure surfaces of 23 feet from the top of the bluff have been projected, soil nails or tiebacks in the upper 9 to 11 feet of the bluff will need to be designed no longer than 25 feet, or they will have to be vertically inclined to go under the basement because the soil nails or tiebacks cannot penetrate or otherwise impact the basement wall. The preferred design concept is to retain the upper 21 to 24 feet of bluff top. The upper 9 to 12 feet could be designed as a soil screw wall or soil nail wall (i.e. gravity wall) that is externally supported by soils that are retained by a 12 feet high compression plate tieback wall using post tensioned grouted

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or helical anchors. For added protection from future recession, redundant vertical piers will be added to the bottom of wall, so when future recession, eventually occurs below the new wall, and it must be repaired, the vertical piers will temporarily support the wall until the bottom of the wall can be extended downward. Helical piers are being considered for this purpose. **A soil nail wall or soil screw wall should not be used at the site unless external stability below it is provided by a post tensioned tieback wall, and the tieback wall supports the surcharge from the house, deck and soil nail or soil screw wall above it. If an alternate wall concept is selected, supplemental or different geological and geotechnical recommendations from Haro Kasunich and Associates Inc. shall be required.**

We recommend the proposed tieback wall retain the entire width of the seaward side of the home plus the deck on the upcoast side of the home and the concrete pad near the downcoast corner of the seaward side of the home. This results in an 80 foot long wall. The bottom 12 feet of the wall should utilize post tension anchors to resist lateral soil pressures and seismic loading behind the wall, plus support the surcharge loading of the upper 9 or more feet of bluff (soil screw wall). The soil screw wall should be designed to resist lateral soil pressures and seismic loading behind the wall. Building surcharge loads from the existing structure were found to be negligible compared to the surcharge loading of the soil screw wall, lateral active earth pressures and lateral seismic loading in relation to the factors of safety from our slope stability analysis and in relation to Boussinesq and Westergaard analysis.
As discussed earlier, the majority of the grading (230yds) to accommodate the proposed retaining wall has been completed under the emergency grading permit. We anticipate less than 50 cubic yards of additional grading is necessary to complete the project.

Surface drainage above the new wall should be strictly controlled and not allowed to flow over the wall and pond adjacent to existing and new structures. Roof runoff and downspouts around the existing residence were field verified to drain and discharge landward of the home and to a catch basin on Oakhill Road. The wood deck seaward of the home is permeable and a rat slab or concrete apron exists below the decking. We recommend further investigation of this slab, including evaluation of the condition of the slab and where it is directing deck drainage.

Surface drainage from the retaining wall face and subsurface drainage behind the wall should be diverted with an impermeable concrete or shotcrete swale and collected in a impermeable drain inlet or catch basin. The drain inlet or catch basin should drain back to Oakhill Road via gravity flow via a directionally drilled subsurface pipeline, or be

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pumped up over the bluff edge to the landward side of the Little Residence and ultimately to Oakhill Road.

Backdrains must be installed on the landward side of the wall to prevent pore pressure buildup behind the wall. Miradrain or the equivalent can be used for this purpose.

Immediately after construction, the bluff surface disturbed by construction activity should be protected from erosion. This may be accomplished by implementing landscape improvements and/or seeding the bluff surface with erosion resistant vegetation and covering with erosion resistant fabric.

It should be understood the proposed retaining wall will mitigate or reduce the amount of soil loss below the existing home and deck improvements landward of the retaining wall, but will not eliminate the amount of earth materials that could potentially fall seaward of the new retaining wall and onto Las Olas Drive. In addition, the unretained slopes adjacent to either side of the new retaining wall could fail and impact Las Olas Drive.

General Site Grading

1. The geotechnical engineer should be notified **at least four (4) working days prior to any grading or foundation excavation** so the work in the field can be coordinated with the grading contractor, and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.

2. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on current ASTM Test Designation D1557.

