Staff Report to the Zoning Administrator

Application Number: 111050

Applicant: Hamilton Swift & Associates
Owner: Pot Belly Beach Club
APN: 038-231-38

Agenda Date: August 5, 2011
Agenda Item #: 2
Time: After 10:00 a.m.

Project Description: Proposal to extend a Soquel Creek Water District water line approximately 4,440 lineal feet from McGregor Drive to nineteen existing residences at Potbelly Beach Road and New Brighton Road. The new water line will replace an existing line that provides water from a private reservoir and well system.

Location: Within roadbed of New Brighton Road, south of McGregor Drive, extending south and west along Potbelly Beach Road.

Supervisoral District: 2nd District (District Supervisor: Ellen Pirie)

Permits Required: Coastal Development Permit
Technical Reviews: Soils Report Review

Staff Recommendation:

- Approval of Application 111050, based on the attached findings and conditions.

Exhibits

A.	Project plans	E.	Assessor's, Location, Zoning and General Plan Maps
B.	Findings	F.	Comments & Correspondence
C.	Conditions		
D.	Mitigated Negative Declaration with Initial Study and Attachments (completed for Soquel Creek Water District)		

Parcel Information

Parcel Size:	N/A
Existing Land Use - Parcel:	Private Road
Existing Land Use - Surrounding:	Single-family residences, New Brighton State Park
Project Access:	New Brighton/Pot Belly Beach Drive
Planning Area:	Aptos

Land Use Designation:	O-R, P, R-UL, O-U (Existing Parks & Recreation, Public Facility, Urban Low Residential, Urban Open Space)
Zone District:	PR, PF, R-1-6/ R-1-8 (Parks and Recreation, Public Facilities, Single-family residential (6,000/8,000 square foot minimum parcel size))
Coastal Zone:	_X_ Inside __ Outside
Appealable to Calif. Coastal Comm.	_X_ Yes __ No

Environmental Information

Geologic Hazards:	Not mapped/no physical evidence on site
Soils:	N/A
Fire Hazard:	Not a mapped constraint
Slopes:	Adjacent to coastal bluff
Env. Sen. Habitat:	Biotic Report prepared; potential Monarch butterfly habitat identified
Grading:	Exempt
Tree Removal:	No trees proposed to be removed
Scenic:	Mapped resource; impact temporary
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:	N/A
Fire District:	Central Fire
Drainage District:	Zone 6

Project Setting and Description

The subject site consists of the area occupied by an existing water service line on lands owned by Potbelly Beach Club (PBBC). The project site is located primarily within the roadbed of the New Brighton Road, from McGregor Drive extending south to Potbelly Beach Road, through APN 038-231-38, and terminating at the end of the row of beach houses along Potbelly Beach Road. The total length of the water line to be replaced is approximately 4,440 lineal feet.

The site contains a portion of New Brighton State Park property, public and private rights-of-way and 19 residences, which belong to the PBBC. These residences, as well as several others not associated with the PBBC, currently obtain their water via a reservoir and private well system. Surrounding uses consist of single family residences and groves of Eucalyptus forest with understory elements including coast live oak. New Brighton State Park is located adjacent to the project area to the east.

The proposal is for installation of a new water line to connect the two residences located on New Brighton Road and seventeen residences located on Potbelly Beach Road to the Soquel Creek

Water District (SCWD). The proposed water line totals 4,432 lineal feet and is composed of an 8-inch line from McGregor Drive to the coastal bluff, with a 6-inch line extending from the bluff to the homes on the beach along Potbelly Beach Road. New laterals would then connect the individual homes. The method of installation involves trenching into existing roadways of New Brighton and Potbelly Beach Roads, bore-and-jack installation under the railroad tracks and horizontal directional boring in the vicinity Pine Tree Lane and from the top of the coastal bluff to the beach homes below. The directional boring does not require trenching and will be employed to protect against damage to Eucalyptus tree roots and disturbance of the bluff surface.

In conjunction with the installation of the new water line, the existing water lines to the private well will be removed for the 19 PBBC residences; however the reservoir and well will continue to serve the residences outside of the PBBC. It should be noted, that the new water line will be able to accommodate the non-PBBC residences, both those located on the bluff as well as the residences located on Pine Tree Lane.

The proposal would also provide five additional fire hydrants and is expected to result in improved water quality for the residences in the area as well as increased fire protection.

Local Coastal Program Consistency

The proposed water line extension is in conformance with the County's certified Local Coastal Program, in that the line will be constructed underground, utilizing directional boring, which minimizes grading and potential negative impacts to trees in the vicinity. While the project site is located between the shoreline and the first public road, the construction impacts will be temporary and the placement of the new water line will not result in any permanent visual impact to the coastline and will not interfere with public access to the beach, ocean, or other nearby body of water.

Visual Impacts

The project is located within designated scenic resource areas associated with State Highway 1 and the coastline. During the estimated 30-60 day construction period, construction equipment may be visible from Highway 1 and portions of New Brighton State Park. While the water line installation will take place in close proximity to the beach, much of this work will be shielded from view of the beach by the closely-spaced houses. No permanent visual impact is expected as a result of the water line installation.

Geological Hazards

A portion of the new water line is proposed to be installed down the face of a coastal bluff. The project geotechnical engineer, Haro, Kasunich and Associates, developed a 100-year bluff top setback based on previous analyses performed at nearby bluff top parcels with similar subsurface profiles, and determined that a 25-foot minimum bluff top setback would be appropriate for installation of the pipeline. In order to extend the proposed water line under the bluff without disturbing its edge or surface, horizontal directional boring will be used in lieu of standard trenching. Additional conditions of approval require compacting backfill at both the bore pits adjacent to the bluff to ensure that no water is introduced into the bore hole.

Environmental Review

Environmental review has been required for the proposed project per the requirements of the California Environmental Quality Act (CEQA). The Soquel Creek Water District (SCWD) is the designated Lead Agency for this project and has approved a Mitigated Negative Declaration and Mitigation Monitoring Program (Exhibit D). A Notice of Determination was filed with the County by SCWD on May 2011. The project was subsequently modified prior to application for the subject Coastal Development Permit by eliminating a proposed extension of the water line to five additional properties. Because the subject proposal represents a smaller scope of work, the analysis contained in the Initial Study remains applicable.

As the permitting authority for the project, the County is the Responsible Agency per the requirements of CEQA. The Mitigated Negative Declaration was considered during the review of the application by County staff.

The environmental review process focused on the potential impacts of the project in the areas of biological resources, scenic resources, geology/soils, air quality, cultural resources, and traffic/public safety. The environmental review process generated mitigation measures that will reduce potential impacts from the proposed development and adequately address these issues. All mitigation measures called out in the Negative Declaration are incorporated into the project conditions of approval.

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

- **APPROVAL** of Application Number **111050,** 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
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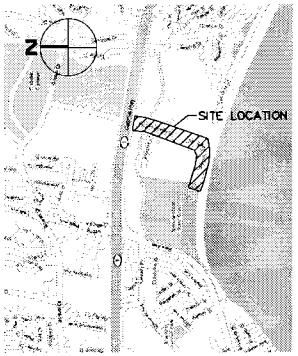
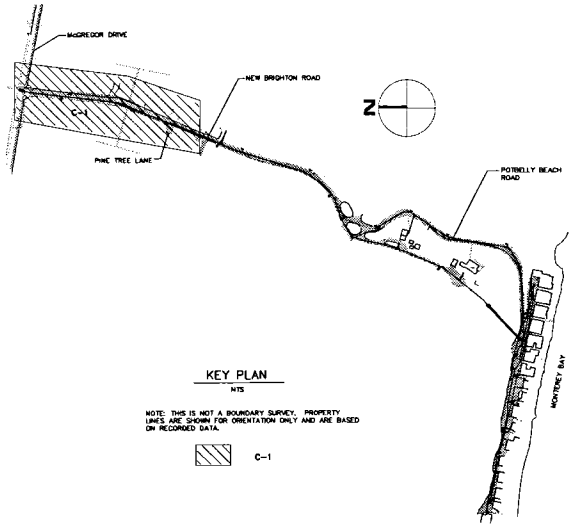
Santa Cruz CA 95060
Phone Number: (831) 454-5357
E-mail: robin.bolsters@co.santa-cruz.ca.us

EXHIBIT A



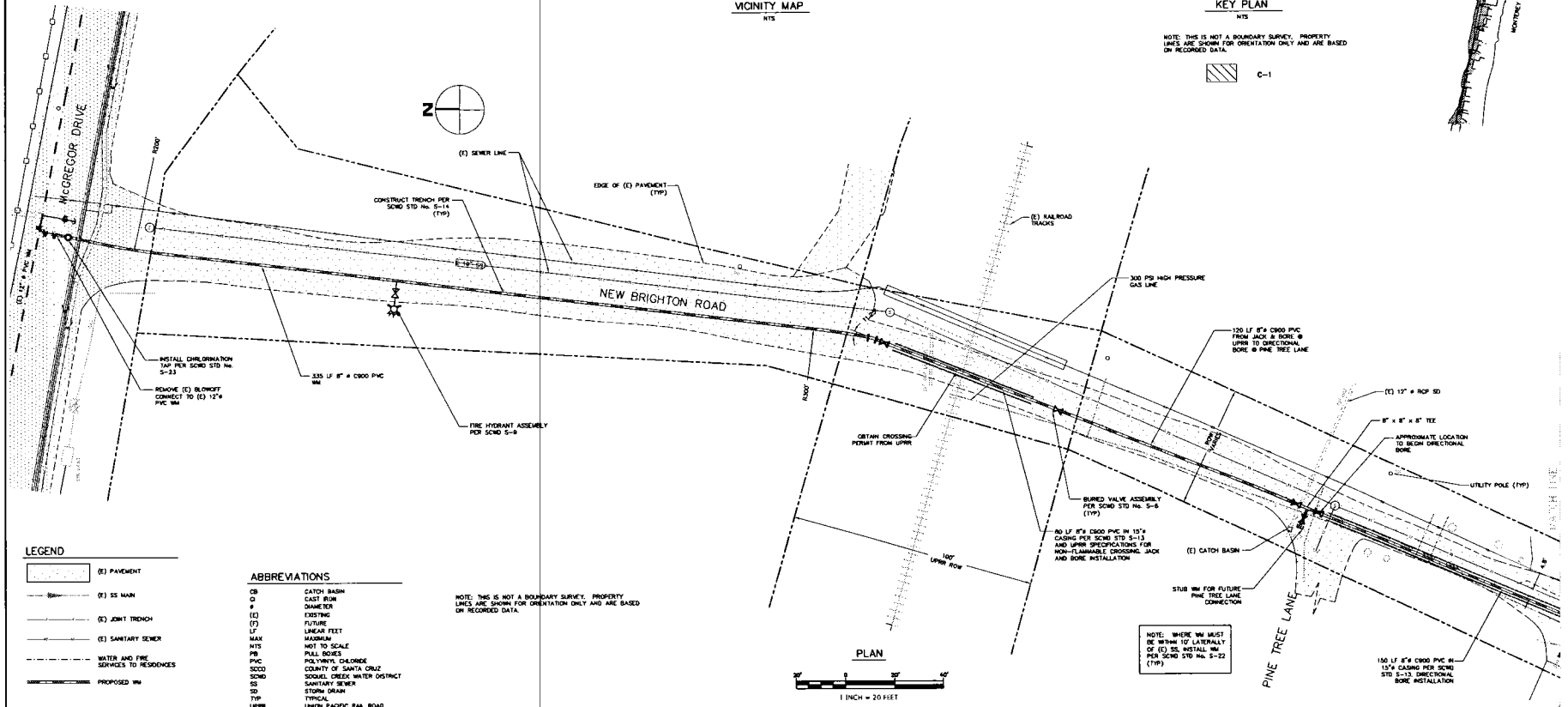
VICINITY MAP
NTS



KEY PLAN
NTS

NOTE: THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE SHOWN FOR ORIENTATION ONLY AND ARE BASED ON RECORDED DATA.

C-1



PLAN

1 INCH = 20 FEET

LEGEND

- (E) PAVEMENT
- (E) SS MAIN
- (E) JOINT TRENCH
- (E) SANITARY SEWER
- WATER AND FIRE SERVICES TO RESIDENCES
- PROPOSED WM

ABBREVIATIONS

CB	CATCH BASIN
ø	CAST IRON
#	DIAMETER
(E)	EXISTING
(F)	FUTURE
L.F.	LINEAR FEET
MAX	MAXIMUM
NTS	NOT TO SCALE
PB	PULL BOXES
PVC	POLYVINYL CHLORIDE
SCCO	COUNTY OF SANTA CRUZ
SCWD	SOQUEL CREEK WATER DISTRICT
SS	SANITARY SEWER
SD	STORM DRAIN
TYP	TYPICAL
UPRR	UNION PACIFIC RAIL ROAD
WM	WATER MAIN

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PLANNING PERMIT SUBMITTAL

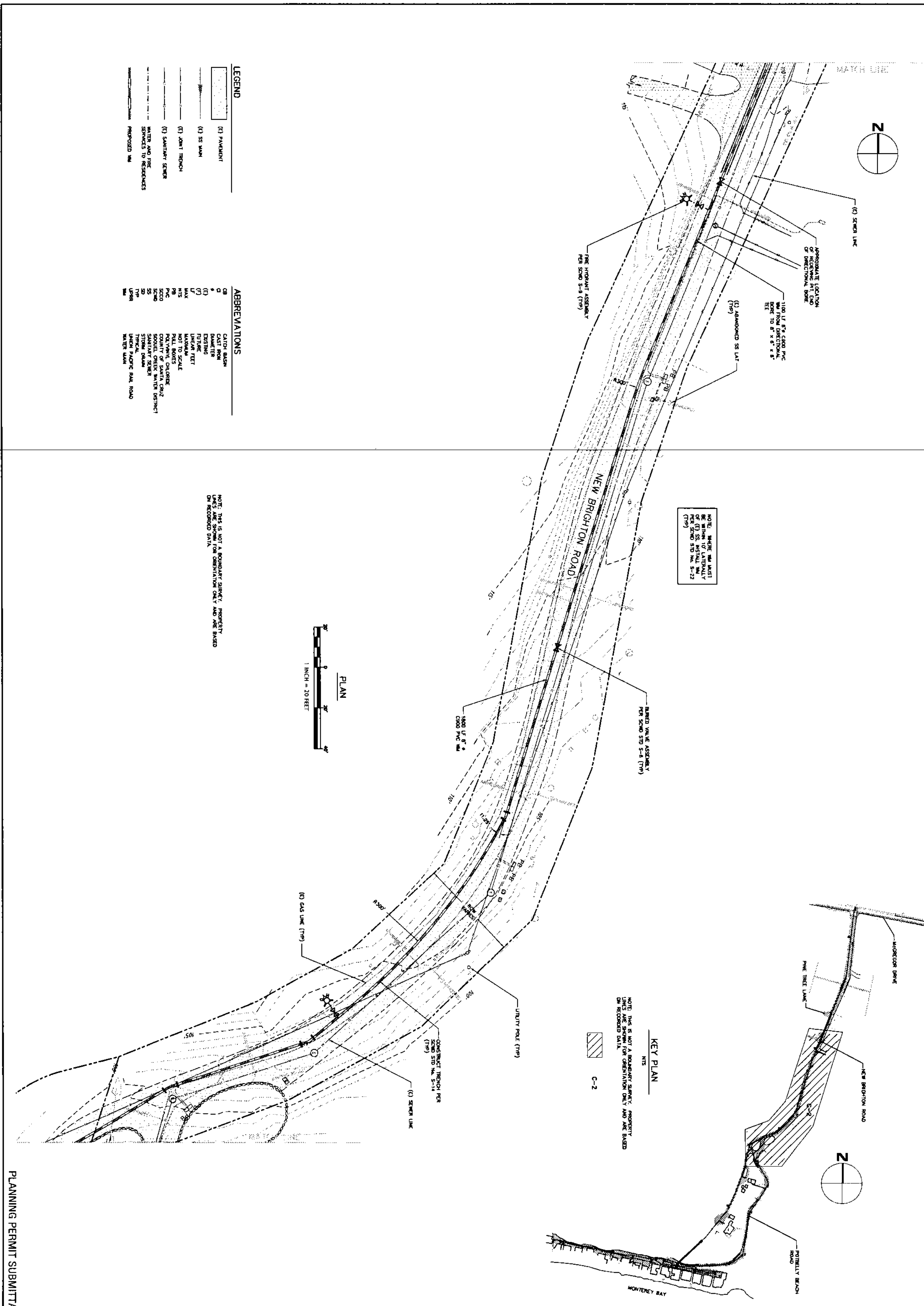
RI Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.rlengineering.com

WATER MAIN INSTALLATION
FOR
POTBELLY BEACH CLUB
POTBELLY BEACH ROAD
SANTA CRUZ COUNTY, CALIFORNIA
APN 038-231-39

PRELIMINARY UTILITY PLAN (1 OF 5)

project no. 07-016-1
date MARCH 2011
scale AS SHOWN
dwg name CIVIL4.DWG

C-1



PLANNING PERMIT SUBMITTAL

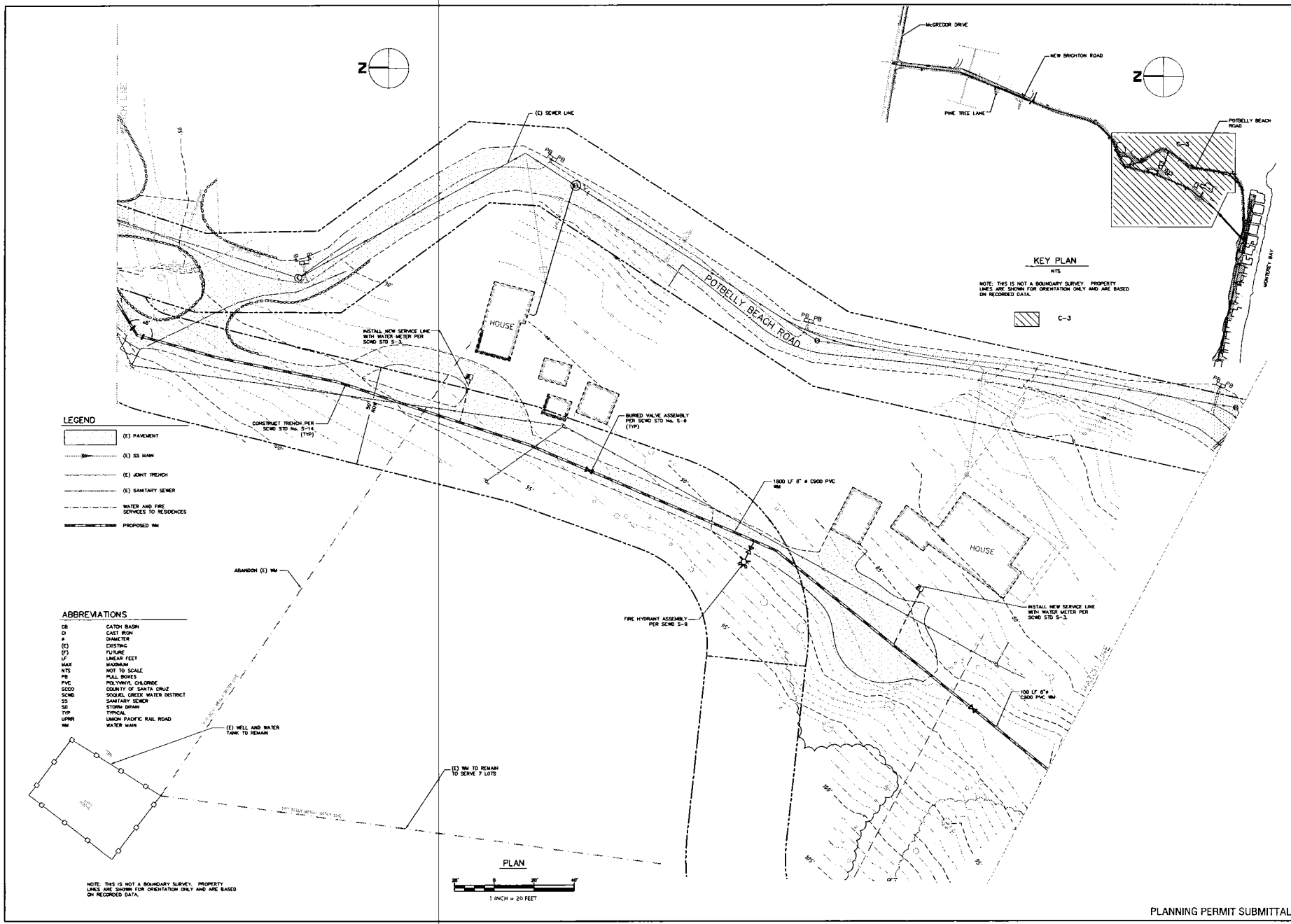
WATER MAIN INSTALLATION FOR POTBELLY BEACH CLUB, POTBELLY BEACH ROAD, SANTA CRUZ COUNTY, CALIFORNIA, APN 038-231-39	RI Engineering, Inc.
PRELIMINARY UTILITY PLAN (2 OF 5)	303 Potrero St., Suite 42-202, Santa Cruz, CA 95060 · 831-425-3901 www.riengineering.com

project no. 07-018-1
date MARCH 2011
scale AS SHOWN
dwg name CIVIL4.DWG

C-2

EXHIBIT A

EXHIBIT A



PLANNING PERMIT SUBMITTAL

RICHARD J. IRISH No. 45622 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA PROFESSIONAL ENGINEER

04/01/2011

R.I Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.rlengineering.com

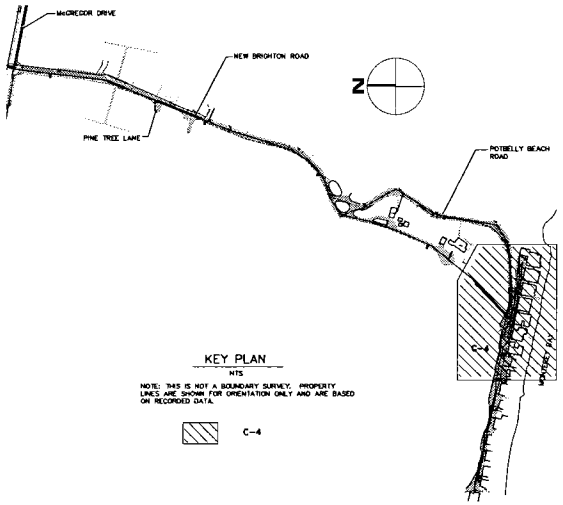
WATER MAIN INSTALLATION
FOR
POTBELLY BEACH CLUB
POTBELLY BEACH ROAD
SANTA CRUZ COUNTY, CALIFORNIA
APN 038-231-39

PRELIMINARY UTILITY PLAN (3 OF 5)

project no. 07-016-1
date MARCH 2011
scale AS SHOWN
dwg name CIVIL4.DWG

C-3

EXHIBIT A

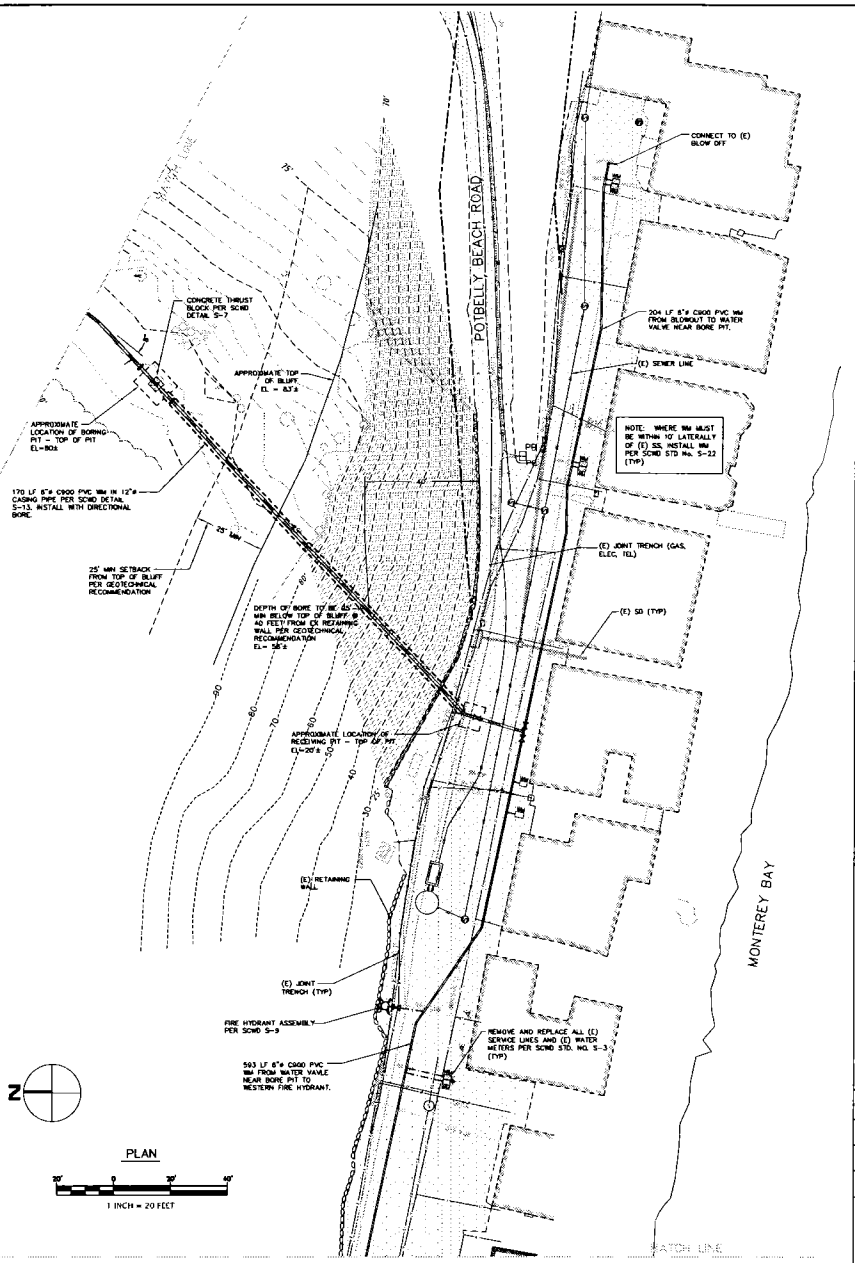


KEY PLAN
NTS

NOTE: THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE SHOWN FOR ORIENTATION ONLY AND ARE BASED ON RECORDED DATA.

WATERMAIN NOTES:

THE (E) WATERMAIN ALONG POTBELLY BEACH ROAD HAS NOT BE LOCATED AND IS UNKNOWN. THE (E) MAIN SHALL BE FIELD VERIFIED AND ABANDONED IN PLACE OR REMOVED.



PLAN

1 INCH = 20 FEET

ABBREVIATIONS

CB	CATCH BASIN
CI	CAST IRON
ø	DIAMETER
(E)	EXISTING
(T)	FUTURE
LF	LINEAR FEET
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- WATER AND FIRE SERVICES TO RESIDENCES
- PROPOSED WM

PLANNING PERMIT SUBMITTAL

R.J Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-423-3901 www.rjengineering.com

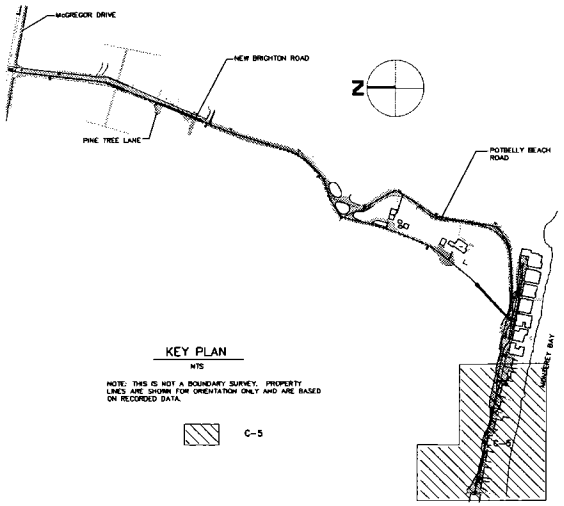
WATER MAIN INSTALLATION
FOR
POTBELLY BEACH CLUB
POTBELLY BEACH ROAD
SANTA CRUZ COUNTY, CALIFORNIA
APN 038-231-39

PRELIMINARY UTILITY PLAN (4 OF 5)

project no. 07-016-1
date MARCH 2011
scale AS SHOWN
dwg name CIVIL4.DWG

C-4

EXHIBIT



KEY PLAN

NTS

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C-5

LEGEND

- (E) PAVEMENT
- (E) SS MAIN
- (E) JOINT TRENCH
- (E) SANITARY SEWER
- WATER AND FIRE SERVICES TO RESIDENCES
- PROPOSED WM

ABBREVIATIONS

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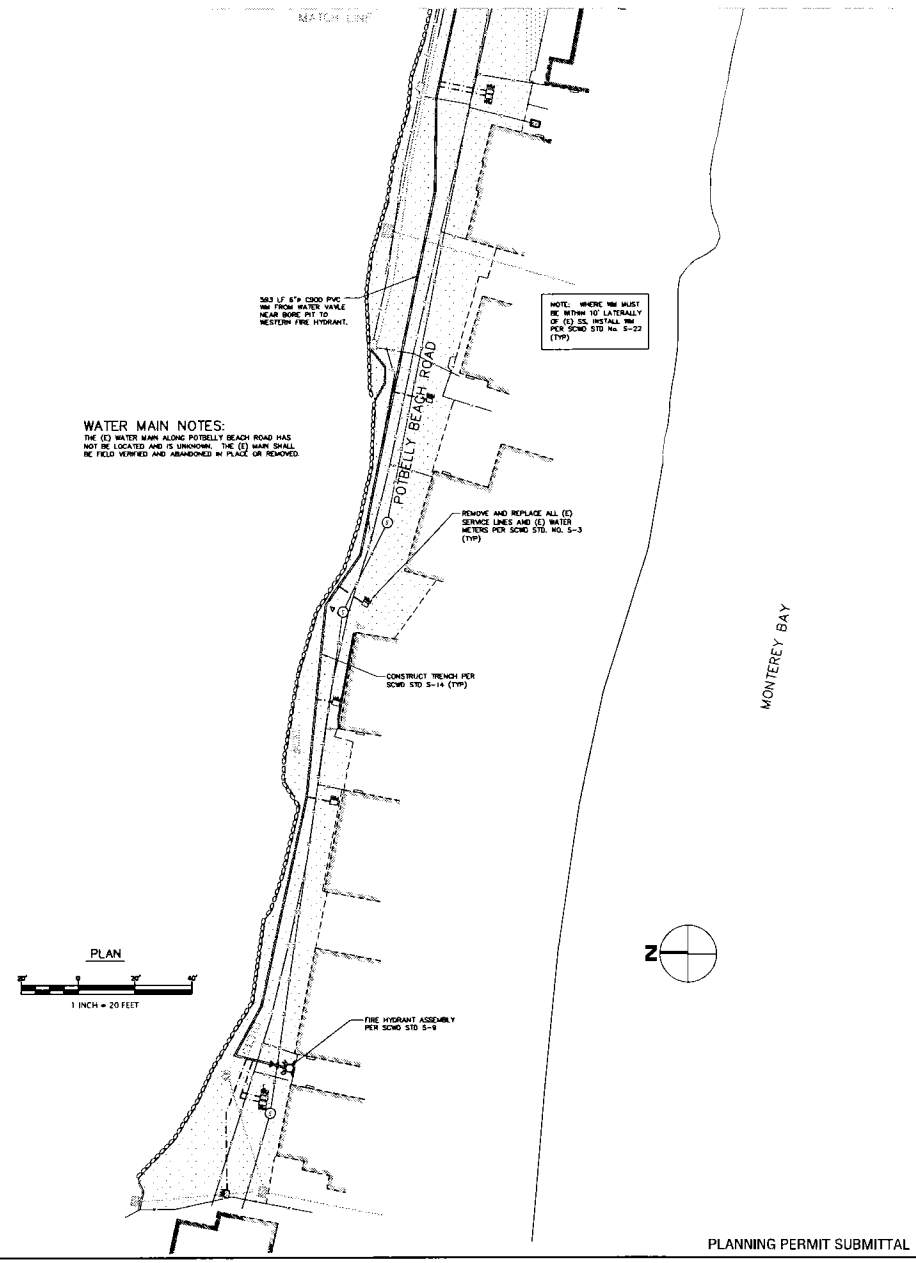


WATER MAIN NOTES:

THE (E) WATER MAIN ALONG POTBELLY BEACH ROAD HAS NOT BE LOCATED AND IS UNKNOWN. THE (E) MAIN SHALL BE FIELD VERIFIED AND ABANDONED IN PLACE OR REMOVED.

PLAN

0' 20' 40'

1 INCH = 20 FEET

PLANNING PERMIT SUBMITTAL

RICHARD J. IRISH No. 18620 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA

03/21/2011

R.I Engineering, Inc.

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

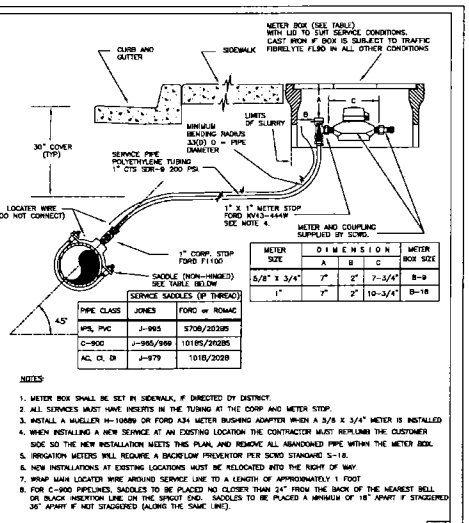
WATER MAIN INSTALLATION
FOR
POTBELLY BEACH CLUB
POTBELLY BEACH ROAD
SANTA CRUZ COUNTY, CALIFORNIA
APN 038-231-38

PRELIMINARY UTILITY PLAN (5 OF 5)

project no. 07-016-1
date MARCH 2011
scale AS SHOWN
dwg name CIVIL4.DWG

C-5

EXHIBIT A

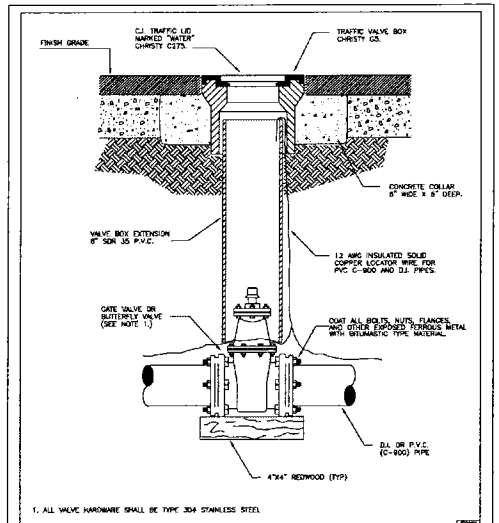


METER SIZE	DIMENSION A	B	C	METER BOX SIZE
5/8" X 3/4"	7"	2"	7-3/4"	B-9
1"	7"	2"	10-3/4"	B-18

PIPE CLASS	SERVICE SADDLES (IP THREAD) JONES	FORD or ROMAC
HPS, PVC	J-995	S708/202B5
C-900	J-995/969	1018S/202B5
AC, CI, DI	J-979	1018/202B

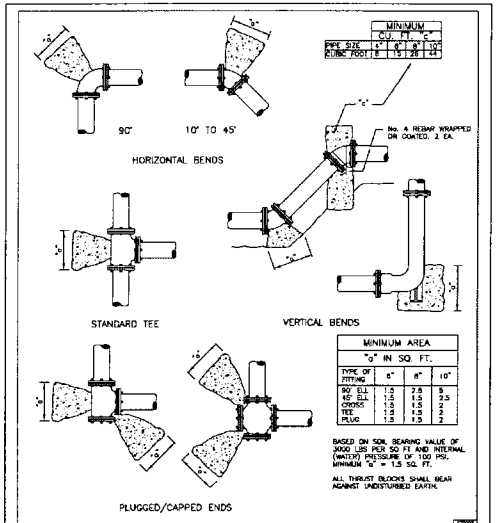
SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD	STANDARD SERVICE CONNECTION	STD. NO. S-3
DATE: JAN-09		
CHECKED: MJW		
APPROVED: JNG		



SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD	BURIED VALVE ASSEMBLY	STD. NO. S-6
DATE: DEC-08		
CHECKED: MJW		
APPROVED: JNG		

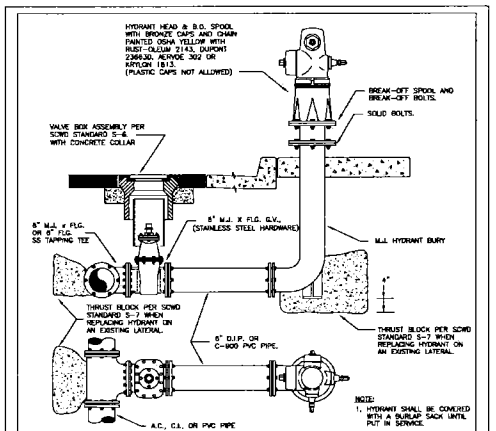


MINIMUM CU. FT. "C"			
PIPE SIZE	4"	6"	8"	10"
CUBIC FOOT	8	15	28	44

MINIMUM AREA "a" IN SQ. FT.			
TYPE OF FITTING	6"	8"	10"
90° ELL	1.5	2.5	5
45° ELL	1.5	1.5	2.5
CROSS	1.5	1.5	2
TEE	1.5	1.5	2
PLUG	1.5	1.5	2

SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

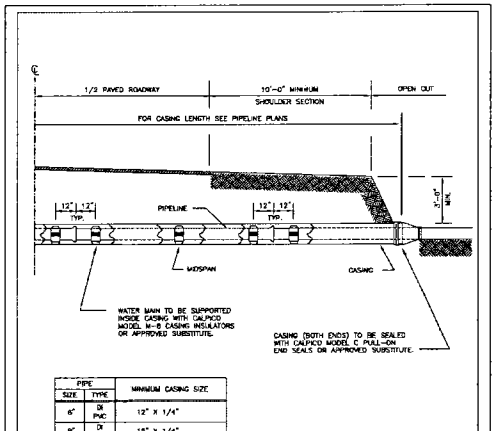
CAD: TAD	THRUST BLOCK DETAILS	STD. NO. S-7
DATE: DEC-08		
CHECKED: MJW		
APPROVED: JNG		



MANUFACTURER	HYDRANT TYPE 6" STEAMER OUTLETS 1-2 1/2" 1-4 1/2"	2-2 1/2" 1-4 1/2"
CLOW	2050	2060
JONES	J-3740	J-3760
LONG BEACH	B125	B130

SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

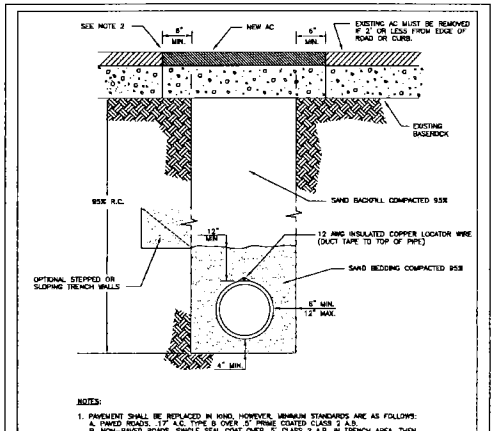
CAD : TAD	FIRE HYDRANT ASSEMBLY	STD. NO. S-9
DATE: DEC-08		
CHECKED: MJW		
APPROVED: JNG		



PIPE SIZE	TYPE	MINIMUM CASING SIZE
6"	DI PVC	12" X 1/4"
8"	DI PVC	15" X 1/4"
10"	DI PVC	15" X 1/4" 18" X 3/8"
12"	DI PVC	18" X 3/8" 20" X 3/8"

SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD	CASING INSTALLATION	STD. NO. S-13
DATE: DEC-08		
CHECKED: MJW		
APPROVED: JNG		



SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD	LONGITUDINAL TRENCH SAND BACKFILL	STD. NO. S-14
DATE: DEC-08		
CHECKED: MJW		
APPROVED: JNG		

PLANNING PERMIT SUBMITTAL

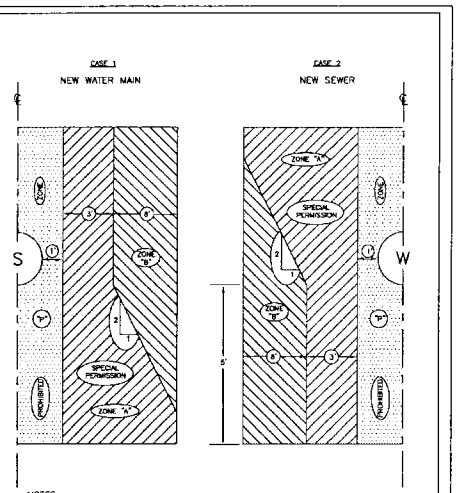
RICHARD J. IRISH No. 43620 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA
03/21/2011
R.I Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.rlengineering.com

WATER MAIN INSTALLATION FOR POTBELLY BEACH CLUB
POTBELLY BEACH ROAD
SANTA CRUZ COUNTY, CALIFORNIA
APN 028-231-39
DETAILS

project no. 07-016-1
date MARCH 2011
scale AS SHOWN
dwg name CIVIL4.DWG

C-6

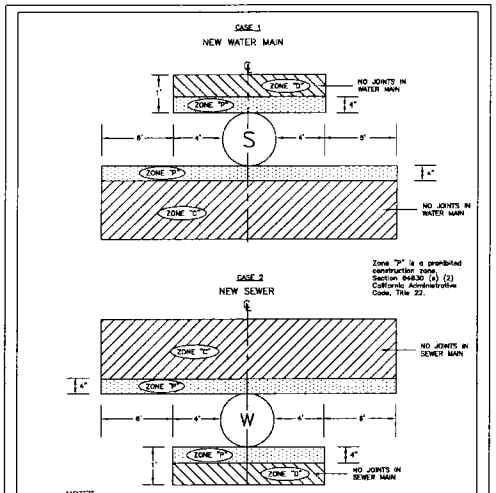
EXHIBIT A



NOTES:
1. SEE STANDARD S-22 2/3 FOR CROSSING PIPES.
2. SEE STANDARD S-22 3/3 FOR MATERIAL TO USE IN EACH ZONE.

SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD DATE: DEC-08 CHECKED: MJW APPROVED: JNG	CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS 1/3 : PARALLEL CONSTRUCTION	STD. NO. S-22 1/3



NOTES:
1. SEE STANDARD S-22 1/3 FOR PARALLEL CONSTRUCTION.
2. SEE STANDARD S-22 3/3 FOR MATERIAL TO USE IN EACH ZONE.

SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD DATE: DEC-08 CHECKED: MJW APPROVED: JNG	CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS 2/3 : CROSSINGS	STD. NO. S-22 2/3

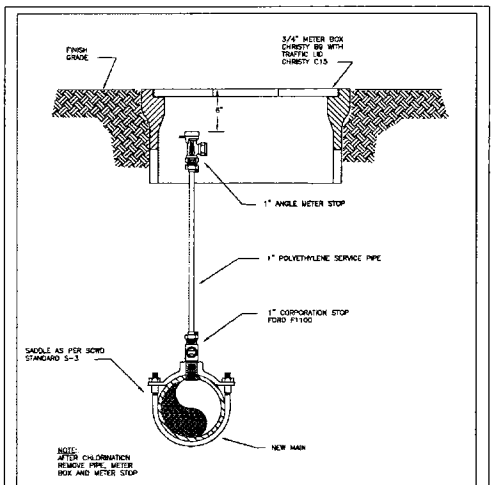
WHEN WATER AND SEWER MAINS MUST BE CONSTRUCTED WITH LESS THAN 10 FEET OF SEPARATION, THE FOLLOWING MATERIALS SHALL BE USED FOR THE NEW MAIN CONSTRUCTION

CONSTRUCTION / ZONE / CASE	PARALLEL		CROSSING	
	A	B	C	D
CASE 1 NEW WATER MAIN	SPECIAL PERMISSION ONLY	PVC AWWA – C900 CLASS 200	PVC AWWA – C900 CLASS 200	PVC AWWA – C900 CLASS 200
		DUCTILE IRON PIPE AWWA – C151 CLASS 50	DUCTILE IRON PIPE AWWA – C151 CLASS 50	
CASE 2 NEW SEWER MAIN	SPECIAL PERMISSION ONLY	PVC AWWA – C900 CLASS 200	PVC AWWA – C900 CLASS 200 (20' LENGTH CENTERED)	PVC AWWA – C900 CLASS 200 (20' LENGTH CENTERED)
		DUCTILE IRON PIPE AWWA – C151 CLASS 50	PVC AWWA – C900 CLASS 200 (20' LENGTH CENTERED)	PVC AWWA – C900 CLASS 200 (20' LENGTH CENTERED)
		VITRIFIED CLAY PIPE EXTRA-STRENGTH	CASING INSTALLATION (20' MIN. CENTERED)	CASING INSTALLATION (20' MIN. CENTERED)
				CAP 10" X 10" X 4" CLASS "B" PCC

NOTES:
1. SEE STANDARD S-22 1/3 FOR PARALLEL CONSTRUCTION.
2. SEE STANDARD S-22 2/3 FOR CROSSING PIPES.

SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD DATE: DEC-08 CHECKED: MJW APPROVED: JNG	CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS 3/3 : MATERIALS	STD. NO. S-22 3/3



SOQUEL CREEK WATER DISTRICT
P.O. BOX 1550 CAPITOLA, CALIFORNIA 95010

CAD: TAD DATE: DEC-08 CHECKED: MJW APPROVED: JNG	CHLORINATION TAP	STD. NO. S-23

PLANNING PERMIT SUBMITTAL

RJ Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.rjengineering.com

WATER MAIN INSTALLATION
FOR
POTBELLY BEACH CLUB
POTBELLY BEACH ROAD
SANTA CRUZ COUNTY, CALIFORNIA
APN 028-021-09

DETAILS

project no.
07-016-1
date
MARCH 2011
scale
AS SHOWN
dwg name
CIVIL4.DWG

C-7

Application #: 111050
APN: 038-231-38
Owner: Pot Belly Beach Club

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 proposed water line is ancillary to the existing allowed residential uses within the R-1-8 (single-family residential, 8,000 square foot minimum parcel size) zone district within which the residences are located. The trenching proposed to occur in the PR, PF (Parks and Recreation, Public Facilities) zone districts is temporary and does not expand any existing or proposed use within this portion of the project site. The proposed water line is consistent with the site's Existing Parks & Recreation, Public Facility, Urban Low Residential, and Urban Open Space (O-R, P, R-UL, O-U) General Plan designations.

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 proposed construction within the public access and utility easements is temporary, is consistent with and will not conflict with the purpose of the easements.

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 proposed construction will be temporary and will not result in any permanent visual impact to the scenic resources in the vicinity. The work proposed at the coastal bluff will be undertaken via directional boring, rather than open trenching, and is expected to last no more than 2-4 days.

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 the proposed water line construction will not impact any public access. While temporary disruptions to traffic along New Brighton Road may result from the construction, project conditions require the preparation of a Traffic Control and Safety Plan and a pre-construction meeting with the project contractor and relevant agencies to ensure compliance with the Plan and to minimize any disruption to both public and private access roads.

EXHIBIT B

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

This finding can be made, in that the water line will be constructed underground, utilizing directional boring, which minimizes grading and potential negative impacts to trees in the vicinity. While the project site is located between the shoreline and the first public road, the construction impacts will be temporary and the placement of the new water line will not result in any permanent visual impact to the coastline and will not interfere with public access to the beach, ocean, or other nearby body of water.

Application #: 111050
APN: 038-231-38
Owner: Pot Belly Beach Club

Conditions of Approval

Exhibit A: Project Plans (7 Sheets) prepared by R.I. Engineering, Inc., dated March 2011

I. This permit authorizes the installation of new 6" and 8" water lines totaling 4,432 lineal feet. 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.

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.

B. Obtain an Encroachment Permit from the Department of Public Works for all off-site work performed in the County road right-of-way.

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. Prior to the start of construction the applicant/owner shall:

A. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached. The Conditions of Approval shall be recorded prior to submittal.

B. Submit 3 copies of the original geotechnical report and addendum prepared and stamped by a licensed geotechnical engineer, for review and acceptance by Environmental Planning staff.

C. Conduct a pre-construction meeting with the project contractor, Environmental Planning staff, County Geologist, project geotechnical engineer, project arborist and other consultants or reviewing agency staff, as required. The meeting shall include a discussion of the scope of work, schedule of completion, implementation of mitigation measures and review of final project plans. Prior to the pre-construction meeting the final grading, drainage and erosion control plans shall be provided to Environmental Planning staff and must include the following:

1. Cross-section through the slope demonstrating that the water line will be bored below the projected zones of instability and erosion. Provide a protective vault at the base of the slope if the water line will intercept the slope above the roadway. This vault must protect the water line from instability.

EXHIBIT C

2. Note on plans "Trenching in the County right-of-way (McGregor Drive) shall conform to County of Santa Cruz Design Criteria including but not limited to FIG-EP-1 and FIG EP-2. Encroachment Inspector may have additional requirements for finished paving; it shall be determined in the field."

3. Plans shall indicate that any water line components located within the special flood hazard area (SFHA) are waterproofed to prevent flood waters from entering the water line.

D. Implement pre-construction canopy clearance pruning in accordance with the recommendations made by the project arborist.

III. All construction must comply with the following requirements:

A. All mitigation measures, as identified in the March 22, 2010 Initial Study prepared by Hamilton Swift and Associates, Inc. shall be implemented.

B. Meet the following requirements regarding tree protection:

1. Locate water line according to the arborist recommendations to avoid tree removal and/or damage.

2. Use alternative construction methods including horizontal directional boring in areas of the project where traditional trenching could be expected to cause destabilization or premature mortality.

3. Use "ditchwitch" (hand tool) excavation instead of traditional backhoe trenching in an area requiring special care (the area of the line running along the utility easement).

C. Meet the following requirements regarding Monarch butterfly protection:

1. Schedule construction for the period of March through September of any given year to avoid disturbance to butterfly autumnal and winter roosting.

2. If project construction must occur during the peak wintering period of Monarch butterfly (i.e., October through February) a qualified biologist shall be hired to survey the project site no more than 15 days prior to onset of construction, to determine if the surrounding forest is occupied by Monarch butterflies during the proposed work schedule.

3. If wintering Monarchs are observed within the forest surrounding the work site, the biologist shall determine if the proximity of the construction work is likely to disturb them, and if so, recommend that work be postponed until the Monarchs have left the area in the following spring.

4. Conduct post-excavation root pruning, in accordance with the recommendations made by the project arborist.

D. Meet the following requirements regarding nesting raptor protection:

1. Schedule project construction to occur from September 1 to March 1 of any given year to avoid the peak raptor nesting season. If this is not practical, hire a qualified biologist to conduct surveys of nesting raptors along the project area and within 250 feet of the project area.

2. If any raptor nests are observed, the biologist shall determine if the construction would impact the nesting raptors, and if so, establish a buffer zone around the nest where construction will be postponed until the biologist has determined all young have fledged the nest.

E. Meet all requirements and pay any applicable fee of the Central Fire Protection District.

F. In order to ensure no significant impacts from hazardous traffic blockage occur as a result of this project, the project engineer will prepare a Traffic Control Plan and a Safety Plan to the satisfaction of the Central Fire District, the Santa Cruz County Sherriff's Office, the Soquel Creek Water District, and the County of Santa Cruz Transportation Engineer. A pre-construction meeting will be conducted with the project contractor and relevant agencies to ensure compliance with the Traffic Control Plan and the Safety Plan.

G. Submit a Traffic Control and Safety Control Plan to the satisfaction of the Central Fire District, the Santa Cruz County Sherriff's Office, the Soquel Creek Water District, and the County of Santa Cruz Transportation Engineer. A pre-construction meeting shall be conducted with the project contractor and relevant agencies to ensure compliance with the Traffic Control and Safety Plan.

H. Complete and record a Declaration of Geologic Hazards. **You may not alter the wording of this declaration**. Follow the instructions to record and return the form to the Planning Department.

I. Comply with all recommendations of the approved geotechnical reports.

J. Provide Environmental Planning staff with an observation letter from the project geotechnical engineer. The letter must state that the project has been completed in substantial conformance with all recommendations made in the geotechnical report for the project.

K. Construction must comply with the following air quality protection provisions:

1. Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.

2. Prohibit all grading activities during periods of high wind (over 15 mph).

3. Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four days).

4. Apply non-toxic binders (e.g. latex acrylic copolymer) to exposed areas after cut and fill operations, and hydroseed any exposed areas).

5. Maintain at least two feet of freeboard in haul trucks.

6. Cover all trucks hauling dirt, sand, or loose materials.

7. Cover inactive storage piles.

8. Install wheel washers at the entrance to construction sites for all existing trucks.

L. Construction must comply with the following cultural resource protection measures:

1. A qualified archaeological monitor shall be present during ground disturbance in specified project locations to ensure that any newly discovered resources are evaluated in accordance with CEQA guidelines. Specifically, monitoring should include all earth disturbing activities in the following locations:

   a. New Brighton Road from its intersection of McGregor Drive to about 200 feet south of Pine Tree Lane).

   b. Lower Potbelly Beach Road, paralleling Potbelly Beach.

   c. Water line segment (8-inch line) that trends southwest from the intersection of New Brighton Road and Potbelly Beach Road to the edge of the terrace bluff.

