



County of Santa Cruz

PLANNING DEPARTMENT

701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060

(831) 454-2580 FAX: (831) 454-2131

KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

www.sccoplanning.com

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

NOTICE OF PUBLIC REVIEW AND COMMENT PERIOD

Pursuant to the California Environmental Quality Act, the following project has been reviewed by the County Environmental Coordinator to determine if it has a potential to create significant impacts to the environment and, if so, how such impacts could be solved. A Negative Declaration is prepared in cases where the project is determined not to have any significant environmental impacts. Either a Mitigated Negative Declaration or Environmental Impact Report (EIR) is prepared for projects that may result in a significant impact to the environment.

Public review periods are provided for these Environmental Determinations according to the requirements of the County Environmental Review Guidelines. The environmental document is available for review at the County Planning Department located at 701 Ocean Street, in Santa Cruz. You may also view the environmental document on the web at www.sccoplanning.com under the Planning Department menu. If you have questions or comments about this Notice of Intent, please contact Todd Sexauer of the Environmental Review staff at (831) 454-3511.

The County of Santa Cruz does not discriminate on the basis of disability, and no person shall, by reason of a disability, be denied the benefits of its services, programs or activities. If you require special assistance in order to review this information, please contact Bernice Shawver at (831) 454-3137 to make arrangements.

PROJECT: 8 TOWNHOUSES – E. CLIFF DR. “ROAD HOUSE” SITE

APP #: 151204

APN(S): 032-181-08

PROJECT DESCRIPTION: The project proposes to divide an existing 39,250 square foot parcel into eight residential parcels and construct eight residential dwelling units. The proposal also includes the removal of two significant trees (42 in. diameter and 24.2 in. diameter) and the grading to include approximately 200 cubic yards of cut and 1,300 cubic yards of fill. The project requires a Subdivision, Residential Development Permit, Coastal Development Permit, Roadway/Roadside Exception, Preliminary Grading Review, and Soils Report Review.

PROJECT LOCATION: The proposed project is located on the north side of East Cliff Drive approximately 500 feet east of the intersection with 38th Avenue, (at 2-3905 East Cliff Drive) within the Pleasure Point community of the Live Oak planning area in unincorporated Santa Cruz County. The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

EXISTING ZONE DISTRICT: RM-4

APPLICANT: Thacher & Thompson

OWNER: Pietro Family Investments

PROJECT PLANNER: Randall Adams

EMAIL: Randall.Adams@santacruzcounty.us

ACTION: Negative Declaration with Mitigations

REVIEW PERIOD: November 3, 2016 through December 2, 2016

This project will be considered at a public hearing by the Planning Commission. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.



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<http://www.sccoplanning.com/>

MITIGATED NEGATIVE DECLARATION

Project: 8 Townhouses – E. Cliff Drive “Road House” Site

APN(S): 032-181-08

Project Description: The project proposes to divide an existing 39,250 square foot parcel into eight residential parcels and construct eight residential dwelling units. The proposal also includes the removal of two significant trees (42 in. diameter and 24.2 in. diameter) and the grading to include approximately 200 cubic yards of cut and 1,300 cubic yards of fill. The project requires a Subdivision, Residential Development Permit, Coastal Development Permit, Roadway/Roadside Exception, Preliminary Grading Review, and Soils Report Review.

Project Location: The proposed project is located on the north side of East Cliff Drive approximately 500 feet east of the intersection with 38th Avenue, (at 2-3905 East Cliff Drive) within the Pleasure Point community of the Live Oak planning area in unincorporated Santa Cruz County. The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

Owner: Pietro Family Investments

Applicant: Thacher & Thompson

Staff Planner: Randall Adams, (831) 454-3218

Email: Randall.Adams@santacruzcounty.us

This project will be considered at a public hearing by the Planning Commission. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

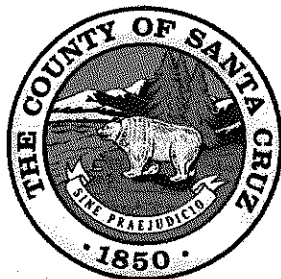
California Environmental Quality Act Mitigated Negative Declaration Findings:

Find, that this Mitigated Negative Declaration reflects the decision-making body's independent judgment and analysis, and; that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period; and, that revisions in the project plans or proposals made by or agreed to by the project applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and, on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project as revised will have a significant effect on the environment. The expected environmental impacts of the project are documented in the attached Initial Study on file with the County of Santa Cruz Clerk of the Board located at 701 Ocean Street, 5th Floor, Santa Cruz, California.

Review Period Ends: December 2, 2016

Date: _____

TODD SEXAUER, Environmental Coordinator
(831) 454-3511



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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) INITIAL STUDY/ENVIRONMENTAL CHECKLIST

Date: October 24, 2016

Application Number: 151204

Project Name: 8 Townhouses - E. Cliff Dr.
"Road House" site

Staff Planner: Randall Adams

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Thacher & Thompson

APN(s): 032-181-08

OWNER: Pietro Family Investments

SUPERVISORAL DISTRICT: 1

PROJECT LOCATION: The proposed project is located on the north side of East Cliff Drive approximately 500 feet east of the intersection with 38th Avenue, (at 2-3905 East Cliff Drive) within the Pleasure Point community of the Live Oak planning area in unincorporated Santa Cruz County (Attachment 2). Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

SUMMARY PROJECT DESCRIPTION:

The project proposes to divide an existing 39,250 square foot parcel into eight residential parcels and construct eight residential dwelling units. The proposal also includes the removal of two significant trees (42 in. diameter and 24.2 in. diameter) and the grading to include approximately 200 cubic yards of cut and 1,300 cubic yards of fill. The project requires a Subdivision, Residential Development Permit, Coastal Development Permit, Roadway/Roadside Exception, Preliminary Grading Review, and Soils Report Review.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: *All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.*

- | | |
|---|---|
| <input type="checkbox"/> Aesthetics and Visual Resources | <input type="checkbox"/> Land Use and Planning |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Noise |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Tribal Cultural Resources | <input type="checkbox"/> Recreation |

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.

- | | |
|---|---|
| <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Utilities and Service Systems |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Mandatory Findings of Significance |
| <input type="checkbox"/> Hydrology/Water Supply/Water Quality | |

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- | | |
|--|--|
| <input type="checkbox"/> General Plan Amendment | <input checked="" type="checkbox"/> Coastal Development Permit |
| <input checked="" type="checkbox"/> Land Division | <input checked="" type="checkbox"/> Grading Permit |
| <input type="checkbox"/> Rezoning | <input type="checkbox"/> Riparian Exception |
| <input checked="" type="checkbox"/> Development Permit | <input type="checkbox"/> LAFCO Annexation |
| <input type="checkbox"/> Sewer Connection Permit | <input type="checkbox"/> Other: |

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (e.g., permits, financing approval, or participation agreement):

Permit Type/Action

Agency

Coastal Development Permit

California Coastal Commission (County LCP)

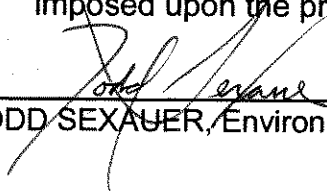
DETERMINATION:

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 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.