3. Areas to be graded or to receive proposed improvements should be cleared of obstructions and fill materials, including trees not designated to remain and their associated root system, non-operating utility lines and other unsuitable material. Existing depressions or voids created during site clearing should be backfilled with engineered fill. Any surface or subsurface obstructions, or questionable material encountered during grading, should be brought immediately to the attention of the soil engineer for proper exposure, removal and processing as directed.

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4. Cleared areas to receive improvements should be stripped of organic-laden topsoil. Strippings should be wasted off-site or stockpiled for use in landscaped areas if desired. Roots larger than ½ inch in diameter of trees removed for this project should be wasted off-site.

5. Permanent engineered fill slopes are not recommended for this project without further evaluation of a Geotechnical Engineer.

6. Engineered fill should be placed in thin lifts not exceeding 8 inches in loose thickness, water conditioned to a moisture content about 2 to 4 percent above optimum, and compacted to at least 90 percent relative compaction. The upper 8 inches of pavement subgrades should be compacted to at least 95 percent relative compaction. Aggregate base below pavements should likewise be compacted to at least 95 percent relative compaction.

7. If grading is performed during or shortly after the rainy season, the grading contractor may encounter compaction difficulty with the wet soils. If compaction cannot be achieved after adjusting the soil moisture content, it may be necessary to use imported fill or gravel and stabilize the bottom of the excavation with stabilization fabric. The need for ground stabilization measures to complete grading effectively should be determined in the field at the time of grading, based on exposed soil conditions.

8. In general, the on-site soils appear suitable for use as engineered fill. Earth materials used for engineered fill should be free of organic and deleterious material, contain no rocks or clods over 4 inches in dimension, and should contain no more than 15 percent by weight of rocks larger than 2 inches, have a Plasticity Index of less than 18, expansion index of less than 20 and should have sufficient binder to allow excavations to stand without caving. Prior to use, a representative sample of proposed import materials should be sent to our laboratory for evaluation.

9. Following grading, exposed soil not planned to be landscaped, should be seeded with erosion-resistant vegetation and erosion-resistant fabric.

10. Temporary excavations including utility trenches should be properly shored or laid back at an appropriate angle to prevent sloughing and caving at sidewalls. The project plans and specifications should direct the attention of the contractor

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to all CAL OSHA and local safety requirements and codes dealing with excavations and trenches.

11. Trench backfill material should be uniformly compacted by mechanical means to the relative compaction as required by county specifications, but not less than 95 percent under paved areas and 90 percent elsewhere. The relative compaction will be based on the maximum dry density obtained from a laboratory compaction curve run in accordance with current ASTM Procedures D1557.

12. After the earthwork operations have been completed and the geotechnical engineer has finished his observation of the work, no further earthwork operations shall be performed without the direct observation and approval of the geotechnical engineer.

Drilled and Grouted Post Tensioned Tieback Anchor Alternative

13. Diagonal post tensioned grouted threadbar tieback anchors can be used for lateral resistance.

14. Tieback anchors should be predrilled with diameters of 4 to 6 inches and inclined to a maximum gradient of 20 degrees from horizontal.

15. Based on potential slide geometry, an unbonded length of 25 feet should be achieved. Bonded length should be determined by using an allowable bond friction of 1,600 psf for the soil.

16. Capacity of the anchors should be verified by pull testing 100% of the grouted anchors to 133 percent of the design load, this load held for 10 minutes and elongation recorded with an allowable elongation of 0.04 inches.

17. Tieback Anchors should be locked off to 80 percent of the earth active pressure plus the lateral surcharge load from the soil screw or soil nail wall above.

18. The grouted threadbar anchor shaft, plate and nut shall be embedded in the concrete wall, concealed from view.

19. The bonded length, depth and inclination of the tieback anchors should be verified during construction.

Post Tensioned Helical Tieback Anchor Criteria Alternative

20. As an alternative to diagonal post tensioned grouted threadbar anchors, diagonal post tensioned helix anchors should penetrate through the earth materials beyond the potential failure plane and be secured beyond this plane. Based on the geometry of the failure plane, the helices on the diagonal anchors for the post tension wall should be installed a minimum of 5 feet plus the diameter of the helices beyond the unbonded depth of 25 feet from the back face of the wall.