   If prehistoric or historic deposits or features are discovered during construction, work must be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

M. Construction must comply with the following geologic hazard protection measures:

1. The initiation point for directional boring shall be set back 25 feet from the top of the bluff. In addition, the boring shall be at least 25 feet below the existing ground surface beginning at a point directly below the bluff top edge, and extending downslope to a point 40 feet horizontally upslope from the existing retaining wall at the bottom of the bluff.

2. Following completion of the boring, backfill at both the initiation and termination points should be placed in thin lifts, moisture conditioned and compacted to a minimum of 90 percent relative compaction, with the upper eight inches of subgrade under pavements compacted to a minimum of 95 percent relative compaction. Care shall be taken to ensure that the initiation point is adequately sealed to prevent the introduction of surface water into the boring.

N. Pursuant to Sections 16.40.040 and 16.42.100 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 16.42.100 shall be observed.

O. 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.

V. Mitigation Monitoring. The mitigation measures listed under this heading have been incorporated in the conditions of approval for this project in order to mitigate or avoid significant effects on the environment. As required by Section 21081.6 of the California Public Resources Code, a monitoring and reporting program for the above mitigation is hereby adopted as a condition of approval for this project. This program is specifically described following each mitigation measure listed below. The purpose of this monitoring is to ensure compliance with the environmental mitigations during project implementation and operation. Failure to comply with the conditions of approval, including the terms of the adopted monitoring program, may result in permit revocation pursuant to Section 18.10.462 of the Santa Cruz County Code.

A. Mitigation Measure: Air Quality

Monitoring Program: In order to ensure no significant impacts to air quality occur as a result of this project, the following measures shall be incorporated into the conditions of approval and shall be fully implemented:

1. Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.

2. Prohibit all grading activities during periods of high wind (over 15 mph).

3. Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four days).

4. Apply non-toxic binders (e.g. latex acrylic copolymer) to exposed areas after cut and fill operations, and hydroseed any exposed areas).

5. Maintain at least two feet of freeboard in haul trucks.

6. Cover all trucks hauling dirt, sand, or loose materials.

7. Cover inactive storage piles.

8. Install wheel washers at the entrance to construction sites for all existing trucks.

B. Mitigation Measure: Monarch Butterflies

Monitoring Program: In order to ensure no significant impacts to Monarch butterflies occur as a result of this project, the following measures shall be incorporated into the conditions of approval and shall be fully implemented:

1. Schedule construction for the water main to occur during the period of March through September of any given year to avoid disturbance to butterfly autumnal and winter roosting.

2. If project construction must occur during the peak wintering period of Monarch butterfly (i.e., October through February) a qualified biologist shall be hired to survey the project site no more than 15 days prior to onset of construction, to determine if the surrounding forest is occupied by Monarch butterflies during the proposed work schedule.

3. If wintering Monarchs are observed within the forest surrounding the work site, the biologist shall determine if the proximity of the construction work is likely to disturb them, and if so, recommend that work be postponed until the Monarchs have left the area in the following spring.

C. Mitigation Measure: Nesting Raptors

Monitoring Program: In order to ensure no significant impacts to nesting raptors occur as a result of this project, the following measures shall be incorporated into the conditions of approval and shall be fully implemented:

1. Schedule project construction to occur from September 1 to March 1 of any given year to avoid the peak raptor nesting season. If this is not practical, hire a qualified biologist to conduct surveys of nesting raptors along the project area and within 250 feet of the project area.

2. If any raptor nests are observed, the biologist shall determine if the construction would impact the nesting raptors, and if so, establish a buffer zone around the nest where construction will be postponed until the biologist has determined all young have fledged the nest.

D. Mitigation Measure: Tree Protection

Monitoring Program: In order to ensure no significant impacts to trees occur as a result of this project, the following measures shall be incorporated into the conditions of approval and shall be fully implemented:

1. Locate water line according to the arborist recommendations to avoid tree removal and/or damage.

2. Use alternative construction methods including horizontal directional boring in areas of the project where traditional trenching could be expected to cause destabilization or premature mortality.

3. Use "ditchwitch" (hand tool) excavation instead of traditional backhoe trenching in an area requiring special care (the area of the line running along the utility easement).

4. Require preconstruction canopy clearance pruning

5. Require post-excavation root pruning.

E. Mitigation Measure: Cultural Resources

Monitoring Program: In order to ensure no significant impacts to cultural resources occur as a result of this project, a qualified archaeological monitor will be present during ground disturbance in specified project locations to ensure that any newly discovered resources are evaluated in accordance with CEQA guidelines. Specifically, monitoring should include all earth disturbing activities in the following locations:

2. New Brighton Road from its intersection of McGregor Drive to about 200 feet south of Pine Tree Lane).

3. Lower Potbelly Beach Road, paralleling Potbelly Beach.

4. Water line segment (8-inch line) that trends southwest from the intersection of New Brighton Road and Potbelly Beach Road to the edge of the terrace bluff.

If prehistoric or historic deposits or features are discovered during construction, work must be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

E. Mitigation Measure: Geology

Monitoring Program: In order to ensure no significant impacts to or from geologic

hazards occur as a result of this project, the following measures shall be incorporated into the conditions of approval and shall be fully implemented:

1. The initiation point for directional boring shall be set back 25 feet from the top of the bluff. In addition, the boring shall be at least 25 feet below the existing ground surface beginning at a point directly below the bluff top edge, and extending downslope to a point 40 feet horizontally upslope from the existing retaining wall at the bottom of the bluff.

2. Following completion of the boring, backfill at both the initiation and termination points should be placed in thin lifts, moisture conditioned and compacted to a minimum of 90 percent relative compaction, with the upper eight inches of subgrade under pavements compacted to a minimum of 95 percent relative compaction. Care shall be taken to ensure that the initiation point is adequately sealed to prevent the introduction of surface water into the boring.

G. Mitigation Measure: Traffic (Conditions

Monitoring Program: In order to ensure no significant impacts from hazardous traffic blockage occur as a result of this project, the project engineer will prepare a Traffic Control Plan and a Safety Plan to the satisfaction of the Central Fire District, the Santa Cruz County Sherriff's Office, the Soquel Creek Water District, and the County of Santa Cruz Transportation Engineer. A pre-construction meeting will be conducted with the project contractor and relevant agencies to ensure compliance with the Traffic Control Plan and the Safety Plan.

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.

Application #: 111050
APN: 038-231-38
Owner: Pot Belly Beach Club

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Steven Guiney, AICP	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.

EXHIBIT C

Initial Study/Proposed Mitigated Negative Declaration

for the

Potbelly Beach Club Water Line Replacement Project

Lead Agency:
Soquel Creek Water District
5180 Soquel Drive
Soquel, California 95073-2549

Prepared by:
Hamilton Swift Consultants
500 Chestnut Street, Suite 100
Santa Cruz, California 95060

March 22, 2010

EXHIBIT B

EXHIBIT D.

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EXHIBIT D

EXHIBIT D

Environmental Checklist

Project Information

1. **Project Title:** Potbelly Beach Club (PBBC) Water Line Replacement Project

2. **Lead Agency Name and Address:**
   Soquel Creek Water District
   5180 Soquel Drive
   Soquel, California 95073-2549

3. **Contact Person and Phone Number:** Mike Wilson, Project Engineer, Soquel Creek Water District,. 831-475- 8501 ext 122.

4. **Project Location:** The water line will replace existing water service lines located on lands owned by Potbelly Beach Club, primarily within the roadbed of New Brighton Road, south of McGregor Drive. The line also extends along Potbelly Beach Road, which is the access road between the bluff and the beach homes, and on lands on the bluff above the beach. The existing reservoir on the PBBC property will be abandoned and filled.

Figure 1: *Project extends from McGregor Drive down New Brighton Road.*

EXHIBIT D

5. **Project Sponsor's Name and Address:**
Potbelly Beach Club Management Committee
c/o Carl Sprague
PacCom Management
Watsonville, CA

6. **General Plan Designation:** Urban Low Density in *Santa Cruz County General Plan*

7. **Zoning:** Residential Low Density per *Santa Cruz County Zoning Ordinance*

8. **Description of Project:**

a. Project Overview: Potbelly Beach Club, in cooperation with Soquel Creek Water District, proposes to replace existing water service lines with new lines and laterals (as needed), and to connect to the Soquel Creek Water District system. The proposed project would replace an existing private well and water distribution system serving the existing Potbelly Beach Club homes and lots, and result in the closure and abandonment of an existing reservoir currently owned and operated by Potbelly Beach Club.

Soquel Creek Water District is the Lead Agency for the project, and the District will own and operate the water line upon its completion. Santa Cruz County is a Responsible Agency, as they will require the approval of a Coastal Development Permit for the project. The project will be funded by the Potbelly Beach Club (PBBC) through an assessment of its property owners. Construction work will be contracted by the PBBC with the water district's concurrence and oversight.

The project objective is to improve water quality and provide a greater level of fire protection. The project will not result in any provision of water service or future rights not already held by the property owners of Potbelly Beach Club, therefore no new growth or service capacity will result from the project. The project will support efforts by the Soquel Creek Water District to implement water conservation measures, inasmuch as the area will be subject to the conservation policies and regulations of the water district. Moreover, the project is expected to provide some level of relief to saltwater intrusion conditions inasmuch as the water source for the property will no longer be drawn directly from wells on the coastal property. Construction is expected to take between 30 and 60 days.

b. Project Details: The project involves constructing a new 8-inch water line that will connect to a 12-inch water main at McGregor Drive and New Brighton Road (see Figures 2a-2e: Preliminary Utility Plan Maps). The 8-inch line will extend down New Brighton Road to the parking area where New Brighton Road ends and Potbelly Beach road begins. The line will then continue in the paved road past the parking area and leading to the bluff, thereby completely avoiding the winding portion of Potbelly Beach Road that extends from the parking area down to the beach. At a point approximately 20 feet past the cul-de-sac at the end of the pavement serving the caretaker house and the Gray residence, the 8-inch line will bifurcate into two 6-inch lines. One of the lines will serve 17 houses along the beach, and the second will serve seven houses on the bluff to the west. New laterals, meters and new fire hydrants would be installed per water and fire district specifications.

The line on New Brighton Road begins at the water main on McGregor Drive extending 335 lineal feet to a point north of the Union Pacific Railroad line. This would be installed via a trench. A jack-and-bore installation would then be completed for 80 lineal feet to extend the line under the Union Pacific line.

EXHIBIT

Figure 3: *Existing well and reservoir to be decommissioned and filled.*

Figure 4: *New Brighton Road looking south from McGregor Drive toward the Union Pacific RR. Water line would be installed via a trench in this section of the road, and then via bore-and-jack under the train track.*

After passing under the rail line, another 80 lineal feet of water line will be installed via a trench in the road up to the intersection of Pine Tree Lane. From Pine Tree Lane, the next 150 lineal feet of water line will be installed in New Brighton Road via a directional bore. This is being done as a mitigation measure to prevent root damage to a number of Monterey Cypress trees along that section of New Brighton Road.

EXHIBIT D

Figure 5: *Area where water line will be installed via directional boring to avoid any damage to tree root systems.*

The next section of water line (1,100 lineal feet) will be installed via trench to the bluff and the point where the 8-inch line bifurcates into two 6-inch lines. From the bifurcation point, 100 lineal feet will be installed via trench in a southerly direction to the directional bore pit, and 330 lineal feet will be installed via trench in a westerly direction in the area of the utility easement which contains above-ground power poles and lines. The westerly line will serve the homes on the bluff.

To extend the 6-inch line to serve the beach homes, a directional boring will be undertaken, which will allow the line to pass under the bluff without disturbing its edge or surface. Directional boring will commence at a 10' x 20' boring pit, approximately 5 – 10 feet in depth to be set back 25 feet from the top of the bluff. The directionally bored line would emerge beyond the base of the bluff in a receiving pit in the pavement on Potbelly Beach Road. At that point a new 6-inch line would be installed and the old line would be removed. The new line would extend 200 lineal feet to the east and 580 lineal feet to the west of the receiving pit on Potbelly Road. The directionally bored section replaces the current water line that extends above ground over the bluff face and down to the beach homes.

Trenching shall conform to Soquel Creek Water District Standard Specifications Section 203.09 (Open Trenches), Section 301.05.01 (Trenching), and California Department of Public Health drinking water standards. Occupational Health and Safety (OSHA) Standard 1926 Subpart P shall also be met regarding excavations.

Existing pavement will be saw cut to a width that allows a trench to be dug with a traditional backhoe. After the trench is dug, the water line pipes will be installed and connected, and the trench will be backfilled with appropriate material. Pavement will be repaired following the completion of the installation of the water line.

The existing reservoir is eight feet in depth and approximately 22'x 45' in surface area. It will require approximately 294 cubic yards of fill to bring it to grade. This will generate 12 truck trips.

Figure 6 and 7: *Approximate location of bifurcation point, where an 8-inch line will be split into two 6-inch lines, one proceeding south toward the bluff, and the second extending west (right of picture) to serve the houses on the upper bluff. Directional boring will avoid impacts to the face of bluff (below).*

EXHIBIT D

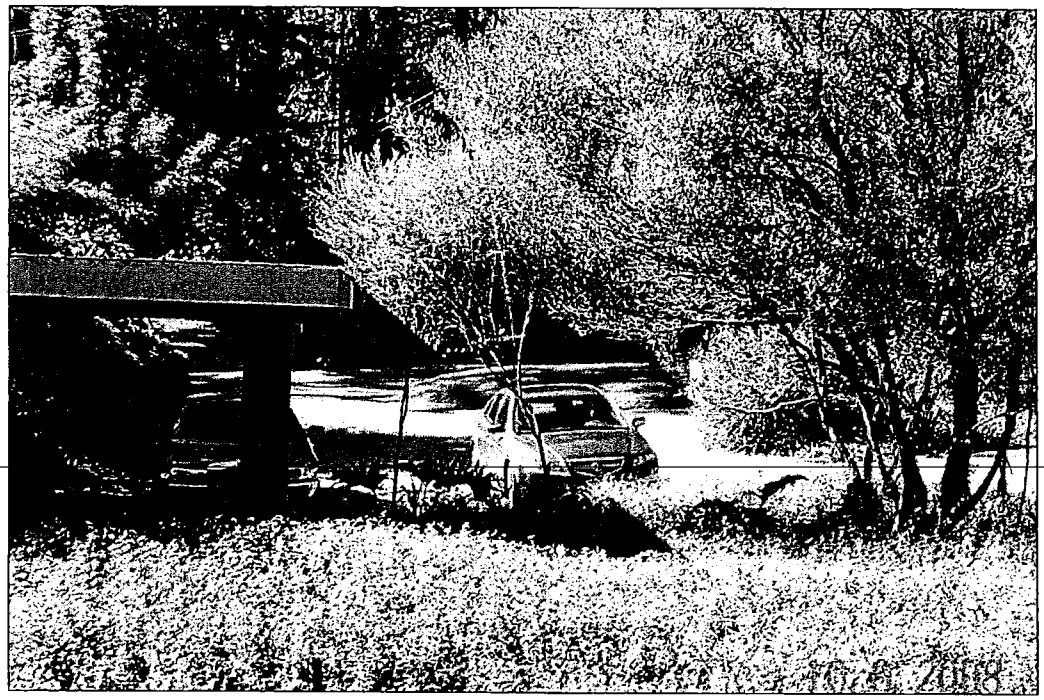

Figure 8: *Seven homes on bluff will be served by a new 6-inch line*

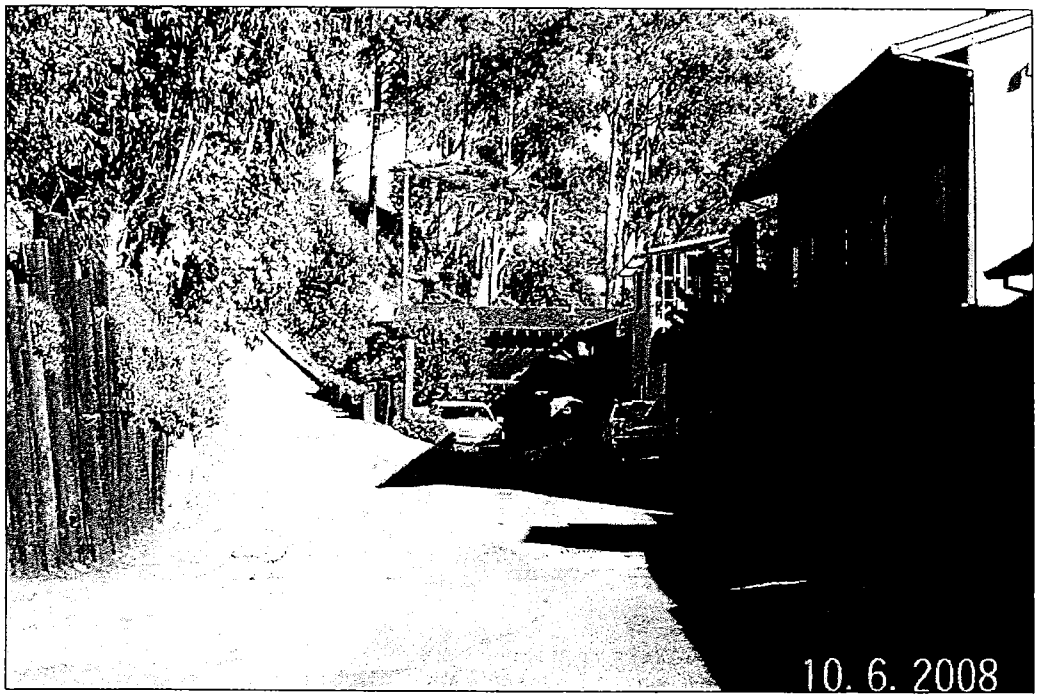

Figure 9: *New 6-inch line and laterals will serve 17 existing beach homes.*

EXHIBIT D

9. **Surrounding Land Uses and Setting: (Briefly describe the project's surroundings):**
Within Potbelly Beach Club lands, the surroundings consist of single family residences and accessory structures, with a variety of residential landscaping including trees, shrubs, herbaceous species, and irrigated turf. Other undeveloped areas within PBBC consist primarily of Eucalyptus forest with typical understory elements including coast live oak and other species. New Brighton State Park is located adjacent to Potbelly Beach Club to the west.

10. **Other agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)**
County of Santa Cruz Planning Department
701 Ocean St., 4th Floor
Santa Cruz, CA 95060
(Responsible for issuing a Coastal Development Permit)

EXHIBIT n

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

■ Aesthetics	☐ Agricultural Resources	☐ Air Quality
■ Biological Resources	■ Cultural Resources	■ Geology/Soils
■ Hazards & Hazardous Materials	■ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
■ Public Services	☐ Recreation	■ Transportation/Traffic
☐ Utilities/Service Systems	■ Mandatory Findings of Significance	

~~Determination.~~ ~~(To be completed by the Lead Agency.)~~

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Laura D Brown — Signature

3/24/10 — Date

Laura D. Brown — Printed Name

Soquel Creek Water District — For

EXHIBIT D

Evaluation of Environmental Impacts:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. ~~Once the lead agency has determined that a particular physical impact may occur, then the checklist~~ answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

EXHIBIT D

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significant.

EXHIBIT D

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a) Have a substantial adverse effect on a scenic vista?

Less than Significant Impact. Per Santa Cruz County GIS mapping, the part of McGregor Drive intersecting New Brighton Road, and adjacent portions of New Brighton Road are within areas designated as scenic resources. Also, this designation applies to the coastline along Potbelly Beach Road. During construction, equipment needed for trenching and directional boring will be present. Construction will be visible within a scenic resource area while the equipment is operating at McGregor Drive and along areas of New Brighton Road closest to McGregor. However, the duration of the visual impact will be limited to a few days at most for this area. While the coastline at Potbelly Beach Road is within the scenic area, the construction along the road is unlikely to be visible to the beach-going public because it will be obstructed by the beach residences. The area of directional boring and trenching on the bluff may be visible temporarily from some public areas along the beach. Again, this will be only a limited disruption time-wise.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than Significant with Mitigation Incorporation. This project is not located within California Route 1, which is not currently a designated scenic highway but may be eligible for designation. There is a potential impact to trees that may be visible from the highway. However, the project has been designed to avoid any tree removal or damage. Mitigation measures have been incorporated based on the recommendations of arborist James Allen. The project water line locations have been adjusted to avoid tree roots. Directional boring is to be used to protect Monterey Cypress trees on New Brighton Road. These mitigations are described in the biotic resources section of this report.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

No Impact. Once construction is complete there will be no change in the visual character and quality of the site.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

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No Impact. No permanent installation of lights or reflective materials is associated with this project.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURAL RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?*

No Impact. The proposed project is not located within prime farmland, unique farmland, or farmland of statewide significance.

b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact. The proposed project is not located within an agricultural zone, or land under a Williamson Act contract. It does not conflict with County zoning, agricultural or timber land regulations.

c) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?*

No Impact. The proposed project will not change land use nor will it result in any increase in development potential for the Potbelly Beach Club property, and is not adjacent to any agricultural areas. Therefore the project will not lead to development that could result in the conversion of farmland to non-agricultural uses.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The proposed project is located within the North Central Coast Air Basin (NCCAB) which includes Santa Cruz, Monterey and San Benito counties. Air quality in the NCCAB is regulated primarily by the Monterey Bay Unified Air Pollution Control District (MBUAPCD).

With respect to federal regulations, the NCCAB is in "attainment" for all federal standards, and the District has an adopted Federal Maintenance Plan for ozone (*2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region).*

In terms of California regulations, the District has two applicable plans: the *2005 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region: Senate Bill 656 Implementation Plan* (also known as the Bill 656 Implementation Plan), and the *2008 Air Quality Management Plan for the Monterey Bay Region* (also known as the AQ Management Plan). The NCCAB is considered to be in "nonattainment" status for state standards for 1-hour ozone and PM10.

The aforementioned plans focus primarily on reducing emissions from stationary sources, and the project will not result in the operation of any major permanent stationary emission source. Moreover, the project will not increase population or vehicle miles traveled beyond that already assumed and approved for development and accounted for in the emissions budgets developed by the MBUAPCD in accordance with its attainment classification. Therefore the project does not conflict with or obstruct the implementation of the applicable plans.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant with Mitigation Incorporated. The proposed project will generate short-term emissions due to construction impacts, including ozone precursors (volatile organic compounds (VOC) and nitrogen oxide (NOx)), carbon monoxide (CO) from vehicle and/or equipment emissions, and particulate matter (PM10) from fugitive dust and vehicle emissions.

The MBUAPCD has adopted and published *CEQA Air Quality Guidelines* (MBUAPCD 2004b), which establishes thresholds of significance for determining impacts of a given project. The threshold limits are:

- Emission of 137 or more pounds per day of VOC or NOx
- Direct emission of 550 or more pounds per day of CO
- Generation of traffic that significantly affects levels of service
- Direct emission of 82 or more pounds per day of particulate matter (PM10) on site during operation or construction
- Direct emission of 150 pounds per day or more of SOx

The construction impacts generated by the Potbelly Beach water line project are similar in nature to the impacts of the County's Aptos Transmission Line replacement project. Both projects rely on trenching and some bore-and-jack and directional boring. The equipment used for both projects is similar. Therefore, the analysis prepared by EDAW for the County sewer line project are directly applicable to the Potbelly project, and the conclusions reached in that analysis can serve as the analytic basis for the air quality analysis of this project. (The complete text of the EDAW analysis is provided in Attachment 5: Air Quality Background Material).

The scope of the County's sewer line project is substantially larger than the Potbelly water line project For example, the sewer line project assumes 100 workdays of construction per year, as compared to an expected 30-60 total days of construction for the Potbelly Beach project. Similarly, the sewer line project assumes 16 trucks and 20 employees traveling each work day. The comparable estimates for the Potbelly water line project are 1-2 trucks, and 3-6 employees.

Logically, therefore, one could infer that the Potbelly water line project would result in lower air quality impacts than those resulting from the sewer line project. When estimated on a proportional basis, the emissions generated by the Potbelly water line project would be approximately 30 to 60 percent of those produced by the County sewer line project.

The comparative analysis of the sewer line project to the water line project demonstrates that the Potbelly Beach Club water line project air quality impacts will be far below any of the applicable threshold standards.

With respect to VOC, NOx, CO, and PM10, the impact of the sewer line project falls below the threshold level of significance, based on the analysis prepared by EDAW. That analysis looked at the emissions generated by construction including equipment operations, truck traffic and employee commuting. The expected emissions from the sewer line project were calculated as:

- 11.2 pounds/day of VOC (8.2% of threshold)
- 131.8 pounds/day of NOx (96% of threshold)
- 75.6 pounds/day of CO (13.7% of threshold)
- 8.2 pounds/day of PM10 (10% of threshold)

The EDAW analysis also concludes that the sewer line project will generate SOx emissions of less than 150 pounds/day and will not generate traffic that significantly affects levels of service.

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Given that the Potbelly water line project will generate less emissions and traffic than the County sewer line project, it is clear that the air quality impacts of the Potbelly water line project will fall well below all of the applicable threshold of significance standards.

While the Potbelly water line project will have a less than significant impact on air quality, the MBUAPCD guidelines identify mitigation measures that it recommends in order to further reduce impacts resulting from fugitive dust (particulate matter) due to construction emissions. The Soquel Water District will implement these recommendations as part of the Potbelly water line project to the extent feasible to further ensure that the impacts are minimized.

Mitigation Measure Air-1:

- Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities during periods of high wind (over 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g. latex acrylic copolymer) to exposed areas after cut and fill operations, and hydroseed any exposed areas.
- Maintain at least two feet of freeboard in haul trucks.
- Cover all trucks hauling dirt, sand, or loose materials.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all existing trucks.
- Pace all roads at construction sites.

c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

Less than Significant with Mitigation Incorporation. As discussed above, the proposed project would not have any significant long-term operational air quality impacts, and the short-term construction impacts will not be above the threshold (de minimus) standards. The proposed project will not permanently generate additional motor vehicle trips, vehicle miles traveled, or additional stationary sources of emissions. The emission levels are at a level that will not generate ozone precursor emissions (VOC, NOx) or local CO emissions that would result in or contribute substantially to an air quality violation as a result of short-term construction or long-term operations.

d) *Expose sensitive receptors to substantial pollutant concentrations?*

No Impact. The nearest sensitive receptors would be residences adjacent to New Brighton Road, on the upper bluff, and along Potbelly Beach. As noted previously, the short duration of the project and the limited expected emission pollutants mean that the construction of the proposed water line will not generate pollutants in sufficient quantity or duration to result in substantial pollutant concentrations.

e) *Create objectionable odors affecting a substantial number of people?*

No Impact. The construction of the water line will not generate objectionable odors except to the extent that someone finds equipment or truck emission odors objectionable. Even if the odors were

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to be considered objectionable, the quantity and duration of the odor generated would not be sufficient to affect a substantial number of people.

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IV. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) Through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Potentially Significant Unless Mitigation Incorporated: Kathleen Lyons, plant ecologist, and Dana Bland, wildlife biologist, conducted a site visit of the water line project area in May 2009. The botanical and wildlife resources were assessed by a walk of the project site, search of the CNDDB, and review of other recent biological reports for the area (e.g., EDAW 2008).

Sensitive Habitats: Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. The site analysis conducted by the consulting plant ecologist and wildlife biologist confirmed that no sensitive habitat types exist within the project area.

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Special Status Plant Species: Plant species of concern include those listed by either the Federal or State resource agencies as well as those identified as rare by CNPS. Species considered for the project area are those identified in the County sewer line project EIR (EDAW, 2008). This list is based on a search of the CNPS and CNDDB inventories for the Soquel quadrangle and surrounding quads. Based on a review of the habitats present within the project area, and a review of the surveys conducted by EDAW (EDAW, 2008) the potential for plant species of concern to occur within the water line construction area is considered very low. This is due to the dense woody debris created by the eucalyptus forest and lack of any specialized substrate or habitat features conducive to special status species (e.g., lack of grassland, open sandy substrate, etc.). No special status plant species were documented within the water main project area during the May 2009 field survey. The project will not affect special status plant species.

Special Status Wildlife Species: The literature review, data base search, and site reconnaissance survey for wildlife identified three special status wildlife species that may occur within the project area: monarch butterfly, nesting raptors, and San Francisco dusky-footed woodrat. These species are briefly described below. The CNDDB lists several other special status wildlife species from the general project vicinity, but are not expected to occur within the project area because the area lacks suitable habitat. The following species are not expected to occur within the project area: Ohlone tiger beetle (no coastal terrace prairie), steelhead and tidewater goby (no creek or lagoon habitat), California red-legged frog (no creek or pond habitat), western snowy plover (no beach or sand dune habitat), riparian dependent nesting birds such as yellow warbler (no riparian habitat), and pallid bat (no suitable man-made structures or large tree hollows for roosting).

a. Monarch butterflies (*Danaus plexippus*). This species migrates to central California and overwinter in Eucalyptus, pine and acacia trees. They are present in Santa Cruz County between September 1 and March 1, and prefer dense stands of trees that provide protection from the wind. The California Department of Fish and Game (CDFG) recognize monarchs as a "Special Status Animal" because their winter residence in California represents a critical stage in their life cycle and because of declining habitat from land development. The Santa Cruz County Local Coastal Plan also recognizes monarch wintering habitat as a sensitive resource.

   The large eucalyptus grove within the project area may serve as either an autumnal site or overwintering site for monarch butterflies, and the CNDDB (CDFG 2009) lists known monarch wintering sites along Park Avenue just northwest of this site. Although no trees suitable for monarch wintering habitat will be removed as a part of this project, wintering monarchs are somewhat sensitive to noise and dust which may be generated during the construction of this project. Measures are recommended to avoid impacts to wintering monarch butterflies.

b. Nesting Raptors. Several species of raptors occur along this portion of the Central California Coast and are protected by CDFG code as well as the federal Migratory Bird Treaty Act. Raptors which commonly utilize eucalyptus forests for nesting include red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and great horned owl (*Bubo virginianus*). Occasionally, Cooper's hawk (*Accipiter cooperii*) and western screech-owl (*Otus kennicottii*) may nest in dense eucalyptus forests, although they are more commonly associated with oak woodlands.

   No raptor nests were observed within the eucalyptus forest along the project alignment during May 2009. However, raptors may establish nests within the forest prior to onset of project construction. Noise and dust from project construction has the potential to disturb nesting raptors if it occurs during a critical point in the nesting season, therefore, measures to avoid and minimize potential impacts are recommended.

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c. San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). This woodrat is a State species of special concern. These small mammals build large stick nests at the base of trees and shrubs. They prefer forested and scrub habitats with a moderate canopy and brushy understory, and are often found on the upper banks of riparian forests. This woodrat feeds on a variety of woody plants, fungi, flowers and seeds.

No woodrat nests were observed during the May 2009 site reconnaissance survey, and none are expected to occur within the project work area because the vegetation in the understory of the Eucalyptus forest is removed periodically by maintenance for existing road, power line and water storage facilities. No woodrat nests were observed in the areas immediately adjacent to the work site, and disturbance by this project to woodrat nests that may exist further from the project area is not likely to occur because the woodrat is a nocturnal species (i.e., unlikely to be foraging during the day within the project area). They are also not subject to visual and noise disturbance because they shelter in their stick nests during the daytime when construction would be occurring. No impacts to woodrats or their habitats are expected to occur as a result of this project.

Mitigation Measure Bio-1: Monarch Butterflies.

- Schedule construction for the water main to occur during the period March through September of any given year to avoid disturbance to Monarch butterfly autumnal and winter roosting. It would not be practical to create buffer zones to avoid Monarch butterfly habitat for this project, as the entire project lies within suitable Monarch butterfly wintering habitat.
- However, if project construction must occur during the peak wintering period of Monarch butterfly (i.e., October through February), a qualified biologist shall be hired to survey the project site no more than 15 days prior to onset of construction, to determine if the surrounding forest is occupied by Monarch butterflies during the proposed work schedule.
- If wintering Monarch butterflies are observed within the forest surrounding the work site, the biologist shall determine if the proximity of the construction work is likely to disturb them, and if so, recommend that work be postponed until the Monarchs have left the area in the following Spring.

Mitigation Measure Bio-2: Nesting Raptors.

- Schedule project construction to occur from September 1 to March 1 of any given year to avoid the peak raptor nesting season. If this is not practical, hire a qualified biologist to conduct surveys for nesting raptors along the project area and within 250 feet of the project area.
- If any raptor nests are observed, the biologist shall determine if the construction would impact the nesting raptors, and if so, establish a buffer zone around the nest where construction will be postponed until the biologist has determined all young have fledged the nest.

b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Less than Significant Impact: Santa Cruz County Code requires a tree removal permit for the removal of any "significant" tree. As the proposed project is located within the Urban Services Line, a "significant" tree is a tree equal or greater than 20 inches in diameter; any sprout clump of five or more stems each that are greater than 12 inches in diameter or any group of five or more trees on one parcel each which are greater than 12 inches in diameter (County Code 16.34.030). The eucalyptus forest adjacent to the water main project supports several trees that are greater than 20 inches in diameter; however, the project will not remove any trees.

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Construction and trenching for the water main within the eucalyptus forest may result in direct and indirect impact to small-size (1-3" diameter) coast live oak trees. Three small oak trees are located within the vicinity of the water main line. Due to the small size of these trees and that they are growing beneath existing power lines (and subject to periodic trimming by PG&E), trenching near these tree and/or their removal is not considered a significant impact to regional botanical resources. Trenching and directional boring will not affect sensitive habitats or "significant" trees.

c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) Through direct removal, filling, hydrological interruption, or other means?*

No impact. No protected wetlands exist within the area of the water main replacement project.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Potentially Significant Unless Mitigation Incorporated. As discussed previously, there is potential impact to the overwintering of Monarch butterflies, and some native raptor species. Mitigation Measures Bio-1 and Bio-2 address and mitigate the potential impacts.

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Potentially Significant Unless Mitigation Incorporated. Santa Cruz County Zoning Code includes a Significant Trees Protection Ordinance (Chapter 16.34). It defines "significant trees" and calls for preservation of significant trees. It establishes procedures for protection and circumstances under which they may be removed, subject to certain findings.

As part of the design of the project, an arborist (James Allen) was hired to evaluate potential impacts to trees and to recommend changes and/or mitigations to the project that would achieve compliance with the County's policies. The full report is provided in Attachment 3.

The Arborist report assessed potential impacts to 106 trees/tree groups. In the initial configuration, 16 trees would need to have been removed, six of which met the criteria for "significant." Following this assessment, the arborist made a number of recommendations, with the result that the current plan (as described in this Negative Declaration) completely avoids the potential impacts.

Mitigation Measure Bio-3: Tree Protection.
The specific project changes that have been incorporated as mitigation include the following:

- Locating water line according to arborist recommendations to avoid tree removal and/or damage (as shown in proposed plan)
- Use of alternative construction methods including horizontal directional boring in two separate areas of the project where traditional trenching would have caused destabilization or premature mortality
- Use of "ditchwitch" (hand tool) excavation instead of traditional backhoe trenching in an area requiring special care (the area of the line running along the utility easement)
- Preconstruction canopy clearance pruning
- Post-excavation root pruning

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- Construction monitoring in areas with roots greater than 1.5 inches in diameter, and in the area proposed for "ditchwitching"

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan?

No Impact. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional or State habitat conservation plans applicable to the project.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Government Code Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Government Code Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

a) Cause a substantial adverse change in the significance of a historical resource as defined in Government Code Section 15064.5?

No Impact: In May 2009, Albion Environmental. Inc. (Albion) conducted a cultural resources assessment for the Soquel Creek Water District (SCWD) Potbelly Beach Water Line Project (PBWLP), Santa Cruz County, California. The assessment is intended to fulfill the water district's obligations under the California Environmental Quality Act (CEQA) to address potential impacts that a project may impose on significant cultural resources (i.e. historical or unique archeological resources).

The study was conducted in two phases. The first part included a thorough review of cultural resource documents and recommendations developed for the nearby Aptos Transmission Main Relocation Project (ATMRP) (Clark 2008, 2009) in order to determine if any additional studies are required for the PBWLP. Albion assessed the completeness of the previous studies including background research, resource identification efforts, survey coverage, and Native American consultation. Results of this phase were documented in a letter report dated May 7, 2009 (For entire Albion Report, see Attachment 4). Recommendations outlined in the Phase I letter were carried out during Phase II, and included a records search update, Native American consultation, and inspection of un-surveyed potions of the PBWLP.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Government Code Section 15064.5?

Less than Significant Impact with Mitigation. Background research indicates the area is sensitive for prehistoric and historic-era archaeological resources. However, no sites are recorded within the PBWLP alignment. Excavations conducted for the ATMRP discovered sparse accumulations of historic–era artifacts near the intersection of New Brighton Road and the railroad, and in two locations along lower Potbelly Beach Road, however, none were judged to be significant cultural resources (Clark 2009:31).

Given these findings, it is Albion's judgment that the proposed undertaking will not impact significant cultural resources (i.e., historical resources), and additional formal study of this project is

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not warranted. (Note: Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.) Although no evidence of potential significant impacts was uncovered during the Albion investigation, given the area's sensitivity for cultural resources, the following mitigation measure will be implemented:

Mitigation Measure Cultural - 1: Monitoring
A qualified archaeological monitor will be present during ground disturbance in specified project locations to ensure that any newly discovered resources are evaluated in accordance with CEQA guidelines.

Specifically, monitoring should include all earth disturbing activities in the following locations:

- New Brighton Road from its intersection of McGregor Drive to about 200 feet south of Pine Tree Lane (incorporates recommendations from ATMRP for Sta. 207+00 through 250+00)
- Lower Potbelly Beach Road, paralleling Potbelly Beach (incorporates recommendations from ATMRP for Sta. 32+00 through 4+03.8)
- Water line segment (8-inch water line) that trends southwest from the intersection of New Brighton Road and Potbelly Beach Road to the edge of the terrace bluff, as well as the 6-inch water line that extends west of this alignment

If prehistoric or historic deposits or features are discovered during construction, work must be halted in that area until a qualified archaeologist can assess the significance of the find (also in accordance with ATMRP MND Mitigation Measure Cul-1.3). Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less than Significant Impact with Mitigation. Any potential impacts are addressed with Mitigation Measure Cultural -1.

d) *Disturb any human remains, including those interred outside of formal cemeteries?*

Less than Significant Impact with Mitigation. There are no known cemeteries or human remains within the project area. In the event that human remains are discovered, the following mitigation measure will be implemented:

Mitigation Measure Cultural – 2: Human Remains
In the case that human remains are discovered, the NAHC will be contacted to assign a Most Likely Descendant (MLD), who will work with the project to determine proper treatment of remains. Also, in accordance with Sana Cruz county Code (Chapter 16.40.040-16.40.050), if Native American artifacts or human remains are encountered during the project, local Native American groups will be notified and invited to inspect the find, and if needed, to participate in consultation regarding any necessary archaeological excavation.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42

No Impact: There are no active faults within the project site, nor is the site located in an Alquist-Priolo Earthquake Fault Zone. The San Andreas Fault is located 11 kilometers from the project site, and the San Gregorio fault is located 24 kilometers from the project site.

ii) Strong seismic ground shaking?

Less than Significant Impact: The project site is located in a seismically active region and would be subject to potentially severe ground shaking during a major earthquake on an active fault in the region. The project does not involved construction of any new structures that would expose inhabitants to seismic safety risks. Nonetheless, when the average peak ground acceleration exceeds

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about 0.50 gram, ground cracking can occur and underground pipes can sometimes break. At some point it is likely that the ground surface acceleration along the waterline will exceed 0.50 gram during moderate to large earthquakes on faults in the region, and damage to the project pipelines from seismic shaking and/or its effects (such as liquefaction) should be expected.

The project design was reviewed by the geotechnical and coastal engineering firm of Haro, Kasunich and Associates. In addition, specifications meet all seismic specifications of the Soquel Creek Water District. Building the project within these design parameters will reduce the impact to less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact: The location of the water line in Potbelly Beach Road is an area potentially subject to liquefaction in the event of a seismic event. However, the impact is less than significant because the design meets the seismic standards of the Soquel Creek Water District both for the line itself and for the trenching operations.

iv) Landslides?

Less than Significant Impact with Mitigation Incorporation: Most of the project is not located in areas where there is a risk of landslides. In the area near the bluff, the potential for landslides to be induced by the project are avoided through the use of horizontal directional boring with particular drilling specifications as established by Haro and Kasunich in a project review letter, dated April 3, 2008 (Attachment 2). The particular requirements for the horizontal directional boring including a minimum setback of 25 feet from the top of slope are included in the following mitigation measures:

Mitigation Measure Geo – 1:
The initiation point for directional boring shall be set back 25 feet from the top of the bluff. In addition, the boring shall be at least 25 feet below the existing ground surface beginning at a point directly below the bluff top edge, and extending downslope to a point 40 feet horizontally upslope from the existing retaining wall at the bottom of the bluff.

Mitigation Measure Geo -2:
Following completion of the boring, backfill at both the initiation and termination points should be placed in thin lifts, moisture conditioned and compacted to a minimum of 90 percent relative compaction, with the upper 8 inches of subgrade under pavements compacted to a minimum of 95 percent relative compaction. Care shall be taken to ensure that the initiation point is adequately sealed to prevent the introduction of surface water into the boring.

b) *Result in substantial soil erosion or the loss of topsoil?*

Less than Significant Impact. In the bluff area, horizontal directional boring will be implemented to prevent any potential soil instability or lateral spreading. The location of the boring and receiving pits was based on recommendations from Haro and Kasunich. In trenched areas where lateral spreading could occur, trench backfill shall be done in conformance with Soquel Creek Water District Standard S-14. Erosion control plans will be prepared for the project per the specifications of the water district.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

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Less than Significant with Mitigation Incorporation: As previously discussed, with the implementation of Mitigation Measures Geo - 1 and Geo – 2, the project as designed will not facilitate or lead to on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

No Impact. Both the analysis by Haro Kasunich and Associates, and a soils investigation performed for the Aptos Transmission Main Relocation Project (prepared by DCM Engineering in December 2007, the scope of which encompasses the entire Potbelly water line project) demonstrate that the project is not located in any expansive soils, therefore will not create risks in that regard.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

No Impact. The project does not involve septic systems.

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VII. HAZARDS. Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

No Impact. The proposed project does not involve the routine transport, use or disposal of hazardous materials, and therefore would not create any impacts.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

No Impact. Small amounts of fuels, lubricants, and solvents may be used on construction equipment during the course of construction of the project. These materials will be stored and

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handled in accordance with regulatory protocols. Moreover, the project would not involve any long-term use of such materials. Therefore there are no significant hazards resulting from the proposed project.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

No Impact. Cabrillo College and Twin Lakes Christian School are the nearest schools to the project site and are located on the opposite side of Highway 1, more than ¼ mile from the project. As noted previously, the project does not involve the handling of hazardous or acutely hazardous materials, substances or waste other than minor uses of lubricants, fuels and solvents. No emissions will affect existing or proposed schools.

d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

No Impact. The site is not on the list of hazardous materials sites compiled pursuant Government Code Section 65962.5.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. The site is not located within two miles of any public or private airports.

f) *For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. The project is not located in the vicinity of a private airstrip.

g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less than Significant with Mitigation. During construction, the use of equipment and the trenching work associated with the project could reduce the roadway capacities, impede emergency access, or cause minor congestion on New Brighton Road and Potbelly Beach Road. A temporary detour and lane closure will also be required on McGregor Drive. In order to mitigate this impact, the project engineer will prepare a Traffic Control Plan and Safety Plan.

Mitigation Measure Haz-1:
The project engineer will prepare a Traffic Control Plan and a Safety Plan to the satisfaction of the Central Fire District, the Santa Cruz County Sheriff's office, the Soquel Creek Water District, and the County of Santa Cruz Transportation Engineer. A pre-construction meeting will be conducted with the project contractor and relevant agencies to ensure compliance with the Traffic Control Plan and the Safety Plan.

h) *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

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No Impact. The proposed project will not create any potential fire hazards. Fire suppression capacity will be improved as a result of the project.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a) Violate any water quality standards or waste discharge requirements?

Less than Significant with Mitigation Incorporation. Surface water runoff from the project site during construction could affect water quality off-site if not properly controlled. Surface runoff could contain sediment as a result of erosion if proper construction techniques are not implemented. An Erosion Control plan shall be prepared by the project engineer and implemented by the contractor to prevent water quality impacts from construction activity.

Mitigation Measure Hydro – 1:
The project engineer shall prepare an Erosion Control Plan to the satisfaction of the Soquel Creek Water District and County of Santa Cruz. This plan will meet state standards for stormwater pollution prevention.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

No Impact. The project site is not located in a significant groundwater recharge area, as established in the Aptos Transmission Line project environmental review, and therefore has no impact on groundwater recharge.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

No Impact. The project will not alter existing drainage patterns. The only possible alteration of drainage would be during construction, but any effects will be eliminated when the project is completed.

d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

No Impact. As noted previously, no alteration of drainage or stream courses will result from the project.

e) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

No Impact. The installation of the water lines will not affect runoff because there is no increase of impervious surfaces.

f) *Otherwise substantially degrade water quality?*

Less than Significant with Mitigation Incorporation. Any potential water quality impacts are addressed by Mitigation Measure Hydro-1, above (see VIII-a).

g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

No Impact. The project does not involve construction of any new housing. Future building sites in the Potbelly Beach Club lands are located on the bluff, and are not subject to any flood hazards.

h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

No Impact. The project does not involve construction of any new housing. Future building sites in the Potbelly Beach Club lands are located on the bluff, and are not subject to any flood hazards.

i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?*

No Impact. The project will not involve any creation of exposure to people or structures to risks of flooding or dam failure.

j) *Inundation by seiche, tsunami, or mudflow?*

No Impact. Any existing exposure to inundation would not be affected by the project.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a) Physically divide an established community?

No Impact. The project involves constructing a water line, and will occur below grade.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project is consistent with the objectives of the Soquel Creek Water District. It is their policy to encourage independent water systems to join with the District system in order to provide a consistent level of capacity and water quality, and to minimize the impacts of potential for saltwater intrusion caused by independent wells in coastal areas.

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

No Impact. The project is not located within a proposed or existing Habitat Conservation Plan or Natural Community Conservation Plan.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Implementation of the proposed project will not result in the loss of availability of known mineral resources that would be of value to the region or residents of the state.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The proposed project is not designated as a mineral resource recovery site.

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XI. NOISE. Would the project result in:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less than Significant Impact. Short-term noise impacts can be expected to occur during construction with the operation of trucks and the trenching and boring equipment. These impacts will be limited to hours of construction (8 AM – 5 PM, Monday through Friday), for a period of 30 to 60 days, and therefore are not considered significant. There are also short-term noise impacts associated with trucks and equipment traveling to the site. Construction truck travel will take place during regular business travel hours and would not be of sufficient intensity to cause businesses and residences to experience any greater noise than already is experienced on the various roads leading to the project site. These impacts also are less than significant because they would not exceed standards in that Santa Cruz County General Plan Public Safety and Noise Element.

b) *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*

Less than Significant Impact. Ground vibration may be noticeable during construction or jacking and boring operations. However, these vibrations will be short-term, lasting only as long as needed for construction on the various project locations. All equipment will be operated during normal business hours as noted above.

c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

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No Impact. The project will not create a substantial permanent increase in ambient noise levels, inasmuch as all noise impacts are temporary in nature.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. As noted in the response to question XI-a) above, temporary noise impacts will be limited in intensity and duration. The project contractors will use properly muffled equipment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The project is not located within an airport land use plan area.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The project is not located within the vicinity of a private airstrip.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The water line installation will serve existing homes in the Potbelly Beach Club. It will not create any water service demands nor establish capacity beyond what currently exists. No new areas are being opened up for development as a result of the project.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. No housing displacement is associated with this project.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. No displacement of persons is associated with this project.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☒	☐	☐
Fire protection?	☐	☒	☐	☐
Police protection?	☐	☒	☐	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection, police protection, schools, parks, other public facilities?

Less than Significant Impact with Mitigation Incorporation. As noted in response VII, Hazards, there are temporary impacts to response times for police and fire due to short-term construction involving work in the existing roadways of New Brighton and Pot Belly Beach Roads. This impact is addressed in Mitigation Measure Haz – 1, which calls for the creation and implementation of appropriate safety plans and consultation with the Central Fire District and the County Sheriff's office.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No Impact. The installation of a water line will not affect the use of existing parks and recreational facilities.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

No Impact. No recreational facilities are included as part of the project and it will not require any expansion of existing recreational facilities.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. TRANSPORTATION/TRAFFIC. Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted polices, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

a) *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e. result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?*

Less than Significant with Mitigation Incorporation. The water line project will not bring about the creation of new vehicle trips because there is no increase in housing units or population resulting from the implementation of the project. The residential traffic volumes and patterns that currently occur will continue into the future. There will be a slight increase in truck traffic during construction due to the arrival and departure of workers and equipment, but the trip numbers are insignificant relative to existing street and highway capacities. Moreover, the duration of construction is approximately 30 to 60 days. There also will be approximately 12 truckloads of fill that will need to be brought in to fill the reservoir. These 12 truck trips also are not significant in impact.

Trenching work, however, will result in temporary lane closures and/or inhibit the free flow of traffic on New Brighton Beach Road and Potbelly Beach Road. This could reduce road capacity on a temporary basis, possibly to the point of impeding emergency access and causing minor points of congestion. With the implementation of Mitigation Measure Haz-1, the potentially significant impacts resulting from temporary lane closures will be reduced to less than significant. (Haz-1 requires the preparation of a Traffic Control Plan for the project).

b) *Exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways?*

Less than Significant Impact. As described in response a) above, the project will generate minimal construction period traffic and no additional long-term traffic, and therefore will not result in exceeding current Level of Service standards in the County.

c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

No Impact. The project will have no bearing on air traffic patterns.

d) *Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

No Impact. The project will not create a hazard with respect to any design features inasmuch as the water line will be below grade.

e) *Result in inadequate emergency access?*

Less than Significant with Mitigation Incorporation. Mitigation Measure Haz-1 addresses the temporary construction period impacts of the trenching work with respect to access impingements on emergency service vehicles. The preparation of the Traffic Control Plan will mitigate this impact to a less than significant level.

f) *Result in inadequate parking capacity?*

Less than Significant Impact. The project does not affect existing parking capacity, although there might be some temporary affects on parking in the vicinity of the homes on Potbelly Beach Road during the course of construction. This impact is not considered to be significant.

g) *Conflict with adopted polices, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?*

No Impact. The installation of the water line bears no relation to any adopted policies, plans or programs supporting alternative transportation.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project=s projected demand in addition to the provider=s existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project=s solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

No Impact. No additional wastewater will be generated as a result of the project.

b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

No Impact. The project will add the residences at Potbelly Beach Club to the Soquel Creek Water District water treatment and distribution system. The addition of these residences will create a minimal amount of new demand, the level of which will not generate any additional capacity expansion requirements.

c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

No Impact. The project will have no long-term effect on storm water generation, and therefore will not require nor result in the construction new storm water drainage facilities.

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d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less than Significant Impact. According to the staff of the Soquel Creek Water District, there are sufficient water supplies within the system to accommodate the minimal new demand from the Potbelly Beach Club residences. Moreover, there is no net new demand on the water supply within the aquifer, as noted previously in Section VIII, Hydrology..

e) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider=s existing commitments?*

No Impact. The project will not add new net demand to the wastewater treatment system.

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f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

No Impact. The project area is served by the County landfill, and the project would not result in significant generation of solid waste. To the extent that fill for the reservoir diverts fill from being deposited at the landfill, there could be a net positive benefit in terms of preservation of landfill capacity.

g) *Comply with federal, state, and local statutes and regulations related to solid waste?*

No Impact. The project would not result in any breaches of solid waste management regulations mandated by Federal, State or local statutes.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

Less than Significant Impact with Mitigation Incorporated. Construction activities related to the proposed project have the potential to temporarily impact two special status wildlife species: monarch butterflies and certain species of nesting raptors. Mitigation measures described in Section IV, Biological Resources, will reduce these impacts to less than significant.

Long-term operation of the water line will not impact special-status species or habitat because the water line will be located underground, within existing roadways and along a power line easement. Impacts to trees on site have been mitigated through the design of the project and a mitigation addressing tree preservation and protection.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)*

Less than Significant Impact with Mitigation Incorporated. Implementation of the proposed project would not result in cumulatively considerable significant impacts related to site-specific issues, such as aesthetics, geology and soils, hydrology, water quality, hazards, biological or cultural resources, or land use and planning. Any impacts to these resources would be short-term and construction-related. Construction impacts would not create an incremental cumulative, or

otherwise, long-term effect. Potential impacts to these site-specific issues are either avoided or minimized through implementation of mitigation measures discussed in this report.

d) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Less than Significant Impact with Mitigation Incorporated. Short-term construction activities could contribute to impacts on air quality and water quality which may cause substantial adverse effects on human beings, directly or indirectly, if not mitigated. The mitigation measures included in this report would reduce these impacts to a less than significant level.

LIST OF MITIGATION MEASURES

Aesthetic Resources Mitigation Measures

See Tree Protection Mitigation Measure Bio-3 in the Biological Resources section.

Air Quality Mitigation Measures

Mitigation Measure Air-1:

- Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities during periods of high wind (over 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g. latex acrylic copolymer) to exposed areas after cut and fill operations, and hydroseed any exposed areas.
- Maintain at least two feet of freeboard in haul trucks.
- Cover all trucks hauling dirt, sand, or loose materials.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all existing trucks.
- Pace all roads at construction sites.

Biological Resources Mitigation Measures

Mitigation Measure Bio-1:

Monarch Butterflies.