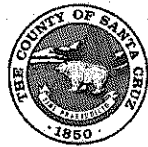
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to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



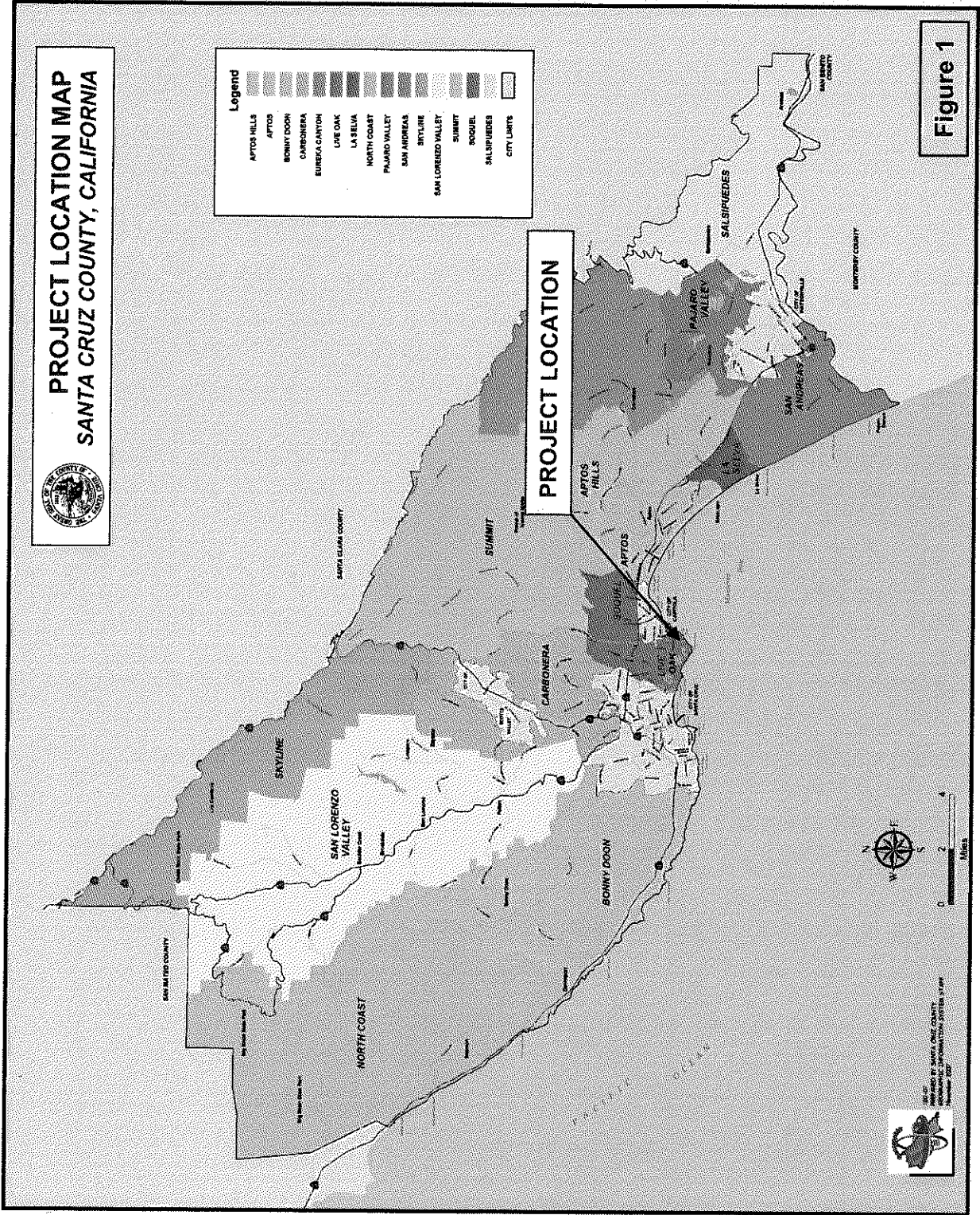
TODD SEXAUER, Environmental Coordinator

10/28/16

Date

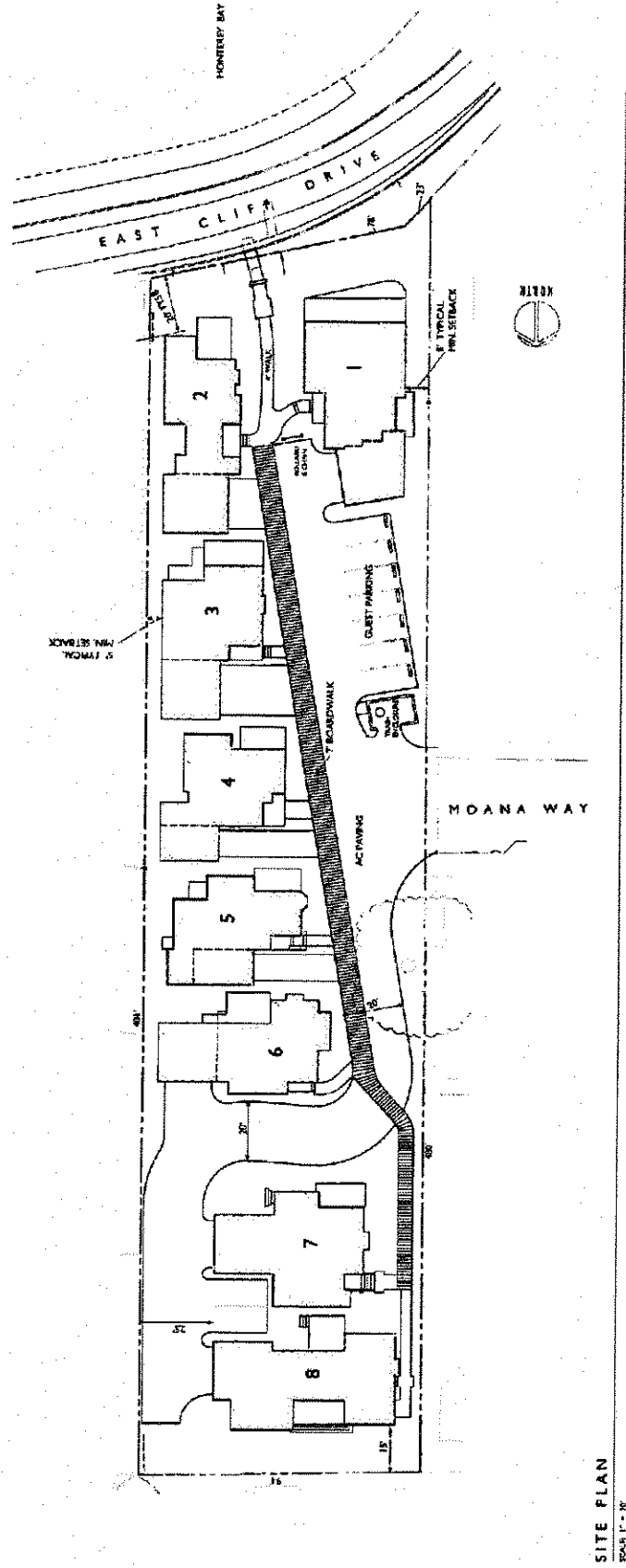


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Project Site Plan

Figure 2



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II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS:

Parcel Size: 39,250 square feet (0.9 acres)
Existing Land Use: Vacant/Unimproved
Vegetation: Low grasses, dirt and a few trees
Slope in area affected by project: 0 - 30% 31 - 100% N/A
Nearby Watercourse: Moran Lake Drainage (west) and Pacific Ocean (south)
Distance To: 1,500 feet to Moran Lake Drainage & 100 feet to Pacific Ocean

ENVIRONMENTAL RESOURCES AND CONSTRAINTS:

Water Supply Watershed:	Not mapped or identified on site	Fault Zone:	Not mapped or identified on site
Groundwater Recharge:	Not mapped or identified on site	Scenic Resource:	Scenic beach viewshed
Timber or Mineral:	Not mapped or identified on site	Historic:	Roadhouse structure evaluated for listing and determined to not be a historic resource (demolished)
Agricultural Resource:	Not mapped or identified on site	Archaeology:	Not mapped or identified on site
Biologically Sensitive Habitat:	Biotic Assessment completed - No Tarplant identified on site	Noise Constraint:	Not mapped or identified on site
Fire Hazard:	Not mapped or identified on site	Electric Power Lines:	No high voltage transmission lines
Floodplain:	Not mapped or identified on site	Solar Access:	Available
Erosion:	Low erosion potential	Solar Orientation:	Level
Landslide:	No landslides identified on site	Hazardous Materials:	Site Assessment completed
Liquefaction:	Low liquefaction potential		

SERVICES:

Fire Protection:	Central FPD	Drainage District:	Zone 5 Flood Control District
School District:	Soquel Elementary Santa Cruz High School	Project Access:	Moana Way

Sewage Disposal: Santa Cruz County
Sanitation District

Water Supply: City of Santa Cruz
Water Department

PLANNING POLICIES:

Zone District: RM-4

Special Designation: -PP (Pleasure Point
combining district)

General Plan: R-UM

Urban Services
Line: Inside

Outside

Coastal Zone: Inside

Outside

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

Natural Environment

Santa Cruz County is uniquely situated along the northern end of Monterey Bay approximately 55 miles south of the City of San Francisco along the Central Coast. The Pacific Ocean and Monterey Bay to the west and south, the mountains inland, and the prime agricultural lands along both the northern and southern coast of the county create limitations on the style and amount of building that can take place. Simultaneously, these natural features create an environment that attracts both visitors and new residents every year. The natural landscape provides the basic features that set Santa Cruz apart from the surrounding counties and require specific accommodations to ensure building is done in a safe, responsible and environmentally respectful manner.