21. Diagonal tieback helix anchors should be installed at a maximum inclination of 20 degrees from horizontal;

22. The capacity of the anchors as required by the structural engineer should initially be measured during helical anchor installation as a function of installation torque, and be measured again prior to the lock off of the post tension anchors;

23. Capacity of the diagonal anchors should be verified by pull testing a minimum of 50% of the anchors to 133 percent of the design load, this load held for 10 minutes and elongation recorded. Pull testing of additional anchors maybe required.

24. Anchors should be locked off to 80 percent of the earth active pressure plus lateral surcharge load from the soil screw wall above.

25. The helical anchor shaft, plate and nut shall be embedded in the concrete wall, concealed from view.

26. The length of the shaft with helices, and the depth and inclination of the tieback anchors should be verified during construction.

Drilled and Grouted Soil Nail (Upper Wall Only)

27. As an alternative to un-tensioned helical soil screws, drilled and grouted soil nails can be used for the upper wall. Hollow bar or solid bar soil nails can be used.

28. Drilled and grouted soil nails should be predrilled with diameters of 4 to 6 inches and inclined to a maximum gradient of 20 degrees from horizontal.

29. Soil nails should penetrate a minimum of 20 feet into the earth materials. The soil screws shall be sized and angled so they do not impact the basement. The soil

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nail length shall be stipulated by the structural engineer. The soil nails should be at least 3 feet below the ground surface as measured from the grouted section.

30. The soil nails should be installed at a maximum inclination of 20 degrees from horizontal; and

31. The soil nail capacity per foot of embedment shall be measured by installation and testing of 2 sacrificial nails that are tested to verify design bond capacity per foot.

32. The depth and inclination of the soil nails should be verified during construction.

33. The grouted threadbar shaft, plate and nut shall be embedded in the concrete wall, concealed from view.

34. The upper drilled and grouted soil nail wall shall not be structurally connected to the lower post tensioned tieback wall.

Helical Soil Screw Criteria Alternative (Upper Wall Only)

35. Soil screws should extend sufficiently beyond an imaginary line equal to 38 degrees (measured from horizontal) starting at the toe of the structure and extending up through the bluff. The soil screws shall be sized and inclined so they do not impact the basement. The soil screw length shall be designed based on soil values of Nq=35 and unit weight of 122 pcf (based on Chance Soil Screw Design Manual). Average overburden should be determined based on methods outlined in the Chance Soil Screw Design Manual. Average overburden for the upper row of nails, use a vertical distance from top of wall to head of nail of 2 feet.

36. The soil screws should be installed at a maximum inclination of 20 degrees from horizontal; and

37. The soil screw capacity shall be measured during helix installation as a function of installation torque verses depth. The soil screw must achieve the minimum capacity and minimum depth as stipulated by the structural engineer. Actual capacity should be verified by pull testing the soil screws per Appendix B of the soil screw design manual by Chance. At least on screw nail should be sacrificial for pre-production verification testing. Once production nail should be proof tested. Preferably the soil screw with the lowest installation torque.

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38. The length of the shaft with helices, and the depth and inclination of the soil screws should be verified during construction.

39. The helical soil screw shaft, plate and nut shall be embedded in the concrete wall, concealed from view.

40. The upper helical soil screw wall shall not be structurally connected to the lower post tensioned tieback wall.

Vertical Helical Piers

41. The vertical helical piers should be installed to a minimum depth of 15 feet below the below the base of the wall.

42. The helical piers shall be sized to carry the vertical loads imposed on them from above. The top of the square helical pier shaft shall be in contact with the appropriate sized new construction bracket or plate at the top of the shaft and the assembly shall be embedded in the concrete wall, concealed from view.

Lateral Active Earth Pressures

43. Retaining walls and tie backs should be designed to resist both lateral earth pressures and any additional surcharge loads.