- Schedule construction for the water main to occur during the period March through September of any given year to avoid disturbance to Monarch butterfly autumnal and winter roosting. It would not be practical to create buffer zones to avoid Monarch butterfly habitat for this project, as the entire project lies within suitable Monarch butterfly wintering habitat.
- However, if project construction must occur during the peak wintering period of Monarch butterfly (i.e., October through February), a qualified biologist shall be hired to survey the project site no more than 15 days prior to onset of construction, to determine if the surrounding forest is occupied by Monarch butterflies during the proposed work schedule.
- If wintering Monarch butterflies are observed within the forest surrounding the work site, the biologist shall determine if the proximity of the construction work is likely to disturb them, and if so, recommend that work be postponed until the Monarchs have left the area in the following Spring.

Mitigation Measure Bio-2:

Nesting Raptors.

- Schedule project construction to occur from September 1 to March 1 of any given year to avoid the peak raptor nesting season. If this is not practical, hire a qualified biologist to conduct surveys for nesting raptors along the project area and within 250 feet of the project area.

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- If any raptor nests are observed, the biologist shall determine if the construction would impact the nesting raptors, and if so, establish a buffer zone around the nest where construction will be postponed until the biologist has determined all young have fledged the nest.

Mitigation Measure Bio-3:

Tree Protection. Specific project changes that have been incorporated as mitigation include the following:

- Locating water line according to arborist recommendations to avoid tree removal and/or damage (as shown in proposed plan)
- Use of alternative construction methods including horizontal directional boring in two separate areas of the project where traditional trenching would have caused destabilization or premature mortality
- Use of "ditchwitch" (hand tool) excavation instead of traditional backhoe trenching in an area requiring special care (the area of the line running along the utility easement)
- Preconstruction canopy clearance pruning
- Post-excavation root pruning
- Construction monitoring in areas with roots greater than 1.5 inches in diameter, and in the area proposed for "ditchwitching"

Cultural Resources Mitigation Measures

Mitigation Measure Cultural – 1:
A qualified archaeological monitor will be present during ground disturbance in specified project locations to ensure that any newly discovered resources are evaluated in accordance with CEQA guidelines. Specifically, monitoring should include all earth disturbing activities in the following locations:

- New Brighton Road from its intersection of McGregor Drive to about 200 feet south of Pine Tree Lane (incorporates recommendations from ATMRP for Sta. 207+00 through 250+00)

- Lower Potbelly Beach Road, paralleling Potbelly Beach (incorporates recommendations from ATMRP for Sta. 32+00 through 4+03.8)

- Water line segment (8-inch water line) that trends southwest from the intersection of New Brighton Road and Potbelly Beach Road to the edge of the terrace bluff, as well as the 6-inch water line that extends west of this alignment

- If prehistoric or historic deposits or features are discovered during construction, work must be halted in that area until a qualified archaeologist can assess the significance of the find (also in accordance with ATMRP MND Mitigation Measure Cul-1.3). Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

Mitigation Measure Cultural – 2: Human Remains
In the case that human remains are discovered, the NAHC will be contacted to assign a Most Likely Descendant (MLD), who will work with the project to determine proper treatment of remains. Also, in accordance with Sana Cruz county Code (Chapter 16.40.040-16.40.050), if Native American artifacts or human remains are encountered during the project, local Native American groups will be notified and invited to inspect the find, and if needed, to participate in consultation regarding any necessary archaeological excavation.

Geology Mitigation Measures

Mitigation Measure Geo – 1:

- The initiation point for directional boring shall be set back 25 feet from the top of the bluff. In addition, the boring shall be at least 25 feet below the existing ground surface beginning at a point directly below the bluff top edge, and extending downslope to a point 40 feet horizontally upslope from the existing retaining wall at the bottom of the bluff.

Mitigation Measure Geo -2:

- Following completion of the boring, backfill at both the initiation and termination points should be placed in thin lifts, moisture conditioned and compacted to a minimum of 90 percent relative compaction, with the upper eight inches of subgrade under pavements compacted to a minimum of 95 percent relative compaction. Care shall be taken to ensure that the initiation point is adequately sealed to prevent the introduction of surface water into the boring.

Hazards Mitigation Measures

Mitigation Measure Haz-1:

- The project engineer will prepare a Traffic Control Plan and a Safety Plan to the satisfaction of the Central Fire District, the Santa Cruz County Sheriff's office, the Soquel Creek Water District, and the County of Santa Cruz Transportation Engineer. A pre-construction meeting will be conducted with the project contractor and relevant agencies to ensure compliance with the Traffic Control Plan and the Safety Plan.

Hydrology Mitigation Measures

Mitigation Measure Hydro – 1:

- The project engineer shall prepare an Erosion Control Plan to the satisfaction of the Soquel Creek Water District and County of Santa Cruz. This plan will meet state standards for stormwater pollution prevention.

Public Services Mitigation Measures

See Mitigation Measure Haz – 1 in the Hazards section.

Traffic Mitigation Measures

See Mitigation Measure Haz – 1 in the Hazards section.

REFERENCES, PERSONS CONTACTED, REPORT PREPARER

References

Albion Environmental, 2009. *Cultural Resources Assessment for Potbelly Beach Water Line Project.*

Biotic Resources Group, 2009. *Results of Biological Review: Potbelly Beach Club Water Main Installation Project.*

County of Santa Cruz, 1994, *General Plan and Local Coastal Program.*

EDAW/AECOM, 2008, *Initial Study/Proposed Mitigated Negative Declaration for Aptos Transmission Main Relocation Project, Santa Cruz County, California.*

Haro, Kasunich and Associates, 2008. *Geotechnical Recommendations for Water Service Line Installation (Letter).*

Holman & Associates, 2008. *Historic Resources Inventory and Initial Subsurface Reconnaissance for Archaeological Resources.*

James P. Allen & Associates, 2008. *Aptos Sewer Main Reconstruction Project: Tree Resources Analysis/Construction Impact Assessment (Working Draft).*

James P. Allen & Associates, 2009. *Potbelly Beach Homeowners Association Water Supply Line Construction Project; Tree Resource Analysis/Construction Impact Assessment*

Persons Contacted

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EXHIBIT F

ATTACHMENTS

Attachment 1 – Biological Background Material: Biotic Resources Group, May, 2009. *Results of Biological Review: Potbelly Beach Club Water Main Installation Project.*

Attachment 2 – Geotechnical Background Material: Haro, Kasunich and Associates, 2008. *Geotechnical Recommendations for Water Service Line Installation*

Attachment 3 – Tree Resources Background Material: James P. Allen & Associates, 2009. *Tree Resource Analysis/Construction Impact Assessment, Potbelly Beach Club Homeowners Association Water Supply Line Construction Project*

Attachment 4 – Cultural Resources Background Material:
Albion Environmental, June 2009. *Cultural Resources Assessment for Potbelly Beach Water Line Project;*
Holman and Associates, 2008. *Historic Resources Inventory and Initial Subsurface Reconnaissance for Archaeological Resources* (from EDAW/AECOM, October, 2008, *Initial Study/Proposed Negative declaration for Aptos Transmission Main Relocation Project, Santa Cruz County, California).*

Attachment 5 – Air Quality Background Material: EDAW/AECOM, October, 2008. *Initial Study/Proposed Negative Declaration for Aptos Transmission Main Relocation Project, Santa Cruz County, California* (excerpt, Air Quality)

EXHIBIT n

Attachment 1 - Biological Background Material:

Biotic Resources Group, May, 2009. *Results of Biological Review: Potbelly Beach club Water Main Installation Project*

EXHIBIT D

Biotic Resources Group
Biotic Assessments ◆ Resource Management ◆ Permitting

RESULTS OF BIOLOGICAL REVIEW

POT BELLY BEACH CLUB WATER MAIN INSTALLATION PROJECT

Methodology and Existing Setting

Kathleen Lyons, plant ecologist, and Dana Bland, wildlife biologist, conducted a site visit of the water line project area in May 2009. The botanical and wildlife resources were assessed by a walk of the project site, search of the CNDDB, and review of other recent biological reports for the area (e.g., EDAW 2008).

The project site is located between McGregor Drive and Pot Belly Beach, just south of New Brighton State Beach. The project site was accessed from McGregor Drive along New Brighton Road and from Pot Belly Beach Road. The area proposed for the water main was viewed by walking the area along/near New Brighton Road. The direction bore site for the water main to reach Pot Belly Beach Road was viewed from the terminus of New Brighton Road.

A section of the water main work area is located within the roadbed of New Brighton Road, a paved road that extends from McGregor Road to the road's end near the coastal bluff. The water main will be in a buried trench until the edge of the coastal bluff where a directional bore will take the water main down to Pot Belly Beach Road. While the bluff face between New Brighton Road and Pot Belly Beach Road supports coastal scrub, the directional bore entry will be within a grassy area adjacent to the eucalyptus forest. Near the bluff top, the water main will tee-off northward and be installed within a eucalyptus-dominated forest parallel to existing power lines. Within the eucalyptus forest, the water main will be placed within a buried trench.

Eucalyptus forest type occupies the coastal terrace, extending from approximately Pine Tree Lane to the edge of the bluff. Areas adjacent to existing residences support a myriad of landscape trees, shrubs and herbaceous species, as well as irrigated turf.

The eucalyptus forest is dominated by non-native blue gum eucalyptus (*Eucalyptus globulus)* as well as non-native Monterey cypress (*Cupressus macrocarpa)*. Other species observed within the forest understory are coast live oak (*Quercus agrifolia)*, French broom (*Genista monspessulanus)*, cotoneaster (*Cotoneaster sp.)*, poison oak (*Toxicodendron diversilobum),* toyon *(Heteromeles arbutifolia*), coffee berry *(Rhamnus californica*), sticky monkey flower (*Mimulus aurantiacus)*, and hairy honeysuckle (*Lonicera hispidula)*. Native and non-native grasses and forbs are also present, such as foxtail (*Hordeum leporinum)*, soft chess (*Bromus hordeaceus)*, periwinkle (*Vinca major)*, ripgut brome (*Bromus diandrus)*, hedge-parsley (*Torilis arvensis)*, spreading rush (*Juncus patens)*, yerba buena (*Satureja douglasii)*, Italian thistle (*Carduus pycnocephalus)*, milk thistle (*Silybum marianum)*, hedge nettle (*Stachys sp.)*, sanicle (*Sanicula sp.)*, English ivy (*Hedera helix)*, yerba de selva (*Whipplea modesta)*, and bedstraw (*Gallium sp.)*. The grassy area at the directional bore entry site (at the top of the bluff) supports wild oat (*Avena fatua)*, English daisy (*Bellis perenne)*, bur clover (*Medicago polymorpha),* and periwinkle.

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The dominant plant community for wildlife within the water line alignment project area is the eucalyptus forest. The understory within the eucalyptus forest is relatively open due to previous disturbance for maintenance of existing power lines, roads, and water storage tank facilities. The landscaping around the residences does not provide suitable habitat for native special status wildlife species.

Sensitive Habitats and Significant Trees

Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. No sensitive habitat types occur within the water main project area. Santa Cruz County Code requires a tree removal permit for the removal of any "significant" tree. As the proposed project is located within the Urban Services Line, a "significant" tree is a tree equal or greater than 20 inches in diameter; any sprout clump of five or more stems each that are greater than 12 inches in diameter or any group of 5 or more trees on one parcel each which are greater than 12 inches in diameter (County Code 16.34.030). The eucalyptus forest adjacent to the water main project supports several trees that are greater than 20 inches in diameter; however, the project will not remove any trees.

Construction and trenching for the water main within the eucalyptus forest may result in direct and indirect impact to small-size (1-3" diameter) coast live oak trees. Three small oak trees are located within the vicinity of the water main line. Due to the small size of these trees and that they are growing beneath existing power lines (and subject to periodic trimming by PG&E), trenching near these tree and/or their removal is not considered a significant impact to regional botanical resources. Trenching and directional boring will not affect sensitive habitats or "significant" trees.

Special Status Plant Species

Plant species of concern include those listed by either the Federal or State resource agencies as well as those identified as rare by CNPS. Species considered for the project area are those identified in the sewer line project EIR (EDAW, 2008). This list is based on a search of the CNPS and CNDDB inventories for the Soquel quadrangle and surrounding quads. Based on a review of the habitats present within the project area, and a review of the surveys conducted by EDAW (EDAW, 2008) the potential for plant species of concern to occur within the water line construction area is considered very low. This is due to the dense woody debris created by the eucalyptus forest and lack of any specialized substrate or habitat features conducive to special status species (e.g., lack of grassland, open sandy substrate, etc.). No special status plant species were documented within the water main project area during the May 2009 field survey. The project will not affect special status plant species.

Special Status Wildlife Species

The literature review, data base search, and site reconnaissance survey for wildlife identified three special status wildlife that may occur within the project area: monarch butterfly, nesting raptors, and San Francisco dusky-footed woodrat. These species are briefly described below. The CNDDB lists several other special status wildlife species from the general project vicinity, but are not expected to occur within the project area because the area lacks suitable habitat. The following species are not expected to occur within the project area: Ohlone tiger beetle (no coastal terrace prairie), steelhead and tidewater goby (no creek or lagoon habitat), California red-legged frog (no creek or pond habitat), western snowy plover (no beach or sand dune habitat), riparian dependent nesting birds such as yellow warbler (no riparian habitat), and pallid bat (no suitable man-made structures or large tree hollows for roosting).

EXHIBIT F

Monarch butterflies (*Danaus plexippus*). This species migrates to central California and overwinter in Eucalyptus, pine and acacia trees. They are present in Santa Cruz County between September 1 and March 1, and prefer dense stands of trees that provide protection from the wind. The California Department of Fish and Game (CDFG) recognize monarchs as a "Special Status Animal" because their winter residence in California represents a critical stage in their life cycle and because of declining habitat from land development. The Santa Cruz County Local Coastal Plan also recognizes monarch wintering habitat as a sensitive resource.

The large eucalyptus grove within the project area may serve as either an autumnal site or overwintering site for monarch butterflies, and the CNDDB (CDFG 2009) lists known monarch wintering sites along Park Avenue just northwest of this site. Although no trees suitable for monarch wintering habitat will be removed as a part of this project, wintering monarchs are somewhat sensitive to noise and dust which may be generated during the construction of this project. Measures are recommended to avoid impacts to wintering monarch butterflies.

Nesting Raptors. Several species of raptors occur along this portion of the Central California Coast and are protected by CDFG code as well as the federal Migratory Bird Treaty Act. Raptors which commonly utilize eucalyptus forests for nesting include red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and great horned owl (*Bubo virginianus*). Occasionally, Cooper's hawk (*Accipiter cooperii*) and western screech-owl (*Otus kennicottii*) may nest in dense eucalyptus forests, although they are more commonly associated with oak woodlands.

No raptor nests were observed within the eucalyptus forest along the project alignment during May 2009. However, raptors may establish nests within the forest prior to onset of project construction. Noise and dust from project construction has the potential to disturb nesting raptors if it occurs during a critical point in the nesting season, therefore, measures to avoid and minimize potential impacts are recommended.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). This woodrat is a State species of special concern. These small mammals build large stick nests at the bases of trees and shrubs. They prefer forested and scrub habitats with a moderate canopy and brushy understory, and are often found on the upper banks of riparian forests. This woodrat feeds on a variety of woody plants, fungi, flowers and seeds.

No woodrat nests were observed during the May 2009 site reconnaissance survey, and none are expected to occur within the project work area because the vegetation in the understory of the Eucalyptus forest is removed periodically by maintenance for existing road, power line and water storage facilities. No woodrat nests were observed in the areas immediately adjacent to the work site, and disturbance by this project to woodrat nests that may exist further from the project area is not likely to occur because the woodrat is a nocturnal species (i.e., unlikely to be foraging during the day within the project area). They are also not subject to visual and noise disturbance because they shelter in their stick nests during the daytime when construction would be occurring. No impacts to woodrats or their habitats are expected to occur as a result of this project.

Recommendations

1. **Monarch Butterflies.** Schedule construction for the water main to occur during the period March through September of any given year to avoid disturbance to Monarch butterfly autumnal and

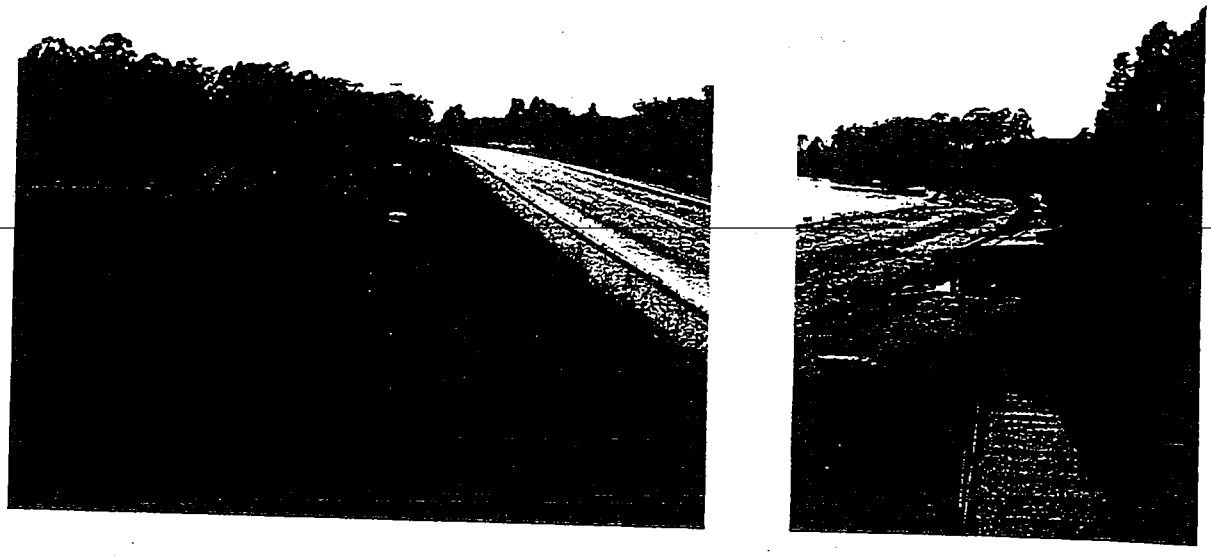
winter roosting. It would not be practical to create buffer zones to avoid Monarch butterfly habitat for this project, as the entire project lies within suitable Monarch butterfly wintering habitat. However, if project construction must occur during the peak wintering period of Monarch butterfly (i.e., October through February), a qualified biologist shall be hired to survey the project site no more than 15 days prior to onset of construction, to determine if the surrounding forest is occupied by Monarch butterflies during the proposed work schedule. If wintering Monarch butterflies are observed within the forest surrounding the work site, the biologist shall determine if the proximity of the construction work is likely to disturb them, and if so, recommend that work be postponed until the Monarchs have left the area in the following spring.

2. **Nesting Raptors.** Schedule project construction to occur from September 1 to March 1 of any given year to avoid the peak raptor nesting season. If this is not practical, hire a qualified biologist to conduct surveys for nesting raptors along the project area and within 250 feet of the project area. If any raptor nests are observed, the biologist shall determine if the construction would impact the nesting raptors, and if so, establish a buffer zone around the nest where construction will be postponed until the biologist has determined all young have fledged the nest.

EXHIBIT D

Biological Resources Assessment for the Aptos Transmission Main Relocation Project

Aptos and Capitola, Santa Cruz County, California



Prepared for:

Harris and Associates

(Appendices Only)

August 26, 2008

EDAW | AECOM

EXHIBIT D

APPENDIX A

Potentially Occurring Special-Status Plant Species

Family *Scientific Name* Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Cupressaceae - Cypress Family				
Cupressus abramsiana Santa Cruz cypress	**Federal:** FE **State:** CE **CNPS** 1B.2	Closed-cone coniferous forest, chaparral, lower montane coniferous forest/sandstone or granitic. Known from fewer than ten occurrences in the Santa Cruz Mountains	N/A tree (evergreen)	None: no suitable habitat present.
Pinaceae - Pine Family				
Pinus radiata Monterey pine	**Federal:** None **State:** CEQA **CNPS** 1B.3-3-2	Closed-cone coniferous forest. Distributed from San Mateo County to Baja California. Only three native stands in California; introduced in many areas. Threatened by genetic contamination, development, and fragmentation.	N/A tree (evergreen)	None: No naturally occurring populations.
Asteraceae - Sunflower Family				
Holocarpha macradenia Santa Cruz tarplant	**Federal:** FT **State:** CE **CNPS** 1B.3-3-3	Coastal prairie, valley/foothill grassland, often on heavy clay soils. Known from coastal areas of Contra Costa, Monterey and Santa Cruz counties; presumed extirpated in Alameda and Marin counties. Several introduced populations present along San Pablo Ridge in western Contra Costa County.	June-October annual herb	None: no suitable habitat present.
Pentachaeta bellidiflora white-rayed pentachaeta	**Federal:** FE **State:** CE **CNPS** 1B.3-3-3	Open dry rocky slopes, valley/foothill grassland, often on serpentinite. Restricted to San Mateo County; presumed extirpated in Marin and Santa Cruz counties.	March-May annual herb	None: no suitable habitat present.
Stebbinsoseris decipiens Santa Cruz microseris	**Federal:** None **State:** CEQA **CNPS** 1B.2-2-3	Broadleaf and coniferous forest, chaparral, coastal prairie, coastal scrub, in open areas, on loose soil, sometimes serpentinite. Recorded in Monterey, Marin and Santa Cruz counties.	April-May annual herb	None: marginally suitable habitat present. Habitat heavily degraded.
Brassicaceae - Mustard Family				
Erysimum teretifolium Santa Cruz wallflower	**Federal:** FE **State:** CE **CNPS** 1B.1	Chaparral, lower montane coniferous forest/inland marine sands, Santa Cruz County	March-July perennial herb	None: no suitable habitat present.
Campanulaceae - Bellflower Family				
Campanula californica swamp harebell	**Federal:** None **State:** CEQA **CNPS** 1B.2-2-3	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows, freshwater marsh and North Coast coniferous forest. Known from Mendocino to Marin counties; presumed extirpated in Santa Cruz County.	June-September perennial herb (rhizomatous)	None: no suitable habitat present.

EXHIBIT B

APPENDIX A

Potentially Occurring Special-Status Plant Species

Family *Scientific Name* Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Caryophyllaceae - Pink Family				
Arenaria paludicola marsh sandwort	**Federal:** FE **State:** CE CNPS 1B:3-3-2	Freshwater marsh and swamps. Last known extant population located on Nipomo Mesa, San Luis Obispo County. Presumed extirpated in Los Angeles, San Bernardino, Santa Cruz and San Francisco counties.	May-August perennial herb	None: no suitable habitat present.
Silene verecunda ssp. verecunda San Francisco campion	**Federal:** None **State:** CEQA CNPS 1B:3-2-3	Coastal bluffs, coastal scrub, dunes, on sandy or rocky soils. Known from fewer than 20 occurrences in Santa Cruz, San Mateo and San Francisco counties.	March-June perennial herb	None: Would have been detectable.
Ericaceae - Heath Family				
Arctostaphylos andersonii Santa Cruz manzanita	**Federal:** None **State:** CEQA CNPS 1B:2-2-3	Broadleafed upland forest, chaparral, North Coast coniferous forests, in openings and at edges. Restricted to Santa Clara, Santa Cruz and San Mateo counties.	November-April evergreen shrub	None: Would have been detectable.
Arctostaphylos glutinosa Shreiber's manzanita	**Federal:** None **State:** CEQA CNPS 1B.2	Closed-cone coniferous forest, chaparral/diatomaceous shale. Known from fewer than ten occurrences.	November-April evergreen shrub	None: Would have been detectable.
Arctostaphylos pajaroensis Pajaro manzanita	**Federal:** None **State:** CEQA CNPS 1B:2-3-3	Chaparral, on sandy sites. Restricted to Monterey County; presumed extirpated in Santa Cruz County.	December-March evergreen shrub	None: Would have been detectable.
Arctostaphylos silvicola Bonny Doon manzanita	**Federal:** None **State:** CEQA CNPS 1B.2	Chaparral, closed-cone coniferous forest, lower montane coniferous forest/inland marine sands. Known from fewer than twenty occurrences.	November-April evergreen shrub	None: Would have been detectable.
Fabaceae - Pea Family				
Trifolium buckwestiorum Santa Cruz clover	**Federal:** none **State:** CEQA CNPS 1B:3-3-3	Broadleafed upland forests, cismontane woodland, and margins of coastal prairies. Known only from Santa Cruz County. Recorded from the Loma Prieta, Davenport and Año Nuevo quads.	May-October annual herb	None: no suitable habitat present.
Malvaceae - Mallow Family				
Sidalcea malachroides maple-leaved checkerbloom	**Federal:** none **State:** CEQA CNPS 1B:2-2-2	Broadleafed upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, often in disturbed areas. Recorded from Oregon to Monterey County and Santa Clara County.	May-August perennial herb	None: marginally suitable habitat present. Habitat heavily degraded.

EXHIBIT B

APPENDIX A

Potentially Occurring Special-Status Plant Species

Family *Scientific Name* Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Polygonaceae - Buckwheat Family				
Chorizanthe pungens ssp. hartwegiana Ben Lomond spineflower	**Federal:** FE **State:** None CNPS 1B.1	Lower montane coniferous forest (maritime ponderosa pine sandhills). Known only from sandhill parklands in the Santa Cruz Mountains.	April-July annual herb	None: no suitable habitat present.
Chorizanthe robusta var. robusta robust spineflower	**Federal:** FE **State:** CEQA CNPS 1B.3-3-3	Openings and sandy locations in cismontane woodland, coastal dunes, and coastal scrub. Restricted to Monterey and Santa Cruz counties; believed extirpated in Alameda, Santa Clara and San Mateo counties.	May-September annual herb	None: Would have been detectable.
Chorizanthe robusta var. hartwegii Scott's Valley spineflower	**Federal:** FE **State:** CEQA CNPS 1B.1	Meadows and seeps (sandy), valley and foothill grassland (mudstone and Purisima outcrops). Known from only three occurrences in Scott's Valley.	April-July annual herb	None: no suitable habitat present.
Eriogonum nudum var. decurrens Ben Lomond buckwheat	**Federal:** none **State:** CEQA CNPS 1B.3-3-3	Chaparral, cismontane woodland and lower montane coniferous forest (Maritime ponderosa pine sandhills), on sandy sites. Restricted to Alameda, Contra Costa and Santa Cruz Counties.	June-October perennial herb	None: no suitable habitat present.
Polygonum hickmanii Scott's Valley polygonum	**Federal:** FE **State:** CE CNPS 1B.1	Valley and Foothill grassland (mudstone and sandstone). Known from only two occurrences in Scott's Valley.	April-September perennial herb	None: no suitable habitat present.
Rosaceae - Rose Family				
Horkelia cuneata ssp. sericea Kellogg's horkelia	**Federal:** None **State:** CEQA CNPS 1B.3-3-3	Closed-cone coniferous forest, old dunes and coastal scrub. Restricted to coastal areas from Santa Barbara to San Mateo counties; presumed extirpated in San Francisco, Alameda and Marin counties.	April-September perennial herb	None: marginally suitable habitat present. Habitat heavily degraded.
Scrophulariaceae - Figwort Family				
Pedicularis dudleyi Dudley's lousewort	**Federal:** None **State:** CEQA CNPS	Maritime chaparral, North Coast coniferous forest, valley/foothill grassland. Restricted to San Luis Obispo, Monterey and San Mateo counties. Believed extirpated in Santa Cruz County.	April-June perennial herb	None: no suitable habitat present.
Penstemon rattanii var. kleei Santa Cruz Mountains beardtongue	**Federal:** none **State:** CEQA CNPS 1B.3-2-3	Chaparral, lower montane coniferous forests and North Coast coniferous forests. Restricted to Santa Clara and Santa Cruz counties.	May-June perennial herb	None: no suitable habitat present.

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APPENDIX A

Potentially Occurring Special-Status Plant Species

Family *Scientific Name* Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Comments	Potential for Occurrence On Site
Cyperaceae - Sedge Family				
Carex comosa bristly sedge	**Federal:** None **State:** CEQA **CNPS** 2.1	Marshes and swamps, lake margins. Believed extirpated in San Francisco, San Bernardino and Santa Cruz counties. Extant in Contra Costa, Lake, Shasta, San Joaquin and Sonoma counties.	May-September perennial herb (rhizomatous)	None: no suitable habitat present.
Carex saliniformis deceiving sedge	**Federal:** none **State:** CEQA **CNPS** 2:2-2-3	Mesic coastal salt marshes and swamps, coastal prairies and scrub. Known from Humboldt to Sonoma counties. Extirpated in Santa Cruz County.	June perennial herb (rhizomatous)	None: no suitable habitat present.
Poaceae - Grass Family				
Agrostis blasdalei Blasdale's bent grass	**Federal:** None **State:** CEQA **CNPS** 1B:3-2-3	Coastal bluff scrub, coastal dunes and coastal prairie. Known from fewer than fifteen occurrences. Restricted to Mendocino, Marin, Santa Cruz and Sonoma counties.	May-July perennial herb (rhizomatous)	None: marginally suitable habitat present. Habitat heavily degraded.

[1] Explanation of sensitivity status codes provided in Appendix C.

EXHIBIT B

APPENDIX B

Potentially Occurring Special-Status Wildlife Species

Scientific Name Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence On Site
Invertebrates			
Cicindela ohlone Ohlone tiger beetle	**Federal:** FE **State:** None	Endemic to Santa Cruz County in areas supporting coastal terraces with remnant patches of native grassland habitat. Soils are typically shallow, poorly-drained, pale clay or sandy clay soils.	Low: Marginally suitable habitat present immediately off site
Danaus plexippus Monarch butterfly	**Federal:** None **State:** CNDDB	Overwinters in wind-protected tree groves along the California coast from Mendocino County to San Diego County. Most overwintering sites are within one half mile of the coast.	High: Suitable overwintering habitat present, known occurrences nearby
Linderiella occidentalis California linderiella (California fairy shrimp)	**Federal:** None **State:** CNDDB	Usually inhabits large, fairly clear vernal pools and lakes; sometimes found in small pools located in grasslands in the Central Valley, Coast Ranges, and South Coast mountains.	Not expected: No suitable habitat
Lytta moesta Moestan blister beetle	**Federal:** None **State:** CNDDB	Known from the San Joaquin Valley, occurences noted in San Joaquin and Stanislaus Counties, south to Kern County. Records of specimens collected in Santa Cruz County as well. Associated with vernal pool and surrounding grassland communities.	Not expected: No suitable habitat
Trynoia imitator Mimic tryonia (California brackishwater snail)	**Federal:** None **State:** CNDDB	Inhabits coastal lagoons, estuaries, and salt marshes. Found only in permanently submerged areas in a variety of sediment types, and is able to withstand a wide range of salinities. Known from the California coast from San Diego to Sonoma County.	Low: Suitable habitat present in Aptos Creek
Fish			
Eucyclogobius newberryi Tidewater goby	**Federal:** FE **State:** CSC	Occurs in tidal streams associated with coastal wetlands. Typically occurs in loose aggregations of a few to several hundred individuals on the substrate of shallow water less than three feet deep. Occurs along the entire California coast.	High: Suitable habitat present, known from Aptos Creek
Oncorhynchus mykiss irideus Steelhead (Central California Coast ESU)	**Federal:** FT **State:** None	The ESU includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin.	High: Suitable passage habitat present, known from Aptos Creek
Amphibians			
Ambystoma californiense California tiger salamander (Central Valley DPS)	**Federal:** FT **State:** CSC	Breeds in temporary or semi-permanent pools. Seeks cover in rodent burrows in grasslands and oak woodlands. This DPS inhabits the Coast Ranges north of Santa Barbara County and south of Sonoma County, as well as the Central Valley from Tulare to Colusa County.	Not expected: No suitable habitat

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APPENDIX B

Potentially Occurring Special-Status Wildlife Species

Scientific Name Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence On Site
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	**Federal:** FE **State:** SE CFP	Restricted to coastal portions of Santa Cruz and Monterey Counties. Inhabits temporary ponds for breeding and adjacent upland scrub and woodland areas during the non-breeding season.	Not expected: No suitable breeding habitat present, isolated from known populations
Rana boylii Foothill yellow-legged frog	**Federal:** None **State:** CSC	Inhabits permanent, slow-moving stream courses in the Coast Ranges and Sierra Nevada foothills. These streams usually contain a cobble substrate and a mixture of open canopy riparian vegetation.	Not expected: No suitable habitat present
Rana draytonii California red-legged frog	**Federal:** FT **State:** CSC	Prefers semi-permanent and permanent stream pools, ponds, and creeks with emergent and/or riparian vegetation. Will occupy upland areas during the wet winter months.	Not expected: No suitable breeding habitat present, isolated from known populations
Reptiles			
Actinemys (=Clemmys) marmorata Western pond turtle	**Federal:** None **State:** CSC	Prefers permanent, slow-moving creeks, streams, ponds, rivers, marshes, and irrigation ditches with basking sites and a vegetated shoreline. Needs upland sites for egg laying. Occurs from the Oregon border to the San Francisco Bay, inland throughout the Sacramento Valley, and south along the coastal zone to San Diego County.	Low: Marginally suitable habitat present
Birds			
Accipiter cooperii Cooper's hawk (nesting site only)	**Federal:** None **State:** WL	Nests primarily in deciduous riparian forests. May also occupy dense canopied forests from gray pine-oak woodland to ponderosa pine. Forages in open woodlands. Occurs throughout the San Francisco Bay Area.	Moderate: Suitable nesting and foraging habitat present
Accipiter striatus Sharp-shinned hawk (nesting site only)	**Federal:** None **State:** WL	Dense to open canopy pine or mixed conifer forest, riparian habitats, and grassland with scattered trees. Permanent resident in parts of the Sierra Nevada, Cascade, Klamath, and North Coast Ranges. Usually nests in conifers. Does not nest in San Francisco Bay Area.	Moderate: Suitable foraging habitat present
Asio otus Long-eared owl (nesting only)	**Federal:** None **State:** CSC	Breeds mainly in dense coniferous or mixed woodland, including riverine woodland belt. Nests in large, previously used nest of another bird species or squirrel. Nests up to 10-29 feet in height, more rarely on ground or among shrubby growth. Forages over open fields and marshes. Winters between southern Canada and Baja California.	Low: Suitable nesting and foraging habitat present
Charadrius alexandrinus nivosus Western snowy plover (nesting)	**Federal:** FT **State:** CSC	Breed primarily on coastal beaches from southern Washington to Baja California. Sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths are preferred nesting habitat.	Very low: Suitable habitat present on beaches, but highly disturbed by continual human use

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APPENDIX B

Potentially Occurring Special-Status Wildlife Species

Scientific Name Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence On Site
Cypseloides niger Black swift (nesting)	**Federal:** None **State:** CSC	Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons. Favors mountainous and coastal cliff habitat. Forages widely. In California occurs from San Francisco south to San Luis Obispo, along the Sierra Nevada, San Bernadino and San Gabriel Mountains.	Very low: Marginally suitable habitat present
Dendroica petechia brewsteri California yellow warbler	**Federal:** None **State:** CSC	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders, and in mature chaparral. May also inhabit oak and coniferous woodlands and urban areas near stream courses.	Moderate: Marginally suitable habitat present
Elanus leucurus White-tailed kite (nesting sites)	**Federal:** None **State:** CFP	Inhabits agricultural areas, low rolling foothills, valley margins with scattered oaks and river bottomlands, or marshes adjacent to deciduous woodlands. Prefers open grasslands, meadows, marshes, and agricultural fields for foraging. Occurs throughout the San Francisco Bay Area.	Moderate: Suitable nesting and foraging habitat present
Pandion haliaetus Osprey (nesting)	**Federal:** None **State:** WL	Nests in snags or on man-made structures such as telephone poles near fish-producing water bodies. Forages mainly on fish. Nests along the North Coast Range, Cascades, and Sierra Nevadas, and winters along the coast of central and southern California.	Low: Suitable nesting and foraging habitat present
Pelecanus occidentalis californicus California brown pelican (nesting colony)	**Federal:** FE **State:** SE CFP	Found in estuarine, marine subtidal, and marine pelagic waters along the California coast. Rare occurrance inland at the Salton Sea. Breeds on Channel Islands: Anacapa, Santa Barbara, and Santa Cruz. Usually rests on water or inaccessible rocks (either offshore or on mainland), but also uses mudflats, sandy beaches, wharfs, and jetties.	Observed: Forages in ocean immediately offsite, but no suitable nesting habitat present
Phalacrocorax auritus Double-crested cormorant	**Federal:** None **State:** WL	Breeds colonially on coastal cliffs, offshore islands, and lake margins in the interior of the state. Known from sites throughout the San Francisco Bay Area and Sacramento River Delta. Forages in lakes, rivers, and bays.	Observed: Forages in ocean immediately offsite, marginally suitable nesting habitat present on site
Riparia riparia Bank swallow (nesting colonies only)	**Federal:** None **State:** ST	Nests in colonies on sandy cliffs near water, marshes, lakes, streams, and the ocean. Forages in fields. Largest remaining populations occur along the Sacramento River from Tehama County to Sacramento County. Also found along the Feather and lower American Rivers, and in the Owens Valley. Breeding populations also present in San Francisco County, and at Año Nuevo in southern San Mateo County.	Very low: Marginally suitable nesting habitat present

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APPENDIX B

Potentially Occurring Special-Status Wildlife Species

Scientific Name Common Name	Status[1]	Habitat Affinities and Reported Localities in the Project Area	Potential for Occurrence On Site
Mammals			
Antrozous pallidus Pallid bat	**Federal:** None **State:** CSC	Large range in western North America; fairly common in many areas; however, regional population trends are poorly known. Inhabits open, dry habitats such as deserts, grasslands, and shrublands with rocky areas for roosting. Roosts in caves, mine tunnels, crevices in rocks, buildings, and trees. Bats are very sensitive to disturbance of roosting sites. Forages in open habitats.	Low: Suitable roosting habitat present
Eumops perotis californicus Western mastiff bat	**Federal:** None **State:** CSC	Roosts in cliff faces and buildings. Ranges from California to Texas.	Low: Suitable roosting habitat present
Lasiurus blossevillii Western red bat	**Federal:** None **State:** CSC	From Shasta County south to the Mexico, west of the Sierra Nevada/Cascade crest and deserts. The winter range includes western lowlands and coastal regions south of San Francisco Bay. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests.	Low: Suitable roosting habitat present
Lasiurus cinereus Hoary bat	**Federal:** None **State:** CNDDB	Found throughout California. Habitats suitable for bearing young include all woodlands and forests with medium to large-size trees and dense foliage.	Low: Suitable roosting habitat present
Myotis evotis Long-eared myotis bat	**Federal:** None **State:** CNDDB	Inhabits thinly forested areas around buildings or trees. Occasionally found in caves. Does not occur in large colonies. Distributed throughout the western U.S.	Low: Suitable roosting habitat present
Myotis thysanodes Fringed myotis bat	**Federal:** None **State:** CNDDB	Roosts in colonies in caves and attics of old buildings. Distributed throughout the western U.S. and into Mexico. Most frequent in coastal and montane forests and around mountain meadows.	Low: Suitable roosting habitat present
Myotis volans Long-legged myotis bat	**Federal:** None **State:** CNDDB	Roosts colonially in buildings, small pockets and crevices in rock ledges, and exfoliating tree bark and hollows within snags. Distributed throughout the western U.S., Mexico, and Canada.	Low: Suitable roosting habitat present
Myotis yumanensis Yuma myotis bat	**Federal:** None **State:** CNDDB	Roosts colonially in caves, tunnels, trees and buildings. Inhabits arid regions. Distributed throughout the western U.S., Mexico, and Canada.	Low: Suitable roosting habitat present
Taxidea taxus American badger	**Federal:** None **State:** CSC	Inhabits open grasslands, savannas, and mountain meadows near timberline. Requires abundant burrowing mammals, their principal food source, and loose, friable soils. Distributed throughout California except in the humid forests of the extreme northwest.	Low: Suitable habitat present

[1] Explanation of sensitivity status codes provided in Appendix C.

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APPENDIX C

Explanation of Sensitivity Status Codes

CALIFORNIA NATIVE PLANT SOCIETY DESIGNATIONS (CNPS)

List 1: Plants of highest priority
List 1A: Plants presumed extinct in California
List 1B: Plants rare and endangered in California and elsewhere
List 2: Plants rare and endangered in California but more common elsewhere
List 3: Plants about which additional data are needed
List 4: Plants of limited distribution

CNPS R-E-D Codes

R (Rarity)
1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
2 = Occurrence confined to several populations or to one extended population.
3 = Occurrence limited to one or a few highly restricted populations, or present in such low numbers that it is seldom reported.
? = More data are needed

E (Endangerment)
1 = Not endangered
2 = Endangered in a portion of its range
3 = Endangered throughout its range
? = More data are needed

D (Distribution)
1 = More or less widespread outside California
2 = Rare outside California
3 = Endemic to California
? = More data are needed

note: currently, all CNPS list 1B and 2 taxa are considered "Special Plants" by the CDFG.

U.S. FISH AND WILDLIFE DESIGNATIONS (USFWS)

FE = Listed as endangered by the Federal Government
FT = Listed as threatened by the Federal Government
FPE = Proposed as endangered by the Federal Government
FPT = Proposed as threatened by the Federal Government
FC = Candidate; taxa for which USFWS has sufficient biological information to support a proposal to list as endangered or threatened.
FD = Delisted by the Federal Government; Delisted species are monitored for five years beyond the date of delisting.

CALIFORNIA DEPT. OF FISH AND GAME DESIGNATIONS (CDFG)

CE = Listed as endangered by the State of California
CR = Listed as rare by the State of California
CT = Listed as threatened by the State of California
CPE = Proposed for listing as endangered
CFP = Fully protected under California Fish and Game Code
CSC = California Species of Special Concern
WL = California Department of Fish and Game Watch List
CEQA = Taxa which are considered to meet the criteria for listing as endangered, threatened or rare by the CDFG; impacts to such taxa must be addressed in CEQA documents.
CNDDB= Tracked by the California Natural Diversity Data Base

NOAA FISHERIES DESIGNATIONS

NSC = NOAA Fisheries Species of Concern

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Attachment 2 - Geotechnical Background Material:
Haro, Kasunich and Associates, 2008. *Geotechnical Recommendations for Water Service Line Installation*

EXHIBIT D

HARO, KASUNICH AND ASSOCIATES, INC.

CONSULTING GEOTECHNICAL & COASTAL ENGINEERS

Project No. SC5190
3 April 2008

POT BELLY BEACH HOMEOWNERS ASSOCIATION
c/o Carl Sprague
155 Westridge Drive
Watsonville, California 95076

Subject: Geotechnical Recommendations for Water Service Line Installation

Reference: Pot Belly Beach Road Water Project
Santa Cruz County, California

Dear Mr. Sprague:

At your request, this letter presents our geotechnical recommendations regarding an upgrade to the water system at Pot Belly Beach. It is our understanding that the possibility of directional boring is being explored. Our discussion is focused on the geotechnical issues at the site which may impact this process.

Our conclusions are based on review of documents and maps in our files relating to work performed previously for the Association and nearby property owners, site reconnaissance, and our discussions with you and project planner Charles Eadie of Hamilton-Swift and Associates. The locations and logs of the borings we have performed on nearby properties are enclosed, as are pertinent details of geologic investigations and slope stability analysis for these properties. The boring logs contain detailed information regarding the USCS (United Soil Classification System) classification of the samples recovered. Cross sections of the bluff generated by our computer modeling of the surface and subsurface soils indicate possible failure planes under static and pseudo-static conditions. No groundwater was discovered in our borings. Groundwater depths will probably vary seasonally, and can be expected to fluctuate due to variations in rainfall or other factors not evident during our investigation.

It is our understanding that the directional boring will be initiated at the top of the bluff above Pot Belly Beach Road on APN 038-231-39 and will terminate at a yet to be determined point on Pot Belly Beach Road between the existing residences and a wood retaining wall at the base of the bluff.

In July 2007, our firm completed a geotechnical investigation for a proposed residence on APN 038-231-09 located west of the proposed drilling initiation point. Our report was based in part on a geologic investigation by Rogers E.

EXHIBIT D

Johnson and Associates, dated February 2007. In the geologic report, a minimum set back of 25 feet from the top of the bluff was recommended to place the project beyond the zone of possible bluff recession. Our slope stability analysis of the site confirmed that this was a conservative and appropriate set back. The initiation point for directional drilling should likewise be set back 25 feet from the top of the bluff. The location of this setback line for the current project should be determined in the field by the geotechnical engineer.

Our slope stability analysis of the site indicated potential failure planes at vertical depth of up to 25 feet below the existing ground surface. For static conditions, the factor of safety against failure was greater than 2.1. For pseudo-static conditions (i.e. for conditions under which a horizontal seismic force acts on the slide mass) factors of safety were greater than 1.0. While these results conformed to minimum County of Santa Cruz requirements, we recommend that any drilling undertaken at other locations along the bluff top be located below the lowest potential failure plane indicated in our analysis. This will require that the boring be at least 25 feet below the existing ground surface beginning at a point directly below the bluff top edge, and extending downslope to a point 40 feet horizontally upslope from the existing retaining wall at the bottom of the bluff. ← Refer to graph point

It is assumed that temporary shoring will be installed for excavations at both the initiation and termination points of the boring. Design of shoring is beyond the scope of this letter but should at a minimum meet all Cal-OSHA requirements. Additional criteria for shoring design can be provided upon request.

Following completion of the boring, backfill at both the initiation and termination points should be placed in thin lifts, moisture conditioned and compacted to a minimum of 90 percent relative compaction, with the upper 8 inches of subgrade under pavements compacted to a minimum of 95 percent relative compaction. Aggregate base under pavements should likewise be compacted to at least 95 percent relative compaction. Care should be taken that the initiation point is adequately sealed to prevent the introduction of surface water into the boring.

It is essential that existing drainage patterns at the site are not altered by construction activities. Surface runoff onto graded or natural slopes should not increase as a result of this project. Surface drainage on paved areas should include provisions for positive gradients so that surface runoff is not permitted to pond on pavements.

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If you have any questions, please call our office.

Very truly yours,

Reviewed by:

HARO, KASUNICH AND ASSOCIATES, INC.

John E. Kasunich
G.E. 455

Mike Hopper
Staff Engineer

MH/dk

Attachments: Boring Site Plan APN 038-231-12
Boring Logs
Schematic Geologic Cross Section
Slope Stability Analysis

Copies: 3 to Addressee

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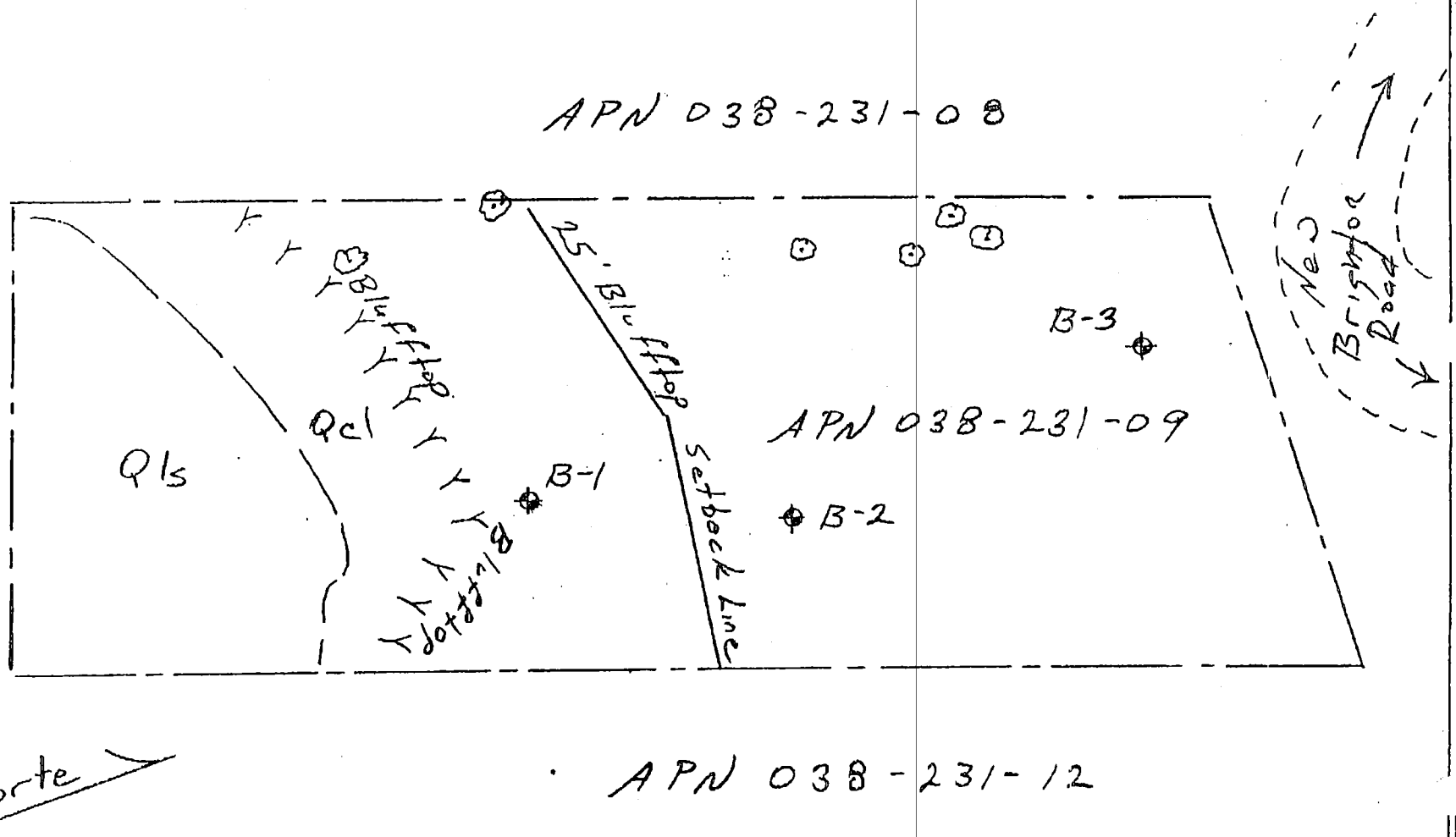

PROJECT No: SC9394	Boring Site Plan
DATE: June 2007	APN 038-231-09
SCALE: 1 inch = 20 feet	New Brighton Road
DRAWN BY: DLP / WARD'06	Santa Cruz County, CA
HARO, KASUNICH & ASSOCIATES	FIGURE No. 2

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Haro, Kasunich and Associates, Inc.

...w Brighton Road

PROJECT NO. SC9394

LOGGED BY RLP DATE DRILLED February 9, 2007 BORING DIAMETER 4 1/2" BORING NO. B-1

Depth, ft.	Sample No. and type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
0	1-1 (L)		Brown Silty SAND with grey brown Clayey SAND clasts, moist, loose	SM	10		110	17	C = 930 psf ϕ = 24° γ Sat = 135 pcf
5	1-2 (L)		Grey brown slightly Clayey SAND with rounded gravels to 3/4"		32		111	12	C = 690 psf ϕ = 43° γ Sat = 133 pcf
10	1-3 (L)		Tan, fine to medium grain SAND w/Gravels, moist, medium dense		20		101	12	C = 40 psf ϕ = 45° γ Sat = 128 pcf
15	1-4 (L)		Tan, fine to medium grain SAND, moist, medium dense		34		85	14	C = 90 psf ϕ = 38° γ Sat = 115 pcf
20	1-5 (L)		Grey brown Silty SANDSTONE with shell hash, wet, dense		57		81	34	C = 620 psf ϕ = 45° γ Sat = 117 pcf
25			Boring terminated at 21.5 feet						
30									
35									

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4 DGS\SC9394.log Date: 6/8/2007

HARO, KASUNICH AND ASSOCIATES, INC.

BY: dk | FIGURE NO.

3

EXHIBIT D

Haro, Kasunich & Associates, Inc.

New Brighton Road

PROJECT NO. SC9394

LOGGED BY RLP DATE DRILLED February 9, 2007 BORING DIAMETER 4 1/2" BORING NO. B-2

Depth, ft.	Sample No. and type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft - lbs.	Qu - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
0	2-1 (T)		Grey brown Clayey Silty SAND, moist, loose	SC	7			16	
5	2-2 (T)		Clayey Silty SAND Orange brown, Clayey, Silty SAND, moist, medium dense		19			16	
10	2-3 (T)		Interbedded Silty SAND with Gravels & clean Sands, moist, medium dense		14			13	
15	2-4 (T)		Brown medium grain SAND, moist, medium dense		16			8	
20	2-5 (T)		Red brown, brown Silty SAND w/Clay binder, moist, dense		52			22	
25	2-6 (T)		Grey Silty fine grain, Sandstone with shell hash, moist, dense Boring terminated at 26.5 feet		67			15	
30									
35									

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog\HKA\SC9394.log Date: 6/8/2007

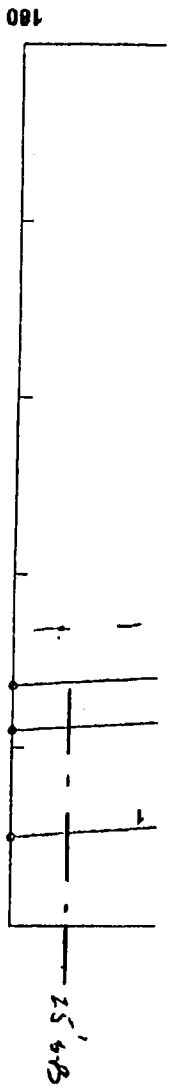
HARO, KASUNICH AND ASSOCIATES, INC.