The California Coastal Zone affects nearly one third of the land in the urbanized area of the unincorporated County with special restrictions, regulations, and processing procedures required for development within that area. Steep hillsides require extensive review and engineering to ensure that slopes remain stable, buildings are safe, and water quality is not impacted by increased erosion. The farmland in Santa Cruz County is among the best in the world, and the agriculture industry is a primary economic generator for the County. Preserving this industry in the face of population growth requires that soils best suited to commercial agriculture remain active in crop production rather than converting to other land uses.

Project Site

The subject property is located on the north side of East Cliff Drive in the Live Oak planning area of the unincorporated County of Santa Cruz. The parcel is currently vacant and covered primarily in low grasses with three larger trees that are located on the west side of the property. The property is bounded by East Cliff Drive to the south and a mix of single and multi-family residential development to the north, east, and west. The Pacific Ocean is located to the south of the property beyond the East Cliff Drive multiple-use pathway and the coastal bluff.

PROJECT BACKGROUND:

The project is located on the site of the former Pleasure Point Roadhouse. Prior to demolition, the Roadhouse was evaluated during the Live Oak Historic Resources Inventory Update for listing as a designated historic resource. The Historic Resources Commission recommended to the Board of Supervisors that the property be assigned a rating of NR6, indicating that the property had been evaluated and determined to not be historically significant. The Board of Supervisors voted on February 12, 2008 to not designate the property as a historic resource.

Following the action by the Board of Supervisors, Coastal Development Permit application (08-0090) was made on March 8, 2008 to demolish the Roadhouse and associated structures. The Coastal Development Permit was approved by the Zoning Administrator on June 13, 2008, and the approval was appealed to the California Coastal Commission. On September 11, 2008 the Coastal Commission determined that there was No Substantial Issue for the commission to consider, and the final action taken by the Zoning Administrator was upheld.

DETAILED PROJECT DESCRIPTION:

This application is a proposal to divide an existing 39,250 square foot parcel into eight residential parcels and to construct eight residential dwelling units (Attachment 3). Access to the property is proposed via Moana Way on the west side of the parcel with an interior driveway serving the eight proposed residences.

The residences are proposed as detached townhouses (sharing a common area for access, parking, landscaping, and drainage improvements). The proposed three bedroom residences would be two stories in height and would range in size from approximately 2,000 square feet to 2,425 square feet (of living area) with attached single or double garages (240 square feet to 460 square feet in area). The interior driveway would include an at grade walkway (textured as a boardwalk) as a portion of the 20 foot width of the drive lanes, terminating in a pedestrian walkway to East Cliff Drive. Parking would be provided through a combination of parking spaces within the driveways and attached garages at each residence, uncovered spaces and a shared guest parking area.

The proposal includes the removal of two Monterey cypress trees (42 in. diameter and 24.2 in. diameter) and the retention of one large (61 in. diameter) Monterey cypress tree on the project site. The site would be graded to accommodate proper drainage of the site with approximately 200 cubic yards (cut) and 1,300 cubic yards (fill). Site improvements, landscaping, and utilities would be installed to serve the development. The proposed improvements include a detailed drainage plan that would direct stormwater runoff to landscaped bioswales and raingarden areas to treat stormwater and to reduce the rate and volume of runoff from the project site.

III. ENVIRONMENTAL REVIEW CHECKLIST

A. AESTHETICS AND VISUAL RESOURCES

Would the project:

1. Have a substantial adverse effect on a scenic vista?

Discussion: The subject property is located within the protected scenic beach viewshed, as designated in the County's General Plan (1994). The proposed development is within an urbanized area at the top of the coastal bluff and on the inland side of East Cliff Drive. The height of the coastal bluff at this location will prevent the majority of the development (on the inland side of East Cliff Drive) from being visible from the public beach. Views of this urbanized and developed area include a variety of residential structures and the proposed development would not result in a visual impact to the scenic beach viewshed.

Although the development will be clearly visible from the public recreational path along East Cliff Drive, it will be designed and situated in a manner that blends with surrounding development and will not have a significant impact on the public viewshed.

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

Discussion: See A-1, above. Additionally, the two trees proposed for removal on the property are located well back from East Cliff Drive and the larger tree (which is closer to East Cliff Drive) will be retained. In any case, the impact to notable scenic features and resources will be less than significant.

3. Substantially degrade the existing visual character or quality of the site and its surroundings?

Discussion: The existing visual setting is an urbanized area with a mix of single and multi-family residential developments. The proposed project is sited and designed to create a variety of coastal homes that are compatible with the surrounding pattern of residential development in the Pleasure Point neighborhood.

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

Discussion: The project would create an incremental increase in night lighting. However, this increase would be small, and would be similar in character to the lighting associated

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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with the surrounding existing uses.

B. AGRICULTURE AND FORESTRY 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. 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 non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. In addition, the project does not contain Farmland of Local Importance. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide or Farmland of Local Importance would be converted to a non-agricultural use. No impact would occur from project implementation.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The project site is zoned RM-4-PP, which is not considered to be an agricultural zone. Additionally, the project site's land is not under a Williamson Act Contract. Therefore, the project does not conflict with existing zoning for agricultural use, or a Williamson Act Contract. No impact is anticipated.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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51104(g)?

Discussion: The project is not located near land designated as Timber Resource. Therefore, the project would not affect the resource or access to harvest the resource in the future.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: No forest land occurs on the project site or in the immediate vicinity. No impact is anticipated.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The project site and surrounding area within a radius of two mile(s) does not contain any lands designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance or Farmland of Local Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide, or Farmland of Local Importance would be converted to a non-agricultural use. In addition, the project site contains no forest land, and no forest land occurs within two mile(s) of the proposed project site. Therefore, no impacts are anticipated.

C. AIR QUALITY

The significance criteria established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) has been relied upon to make the following determinations. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 1. Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The project would not conflict with or obstruct any long-range air quality plans of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The project is consistent with the regional population growth numbers forecast by the Association of Monterey Bay Area Governments (AMBAG) (Attachment 4). AMBAG's regional forecasts for population and dwelling units are embedded in the emission inventory projections used in the regional Air Quality Management Plan (AQMP). Projects which are consistent with AMBAG's regional forecasts have been accommodated in the AQMP and are therefore consistent with the AQMP.

General construction activity related emissions (i.e., temporary sources) are accounted for in the emission inventories included in the plans; impacts to air quality plan objectives are less than significant. See C-2 below.

General estimated basin-wide construction-related emissions are included in the MBUAPCD emission inventory (which, in part, form the basis for the air quality plans cited below) and are not expected to prevent long-term attainment or maintenance of the ozone and particulate matter standards within the North Central Coast Air Basin (NCCAB). Therefore, temporary construction impacts related to air quality plans for these pollutants from the proposed project would be less than significant, and no mitigation would be required, since they are presently estimated and accounted for in the District's emission inventory, as described below. No stationary sources would be constructed that would be long-term permanent sources of emissions.

2. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Discussion: The North Central Coast Air Basin (NCCAB) does not meet state standards for ozone and particulate matter (PM₁₀) (MBUAPCD, 2013a). These pollutants are both emitted during construction activities.

Ozone is the main pollutant of concern for the NCCAB. The primary sources of ROG within the air basin are on- and off-road motor vehicles, petroleum production and marketing, solvent evaporation, and prescribed burning. The primary sources of NO_x are on- and off-road motor vehicles, stationary source fuel combustion, and industrial processes. In 2010, daily emissions of ROGs were estimated at 63 tons per day. Of this, area-wide sources represented 49 percent, mobile sources represented 36 percent, and stationary sources represented 15 percent. Daily emissions of NO_x were estimated at 54 tons per day with 69 percent from mobile sources, 22 percent from stationary sources, and 9 percent from area-wide sources. In addition, the region is "NO_x sensitive," meaning that ozone formation due to local emissions is more limited by the availability of NO_x as opposed to the availability of ROGs (MBUAPCD, 2013b).