44. Based on our slope stability analysis and cursory retaining wall design, initial retained heights of 21 to 24 feet are anticipated. This height may vary as the civil/structural plans are refined and finalized.

45. For the upper soil screw wall (or soil nail wall) an active soil pressure of 14H psf per foot of wall, where H is equal to retained height, should be used. This assumes a fully drained condition. For passive resistance, a friction coefficient of 0.30 should be used between the base of the soil screw wall and top of tieback wall. An allowable toe bearing pressure of 2000 psf maybe used;

46. For the lower tieback wall, an active soil pressure of 14H psf per foot of wall should be used, where H is equal to retained height. This assumes a fully drained condition. In addition, for a soil screw wall height up to 9 feet high, the tieback wall should resist lateral surcharge loading equal to 7,920 lbs/linear foot of wall acting 5.3 feet below the top of the tieback wall. For soil screw wall heights of between 9 and 12 feet high, the tieback wall should resist lateral surcharge loading equal to 8,250 lbs/linear foot of wall acting 5.3 feet below the

EXHIBIT G

top of the tieback wall. Alternatively, the structural engineer may divide the surcharge load by the wall height and assume a uniform distribution.

47. For the upper soil screw or nail wall and lower tieback wall, a seismic surcharge load of 14H psf per foot of wall should be added to the earth pressures presented above, were H is equal to retained height of each wall, respectively.

48. Backdrains must be installed on the landward side of the wall to prevent pore pressure buildup behind the wall. The walls should be fully drained with miradrain panel tied into weep holes at the base and through the wall facing. Miradrain panel and weep holes should be centered between the tie back locations and weep hole discharge should be piped to a suitable discharge point.

Surface Drainage and Erosion Control

49. Surface drainage above the new wall should be strictly controlled and not allowed to flow over the wall and pond adjacent to existing and new structures.

50. Roof runoff and downspouts around the existing residence was field verified to drain and discharge landward of the home and to a catch basin on Oakhill Road. The wood deck seaward of the home is permeable and a rat slab or concrete apron exists below the decking. We recommend further investigation of the condition of the slab to determine where it is directing deck drainage.

51. Surface drainage from the retaining wall face and subsurface drainage behind the wall should be diverted with an impermeable concrete or shotcrete swale and collected it in an impermeable drain inlet or catch basin. The drain inlet or catch basin should drain back to Oakhill Road via gravity flow through a subsurface pipe line installed in a directionally drilled bore hole, or be pumped up over the bluff edge to the landward side of the home.

52. Immediately after construction, the bluff surface disturbed by construction activity should be protected from erosion. This may be accomplished by implementing landscape improvements and/or seeding the bluff surface with erosion resistant vegetation and covering with erosion resistant fabric.

Plan Review, Construction Observation and Testing

53. Our firm should be provided the opportunity for a general review of any project plans prior to construction so that our geological and geotechnical recommendations may be properly interpreted and implemented. The purpose is

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to determine if this preliminary report is adequate and complete for the final planned grading and construction. It is not intended that the geotechnical engineer approve or disapprove the plans, but to provide an opportunity to update the preliminary report and include additions or qualifications as necessary. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations.

54. We recommend that our office review any project plans prior to submittal to public agencies, to expedite project review. The recommendations presented in this report require our review of final plans and specifications prior to construction and upon our observation and, where necessary, testing of the earthwork and foundation excavations. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.

If you have any questions concerning the data or conclusions presented in this report, please call our office. We thank you for this opportunity to be of service on this interesting and challenging project.

Very truly yours,

HARO, KASUNICH AND ASSOCIATES, INC.

William E. St. Clair
Staff Engineer

Mark Foxx
C. E. G. 1493

John E. Kasunich
G.E. 455

WSC/dk
Attachments
Copies: 2 to Addressee
1 to Josie Little
1 to DJ Engineers, Attn: Dan Dremalas
1 to Sunstone Construction, Attn: Rick Fuller
1 to Prime Landscape: Attn: John David
4 to Santa Cruz County Planning Department (To be Hand Delivered)
1 to File

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