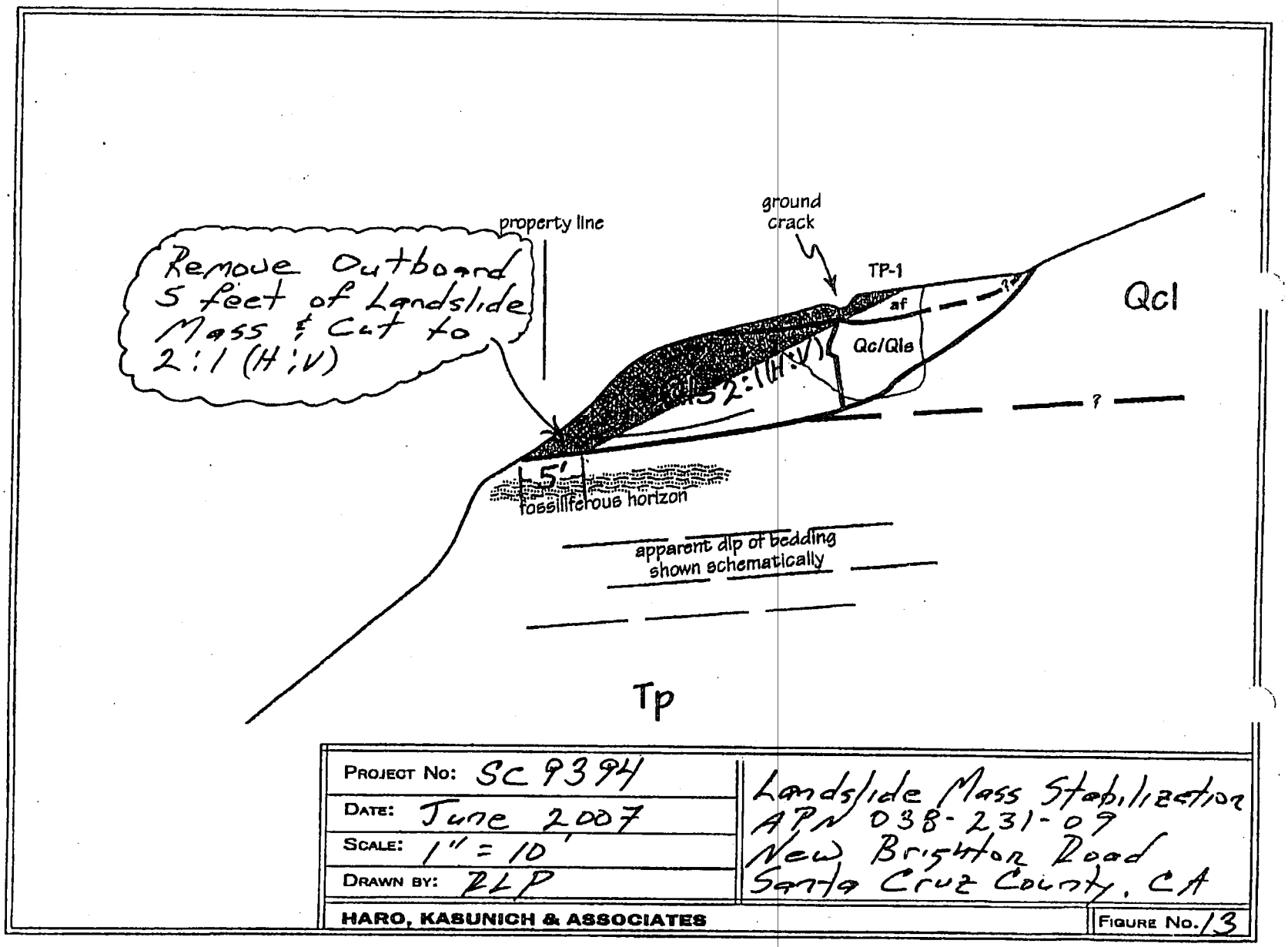
BY: dk | FIGURE NO.

4

EXHIBIT D

11





PROJECT NO: SC 9394	Landslide Mass Stabilization
DATE: June 2007	APN 038-231-09
SCALE: 1" = 10'	New Brighton Road
DRAWN BY: RLP	Santa Cruz County, CA
HARO, KASUNICH & ASSOCIATES	FIGURE NO. 13

EXHIBIT D

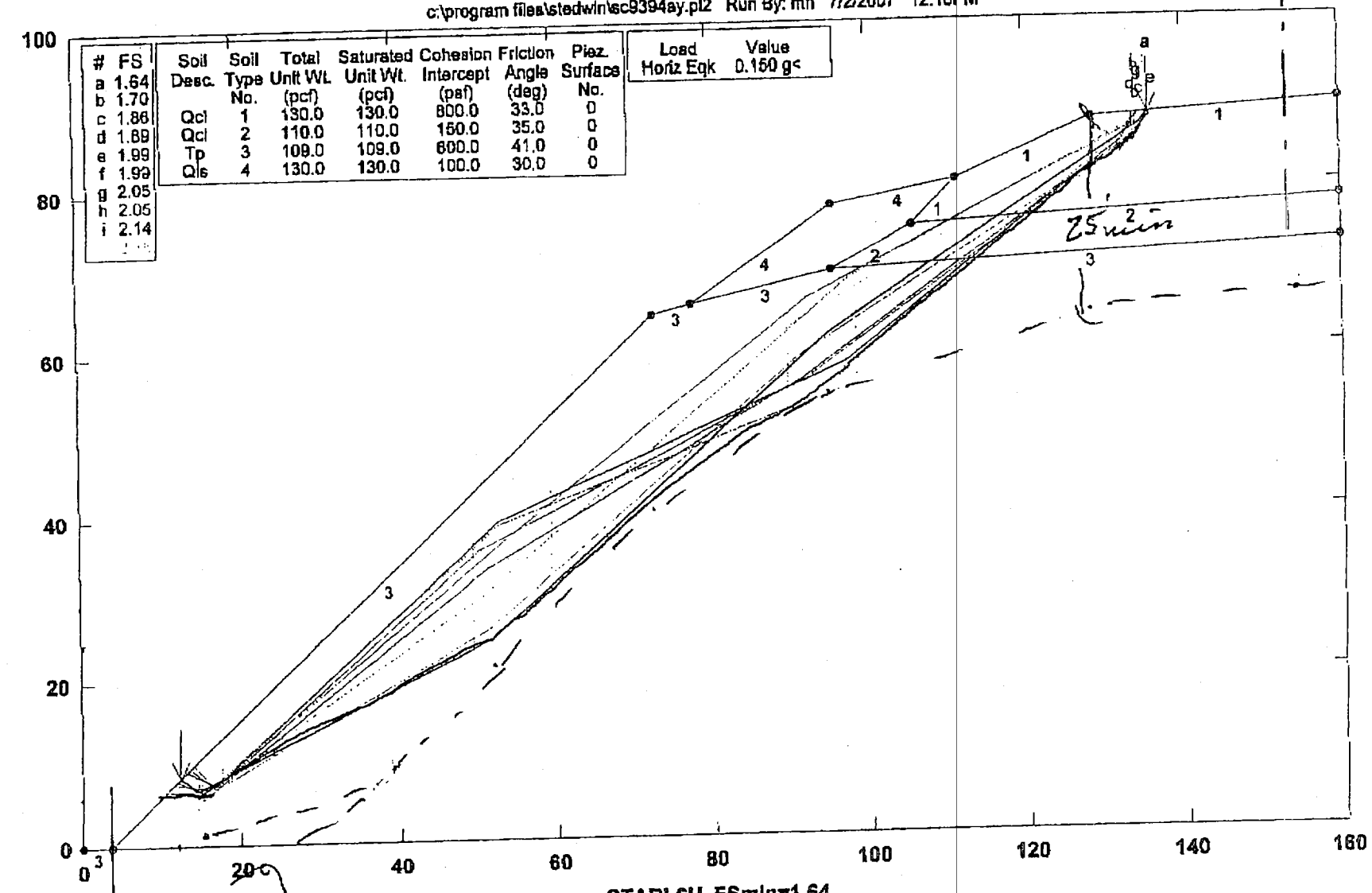
SC9394 Qcl & Tp,k=0.15

c:\program files\stedwin\sc9394ay.pl2 Run By: mh 7/2/2007 12:16PM

#	FS
a	1.64
b	1.70
c	1.86
d	1.89
e	1.99
f	1.99
g	2.05
h	2.05
i	2.14

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Qcl	1	130.0	130.0	800.0	33.0	0
Qcl	2	110.0	110.0	150.0	35.0	0
Tp	3	109.0	109.0	600.0	41.0	0
Qls	4	130.0	130.0	100.0	30.0	0

Load	Value
Horiz Eqk	0.150 g's



STABL6H FSmin=1.64

Safety Factors Are Calculated By The Modified Janbu Method

STED

Depends on depth of retaining wall

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EXHIBIT D

EXHIBIT D

EXHIBIT D

Attachment 3 - Tree Resources Background Material:

James P. Allen & Associates, 2009. *Tree Resource Analysis/Construction Impact Assessment, Potbelly Beach Club Homeowners Association Water Supply Line Construction Project*

EXHIBIT D

James P. Allen
& Associates

Dedicated to the Preservation of Trees

Pot Belly Beach Homeowners Association

Water Supply Line
Construction Project

Tree Resource Analysis/
Construction Impact Assessment

Prepared for
Charles Eade
Hamilton, Swift Land Use Planning

Consulting Arborists
611 Mission Street
Santa Cruz, CA 95060
831.426.6603 office
831.460.1464 fax
jpallen@cruzio.com

EXHIBIT D

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Tree Resource Inventory
Tree Location Maps 24 x 36(2)

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ASSIGNMENT/SCOPE OF SERVICES

The Pot Belly Beach Homeowners Association proposes the construction of a water supply line. The proposed project travels through areas populated with mature native and non-native trees. To insure tree stability, the safe use of the area, and protect tree resources on this site during construction Charles Eade, the project's planning consultant has requested our firm prepare a Tree Resource Analysis/Construction Impact Assessment. To complete this assignment the following tasks have been performed:

- Locate and catalog trees growing within 20 feet of proposed impacts
- Identify each tree as to species and trunk diameter
- Rate individual tree health and structure as "good, fair or poor"
- Determine suitability for retention and tolerance to anticipated impacts
- Identify Critical Root Zone extents to determine exclusion or Special Treatment areas
- Identify trees that meet "Significant" status as defined by Santa Cruz County ordinances
- Review plans for this project as well as the County of Santa Cruz Aptos Sewer Transmission Line plans dated October 18, 2008
    - Compare tree resource impacts resulting from construction of each projects
- Make recommendations for procedures to reduce construction impacts, protect existing trees and provide remedial maintenance of retained trees
- Review projected canopy loss and tree replacement requirements for removed or severely damaged trees
- Work with the Project Engineer to create an effective tree protection plan
- Document findings herewith

SUMMARY

Plans for the proposed construction of a water main servicing residents of Pot Belly Beach have been reviewed and the known impacts to 106 trees/tree groups have been assessed. This impact analysis is based on review of the conceptual plans, site inspections, compilation of a detailed tree resource inventory and verbal descriptions of performance requirements as defined by RI Engineering Project Engineer.

My initial review of conceptual plans for this project dated October 2008 identified project elements that required the removal of sixteen trees, six of which met "Significant" criteria and severe root damage to twelve additional trees.

After reviewing the initial plans, areas were identified where realignment or alternative construction methods would eliminate the need for tree removal and decrease detrimental influences to tree root and canopy systems. Recommendations to lessen potential impacts to tree resources were made, implemented and formalized by the Project Engineer in a revised plan set dated May 20, 2009 including:

- Realignment to avoid Critical Root Zones of Significant trees
- Horizontal drilling in two separate areas of the project where traditional trenching would have caused destabilization or premature mortality

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- A Special Treatment Area where the trench will be excavated using a "Ditchwitch" type trencher or smaller equipment
- Preconstruction canopy clearance pruning
- Post excavation root pruning
- Monitoring, by the Project Arborist if roots greater than 1.5 diameter inches are unearthed and during all activities within defined "Special Treatment Areas"

Plan modifications and the implementation of special treatments during construction have resulted in16 trees (six of which meet "Significant"criteria) being preserved that would have been removed.

Mitigations will eliminate the necessity for tree removal, preserve the adjacent 106 trees/tree groups and decrease impacts to root and canopy systems to less than significant levels.

The implementation of the procedures as defined within this document, including *Tree Preservation Performance Specifications*, are required to ensure the success of the defined mitigation measures. Adherence to these specifications should be input to all contracts related to this project

Monitoring by the Project Arborist should occur at the intervals defined within this report to identify necessary field adjustments and ensure tree protection specifications are adhered to during construction.

BACKGROUND

To complete the assessment, site inspections were performed during the month of May in 2009. For purposes of identification, metal numbered tags have been affixed to tree trunks at 6 feet above natural grade. Tree locations with corresponding numbers are documented on the attached Tree Location Map. Approximately half of the trees were located using survey methods by the Project Engineer. Remaining trees were field located by the Project Arborist.

Construction related impacts were assessed initially using plans dated 10-08 as provided by R.I. Engineering. Upon review and identification of severe impacts that would require the removal of 16 trees and severe damage to many others, recommendations were made to decrease impacts and preserve trees. A revised set of plans, dated May 20, 2009 was submitted for my review. This analysis is based on the most recent plans.

The trees were evaluated visually from the root crown (where the trunk meets natural grade), to the foliar canopy to determine condition/suitability for preservation.

Project Description

This project involves the abandonment and filling of an existing well and reservoir, removal and replacement of existing water main along New Brighton Road and the internal areas of Pot Belly Beach Club. The new main supply line will attach to the

EXHIBIT n

existing Soquel Creek Water District water main on MacGregor Drive. Installation of 2385 lineal feet of six and eight inch water main will comprise the extents of the project. Water lines are to be installed employing traditional trenching methods, except approximately:

- 170 feet of directional boring from the top of the bluff to the base
- 150 feet of directional boring along New Brighton Road south of the railroad tracks for Monterey cypress tree root protection
- 100 lineal feel of jack-and-bore on New Brighton road under the Union Pacific Rail Road tracks

TREE RESOURCE ANALYSIS

Tree species impacted by the proposed project are composed of native coast live oak *Quercus agrifolia*, Monterey cypress *Cupressus macrocarpa*, Monterey pine *Pinus radiata* and non-native eucalyptus *Eucalyptus sp.*, and a small stand of privets *Ligustrum sp.* Overall tree condition is poor. Trees have developed in dense crowded forest conditions and are unstable as individuals. Many are tall with Low Live Crown Ratios (LCR), the ratio of total tree height to live foliar canopy. Trees with low LCR are less stable and prone to falling. Dead and broken branches are visible throughout tree canopies as well as pronounced structural defects that are typical of systems prone to failure.

Fifty-five of the trees evaluated meet "Significant" criteria.

TREE INVENTORY METHODOLOGY

The tree inventory lists species/trunk diameter, location, tree health, structure and suitability for preservation/Critical Root Zone, level/description of construction impacts, observations, recommended procedures whether trees on the site meet Significant status as defined by *Santa Cruz County Significant Trees Protection Ordinance (Chapter 16.34 of the County Code)* for trees/tree groups greater than 6 diameter inches.

Diameter: is the width of the trunk measured at 4.5 feet above natural grade (ground level). For trees that were unable to be measured at 4.5 feet above natural grade, measurement heights are provided.

Health, Structure and Preservation Suitability Inventory ratings are based on the following criteria:

Tree health and structure are separate issues that are related since both are revealed by tree anatomy. A tree's vascular system is confined in a thin layer of tissue between the bark and wood layers. This thin layer is responsible for transport of nutrients and water between the root system and the foliar canopy. When this tissue layer is functioning properly a tree has the ability to produce foliage (leaves). As long as the tree maintains a connected vascular system it may appear to be in good health.

When conditions conducive to decay are present, fungi, bacteria or poor compartmentalization, wood strength is degraded. As decay advances, the tree's ability to continue standing is compromised. Thus, a tree can appear to be in good health, but have poor structure.

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Tree Health: This rating is determined visually. Annual growth rates, leaf size and coloration are examined. Indications of insect activity, decay and dieback percentages are also used to define health ratings.

Trees in "**good**" health are full canopied, with dark green leaf coloration. Areas of foliar dieback or discoloration are less than 10% of the canopy. Dead material in the tree is limited to small twigs and branches less than one inch in diameter. There is no evidence of insects, disease or decay.

Trees with a "**fair**" health rating have from 10% to 30% foliar dieback, with faded coloration, dead wood larger than one inch, and/or visible insect activity, disease or decay.

Trees rated as having "**poor**" health have greater than 30% foliar dieback, dead wood greater than two inches, severe decay, disease or insect activity.

Tree Structure: This rating is determined by visually assessing the roots, root crown (where the trunk meets the ground), supporting trunk, and branch structure. The presence of decay can affect both health and structural ratings.

Trees that receive a "**good**" structural rating are well rooted, with visible taper in the lower trunk, leading to buttress root development. These qualities indicate that the tree is solidly rooted in the growing site. No structural defects such as codominant stems (two stems of equal sizes that emerge from the same point), poorly attached branches, cavities, or decay are present.
Trees that receive a "**fair**" structural rating may have defects such as poor taper in the trunk, inadequate root development or growing site limitations. They may have multiple trunks, included bark (where bark turns inward at an attachment point), or suppressed canopies. Decay or previous limb loss (less than 2 inches in diameter) may be present in these trees. Trees with fair structure may be improved through proper maintenance procedures.

Poorly structured trees display serious defects that may lead to limb, trunk or whole tree failure due to uprooting. Trees in this condition may have had root loss or severe decay that has weakened their support structure. Trees in this condition can present a risk to people and structures. Maintenance procedures may reduce, but not eliminate these defects.

Suitability for preservation: This rating evaluates tree health, structure, species characteristics, age and potential longevity.

Trees with a "**good**" rating have adequate health and structure with the ability to tolerate moderate impacts and thrive for their safe, useful life expectancy.

A "**fair**" rating indicates health or structural problems have the ability to be corrected. They will require monitoring with an expectation that their lifespan will be shortened by construction impacts.

Trees with a "**poor**" rating possess health or structural defects that cannot be corrected through treatment. Trees with poor suitability can be expected to continue to decline

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regardless of remedies provided. Species characteristics may not be compatible with redefined use of the area. Species, which are non-native and unusually aggressive, are considered to have a poor suitability rating.

Critical Root Zone: Individual tree root systems provide anchorage, absorption of water/minerals, storage of food reserves and synthesis of certain organic materials necessary for tree health and stability. The Critical Root Zone (CRZ) is the species-specific amount of roots/root development area necessary to continue to supply these elements essential for each tree to stand upright and maintain vigor. This distance reflects the minimum footage measurement from the trunk required for the protection of the tree's root zone.

Construction activities proposed within these areas are subject to specific review and the implementation of recommended special treatments.

Impact Rating: This section identifies direct influences of the proposed construction activities as defined on the most recent set of plans dated May 20, 2009. The level of impacts were assessed with the stipulation that all plan changes, recommended treatments are implemented and *Tree Preservation Performance Specifications* are adhered to. Classifications are as follows:

> **None,** the tree is not near the impact area of the proposed construction. There will be no direct loss of canopy or root system
>
> **Low,** adverse affects from the proposed construction activities are minimal. Root and/or canopy loss are less than 10% of existing volumes.
>
> **Moderate,** this level of impacts will result in loss of 30 to 45% of the Critical Root Zone and/or total canopy area. Diminished vigor and/or stability. Recommended procedures must be implemented to decrease these impacts.
>
> **High,** this level of impacts will result in loss more than of the Critical Root Zone and/or total canopy area. requiring tree removal or the understanding that premature tree mortality can be anticipated. Mitigation is required for trees subject to this level of impacts.

Impact Description: Site inspections, conversations with RI Engineering, Project Engineer and review of the plans as presented identified direct construction impacts to individual trees.

Impacts to these trees are based on the plans provided. The exact locations of the proposed improvements must be reviewed and evaluated once the site staking is in place. There is a possibility that tree classification and recommended procedures will change once the exact positions of the proposed improvements are known.

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Comparative Impact Analysis: Pot Belly Beach Water Main (PBBWM)/Aptos Sewer Transmission Line (ASTL)

In October of 2008 I performed a preliminary resource assessment and impact analysis of the ASTL project for the Conrad Yumang, County of Santa Cruz. The following comparison reflects my findings.

The PBBWM footprint mirrors the ASTL alignment between MacGregor Drive to a point of divergence at Pot Belly Beach Drive where the sewer line travels to the east, downhill to the beachfront residences and the water line travels south through the terminus of New Brighton Road. Trenching impacts to tree resources are similar with a required five-foot separation between the two lines.

The project that begins first will be required to perform preconstruction canopy clearance and post excavation root pruning treatments. The next project may or may not be required perform these treatment depending on remaining roots and branches are impacted.

The following table documents tree removal requirements of each project.

Project	Number of Trees/Tree Groups Impacted	Total Number of Trees to be Removed	Total Number of Trees to be Removed That Meet "Significant" Criteria
ASTL	Approximately 85	5	2
PBBWM	106	0	0

Trenching for water line construction. The existing pavement will be saw cut to a width that allows a trench to be dug with a traditional backhoe. A trench will be dug to the required depth; a 6-8 inch pipe will be connected to the supply source and backfilled with appropriate material. These procedures require alteration of natural grade in the form of cut and/or fill (described below) at the defined "Limits of Grading". Roots shattered during this process provide openings for opportunistic decay causing organisms degrading tree support systems and vigor.

Trenching for water line construction

The existing pavement will be saw cut to a width that allows a trench to be dug with a traditional backhoe. A trench will be dug and a 6-8 inch pipe will be connected to the supply source and backfilled with appropriate material. These procedures require alteration of natural grade in the form of cut and/or fill (described below). Roots shattered during this process provide openings for opportunistic decay causing organisms degrading tree support systems and vigor.

Equipment Access

Vertical clearance for equipment operation is necessary. Several canopies extend over portions of/the entire road width. Equipment will need to operate beneath the existing canopies in order to avoid damage to tree limbs and maintain the existing canopy.

EXHIBIT D

Storage of equipment and materials
Staging of materials and equipment causes compaction and mechanical damage to root systems.

Horizontal drilling/Bore and Jack methodology requires an initiation and termination pit to allow equipment to drill install and connect the pipeline "cut" to a depth of six to 18 inches below the existing grade.

Alteration of natural grade

- Cuts, lowering of natural grade, require the removal of soil until the desired elevation is reached. A cut within the trees Critical Root Zone can remove non-woody and woody roots. Non-woody (absorbing) roots are responsible for transporting moisture and nutrients necessary for maintaining tree health. More significant cuts remove woody roots that provide structural support, compromising the tree's ability to stand upright.

- Fill, increasing natural grade, often requires an initial cut to "knit in" and stabilize the material. This material is applied in layers and compacted in the process. Compaction breaks down soil structure by removing air and adding moisture. Anaerobic conditions may develop, promoting decay. Absorbing roots can suffocate from lack of oxygen. Structural roots may be compromised as a result of the decay.

SIGNIFICANT TREE DETERMINATION
Santa Cruz County Significant Trees Protection Ordinance (Chapter 16.34 of the County Code). The definition of a significant tree is as follows:

Significant Tree. For the Purposes of this Chapter, significant tree shall include any tree, sprout clump, or group of trees, as follows:

Within the Urban Services Line or Rural Services Line, any tree which is equal to or greater than 20 inches d.b.h. (approximately 5 feet in circumference); any sprout clump of five or more stems each of which is greater than 12 inches d.b.h. (approximately 3 feet in circumference); or any group consisting of five of more trees on one parcel, each of which is greater than 12 inches d.b.h. (approximately 3 feet in circumference).

Outside the Urban Services Line or Rural Services line, where visible from a scenic road, any beach, or within a designated scenic resource area, any tree which is equal to or greater than 40 inches d.b.h. (approximately 10 feet in circumference); any sprout clump of five or more stems, each of which is greater than 20 inches d.b.h. (approximately 5 feet in circumference); or, any group consisting of ten or more trees on one parcel, each greater than 20 inches d.b.h. (approximately 5 feet in circumference).

Any tree located in a sensitive habitat as defined in Chapter 16.32. Also see Section 16.34.090(c), exemption of projects with other permits.
(Note: d.b.h. means diameter breast height; 4.5 feet above the ground)

EXHIBIT D

RECOMMENDATIONS FOR REQUIRED PROCEDURES

Plan Revisions

The following plan modifications have been implemented.

Realignment to avoid the Critical Root Zones of the preserved trees or brought to the attention of the Project Arborist to allow for preconstruction root severance along placement lines.

Horizontal Drilling construction technology is recommended for trenching adjacent to **Trees #13 through 18**, where root disturbance levels are high and will result in destabilization or premature mortality.

Performance Standards

Storage of equipment and materials

Staging areas, for materials and equipment shall be outside of defined Critical Root Zone areas to avoid compaction and mechanical damage to root systems.

Spoils shall be placed on existing asphalt or concrete but not on native ground beneath tree canopies. Spoil are to be consciously placed to avoid the Critical Root Zone of the preserved trees.

A **backhoe may** be used to trench the majority of the water line if the distance between the trees and the excavation line is not decreased. This procedure is defined below:

- Establish a "final line of disturbance" with field staking. This line represents the furthest distance from the trees trunk that will allow the proposed construction.
- Determine the depth of the cut required.
- Dig to the required depth.
- Place trenching spoils on asphalt or concrete surfaces, not on bare soil within Critical Root Zone areas
- Begin pruning roots using the techniques defined above.
- Upon reaching the final line of disturbance make the final root pruning cuts.
- Install Tree Preservation fencing with straw bales to allow maximum distance from the tree while allowing construction space.

Tree Preservation and Protection

Protection and preservation of tree resources adjacent to this project require both active and passive strategies. Specific actions such as the installation and management physical protection structures such as fencing and straw bales are necessary when trees stand in proximity to work areas. Trees growing further from construction activities can be successfully protected following a passive protection approach; respect for Critical Root Zone and canopy extents as exclusion zones for all activities or unexpected encroachment such as workers parking of cars and equipment etc. **Tree Protection Performance Specifications** included in this report, outline specifics for tree protection fencing and other procedures that will provide the best opportunity for their long-term survivability. The exact locations for these procedures are documented on an attached map.

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Straw Bales will be placed end to end along the edge of the road, adjacent to the work area. This barricade will be moved as the work progresses to prevent damage to tree trunks and excess soil from grading and trenching from encroaching into the Critical Root Zone of the retained trees.

Special Treatments

The project that begins first will be required to perform preconstruction canopy clearance and post excavation root pruning treatments. The next project may or may not be required perform these treatment depending on the remaining roots and branches to be impacted.

Post excavation root pruning is the recommended treatment for this project since the alignment is at the extents of Critical Root Zones and canopy extents. Root populations; diameter and density are anticipated to be minimal. This procedure is to be performed after the trench has been dug and before the pipe is installed. Knowledgeable construction personnel may cleanly prune roots less than 1.5 diameter inches. Roots greater than 1.5 diameter inches are to be evaluated by the Project Arborist prior to pruning. Bark should adhere to the wood without tearing. Wood fibers should remain intact without shattering.

The following tools should be used:

- Hand-pruners
- Loppers
- Handsaw
- Reciprocating saw
- Chainsaw

When completed, the pruned portions should be covered with burlap or similar material and kept moist.

A "Ditchwitch" type of trencher is the be use in the identified "Special Treatment Area where tree roots are determined to be less than 1 inch in diameter for preconstruction root severance treatments under the direction of the Project Arborist. This procedure is defined below:

- Establish a "final line of disturbance" with field staking. This line represents the furthest distance from the trees trunk that will allow the proposed construction.
- Determine the depth of the cut required.
- Begin trenching along the "final line of disturbance".
- Trench to the required depth.
- "Clean up" shattered roots using the root pruning techniques defined above.
- Install Tree Preservation structures; straw bales to allow maximum distance from the tree while allowing space to excavate and install the line.

Field location of sewer alignment and construction in densely wooded areas

- Field locate sewer line to avoid tree trunks by a minimum of 15 feet
- Lay sheets of ¾" or 11/8" plywood end-to-end lengthwise on both sides of the proposed trench.
- Trench the length of the line using a Ditchwitch trencher
- If additional depth/width is needed use a mini-backhoe for trenching
- Keep equipment wheels or tracks on plywood

EXHIBIT D

- Place trenching spoils on plywood
- Prune roots cleanly as described above
- Place pipe and backfill
- Remove plywood without driving on bare ground

Preconstruction clearance pruning has been recommended to provide vertical clearance and construction access. Pruning should not remove more foliage than absolutely necessary to accommodate thee proposed excavation equipment, a maximum height of 13'6".

Pruning to remove dead and broken branches has been recommended to reduce potential health and safety hazards that persisting conditions pose, such as decay, attracting harmful insects and injury from falling branches.

A qualified certified arborist, using the following industry guidelines should be contracted to perform the above-described work.

- American National Standards Institute A300 for Tree Care Operations-Tree, Shrub and Other Woody Plant Maintenance-Standard Practices. (Part 1)-2001 Pruning
- International Society of Arboriculture: Best Management Practices
- American National Standards Institute Z133.1-1994 for Tree Care Operations-Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush-Safety Requirements

To ensure the successful implementation of the recommended procedures **Site inspections** will be performed by the Project Arborist. Site inspections will take place at the following intervals throughout the course of the project:

- During tree clearance pruning activities in proximity to preserved trees.
- Following on-site placement of grade stakes.
- During pre/post-excavation root exploration and severance procedures.
- After Tree Preservation fencing locations have been staked.
- Following Tree Protection fencing installation and prior to the commencement of grading.
- As necessary during trenching activities to ensure compliance with all conditions of project approval.
- During all activities within Special Treatment Areas

MITIGATION

Impacts to the tree resources have been modified by the following mitigating elements:

- Plan modifications to decrease impacts and avoid the need for tree removal
- Special treatments and alternative construction methods
- Monitoring by the Project Arborist
- Protection and preservation of the tree resources
  - Protection fencing
  - Straw bales lining the edge of the road adjacent to work areas within 20 feet of tree resources

EXHIBIT D

Plan modifications and the implementation of special treatments during construction have resulted in16 trees (six of which meet "Significant" criteria) being preserved that would have been removed. Impacts to the remaining trees have been decreased to less than significant thresholds.

Tree preservation specifications designed for this project must be enforced as a provision of all contractual agreements associated with the construction of this project.

Any questions regarding this report may be directed to my office.

Respectfully submitted,

James P. Allen
Registered Consulting Arborist #390

EXHIBIT D

POT BELLY BEACH
WATER MAIN PROJECT
TREE PROTECTION PERFORMANCE SPECIFICATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all Specification sections, apply to work of this section.

B. These guidelines should be printed on all relevant pages of the construction documents. Contractors and sub contractors should be aware of tree protection guidelines and restrictions. Contracts should incorporate tree protection language that includes "damage to trees will be appraised using the Guide to Plant Appraisal 9th Edition and monetary fines assessed".

PART 2 – EXECUTION

2.01 TREE PROTECTION:

A. No storage of construction materials, debris, or excess soil will be allowed within the Critical Root Zones. Parking of vehicles or construction equipment in this area is prohibited. Solvents or liquids of any type should be disposed of properly, never within Critical Root Zones.

B. Tree Protection Structures shall be installed as identified prior to the onset of construction.
   a. Weed-free straw or hay bales shall be placed along the edge of New Brighton Road in areas of protected trees within 20 feet of the work zone
      i. Bales shall be moved as work progresses along the road
   b. Tree Protection fencing shall be placed in areas identified on the Tree Location map

C. The Project Arborist shall be onsite during all activities in the designated Special Treatment Areas.
   a. 48 hours notice shall be provided the Project arborist via email or telephone prior to working in the Special Treatment Areas
      i. Telephone
         1. 831-426-6603 office
         2. 831-234-7739 mobile
      ii. Email
         1. jpallen@consultingarborists.com

EXHIBIT D 1

A. SPECIAL TREATMENTS

a. Prune roots less than 1.5 diameter inches that are damaged during excavation using root pruning specifications
   i. Bark should adhere to the wood without tearing.
   ii. Wood fibers should remain intact without shattering.
   iii. The following tools are acceptable for use:
      1. hand pruners
      2. loppers
      3. handsaw
      4. reciprocating saw
      5. chainsaw

b. Alert Project Arborist if roots greater than 1.5 diameter inches are uncovered.
   i. Do not proceed until Project Arborist determines appropriate procedures

c. Cover exposed roots with wet burlap to prevent moisture loss, maintain moist condition of burlap at all times, backfill as soon as possible.

d. Use a smaller backhoe to work within normal 13'6" road clearance standards

e. Do not place excavated soils on native soils, place on asphalt or concrete

f. Use a Ditchwitch for trenching adjacent to Trees #105 through 119

2.03 TRENCHING/SITE WORK:

A. In the event trenches for irrigation and/or lighting are required within a tree's Critical Root Zone, they shall be installed by hand in a radial direction to the trees' trunks. If irrigation trenches cannot be routed as such, the work may, need to be performed using a pneumatic air device (such as an Air-Spade®) to avoid unnecessary root damage.

B. Installation of any fencing within a tree's canopy shall be done with a manually operated post-hole digger for the first 2.5 to 3 feet below grade; mechanical auger can be used to drill the remaining depth. In the event a root of two inches and greater in diameter is encountered during the process, the hole should be shifted about 12 inches in either direction and the process repeated. If this is not possible, see 2.02 SPECIAL TREATMENT above.

EXHIBIT D

DATE: 6/11/09

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Pot Belly Beach
Water Line Construction

Dedicated to the Preservation of Trees

TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
12	Monterey cypress	53	Good	Fair	Good/ 32	MODERATE/ 12 feet from proposed trenching	•Well maintained tree on private property •**Preserve and Protect** **Post excavation root pruning** •Yes
13	Monterey cypress		Good	Fair	Fair/ 24	LOW/ Section of directional boring	•Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and dying branches •**Preserve and Protect** **Directional drilling or "Ditch Witch" type trenching machine** **Root and possible canopy clearance pruning** **Remove dead and broken branches** •Yes
14	Monterey cypress	30.8	Fair	Poor	Fair/ 18	LOW/ Section of directional boring	•Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and dying branches •**Preserve and Protect** **Directional drilling or "Ditch Witch" type trenching machine** **Root and possible canopy clearance pruning** **Remove dead and broken branches** •Yes
15	Monterey cypress	Double trunk 24.2 & 19.6	Fair	Poor	Fair/ 24	LOW/ Section of directional boring	•Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and dying branches •Preserve and Protect Directional drilling or"Ditch Witch" type trenching machinery Root and possible canopy clearance pruning Remove dead and broken branches •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
16	Monterey cypress	Double trunk 19 & 12.3	Fair	Poor	Fair/ 18	LOW/ Section of directional boring	•Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and dying branches **•Preserve and Protect** **Directional drilling or "Ditch Witch" type trenching machine** **Root and possible canopy clearance pruning** **Remove dead and broken branches** •No
17	Monterey cypress	18.5	Fair	Poor	Fair/ 18	LOW/ Section of directional boring	•Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and dying branches **•Preserve and Protect** **Directional drilling or "Ditch Witch" type trenching machine** **Root and possible canopy clearance pruning** **Remove dead and broken branches** •No
18	Monterey cypress	16.7	Fair	Poor	Fair/ 18	LOW/ Section of directional boring	•Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and dying branches **•Preserve and Protect** **Directional drilling or "Ditch Witch" type trenching machine** **Root and possible canopy clearance pruning** **Remove dead and broken branches** •No

EXHIBIT D

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
19	Monterey cypress	15.6	Fair	Poor	Fair/ 18	MODERATE/ Proximity to proposed trenching	•Leans to northwest Poor trunk/stem attachments Pruned for utility line clearance Large diameter dead and broken branches •Preserve and Protect •No
20	eucalyptus	24	Fair	Poor	Poor/ 18	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed tree •Preserve and Protect •Yes
21	eucalyptus	21	Fair	Poor	Poor/ 18	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed tree •Preserve and Protect •Yes
22	eucalyptus	Triple trunk 44 @ 36" above grade	Fair	Poor	Poor/ 24	NONE/ Impacted by SCCO ASTL Project	•Poor trunk/stem attachments Risk of failure •Preserve and Protect •Yes
23	eucalyptus	13.6	Fair	Poor	Poor/ 16	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed stem developing from stump sprout Risk of failure •Preserve and Protect •No
24	eucalyptus	15	Fair	Poor	Poor/ 14	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed stem developing from stump sprout Risk of failure •Preserve and Protect •No

EXHIBIT D

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
25	eucalyptus	Triple trunk 14.9, 18.4, 18.6	Fair	Poor	Poor/ 18	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed stem developing from decayed stump Risk of failure •Preserve and Protect •Yes
26	eucalyptus	26	Fair	Poor	Poor/ 16	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed tree Leans toward utility lines •Preserve and Protect •Yes
27	eucalyptus	14.1	Fair	Poor	Poor/ 18	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed tree Branch rubbing against Tree #28 •Preserve and Protect •No
28	eucalyptus	30	Fair	Poor	Poor/ 24	NONE/ Impacted by SCCO ASTL Project	•Tall, suppressed tree Branch rubbing against Tree #28 •Preserve and Protect •Yes
29	Monterey cypress	8.8	Fair	Poor	Poor/ 12	NONE/ Impacted by SCCO ASTL Project	•Poor trunk/stem attachments Smaller, suppressed tree • Preserve and Protect •No

EXHIBIT E

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
30	coast live oak	4 smaller trees 6, 6, 7 & 8	Fair	Fair	Fair/ 12	LOW/ 18-20 feet proposed trenching	•Group of four smaller trees leaning over road •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning, if necessary Monitoring by the Project Arborist •No
30A	eucalyptus	31.2	Fair	Fair	Fair/ 24	MODERATE/ 12 feet from proposed trenching	•Exposed supporting roots Large diameter dead branches •Preserve and Protect Post excavation root pruning Monitoring by the Project Arborist •Yes
30B	eucalyptus	24.6	Fair	Fair	Fair/ 16	LOW/ 15 feet from proposed trenching	•Exposed supporting roots Large diameter dead branches •Preserve and Protect Post excavation root pruning Monitoring by the Project Arborist •Yes
30C	eucalyptus	12.2	Fair	Fair	Fair/ 12	LOW/ 12 feet from proposed trenching	•Tall, suppressed tree Low Live Crown Ratio •Preserve and Protect Post excavation root pruning Monitoring by the Project Arborist •No

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
30D	eucalyptus	13	Fair	Fair	Fair/ 12	NONE/ 16 feet from proposed trenching	•Canopy suppressed to west •Preserve and Protect Post excavation root pruning, if necessary Monitoring by the Project Arborist •No
30E	eucalyptus	19.1	Fair	Fair	Fair/ 16	MODERATE/ 10 feet from proposed trenching	•Canopy suppressed to west •Preserve and Protect Post excavation root pruning Monitoring by the Project Arborist •No
30F	eucalyptus	15.8	Fair	Fair	Fair/ 14	MODERATE/ 10 feet from proposed trenching	•Tall, suppressed tree Crooked trunk swoops to south •Preserve and Protect Post excavation root pruning Monitoring by the Project Arborist •No
31	coast live oak	18	Fair	Fair	Fair/ 14	LOW/ 25 feet from proposed trenching	•Leans to west Pruned for utility line clearance •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning Monitoring by the Project Arborist •No

EXHIBIT D

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Water Line Construction

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
32	coast live oak	17	Fair	Fair	Fair/ 16	LOW/ 25 feet from proposed trenching	•Suppressed growth to west Pruned for utility line clearance •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning Monitoring by the Project Arborist •No
33	coast live oak	13 @ 36 above grade	Fair	Fair	Fair/ 16	NONE/ Adjacent to proposed jack and bore	•Canopy extends over road Suppressed to west •Preserve and Protect Preconstruction canopy clearance pruning •No
61	Monterey pine	13.1	Poor	Poor	Poor/ 14	LOW/ 10 feet to proposed trenching	•Mechanical wound on lower trunk Leans to east, over power lines Large diameter dead branches •Preserve and Protect Post excavation root pruning •No
62	eucalyptus	10.3	Poor	Poor	Poor/ 14	LOW/ 10 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning •No
63	Monterey cypress	35	Fair	Poor	Poor/ 28	LOW/ 20 feet to proposed trenching	•Large diameter dead branches •Preserve and Protect Post excavation root pruning •Yes

EXHIBIT D

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
64	eucalyptus	36.8	Fair	Poor	Poor/ 32	MODERATE/ 17 feet to proposed trenching	•Large diameter dead branches •Preserve and Protect Remove dead branches Post excavation root pruning •Yes
65	eucalyptus	11.4	Poor	Poor	Poor/ 14	NONE/ 17 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect •No
66	eucalyptus	30.6	Fair	Poor	Poor/ 26	LOW/ 22 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect •Yes
67	Monterey cypress	47.3	Poor	Poor	Poor/ 32	NONE/ 34 feet to proposed trenching	•Large diameter dead and broken branches Failed/decayed top •Preserve and Protect Remove dead and broken branches •Yes
68	eucalyptus	23.1	Poor	Poor	Poor/ 20	MODERATE/ 17 feet to proposed trenching	•Tall, suppressed sprout Large diameter dead and broken branches •Preserve and Protect Post excavation root pruning Remove dead and broken branches •Yes
69	eucalyptus	25.7	Poor	Poor	Poor/ 22	MODERATE/ 13 feet to proposed trenching	•Trunk bows to north •Preserve and Protect •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
70	eucalyptus	17.2	Fair	Poor	Poor/ 16	LOW/ 14 feet to proposed trenching	•Tall, suppressed tree Crooked trunk at 50 feet •Preserve and Protect Post excavation root pruning •No
71	eucalyptus	Double trunk 25.7 & 12.3	Fair	Poor	Poor/ 20	NONE/ 26.5 feet to proposed trenching	•Tall, suppressed tree Large diameter dead branches •Preserve and Protect Post excavation root pruning •Yes
72	eucalyptus	27.1	Fair	Poor	Poor/ 22	NONE/ 23 feet to proposed trenching	•Tall, suppressed tree Large diameter dead branches •Preserve and Protect •Yes
73	eucalyptus	16.8	Fair	Poor	Poor/ 16	NONE/ 19 feet to proposed trenching	•Divides into two stems at 24" above grade Tall, suppressed tree •Preserve and Protect Remove dead branches •No
74	eucalyptus	35.7 @ 24 Inches above grade	Fair	Poor	Poor/ 32	MODERATE/ 15 feet to proposed trenching	•Divides into two stems at 24" above grade Poor trunk/stem attachments Large diameter dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
75	Monterey pine	12.3	Fair	Poor	Poor/ 14	LOW/ 12 feet to proposed trenching	•Tall, suppressed tree Leans to south Dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •No
76	Monterey pine	15	Fair	Poor	Poor/ 16	LOW/ 12 feet to proposed trenching	•Tall, suppressed tree Dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •No
77	eucalyptus	Double trunk 25.7 & 17	Fair	Poor	Poor/ 22	MODERATE/ 14 feet from proposed trenching	•Large diameter dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes
78	eucalyptus	23.3	Fair	Poor	Poor/ 20	MODERATE/ 14 feet from proposed trenching	•Tall, suppressed tree Leans to south •Preserve and Protect Post excavation root pruning •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
79	eucalyptus	30.9	Fair	Poor	Poor/ 28	MODERATE/ 10 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning •Yes
80	eucalyptus	16.1	Fair	Poor	Poor/ 14	LOW/ 10 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning •No
81	Monterey cypress	51.6	Fair	Poor	Poor/ 34	LOW/ 32 feet to proposed trenching	•Decay in lower trunk Large diameter dead branches Poor trunk/stem attachments •Preserve and Protect Post excavation root pruning, if necessary Remove dead branches •Yes
82	Monterey cypress	38.2	Fair	Fair	Fair/ 24	LOW/ 22 feet to proposed trenching	•Large diameter dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes
83	Monterey cypress	22.5	Fair	Poor	Poor/ 18	NONE/ 35 feet from proposed trenching	•Longitudinal fractures in lower trunk Dead and broken branches •Preserve and Protect Remove dead branches •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
84	eucalyptus	42.7	Fair	Poor	Poor/ 34	MODERATE/ 22 feet from proposed trenching	•Divides at 35 feet Poor trunk/stem attachment •Preserve and Protect Remove dead branches •Yes
84A	eucalyptus	24	Fair	Fair	Poor/ 18	MODERATE/ 12 feet from proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning •Yes
84B	coast live oak	5.5	Fair	Fair	Fair/ 8	NONE/ 10 feet to proposed trenching	•Small tree beneat power lines •Preserve and Protect •No
84C	coast live oak	8	Fair	Fair	Fair/ 10	LOW/ 8 feet to proposed trenching	•Poor trunk/stem attachments Divides at five feet above grade •Preserve and Protect Post excavation root pruning •Yes
85	eucalyptus	26.9	Fair	Poor	Poor/ 22	MODERATE/ 14 feet from proposed trenching	•Suppressed to east Poor trunk/stem attachment at 60 feet •Preserve and Protect Post excavation root pruning •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
85A	Monterey cypress	13.6	Fair	Poor	Poor/ 12	NONE/ 17 feet to proposed trenching	•Dead and broken branches •Preserve and Protect Remove dead branches •No
85B	eucalyptus	20.1	Fair	Poor	Poor/ 22	LOW/ 17 feet to proposed trenching	•Tall, suppressed tree Crooked trunk at 20 feet •Preserve and Protect Post excavation root pruning •No
85C	Monterey cypress	12.9	Fair	Poor	Poor/ 14	LOW/ 14 feet to proposed trenching	•Dead branches Leans to east over power lines •Preserve and Protect Post excavation root pruning, if necessary Remove dead and broken branches •No
85D	eucalyptus	18.6	Fair	Poor	Poor/ 16	NONE/ 18 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning, if needed •No
85E	Monterey cypress	11	Fair	Poor	Poor/ 14	NONE/ 15 feet to proposed trenching	•Bowed trunk leans to east Longitudinal fractures in lower trunk •Preserve and Protect Post excavation root pruning •No

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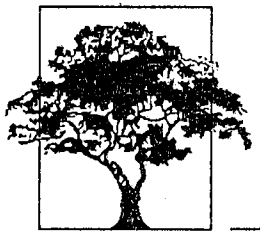

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
85F	eucalyptus	17.1	Fair	Poor	Poor/ 18	LOW/ 17 feet to proposed trenching	•Tall, suppressed tree with crooked trunk •Preserve and Protect Post excavation root pruning, if necessary •No
86	eucalyptus	17.3	Fair	Poor	Poor/ 14	NONE/ 16 feet to proposed trenching	•Common root structure Trunk is intertwined with #87, a Monterey cypress •Preserve and Protect •No
87	Monterey cypress	11	Fair	Poor	Poor/ 16	NONE/ 16 feet to proposed trenching	•Common root structure Trunk is intertwined with #86, a eucalyptus •Preserve and Protect •No
88	Monterey cypress	8.2	Fair	Poor	Poor/ 12	NONE/ 16 feet to proposed trenching	•Small tree Trunk rubbing against #87 •Preserve and Protect Post excavation root pruning •Yes
89	eucalyptus	26.7	Fair	Poor	Poor/ 22	MODERATE/ 16 feet from proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning •Yes

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
90	eucalyptus	21.5	Fair	Poor	Poor/ 18	MODERATE/ 12 feet from proposed trenching	•Sprout developed from decayed parent stump Tall, suppressed tree Leans to south and west •Preserve and Protect Post excavation root pruning •Yes
91	Monterey cypress	8.7	Fair	Poor	Poor/ 12	LOW/ 12 feet to proposed trenching	•Small tree Suppressed to north and east •Preserve and Protect Post excavation root pruning, if necessary •No
92	Monterey cypress	17	Dead	Dead	Dead	NONE	•Dead pine stub Topped at 35 feet •Preserve and Protect •No
93	eucalyptus	27	Fair	Poor	Poor/ 24	MODERATE/ 12 feet from proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning •Yes
94	eucalyptus	14.8	Fair	Poor	Poor/ 16	LOW/ 16 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect Post excavation root pruning, if necessary •No

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RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
95	Monterey cypress	35.1	Fair	Poor	Poor/ 26	MODERATE/ 16 feet from proposed trenching	•Large diameter dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes
96	Monterey cypress	41.5	Fair	Fair	Fair/ 32	MODERATE/ 22 feet from proposed trenching	•Lower canopy section suppressed to north Large diameter dead branches •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning Remove dead branches •Yes
97	Privet	Group of approximately 28 stems	Fair	Fair	Fair/ 6	LOW/ 9 feet to proposed trenching	•Smaller statured shrubs Group of approximately 28 stems •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning •No
98	coast live oak	12	Fair	Fair	Fair/ 14	NONE/ 16 feet to proposed trenching	•Well formed, young tree Large diameter dead branches •Preserve and Protect •No

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
99	coast live oak	Double trunk 8.9 & 6.9	Poor	Poor	Poor/ 12	LOW/ 6 feet to proposed trenching	•Poor trunk/stem attachments Dead branches Thinning canopy •**Preserve and Protect** **Preconstruction canopy clearance pruning** **Post excavation root pruning** **Remove dead branches** •No
100	eucalyptus	Four stems 21.6, 3, 6 & 14.6	Fair	Poor	Poor/ 18	LOW/ 8 feet to proposed trenching	•Larger stems are tall and suppressed Smaller stems are suckers Poor trunk/stem attachments •**Preserve and Protect** **Preconstruction canopy clearance pruning** **Post excavation root pruning** **Remove dead branches** •Yes
101	eucalyptus	8.5	Fair	Poor	Poor/ 12	LOW/ 10 feet to proposed trenching	•Tall, suppressed smaller tree Large diameter dead branches •**Preserve and Protect** **Post excavation root pruning** **Remove dead branches** •No
102	eucalyptus	13.8	Fair	Poor	Poor/ 14	LOW/ 10 feet to proposed trenching	•Tall, suppressed tree •**Preserve and Protect** **Post excavation root pruning** •No

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RESOURCE INVENTORY

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103	eucalyptus	15.7	Fair	Poor	Poor/ 18	**LOW/ 10 feet to proposed trenching**	•Tall, suppressed tree •**Preserve and Protect** **Post excavation root pruning** •No
104	eucalyptus	9.7	Fair	Poor	Poor/ 12	**LOW/ 12 feet to proposed trenching**	•Tall, suppressed tree •**Preserve and Protect** **Post excavation root pruning** •No
105	eucalyptus	30	Fair	Poor	Poor/ 22	**NONE/ 23 feet to proposed trenching**	•Dead and broken branches •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning Remove dead branches •Yes
106	eucalyptus	23.7	Fair	Poor	Poor/ 26	**LOW/ 18 feet to proposed trenching**	•Basal sprouts Trunk bows to south and east Large diameter dead branches •**Preserve and Protect** **Post excavation root pruning** **Remove dead branches** •Yes
107	eucalyptus	18.6	Fair	Poor	Poor/ 18	**LOW/ 17 feet to proposed trenching**	•Trunk rubbing against Tree #108 •**Preserve and Protect** **"Ditch Witch" type trenching machinery** **Post excavation root pruning, if necessary** •No

EXHIBIT 7

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
108	eucalyptus	14	Fair	Poor	Poor/ 18	LOW/ 13 feet to proposed trenching	•Trunk rubbing against Tree #107 •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning, if necessary •Yes
109	eucalyptus	28	Fair	Poor	Poor/ 22	LOW/ 16 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning, if necessary •Yes
110	eucalyptus	Double 6.5 & 15.5	Fair	Poor	Poor/ 14	NONE/ 18 feet to proposed trenching	•Poor trunk/stem attachments Larger trunk bows to the south •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning, if necessary Remove dead branches •No
111	eucalyptus	21.7	Fair	Poor	Poor/ 18	LOW/ 18 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning, if necessary •Yes

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Pot Belly Beach
Water Line Construction

Dedicated to the Preservation of Trees

TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
112	eucalyptus	Three trunks 9, 16 & 10	Fair	Poor	Poor/ 18	NONE/ 25 feet to proposed trenching	•Poor trunk/stem attachments •Preserve and Protect Preconstruction canopy clearance pruning "Ditch Witch" type trenching machinery Post excavation root pruning, if necessary Remove dead branches •Yes
113	unidentified	Two small multi-stem trees	Fair	Poor	Poor/ 12	LOW/ 12 feet to proposed trenching	•Two small multi-stem trees •Preserve and Protect "Ditch Witch" type trenching machinery •No
114	Monterey cypress	17.6	Fair	Poor	Poor/ 18	LOW/ 11 feet to proposed trenching	•Tall, suppressed tree Wire imbedded in lower trunk Dead branches •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning •No
115	Monterey cypress	23	Fair	Poor	Poor/ 18	MODERATE/ 6 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning •Yes

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Water Line Construction

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
116	eucalyptus	14.5	Fair	Poor	Poor/ 16	LOW/ 10 feet to proposed trenching	•Develops from stup that was dug up years ago and placed in thi Poor trunk/stem attachments Minimal root/soil adherence Risk of Failure •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning •No
117	eucalyptus	Double trunk 16 & 13	Fair	Poor	Poor/ 18	LOW/ 18 feet to proposed trenching	•Two trunks wrapped around one-another Poor trunk/stem attachments •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning •No
118	eucalyptus	11.7	Fair	Poor	Poor/ 14	LOW/ 16 feet to proposed trenching	•Tall, suppressed tree •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning, if necessary •No
119	eucalyptus	29	Fair	Poor	Poor/ 18	LOW/ 14 feet to proposed trenching	•Poor trunk/stem attachments Divides into two trunks at 3.5 feet above grade •Preserve and Protect "Ditch Witch" type trenching machinery Post excavation root pruning •Yes

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Pot Belly Beach
Water Line Construction