PM₁₀ is the other major pollutant of concern for the NCCAB. In the NCCAB, highest particulate levels and most frequent violations occur in the coastal corridor. In this area, fugitive dust from various geological and man-made sources combines to exceed the standard. Nearly three quarters of all NCCAB exceedances occur at these coastal sites where sea salt is often the main factor causing exceedance (MBUAPCD, 2005). In 2005 daily emissions of PM₁₀ were estimated at 102 tons per day. Of this, entrained road dust represented 35 percent of all PM₁₀ emission, windblown dust 20 percent, agricultural tilling operations 15 percent, waste burning 17 percent, construction 4 percent, and mobile

sources, industrial processes, and other sources made up 9 percent (MBUAPCD, 2008).

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Table 1 summarizes the threshold of significance for construction activities.

Activity	Potential Threshold*
Construction site with minimal earthmoving	8.1 acres per day
Construction site with earthmoving (grading, excavation)	2.2 acres per day

*Based on Midwest Research Institute, Improvement of Specific Emission Factors (1995). Assumes 21.75 working weekdays per month and daily watering of site.

Note: Construction projects below the screening level thresholds shown above are assumed to be below the **82 lb/day threshold of significance**, while projects with activity levels higher than those above may have a significant impact on air quality. Additional mitigation and analysis of the project impact may be necessary for those construction activities.

Source: Monterey Bay Unified Air Pollution Control District, 2008.

Grading activities will involve would involve a small amount of cut (200 cubic yards) and a larger volume of fill (1,300 cubic yards) that would be brought to the site over a period of days. Project construction may result in a short term, localized decrease in air quality due to generation of PM₁₀. However, standard dust control best management practices, such as periodic watering, would be implemented during construction to avoid significant air quality impacts from the generation of PM₁₀.

3. *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)?*
-

Discussion: Project construction would have a limited and temporary potential to contribute to existing violations of California air quality standards for ozone and PM₁₀ primarily through diesel engine exhaust and fugitive dust. However, the Santa Cruz monitoring station has not had any recent violations of federal or state air quality standards mainly through dispersion of construction-related emission sources. BMPs and BACT described above under C-2 would ensure emissions remain below a level of significance. Therefore, the proposed project would not result in a cumulatively considerable net increase in criteria pollutants. The impact on ambient air quality would be less than significant.

4. *Expose sensitive receptors to substantial pollutant concentrations?*
-

Discussion: The proposed residential project would not generate substantial pollutant concentrations. Emissions from construction activities represent temporary impacts that are typically short in duration. Impacts to sensitive receptors would be less than significant.

5. *Create objectionable odors affecting a substantial number of people?*

Discussion: California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment, which minimizes emissions of sulfurous gases (sulfur dioxide, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). Therefore, no objectionable odors are anticipated from construction activities associated with the proposed project, and no mitigation measures would be required. The proposed project would not create objectionable odors affecting a substantial number of people; therefore, impacts are expected to be less than significant.

D. BIOLOGICAL RESOURCES

Would the project:

1. *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 Wildlife, or U.S. Fish and Wildlife Service?*

Discussion: The subject property is located within a mapped biotic resource area, with the potential for presence of Santa Cruz tarplant. A Biotic Assessment (REV161091) was completed for this project by Ecosystems West (Attachment 5). This assessment has been reviewed and accepted by the Planning Department Environmental Planning section (Attachment 6). The Santa Cruz tarplant was not observed on the subject property during the site assessment. No other special status species have been identified on the subject property in either the Biotic Assessment or in site visits by Planning Department staff, however the Biotic Assessment indicated that measures needed to be taken to protect special-status roosting and nesting bird and bat species that may be affected by tree removals on the project site. The Monterey cypress trees on the property could provide roosting and nesting habitat for special-status birds and bats during their breeding periods. Prior to tree removals, surveys should be conducted of the trees before they are felled, particularly if removal should occur after January 31 through August 31.

The following mitigation measures will be required to assist in the reduction of impacts related to special-status roosting and nesting bird and bat species. With the implementation

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of these measures, no adverse impacts are expected as a result of the project.

Mitigation Measures

BIO-1 In order to avoid impacts to special status bats, tree removal activities shall be limited to between September 15 and November 1, if feasible.

- a. If trees must be removed outside of the timeframe above, a qualified biologist shall conduct surveys for special status bats 3-4 weeks prior to site disturbance. If active roosts are present in trees to be retained, roosting bats shall be excluded from trees to be removed prior to any disturbance. In trees to be retained, no disturbance zones, set by the biologist based on the particular species present, shall be fenced off around the subject tree to ensure other construction activities do not harm sensitive species.
- b. The maternity roosting season for bats is March 1 – July 3. Tree removal should be scheduled outside of the maternal roosting period if special status bats are present. Before any trees are removed during the maternal roosting season, a qualified biologist shall perform surveys. If maternal roosts are present, disturbance shall be avoided until roosts are unoccupied. The biologist shall be responsible for ensuring bat roosts are vacated.

BIO-2 In order to avoid impacts to raptors and migratory songbirds, tree removal activities shall be limited to the months between September 1 and February 1, if feasible.

- a. If trees must be removed outside of the timeframe above, a qualified biologist shall conduct surveys for raptor or migratory songbird nests 3-4 weeks prior to site disturbance.
 - i. If active raptor or migratory bird nests are found in trees to be retained, the biologist shall be required to be on site during any initial vegetation or ground disturbance activities (e.g. vegetation clearing, grading, excavation, tree pruning/removal) that could potentially impact listed species. The biologist shall be responsible for setting and maintaining the disturbance buffers from active nests during construction activities, and buffers and exclusionary measures shall be implemented only after consultation with CDFW.
 - ii. If no active nests are present on the subject parcel, tree removal can proceed provided the mitigations in BIO-1 above have been implemented.

2. *Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional*

plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Discussion: See B-1, above.

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| 3. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: There are no mapped or designated federally protected wetlands on or adjacent to the project site. Therefore, no impacts would occur from project implementation.

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| 4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site.

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The project would not conflict with any local policies or ordinances. The removal of two significant trees, as defined in SCCC 16.34.030, is allowed as a component of a valid discretionary permit per SCCC 16.34.090(C). A Tree Resource Evaluation has been prepared by the project arborist, Maureen Hamb, dated 6/13/15 with an update on 11/6/15. (Attachment 7) The arborist's report indicates that the two trees (both Monterey cypress, 42 in. diameter and 24.2 in. diameter) that are proposed for removal both have structural defects that cannot be addressed through standard tree preservation methods (such as

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pruning or cable support mechanisms). The larger tree (a Monterey cypress, 61 in. diameter) is proposed to be retained and protected on the project site.

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| 6. <i>Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 7. <i>Produce nighttime lighting that would substantially illuminate wildlife habitats?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The subject property is located in an urbanized area and is surrounded by existing residential development that currently generates nighttime lighting. There are no sensitive animal habitats within or adjacent to the project site. No impact would occur.

E. CULTURAL RESOURCES

Would the project:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. <i>Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The existing undeveloped property is not designated as a historic resource on any federal, state or local inventory. The structures previously located on the property were evaluated during the Live Oak Historic Resources Inventory Update for listing as a designated historic resource. The Historic Resources Commission recommended to the Board of Supervisors that the property be assigned a rating of NR6, indicating that the property had been evaluated and determined to not be historically significant. The Board of Supervisors voted on February 12, 2008 to not designate the property as a historic resource. The structures were later demolished and the property is currently vacant. As a result, no impacts to historical resources would occur from project implementation.

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| 2. <i>Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: No archeological resources have been identified in the project area. Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any

artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

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| 3. Disturb any human remains, including those interred outside of dedicated cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: No impacts are anticipated. However, pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

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| 5. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: No unique paleontological resources or unique geologic features are known to occur in the vicinity of the proposed project. No impacts are anticipated.

F. GEOLOGY AND SOILS

Would the project:

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|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| A. 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. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| B. Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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| C. Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| D. Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion (A through D): The project site is located outside of the limits of the State Alquist-Priolo Special Studies Zone (County of Santa Cruz GIS Mapping, California Division of Mines and Geology, 2001). However, the project site is located approximately 10 mile(s) southwest of the San Andreas fault zone, and approximately 7 mile(s) southwest of the Zayante fault zone. While the San Andreas fault is larger and considered more active, each fault is capable of generating moderate to severe ground shaking from a major earthquake. Consequently, large earthquakes can be expected in the future. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) was the second largest earthquake in central California history.