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
120	Monterey cypress	35.8	Fair	Poor	Poor/ 28	LOW/ 18 feet to proposed trenching	•Single upright trunk Large diameter dead and broken branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes
121	eucalyptus	Double 11.1 & 34.3	Fair	Poor	Poor/ 26	LOW/ 22 feet to proposed trenching	•Two trunks growing from decayed parent stump •Preserve and Protect Post excavation root pruning •Yes
122	Monterey cypress	28.8	Good	Fair	Fair/ 18	NONE/ 36 feet to proposed trenching	•Broken top Excellent foliar coloration •Preserve and Protect •Yes
123	Monterey cypress	51.1	Fair	Poor	Poor/ 18	LOW/ 20 feet to proposed trenching	•Mature tree Poor trunk/stem attachments Large diameter dead and broken branches Prone to continued branch/trunk failure Monitor Stability •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning Remove dead branches •Yes

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Pot Belly Beach
Water Line Construction

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
124	eucalyptus	Group of approximately 12 stems 3 to 26"	Fair	Poor	Poor/ 18	LOW/ 12 feet to proposed horizontal boring initiation pit	•Poor trunk/stem attachments Large diameter dead and broken branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes
125	eucalyptus	9	Fair	Poor	Poor/ 10	NONE/ 14 feet to proposed trenching	•Mechanical wound on east side of lower trunk •Preserve and Protect Post excavation root pruning, if necessary •No
126	Monterey cypress	23	Fair	Poor	Poor/ 18	LOW/ 15 feet to proposed trenching	•Tall, suppressed tree Large diameter dead branches •Preserve and Protect Post excavation root pruning Remove dead branches •Yes
127	eucalyptus	30.5	Fair	Poor	Poor/ 18	LOW/ 14 feet to proposed trenching	•Tall, suppressed tree Large diameter dead branches •Preserve and Protect Preconstruction canopy clearance pruning Post excavation root pruning •Yes

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DATE: 6/11/09

Pot Belly Beach
Water Line Construction

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TREE
RESOURCE INVENTORY

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	PRESERVATION SUITABILITY/ Critical Root Zone, Distance From Tree Trunk (Footage)	IMPACTS Level, after recommended treatments are implemented/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
128	eucalyptus	41.2	Fair	Poor	Poor/ 32	LOW/ 23 feet to proposed trenching	•Tall, suppressed tree Large diameter dead branches •Preserve and Protect Preconstruction canopy clearance pruning Remove dead branches •Yes
129	Monterey pine	19	Fair	Poor	Poor/ 18	NONE/ 56 feet to proposed trenching	•Canopy suppressed on west side •Preserve and Protect •No

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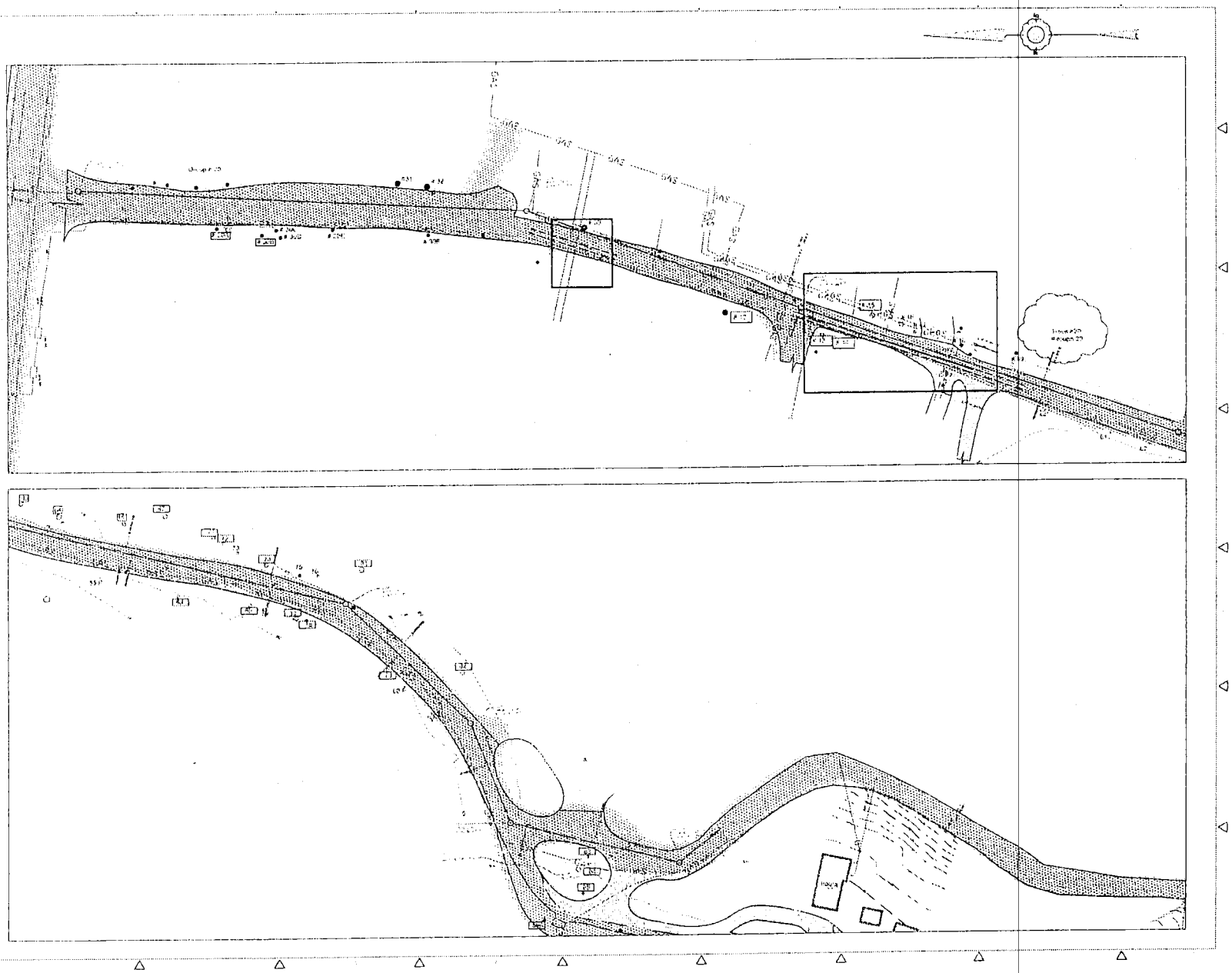

Map Key / Legend

- Surveyed Tree Trunk Location
- Field Located Tree Trunk Location
- 86 Preserve and Protect
- Meets "Protected" criteria
- Special Treatment Area Sections to be directionally bored or horizontally drilled
- Tree Preservation Fencing with Straw Bales
- Clearance Pruning Required

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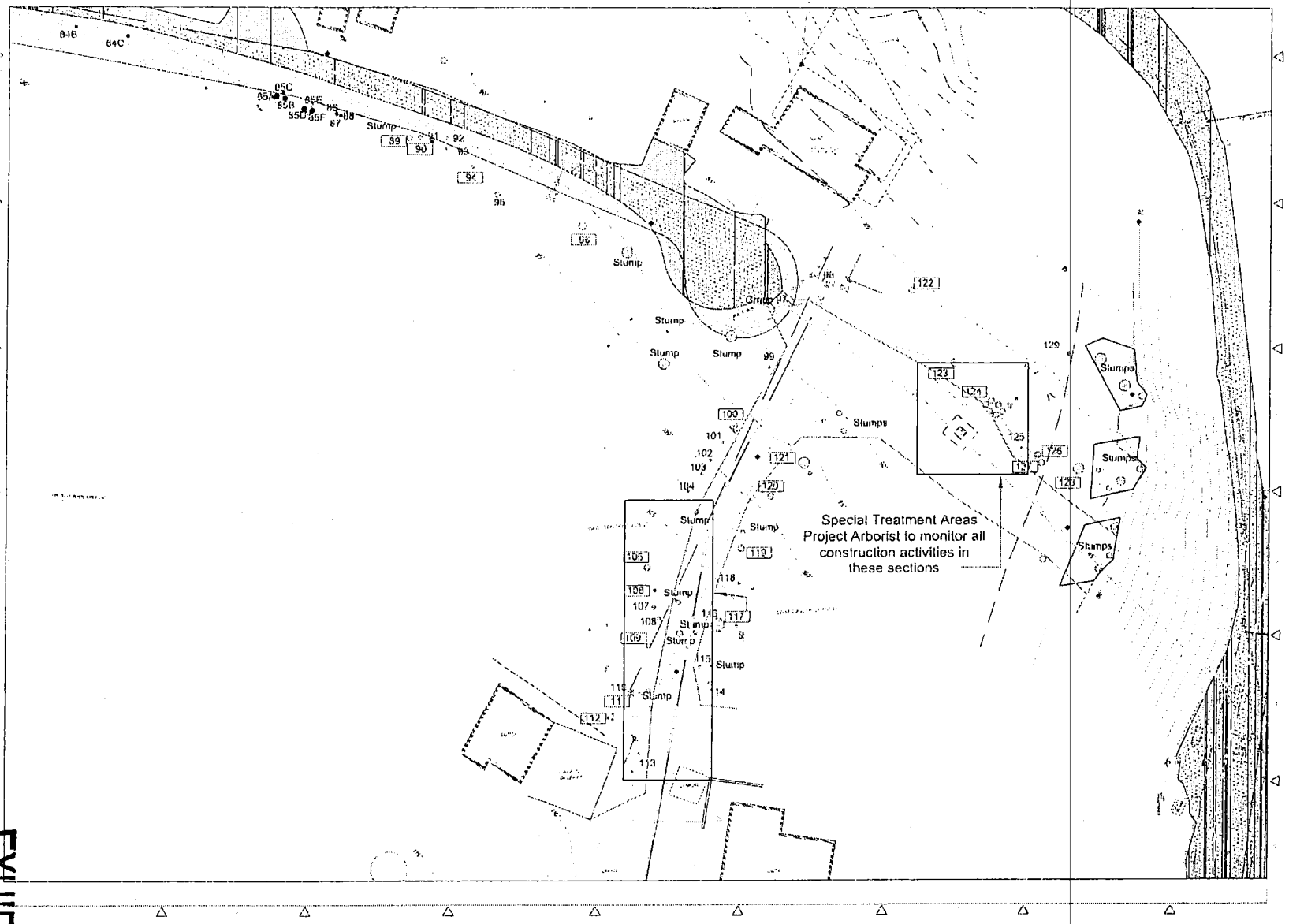

Map Key / Legend

- Surveyed Tree Trunk Location
- Field Located Tree Trunk Location
- 86 Preserve and Protect
- Meets "Protected" criteria
- Special Treatment Area
  Project Arborist to Monitor Construction
- Tree Preservation Fencing
  With Straw Bales
- Clearance Pruning Required

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Attachment 4 - Cultural Resources Background Material: Albion Environmental, June 2009. *Cultural Resources Assessment for Potbelly Beach Water Line Project;*

Holman and Associates, 2008. *Historic Resources Inventory and Initial Subsurface Reconnaissance for Archaeological Resources* (from EDAW/AECOM, October, 2008, *Initial Study/Proposed Negative Declaration for Aptos Transmission Main Relocation Project, Santa Cruz County, California*).

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HAMILTON SWIFT LAND USE AND DEVELOPMENT CONSULTANTS, INC.

CULTURAL RESOURCES ASSESSMENT FOR POTBELLY BEACH WATER LINE PROJECT

SOQUEL WATER DISTRICT, SANTA CRUZ COUNTY, CALIFORNIA

AUGUST 2009

FINAL

ALBION ENVIRONMENTAL, INC.

EXHIBIT D

HAMILTON SWIFT LAND USE AND DEVELOPMENT CONSULTANTS, INC.

CULTURAL RESOURCES ASSESSMENT FOR POTBELLY BEACH WATER LINE PROJECT

SOQUEL WATER DISTRICT, SANTA CRUZ COUNTY, CALIFORNIA

AUGUST 2009

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J2009-007

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EXECUTIVE SUMMARY

In May 2009, Albion Environmental. Inc. (Albion) conducted a cultural resources assessment for the Soquel Creek Water District (SCWD) Potbelly Beach Water Line Project (PBWLP), Santa Cruz County, California. The project is located in Aptos, California, just south of McGregor Drive, and east of New Brighton State Park Campground; it is owned and operated by the SCWD.

The current assessment is intended to fulfill the water district's obligations under the California Environmental Quality Act (CEQA) to address potential impacts that a project may impose on significant cultural resources (i.e. historical or unique archeological resources). The study was conducted in two phases. The first part included a thorough review of cultural resource documents and recommendations developed for the nearby Aptos Transmission Main Relocation Project (ATMRP) (Clark 2008, 2009) in order to determine if any additional studies are required for the PBWLP. Albion assessed the completeness of the previous studies including background research, resource identification efforts, survey coverage, and Native American consultation. Results of this phase were documented in a letter report dated May 7, 2009 (Appendix A). Recommendations outlined in the Phase I letter were carried out during Phase II, and included a records search update, Native American consultation, and inspection of unsurveyed potions of the PBWLP.

Background research indicates the area is sensitive for prehistoric and historic-era archaeological resources; however, no sites are recorded within the PBWLP alignment. Excavations conducted for the ATMRP discovered sparse accumulations of historic –era artifacts near the intersection of New Brighton Road and the railroad, and in two locations along lower Potbelly Beach Road, however, none were judged to be significant cultural resources (Clark 2009:31).

Given these findings, it is Albion's judgment that the proposed undertaking will not impact significant cultural resources (i.e., historical resources), and additional formal study of this project is not warranted. However, given the area's sensitivity for cultural resources it is recommended that a qualified archaeological monitor be present during ground disturbance in specified project locations to ensure that any newly discovered resources are evaluated in accordance with CEQA guidelines. If prehistoric or historic deposits or features are discovered during construction, work must be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits

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INTRODUCTION

This report documents a cultural resource assessment conducted by Albion Environmental, Inc. (Albion) for the Soquel Creek Water District (SCWD) Potbelly Beach Water Line Project (PBWLP), Santa Cruz County, California (Figure 1).

The project is located in Aptos, California, just south of McGregor Drive, and east of New Brighton State Park Campground. A large portion of the project follows the alignment for the Santa Cruz County Sanitation District's Aptos Transmission Main Relocation Project (ATMRP), currently under separate environmental review. Cultural resources for the ATMRP are addressed in *Aptos Transmission Main Relocation Project: Historic Resources Inventory and Initial Subsurface Reconnaissance for Archaeological Resources* (Clark 2008), an appendix of the Initial Study/Proposed Mitigation and Negative Declaration for the ATMRP; and *Aptos Transmission Main Relocation Project: National Historic Preservation Act Section 106 Subsurface Reconnaissance for Archaeological Resources, Historic Resources Inventory, and Historic Properties Treatment Plan* (Clark 2009), submitted for the ATMRP Section 106 consultation.

The current assessment is intended to fulfill the water district's obligations under the California Environmental Quality Act (CEQA) to address potential impacts that a project may impose on significant cultural resources (i.e. historical or unique archeological resources). Current CEQA guidelines are contained in Section 15064.5 (a) (2)-(3). Briefly, CEQA requires environmental consideration in the decision-making process for projects undertaken or approved by state, local, and regional agencies, boards, and commissions. Protocols for implementing CEQA include (1) identification of historic resources; (2) assessment of potential impacts to historic resources; and (3) development of necessary mitigation measures.

Pursuant to these regulations, Albion conducted a study to address the first step under CEQA (resources identification) for the PBWLP. The goal of this initial phase is to identify all cultural resources that may require legal scrutiny, and to determine the need for additional technical studies to evaluate resources and potential project impacts.

The study was conducted in two phases. The first included a thorough review of cultural resource documents and recommendations developed for the ATMRP (Clark 2008, 2009) in order to determine if any additional studies are required for the PBWLP. Albion assessed the completeness of the previous studies including background research, resources identification efforts, survey coverage, and Native American consultation. Results of this phase were documented in a letter report dated May 7, 2009 (Appendix A). Recommendations outlined in the Phase I letter were carried out during Phase II, and included a records search update, Native American consultation, and inspection of unsurveyed portions of the PBWLP.

The records search update at the NWIC was conducted by Albion staff archaeologist Stella D'Oro in May 2009 (NWIC File No.: 08-1393). The subsequent pedestrian survey was conducted on May 25, 2009 by Albion staff archaeologists Stella D'Oro and Cher Peterson under the supervision of Jennifer M. Farquhar. Ms. D'Oro has a M.A. degree in Applied

EXHIBIT D

Anthropology and has worked in California archaeology for 6 years. Ms. Farquhar holds a M.A. in Anthropology, and has worked in California archaeology for over 20 years, the past seven years in a supervisory capacity.

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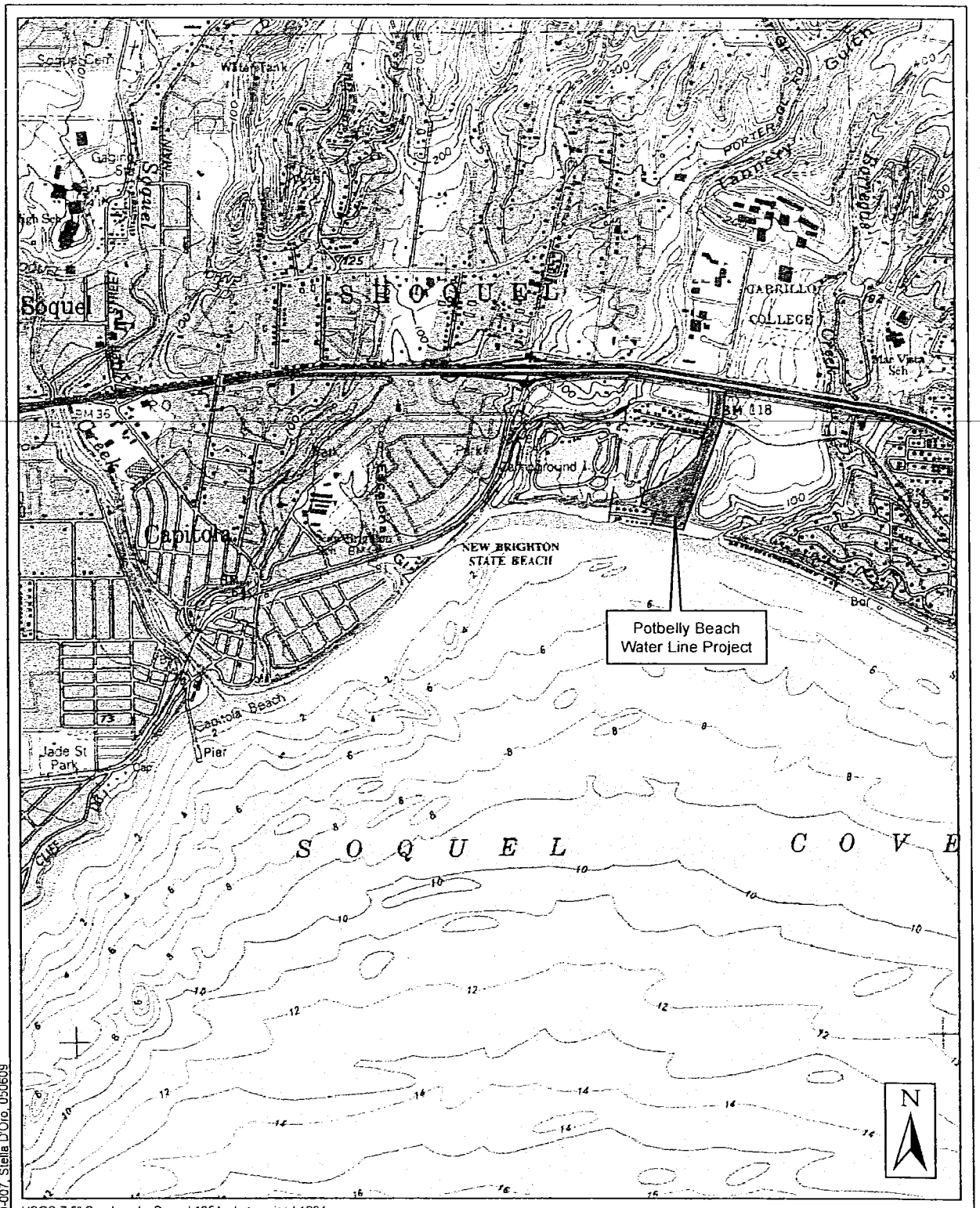

USGS 7.5" Quadrangle: Soquel 1954, photorevised 1994

0 0.5 1
miles

0 800 1,600
meters

Albion Environmental, Inc.

Figure 1. Project location.

File name: Figure 1.ai, J2009-007, Stella D'Oro, 050609

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PROJECT INFORMATION

Project Description

The project is owned and operated by the SCWD and involves several tasks including:

- Removal and replacement of 780 lineal feet of existing 6" water main along New Brighton Road and internal areas of Pot Belly Beach Club;
- abandonment and filling of existing well and reservoir;
- installation of 1,785 lineal feet of 8" water main;
- installation of 600 lineal feet of 6" water main;
- tie-in to existing SCWD water main on McGregor Dive.

Construction will involve backhoe trenching for most of the alignment. Approximately 120 lineal feet of jack and bore will be employed at the sole Union Pacific railroad crossing, while directional boring will be conducted at two locations including: 1) New Brighton Road south of railroad crossing to avoid impacts to Monterey Cypress trees; and 2) from top to base of bluff north of Potbelly Beach.

Project Location

The project location is depicted on the Soquel, CA 7.5" USGS quadrangle (Figure 1). The project begins at the intersection of McGregor Drive and New Brighton Road (proposed 8"water main) and trends south along under New Brighton Road (crossing the Union Pacific Rail Road) for about 1,200 feet to its intersection with a private drive; this segment corresponds with the ATMRP alignment (Figure 2).

From this point, the alignment travels southwest along (and under) the private drive (past residential and auxiliary structures), for about 600 feet to edge of a bluff above Potbelly Beach. A 6" water line extends northwest of the 8" line for about 320 feet to service several residences along the bluff. This portion of the project is not part of the ATMRP alignment; portions of this segment pass through relatively undisturbed soils (i.e., areas not previous excavated for road or utility construction).

A proposed southwest directional bore connects the 8" line to lower Potbelly Beach Road and an existing water line that parallels Potbelly Beach (part of the ATMRP).

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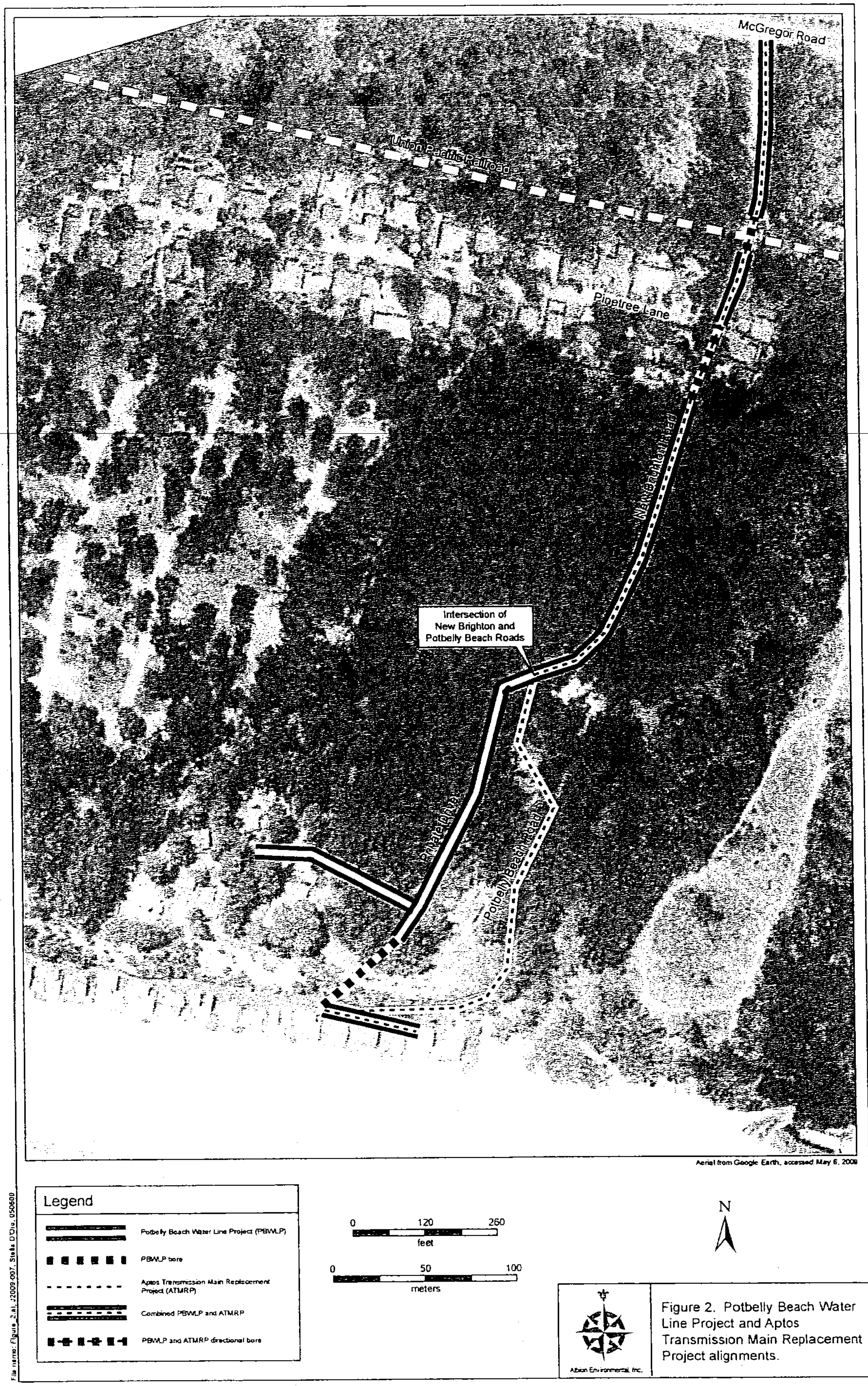

Figure 2. Potbelly Beach Water Line Project and Aptos Transmission Main Replacement Project alignments.

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BACKGROUND

Project Setting

The project foot print occupies an elevated coastal terrace and lower beach just north of Soquel Cove in Monterey Bay. Most of the project alignment is situated on the contact between a Pleistocene age coastal terrace and a section of the Purisima Formation, a Pliocene age sedimentary rock formation. Holocene age beach sand of Potbelly Beach comprises the southernmost portion of the project. A seasonal stream, Potbelly Beach drainage, is located immediately east of the project alignment.

Soils in most of the project area (adjacent to Potbelly Drainage) consist of Elkhorn-Pfeiffer complex (30 to 50 percent slopes), typical of dissected marine terraces and hills. This complex is about 45 percent Elkhorn sandy loam and 25 percent Pfeiffer gravelly sandy loam. Elkhorn soils are on marine terraces. Pfeiffer soils are in deep cuts on marine terraces and hills (USDA 2005). Soils of the elevated terrace are mapped as Watsonville loam (2 to 15 percent slopes). These soils are typically formed in alluvium, are very deep, somewhat poorly drained (USDA 2005).

The climate of Santa Cruz County is characterized as "Mediterranean" with cool, wet winters, and warm, dry summers. In coastal zones, mean annual temperature during summer months (July and August) is 50-55° minimum and 70-75° maximum. During the winter (January), mean daily temperature is 40° minimum and 57- 62° maximum (USDA 2005). Rainfall is variable throughout the county with light precipitation occurring in lowland areas and heavy rain in mountain areas. Mean annual precipitation for the county is 30 inches. During summer, a dense marine layer is present in the morning, and generally dissipates by mid-day when on-shore winds blow in from the south.

Prehistoric Context

While the ethnographic record of the central coast is relatively rich, with accounts from early explorers describing certain aspects of Native American lifeways, research investigating prehistoric lifeways and the culture history of in Native inhabitants of the Monterey Bay has not been undertaken until the past few decades (Hylkema 1991; Jones et al. 2007). Interpretation of Monterey Bay prehistory has been developed through both local and regional archaeological investigations. Through these projects, general patterns of prehistoric lifeways along the central California coast have been developed and the most common taxonomic framework used today involves six distinct temporal periods that are viewed to represent differences in the organization of past subsistence and settlement patterns of the region's inhabitants.

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Prehistoric Periods

Paleo-Indian	(pre-10,000 B.P.)
Millingstone	(10,000-5500 B.P.)
Early	(5500-2600 B.P.)
Middle	(2600-1000 B.P.)
Middle/Late Transition	(1000-850 B.P.)
Late	(850-Historic)

The periods are characterized by either specific artifact types or suites of artifacts and site locations that typify the particular lifeway that each period is seen to represent. The patterns may reflect one or a few aspects of the past manner of living and are generally not understood as a holistic representation of how people on the Central Coast were living at a particular point in time. The Paleo-Indian period is generally viewed as a time where people were focusing their subsistence pursuits on large Pleistocene mammals, such as mammoths, and were highly mobile in search of game, though associations between the animal bones and archaeological sites are spotty at best. Two sites located in San Luis Obispo County are reported to have contained fluted points (Gibson 1996, Mills et al. 2005) the main marker of this time period, though their archaeological context is difficult to interpret. Associated artifacts with sites of this antiquity are suggested to be scrapers, scraper-planes, bifaces, and to lack milling equipment. More locally, the Scotts Valley site (CA-SCR-177) has been argued to pertain to the Paleo-Indian period and contained leaf and lanceolate projectile points/knives, flake tools, hammerstones, and ochre (Cartier 1993, Fenenga 1993: 245-254), though similar to the other sites, its integrity is suspect (Jones et al. 2007:130).

The Millingstone Period is typified by an abundance of milling equipment that includes handstones and millingstone, along with a sparse flaked stone assemblage that lacks formalized tools. Millingstone period sites are present in the Monterey Bay near the mouth of Elkhorn Slough (CA-MNT-229) (Jones et al. 1996) and Moss Landing (CA-MNT-234) (Milliken et al. 1993). These sites contained cobble and core tools fabricated form chert and quartzite, grinding stones, estuary shellfish and small terrestrial mammal bone.

The Early Period is recognized by changes in artifact assemblages, signifying a shift in subsistence and settlement practices at this frame. It is recognized by an increased abundance of bifacially flaked projectile points, along with the presence of mortar and pestle technology. Projectile points dating to this time period are Rossi Square-stemmed and side notched points, large Side-notched, and Año Nuevo Long-stemmed varieties. This may be a time when hunting became more important over the more generalized plant and small game focused economy of the Millingstone period. Early Period sites are more abundant in the Monterey Bay area than earlier ones and are represented CA-MNT-108 near Fisherman's Wharf in Monterey (Breschini and Haversat 1992a), CA-MNT-831 in Pacific Grove (Breschini and Haversat 2008), and CA-SCR-38/123 at Wilder Ranch (D. Jones and Hildebrandt 1994). The sites are typified by dark midden soils, abundant shellfish, mortars and pestles along with flaked stone tools and chipping debris, and certain shell bead types (Bennyhoff and Hughes 1987).

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The Middle Period is understood to be a time when the use of shellfish declines relative to earlier times, and the exploitation of more mobile small game such as rabbits and otters increases. Artifact assemblages contain contracting stemmed projectile points, mortars and pestles, along with in increased presence of fishing equipment that includes grooved and notched net weights and circular shell fish hooks. Handstones, millingstones, and pitted stones may also be present at sites dating to this period (Jones et al. 2007:138-139). In the Monterey Bay, Middle period components are present at CA-MNT-229 and -234 as well as CA-SCR-7 (Jones and Hildebrandt 1990) and CA-SCR-9 (Hylkema 1991:141-183).

The Middle/Late Transition reflects at short period of time where rapid culture change is argued to have occurred. This is suggested to have been influenced by a time of rapid climate change that has been identified at various locations in the Western United States (Jones et al. 1999) as well as in Patagonia (Stine 1994). It is suggested that occupants of the central coast underwent a dramatic reorganization of their social structure and subsistence practices. Sites dating to this period in Monterey County are restricted to the Big Sur locality (Jones 1995).

The Late Period is better represented in the Monterey Bay, yet these sites are most often short term task specific sites. Occupation sites are believed to commonly be located at inland areas such as the Upper Carmel Valley (Breschini and Haversat 1992b) and Santa Clara Valley (Hildebrandt and Mikkelson 1993). Late Period sites in the Monterey Bay area include CA-MNT-1765 at Moro Cojo Slough, which appears to represent a collection station and field camp (Fitzgerald et al. 1995), or CA-MNT-143 at Asilomar State Beach (Brady et al. 2008), which is a site that was used for the short term acquisition of shellfish. Concentrations of abalone shell are commonly present at late period coastal sites in the Monterey Bay (Breschini and Haversat 1991), signifying the importance of the acquisition of this resource, though more long-term occupation is generally not seen to co-occur.

Several sites are recorded within the Aptos/Soquel vicinity, and suggest that the area has been subject to human occupation for several millennia, though the location of particularly dense and rich archaeological deposits has yet to be systematically identified. CA-SCR-222 is located within the Village of Aptos. It was initially described as an extensive occupation site with a midden deposit that includes fire affected rock, large mammal bone, and shellfish remains (Morris 1979a).

Other archaeological sites in the vicinity include CA-SCR-1 on the eastern bank of Aptos Creek which contained a human burial, along with mussel and clam shell (Riddell 1949). CA-SCR-221 located north of Aptos County Park was identified by its surface manifestation that is similar to CA-SCR-222 in that it contained marine shell, fire cracked rock, a hammerstone, and large mammal bone (Morris 1979b). CA-SCR-2 is located in Aptos Village and contained flaked stone tools, ground stone artifacts fire affected rock, and ashy midden soils (Riddell and Pilling 1949). CA-SCR-52 is located near the confluence of Aptos and Valencia Creeks and contained burials along with flaked and ground stone tools (Baumhoff 1954). Other nearby sites include CA-SCR-135 (Wardill 1975), CA-SCR-233, and CA-SCR-353 (King et al. 2004). These sites were also noted to contain limited amounts of flaked and ground stone tools along with marine shell, and are also noted to have been disturbed through modern and historic development activities.

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Ethnohistoric Background

At the time of Euroamerican contact, a substantial Native American population occupied the Santa Cruz/Monterey Bay area. Spanish explorers first traveled through the Bay Area in the 1760s and the 1770s, making what were often initial contacts with its inhabitants and frequently recording some details of the events that took place. Native lands in the Monterey Bay area, were rapidly populated by Spanish and other European settlers. This drastic influx of foreigners, combined with the pressures of forced missionization and disease, resulted in abrupt modifications of native traditional cultures.

Modifying the Spanish term "costeños" or "costaños," which means "coast dwellers," many anthropologists used the term "Costanoan" in reference to native peoples that once occupied the Bay Area. In 1902, C. Hart Merriam (in Heizer 1967) referred to Bay Area languages as "Olhonean," a term derived from the name of a tribelet located between San Francisco and Santa Cruz that was spelled variously as "Alchone," "Olchone," "Oljon," or "Olhon" (Heizer 1974; Levy 1978). More recently, modern descendants of Costanoan peoples have identified themselves as "Ohlone" (Bean 1994), a derivation of Olhone, and that is the term that will be used here, except in reference to the language family.

At the time of European contact, the Ohlone occupied the San Francisco Peninsula, the east Bay south to the Delta, and the Santa Clara Valley down to Monterey and inland south to San Juan Bautista. This area encompassed a mosaic of different ecological communities, from grasslands, woodlands, and chaparral to redwood forests and seacoasts as well as bay estuary and tidal marsh. They were bounded to the north and northeast by the Miwok, and to the east by the Yokuts. Their immediate neighbors to the south included the Hokan-speaking Esselen and Salinan. The Ohlone spoke a Costanoan language, which belongs to the Utian family of the larger Penutian language stock. Speakers of Penutian inhabited north central California and included the Maidu, Wintu, Miwok, and Yokuts. The Costanoan language is divided into eight different languages, which Levy (1978) has characterized as "different from one another as Spanish is to French." According to Levy (1978:485), the Ohlone inhabitants of the Santa Cruz region spoke a Costanoan dialect known as "Awaswas, or Santa Cruz Costanoan."

It has been hypothesized that the Ohlone were relatively late entrants into the Bay Area. Linguists and archaeologists have argued that the ancestors of the Ohlone originally migrated into the San Francisco and Monterey Bay Area from the San Joaquin-Sacramento River system sometime around A.D. 500 (Levy 1978:486). This migration represented the movement of several Penutian-speaking peoples westward into areas formerly inhabited by Hokan-speakers. Other researchers have posited a much earlier time for the movement of Penutian-speakers into the Bay Area. For example, Whistler (1977) suggests that Penutian-speakers (e.g., Miwok and Ohlone) settled in the Bay Area around 3000 B.C. Whenever the migration actually occurred, the ancestors of the ethnohistoric Ohlone were fully ensconced in the Bay Area and environs by the Late Holocene.

Estimates of total Ohlone population during the time of European contact are varied. A.L. Kroeber (1925) suggested an estimate of 7,000 people, while Cook (1943) posited a total of about 11,000 at the beginning of the Mission period, and Heizer (1974) and Levy (1978)

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estimated about 10,000. Based on mission records, Milliken et al. (1993:25) estimated a population density of about 2.5 people per square mile. In the San Francisco peninsula area, Milliken (1995:19) claimed that the earliest explorers usually encountered native villages every "three to five miles," and noted that their descriptions suggested village populations numbering from 60 to 90 persons. Elsewhere in Ohlone territory, estimates of village size ranges from 200 to 400 people. Milliken (1995:19) reported that the largest Bay Area village, near Carquinez Strait, contained some 400 people. Other large villages were located on San Francisquito Creek (250 inhabitants), and on the coast at Point Año Nuevo.

By the time anthropologists like Kroeber (1925), J.P. Harrington (1985), and Merriam (1967) began their systematic studies of the California Indians in the early 20th century, many of the pre-contact cultural traditions of these native groups had been forgotten. The Ohlone were no exception. They underwent cataclysmic changes during the period of Spanish colonialism and missionization. During the Mission period, the Franciscan fathers actively discouraged or banned traditional Ohlone customs, rites, and rituals. The Ohlone also suffered a major drop in population during this time. As a result of introduced diseases and a declining birth rate, the Ohlone population fell from some 10,000 in 1770 and then to less than 2,000 in 1832 (Cook 1943). Despite this, some knowledge of their language, folkways, and material culture was preserved by the few surviving Ohlone. This information was supplemented by a few 18th century Spanish letters, diaries, and accounts. From these scattered bits of information, and archaeological investigations, ethnographers (Kroeber 1925; Broadbent 1972; Levy 1978; Bean 1994; Milliken 1995) have been able to piece together a generalized picture of traditional Ohlone culture.

The Ohlone lived in approximately 50 autonomous villages that Kroeber called tribelets (Levy 1978). The tribelet defined the basic unit of Ohlone political organization. Tribelet chiefs might be either men or women. The office was inherited patrilineally, usually passing from father to son (Levy 1978:487). Each tribelet occupied a permanent primary habitation site, in addition to many smaller resource procurement camps. Each village within the tribelet was probably occupied for several months each year, with groups of families moving between different locations as food resources became seasonally available. Groups of families coalesced during winter, in part to make use of shared food stores but also to engage in annual ceremonial activities. Many Spanish diaries also note that warfare was common between Ohlone groups, normally consisting of small-scale battles resulting from arguments over land rights, or in defense of the honor of some individual or family in a tribelet (Broadbent 1972; Margolin 1978; Milliken 1995).

The Aptos tribelet lived along the shores of Monterey Bay from the present location of Aptos and eastward about half way to the mouth of the Pajaro River. The Aptos peoples were one of four early groups converted at Mission Santa Cruz, but were actually the last of those four nearby groups to be completely absorbed into the mission in 1796. Although they did marry with their neighbors the Cotoni, Sayanta, and Uypi, they were completely mixed together with the Cajastaca people of the Corralitos area. So much mixing occurred within the nuclear family groups that the idea arises that the Aptos and the Cajastaca were a single tribal group (Milliken 1995).

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Several early references from the early Spanish explorers and Spanish Missionary records describe the presence of Native Americans in the Aptos area at the time of contact. An exploratory land expedition led by Don Gaspar de Portolá in 1769 is said to have come upon an Indian village at the confluence of the Valencia and Aptos creeks. The Spaniards recorded the site as "Aptos". In 1791, the Santa Cruz Mission was established west of the San Lorenzo River. Indians from the Aptos area were brought into the Mission compound. Records of Father Crespi in 1769, Father Palou in 1774, and the Santa Cruz Mission in 1791 describe the Aptos region, with some mention of the Native Americans who called their area "Aptos" (Brown 2001). The first recorded contact came in 1774 when the Rivera Expedition encountered residents of the village at Aptos and offered gifts. The accounts mention seven (or eleven) grass huts and a population that added up to the diarists estimation of a 'medium sized village" (Brown 2001)

The Ohlone were hunters and gatherers who supported themselves largely or entirely by the exploitation of natural plants and animals. They followed a seasonal round of resource availability. Life varied with the seasons, requiring dispersed family groups to move over the tribelet territory during seasons of abundance when a heavy labor effort was required; resources were stored for the lean winter and early spring when the tribelet tended to congregate together (Levy 1978).

Although the Ohlone consumed a variety of different foods, most references to ethnographic subsistence practices indicate that they relied on the acorn as a staple food (Beechey 1968; Bickel 1981; Broadbent 1972; King 1974; Milliken 1995:17). The preferred acorns came from Tanbark oak (*Lithocarpus densiflorus*), valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and California black oak (*Quercus kelloggii*). Readying the acorns for consumption was an involved process. Acorns were usually collected in fall and ground into flour using stone pestles in either portable stone or bedrock mortars. The flour was leached in freshwater streams to remove the tannic acid. Acorn meal was consumed during winter as mush or cakes (Broadbent 1972:61). In addition to acorns, other important plant resources were Buckeye (the nuts of which were leached and made into a mush), and the seeds of dock, gray pine, and tarweed, all of which were roasted in baskets with hot coals before eating. Berries gathered by the Ohlone included gooseberries, blackberries, madrone, and wild grapes. Roots were also gathered; these included wild onion, cattail, and wild carrot. For coastal groups, kelp was a common food, which was sun-dried and roasted (Broadbent 1972).

Shell mounds attest to the importance of shellfish in the Ohlone diet, particularly for coastal populations. Indeed, there are many references to shellfish collection and consumption in the diaries of Spanish explorers, indicating that this resource was of significance to contact-period diets. Shellfish resources of primary importance included mussels (*Mytilus* sp.), abalone, (*Haliotis* sp.), and various clam, oyster, and scallop species. Mussels, clams, and other species were probably collected year-round but primarily during winter, being taken by hand or with prying bars or sticks. Clams were dug from beds within tidal flats, and a variety of fish (salmon, sturgeon, steelhead, and numerous other species native to California waters) were captured with spears or nets from riverine or coastal habitats (Broadbent 1972; Levy 1978). In addition, sea lions, seals, and sea otters were taken, generally by clubbing them on the beaches (Baumhoff 1963:17). The meat of beached whales was also occasionally

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consumed after being roasted in earth ovens. Some Ohlone groups also used small "balsas," or rafts made from tule reeds, not only to exploit marine fishes but also to obtain lakeside waterfowl, such as ducks and geese.

Various land animals were also important to Ohlone subsistence. Large terrestrial game mammals such as deer, pronghorn, and tule elk (Baumhoff 1963:17) were key sources of protein. In order to facilitate the hunting of deer, the Ohlone periodically practiced controlled burning of chaparral-bearing grasslands and woodlands. These fires cleared lands of dense vegetation cover and increased the productivity of grasses and stimulated regrowth of tender shoots that attracted browsing deer. Rabbits were also taken. These were hunted in large, communal drives and snared in nets, where they were summarily clubbed to death. Other small game taken included squirrel, ground squirrel, woodrat, and even mouse and mole (Levy 1978:491). Insects such as caterpillars and grasshoppers were also collected and eaten.

Little is known about Ohlone mythology and cosmology, although ethnographers generally agree that their beliefs were similar to their Yokuts and Salinan neighbors to the east and south (Kroeber 1925:470-473; Levy 1978:489-490). The sun was one of several principal deities; prayers were directed to the sun through offerings of smoke, seeds, tobacco, and shell beads (Broadbent 1972; Levy 1978). Other prominent deities included Coyote, who was reputed to have taught the Ohlone the arts of subsistence. Shamans held prominent places in Ohlone culture. They wielded magical powers and maintained contact with the spirit realm. They were also healers who cured disease and could diagnose ailments through ritual singing and dancing. Shamans could also control the weather and assure an abundant crop of acorns or a successful hunt (Levy 1978:489).

The Ohlone first came into contact with Europeans in 1602-03 during the voyage of Sebastian Vizcaino, who briefly described the Ohlone inhabitants of Monterey (known as the Rumsen):

> The land [is] well populated with Indians without number many of whom came on different occasions to our camp. They seem to be gentle and peaceful people; they say with signs that there are many villages inland. The sustenance which these Indians eat most of daily, besides fish and shellfish, is acorns and another fruit larger than a chestnut; this is what we could understand of them (Vizcaino [1602] in Broadbent 1972:47).

This contact was brief and it was not until nearly 170 years later that the Ohlone again made contact with the Spanish. In 1769, Gaspar de Portola, traveling north by land along the Pacific Ocean from San Diego in order to establish a settlement in Monterey, was the first European to sight San Francisco Bay. As he journeyed through Ohlone territory, Portola gave brief descriptions of the Indians he encountered. Shortly thereafter, in 1770, Lieutenant Pedro Fages led a small expedition inland from Monterey. One of the expedition's chroniclers, Juan Crespi, made extensive notes on the aboriginal inhabitants of the area. From that time on, the Spanish were a constant presence in the lives of the Ohlone. Between 1770 and 1797, seven missions were established within Ohlone territory (Levy 1978:486).

In Santa Cruz, the Mission period (1776-1834) saw the disruption of traditional Ohlone culture and lifeways. As the Ohlone were gradually brought into the mission system, and placed under the protection and tutelage of the Mission fathers, they lost much of their erstwhile autonomous existence and traditional lifeway. Compounding the difficulties and disruption to traditional life, the Mission fathers inducted members of distant and distinct tribes into the Mission neophyte population. In Santa Cruz, Costanoan peoples were joined by Northern Valley Yokuts, conscripted from the San Joaquin Valley, as the local Indian workforce succumbed to diseases and hardships ubiquitous to the Spanish and Mexican missions.

In 1834, under the new Mexican government, secularization of the mission lands began in earnest. The indigenous population scattered away from the mission centers, and the few that were given rancherias from the mission lands were ill-equipped to maintain or work their land. Most of the former mission land was divided among loyal Mexican subjects, and the few Ohlone who chose to remain in their ancestral territory were obligated to become squatters. Some were given jobs as manual laborers or domestic servants on Mexican, or later American, cattle ranches.

The Ohlone underwent a period of near cultural anonymity from the mid-19th century to the relatively recent past. During this time Ohlone often presented themselves as other than Indian to the outside world, in large part to the discrimination suffered during and after the mission period. Present day Ohlone descendents often remark that they were unaware of their heritage or that elders and relatives had at least not encouraged an interest in Ohlone heritage.

As was common elsewhere in California, Native peoples were forced to live on the fringes of American society, often in settlements near ranches or towns, or, were subjected to forced assimilation. Often Ohlone descendents identified themselves as of Mexican heritage, in many ways a valid self-description considering the close ties, often marital between the Ohlone and Mexican groups. This however served to mask Ohlone identity for a long period.

The so-called plight of California Indians, often considered "shameful" by observers in the period, brought the attention of the federal and State governments and religious groups and missionaries. Few true reservations had been established in California at the time of the American ascension to authority in 1850, so at the beginning of the 20th century a large number of "rancherias" were established throughout California to accommodate "landless Indians". These were administered by the federal government and were strongly influenced by religious agents. Unfortunately rancherias were not established in Ohlone territory, at least not formal rancherias that would fit the criteria of federal trust status. As a result, the present day Ohlone community has been forced to seek federal trust status or formal recognition by the federal government, in the absence of a rancheria land base. Thus far no group within the greater Ohlone community has been able to navigate the hurdles to federal recognition. In the absence of such recognition, the Ohlone are denied the many benefits of federal trust status, and, importantly do not have the same standing as recognized tribes under regulations such as Section 106 of the National Historic Preservation Act. Currently under Section 106 Ohlone representatives occupy the lesser role of "interested persons" as opposed to "concurring parties".

Recognition of Ohlone heritage, while present in some form since mission times, became more public in the 1960s and 1970s. A general recognition that civil rights had been denied to minority or ethnic populations, the explosion of the pan-Indian movement, and the political statements made in such places as Wounded Knee and Alcatraz, brought the "plight" of the Native American into sharp focus. Within this context, the Ohlone began to take a much greater public interest in the protection of their heritage, cultural, spiritual, and physical. This was strongly expressed in a unified desire to preserve those elements of the traditional Ohlone lifeway still visible on the landscape: archaeological deposits from villages and camps, spiritual and ceremonial locales, and particularly burial sites.

At present the Ohlone in the Santa Cruz region are represented by a number of individuals, in turn representing themselves, family groups or organized Ohlone community groups. Interest in heritage resources in Santa Cruz has become the purview of Ohlone from Hollister, Watsonville, Monterey, Santa Clara, San Jose, and the East Bay.

Historic Context

A comprehensive historical context was developed for the ATMRP, and is presented in Appendix 2 of Clark 2008. A brief synopsis is offered here.

Spanish-Mexican Period

The Santa Cruz Mission

European occupation of Santa Cruz begins with the establishment of the *Mission La Exaltacion de la Santa Cruz*. The Mission, founded in 1791, was the 12th Franciscan mission in *Alta California*. During the Spanish occupation, the current route of Mission Street was the main thoroughfare connecting the Mission Santa Cruz to Santa Clara and Mission Dolores in San Francisco. The first mission chapel at Santa Cruz was a temporary structure of thatch and mud built close to the San Lorenzo River. Between 1793 and 1794, a more permanent adobe chapel was constructed on a higher bluff overlooking the river. The site of the second church is where Holy Cross Church currently stands on Mission Hill.

By the early nineteenth century, a complex of mission buildings was erected around the chapel and the mission prospered with extensive gardens, a grist mill, and more than 4,000 head of cattle. Mission lands included a wide-ranging grazing area that extended as far as Año Nuevo more than 25 miles north of Santa Cruz.

Damage to the church occurred in 1818 in response to threats of a pirate attack; the attack never occurred, but the church itself and many of its furnishings were damaged in the attempt to save mission property. In 1834, Governor Figueroa secularized the mission property. In 1840 an earthquake weakened the church walls, and in 1857 another tremor caused the structure to collapse entirely (Hoover et al. 1990).

Villa de Branciforte

Established in 1797, *Villa de Branciforte* was one of the three original Spanish cities in *Alta California*, the others being San Jose (1776) and Los Angeles (1781); associated lands extended to at least Soquel. Named after the viceroy of New Spain, the Villa was intended to be a mixed community of active and retired Spanish soldiers as well as civilians who would

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defend the coast against incursions from enemy powers, (i.e. Russia and Britain). The padres at the nearby Mission were vehemently against the foundation of the Villa and offered little assistance to the new settlers. Located on the river terrace opposite the San Lorenzo River from the Mission, the Villa's main thoroughfare, Branciforte Avenue, which was also used as a horserace track, was lined with crude huts, then adobe houses, some of which lasted until the middle of the 20th century (Reader 1997).

The community was very slow to grow due to the lack of support by the Spanish government and competition of cattle grazing lands with the nearby Mission. Gradually, however, more immigrants arrived during the Mexican period (1823-1846) and grew from a population of 17 in 1807 to 194 in 1845 (Reader 1997). The Branciforte area was annexed into the City of Santa Cruz in 1905.

In 1833 Rafael Castro, a retired soldier and native of Villa de Branciforte was awarded a private land grant named Rancho Aptos. The original 4,486 rancho was bounded on the west by Aptos Creek, but in 1840 Castro was granted an additional 2,200 acres extending the boundaries west to Borregas Gulch. Castro built his home on the western bank overlooking Aptos Creek and began raising cattle, shipping the hides off the beach at the mouth of Aptos Creek (Waid 1984). Rancho Soquel, occupying lands between Soquel Creek and Borregas Gulch, was granted Martina Castro, Rafael's sister, in 1833.

American Period

1840s-1870s

Americans began to settle in Santa Cruz in the 1840s, introducing more industrial and commercial enterprise to the area. The lumber trade became an important business, necessitating the construction of a wharf in Santa Cruz. In 1860, the town of Santa Cruz was the county seat with a population of 800 persons. Its shipping facilities were excellent; the wharf continued to encourage commercial growth and soon several sawmills and tanneries were operating at the edges of the town. The town of Santa Cruz was incorporated in 1866; the City was incorporated ten years later. Land use patterns of the Spanish and Mexican periods left a strong imprint on the development of the City. Parts of the former mission lands became ranchos and farms that were later subdivided into lots and ultimately into housing tracts.

Rafael Castro took his Rancho Aptos land title papers to the Land Commission in the early 1850s and in 1860 he received confirmation. Even before he had clear title, Castro received numerous offers to sell his property, but he declined, preferring instead to negotiate leases with the various sawyers and loggers who were interested in the redwood trees growing in the canyons to the north. To ship the products coming off his own property and those land grants to the east, in 1850 Castro built a relatively short five hundred-foot wharf just west of the creek mouth and during the next twenty-five years, hides, lumber, flour and agricultural products were shipped out across what became known as Aptos Landing (Collins 1995).

Also during this time, lands associated with Rancho Soquel had been divided into separate parcels, many deeded to family members. Jean Richard Fourcade, son-in law of Martina Castro, established a tannery along present day Tannery Gulch which operated from 1853-

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1858. Prior to this, he and his wife Maria Luisa Cota made their home on Potbelly Road (immediately east of the current study area) (Clark 2008:A2).

Also during this period, immigrant Chinese fisherman entered the Monterey Bay region, in hopes of exploiting the undeveloped fishing grounds and abalone beds (Clark 2008: A-8). By the mid 1950s, Chinese fishing Camps extended from Point Lobos to Año Nuevo. One such camp, known as China Beach, was located along present day New Brighton Beach (2008:14). Fishing shacks have also been documented along Potbelly Beach as late as 1915 (Clark 2008: A2 Photo 8).

1870-Present

In 1876, the narrow-gauge Santa Cruz Railroad line was completed from Santa Cruz to Watsonville, where it connected with the Southern Pacific line to San Francisco. This line cuts across the northern portion of the PBWLP alignment. Prior to the railroad, the primary mode of transportation for goods and passengers to Santa Cruz was by ocean steamer, although there was a toll road between Los Gatos and Santa Cruz. The completion of the Santa Cruz Railroad line was particularly important to local mill owners and fisherman, providing a safe alternative to shipping off the local landings (Clark 2008: Appendix 2). Completion of the railroad was also a boon to local tourism, including the development of Camp San Jose, a tourist resort located on the bluff above Potbelly Beach.

Southern Pacific purchased the Santa Cruz Railroad line in 1881 for the express purpose of expanding its tourist business; by 1887 it ran two round trips per day between San Francisco and Santa Cruz. The following decade saw an increase in the amount of tourism; railroads began transporting more passengers and less cargo (Lehmann 2002).

By the mid-1870s, Santa Cruz County was a popular resort destination. Tourism was accelerated by the promotional activities of Fred Swanton, who owned and developed the boardwalk area. He also owned the Santa-Cruz—Capitola Railroad Company, which contracted to build an electric railroad line from Santa Cruz to the beach in preparation for President Roosevelt's visit in May of 1903.

However, the opening of the highway from Los Gatos in 1915 caused a change in the nature of tourism in Santa Cruz. Families no longer stayed for weeks at a time in resorts and tent cities; with the advent of the automobile and the availability of good roads, tourists came for only a day or a weekend. In 1933 the State purchased the land now known as New Brighton Sate Beach. While the growth of automobile-based tourist enterprises was eventually stimulated, the rail-based tourist businesses suffered. The net result was a temporary decline in the prosperity of Santa Cruz as it adjusted to the culture of the automobile. The Great Depression had less impact on Santa Cruz than it did elsewhere, largely because the primary base economy of the city had shifted from manufacturing to agriculture. The onset of World War II, however, brought a drastic decline to the tourism industry due to wartime travel restrictions and gasoline rationing.

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PREDICTED ARCHAEOLOGICAL PROPERTY TYPES

Predicted Prehistoric Archaeological Property Types

Several different types of sites have been identified in the region over the course of archaeological investigation (Bourdeau 1985 and 1986; Breschini and Haversat 1981; Carroll and Holsapple 1986, Cartier 1993a, 1993b; Giambastiani and Farquhar 2003; Gifford 1978; Jones and Hildebrandt 1994, Kirk 2001, McGregor 1981, Robnich 1979, Smith and Breschini 1988, Tinsley 2006). Based on previous research, it can be anticipated that potential sites located within the project area may include midden sites, lithic scatters, burial complex/cemeteries, residential sites, and isolates. Table 1 summarizes these site types and gives examples of the characteristics most associated with each property type.

Midden Sites

Along seacoasts and rivers, a very common kind of site is the midden, an accumulation of shells, bones, and cultural refuse. Middens are usually distinguished by a high organic content that causes the soil to be noticeably darker, and can vary greatly in size. Middens are usually found where people ate shellfish and other invertebrates, fish, birds, and sea mammals. All these food sources leave a great amount of debris that was customarily piled up where the food was processed and eaten. People sometimes lived on the middens but more often their shelters were close by, away from the piles of debris. When deaths occurred, the middens were sometimes used as burial sites, perhaps because a relatively secure grave could be made by covering the body with shells. For the most part, however, middens should be considered evidence of temporary occupation rather than permanent habitation sites. They were probably used seasonally as people made their annual round, hunting, fishing, and gathering the various food resources throughout their territory.

Table 1. Prehistoric property types and their characteristics.

Property Type	Characteristics
Midden Sites	Dark, friable or greasy soil; midden constituents may include all or some of the following: shell, bone, ash, charcoal, FCR, baked clay, worked bone, flaked and ground stone, house floors, and human burials
Lithic scatter	Flaked stone debitage, projectile points and flaked stone tools; may also include some ground stone
Burial Complexes/ Cemetery	Deliberately interred burials, cremations, or human bone; beads and other ornaments (e.g., charmstones, pendants, etc.) may be interred with burials
Residential sites	Midden soils in conjunction with evidence of long-term or short term residence (house floors, FCR or rock concentrations); ash, shell and faunal material; flaked stone artifacts; ground stone artifacts including mortars, pestles, manos and milling slabs; shells beads and other ornaments
Isolates	Artifacts that are found without association with other artifacts or features; they frequently lack stratigraphic integrity and significant spatial patterning

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Lithic Scatters

Lithic scatters are collections of flaked and/or ground stone debris, including tools and debitage that relate to post-quarry reduction and tool manufacturing efforts. They are perceived primarily as daily or overnight task-oriented camps where a limited range of activities was conducted. These sites may or may not contain chronological information depending upon the presence and quantity of diagnostic items (projectile points, pottery) or dateable materials (obsidian). Lithic scatters can be perceived as *simple*, containing only flaked stone debitage and tools, or *complex*, having primarily flaked stone debris but some ground stone as well.

Burial Complexes/Cemeteries

These types of sites are where people intentionally buried their dead. Burial sites range from isolated burials in shallow holes to elaborate interments, such as whole cemeteries that may possess numerous bodies. Burials may be found in middens, under the floors of house pits, or in specially designated areas. At times certain cemeteries, or sections of a cemetery, may have been reserved for persons of one sex or age or social rank. Data gleaned from burials frequently provide archaeologists with invaluable information on past social organization. For example, both the location of a burial and elaboration of its contents may be taken as indicators of wealth, social status, and sometimes the occupation of the deceased.

Residential Sites

In simplest terms, residential sites are places where people lived and carried out their daily activities. Residential sites include large sites, such as villages, or small sites, such as camps of short duration. Villages, which are defined as permanent or semi-permanent residential sites, are assumed to have had full-family units or multiple-family occupations. Cultural deposits usually have full complements of flaked and ground stone debris within organic midden deposits, and may also have features like hearths or dwelling structures. They represent the extreme high end of data potential in terms of chronology, subsistence, exchange, and social organization, as they commonly contain a wide array of artifactual and ecofactual remains, time-sensitive artifacts, hearth and storage features, and complex living facilities.

Short-term camps represent habitations that were visited for short duration, or places that were routinely revisited over several years. Most sites of this type were chosen for pragmatic reasons – the butchering of a large mammal, availability of water or vegetation, or an abundance of tool-making stone. A few important short-term camp sites were occupied again and again, and were often situated in areas of particular richness in game or vegetable foods. Frequently, these types of camps were visited during a particular time of the year for the purpose of harvesting or acquiring a seasonally available resource (such as acorns, hazelnuts, seasonal fowl, etc.). Ethnographic accounts of the Ohlone, for example, discuss acorn harvesting as an activity that occurred during the late summer/fall.

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Isolates

Isolates are single artifacts found without association with any other artifacts or features. Although isolates reflect the past activities of groups or individuals, the lack of spatial clustering or functional patterning largely prevents the archaeologist from making inferences about prehistoric behavior. Sometimes, however, an isolate may be temporally significant especially if it is diagnostic for a particular time period, such as, for example, a Desert side-notched projectile point or an Elko-eared point.

Historic-era Resources

Although no specific historic archaeological sites have been recorded, previous investigations indicate that the project area is sensitive for American Period deposits associated with transportation (Santa Cruz Rail Road), early land-use (Fourcade Residence), and economic activities (Camp San Jose and Chinese fishing camps).

American Period archeological features or artifacts found in the project area may yield important information regarding the history of early Mid-County Santa Cruz. Applicable research questions include ethnicity and socioeconomic status as reflected in consumer behavior and disposal patterns, the impacts of late nineteenth century technological advances on domestic households, and the local effects of early twentieth century industrialization and an increasing global market.

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CULTURAL RESOURCES INVENTORY

The PBWLP cultural resources assessment was conducted in two phases. The first phase included a thorough review of cultural resources documents and recommendations developed for the Aptos Transmission Main Replacement Project (ATMRP) (Clark 2008, 2009) in order to determine if any additional studies are required for the PBWLP. Albion assessed the completeness of the previous studies including background research, resources identification efforts, survey coverage, and Native American consultation. Results of this phase were documented in a letter report dated May 7, 2009 (Appendix A). Recommendations outlined in the Phase I letter comprised the Phase II work, including a records search update, Native American consultation, and inspection of unsurveyed portions of the PBWLP.

Phase I Review of ATMRP Environmental Documentation

ATMRP Records Search and Background Research

Archaeological record searches for the ATMRP were conducted in 2003 and 2007 at the Northwest Information Center at Sonoma State University (Clark 2008:11). Records housed at the Department of Parks and Recreation (DPR) were also consulted. Records indicate that significant portions of the current PBWLP area have been previously surveyed for cultural resources including New Brighton Road, Pine Tree Lane, Potbelly Beach Road and beach area. No cultural resources are recorded within the PBWLP study area; one site, CA-SCR-213, is located adjacent to the study area, along McGregor Drive, just west of its intersection with New Brighton Road.

The records search identified several historic resources recorded in the New Brighton State Beach campground immediately west of the PBWLP study area, including: P-44-000446 (CCC-era Comfort Station); P-44-000513 (CCC-era Picnic Ramada); P-44-000512 (Menefee Residence, neo-Spanish Colonia Revival circa 1937). None are within the PBWLP study area, and are not pertinent to the current assessment.

Additional historic research conducted for the ATMRP identified four locations within the PBWLP study area that have potential for historic archaeological resources. The first, referred to as "Area E" (Clark 2008: 16) is the Santa Cruz Rail Road alignment (now Union Pacific) and the ca. 1876 New Brighton Station location, likely in the vicinity where New Brighton Road crossed the railroad. The second, "Area F1" is on the flat above Potbelly Beach drainage where New Brighton Road becomes Potbelly Beach Road. Area "F2" is located on the bluff above Potbelly Beach residences, and is thought to be the site of Camp San Jose and a hotel (circa 1878), and Pot Belly Beach Club (circa 1930). Area "F3" is a possible Chinese fishing station (circa 1877) located at the base of the bluff along Potbelly Beach (Clark 2008: 16).

Also during the ATMRP study, the Native American Heritage Commission (NAHC) was contacted to conduct a search of the Sacred Lands files and to obtain a list of Ohlone/Costanoan Native American contacts. No additional resources were identified during this search. The nine representatives identified by the NAHC were contacted by letter

requesting information on cultural recourse in the ATMRP vicinity. Two contacts, Ann Marie Sayers (Chairperson of the Indian Canyon Mutsun Band) and Valentin Lopez (Chairperson for the Amah Mutsun Tribal Band) requested further consultation.

ATMRP Surface and Subsurface Investigations

A review of resource documents and recommendations developed for the ATMRP (Clark 2008, 2009) revealed that entire ATMRP study area (including most of the PBWLP) was subjected to surface survey in October of 2007.

A single archaeological site was relocated during this effort, but being located near the western boundary of New Brighton State Park, is sufficiently distant from the PBWLP. Because the ATMRP route runs almost entirely in asphalt-paved streets and or fill areas, a series of subsurface test locations (n=54) were selected to examine areas near recorded prehistoric archaeological resources and areas with high potential for historic-age archaeological resources.

Seven of the test locations are located within, or immediately adjacent to the PBWLP project alignment. Results of the ATMRP testing and subsequent recommendations are presented in Table 2.

Table 2. ATMRP subsurface test locations within the Potbelly Beach Water Line Project alignment.

ATMRP Test Unit	Location	ATMRP Stationing	Target	ATMRP Findings	ATMRP Recommendations
Trench PB 1	New Brighton Road	10+30	Sensitive for prehistoric resources	Native soils at 65cmbs; no cultural materials, though some potential for prehistoric deposits.	Monitor HDD pits at Sta. 10+40
Trench PB 2	New Brighton Road	12+70	Area E	Historic-era artifacts (19th century). Some potential for prehistoric deposits.	Monitor HDD pits at Sta. 12+65, 12+91, 13+80
Trench PB 3	New Brighton Road	16+90	Sensitive for prehistoric resources	Native soils at 80cmbs; no cultural materials, though some potential for prehistoric deposits.	Monitor Pump Station and HDD pits at Sta. 16+00, 17+05.
Trench PB 4	New Brighton /Potbelly Beach Road	22+50	Area F1	No cultural materials.	None.
Geoprobe PB 5	Potbelly Beach Road	1+50	Area F2	Native soils at 96cmbs; no cultural materials, though some potential for historic deposits.	Monitor lower Potbelly Beach Road from Sta. 32+00 to 4+04.
Geoprobe PB 6	Potbelly Beach Road	3+20	Area F2 and F3	Native soils at 54cmbs; burned materials observed.	Monitor lower Potbelly Beach Road from Sta. 32+00 to 4+04.
Geoprobe PB 7	Potbelly Beach Road	3+80	Area F2 and F3	Native soils at 104cmbs; burned materials observed.	Monitor lower Potbelly Beach Road from Sta. 32+00 to 4+04.

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ATMRP Recommendations

The ATMRP study concluded that none of the materials discovered, including those in the vicinity of the PBWLP, were significant cultural resources (i.e. historic resources under CEQA, or historic properties under NHPA). This finding was documented in the ATMRP Mitigated Negative Declaration (MND). Citing the amount of time and expense involved in evaluating these resources further, and a judgment that evaluations are "reasonably likely to yield equivocal results", the ATMRP recommend no additional studies (Clark 2009:31). Instead, construction monitoring was recommended for areas deemed sensitive for prehistoric and/or historic-era archaeological resources (Clark 2009: 31). As part of the Section 106 consultation (ATMRP MND Mitigation Measure Cul-1.1), findings were submitted to the State Historic Preservation Officer (SHPO) for concurrence. Results of the consultation are not known at this time. There is some possibility that the SHPO will not concur with these findings and may require additional evaluation of areas that tested positive for cultural materials (ATMRP MND Mitigation Measure Cul-1.2).

Phase I Summary and recommendations for Phase II work

A review of available documents for the ATMRP revealed that two segments of the PBWLP have been previously inventoried for cultural resources during the ATMRP including: 1) New Brighton Road between McGregor Drive and the intersection with Potbelly Beach Road; and 2) lower Potbelly Beach Road paralleling Potbelly Beach. Historic –era artifacts were discovered in one location just north of the intersection of New Brighton Road and the railroad (PB 2), and in two locations along lower Potbelly Beach Road (PB 6 and 7) (Table 2). The previous ATMRP study found no evidence of prehistoric resources; however, proximity to a perennial stream (Potbelly Beach drainage) suggests both areas are sensitive for these types of resources.

Portions of the PBWLP not covered by the ATMRP study include the segment (8" water line) that trends southwest from the intersection of New Brighton Road and Potbelly Beach Road to the edge of the terrace bluff, as well as the 6" water line that extends west of this alignment. These segments are located on an elevated coastal terrace in close proximity to a perennial water source, and is highly sensitive for prehistoric archaeological resources. The area is also the reported location of Camp San Jose and the Pot Belly Beach Club, and is therefore sensitive for historic-era archaeological resources.

Base on the findings, Albion recommended the following actions for the PBWLP (Appendix A):

> *Recommendation #1*: Assuming the SHPO concurs with the ATMRP findings and recommendations, no further archaeological surveys or testing are required for areas previously investigated for the ATMRP. However, any further recommendations resulting from the ATMRP Section 106 consultation should be incorporated into the PBWLP.
>
> *Recommendation #2*: Based on these findings, it was recommended that the unsurveyed segment of the PBWLP be subjected to a cultural resources assessment to identify potential resources including archaeological sites (prehistoric and historic) and

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historic buildings. Any cultural resources identified should be recorded on appropriate DPR Forms and filed at the NWIC. A report of findings should be prepared documenting any cultural resources identified. The report should also identify any additional studies need to satisfy requirements for treatment of cultural resources under CEQA (i.e., resource evaluation, mitigation measures).

Recommendation #3: In keeping with protocols established for the ATMRP, it was recommended that the PBWLP consult with the local Native American community regarding this project. Native American Consultation typically involves contacting the NAHC to conduct a search of the Sacred Lands files and to obtain a list of Ohlone/Costanoan Native American contacts. Representatives should be contacted by mail to request additional information about the project area and to solicit comments or concerns about the project. This should be followed up with personal contact via phone, or if requested, on site (as per NAHC recommendations).

Recommendation #4: With only one exception, monitoring requirements outlined for the ATMRP appear to be prudent and should be followed for the PBWLP. Due to sensitivity for both historic and prehistoric resources, as well as the discovery of intact native soils below road fill, it is recommend that monitoring requirements for ATMRP HDD and Pump Station construction along New Brighton Road, be expanded to include all earth disturbing activities (excluding bores) along New Brighton Road from the intersection of McGregor Drive and New Brighton Road to the about 200 feet south of Pine Tree Lane.

Phase II PBWLP Cultural Resources Update

Phase II encompasses those recommendations developed during Phase I and included a records search update, Native American consultations, and pedestrian survey of portions of the project alignment not previously investigated.

Northwest Information Center Records Search Update

In order to determine if any additional cultural resources were recorded within the PBWLP project area, the following sources were consulted as part of the NWIC records search (NWIC File No.: 08-1393):

- California Inventory of Historic Resources. No resources listed
- Historic Property Data File for Santa Cruz County managed by the State Office of Historic Preservation (includes the California Register, California Historical Landmarks, and California Points of Historical Interest). No resources listed.
- National Register of Historic Places. No resources listed.

The NWIC records search identified five cultural resources studies conducted within a 1/8-mile radius of the project area. Two of the studies were conducted for residential construction; three were for public works projects. Only one of the studies, a study conducted

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for a City of Capitola EIR, falls within the project parcel (Breschini 1979). No additional cultural resources, beyond those identified during the ATMRP survey, were identified.

Native American Consultation and Traditional Resources

Albion engaged standard protocols for consultation with the members of the Native American community who might be concerned about the effect of the project on resources of traditional importance, or resources simply representing the pre-contact lifeways in the Santa Cruz area. The consultation process is described below.

Albion first contacted the California Native American Heritage Commission (NAHC) for information possibly contained in the Commission's Sacred Sites Inventory files, as well as a list of potentially interested Native Americans (Appendix C: Letter from Blount to NAHC May 18, 2009). The NAHC responded indicating that no information was found in the Commission's inventory. The response contained a list of suggested contacts (Appendix C: Letter from Pilas-Treadway to Blount, June 10, 2009).

Albion then prepared an information package for each of these contacts, including a project description and location map. This letter also indicated that no resources had been identified during the archaeological inventory. (Appendix C: Letter Blount to Native American contacts, June 29, 2009.) In June and July Albion's archaeologist Stella D'Oro, contacted, or attempted to contact each recipient. In some cases several calls were made. By July 11, 2009 five of the 11 Native American recipients had been successfully contacted (Appendix C: Table 1). None of the respondents had specific information about the area, nor did they identify or indicate any concern about potential effects to known cultural resources. One respondent, Jean-Marie Feyling of the Amah Mutsun, requested additional inventory work be completed including contacting local universities to see if additional site recodes could be located, and also the county coroner to determine if human remains were ever located within the project area. She also recommended a Native American monitor be present during the project. Anne-Marie Sayers of the Indian Canyon Mutsun also requested that a Native American monitor be present, and she also wanted to know specific plans to reinter human remains should they be identified during the project.

Regarding Ms. Feyling's request for additional contact to universities and the coroner's office, it is Albion's judgment that records searches conducted at recognized state information centers for current project and Aptos Transmission Main Relocation Project (ATMRP) are sufficient to identify resources and previous studies, and that no further action is necessary.

As to monitoring protocols, the current project will follow monitoring requirements established for the ATMRP Mitigated Negative Declaration (MND); archaeological monitor will be present in areas sensitive for cultural resources. In the case that human remains are discovered, the NAHC will be contacted to assign a Most Likely Descendant (MLD), who will work with the project to determine proper treatment of remains. Also, in accordance with Santa Cruz County Code (Chapter 16.40.040-16.40.050) , if Native American artifacts or human remains are encountered during the project, local Native American groups will be

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notified and invited to inspect the find, and if needed, to participate in consultation regarding any necessary archaeological excavation.

These recommendations were communicated to Ms. Feyling and Ms. Sayers in phone calls placed August 2009.

Field Survey

On May 25, 2009, Albion staff archaeologist Stella D'Oro and Cher Peterson conducted surface and subsurface archaeological investigations along portions of the PBWLP not previously surveyed. A pedestrian survey was first conducted over the alignment from the intersection of New Brighton and Potbelly Beach roads southward along the private drive to the cliff edge, and then along the western-most section extending westward through a wooded area (for the 6" pipe). The surface survey included areas 8-10 meters on either side of the alignment as well as relatively flat, open areas on the bluff adjacent (within 70 meters) to the alignment (Figure 3).

While surveying this flat area, the archaeologists met the property owner, George Gray, who showed them the foundation walls of Camp San José built in 1878, formerly located on his property (Appendix B, Photograph 1). Now situated under a landscaped garden, the brick foundation is located 8 meters southwest of Mr. Gray's wooden deck, about 30 meters east of the PBWL alignment. During the process of gardening, Mr. Gray unearthed many artifacts which he keeps in a coffee can; these include historic ceramics, glass, and metal. Several fragments of ceramics have been identified as "Willow Pattern," a British transfer print dating to 1800-1830 (Neale 2005) (Appendix B: Photograph 2).

Visibility of soil surfaces throughout most of the project area was generally poor and consisted of heavily-wooded areas with several inches of duff, brush, blackberry bushes, and poison oak. The exceptions are the paved private road and the footpath from the cul-de-sac to the cliff's edge (east of the alignment). On the footpath, there is an area of burned soil approximately 10 x 20 feet. According to George, this area once was the location of a shed, which was recently moved. Currently the area serves as a communal vegetation burn spot. Surface soils in the rest of the alignment consisted of medium brown loam. The surface inspection produced two shell fragments, two ceramic fragments, and one piece of burned bone.

Following surface inspection, four shovel tests were excavated within the project alignment to check for subsurface cultural deposits. The shovel tests measured approximately 50 cm in diameter, and were excavated to a depth of 60 cm below current grade. Soils were removed in three 20 cm increments. Excavated soils were screened through $^{1}/_{8}$-inch mesh. The shovel tests were distributed in the southern and western sections of the alignment (Figure 3).

Shovel Probe 1 (Appendix B: Photograph 3) was placed at the point where the alignment splits, approximately 20 feet southwest of the end of the cul-de-sac on the private drive. Soils from 0-20 cm consisted of dark yellowish-brown (10YR 3/4), compacted fine silty loam with rootlets and approx. 50% pea-sized or smaller gravels. Soils in the second level (20-40 cm) were very dark grayish-brown (10YR 3/2), compacted fine silty loam with approx. 50% pea-

sized or smaller gravels. Soils in the final level (40-60 cm) were very dark gray (10YR 3/1) compact fine silty loam with 20% pea-sized or smaller gravels. No cultural materials were recovered.

Shovel Probe 2 (Appendix B: Photograph 4) was placed on the western-most section of the alignment 50 feet west of the split (at the location of SP 1). Soils were homogenous from 0-60 cm consisting of brown (10YR 4/3) medium-compacted silty loam, approx. 50% pea-sized or smaller gravels, and roots. Two small sandstone cobbles (5 cm long) were found in the 40-60 cm level. No cultural materials were recovered.

Shovel Probe 3 (Appendix B: Photograph 5) was placed on the alignment at the proposed bore pit 80 feet southwest of the split in the alignment (at the location of SP 1). Soils from the first level (0-20 cm) consisted of dark brown (10YR 3/3), compacted fine silty loam with rootlets and approx. 50% pea-sized or smaller gravels. A small clamshell fragment was collected from the first level. Soils in the second and third levels (20-60 cm) were very dark grayish-brown (10YR 3/2), compacted fine silty loam with approx. 30% pea-sized or smaller gravels and roots. No cultural materials were recovered from 20-60 cm.

Shovel Probe 4 (Appendix B: Photograph 6) was placed near the edge of the bluff 140 feet southwest of the split in the alignment (at the location of SP 1). Soils from the first level (0-20 cm) consisted of brown (10YR 4/3), medium-compacted fine silty loam with rootlets and approx. 50% pea-sized or smaller gravels. Soils in the second and third levels (20-60 cm) were dark brown (10YR 3/3), compacted fine silty loam with approx. 50% pea-sized or smaller gravels and roots. A large root was located on the southeastern portion of the unit at 58 cmbs. No cultural materials were recovered from this unit.

Phase II Summary

Phase II of the PBWLP cultural resources inventory, including an updated records search, Native American consultation, pedestrian survey and limited subsurface investigations did not reveal evidence of intact prehistoric or historic-age archaeological deposits that would require further evaluation or mitigation under CEQA. That said, the area is highly sensitive for historic-era resources, especially features associated with Camp San Jose, a resort known to have occupied the bluff above Potbelly Beach in the late 1870s.

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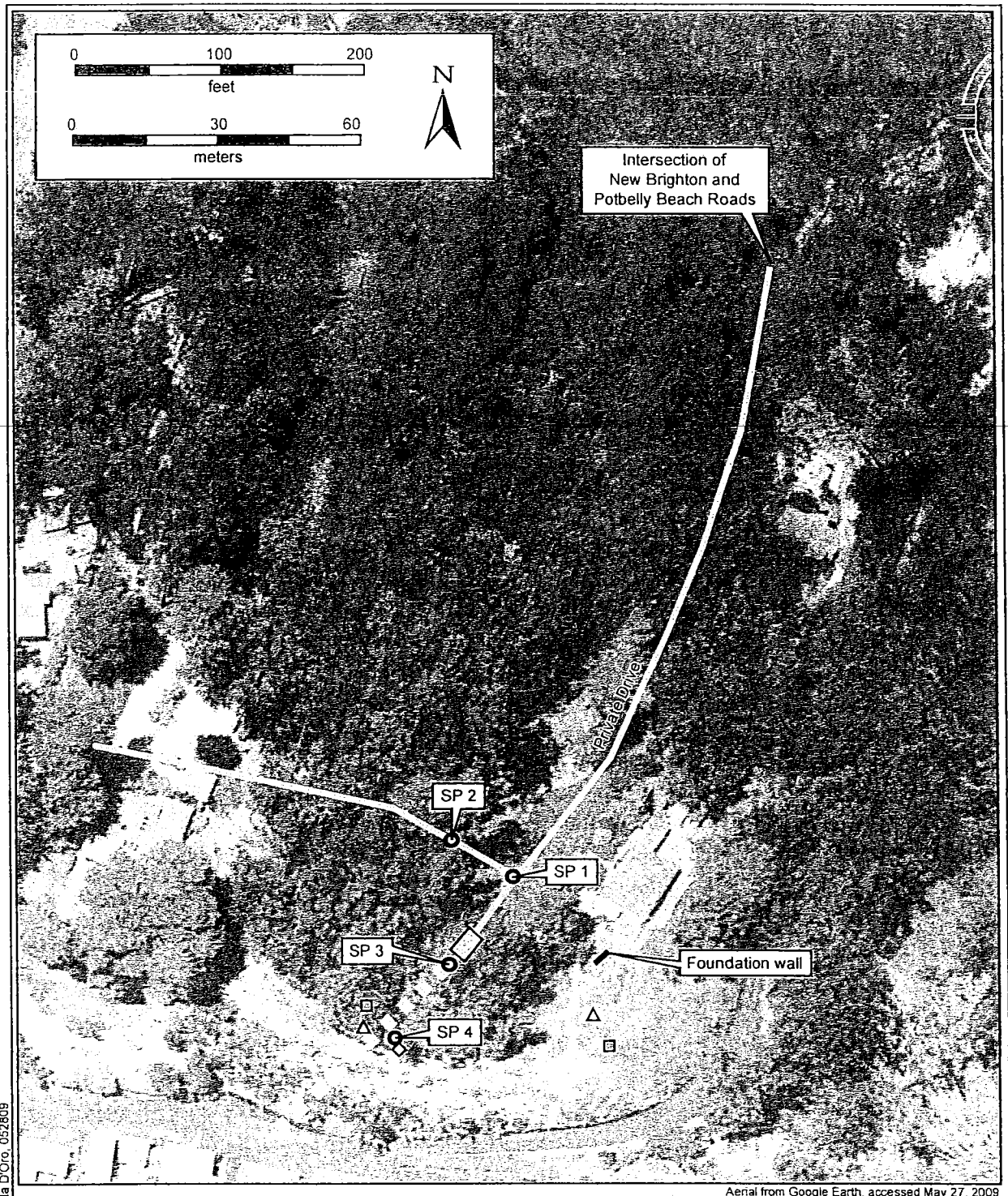

Aerial from Google Earth, accessed May 27, 2009

File name: Figure_3.ai, J2009-007, Stella D'Oro, 052809

Legend

- Potbelly Beach Water Line Project (PBWLP)
- PBWLP bore
- Shovel probe (SP)
- Burn area
- Ceramic
- Bone
- Shell

Albion Environmental, Inc.

Figure 3. Location of shovel probes.

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CONCLUSIONS AND RECOMMENDATIONS

The current study, including a review of ATMRP environmental documents, an updated records search, and inspection of previously unsurveyed project segments revealed no evidence of intact prehistoric or historic-age archaeological deposits in the PBWLP alignment. Previous investigations for the ATMRP reported sparse accumulations of historic –era artifacts in one location just north of the intersection of New Brighton Road and the railroad (PB 2), and in two locations along lower Potbelly Beach Road (PB 6 and 7), however, none were judged to be significant cultural resources (historical resources under CEQA) (Clark 2009:31). Additionally, a few ceramic shards, possibly associated with a hotel dating to the late 1870s, were observed on the surface in areas immediately adjacent to the PBWLP alignment. No associated subsurface deposits were encountered during limited shovel testing of the area.

Based on these findings, it is Albion's judgment that the PBWLP, is not likely to impact historical resources, and no further evaluation or mitigation is required. However, the area is sensitive for prehistoric and historic-era cultural resources, and preventive measures should be taken to address unanticipated discoveries.

Recommendations

- Assuming the SHPO concurs with the ATMRP findings and recommendations (ATMRP MND Mitigation Measures Cul-1.1 and 1.2), no further archaeological surveys or testing are required for PBWLP. However, any further recommendations resulting from the ATMRP Section 106 consultation (directly related to the PBWLP area) should be incorporated into the PBWLP.

- Given the areas sensitivity for cultural resources it is recommended that a qualified archaeological monitor be present during ground disturbance in specified project areas to ensure that any newly discovered resources are evaluated in accordance with CEQA guidelines.

  Specifically, monitoring should include all earth disturbing activities in the following locations:

  - New Brighton Road from its intersection of McGregor Drive to about 200 feet south of Pine Tree Lane (incorporates recommendations from ATMRP for Sta. 207+00 through 250+00);

  - lower Potbelly Beach Road, paralleling Pot Belly Beach (incorporates recommendations from ATMRP for Sta. 32+00 through 4+03.8).

  - water line segment (8" water line) that trends southwest from the intersection of New Brighton Road and Potbelly Beach Road to the edge of the terrace bluff, as well as the 6" water line that extends west of this alignment.

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- If prehistoric or historic deposits or features are discovered during construction, work must be halted in that area until a qualified archaeologist can assess the significance of the find (also in accordance with ATMRP MND Mitigation Measure Cul-1.3). Additional archaeological survey will be needed if project limits are extended beyond the present survey limits. In the case that human remains are discovered, the NAHC will be contacted to assign a Most Likely Descendant (MLD), who will work with the project to determine proper treatment of remains. Also, in accordance with Santa Cruz County Code (Chapter 16.40.040-16.40.050) , if Native American artifacts or human remains are encountered during the project, local Native American groups will be notified and invited to inspect the find, and if needed, to participate in consultation regarding any necessary archaeological excavation.

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EXHIBIT D

Recommendation #3: Native American Consultation typically involves contacting the NAHC to conduct a search of the Sacred Lands files and to obtain a list of Ohlone/Costanoan Native American contacts. Representatives should be contacted by mail to request additional information about the project area and to solicit comments or concerns about the project. This should be followed up with personal contact via phone, or if requested, on site (as per NAHC recommendations).

Monitoring

With only one exception, monitoring requirements outlined for the ATMRP appear to be prudent and should be followed for the PBBWLP.

Recommendation #4: Due to sensitivity for both historic and prehistoric resources, as well as the discovery of intact native soils below road fill, it is recommend that monitoring requirements for ATMRP HDD and Pump Station construction along New Brighton Road, be expanded to include all earth disturbing activities (excluding bores) along New Brighton Road from the intersection of McGregor Drive and New Brighton Road to the about 200 feet south of Pine Tree Lane.

Please feel free to contact me at 831-469-1875 or jfarquhar@albionenvironamm.com if you have any questions about our findings or recommendations.

Sincerely,

Jennifer M. Farquhar

Jennifer M. Farquhar
Principal

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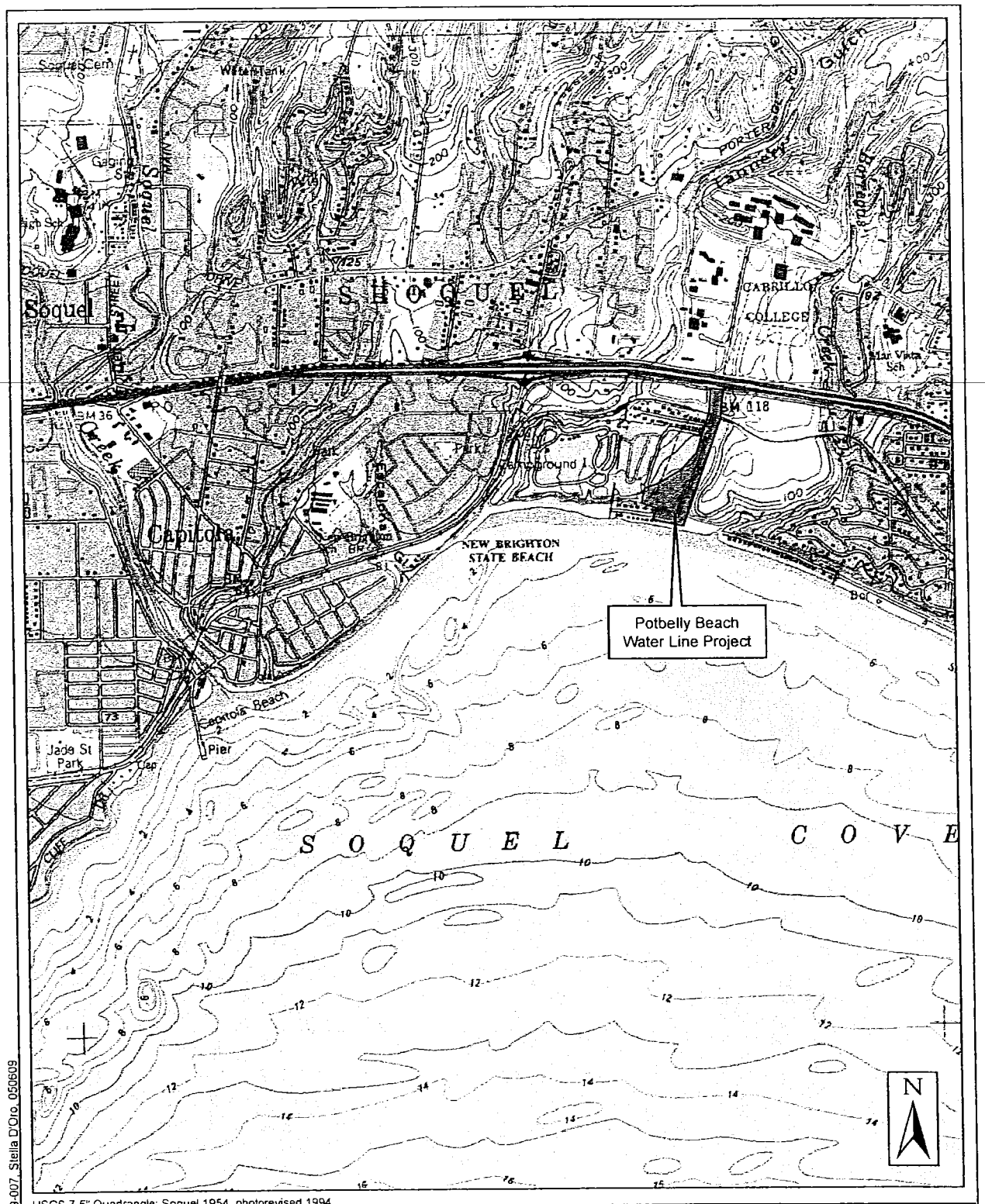
EXHIBIT D



USGS 7.5" Quadrangle: Soquel 1954, photorevised 1994

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Albion Environmental, Inc.

Figure 1. Project location.

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EXHIBIT D

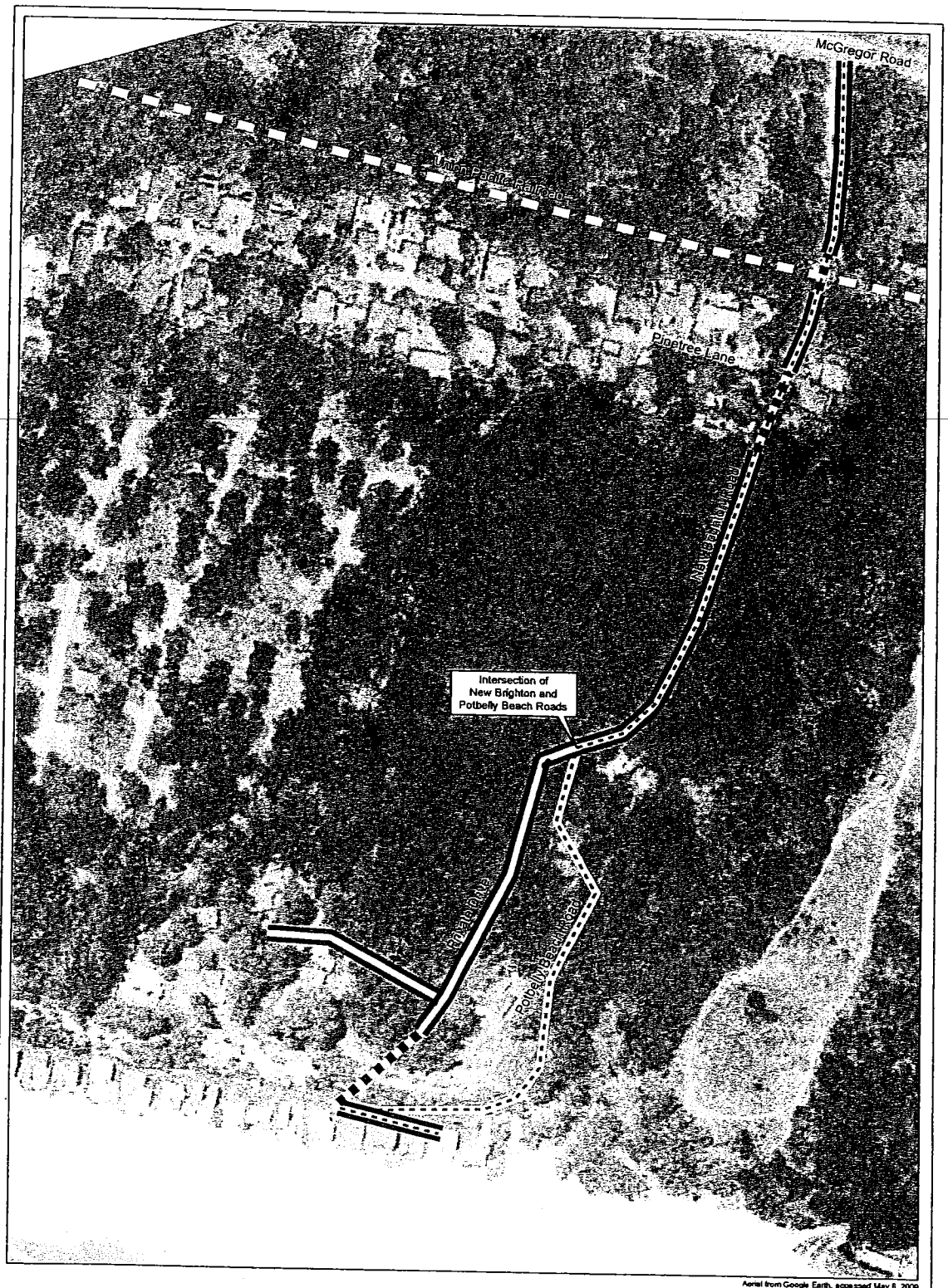

Figure 2. Potbelly Beach Water Line Project and Aptos Transmission Main Replacement Project alignments.

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APPENDIX B

PHOTOGRAPHS

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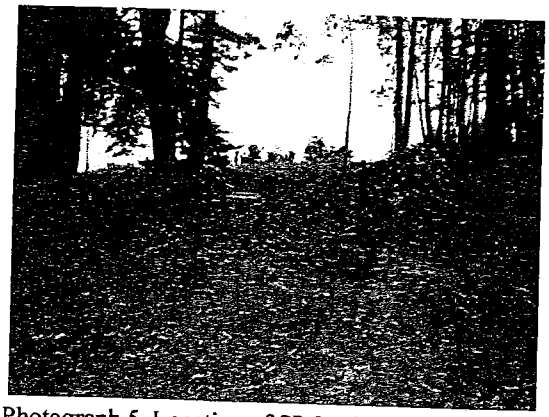
Photograph 1. Foundation of Camp San José in garden (facing northwest).

Photograph 2. "Willow Pattern" ceramics found near historic foundation (plan view).

Photograph 3. Location of SP 1 with C. Peterson (facing southwest).

Photograph 4. Location SP 2 with C. Peterson (facing west).



Photograph 5. Location of SP 3 with C. Peterson (facing southwest).

Photograph 6. Location of SP 4 with S. D'Oro (facing south).

EXHIBIT D

APPENDIX C

NATIVE AMERICAN CONSULTATION DOCUMENTAION

EXHIBIT D

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
916 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390

June 10, 2009

Clinton Blount
Principal
Albion Enviromental, Inc.
1414 Soquel Avenue, Suite 205
Santa Cruz, CA 95062

Sent by Fax: (831) 469-9137
Number of Pages: 3

Re: Pot Belly Beach Water Line Project, Santa Cruz County

Dear Mr. Blount:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure toiconsult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

EXHIBIT D

Native American Contacts
Santa Cruz County
June 10, 2009

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
jakki@bigvalley.net
(209) 892-1060
Ohlone/Costanoan

Amah/Mutsun Tribal Band
Melvin Ketchum III, Environmental Coordinator
7273 Rosanna Street
Gilroy , CA 95020
408-842-3220
Ohlone/Costanoan

Amah MutsunTribal Band
Valentin Lopez, Chairperson
3015 Eastern Ave, #40
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vlopez@amahmutsun.org
(916) 481-5785
Ohlone/Costanoan

Amah/MutsunTribal Band
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(650) 851-7489 - Fax
Ohlone/Costanoan

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Davis , CA 95616
aerieways@aol.com
Ohlone/Costanoan
Northern Valley Yokuts

Amah/MutsunTribal Band
Jean-Marie Feyling
19350 Hunter Court
Redding , CA 96003
amah_mutsun@yahoo.com
530-243-1633
Ohlone/Costanoan

Amah/Mutsun Tribal Band
Joseph Mondragon, Tribal Administrator
882 Bay view Avenue
Pacific Grove , CA 94062
831-372-9015
831-372-7078 - fax
Ohlone/Costanoan

Costanoan Ohlone Rumsen-Mutsen Tribe
Patrick Orozco
644 Peartree Drive
Watsonville , CA 95075
yanapvoic@earthlink.net
(831) 728-8471
(831) 728-8471
Ohlone/Costanoan

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Pot Belly Beach Water Line project, Santa Cruz County.

Native American Contacts
Santa Cruz County
June 10, 2009

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister , CA 95024
ams@garlic.com
831-637-4238
Ohlone/Costanoan

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
PO Box 360791
Milpitas , CA 95036
muwekma@muwekma.org
408-434-1668
408-434-1673
Ohlone / Costanoan

Trina Marine Ruano Family
Ramona Garibay, Representative
16010 Halmar Lane
Lathrop , CA 95330
soaproot@msn.com
209-629-8619
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Pot Belly Beach Water Line project, Santa Cruz County.

EXHIBIT

ALBION ENVIRONMENTAL, INC.
NATURAL AND CULTURAL RESOURCES CONSULTANTS

1414 SOQUEL AVENUE, SUITE 205
SANTA CRUZ, CALIFORNIA 95062

TELEPHONE (831) 469-9128
FACSIMILE (831) 469-9137

May 18, 2009

Debbie Pilas-Treadway
Native American Heritage Commission

FAX Transmittal

Re: Pot Belly Beach Water Line Project, City of Aptos, Santa Cruz County

Dear Ms. Pilas-Treadway:

Albion Environmental, Inc. (Albion) is assisting Hamilton Swift Land Use and Development Consultants, Inc. in the cultural resources assessment of the site of the proposed water line for Pot Belly Beach. The project is located in Aptos, California, just south of McGregor Drive, and east of New Brighton State Park campground. A large portion of the project follows the alignment for the Santa Cruz County Sanitation District's Aptos Transmission Main Relocation Project (ATMRP), currently under separate environmental review. The project is located in the Township 11 South, Range 1 West (Soquel Quadrangle, 1954, Revised 1994) in an area where there are no section numbers. Please see the attached map showing the project area plotted on the Soquel Quadrangle.

We would appreciate any information you may be able to provide from your files, and guidance on possible contacts in the interested Native American community.

Thank you in advance for your help in the matter. If you have any questions, please contact Stella D'Oro at (831) 469-1771 (direct line); I am available at (831) 466-1787 (direct line). We may both be contacted by FAX at (831) 469-9137.

Sincerely,

Clinton Blount
Principal

EXHIBIT D

Appendix C: Table 1: Potbelly Beach Water Line Project Native American Consultation Table

Name of Native American Representative (Tribal Affiliation)	Delivery of 6/12/09 letter confirmed?	Follow up Information	Concerns	Albion Recommendations
Jakki Kehl (Ohlone/Costanoan)	No. Letter returned unclaimed 7/13/09.	Phoned 6/30/09: Phone did not accept message.	No response	No further action needed
Valentin Lopez (Amah Mutsun)	Yes	Phoned 6/30/09: Left message.	No response	No further action needed
Edward Ketchum (Amah Mutsun)	No. Letter returned unclaimed 7/13/09.	Emailed 6/30/09 (NAHC did not provide a phone number). Mr. Ketchum responded in email 7/1/09 asking about project location. He was emailed details and a map on the same day.	7/2/09 Mr. Ketchum sent an email. Indicating that while he had no specific site information, proximity to ocean and creeks, there is a strong possibility that a village is located in the area.	No further action needed
Joseph Mondragon (Amah Mutsun)	No. Letter returned unclaimed 7/8/09.	Phoned 6/30/09: Disconnected number.	No response.	No further action needed
Melvin Ketchum (Amah Mutsun)	Yes	Phoned 6/30/09: Left message.	No response	No further action needed
Irene Zwierlein (Amah Mutsun)	Yes	Phoned 6/30/09: Spoke to Ms. Zwierlein.	No concerns about project area.	No further action needed
Jean-Marie Feyling (Amah Mutsun)	Yes	Phoned 6/25/09: Spoke to Ms. Feyling.	Recommended calling local universities to insure they haven't excavated in the area and haven't written reports sent to NWIC; also suggested calling the County coroner to ensure no Native American remains have been found in the project area. She also recommended monitoring by a Native American. Project recommendations will be communicate to Ms. Feyling upon completion of report.	Records searches conducted at state information centers for current project and Aptos Transmission Main Relocation Project (ATMRP) are sufficient to identify resources and previous studies. No further action is necessary Project will follow monitoring requirements for ATMRP Mitigated Negative Declaration (MND); archaeological monitor will be present in areas sensitive for cultural resources. NAHC will be contacted if Native American human remains are encountered. The NAHC will assign a Most Likely Descendant (MLD), who will work with the project to determine proper treatment of remains. Also, in accordance with Santa Cruz County Code (Chapter 16.40.040-16.40.050) , if Native American artifacts or human remains are encountered, local Native American groups will be notified and invited to inspect the find, and if needed, to participate in consultation regarding any necessary archaeological excavation.

[1] = Provided by Native American Heritage Commission (NAHC)

Appendix C: Table 1: Potbelly Beach Water Line Project Native American Consultation Table (Continued)

Name of Native American Representative	Delivery of 6/12/09 letter confirmed?	Follow up Information	Concerns	Albion Recommendations
Ann-Marie Sayers (Indian Canton Mutsun)	Yes	Ms. Sayers sent an email 6/24/09.	Recommended a Native American monitor during construction and would like to know where remains will be reinterred in the event they are located. Project recommendations will be communicate to Ms. Sayers upon completion of report.	Project will follow monitoring requirements for ATMRP Mitigated Negative Declaration (MND); archaeological monitor will be present in areas sensitive for cultural resources. NAHC will be contacted if Native American human remains are encountered. The NAHC will assign a Most Likely Descendant (MLD), who will work with the project to determine proper treatment of remains. Also, in accordance with Santa Cruz County Code (Chapter 16.40.040-16.40.050) , if Native American artifacts or human remains are encountered, local Native American groups will be notified and invited to inspect the find, and if needed, to participate in consultation regarding any necessary archaeological excavation.
Patrick Orozco (Costanoan Ohlone Rumsen-Mutsen)	Yes	Phoned 6/30/09: Left message. Mr. Orozco returned call 7/1/09.	Aware of a site in the New Brighton Beach area located during restoration work in Camp Ground. He was informed that site is out of project area.	No further action needed
Rosemary Cambra (Muwekma Ohlone)	No. Letter returned unclaimed 6/30/09.	Mailed the letter again via FED EX 6/29/00; delivered confirmed on 6/30/09. Phoned (408) 434-1668, but no answer. Phoned (408) 434-1673, but number has been disconnected. Both phone calls were made on 6/30/09.	No response	No further action needed
Ramona Garibay (Trina Marine Ruano Family)	No. Letter returned unclaimed 7/8/09.	Phoned 6/30/09: Phone did not accept message.	No response	No further action needed

APTOS TRANSMISSION MAIN RELOCATION PROJECT

HISTORIC RESOURCES INVENTORY AND INITIAL SUBSURFACE RECONNAISSANCE FOR ARCHAEOLOGICAL RESOURCES

by

Matthew R. Clark
Registered Professional Archaeologist

July 2008

Prepared For

Santa Cruz County Sanitation District
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EXHIBIT D

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1. Archaeological Test Trench Log.
2. **Historical Research and Context for Potential Archaeological Sensitivity for the Aptos Transmission Main Relocation Project**, by Charlene Duval, Sandy Lydon, Carolyn Swift.

EXHIBIT D

INTRODUCTION AND MANAGEMENT SUMMARY

The "Aptos Transmission Main Relocation Project" wastewater collection and transmission project (ATMRP or "Project") by the Santa Cruz County Sanitation District (SCCSD/District) is in the City of Capitola and the unincorporated communities of Aptos, Seacliff, and Rio del Mar (Map 1). The Project proposes new, expanded or improved force mains; repairs, relocation and/or abandonment of several existing force mains; some small sections of gravity sewer pipeline; several new pump stations; and, removing from service some existing wastewater lines and pump stations. Portions of the Project are within two units of the California State Parks system, New Brighton State Beach (NBSB) and Seacliff State Beach (SSB), and are subject to review and permitting by the Department of Parks and Recreation (DPR).

The Project is under review for California Environmental Quality Act (CEQA) compliance. The County of Santa Cruz is CEQA Lead Agency; DPR and others are "responsible" or "trustee" agencies under CEQA. This report describes cultural resources inventory work done for CEQA compliance only, as per direction furnished by the County, for incorporation into an Initial Study/Mitigated Negative Declaration. Project compliance with Section 106 of the National Historic Preservation Act (NHPA) will also be required, but that compliance is not addressed here.

Developing the historic resources inventory for the Project entailed several steps. A surface reconnaissance of the Project Area was completed, but was of little utility. An historic resources records search and other archival research encompassed a wider area to provide context. Parks personnel were also consulted for archaeological and historic information. Ohlone/Costanoan Native American representatives designated by the Native American Heritage Commission were contacted to invite and solicit consultation, asking for any information or concerns relevant to the Project. Project-specific historical research by knowledgeable local historians focused on archaeological sensitivity was commissioned (Appendix 2). Incorporating information gained by these efforts, a program of subsurface archaeological testing was completed and is described here.

Archival, project-specific historical, and subsurface research, and input from the one Ohlone/Costanoan representative to respond, indicate that the Project runs through archaeologically sensitive zones. Four recorded archaeological sites are in or very near the Project impact zones; two will not be affected, the other two merited subsurface investigation to determine whether impacts could ensue. Twelve exploratory trenches and one test unit were excavated. No evidence of the one site recorded on State Parks property was found. Archaeological materials were found at two other locations, each of which was investigated further; these may be related to a previously recorded but poorly defined prehistoric site. At one location along McGregor Drive a single prehistoric artifact was found but three additional trenches very close to that discovery found no archaeological evidence. Another trench along McGregor found a possible prehistoric cultural feature and was explored with a hand-excavated test unit; the trench and unit yielded a few likely artifacts in an obscure context. No potentially significant historic materials were found by subsurface testing.