All of Santa Cruz County is subject to some hazard from earthquakes. However, the project site is not located within or adjacent to a county or state mapped fault zone. A geotechnical investigation for the proposed project was performed by Pacific Crest Engineering, Inc., dated January 2015 (Attachment 8). The report concluded that seismic shaking can be managed through proper foundation design, that landslides are not a potential hazard, and that the potential for liquefaction is low. The report has been reviewed and accepted by Environmental Planning staff (Attachment 9).

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| 2. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The geotechnical report cited above (see Discussion under F-1) did not identify a significant potential for damage caused by any of these hazards.

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Develop land with a slope exceeding 30%? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: There are no slopes that exceed 30% on, or adjacent to, the property.

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 4. Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: Some potential for erosion exists during the construction phase of the

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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project, however, this potential is minimal because the property is relatively level and standard erosion controls are a required condition of the project. Prior to approval of a grading or building permit, the project must have an approved Erosion Control Plan (*Section 16.22.060 of the County Code*), which would specify detailed erosion and sedimentation control measures. The plan would include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion. Impacts from soil erosion or loss of topsoil would be considered less than significant.

5. *Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?*

Discussion: According to the geotechnical report for the project there are indications of expansive soils in the project area. The soil treatment and foundation design recommendations contained in the geotechnical report shall be implemented to adequately reduce this potential hazard to a less than significant level.

6. *Have soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

Discussion: No septic systems are proposed. The project would connect to the Santa Cruz County Sanitation District, and the applicant would be required to pay standard sewer connection and service fees that fund sanitation improvements within the district as a Condition of Approval for the project.

7. *Result in coastal cliff erosion?*

Discussion: The proposed project is located on the north side of East Cliff Drive, across from the coastal bluff. A drainage plan has been prepared that will maintain stormwater runoff rates at pre-development levels and will not directly drain onto or over the coastal bluff. The project would be equivalent to the predevelopment conditions on the site and, therefore would not contribute significantly to coastal cliff erosion.

G. Greenhouse Gas Emissions

Would the project:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Discussion: The proposed project, like all development, would be responsible for an

incremental increase in green house gas emissions by usage of fossil fuels during the site grading and construction. Santa Cruz County has recently adopted a Climate Action Strategy (CAS) intended to establish specific emission reduction goals and necessary actions to reduce greenhouse gas levels to pre-1990 levels as required under AB 32 legislation. The strategy intends to reduce greenhouse gas emissions and energy consumption by implementing measures such as reducing vehicle miles traveled through the County and regional long range planning efforts and increasing energy efficiency in new and existing buildings and facilities. All project construction equipment would be required to comply with the Regional Air Quality Control Board emissions requirements for construction equipment. As a result, impacts associated with the temporary increase in green house gas emissions are expected to be less than significant.

The project would result in a small temporary increase in greenhouse gas emissions during construction. Permanent operational project emissions are also expected to be minimal. However, in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination on the project's direct impact and its contribution on the cumulative scale to climate change. Nonetheless, the County has strategies to help reduce greenhouse gas emissions and energy consumption. These measures included in the *County of Santa Cruz Climate Action Strategy* (County of Santa Cruz, 2013) are outlined below.

Strategies for the Reduction of Greenhouse Gases from Transportation

- Reduce vehicle miles traveled (VMT) through County and regional long range planning efforts.
- Increase bicycle ridership and walking through incentive programs and investment in bicycle and pedestrian infrastructure and safety programs.
- Provide infrastructure to support zero and low emissions vehicles (plug in, hybrid plug-in vehicles).
- Increase employee use of alternative commute modes: bus transit, walking, bicycling, carpooling, etc.
- Reduce County fleet emissions.

Strategies for the Reduction of Greenhouse Gases from Energy Use

- Develop a Community Choice Aggregation (CCA) Program, if feasible.
- Increase energy efficiency in new and existing buildings and facilities.
- Enhance and expand the Green Business Program.

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- Increase local renewable energy generation.
- Public education about climate change and impacts of individual actions.
- Continue to improve the Green Building Program by exceeding the minimum standards of the state green building code (Cal Green).
- Form partnerships and cooperative agreements among local governments, educational institutions, nongovernmental organizations, and private businesses as a cost-effective way to facilitate mitigation and adaptation.
- Reduce energy use for water supply through water conservation strategies.

Impacts are expected to be less than significant.

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 2. <i>Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: See the discussion under G-1 above. No significant impacts are anticipated.

H. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 1. <i>Create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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Discussion: The proposed project would not create a significant hazard to the public or the environment. No routine transport or disposal of hazardous materials is proposed.

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| 2. <i>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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: Please see discussion under H-1 above. Project impacts would be considered less than significant.

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. <i>Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: Del Mar Elementary School and Cypress High School are located

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approximately one mile to the northwest and Opal Cliffs School is located approximately 0.75 miles to the northeast of the project site. The project is a residential project and would not handle, emit, or transport substantial quantities of hazardous materials. Although fueling of equipment is likely to occur within the staging area during construction, best management practices would be implemented. No impacts are anticipated.

4. *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?*
- | | | | |
|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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Discussion: The project site is included on the 9/2/16 list of hazardous sites in Santa Cruz County compiled pursuant to Government Code Section 65962.5. A site assessment was completed in September 2007 (Attachment 10) as part of the proposed demolition of the Roadhouse structures and the former presence of fuel pumps on the property. The site assessment did not find hazardous materials on the property in excess of allowed thresholds. The Environmental Health Services department closed the case with a final closure date of 12/14/2010. No impacts are anticipated from project implementation.

5. *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?*
- | | | | |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed project is not located within two miles of a public airport or public use airport. No impact is anticipated.

6. *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*
- | | | | |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed project is not located in the vicinity of a private airstrip. No impact is anticipated.

7. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*
- | | | | |
|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed project would not conflict with implementation of the County

of Santa Cruz Local Hazard Mitigation Plan 2015-2020 (County of Santa Cruz, 2015). Therefore, no impacts to an adopted emergency response plan or evacuation Plan would occur from project implementation.

8. *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?*

Discussion: The proposed project is not located in a Fire Hazard Area. However, the project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. Impacts would be less than significant.

I. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

Would the project:

1. *Violate any water quality standards or waste discharge requirements?*

Discussion: The project would not discharge runoff either directly or indirectly into a public or private water supply. However, runoff from this project may contain small amounts of chemicals and other household contaminants. No commercial or industrial activities are proposed that would contribute contaminants. Potential siltation from the proposed project would be addressed through implementation of erosion control best management practices (BMPs). No water quality standards or waste discharge requirements would be violated. Impacts would be less than significant.

Storm-water runoff treatment facilities, and a plan for maintenance, are proposed to ensure impacts water quality would be less than significant.

2. *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)?*

Discussion: The project would obtain water from the City of Santa Cruz Water Department and would not rely on private well water. Although the project would

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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incrementally increase water demand, the City of Santa Cruz Water Department has indicated that adequate supplies are available to serve the project (Attachment 11). The project is not located in a mapped groundwater recharge area.

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| 3. <i>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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan. Standard erosion control BMPs would be required during construction to prevent erosion or siltation from construction activities. Impacts would be less than significant.

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| 4. <i>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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan. Impacts from project construction would be less than significant.

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|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 5. <i>Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: Drainage Calculations prepared by Ifland Engineers (Attachment 12) have been reviewed for potential drainage impacts and accepted by the Department of Public Works (DPW) Drainage Section staff. The runoff from the property would be controlled by on-site storm water detention and treatment facilities. DPW staff have determined that the proposed storm water detention and retention/infiltration improvements are adequate to handle the increase in drainage associated with the project, and that storm water release would comply with the County Design Criteria standards. Refer to response J-1 for discussion of urban contaminants and/or other polluting runoff. Impacts would be

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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considered less than significant.

6. *Otherwise substantially degrade water quality?*

Discussion: Please see discussion under I-1 above. Impacts would be considered less than significant with the implementation of BMPs.

Storm-water runoff treatment facilities, and a plan for maintenance, are proposed to ensure impacts water quality would be less than significant.

7. *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?*

Discussion: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated May 16, 2012, the project is not located within a 100-year flood hazard area. Impacts from project implementation are expected to be less than significant.