Archaeological monitoring is recommended as the appropriate and most workable measure under CEQA to mitigate potential adverse impacts to historic resources. Justification for and description of what monitoring should entail are provided at the conclusion of this report.

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PROJECT DESCRIPTION

The ATMRP "Project Description" is in the "Draft Initial Study/Mitigative Negative Declaration" CEQA document of September 2007:

> The existing Aptos Transmission Line, constructed in 1979, delivers sewer flows from various gravity subsystems of the Santa Cruz County Sanitation District (District) to the East Cliff Pump Station. The facility extends from the southeastern regions of the District, at the Rio Del Mar Pump Station, to the East Cliff Pump Station at its northwestern end. The existing alignment follows roadways and skirts beach areas and includes a series of pumping stations. The limits for this project include an existing 24-inch force main which runs westward from Rio Esplanade (formerly known as Aptos Esplanade) Pump Station (REPS) along the beach to Park Avenue, where it continues west to Capitola.
>
> Shortly after construction, a segment of the line between the REPS and the New Brighton Beach Pump Station (NBPS), in the Potbelly Beach area, experienced a structural failure. This failure resulted in a breach in the pipeline and subsequent sewage discharge into Monterey Bay. The high-density polyethylene (HDPE) pipeline is relatively flexible and has been susceptible to sags and reduction in the cross-sectional area due to pinching. The District has had to make point repairs and surround portions of the pipeline in concrete to maintain its integrity.
>
> The District commissioned four studies to identify a long-term solution to these ongoing problems. The various repair alternatives included open trench excavation repairs, trenchless rehabilitation-/replacement of the line on the beach, and rerouting the line off Potbelly Beach to an inland location. The District's consultants subsequently identified five options, four of which involved repairing the pipeline on the beach and one that involved rerouting the line to an inland location (...). The District selected the rerouting alternative as its preferred alternative, and is the project assessed in this Initial Study/Proposed Mitigated Negative Declaration [EDAW et al. 2007:5].

The Project is located on the US Geological Survey "Soquel" 7.5 topographic quadrangle, a portion of which is reproduced here as Map 2. Details of the routes and construction are provided on the "Project Plans for the Construction of Aptos Transmission Main Relocation," pertinent portions of which are referred to and supplied here (by page number, e.g., PP-1) (Harris & Associates, Jan. 15, 2008). The primary force main route (on Park Avenue, McGregor Drive, State Park Road, Beach Access Road, Moosehead Drive, Marina Avenue) runs about 3.1 miles/5 km total; much of this length will be constructed as parallel mains or existing main will be slip-lined and parallel main constructed. Project work will include five new or improved pump stations (at New Brighton Beach, New Brighton State Beach Campground, Tannery Gulch, Pot Belly Beach, and Rio Esplanade).

The primary transmission main project route runs, west to east, in Capitola along Park Avenue from just below/east of Washburn Avenue and just above/west of the Park Avenue Apartments, down Park Avenue for about 0.67 mile/1.08 km and onto McGregor Drive (the frontage road paralleling State Route 1). The route leaves the City of Capitola on McGregor Drive about 0.9 miles/1.45 km from the start, east of the entry road to NBSB (at approximately Sta. 219+50, Sheet PP-9) and the rest is within unincorporated County and/or DPR lands. A smaller main branches from the primary downslope to the east off Park Avenue about 0.4 miles/0.64 km from the western start, running under the Union Pacific Railroad (UPRR) tracks onto NBSB land and the NBSB Day-use parking lot,

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where it branches again, one reach running eastward along New Brighton/China Beach to an existing restroom/pump station, both of which will be replaced, and the other reach running northeastward up the slope bordering the parking lot into the NBSB Campground on the bluff above the beach, where another new pump station will be constructed. Total length of the project on NBSB property is about 0.39 miles/0.63 km.

The primary route continues to follow McGregor Drive east, paralleling SR 1, branching southward at New Brighton Road into Tannery Gulch, crossing under the railroad into and through a private subdivision (Pine Tree Lane Homeowner's Association) and downslope onto Pot Belly Beach Road and Pot Belly Beach Homeowner's Association (PBBHA) property (another private subdivision), ending next to private homes on Pot Belly Beach. The Tannery Gulch Pump Station will be constructed just south of the Pine Tree Lane properties on a property to be acquired by the District. Another pump station will be constructed at about 15 feet elevation just behind the Pot Belly Beach houses. The current main servicing the residences on Pot Belly Beach running eastward on the beach will be plugged and abandoned, the manholes removed by excavations. Total length of the section to Pot Belly Beach is about 0.5 miles/0.8 km; new gravity sewer will be constructed on part of this section.

From New Brighton Road the primary main continues east on McGregor Drive, curving south and then southwest, jogging east over to State Park Road, again crossing under the railroad, into DPR property and down a steep slope to cut across the loops in the road, into Seacliff State Beach. At the Parks access road paralleling the beach, Beach Access Road, the main turns southeast to follow the road to Aptos Creek, crossing under the creek by horizontal directional drilling (HDD), emerging into "The Esplanade" parking lot, reversing course to the northwest to Moosehead Drive and leaving SSB property, to finally turn right/southeast onto Marina Avenue and run the short distance to the Rio Esplanade Pump Station. A small length of gravity sewer (234'/71.3 m) will be dug up and replaced on SSB property on the west side of the mouth of Aptos Creek. Total length of the primary main project on SSB property is about 0.66 mile/1.06 km.

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PROJECT CONTEXT

Cultural, archaeological, and/or historic resources likely to exist in the Project Area are produced by the interaction of human behaviors with the physical environment--i.e, adaptations made to utilize resources that allow human use and occupation of the location. To find, understand the genesis and uses, and interpret the meanings of cultural resources in the Project Area, knowing the past and present environmental and cultural context is essential. Following is a basic description of the natural setting, current conditions, and cultural past of the Project Area.

Topographic/Geological/Biophysical

The Aptos Transmission Main Relocation Project will be constructed through three general types of topographic/environmental areas. Most work will take place on the coastal terrace above the beaches, relatively level and flat areas where elevation ranges from about 50 to 150 feet above sea level. The often quite steep slopes from the terrace down to the beaches and across watercourses will be traversed for the branch to the NBSB campground and beach, the Tannery Gulch/Pot Belly Beach section, and the approach to Beach Access Road in SSB (several other formerly steep watercourses will be crossed on historic fill along McGregor, as at Tannery Gulch and Borregas Creek). Upper sandy beaches at the foot of the terrace cliffs will contain the NBSB line from the Day-use parking lot to the new pump station and restroom location (along a filled and riprap-buttressed dirt road), the lowest portion of the Pot Belly Beach work (in the paved and presumably filled roadway), and along Beach Access Road (built on fill and paved, with adjacent parking, picnic and group areas, restrooms, etc.). For areas formerly sandy beach, a fourth setting might be added: filled zones; the Esplanade east of Aptos Creek, which was historically a marshy zone open to tidal and wave action, is a notable example.

Several perennial and semi-perennial but not very large streams are crossed by the Project routes; these drain relatively small watersheds running southward across the coastal terrace. From west to east, Escalona Gulch, Tannery Gulch, and Borregas Creek are shown as semi-perennial watercourses on the topographic maps, while at the east end Aptos Creek is a perennial stream. All these have been channelized to some extent and/or had culverts installed for road crossings and other development. Escalona Gulch is no longer even visible in the Project vicinity along Park Avenue, but is evidenced by the drop in elevation just east of the project start. Tannery Gulch, which was probably perennial prior to the twentieth century, is crossed by culverts on McGregor Drive and for the railroad and entirely filled over in the NBSB Day-use parking lot. Borregas Creek, probably also perennial historically, is crossed by McGregor Drive and railroad culverts but otherwise flows unimpeded to the beach. Aptos Creek has been channelized in the Project vicinity, but the concrete channel is itself an historic location, bordered by a steep cliff at the west and the filled former marshland at the Esplanade. These watercourses would have been the foci of prehistoric cultural activities (most prehistoric sites are recorded on the banks and terraces along streams), and have also been locales of various uses and developments since the earliest historic times. Numerous unnamed smaller watercourses or gulches also occur along the terrace cliff, the largest being the apparently unnamed seasonal stream down paralleling Pot Belly Beach Road. Several of these short smaller gulches are created by fresh water seeping from the terrace cliff above the beach at the contact of the Holocene alluvial and Pleistocene terrace deposits with the older Purisima Formation.

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Soils in the Project vicinity are primarily recent Holocene alluvial deposits of moderately sorted silt and sand with lenses of clay and silty clay and some deposits of gravels, and older semi-consolidated Pleistocene alluvial fans of silty clays, silts, sand, and gravel, and coastal terrace deposits of sorted sand with continuous layers of small to large gravels. The beach sand is all very recent Holocene deposits, which are depleted and replenished annually by storm activity, new deposition, and lateral drift. Strata underlying most of the Project vicinity is much older Pliocene and Upper Miocene Purisima Formation, very thickly bedded siltstones and layers of sandstones (DCM Engineering 2007:Plate I-3). The Holocene and Upper Pleistocene deposits are potential locations for prehistoric archaeological resources; historic resources should only occur on and in the Holocene expect perhaps at locations where erosion exposes the Upper Pleistocene. In searching for prehistoric archaeological resources, once the older Purisima Formation is encountered, testing would be considered finished. Though obviously prehistoric cultures used the beaches, probably extensively, for procurement and processing of resources, the active beach landscape quickly erases such evidence unless filled over and protected. Evidence and remnants of historic uses of the high beach (just below the cliffs) do survive because they were meant to be "permanent" and are protected by riprap, seawalls, and other artificially maintained stabilizers, and because these are so much more recent than prehistoric cultural evidence.

Aboriginally, the Project vicinity would have contained the same three natural ecozones, but would have looked quite different except on the beaches. The coastal terrace would likely have been grasslands or oak grasslands dotted with bushy native plant species and the occasional tree, but not supporting the imported Monterey Pine, Monterey Cypress (both California natives but not found in this vicinity until planted in the nineteenth century) and Eucalyptus groves and other imported trees now dominating the upper story. The riparian zones would have looked more like they do today than the terraces, with greater average water flow supporting thick ground cover vegetation, bushy second story plants, and trees dominated by Coast Redwoods, oaks, and willows. The cliffs above the beach would have be thinly if at all covered by vegetation except where seeps occur. The beaches would have been much the same, lacking of course the housing and other developments at Pot Belly and Seacliff. A fresh/brackish water marsh on the eastern side of the mouth of Aptos Creek is shown on historic maps, and would have attracted more bird species than it does today.

Ethnographic Setting

The Native Americans who owned the San Francisco Bay region, Santa Cruz Mountains and East Bay Hills, and the Monterey Bay area at the 1769 Spanish invasion are now most commonly known as "Ohlones," a name taken from a coastal village between Santa Cruz and Half Moon Bay. Archaeological evidence indicates the ancestral Ohlones arrived in the San Francisco Bay region–depending on location–somewhere around A.D. 500 (Moratto 1984), possibly from the lower Sacramento Valley/Delta, and in the Santa Cruz/Monterey Bay region somewhat later, displacing earlier populations. Anthropologists and the Federal Government labeled these people "Costanoans," from the Spanish "costanos" or coast-dwellers, a linguistic term coined to describe groups speaking related languages, occupying the coast from the Golden Gate to Point Sur and inland to about the crest of the Diablo Range. Some Indian descendants of these people still prefer the term "Costanoan," while others prefer "Ohlone" or more readily identify with more specific tribelet names such as Muwekma or Rumsen/Rumsien.

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Currently the best available information indicates that, at the Spanish arrival, the *Aptos* tribelet of the Ohlones/Costanoans held the general Project Area vicinity. The *Aptos* group inhabited "the shores of Monterey Bay from Aptos eastward about half way to the mouth of the Pajaro River" but "were completely mixed together with the *Cajastaca*, alias 'San Antonio,' people of the Corralitos area. So much mixing occurred within nuclear family groups that the idea arises that Aptos and *Cajastaca* were a single tribal group" (Milliken 1995:235). Clearly the Project Area vicinity was permanently occupied, probably supporting both permanent and seasonally occupied villages, and very likely had been for a millennium or more, but whether any of the Project's direct impact areas were the locations of permanent or seasonal habitation is as yet unknown. There are indications that the Project vicinity was used aboriginally for specific tasks, such as gathering and processing food resources, and the banks of permanent and seasonal streams in this region contain nearly continuous archaeological sites, so the entire Project vicinity should be considered sensitive for prehistoric archaeological resources.

Natural resources of their home areas provided for nearly all the needs of the aboriginal Ohlone populations. The prehistoric Ohlones were "hunters and gatherers," a term which may connote a transient, unstable and "primitive" life, materially poor, constantly fending off starvation; it should not. While undoubtedly recurrent lack of resources and cultural strife did not make life perpetually easy, in many ways the Indians of Central California practiced a lifestyle similar to contemporary agricultural peoples elsewhere. The Ohlones had adapted to and managed their abundant local environment so well that some places were continuously occupied for literally thousands of years. Compared to modern standards, population density always remained relatively low, but the Ohlone area, especially around Monterey and San Francisco Bays, was one of the most densely lived-in areas of prehistoric California for centuries. The Ohlones had perfected living in and managing myriad slightly differing environments, varying with location, some rich enough to allow large permanent villages of "collectors" to exist, others less abundant and more encouraging of a more mobile "forager" way of life. Littoral (shoreline) and riparian environments were obviously more productive and were therefore most sought out, most intensively utilized and occupied, and most jealously defined and guarded. Uplands and redwood areas were less productive and less intensively used and occupied than the ocean and Bay coasts and riparian corridors. As throughout Central California, the acorn was the dietary staple of the Ohlones, with Black and Tanoak most favored, but a huge number of floral and faunal resources were utilized. Like other native Californians, the Ohlone managed their environment to improve it for their use; for example, by burning grass and brush lands annually to improve forage for deer and rabbits, keep the land open and more safe from predators and their neighbors, and improve productivity of many resources they used.

The basic unit of Ohlone society was the "tribelet," a small independent group of usually related families occupying a specific territory and speaking the same language or dialect. An incredible diversity of languages had evolved in Central California, evidence of centuries of in-place divergence of very small social groups. Early linguists encountered some groups of only 50-100 people speaking distinct languages sometimes but not generally unintelligible to their neighbors. Inter-tribelet relationships were socially and economically necessary however, to supply both marriage partners and goods and services not available locally. Trade and marriage patterns were usually but not always dictated by proximity; traditional enemies were usually also defined by proximity. Regional festivals and religious dances would bring groups together during periods of suspended hostilities

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Traditional trade patterns thousands of years old were operating when the Spanish invaded. Trade supplied the Ohlones with products from sources sometimes several hundred kilometers distant and allowing export of products unique to their region. Historically, Ohlone groups traded most with each other, but also exchanged regularly with the Plains and Coast Miwok, Yokuts, Salinans and Esselens to the south, and North Coast Ranges groups such as the Pomo. Of particular interest archaeologically are imported obsidian and exported marine mollusk shell beads and ornaments. Obsidian has the useful property of each source having a unique chemical "fingerprint," allowing obsidian artifacts to be sourced to a specific locality of origin, as well as being datable by technical methods ("hydration"). Obsidian was obtained by the Ohlones from the North Coast Ranges and Sierran sources, in patterns that changed through time. By 1769, the Ohlones had been trading for or buying finished obsidian arrowheads of specific forms, manufactured by North Coast Range tribes, for hundreds of years. Shell beads and ornaments, a major export from the Ohlone regions, were made primarily from the shells of abalone (*Haliotis*), Purple Olive snail (*Olivella*), and Washington clam (*Saxidomus*), all ocean coast species. Shell beads and ornaments evolved through many different and definable types through the millennia, allowing chronological typing of these common artifacts to serve as a key to the age and relative cultural position of archaeological complexes. These beads were traded for thousands of years, and have been found in prehistoric sites up and down California and many kilometers east, into the Great Basin, showing that prehistoric peoples on the coast were tied into an "international" system of trade. At the time of the Spanish invasion, some Central Californians had developed a system of exchange currency or "money" based on clam shell disk beads; the extent to which the Ohlones related to that system is unknown.

The small tribelet groups were at once independent and interdependent. Trade with neighbors in goods, and wives, is strongly attested in both the archaeological record and ethnographic accounts. These relationships often moved both goods–particularly obsidian and shell beads–and sometimes individuals long distances, though again proximity was always the key factor in intensity of interaction (Milliken 1995). As noted, control of territory and resources was jealously guarded. Such interaction also included a significant component of interpersonal and intergroup violence, from individual disputes and clan feuds up to a level reasonably described as warfare (with the goal of displacing neighbors and laying claim to their desirable resources). The most typical weapons were the short thrusting spear and the bow and arrow, and archaeological evidence of use of both on human victims is not lacking. The Spanish also reported ongoing multigenerational feuds or warfare in Ohlone territory. Such violence was accorded social approval and prestige, as exemplified by the practice of dismembering dead foes, taking and displaying trophy heads, and composing powerful "songs of insult or vengeance" toward one's enemies (Kroeber 1925:468-469). Postmortem dismemberment of human remains has been documented at several Ohlone area sites (Wiberg 1993, 2002; Grady et al. 2001; Hylkema 2002). The too-common stereotype of Central California natives as altogether peaceable and passive in the face of threats–such as the Spanish invasion–is contradicted by both historic and archaeological evidence. As everywhere, the struggle for resources and territory, as well as individual disputes, often led to violence in the Ohlone tribelets.

Absolute and relative dating of archaeological sites, the linguistic diversity, and demonstrably ancient trade patterns all indicate that the Ohlones and other Central California groups had reached a state of demographic and social stability unimaginable to modern city-dwellers--a state in which the same family groups occupied the same location continuously for hundreds or even thousands of years

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with few if any changes in population size or profile. This long term stability is reflected in the homogeneity of archaeological sites spanning wide geographic and temporal ranges.

Archaeological Context

Prehistoric archaeological sites typically occur at locations offering suitable combinations of characteristics and resources needed by ancient populations; the more favorable characteristics occur at a given location, the more likely it was to have been used, with intensity and longevity of use–and hence, archaeological visibility–also varying with those criteria. Such locations that offered reliable fresh water, plant and animal resources, lithic resources, and defensibility but also the possibility of contact with neighbors, and suitable physical traits such as relatively level land, accessibility, and good weather, also varied through time as California's environment varied, so locations now favorable may not have been so in the distant past and vice versa. Environmental change thus caused sites to be clustered in different locations during different time periods. However, some places appear to have been favored–or disfavored–for long periods, often thousands of years. Sites over 9000 years old have been found in interior Santa Clara and Santa Cruz County in locations perhaps later unlikely to harbor permanent aboriginal habitation, while other locations exhibit sporadic or virtually constant habitation from even that early to the present day. Still, generally still-extant natural landforms will provide the best clues to the locations of potential archaeological sites. As elsewhere, more recent sites are more likely to be discovered due to being more numerous, in better states of preservation, nearer or on the surface, and less likely to have been covered or erased by erosion or rising water levels. It appears likely that many older sites once created on the ocean coast are now inundated by the ocean rising over the last several thousand years.

As evidenced by the antiquity of a few sites, the Santa Cruz and San Mateo coasts have been hospitable to human populations for at least six millennia (Hylkema 1998, 2002). Prehistoric sites are found in most environmental zones from the ocean coast and coastal terrace well up into the steep hills to the east, but are most numerous along the few perennial streams such as Waddell, Scott, Soquel, and Aptos Creeks, and the San Lorenzo and Pajaro Rivers, around marshlands such as formerly existed at Aptos Creek, and immediately above the beach on the edge of the coastal terrace. Locations such as most of the Project vicinity, crossed by small perennial and seasonal streams running from redwoods through grasslands and brushlands, with only small areas of the concentrated resources along perennial streams, are less likely to contain prehistoric sites than more favored zones, but would still have offered some resources attractive to prehistoric populations during parts of each year. Both extensive studies of the coastal archaeological record (e.g., Hylkema 1991) and the records search for this project show this pattern strongly; sites tend to cluster along the watercourses and right above the beach. Very old sites (>4000 years) are however quite rare on the coast, probably simply because the coast has retreated significantly almost everywhere in those millennia so that sites displaying a coastal adaptation are relatively recent. Parks District Archaeologist Mark Hylkema, who has done the most research on the Santa Cruz/San Mateo coast, is of the opinion that older sites do exist on what is now the coastal terrace, but will display characteristics of adaptations to a noncoastal location because that was their situation when deposited.

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Historic Context

Very knowledgeable, active, and competent local historians were commissioned to research and assess the Project routes and work locations for historic archaeological potential; see the attached *draft* historic resources report by Duval, Lydon and Swift. The historians' research and results need not be more than very briefly reiterated here.

The Project vicinity has been actively used by Europeans and later Americans since the Spanish arrival, and considerable change has been wrought to the landscape, managed by Native Americans for previous millennia, beginning in the late eighteenth century. The first written account of the Santa Cruz area dates to 1769 and the Portolá Expedition, and includes descriptions of the grasslands and steeply cut watercourses typical of the aboriginal Project vicinity and accounts of the local inhabitants. Mission Santa Cruz was founded in 1791 and absorbed natives from the Project vicinity and beyond. The 1796 Spanish colonial settlement of Branciforte held lands extending at least to Soquel. Ranchos Shoquel (sic) and Aptos were granted in the early 1830s and the Californio cattle, tallow, hides, and grain economy established, resulting in removal of most of the abundant local tanoak trees. By the 1850s communities had been established at Soquel and Aptos along the main road between Santa Cruz and Watsonville. By then, a wharf had been established by Rafael Castro at Aptos Creek to ship such products and also redwood, wheat and other products to the lucrative Gold Rush markets. As elsewhere on the California coast, the redwood-lined perennial streams of the Project vicinity were foci of development and extractive industries, and a tannery and later distillery were in business along Tannery Gulch by the 1860s, followed by the railroad in the 1870s,

By the late nineteenth century the use of the area began to shift from extractive industries like lumbering and fishing to more agricultural, residential, and recreational uses. Being an attractive coastline and terrace for all those uses, by the early twentieth century land use impacts would have been evident throughout the APE. The Project Area's development mirrors that of Santa Cruz County and central California generally, and the locations of Project facilities coincides with numerous locations likely to contain evidence of historic land use and development, as amply documented by the historians (see Appendix 2), and elaborated upon below.

Records Search Results

Archaeological records searches for the ATMRP were conducted in 2003 and 2007; relevant archaeological literature and documentation changed very little. Several portions of the Project's "Area of Potential Effects" (APE) have been formally surveyed for archaeological resources and reported, including part of McGregor Drive or immediately adjacent to it (Breschini 1979; Haversat and Breschini 1985; Farquhar 1999), State Route 1 in the vicinity of the APE (Melandry 1979, 1996, 1996a; Jones 1987, 1987a, 1988; Jones and Melandry 1988; Mikkelsen et al. 2004), the New Brighton Road/Pine Tree Lane/Pot Belly Beach Road and beach area (Breschini 1979; Jackson 1979; Turner and Aleman 2001); the current Project route from State Park Road to across Aptos Creek (ACRS 1976; Peak & Associates 1977); and the beach and adjacent foot of cliff along Seacliff State Beach (Woodward 1984). Only one of these surface surveys recorded a site, though several revisited and/or rerecorded sites, probable evidence that surface surveys are not very effective in this archaeologically sensitive but highly developed and impacted area.

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Prehistoric Resources

Within or adjacent to the APE four prehistoric sites are recorded, and several other historic resources are recorded, the latter of which appear less relevant in assessing potential impacts to archaeological and historic resources for this project. Subsequent discussions with DPR Santa Cruz District Archaeologist Mark Hylkema (personal communications 2007, 2008), and a search of District records, did not discover any additional recorded resources relevant to the APE. The District Archaeologist provided a copy of the USGS "Soquel" topographic quadrangle showing numerous additional sites in the vicinity of the Project, though not subject to impacts. The NBSB Interpretive Center also displays a prehistoric portable stone mortar that was unearthed in the Campground at an unrecorded location on an unrecorded date, as confirmed by Hylkema.

None of the prehistoric archaeological site records in the archives provided good–or in most cases, any–boundary definitions; most records are old, not complete to contemporary standards, and in at least three of four cases, whether the sites still exist (or ever did) appears questionable. None of these sites has been subject to archaeological excavations or evaluated for eligibility to the California Register of Historic Resources (CRHR). Prehistoric archaeological sites within, immediately adjacent, or very near the APE include:

CA-SCR-201/P-44-000203: this is or was a degraded small shell midden recorded in 1973 (originally as SCR-53; Olsen 1973) on the edge of the bluff top above the SSB Beach Access Road, and rerecorded at a different location, eroding and possibly partially graded over the edge, in 1984 (Furniss and Gilbert 1984). Originally recorded as "essentially destroyed" and "graded for parking," with no boundaries or site size even attempted (Olsen 1973:1), a 2002 assessment by DPR personnel reports the "Site still exists as described ... in 1984. ...measures about 6 feet E/W by 5 feet N/S..... very small remnant of midden soils in an highly disturbed area (Lindahl and Gruver 2002:1-2), and "All that remains is a sparse scattering of highly disturbed shell midden" (Lindahl and Gruver 2002a:1). This "site" is immediately above–by about 75 feet–but not within the Project APE; if it was graded or eroded downslope, remnants may occur near the Beach Access Road. It was not relocated in the field although the setting appears little changed from the 2002 assessment. This site will not be further researched or evaluated for this project.

CA-SCR-213/P-44-000215: originally recorded as a "sparse scatter of shell" between McGregor Drive and the landscaped southerly cut bank next to SR 1 (Melandry and Gardner 1977; first page of original site record is missing at the Information Center; quote is from King, Andolina, and Johnson 2004:1). Lacking the first page, no site bounds are recorded, but the 1977 sketch map shows the site about 240 feet long by 25 feet wide, contained between the Caltrans fence on the north of McGregor and the cutbank; the record notes "Cannot be evaluated at this time because site limits not defined (Melandry and Gardner 1977:3). This site was reportedly revisited in 1999 for the "McGregor Drive Main Extension Project" (Farquhar 1999) and "no cultural material of any kind was observed" (King, Andolina, and Johnson 2004:1). In 2004, "only three small pieces of marine shell were noted ... despite an intensive examination of the ground" but surface visibility was very poor (King, Andolina, and Johnson 2004:1). If this is a site, it could extend under McGregor Drive to the south and be within the Project APE. Diligent surface survey did not find any indications of this site, but the area is either covered by McGregor Drive (in the APE) or by thick vegetation along the

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Caltrans fence; no site materials were noted on the south side of the road. This site location merits additional attention for impacts assessment on this project.

SCR-232: although clearly known previously (Kelly 1978), this site was originally recorded in 1980 as a "thin deposit of shell and one stone artifact exposed in bank west of [NBSB Day-use] parking lot.... Site cut by parking lot and trail [to China Beach] (Felton 1980:1) for a review of the "Tannery Gulch Sewer Improvement Project–Alternate Routes Plan," which showed "Alternate 1" would cut through the site; this alternative was not adopted. The site was rerecorded in 1983 (Felton and Woodward 1983), with the same description of a midden lens circa 3 m long and 20-30 cm thick, a "light horizontal scatter of clam and mussel shell near the subsoil["Pleistocene non-marine sandstone"]/topsoil interface" (1983:1-2). The size, area, integrity, and significance of the site were unknown in 1983 and remain so. By 1983 the sewer line planned by 1978 was present southwest of the site; it is this pipe that is to be sliplined for the current project.

SCR-232 was located again by DPR personnel in 2004 for a project to replace the very large "storm drain" culvert that carries the Tannery Gulch stream under the Day-use parking lot. A 2006 DPR Historical and Archaeological Review and Archaeological Survey Report found that the project would not impact the site but recommended monitoring in the vicinity (Sevrens and Wulzen 2006-07). This site was relocated by field survey for this project and appears much the same as in 1983 and 2004, clearly exposed in the steep slope but easily approached via a much-used trail. The site as recorded is outside the Project APE, but the former banks of Tannery Gulch must be considered archaeologically sensitive. The precise site location will not be impacted by this Project, as the pipeline near it will be lined but not reexcavated. If work pits for the sliplining are needed near this site location such work would need to be monitored, and the vicinity that will be impacted should be researched.

CA-SCR-264/P-44-000266: this prehistoric shell midden was recorded in 1983 by Woodward as a "probable prehistoric small village, campsite, or just shellfish processing site; site determination is based on finding moderate amounts of marine shell fragments and black ashy soil in a location well suited to a small group of fishers and gatherers" (Woodward 1983:1). The site is/was located in SSB at the base of the cliff where State Park Road forks left into Beach Access Road and right into Las Olas Drive, where the former Park Headquarters and now Visitor Center/Museum stand. Prior to development, perhaps as early as the last quarter of the nineteenth century, this location would have been on the east side of the mouth of a small probably ephemeral stream. Woodward estimated the area at 35 by 35 m but did not map site limits; no artifacts or features were recorded. He noted a "fair possibility of intact subsurface features and artifact-bearing strata, poor surface integrity and grading of read at the boundaries of the surviving midden deposit" (1983:2). Woodward maps the small building on the site as a "museum." A Site Record Continuation Sheet from August 1984 notes:

> "Shovel testing and re-examination of this site and the surrounding area lead the recorders to conclude this deposit is probably not a cultural site. ... Two shovel test pits indicated depths of 5 inches and 6 inches for the surface layer of dark soil. No shell fragments of any type were found subsurface in this dark soil, though some shell fragments were found in the mottled yellow subsoil. ... Again, no artifacts or possible debitage were found. ... Site Integrity: Considered to be non-existent or very poor at best. The compacted dark surface soil layer has been heavily disturbed by rodents. This soil may have been cut from nearby cliffs that also contain Pleistocene shell deposits, and placed here in the 1930s as fill

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material to facilitate road construction and beach access. Or it may have washed down from above. The park museum building was constructed in 1940, and originally served as the park office [Woodward, Gilbert, and Furniss 1984:b].

The museum on the site was expanded into the Visitor Center between 1984 and 2001, incorporating the original small headquarters/museum into the larger building now at the location. A Primary Record and DPR Archaeological Site Condition Assessment Record (ASCAR) were completed in 2002 for the "site" and concurred with the 1984 conclusion that the site was not a cultural deposit (Lindahl and Gruver 2002b). No additional testing was conducted at that time, but surface shell fragments were still present. The site area was located and inspected again in 2008 and the 2002 descriptions are still apt. However, this location merits further investigations because the 1983/84 DRP excavations only went 30 cm/one foot deep, the entire zone appears to have been filled, and excavations for the Sanitary District Project will go much deeper than has been tested.

In sum, two of the four prehistoric sites recorded near or in the Project impacts zones merit further investigations to better locate them assess potential impacts (SCR-213 and SCR-264). The other two sites, SCR-201 and -232, appear not to be potentially impacted by the Project and do not merit inventory research or impact assessment under CEQA requirements, at least at this point.

Historic Resources

Numerous historic resources are formally recorded in the Project APE vicinity, but are not pertinent to assessment of current project impacts. The entire length of Highway One in Santa Cruz County, for example, is recorded as P-44-000406, and four others are briefly discussed below. One historic resource is recorded as within the actual APE, but the identification and location of "China Beach" may be incorrect (see Historic Resources Report by Duval, Lydon, and Swift, appended).

"China Beach" is recorded as P-44-000511/HRI5010-0006-0000 now but was originally recorded in 1980 as Historic Inventory 5010-1 (Way 1980). The original record contains little useful or verifiable information, and no locational information other than that:

> No buildings remain from the Chinese Fishing Camp. ... New Brighton Beach was originally called China Beach because of the early Chinese American fishing village there. The buildings were simple wooden structures built along the shore. Those nearest the water were raised on stilts to keep them from the incoming tides. Little is known of the residents there. It is rumored that illegal Chinese immigrants may have entered the United States at China Beach after the Chinese Exclusion Act was passed in 1882 [Way 1980:1-2].

In 1984 the Historic Resources Inventory record was updated when the fraternal organization The Ancient and Honorable Order of E Clampus Vitus placed a plaque at the end of the NBSB Day-use parking lot just above the beach, where it remains. The source and accuracy of the information on the Clampers' plaque is unknown. The following information was added to the HRI record:

> There is a second-hand report in the unit [New Brighton State Beach] history files about a few artifacts having been found in the area during parking lot construction in the 1940s. There are no known collections, and little possibility for material remains under the parking lot at this site.

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The photograph below is of a bronze plaque on the ocean side of the parking lot: "CHINA BEACH. During the 1870's and 1880's, a small village constructed of scrap lumber and driftwood was erected at the base of these cliffs. Known as China Beach, or China Cove, it was established by Chinese fisherman who set their nets by boat and then hauled their daily catch onto the beach by hand for drying and selling. By 1890, however, the expanding resort industry and waves of anti-Chinese sentiment had combined to force the last of the Chinese fishermen out of Santa Cruz County. Dedicated October 20, 1984, by the Monterey Viejo Chapter No. 1846, E Clampus Vitus."

The last vestiges of this village were reportedly removed in the late 1940s for construction of the parking lot [Woodward 1984a:1-2].

It was thought that the nineteenth century Chinese fishing village was located to one side or the other, or both, of the mouth of Tannery Gulch, right below the Day-use parking lot. This very probably was incorrect, being slightly off as to location, as additional research by local Historian Sandy Lydon, and very recent research for this Project has shown (Lydon 1984 and Duval, Lydon, and Swift, this report). Examination of historic maps and photographs reveals the Chinese village was probably located to the east, at Area B-3: "Area around the extant restroom building [on NBSB] at the eastern terminus of the lower forcemain: ...research suggests this area to be the most likely location of the ca. 1850s to 1894 Chinese fishing village known to have been located on China Beach." However, the historians also report that apparently Chinese artifacts were recovered during construction in the vicinity, either for the parking lot and storm drain/culvert, or for the extant restroom on the beach. The actual location, and whether any materials remains exist from the Chinese fishing village is yet to be determined.

Three other historic resources are recorded in the NBSB Campground, but do not appear specifically germane to this Project, other than they demonstrate historic use of the area and predict there may be other remnants within the APE. Resource P-44-000446 was a "CCC era Comfort Station, New Brighton State Beach" built in the 1930s; this structure was originally to be the terminus of the Project pipeline in the campground, but final plans call for the pipeline to end several hundred feet from the location. In any event, the original Civilian Conservation Corps restroom, thought to be CRHR-eligible, was smashed by a blown-down tree, entirely removed and replaced about four years ago (Aleman 2001; Kelly 2001). Nearby and related to that CCC restroom is P-44-000513, the still-standing "CCC Picnic Ramada" overlooking the beach in the NBSB Campground, built in 1936 or the "late 1930s" (McGuire 1985a). Also in the Campground is the Menefee Residence, P-44-000512, estimated construction date 1937, a "neo-Spanish Colonial Revival" structure which was formerly a combination gatehouse, office, and residence for Parks personnel in the late 1930s (McGuire 1985); this structure is near but not within the Project APE.

Project-Specific Historic Research

There appears to be potential for significant historic archaeological resources within the APE that have yet to be located, recorded, or evaluated. Local Historians Charlene Duval of Santa Cruz and Sandy Lydon and Carolyn Swift of Capitola, both "*the* experts" in the vicinity's history, were retained to research potential for historic resources for this Project. Their report is appended and the most pertinent points summarized below.

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Area A is the former location of Camp McQuaide, the first anti-aircraft base on the California Coast, where anti-aircraft and anti-ship artillery training involved firing into Soquel Cove. This was also earlier the site of F.A. Hihn's "Eastern Field," a portion of which became the Capitola Airport.

Area B is at and to the east of the mouth of Tannery Creek, which was named for the ca. 1853-ca. 1880 tannery upstream. Area B-1 may contain deposits related to the Fourcade-Porter Tannery and the ca. 1866 Porter Distillery. The Parks filled and culverted Tannery Gulch for the Day-use parking lot in the 1930s. B-2 is the beach between the culvert and the existing beach restroom, which is considered sensitive for deposits dating possibly to the 1850s. Area B-3 is the probable location of the Chinese fishing village discussed above.

Area C is the Park Avenue entrance to early area settler and farmer/lumberman F.A. Hihn's "Eastern Field" ca. 1869; this is somewhere in the vicinity of the railroad trestle over the NBSB entry road.

Area D is in the vicinity of the County-owned closed parking lot on the south side of McGregor Drive just east of the NBSB entry; this was part of the ca. 1869 Bunte/Dutton Farm Complex.

Area E is the Santa Cruz Railroad alignment (later Southern Pacific, now Union Pacific, on the same alignment) and ca. 1876 New Brighton Station location, which was in the vicinity of where New Brighton Road crosses the railroad.

Area F is along lower New Brighton Road, formerly Ricardo Lane, and Pot Belly Beach Road, and Camp San José. F-1 is the ca. 1849 Fourcade Farm Complex, structures of which may have been located near the artificial flat above the drainage where Pot Belly Beach and New Brighton Roads fork. F-2 is the location of the ca. 1878 Camp San José and the ca. 1930s Pot Belly Beach Club, where a hotel once stood on the bluff above the residences now on Pot Belly Beach. Area F-3 is another possible Chinese fishing station, ca. 1877, which may have been used earlier than the Chinese fishing village location westward down the beach.

Area G is where the APE crosses the 1870s Santa Cruz Railroad alignment on State Park Road, which used Chinese laborers; railroad construction may have left remnants in this area.

Area H is the access road to Seacliff Beach, which was probably used as early as the 1880s and even earlier, but is clearly mapped by 1910 as a dirt road and was graded and paved to the bluff top and beach in 1925.

Area I extends along Beach Access Road in SSB, where a seawall and esplanade were under construction in 1925, only to be largely wiped out by storms in 1926, then partially rebuilt in 1929 and rebuilt by the CCC in the 1930s when Parks had acquired the properties.

Area J is along the western bank and mouth of Aptos Creek and out onto the beach. Area J-1 was the location of the 1840s landing used by Aptos Rancho grantee Rafael Castro, who built a wharf in the early 1850s to ship local products. The wharf was expanded and repaired in 1866 and in use until wrecked by a storm in 1889; pilings from this wharf are still visible on the beach when the sand is deflated by storms. Area J-2 is just up the creek on the west side below the bluff, the site of a resort, swimming pool (actually the creek itself, walled in), and bathhouse built in 1928.

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Area K is the Rio del Mar "Flats" where in 1926 the marshy eastern side of the mouth of Aptos Creek was filled and platted, including SSB's The Esplanade parking lot; this area could contain prehistoric and/or historic deposits relating to the first 1920s development of the area as a resort.

NATIVE AMERICAN CONSULTATION

Though not required under CEQA prior to or during the resource inventory phase, recognized Native American representatives were solicited for information and comments on the Aptos Main Relocation Project. The California Native American Heritage Commission was contacted by letter on 20 August 2007, with regional and USGS topographic quadrangle maps provided, and requested to conduct a search of the Sacred Lands files and provide the current list of Ohlone/Costanoan "Native American Contacts" for Santa Cruz County. The NAHC responded in a letter dated 30 August 2007 that "A record search of the sacred land file has failed to indicated the presence of Native American cultural resources in the immediate project area." A list of nine Native American individuals and groups was provided. These nine were contacted by letter sent with Delivery Confirmation on 31 January 2008, providing regional and topographic maps of the Project vicinity and a brief summary of the archaeological records search results. Native American representatives were requested to "Please notify us if you have any information or concerns about cultural resources that may be within or adjacent to the Project Area, or if you would like to informed if Native American cultural materials are found. We request that you respond in writing within 15 days if you have such information or concerns." Contact information was provided for responses in writing by mail, fax, or email. The following Ohlone/Costanoan contacts were sent letters:

Linda G .Yamane, Ohlone/Costanoan, Seaside, CA.

Jakki Kehl, Ohlone/Costanoan, Patterson, CA

Valentin Lopez, Chairperson, Amah Mutsun Tribal Band, Sacramento, CA

Edward Ketchum, Amah Mutsun Tribal Band, Davis, CA

Michelle Zimmer, Cultural Resource Coordinator, Amah/Mutsun Tribal Band, Clear Lake, CA

Irenne Zwierlein, Chairperson, Amah/Mutsun Tribal Band, Woodside, CA.

Patrick Orozco, Coastanoan Ohlone Rumsen-Mutsen Tribe, Watsonville, CA

Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan, Hollister, CA

Ramona Garibay, Representative, Trina Marine Ruano Family, Ohlone/Costanoan, Lathrop, CA.

By 30 days later, only one Ohlone/Costanoan representative had responded to this solicitation for consultation. Ann Marie Sayers of the Indian Canyon Mutsun Band called M.R. Clark of Holman & Associates on 25 February, stating that she had been recently monitoring in Santa Cruz, where a Native American burial had been found during water line work in a paved street, so she was concerned that similar work for the ATMRP might encounter similar finds. The results of the records search were discussed and Ms. Sayers requested that she be kept informed of work on the Project

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and that Indian monitors be retained during construction. She did not request subsequent reports or other documents regarding the Project.

On 03 March, a faxed form letter dated 2/29/08 was received from Mr. Lopez of the Amah Mutsun Tribal Band, Sacramento. Mr. Lopez made two requests: "1. We request consultation. Please contact us immediately." and "2. We believe this site has a high probability of containing archaeological resources. Consequently we are requesting that the entire site be surveyed and that a Native American monitor be present to observe all underground construction. Tribal members are available to consult regarding our position." For the Project, H&A attempted to fax a response back to Mr. Lopez on 04, 05, 06, and 07 March, but the fax would never go through, so the response letter was sent to Mr. Lopez' mailing address on 07 March. As the initial solicitation for consultation had met request number one, the subsequent response requested that specific recommendations be provided in writing; noted that Santa Cruz County had decided to complete CEQA compliance prior to other historic preservation processes (i.e., Section 106 compliance); offered to provide documents generated by CEQA compliance work upon request; and provided for additional contacts with the Amah Mutsun Tribal Band, Sacramento, when the inventory phase is completed. As of July 2008, no additional contacts or requests for reports or documents, information, or consultation have been received from Mr. Lopez.

SURFACE RECONNAISSANCE

The entire impacts zone or Area of Potential Effects was surfaced surveyed in October 2007. Other than the relocating the recorded location of SCR-232, no evidence of archaeological or historic resources was found by surface reconnaissance. No surficial evidence of SCR-201, -213, or -264 could be found, but surface conditions were poor for survey in all instances. For locations, "Sheet" references are to the plans provided by Harris & Associates.

As described, the pipeline routes run almost entirely in asphalt- paved (AC) streets and/or filled areas. The only exceptions to running in paved areas are: the short run down the Tannery Gulch creek bank from Park Avenue (which will not be excavated but sliplined; Sheet PP-106; down the even shorter run from the NBSB Day-use parking lot to the path leading to the NBSB restroom on the beach (PP-110); the short run up from the NBSB Day-use parking to the Campground Loop Road (which will be directionally drilled; PP-107); a few very short sections running across the NBSB Campground between roads and paved parking/picnic areas (PP-107, -108, -109); a very short section that skirts paved New Brighton Road at the UPRR crossing (PP-100); a stretch that runs next to McGregor Drive north of Sea Ridge Road/State Park Drive (PP-20, -21); the short section down from State Park Drive near the entrance to SSB back into the access road loop below (PP-23); and two very short sections that run under planted areas in SSB (PP-24, -28).

Three of the five proposed pump stations are in paved or clearly filled areas, including the NBSB station near the existing restroom (filled and paved; Sheet PP-111), the Pot Belly Beach station (paved and probably filled too; PP-103, -104), and the Rio Esplanade station east of Aptos Creek (definitely filled and paved; PP-29). The other two pump station locations differ: the NBSB Campground station location is open soil in a vegetated area, but the area has very probably been graded and/or leveled several times by Parks (PP-109). The Tannery Gulch Pump Station location

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on the east side of New Brighton Road just inside PBBHA property, is very thickly vegetated but appears to be at least slightly elevated by grading of the road (PP-101).

With these field conditions, much of the Project Area could not be adequately examined by surface reconnaissance. For the pipeline stretches on paved roads, surrounding and adjacent areas were examined as possible, wherever soil could be seen or easily cleared by trowel. The short pieces not paved were inspected as possible, but most were previously disturbed though not paved, over quite steep, such as the run down from Park Avenue to the Day-use parking and the run from the parking lot up to the campground. The pump station locations were also examined as well as possible, meaning not very possible in all but one instance (the Campground location).

The Project Area along Park Avenue is highly disturbed. The pipeline route runs on the edge of the coastal terrace for about the first (westerly) half of this section, but the UPRR parallels it and clearly disturbed the alignment outside the actual railbed. The easterly half, except for the end at McGregor, is cut into a steep hillside, the bank above Tannery Gulch, and also mostly covered by thick eucalyptus trees and duff. The terrain levels out as Park approaches McGregor Drive and SR 1, and was a good level location above that stream, but the entire APE is highly disturbed by road building.

The route along McGregor is entirely built environment on the SR 1/north side from Park Avenue to the southward curve at State Park Drive, behind a Caltrans fence, and the narrow frontage zone was covered by thick grasses. The south side is relatively undeveloped–but not undisturbed–from Park to near Estates Drive, with only a graded County parking lot just east of the entrance to NBSB and New Brighton Road running southward to Pot Belly Beach. These areas were covered by thick grasses and higher, thicker vegetation in the riparian zones. From a block west of Estates Drive to the southward curve, the south road side bounds a residential subdivision and is lined by built-up planted and landscaped areas. From just around the curve, the east roadside is a built-up and fenced divider between McGregor and State Park Drive; the west side was first an large open parcel with visible dark brown clayey silt soil interspersed with thick annual grasses and other weeds (this parcel in currently being developed; it was fenced off and being graded and excavated in mid-June). The next parcel to the south is still open and is slated to become a County Park; it was fenced off but soil could be examined. From the intersection of McGregor with Sea Ridge and then State Park Drive to the eastern end of the APE, the Project Area is entirely developed and the great majority paved. The steep slope from upper State Park Drive down to the looped road below was vegetated with planted species and annual grasses, but light yellow-brown sandy soil with rounded gravels could be seen. The area around the SSB Visitor Center (SCR-264) was inspected but appears entirely disturbed at least on the surface. The Beach Access Road is entirely paved and appears filled at the base of the cliff; the location of SCR-201 above was searched but no archaeological materials found. The APE west of Aptos Creek afforded some open soil to inspect, but appears to have been cut and filled historically. The east side of the creek is entirely developed and the Project Area all filled and paved.

At NBSB, the pipeline route comes down the steep hillside/creek bank from Park Avenue, under the existing UPRR line, to emerge on the filled-in and paved Day-use parking lot and then go up the nearly as steep easterly slope to the campground loop. The westerly slope is steep and mostly covered by eucalyptus and pine trees and duff, plus the railroad cut and railbed, but a pedestrian trail

in common use exposes the location and indications of SCR-232 next to the parking lot. The pipeline route goes down the bluff to the southeast and onto a filled, riprapped, and gravel paved road/walk to the NBSB restroom. The beach and road could not be meaningfully surveyed, and the adjacent bluff was both eroded (any old surface covered or gone) and thickly vegetated. The area around the restroom and other utilities located around it was filled and paved; native soil could only be seen on a little of the adjacent bluff, which is a light yellow-brown sandy silty soil displaying layering to the bluff top. Within the NBSB Campground, the APE crosses vegetated areas, paved roads and parking slots, campgrounds and picnic areas, affording generally quite poor to nonexistent surface visibility. The location of the new campground pump station was inspected but inadequately due to vegetation and duff.

The New Brighton Road/Pot Belly Beach reach was similarly not amenable to adequate surface survey. The roadway is entirely asphalt paved and immediately off the road thick trees, brushes, and duff generally completely covered the surface. Native soil, a medium brown clayey silt with rare rounded pebbles, could be inspected in road cuts, ditches, and around the obviously disturbed UPRR right-of-way. The area is developed above the PBBHA property by the Pine Tree Lane subdivision. The road on the PBBHA property is immediately bounded by thick trees and duff; the proposed Tannery Gulch Pump Station location was completely invisible in trees, brush, and poison oak. From about halfway down the route, where the road splits into New Brighton and Pot Belly Beach Roads and the route makes a wide curve to descend along Pot Belly Creek, the roadway is cut into the steep hillside, which is supported by a railroad tie retaining wall. Approaching the houses on Pot Belly Beach, the road swings back westward and levels out, continuing west, but the APE reverses to the east end of the road. Seemingly "on the beach," no native soil or even sand could be seen in this area. East of the last house is beach sand, where manhole will be removed and the existing main abandoned. West of the last Pot Belly Beach house another manhole and metering station will be removed from the beach (Sheet R-1).

SUBSURFACE RECONNAISSANCE PLAN

For CEQA purposes, a total of nine subsurface test locations were proposed along the Project APE, all backhoe trenches (see "Subsurface Archaeological Reconnaissance Test Locations" table). Locations were primarily chosen due to proximity of recorded prehistoric archaeological sites and/or potential for historic archaeological resources, all the latter of which are currently unknown and unrecorded. The known prehistoric archaeological record shows recorded sites clustered along the major (perennial and semi-perennial) streams, most often on the nearest level bank or terrace, so proximity to streams is a key indicator of archaeological sensitivity. In addition, there are older and probably more ephemeral, difficult to detect sites that occur on the terrace lands between the current watercourses (Mark Hylkema, Parks Archaeologist, personal communications 2007-2008); given a record of human activity and cultural deposits stretching back some 10,000+ years and the constantly changing, evolving landscape and environment, this should be expected. Some locations on the terraces were targeted for testing for these kinds of sites. Intervals between test locations vary widely and were based on known archaeological sensitivity, both prehistoric and historic, archaeological potential, and degree of Project impact (e.g., HDD pits).

Two test locations were proposed within streets/rights-of-way in the City of Capitola; four in County streets/rights-of-way; three on Parks property in Seacliff State Beach. Permits or approvals

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from each of these entities was obtained and work was coordinated with each. Test locations were marked in the field and an Underground Service Alert (USA) completed for all testing locations, with requests to mark all utilities within 10 feet so locations might be adjusted or changed if necessary; changed locations would be re-USA'd.

The locations in Capitola were P-1, on Park Avenue at the western terminus of the Project, located at a proposed work pit to test for both prehistoric and historic resources (the SPRR and Area A); and, M-1, on McGregor Drive just east of the entry road to NBSB (near where a prehistoric stone bowl mortar was recently found below surface by Parks personnel), located to test for prehistoric resources on the bank of Tannery Gulch and historic Area D. All the County property test locations were on McGregor Drive: M-5, -6, -7, and -8. M-5, -6, and -7 were located to test for recorded site SCR-213, for which boundaries have not been established, and M-7 also to generally test the terrace. Location M-8 was located to test for prehistoric cultural evidence near the south bank of Borregas Creek. At Seacliff State Beach, tests SP-3 and SC-1 were on the recorded location of SCR-264 and to test for historic Areas H and I, while SC-4 was located just west of Aptos Creek to primarily to test for historic deposits in Area J.

The CEQA impacts zone is nearly all in paved streets, and all in developed zones. Santa Cruz County environmental review mandated that locations for trenching would be at or the nearest possible to actual routes for the pipeline trenches as shown on plans, necessitating saw-cutting through asphalt pavement, off-hauling excavated materials, backfilling to City/County specifications (that is, with cement slurry to four inches from top of pavement), then repaving the trenches with fresh asphalt. State Parks, conversely, did not want access roads to Seacliff State Beach breached or held out of service for any but the most minimal period. Fortunately, two of the three SSB Parks locations could be placed where the pipeline or a HDD pit will go under a planter next to or in the middle of the road (SP-3 and SC-4); the third location was placed off the road in another unpaved area but within about 8 m/26' of the projected pipeline trench (SC-1). Trenches were also placed to avoid major trees or other vegetation, and avoid harm to landscaping as much as possible.

Backhoe trenching was done with an 18" or 24" toothed backhoe bucket and the trenches cut to 24"/61 cm wide. Trenches were excavated so as to keep the floor horizontal and flat, and the end walls as near vertical as practicable, so stratigraphy could be accurately recorded and any cultural materials assigned to soil types and depth. Only trenches with positive results were profiled and/or photographed; all trenches were recorded on forms designed for the purpose. Any artifacts or other cultural materials found were described, drawn or photographed, and replaced, or collected where the point of discovery is right on the proposed pipeline trench alignment (that is, the location will be dug up later anyway). Any artifacts or cultural materials found on Parks property were to be retained, mapped, described, and turned over to Parks staff or otherwise handled according to Parks' direction. All backhoe trenches with negative results (and also trench M-7) were immediately backfilled upon completion. Trenches in City and County roads were backfilled and paved as described above; trenches on Parks property were backfilled with original materials, recompacted by wheel-rolling, and the location restored to its original contours. Maximal depths projected for each trench are shown on the Test Locations table. Meant to approximate the depth of Project excavations shown on the plans if necessary, it was anticipated that most trenches would not need to go as deep as proposed construction impacts because when verifiably culturally-sterile soil (e.g., the Purisima Formation) was encountered, digging deeper would become unnecessary.

Project pipeline routes and sections are shown on the topographic map (Map 2). Subsurface reconnaissance locations are summarized in the Test Locations table and shown on the Final Plan sheets by Harris & Associates (enclosed).