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

Discussion: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated May 16, 2012, no portion of the project site lies within a 100-year flood hazard area. Therefore, the proposed project would not impede or redirect flood flows. No impact would occur.

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

Discussion: The proposed project would not increase the risk of flooding and would not lead to the failure of a levee or dam. No impact would occur.

10. *Inundation by seiche, tsunami, or mudflow?*

Discussion: There are two primary types of tsunami vulnerability in Santa Cruz County. The first is a teletsunami or distant source tsunami from elsewhere in the Pacific Ocean. This type of tsunami is capable of causing significant destruction in Santa Cruz County. However, this type of tsunami would usually allow time for the Tsunami Warning System

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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for the Pacific Ocean to warn threatened coastal areas in time for evacuation (County of Santa Cruz 2010).

The more vulnerable risk to the County of Santa Cruz is a tsunami generated as the result of an earthquake along one of the many earthquake faults in the region. Even a moderate earthquake could cause a local source tsunami from submarine landsliding in Monterey Bay. A local source tsunami generated by an earthquake on any of the faults affecting Santa Cruz County would arrive just minutes after the initial shock. The lack of warning time from such a nearby event would result in higher casualties than if it were a distant tsunami (County of Santa Cruz 2010).

The project site is located approximately 50 feet inland, across East Cliff Drive from the coastal bluff. The elevation of the property above sea level and the height of the coastal bluff would shield the property from most tsunami events. The property is located outside of the tsunami inundation area as indicated on the Tsunami Inundation Map for Emergency Planning, prepared by the California Emergency Management Agency (Attachment 13) and in the in the County of Santa Cruz Local Hazard Mitigation Plan 2015-2020, prepared by the County of Santa Cruz Office of Emergency Services. In addition, no impact from a seiche or mudflow is anticipated. Impacts are expected to be less than significant.

J. LAND USE AND PLANNING

Would the project:

1. *Physically divide an established community?*

Discussion: The proposed project does not include any element that would physically divide an established community. No impact would occur.

2. *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?*

Discussion: The proposed project does not conflict with any regulations or policies adopted for the purpose of avoiding or mitigating an environmental effect. No impacts are anticipated.

3. *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: The proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan. No impact would occur.

K. MINERAL RESOURCES

Would the project:

1. 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?

Discussion: The site does not contain any known mineral resources that would be of value to the region and the residents of the state. Therefore, no impact is anticipated from project implementation.

2. 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?

Discussion: The project site is zoned RM-4-PP, which is not considered to be an Extractive Use Zone (M-3) nor does it have a Land Use Designation with a Quarry Designation Overlay (Q) (County of Santa Cruz 1994). Therefore, no potentially significant loss of availability of a known mineral resource of locally important mineral resource recovery (extraction) site delineated on a local general plan, specific plan or other land use plan would occur as a result of this project.

L. NOISE

Would the project result in:

1. 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?

Discussion: Although construction activities would likely occur during daytime hours, noise may be audible to nearby residents. However, periods of noise exposure would be temporary. Noise from construction activity may vary substantially on a day-to-day basis, however the construction hours would be limited as a condition of approval for the land division. County Code section 8.30 further limits any offensive noise (defined as over 75db at the boundary of the property generating the noise) to the hours between 8 AM to 10 PM.

The development of new residential and commercial uses typically increases the traffic volumes in the vicinity of new development. Because traffic noise is a primary contributor to the local noise environment, any increase in traffic resulting from the development of new residential and commercial uses would be expected to proportionally increase local

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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noise levels. The following General Plan policies are applicable to noise generation: Policy 6.9.1, Land Use Compatibility Guidelines; Policy 6.9.2, Acoustical Studies; Policy 6.9.3, Noise Sensitive Land Uses; Policy 6.9.5, Residential Development; and Policy 6.9.7, Construction Noise. The proposed project would create an incremental increase in the existing noise environment. However, this increase would be small, and would be similar in character to noise generated by the surrounding existing uses. Adherence to applicable County and/or state noise standards would ensure that potential impacts related to this issue are less than significant.

2. *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Discussion: The use of construction and grading equipment would potentially generate vibration in the project area. This impact would be temporary; and therefore, is not expected to be significant.

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

Discussion: The proposed residential project would generate noise similar to surrounding residential properties and would not result in a permanent increase in the ambient noise level. The main source of ambient noise in the project area is traffic noise along Rodriguez Avenue. Impacts are expected to be less than significant.

4. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Discussion: See discussion under L-1 above. Noise generated during project construction would increase the ambient noise levels in adjacent areas. Construction would be temporary, and construction hours would be limited as a condition of approval for the land division. Given the limited duration of construction and the limited hours of construction activity, this impact it is considered to be less than significant.

5. *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?*

Discussion: The proposed project is not within two miles of a public airport. Therefore, the proposed project would not expose people residing or working in the project area. No impact is anticipated.

6. 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?

Discussion: The proposed project is not within two miles of a private airstrip. Therefore, the proposed project would not expose people residing or working in the project area. No impact is anticipated.

M. POPULATION AND HOUSING

Would the project:

1. 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)?

Discussion: The proposed project is designed at the density and intensity of development allowed by the General Plan and zoning designations for the parcel. Additionally, the project does not involve extensions of utilities (e.g., water, sewer, or new road systems) into areas previously not served. Consequently, it is not expected to have a significant growth-inducing effect. Impacts would be less than significant.

2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Discussion: The proposed project would create 8 new housing units on a vacant parcel and will not displace existing housing as a result. No impact would occur.

3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Discussion: The proposed project would not displace a substantial number of people since the project is intended to create additional housing units in an area designated for residential development. No impact would occur.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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N. PUBLIC SERVICES

Would the project:

1. *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:*

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a. <i>Fire protection?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. <i>Police protection?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. <i>Schools?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. <i>Parks?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. <i>Other public facilities; including the maintenance of roads?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion (a through e): While the project represents an incremental contribution to the need for services, the increase would be minimal. Moreover, the project meets all of the standards and requirements identified by the local fire agency, and school, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for school and recreational facilities and public roads. Impacts would be considered less than significant.

O. RECREATION

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 1. <i>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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The proposed project would not substantially increase the use of existing neighborhood and regional parks or other recreational facilities. Impacts would be considered less than significant.

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 2. <i>Does the project include recreational facilities or require the construction or expansion of recreational facilities which</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

might have an adverse physical effect on the environment?

Discussion: The proposed project does not propose the expansion or construction of additional recreational facilities. No impact would occur.

P. TRANSPORTATION/TRAFFIC

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <p>1. <i>Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</i></p> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The project would create a small incremental increase in traffic on nearby roads and intersections. However, given the small number of new trips created by the project (8 PM peak hour trips), this increase would be less than significant. Further, the increase would not cause the Level of Service at any nearby intersection to drop below Level of Service D, consistent with General Plan Policy 3.12.1.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| <p>2. <i>Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</i></p> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: In 2000, at the request of the Santa Cruz County Regional Transportation Commission (SCCRTC), the County of Santa Cruz and other local jurisdictions exercised the option to be exempt from preparation and implementation of a Congestion Management Plan (CMP) per Assembly Bill 2419. As a result, the County of Santa Cruz no longer has a Congestion Management Agency or CMP. The CMP statutes were initially established to create a tool for managing and reducing congestion; however, revisions to those statutes progressively eroded the effectiveness of the CMP. There is also duplication between the CMP and other transportation documents such as the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP). In addition, the goals of the CMP may be carried out through the Regional Transportation Improvement Program and the Regional Transportation Plan. Any functions of the CMP which are useful, desirable

and do not already exist in other documents may be incorporated into those documents.

The proposed project would not conflict with either the goals and/or policies of the RTP or with monitoring the delivery of state and federally-funded projects outlined in the RTIP. No impact would occur.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. <i>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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: No change in air traffic patterns would result from project implementation. Therefore, no impact is anticipated.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. <i>Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed development would result in 8 additional dwellings in a residential neighborhood. The project would take access from Moana Way to 38th Avenue. No impacts would occur with project implementation.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. <i>Result in inadequate emergency access?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The project's road access meets County standards and has been approved by the local fire agency.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 6. <i>Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed project design would provide interior driveway and pedestrian access through the project site and would not result in potential hazards to motorists, bicyclists, and/or pedestrians. The project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.