Additional Inventory Research at Positive Test Locations

At two test trench locations, scant indications of archaeological resources were found. At these locations additional resource inventory research was warranted and carried out when approved by the SCCSD. At trench location M-7, a single prehistoric artifact (a quartzite core) was found between 45 and 51 cm/17¾-20" below surface (BS; from top of pavement). This artifact (only definitively identified after washing and examination under the microscope) came from a layer of orange-brown coarse sand and appeared to be just above or associated with an old surface identified as a dark grey-blue clay layer containing pebbles and organic materials, probably a marshy deposit. Numerous other rocks from this trench were examined; none appeared possibly artifactual. Trench M-7 was backfilled after being profiled; no other items were collected. Three additional trenches were excavated near M-7 on 02 July (M-7A, M-7B, M-7C), but off the edge of the paved road and near both paved and unpaved shallow drainage trenches using the same original methods to search for additional data. These trenches, within 2-3 m/6-9' of the first, were quite different from T-7, exhibiting a mixed, mostly disturbed profile and entirely lacking in the upper orange-brown coarse sand layer just below the road base fill at T-7, as well as the blue-grey clay layer; two of the three appeared to be disturbed fill to about 75 cm BS. See discussion below.

At location M-1, what appeared to be a prehistoric cultural feature, a collection of rounded cobbles and pebbles associated with dark possible charcoal deposits in a coarse orange-brown matrix that showed laminations and minor but definite layering indicative of natural deposition, was found on and embedded in an old surface about 68-74 cm/27-29" below surface. The feature was quickly cleared, photographed, and 22 rocks and adhering "charcoal" and sand collected for analysis. No definite artifacts were initially identified in the field, nor were any other associated cultural materials identified. This trench was plated but not backfilled and a recommendation made that excavation of an adjoining square-meter hand-excavated test unit be completed to gain more controlled data from the location. Following SCCSD approval, the unit was excavated inside a meter-square cut in the asphalt on the side of the trench nearest the road edge (south side) on 08 July. Two artifacts and a possible manuport were later identified from the trench recovery, and the test unit yielded three possible artifacts from the same layer of coarse sand with many cobbles and pebbles. See discussion below.

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RESULTS AND RECOMMENDATIONS

Initial CEQA-required historic resource inventory research is completed. Surface reconnaissance on the specific Project APE was fruitless because topography and surface features have been greatly altered in the impacts zones, which are nearly all paved or covered by modern features. Only one of the four recorded prehistoric sites could be relocated on the surface (SCR-232), and as presently conceived the project will not affect it. Sites SCR-201, -213, and -264 could not be relocated visually on the surface and this repeats results of recent previous archaeological surveys for all three. Historic resources were also not apparent to surface inspections, with the exception of the wharf posts seen in SSB near Aptos Creek, but outside the APE. A day-long inspection conducted with the three local historians helped indicate potentially archaeologically sensitive zones, but no specific historic features were located.

Although widely spaced over most of the Project, subsurface testing shows that prehistoric archaeological resources are present in the impact zones. Minimal testing for historic archaeological resources was done, although five of the nine trenches were placed in areas with potential for historic deposits, and no potentially significant historic deposits were found.

Subsurface reconnaissance at nine locations targeted recorded archaeological sites and locations with prehistoric or historic archaeological potential. Potentially significant materials were found in two of the nine, both with prehistoric artifacts but no well-defined cultural strata or features. No indications of archaeological materials were found at the recorded location of SCR-264. A single prehistoric artifact was found in the vicinity of SCR-213, but well to the east of the originally recorded location, but as noted the site record does not specify site margins and those margins could not be fixed by this or several other investigations. Location M-1 was found to contain scant but definite and some not-so-definite artifacts, enigmatic prehistoric materials, none of which appear inherently significant but still indicative of archaeological potential. These discoveries are described in more detail below.

Indications of historic deposits were notably lacking in all but test Trench SC-4, where recent (<50 years old) deposits were found from surface to 235 cm/7.7', where the narrow deep trench began to collapse and excavation was terminated. But this trench did not yield any materials reliably dated to more than 50 years, only materials dumped back in the excavation when the existing gravity line was replaced reportedly within the last 17 years (personal communication, Dave Carman, State Parks employee), nor any in good enough condition to yield significant information. The only other possibly historic item found was a portion of a redwood post in M-7C, found in a disturbed matrix.

Prehistoric Cultural Materials

Two test locations yielded prehistoric cultural materials; one was an apparently isolated artifact and the other a possible feature with several artifacts or likely artifacts.

Test Location M-1

The first location containing prehistoric cultural materials was M-1, on McGregor between the NBSB entry road and a County parking lot on the south roadside. Below the road base rock and fill, a stratum of medium coarse orange-brown sand lay on top of an apparent old surface, indicated by

a 1 cm layer of dark brown silt. Below this silt medium to coarse orange sand was again seen, containing evident layering and minor laminations of darker material (which turned out to be stained sand).

The possible cultural feature first appeared as a concentration of rounded cobbles and pebbles in the second medium to coarse orange sand matrix (10YR 4/3 to 4/4 orange-brown, and very similar to where the core in M-7 was found), with associated thin layers, laminations, and wisps of black material thought at first to be charcoal/carbon perhaps related to prehistoric fires. The enclosing matrix, while mostly homogeneous sand, showed layering and thin laminations in the trench walls, and no other rocks occurred until the cobbles were encountered about 68 cm below surface. The "feature" was raked through by the backhoe bucket teeth and disturbed before tractor work was halted and the stratum cleared and explored by hand. The stratum was cleared of sand to expose the cobbles, which did not form a coherent pattern (e.g., a fire-ring) but many had been dislodged. The layer of cobbles and dark materials was about 10 cm/4" thick; the mostly oblong cobbles and pebbles were sandstones, greywacke, mudstone/siltstone, cherty material that appears hydrothermally altered, and one of light yellow-brown quartzite material. Excavating by hand through the rocky layer showed the orange pure sand lay on top of a very thin (<2 cm) layer of darker brown silty fine sand, probably an old surface, which then gave way again to orange-brown sand. The trench wall and floor were photographed, a quick profile of the north wall drawn, and the trench plated to await additional inventory research. Twenty-two cobbles and larger pebbles were collected and bagged for later analysis, along with some of the sand matrix and darker materials.

Upon getting the collected materials back for more minute examination, under magnification it was seen that the dark flecks and undulating thin layers thought to be carbon deposits were not. These stains in the sand matrix did not show any of the characteristic "crystal-like" structure of charcoal and did not smear when broken up. This dark material appears to stain but not penetrate the sand grains; it may be staining from hydrocarbons (i.e., bituminous, tarry, asphaltic, almost and actually petroleum in some places), seeps of which are common along the California coast from Humboldt to San Diego County (Galloway 2008) and are well-known in Santa Cruz County (e.g., see Rowe and Riihimaki 2003). Some of the most ephemeral dark layers and spots also appeared to contain dark biotite mica flecks, as wash up on beaches in the area. The rocks found in the trench and adjacent test unit were uniformly at least partially covered with this dark material, which was much more concentrated on the down-side surfaces than on the upper. None of the rocks recovered from the trench or unit appear burnt or to be fire-altered rock (FAR) or fire-cracked rock (FCR).

The 22 cobbles and pebbles collected from the initial trench "feature" were also washed and closely examined. None appeared to be thermally altered or to have come from a hearth. Three stones appear likely to have been culturally modified–that is, artifacts. One is the single piece of light-colored quarzite, the "best" artifact recovered. This is an irregular rounded cobble about 8 cm long that appears to have one battered surface, where one edge shows a rough surface and the broken crystal faces that typically result from use for hammering or pounding usually hard materials (such as shells or other rocks); this battered surface is small and seems confined to one edge. Another stone also appears to have a battered surface, this being a nearly symmetrical flat ovoid sandstone cobble with one end apparently battered. Unfortunately, scrubbing the sand and adhering tarry material perhaps removed more definitive evidence of use as a hammer stone; this item also has one "ding" from either the backhoe or hand equipment on the upper surface, and another location where a small

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flat spot was scraped away during excavations. The sandstone cobble appears to be a hand-wielded hammer, but the damage to one end could conceivably have resulted from test excavations. The third item retained is a flat greywacke (hard, indurated sandstone, common in the Franciscan Formation) pebble with rounded edges, broken off at one end. This is the only piece of such material found at this location, and could well have been brought to the location by prehistoric users (that is, a "manuport").

Test Unit "M-1A" was excavated by hand on 08 July, a square meter cut through the AC toward the road edge and it and the road base rock removed, after which excavated materials were screened through ¼" dry shaker screens. The unit was excavated by stratigraphic levels, of which there were four or five below the AC and road base fill at the top. Immediately below what appeared to be sandy-rocky brown fill under the road base rock (Stratum 1), a sloping strata of clays was found to extend across the unit (Stratum 2). At the south side the clay was quite thin (<2 cm) but it got deeper and thicker to the north and displayed internal layering, with a very dark grey center; colors ranged from Gley 2.4/N black to 5YR 3/3 dark reddish-brown on the Munsell scale. The clay layer was up to 10 cm thick from about 35-45 cm BS in the middle of the unit's eastern wall. The clay layer continued across the original trench and the again thin layer could be seen in the north trench wall. This clay layer could be historic as its form resembles some old irrigation trenches that have been repeatedly cleared or deepened.

Below the clay layer, Stratum 3 was dark yellowish-brown sand, with coarser sand at the north side, where the coarser sand had extended into the trench. This stratum could have been divided, with finer sand at the south and more coarse at the north. Stratum 3 extended from about 18 cm to 45 cm BS at the south end but was only about 8 cm thick (41-50 cm BS) at the north end. The first possible artifact was found in this stratum between 26 and 37 cm BS. This is a small dark grey quartzite "flake" with attributes typical of hand-made stone flakes, but the material was not seen anywhere else and this item could have come from above, perhaps from the second fill layer below the road base. Found in a prehistoric context, it is a flake; found isolated, it is "iffy."

Stratum 4 was an orange-brown clayey sand (10YR 4/4) that extended from ~45-50 cm to the bottom of the unit at 90 cm BS. This stratum was siltier near the bottom and could have been subdivided at about 80 cm. The line between Strata 3 and 4 was marked by a thin darker clayey layer, in which numerous cobbles and pebbles were embedded, some "stacked," which extended from 40 to 50+ cm BS, with a few cobbles found as deep as70 cm. This zone was carefully excavated as a cultural feature, photographed, and the cobbles carefully brushed clean and examined; only four were bagged as possible artifacts; no obvious artifacts were found initially and no FAR/FCR noted. Again no pattern was observed in the cobbles at any given depth; the darker stained sand swirled around the rocks and adhered mostly to the bottom surfaces, and a couple thin layers of nearly vertical clay "walls" were noted (perhaps cracks that had been infiltrated clays and solidified).

The four rocks retained from approximately 35 found in Stratum 4 were washed and examined in the lab. Two were discarded as nonartifactual, the others retained. One is a Santa Cruz mudstone cobble, flat/concave in profile, with at least two "flake scars" observable on different edges–the kind of scars that result from using a stone edge as a hammer. Although there is also a nick from excavation, the edge scars are covered by the black bituminous material and hence old; but, this is still not definitively an artifact as such scarring could occur during rapid transport by water. The other

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item is a squarish flat cobble of as darker, denser, harder, more siliceous mud/siltstone, with quartz-filled cracks, which as one battered-looking surface. Again, the "battered" surface is old and not caused by our excavation, but could also have occurred naturally rather than culturally. So, in all Test Unit M-1A yielded three possible but not definite artifacts and no other cultural materials such as bone, shell, charcoal.

Location M-1 may best be termed enigmatic. The original trench did encounter what looked like a cultural feature but it was disturbed in being discovered. This "feature" was would be unusual in that the typical indicator, charcoal/carbon from manmade fires, was not present, and nor were other cultural materials found. The trench yielded two probable artifacts and a probable manuport, but no other cultural materials or evidence of cultural deposition. The adjacent controlled test unit yielded even less, just two likely artifacts and another less likely. The "feature" found in the trench did not appear to continue southward into the test unit except slightly, if the coarser sand is taken as the feature matrix; whether it continues northward from the trench is unknown. Features lacking any cultural items but the most durable are not unusual, of course, especially if quite ancient, but the lack of very definite "good" artifacts, bones or shells, a pattern in the rocks, or any other clear indications of cultural origin for the feature makes evaluation of the site with extant data problematic.

Test Location M-7

A single core (the central stone from which lithic flakes are struck for use as tools, or which is modified by reduction into the tool itself, as with a projectile point) of pinkish-brown quartzite material was found between 45 and 50 cm below surface in Trench M-7. This item displays flake scars and compression rings indicating it was reduced from a larger piece by hard percussion; the artifact itself does not appear to be a tool but remnant raw material. Such cores are typical of all stone tool technologies and have been produced by people literally since the production of purposeful tools began. The artifact was found in a matrix of coarse orange-brown sand, a stratum that appeared natural because some uneven thin darker more clayey layers in the otherwise homogeneous matrix were noted in the sidewalls. Precise provenience (depth) could not be determined because the core was backhoed up and retrieved from a screen. The core when collected was covered with the orange sand, but initial washing showed some of the small crack and crevices also contained darker material like the blue-grey clay stratum that underlay the sand at this location; the core probably came from the sand but was right on top of the clay layer below. Below the orange sand, a thin (9-10 cm) layer of grey-blue clay with small rounded pebbles and gravel contained roots, small bits of woody material, and compressed organic materials, looked like typical slow-water or marshy environment deposit. This clay graded into a lighter grey clay with tiny gravels, and together the strata indicate a location where slow water movement deposited clays and as the area filled it became marshy or swampy, to later be covered by coarse sand carried by water flowing faster.

As noted above, three additional trenches were excavated just off the paved road near M-7, one just to the west (M-7A), one next to the original trench (M-7B) and the last to the east (M-7C). None of these trenches contained any of the coarse orange sand seen in M-7, and in most of the trenches along McGregor Drive. Rather, each nearby trench showed what appeared to be disturbed fill down to 76, 81, and at least 77 (and perhaps to 140) cm below surface. It is quite unlikely the orange sand was laid down as fill for the road (McGregor Drive on this alignment did not even exist until at least the 1960s, when road construction techniques would not have included sand for base),

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so the other reasonable conclusion is that the road apron was disturbed and filled. A small drainage ditch was right next to the edge of pavement and a larger ditch running into Pot Belly Creek was just about two meters farther inland.

Summary of Results

Archival and project-specific research shows that the entire Aptos Main Relocation Project is in locations that must be considered sensitive for both prehistoric and historic archaeological potential. Four prehistoric sites are recorded in or directly adjacent to project impact zones, but only two of these merited field investigations. Prehistoric site SCR-264 appears to have either been destroyed or, as concluded by Woodward in 1984, may not have ever been a cultural deposit site. SCR-213 still has not been mapped and it remains questionable whether the site as described from a surface manifestation even exists, but at least one apparently isolated prehistoric artifact was found in the vicinity at test Trench M-7. Location M-1 was found to contain a few likely prehistoric cultural materials but the context and significance of these is unsettled. The minimal subsurface testing conducted to date has not found any significant historic archaeological locations, but archival research strongly suggests such resources should exist within project impacts zones. The following recommendations are made mindful of the context of the project, the scope of impacts, and the results of field surface and subsurface reconnaissance.

RECOMMENDATIONS

Under CEQA procedures, only those cultural resources that qualify as "historic resources" under criteria furnished in CEQA (PRC §5024.1(c)(1-4)) require impact mitigation, but also "CEQA applies to effects on archaeological sites" (CCR §15064.5(c)). The potential for archaeological resources in the Aptos Main Relocation Project impacts zones is illustrated by the presence of sites and the historic and archaeological records, and by the scant but definite archaeological materials found by subsurface reconnaissance. However, the subsurface testing results at this point are not very compelling; one positive location had an isolated artifact, not confirmed as from a site, and the other positive location yielded indistinct evidence that might or might not be a site under DPR definitions. Formal evaluation of these resources under CEQA criteria would be an expensive, time-consuming, and destructive process (it must be recognized that archaeological evaluation requires destructive analysis of resources), would likely need to extend outside Project impact zones, and would perhaps more negatively impact archaeological resources than will the Project. Such evaluative procedures are also reasonably likely to yield equivocal results, so the recommendation below for archaeological monitoring of construction would still be a likely result as well.

Recommendation 1: Archaeological Monitoring

Although the majority of subsurface reconnaissance tests did not find archaeological resources or potential historic resources, the two locations discussed above did contain indications of potential archaeological resources. Given these results and the overall archaeological sensitivity of the Project's impact zones, archaeological monitoring of construction as described below is recommended as appropriate under CEQA. The duration, nature, type, and thoroughness of monitoring should be adjusted at the discretion of a qualified archaeologist.

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Recommendation 2: Archaeological Monitoring Set-up and Procedures

Archaeological monitoring for the Aptos Main Relocation Project should be conducted under a written Archaeological Monitoring Agreement including Santa Cruz County, State Parks, County supervisory personnel, construction management personnel working for the County, and the archaeological monitoring firm. The Archaeological Monitoring Agreement may not necessarily be signed by all parties.

Before construction and archaeological monitoring begin, a formal Archaeological Monitoring Agreement (AMA) should be executed between the County, State Parks, construction contractors for the Project, and the archaeological monitors. While flexibility in implementing monitoring procedures is essential, the AMA will provide basic guidelines for onsite monitoring and reporting requirements.

Prior to construction commencing, a meeting with Santa Cruz County Sanitation District staff, State Parks staff, construction management supervisors for the County, supervisors for the construction companies selected, and the archaeological monitoring team should be held. The role, function, procedures, and onsite authority and responsibility of the monitors should be explained and all safety considerations made manifest. Onsite monitors will continuously observe earth-moving, as long as is warranted in the opinion of the monitoring team. The number of onsite monitors will be adjusted to the scale of earth-moving on given days, so communication regarding scheduling between construction supervisors, the County, State Parks, and the archaeological monitors will be an important function of the team leaders. Procedures, definitions, conditions, techniques, and other specifications will be as delineated in the AMA, which will detail more specifically the process of archaeological monitoring.

A system should be set up for notifying the archaeological monitors of construction schedules, the County and State Parks of ongoing monitoring and any discoveries, and for identifying any problems or conflicts arising during monitoring so these may be expeditiously resolved. This system should also provide for timely notification to the archaeological monitors in the event potential archaeological resources are discovered anywhere outside the areas to be specifically monitored.

All archaeological monitoring, resource evaluation, and mitigative measures should be undertaken under the direction and supervision of professional archaeologists qualified under the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* for such work.

Implementing the AMA will involve qualified professional archaeologists closely following, observing, and recording all monitored excavations. The level of monitoring may be adjusted to circumstances as warranted. That is, should subsurface conditions indicate a potential for historic or prehistoric archaeological materials, continuous up-close monitoring will be maintained. Similarly, if historic or prehistoric archaeological indications are found, continuous thorough monitoring should be maintained in the vicinity as such features or deposits are recorded.

Professional archaeological monitors should be equipped with required safety equipment at all times. Daily Monitoring Records should be completed along with maps of areas monitored. Monitors should be equipped with cameras for photographing earth-moving processes and to record

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Attachment 5 – Air Quality Background Material:

EDAW/AECOM, October, 2008. *Initial Study/Proposed Negative Declaration for Aptos Transmission Main Relocation Project, Santa Cruz County, California* (excerpts, Air Quality)

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Table 1. State and Federal Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards [1]**		**Federal Standards [2]**		
		Concentration [3]	**Method [4]**	**Primary [3,5]**	**Secondary [3,6]**	**Method [7]**
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.08 ppm (157 µg/m³)[8]		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		50 µg/m³		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		65 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m³)		—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		—	—	—
Lead[9]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

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3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18,1997. Contact U.S. EPA for further clarification and current federal policies.
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: California Air Resources Board 2006b.

Regulatory Setting

Air quality in the project area is regulated by such agencies as the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and the Monterey Air District. Each of these agencies develops rules, regulations, policies, and/or goals to attain the directives imposed through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

The following regulations related to air quality are applicable to the proposed project:

- Clean Air Act and Amendments of 1990
- CARB regulations
- Monterey Air District regulations

The Monterey Air District has published the following implementation and management plans for the area:

- Senate Bill 656 Implementation Plan (MBUAPCD 2005)
- 2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region (MBUAPCD 2007)
- 2008 Air Quality Management Plan (MBUAPCD 2008)

Impacts and Mitigation Measures

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact.

Federal Air Quality Plans

Federal clean air regulations require states with areas in nonattainment for air quality standards to develop State Implementation Plans (SIPs) to achieve attainment. SIPs are not single documents, rather they are a compilation of new and previously submitted plans, programs, district rules, state regulations and federal controls. Because the NCCAB is in attainment for all federal standards, the project area does not have an applicable SIP. However, the NCCAB was previously designated a "maintenance" area for the Federal 1-hour ozone standard, which was revoked on June 15, 2005. Therefore, the *2007 Federal Maintenance Plan for Maintaining the*

National Ozone Standard in the Monterey Bay Region (Federal Maintenance Plan) was prepared as required for areas in attainment for the current 8-hour ozone standard that had an approved Federal Maintenance Plan for the previous 1-hour ozone standard.

State Air Quality Plans

State clean air regulations require air districts to develop plans to achieve a reduction in district-wide emissions of 5 percent or more per year for each nonattainment pollutant or its precursors, averaged every consecutive three-year period, unless an alternative measure of progress is approved (MBUAPCD 2004b). The Monterey Air District prepared the *2008 Air Quality Management Plan for the Monterey Bay Region* (AQ Management Plan) and the *2005 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region: Senate Bill 656 Implementation Plan* (Bill 656 Implementation Plan). These plans mainly focus on reducing emissions from stationary sources.

Impact Analysis

The proposed project would generate short-term construction emissions, including ozone precursors, *i.e.*, volatile organic compounds (VOC) and nitrogen oxides (NOx), and particulate matter from fugitive dust and vehicle emissions. Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. The Monterey Air District published *CEQA Air Quality Guidelines* (MBUAPCD 2004b), which establish thresholds of significance for determining short-term construction impacts. According to the guidelines, a project would conflict with or obstruct implementation of an air quality plan if it would emit 137 pounds per day or more of direct and indirect VOC or NOx emissions or be inconsistent with the Air Quality Management Plan (MBUAPCD 2004b). An analysis of construction emissions was conducted as part of a Federal Conformity Determination (Appendix D), which determined the project is expected to emit 0.56 tons/year of VOC and 6.59 tons/year of NOx. Assuming a 100-workday-per-year schedule (as used in the conformity analysis), the project is expected to emit 11.2 pounds per day of VOC and 131.8 pounds per day of NOx. In addition, implementation of the proposed project is not anticipated to increase population or vehicle miles traveled beyond that already assumed and approved for development and accounted for in the emissions budgets developed by the Monterey Air District and included in the air quality plans. The proposed project will not result in the operation of any major permanent stationary emission source. Therefore, the proposed project is consistent with both the federal and state air quality plans developed by the Monterey Air District. In conclusion, the project would not conflict with or obstruct implementation of the Federal Maintenance Plan, AQ Management Plan, or the Bill 656 Implementation Plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant with Mitigation Incorporation. The Monterey Air District has established thresholds for determining the significance of potential air quality impacts. According to the Monterey Air District CEQA Air Quality Guidelines (MBUAPCD 2004b), a project will violate an air quality standard if the project will:

- emit 137 pounds per day or more of VOC or NOx,
- directly emit 550 pounds per day or more of CO,

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- generate traffic that significantly affects levels of service,
- directly emit 82 pounds per day or more of particulate matter (PM_{10}) on site during operation or construction,
- generate traffic on unpaved roads of 82 pounds per day or more of particulate matter, or
- directly emit 150 pounds per day or more of SOx.

Only minor short-term construction trips would be generated, which would not exceed the Monterey Air District thresholds for criteria air pollutants. Dust emissions associated with project trenching and grading would be limited by the below-ground location of the trenching (which reduces wind entrainment of dust), the limited area of ground disturbance, and the likelihood that soil at trenching depths may be moist. No other elements of the sewer line improvement project would generate air quality impacts.

Please see response to 3.3(a) above for a discussion of VOC and NOx emissions related to the project. In addition, the Monterey Air District's CEQA Air Quality Guidelines state, "Construction projects using typical construction equipment such as dump trucks, scrappers, bulldozers, compactors, and front-end loaders which temporarily emit precursors of ozone are accommodated in the emission inventories of state- and federally required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS" (MBUAPCD 2004b). According to the Conformity Determination (Appendix D), the project is expected to emit 3.78 tons/year of CO and 0.41 tons/year of particulate matter. Assuming 100 workdays in a year, the project would emit an average of 75.6 pounds per day of CO and 8.2 pounds per day of particulate matter. This is below the established thresholds of significance. The project will not generate traffic that significantly affects levels of service, nor would traffic be generated on unpaved roads. The project will emit less than 150 pounds per day of SOx. Therefore, the project will not violate air quality standards and will have a less than significant impact on air quality.

In addition, the project's air quality impacts also have been reviewed for compliance with the federal General Conformity Rule for the Federal Clean Air Act. The USEPA published *Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule*, in the November 30, 1995, Federal Register (codified at 40 CFR § 93(a)). The regulation states that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity which does not conform to an applicable implementation plan (40 CFR § 93.150). It is the responsibility of the federal agency to determine whether a federal action conforms to the applicable implementation plan, before the action is taken.

Federal actions may be exempt from conformity determinations if they do not exceed designated threshold levels. The regulation establishes these threshold levels for criteria pollutants (Table 2, see 40 CFR § 93.153(b)(1)).

Table 2. Threshold Air Pollution Levels

Pollutant	Threshold Level (tons/year)
Carbon Monoxide (CO)	100
Particulate Matter (PM_{10})	100
Volatile Organic Compounds (VOCs)	100
Nitrogen Oxides (NOx)	100

If these thresholds are not exceeded, and the proposed action does not create emissions that constitute more than 10 percent of the air basin's emission budget, a formal conformity analysis is not required. The calculations in Table 3 below show that thresholds for applicable criteria pollutants would not be exceeded nor would the projected emissions be regionally significant (i.e., greater than 10 percent of the air basin's emission budget) as a result of implementation of the proposed action. The emissions summary supporting that conclusion is shown above. Therefore, further formal Conformity Determination procedures are not required. The Record of Non-Applicability is attached as Appendix D.

Table 3. Total Construction Activity Emissions Burden

	Emissions (tons)[1]			
Source	**CO**	**VOC**	**NOx**	**PM-10**
Backhoes (4)	0.34	0.13	1.61	0.11
Loaders (3)	0.34	0.15	1.13	0.10
Crane (1)	0.13	0.03	0.34	0.03
Drilling Machine (1)	0.13	0.03	0.34	0.03
Jacking Machine (1)	0.33	0.03	0.73	0.05
On-road Trucks (16)[2]	1.85	0.12	2.37	0.08
Employee Commuting (20)[3]	0.66	0.07	0.07	0.01
TOTAL	**3.78**	**0.56**	**6.59**	**0.41**
Threshold Level	100.	100.	100.	100.
Exceeds Threshold	No	No	No	No

[1]100 workdays/year x 8 hours/day x 0.5 (power setting) x Emission Factor (AP-42).
[2]16 trucks x 100 mi./day x Emission Factor (EMFAC2002) x 100 days/yr.
[3]20 employees x 100 mi./day.

Based on the significance thresholds established in the Monterey Air District CEQA Air Quality Guidelines and the Federal Conformity Regulations, there would be no significant impacts related to violation of air quality standards. Although the project will have a less than significant impact, the Monterey Air District CEQA Air Quality Guidelines identify mitigation measures that it recommends projects implement to reduce impacts resulting from fugitive dust (particulate matter) due to construction emissions. The District will implement these measures as part of the project to the extent feasible to ensure impacts are less than significant.

Mitigation Measure Air-1:

- Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities during periods of high wind (over 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at lease four consecutive days).
- Apply non-toxic binders (i.e. latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area.
- Haul trucks shall maintain at least 2 feet of freeboard.
- Cover all trucks hauling dirt, sand, or loose materials.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all existing trucks.
- Pace all roads at construction sites.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant with Mitigation Incorporation. As previously discussed, the NCCAB is in nonattainment status for state standards for 1-hour ozone and PM_{10}. The Monterey Air District CEQA Air Quality Guidelines state that for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impacts should be based on an evaluation of the consistency of the project with the air quality management plan for projects above the de minimus levels (MBUAPCD 2004b). As discussed in section (b) above, the proposed project would not have any significant long-term operational air quality impacts and short-term construction impacts will not be above de minimus (threshold) levels. As discussed in section (a) above, the proposed project would not permanently generate additional motor vehicle trips, vehicle miles traveled, or additional stationary sources. As discussed in section (b) above, project implementation would not result in short-term construction or long-term operation ozone precursor (VOC and NOx) emissions or local CO emissions that would result in or contribute substantially to an air quality violation.

Based on the foregoing analysis, the project would not result in a cumulatively considerable net increase of any air pollutants. The project construction would not contribute substantially to cumulative ozone or PM_{10} emissions. Therefore, the project impact is considered less than significant. Nevertheless, because the NCCAB is in nonattainment for state standards for particulate matter, the District will implement Mitigation Air-1 as detailed in section (b) above.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact with Mitigation Incorporation. A majority of the proposed project area is surrounded by low density residences and open space. The nearest sensitive receptors include residences along New Brighton Beach Road where the Tannery Gulch and

Potbelly Beach facilities will be constructed. The nearest residence will be approximately 50 feet from the proposed Potbelly Beach Pump Station.

Criteria Air Pollutant Emissions

As discussed in item (b) above, the proposed project will not result in short-term construction or long-term operational ozone precursor emissions, particulate matter, or local CO emissions that would result in or contribute substantially to an air quality violation. The project's primary pollutant emissions would be fugitive dust during construction. The sensitive receptors in the area would not be exposed to substantial concentrations of dust during construction or potential hauling of debris, because Mitigation Measure Air-1 (above) and Mitigation Measure Air-2 (below) would reduce dust and emissions during the construction period.

Toxic Air Emissions

Construction equipment used for the proposed project would result in the generation of particulate exhaust emissions from diesel-fueled engines (diesel PM) from the use of off-road diesel equipment required for grading and soil excavation and other construction activities. Diesel PM was identified as a toxic air contaminant (TAC) by the California Air Resources Board (CARB) in 1998. The Monterey Air District CEQA Air Quality Guidelines state that construction equipment or processes would not result in significant air quality impacts if they would comply with Rule 1000 (or the Office of Environmental Health Hazards Assessment, CAPCOA[5] Risk Assessment Guidelines, USEPA) (MBUAPCD 2004b). Rule 1000 requires construction equipment to install best available control technology, which will be used on all equipment for the proposed project. In addition, the following mitigation measures from the Monterey Air District CEQA Air Quality Guidelines will reduce potential for diesel PM emissions from construction equipment.

Mitigation Measure Air-2: The following measures shall be implemented where feasible to reduce emissions from construction equipment exhaust:

- limit use of equipment;
- replace diesel-powered equipment with gasoline-powered;
- use PuriNOx emulsified diesel fuel in existing engines;
- modify engine with ARB verified retrofit;
- repower with current standard diesel technology;
- repower with CNG.LNG technology;
- retrofit heavy duty diesel engines as specified in Table 8-4 of the Monterey Air District CEQA Air Quality Guidelines; and
- utilize alternative fuel technologies where feasible as specified in Table 8-7 of the Monterey Air District CEQA Air Quality Guidelines.

[5] California Air Pollution Control Officers Association (CAPCOA) is a non-profit association that provides a forum for sharing of knowledge, experience, and information among the air quality regulatory agencies around the State.

The NCCAB is designated in attainment or unclassified for all the National Ambient Air Quality Standards (CARB 2006a). A new federal ozone standard for 8 hours was adopted in 1997 although implementation was delayed due to litigation. The new federal 8-hour ozone standard replaced the 1-hour standard in 2005 (MBUAPCD 2007). There have been no violations of the Federal 1-hour ozone standard since 1990 in the NCCAB, and the area was designated a Federal Maintenance Area for ozone in March 1997 (MBUAPCD 2004a). The NCCAB is designated in attainment for the new federal 8-hour ozone standard (MBUAPCD 2007). State and Federal Ambient Air Quality Standards are shown in Table 1, *State and Federal Ambient Air Quality Standards*.

EXHIBIT D

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
KATHY MOLLOY PREVISICH, PLANNING DIRECTOR

NEGATIVE DECLARATION AND NOTICE OF DETERMINATION

Application: 111050 **Pot Belly Club Water Line Replacement Project** **APN(S): 038-231-38**

Proposal to extend a Soquel Creek Water District water line to serve existing properties at Pot Belly Beach. Requires a Coastal Permit (111050) and Soils Report Review (REV111022). Water line to be installed in New Brighton Road and undercliff to Pot Belly Road located off McGregor Drive in Aptos (135 and 120 New Brighton Road).

Zone District: PR (Parks – Recreation)
OWNER: Pot Belly Beach Club
APPLICANT: Charlie Eadie, Hamilton Swift
STAFF PLANNER: Robin Bolster-Grant
EMAIL: pln111@co.santa-cruz.ca.us
ACTION: Negative Declaration with mitigations
This project will be considered at a public hearing by the Zoning Administrator.

The Environmental Coordinator for the County of Santa Cruz has considered the Negative Declaration as prepared by the Soquel Creek Water District, acting as lead agency, and has made the following findings.
This project, if conditioned to comply with required mitigation measures or conditions attached, will not have significant effect on the environment. The expected environmental impacts of the project are documented in the Initial Study on this project, attached to the original of this notice on file with the Planning Department, County of Santa Cruz, 701 Ocean Street, Santa Cruz, California.

Required Mitigation Measures or Conditions:
_____ None
__XX__ Are Attached

Date Approved By Environmental Coordinator: May 2, 2011

MATT JOHNSTON
Environmental Coordinator
(831) 454-3201

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

NOTICE OF DETERMINATION

The Final Approval of This Project was Granted by _____

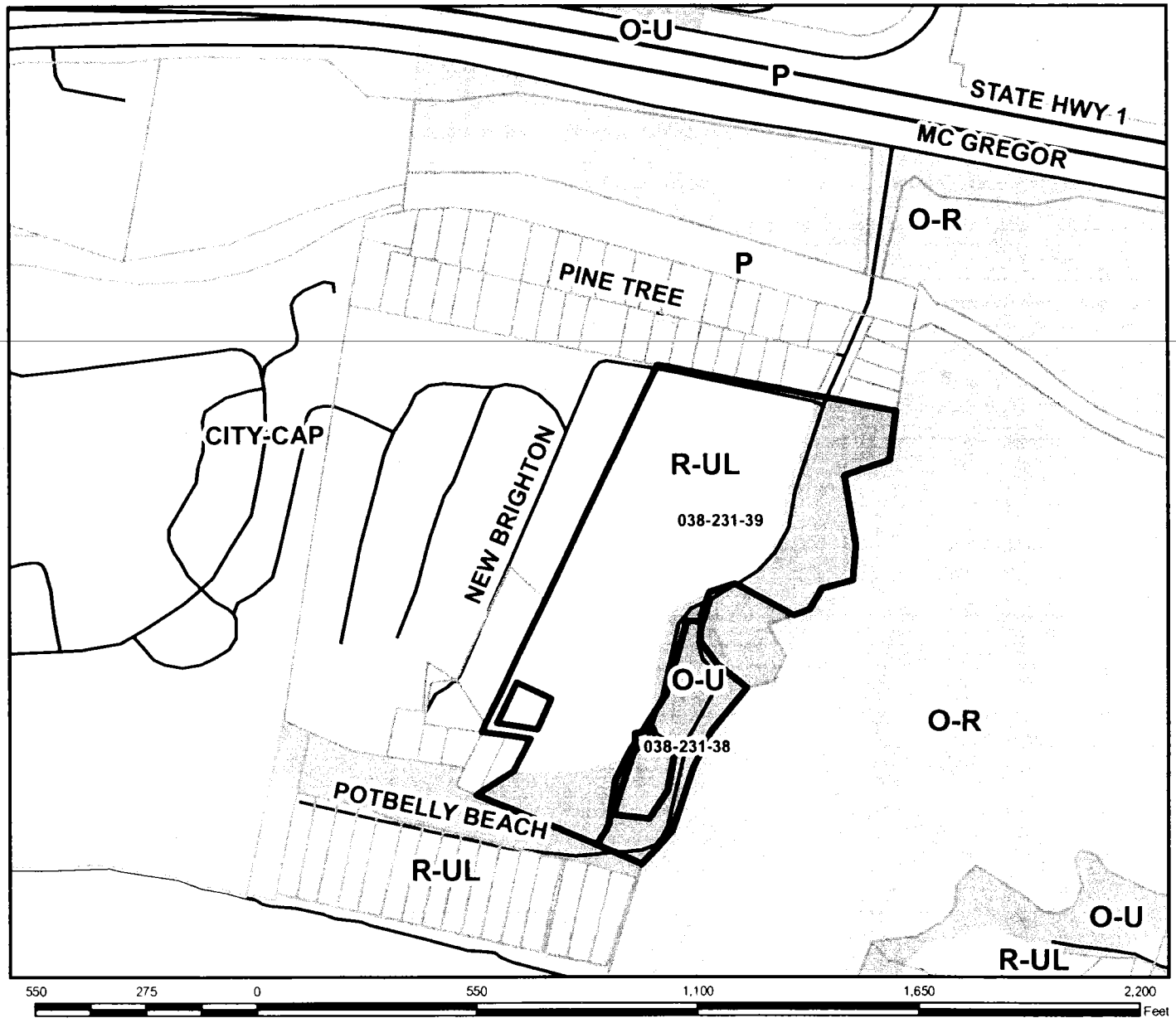
on _____ (Date). No EIR was prepared under CEQA.

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

Date completed notice filed with Clerk of the Board: _____

EXHIBIT D

General Plan Designation Map



LEGEND

- APN: 038-231-39
- APN: 038-231-38
- Assessors Parcels
- Streets
- State Highways
- CAPITOLA
- County Boundary
- Residential - Urban Low Density
- Public Facilites
- Parks and Recreation
- Urban Open Space

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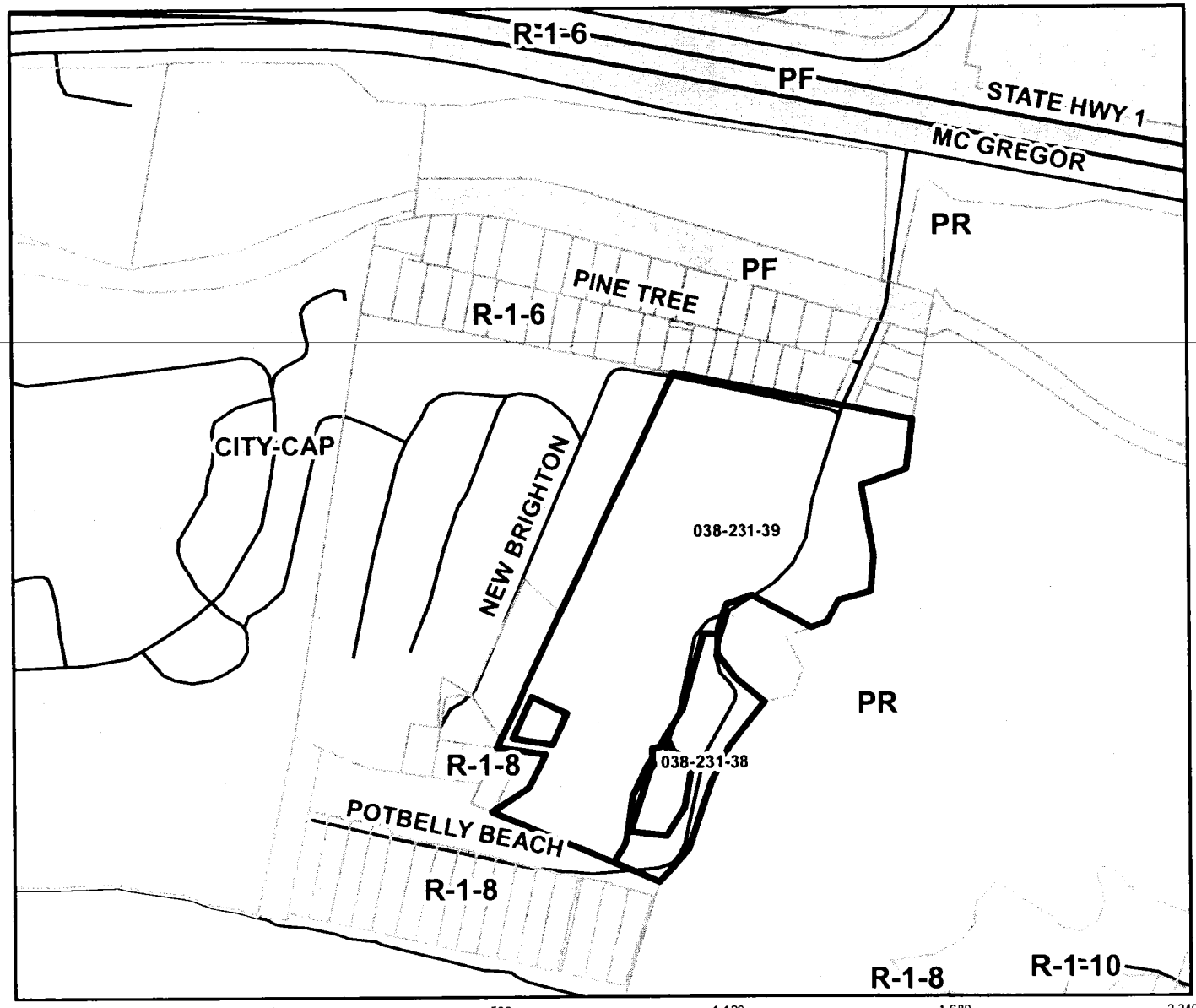
S

Map Created by
County of Santa Cruz
Planning Department
April 2011

EXHIBIT E

Zoning Map



LEGEND

- APN: 038-231-39
- APN: 038-231-38
- Assessors Parcels
- Streets
- State Highways
- CAPITOLA
- County Boundary
- PARK
- RESIDENTIAL-SINGLE FAMILY
- PUBLIC FACILITY

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Map Created by
County of Santa Cruz
Planning Department
April 2011

EXHIBIT EE

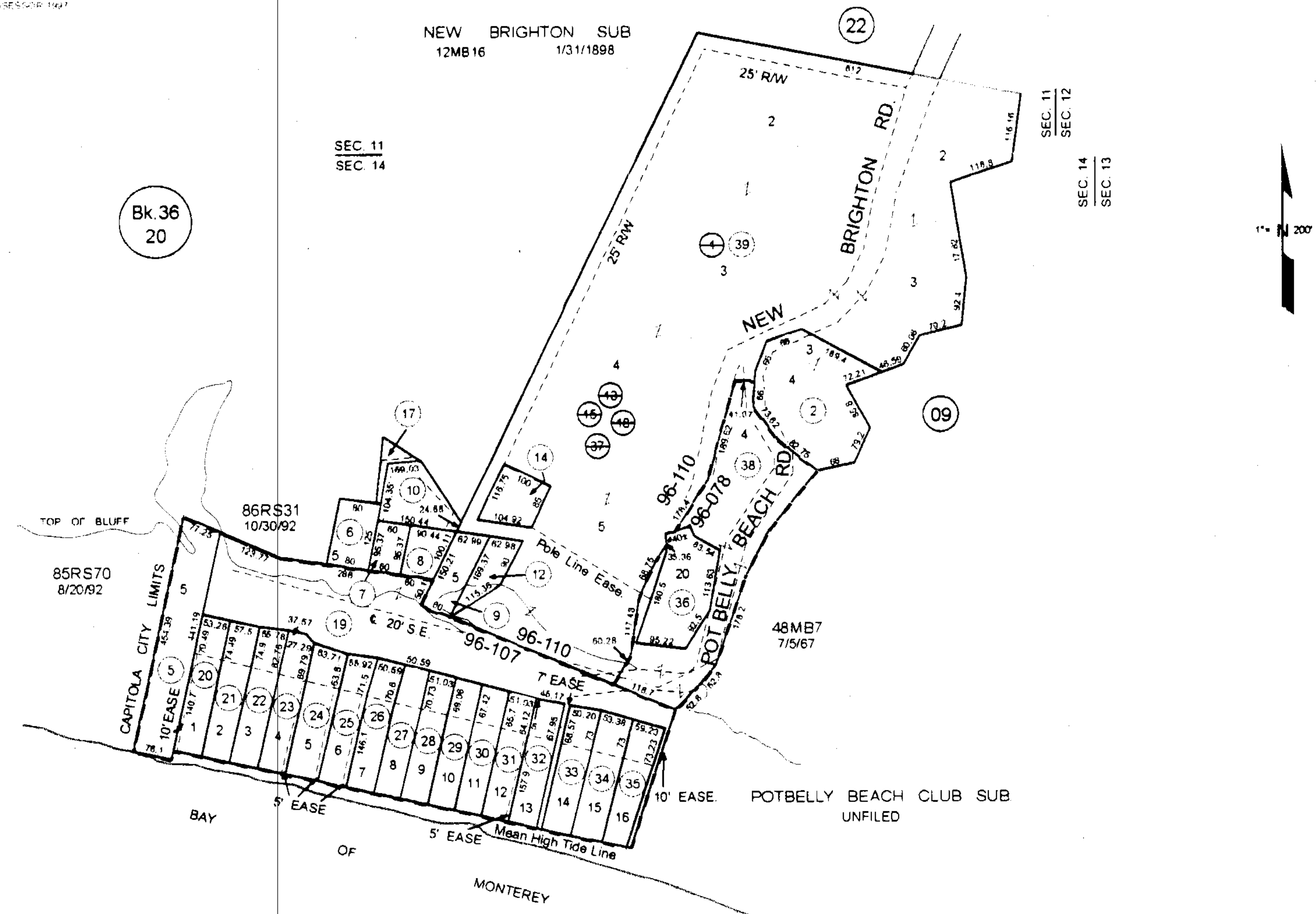
FOR TAX PURPOSES ONLY

SOQUEL RANCHO

POR. SECS. 11, 12, 13 & 14, T.11S., R.1W., M.D.B. & M.

Tax Area Code
96-078 96-107
96-110

38-23



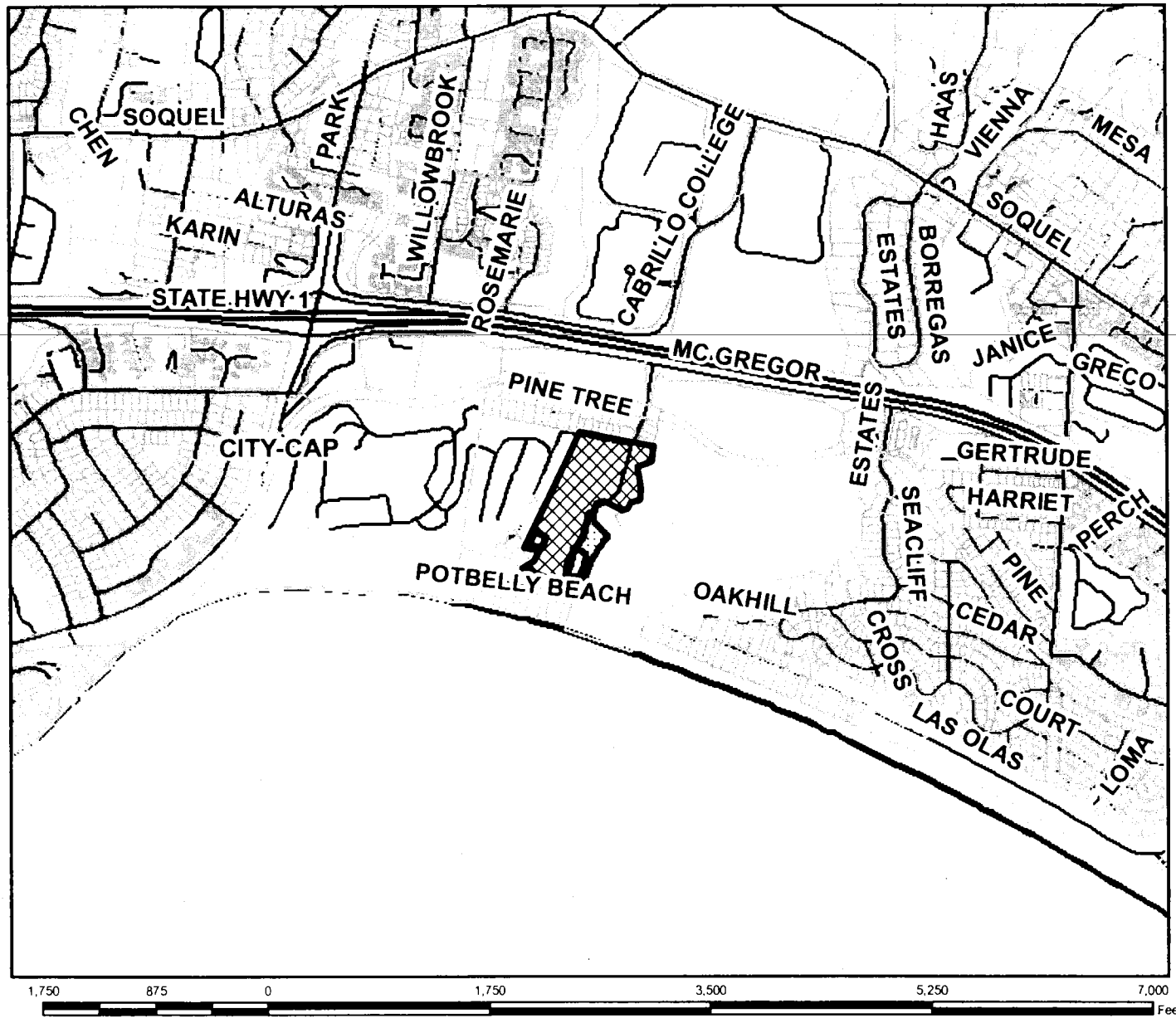
Electronically Redrawn 11/19/97 wrlp
Rev 5/4/98 KSA (CA)
Rev 8/19/98 GG (Cor CA)
Rev 3/3/06 md (spatial adjustment)

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

Assessor's Map No. 38-23
County of Santa Cruz, Calif.
Nov., 1997

EXHIBIT E

Location Map



LEGEND

- APN: 038-231-39
- APN: 038-231-38
- Assessors Parcels
- Streets
- State Highways
- CAPITOLA
- County Boundary

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Map Created by
County of Santa Cruz
Planning Department
April 2011

EXHIBIT EE

County of Santa Cruz, PLANNING DEPARTMENT

Discretionary Application Comments 111050

APN 038-231-38

Driveway/Encroachment Review

Routing No: 1 | Review Date: 04/25/2011

ROBIN BOLSTER (RBOLSTER) : Complete

Completeness Comments:

Please revise plans to include the following:

Note on plans "Trenching in the right-of-way (McGregor Dr) shall conform to County of Santa Cruz Design Criteria including but not limited to FIG EP-1 and FIG EP-2. Encroachment Inspector may have additional requirements for finished paving; it shall be determined in the field", please revise plans to include details.

Work in the right-of-way will require an encroachment permit which must be applied for prior to approval of your plans. You may apply for an encroachment permit at the Department of Public Works, 701 Ocean Street, Room 410, Santa Cruz, CA 95060. Please provide 2 copies of your final site plan and any details pertaining to work within right-of-way.

Design Criteria is available at the following internet address:

http://www.dpw.co.santa-cruz.ca.us/DESIGNCRITERIA.pdf

If you have any questions please contact Anwar Mirza at 831-454-3255.

Environmental Planning

Routing No: 1 | Review Date: 04/25/2011

ANTONELLA GENTILE (AGENTILE) : Incomplete

Completeness Comments

1. The soils report is currently under review. Completeness comments from Joe Hanna, County Geologist, and Carolyn Banti, Associate Civil Engineer:

1A. Provide updates to the soils report and the engineering geology report that identify and make additional recommendations for changes to the site near the bluff, including but not limited to recent bluff erosion.

1B. Provide a cross-section through the slope demonstrating that the water line will be bored below the projected zones of instability and erosion. Provide a protective vault at the base of the slope if the water line will intercept the slope above the roadway. This vault must protect the water line from instability.

1C. Please address the 100-year slope setback from the bluff edge in compliance with General Plan Policy 6.2.12 and demonstrate that there is no alternative.

2. Please identify the location, size, and species of all trees to be removed on a site plan.

Conditions of Approval

1. All mitigation measures as identified in the March 22, 2010 Initial Study prepared by Hamilton Swift Consultants shall be implemented.

2. Water line components located within the special flood hazard area (SFHA) shall be waterproofed to prevent flood waters from entering the water line.

Routing No: 2 | Review Date:

County of Santa Cruz, PLANNING DEPARTMENT

Discretionary Application Comments 111050

APN 038-231-38

Environmental Planning

() :

Fire Review

Routing No: 1 | Review Date: 04/13/2011

KAREN MILLER (KMILLER) : Complete

Project Review

Routing No: 1 | Review Date: 04/25/2011

ROBIN BOLSTER (RBOLSTER) : Incomplete

Incomplete

See comments from Environmental Planning regarding Incomplete items.

Miscellaneous

Santa Cruz County is the responsible local agency for this project with respect to CEQA. Therefore Matt Johnston, the County Environmental Coordinator, is currently reviewing the Initial Study/Proposed Mitigated Negative Declaration prepared for this project. Please be aware that, while not a part of the "completeness determination," the review of the Initial Study may result in a request for additional information and/or the imposition of additional mitigation measures.

Routing No: 2 | Review Date:

() :

Road Engineering Review

Routing No: 1 | Review Date: 04/12/2011

RODOLFO RIVAS (RRIVAS) : Complete

Permit Conditions and Additional Information:

Applicant will need to obtain an encroachment permit for all construction work performed within the County Right of Way.

EXHIBIT FF