Q. TRIBAL CULTURAL RESOURCES

1. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of*

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:?

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Discussion: The project proposes to create an 8 unit residential townhouse subdivision. Section 21080.3.1(b) of the California Public Resources Code (AB 52) requires a lead agency formally notify a California Native American tribe that is traditionally and culturally affiliated within the geographic area of the discretionary project when formally requested. As of this writing, no California Native American tribes traditionally and culturally affiliated with the Santa Cruz County region have formally requested a consultation with the County of Santa Cruz (as Lead Agency under CEQA) regarding Tribal Cultural Resources. As a result, no Tribal Cultural Resources are known to occur in or near the project area. Therefore, no impact to the significance of a Tribal Cultural Resource is anticipated from project implementation.

R. UTILITIES AND SERVICE SYSTEMS

Would the project:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

Discussion: The proposed project's wastewater flows would not violate any wastewater treatment standards. No significant impacts would occur from project implementation.

2. Require or result in the construction of

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Discussion: The project would connect to an existing municipal water supply. The City of Santa Cruz Water Department has determined that adequate supplies are available to serve the project (Attachment 11). No impact would occur from project implementation.

Municipal sewer service is available to serve the project, as reflected in the attached letter from the Santa Cruz County Sanitation District (Attachment 14). No impact would occur from project implementation.

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 3. <i>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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: Please see discussion under I-5 above. Impacts would be considered less than significant.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 4. <i>Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: The City of Santa Cruz Water Department has indicated that adequate water supplies are available to serve the project and has issued a will-serve letter for the proposed project, subject to the payment of fees and charges in effect at the time of service (Attachment 11). The development would also be subject to the water conservation requirements. Therefore, existing water supplies would be sufficient to serve the proposed project, and no new entitlements or expanded entitlements would be required. Impacts would be less than significant.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. <i>Result in 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?</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The Santa Cruz County Sanitation District has indicated that adequate capacity is available to serve the project and has issued a will-serve letter for the proposed project, subject to the payment of fees and charges in effect at the time of service (Attachment 14). Therefore, existing wastewater treatment capacity would be sufficient to

serve the proposed project. No impact would occur from project implementation.

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

Discussion: Due to the small incremental increase in solid waste generation by the proposed project during construction and operations, the impact would be less than significant.

7. *Comply with federal, state, and local statutes and regulations related to solid waste?*

Discussion: The project would comply with all federal, state, and local statutes and regulations related to solid waste disposal. No impact would occur.

S. MANDATORY FINDINGS OF SIGNIFICANCE

1. *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 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?*

Discussion: 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 were considered in the response to each question in Section III (A through R) of this Initial Study. As a result of this evaluation, there were determined to be potentially significant effects to wildlife species related to the following: the removal of trees located on the project site. However, mitigation has been included that clearly reduces these effects to a level below significance. As a result of this evaluation, there is no substantial evidence that, after mitigation, adverse effects to wildlife would result from this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 2. 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: In addition to project specific impacts, this evaluation considered the projects potential for incremental effects that are cumulatively considerable. As a result of this evaluation, no potentially significant cumulative impacts were identified. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Discussion: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III (A through R). As a result of this evaluation, no potentially significant adverse effects to human beings associated with this project were identified. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

IV. REFERENCES USED IN THE COMPLETION OF THIS INITIAL STUDY

California Department of Conservation. 1980

Farmland Mapping and Monitoring Program Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance Santa Cruz County U.S. Department of Agriculture, Natural Resources Conservation Service, soil surveys for Santa Cruz County, California, August 1980.

County of Santa Cruz, 2013

County of Santa Cruz Climate Action Strategy. Approved by the Board of Supervisors on February 26, 2013.

County of Santa Cruz, 2015

County of Santa Cruz Local Hazard Mitigation Plan 2015-2020. Prepared by the County of Santa Cruz Office of Emergency Services.

County of Santa Cruz, 1994

1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

MBUAPCD, 2008

Monterey Bay Unified Air Pollution Control District (MBUAPCD), CEQA Air Quality Guidelines. Prepared by the MBUAPCD, Adopted October 1995, Revised: February 1997, August 1998, December 1999, September 2000, September 2002, June 2004 and February 2008.

MBUAPCD, 2013a

Monterey Bay Unified Air Pollution Control District, NCCAB (NCCAB) Area Designations and Attainment Status – January 2013. Available online at [http://www.mbuapcd.org/mbuapcd/pdf/Planning/Attainment Status January 2013 2.pdf](http://www.mbuapcd.org/mbuapcd/pdf/Planning/Attainment%20Status%20January%202013%202.pdf)

MBUAPCD, 2013b

Triennial Plan Revision 2009-2011. Monterey Bay Air Pollution Control District. Adopted April 17, 2013.



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Attachment 1

Mitigation Monitoring and Reporting Program



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County of Santa Cruz

PLANNING DEPARTMENT

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

MITIGATION MONITORING AND REPORTING PROGRAM

for

8 Townhouses - E. Cliff Drive "Road House" site
 Application No. 151204

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
BIO-1	<p>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 Wildlife, or U.S. Fish and Wildlife Service?</p>	<p>In order to avoid impacts to special status bats, tree removal activities shall be limited to between September 15 and November 1, if feasible.</p> <p>a. If trees must be removed outside of the timeframe above, a qualified biologist shall conduct surveys for special status bats 3-4 weeks prior to site disturbance. If active roosts are present in trees to be retained, roosting bats shall be excluded from trees to be removed prior to any disturbance. In trees to be retained, no disturbance zones, set by the biologist based on the particular species present, shall be fenced off around the subject tree to ensure other construction activities do not harm sensitive species.</p> <p>b. The maternity roosting season for bats is March 1 – July 3. Tree removal should be scheduled outside of the maternal roosting period if special status bats are present. Before any trees are removed during the maternal roosting season, a qualified biologist shall perform surveys. If maternal roosts are present, disturbance shall be avoided until roosts are unoccupied. The biologist shall be responsible for ensuring bat roosts are vacated.</p>	Applicant	Compliance monitored by the County Planning Department	To be implemented during building demolition and site grading operations - Prior to any tree removals
BIO-2	<p>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 Wildlife, or U.S. Fish and Wildlife Service?</p>	<p>In order to avoid impacts to raptors and migratory songbirds, tree removal activities shall be limited to the months between September 15 and February 15, if feasible.</p> <p>a. If trees must be removed outside of the timeframe above, a qualified biologist shall conduct surveys for raptor or migratory songbird nests 3-4 weeks prior to site disturbance.</p> <p>i. If active raptor or migratory bird nests are found in trees to be retained, the biologist shall be required to be on site during any initial vegetation or ground disturbance activities (e.g. vegetation clearing, grading, excavation, tree pruning/removal) that could potentially impact listed species. The biologist shall be responsible for setting and maintaining the disturbance buffers from active nests during construction activities, and buffers and exclusionary measures shall be implemented only after consultation with CDFW.</p> <p>ii. If no active nests are present on the subject parcel, tree removal can proceed provided the mitigations in BIO-1 above have been implemented.</p>	Applicant	Compliance monitored by the County Planning Department	To be implemented during project design, building demolition and construction - Prior to any tree removals

Attachment 2





Initial Study

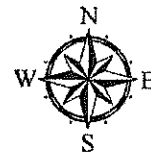


Location Map



LEGEND

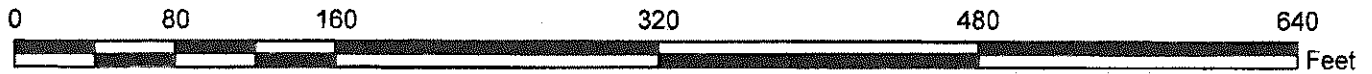
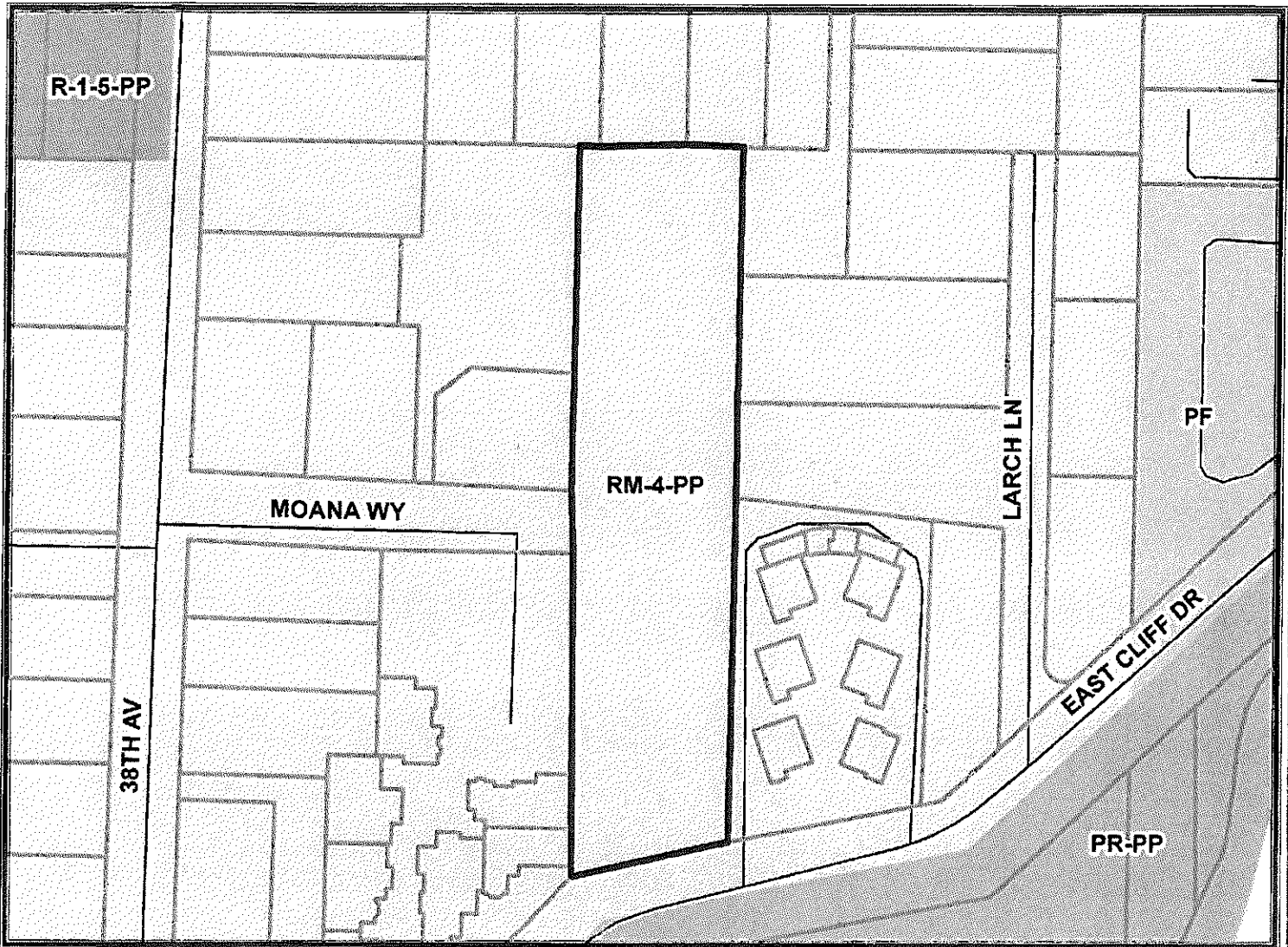
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-  Assessors Parcels
-  Street
-  County Boundary



Map Created by
County of Santa Cruz
Planning Department
August 2015



Zoning Map



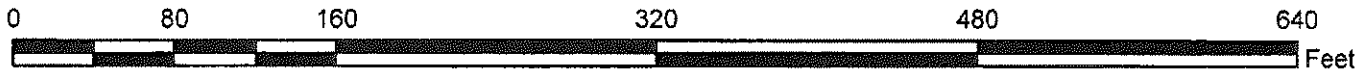
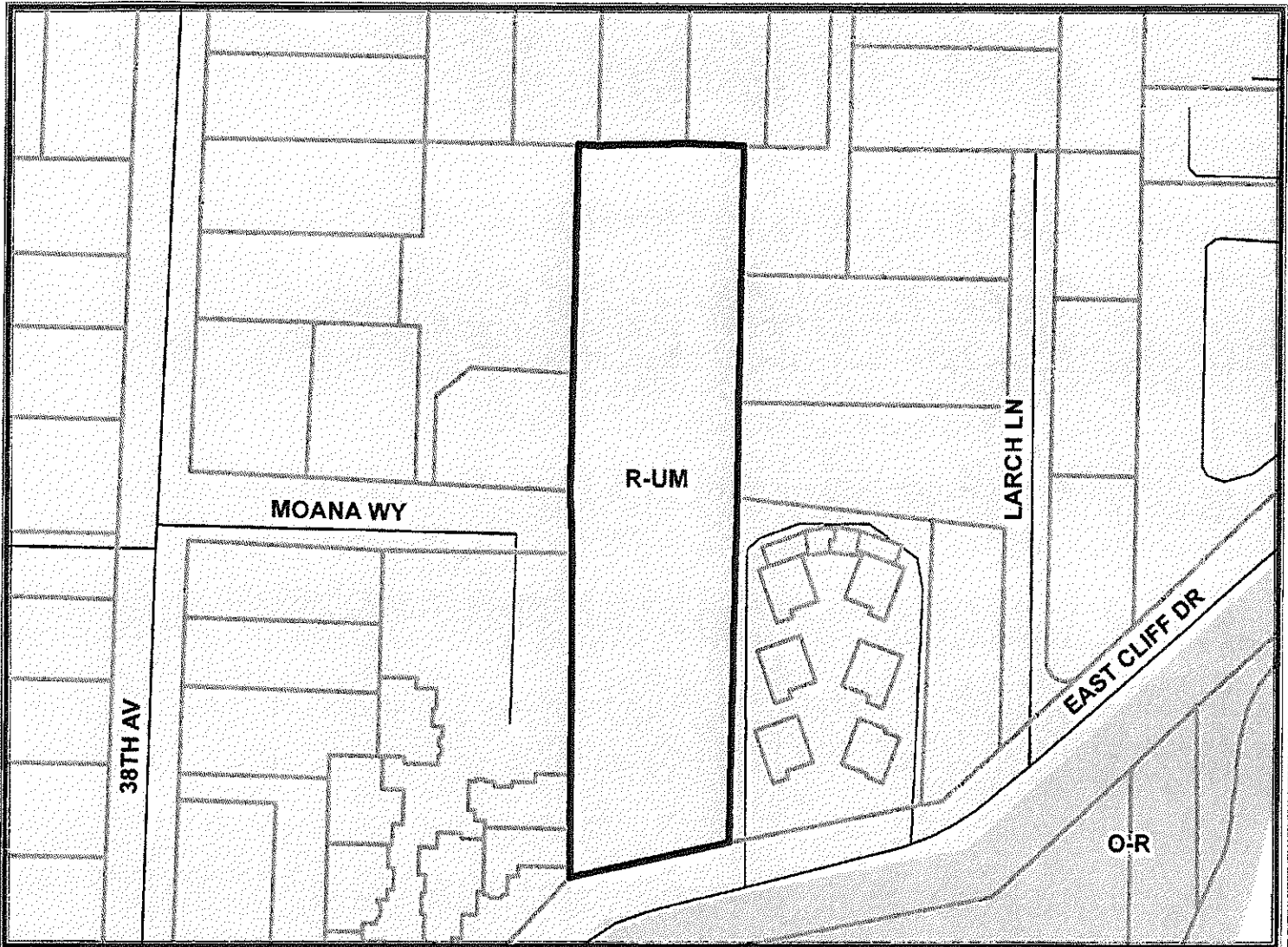
LEGEND

- APN: 032-181-08
- Assessors Parcels
- Street
- RESIDENTIAL-MULTI FAMILY
- PUBLIC FACILITY
- PARK
- RESIDENTIAL-SINGLE FAMILY






*Map Created by
County of Santa Cruz
Planning Department
August 2015*

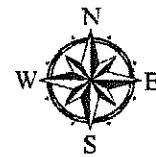


General Plan Designation Map



LEGEND

-  APN: 032-181-08
-  Assessors Parcels
-  Street
-  Residential - Urban Medium Density
-  Parks and Recreation



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County of Santa Cruz
Planning Department
August 2015

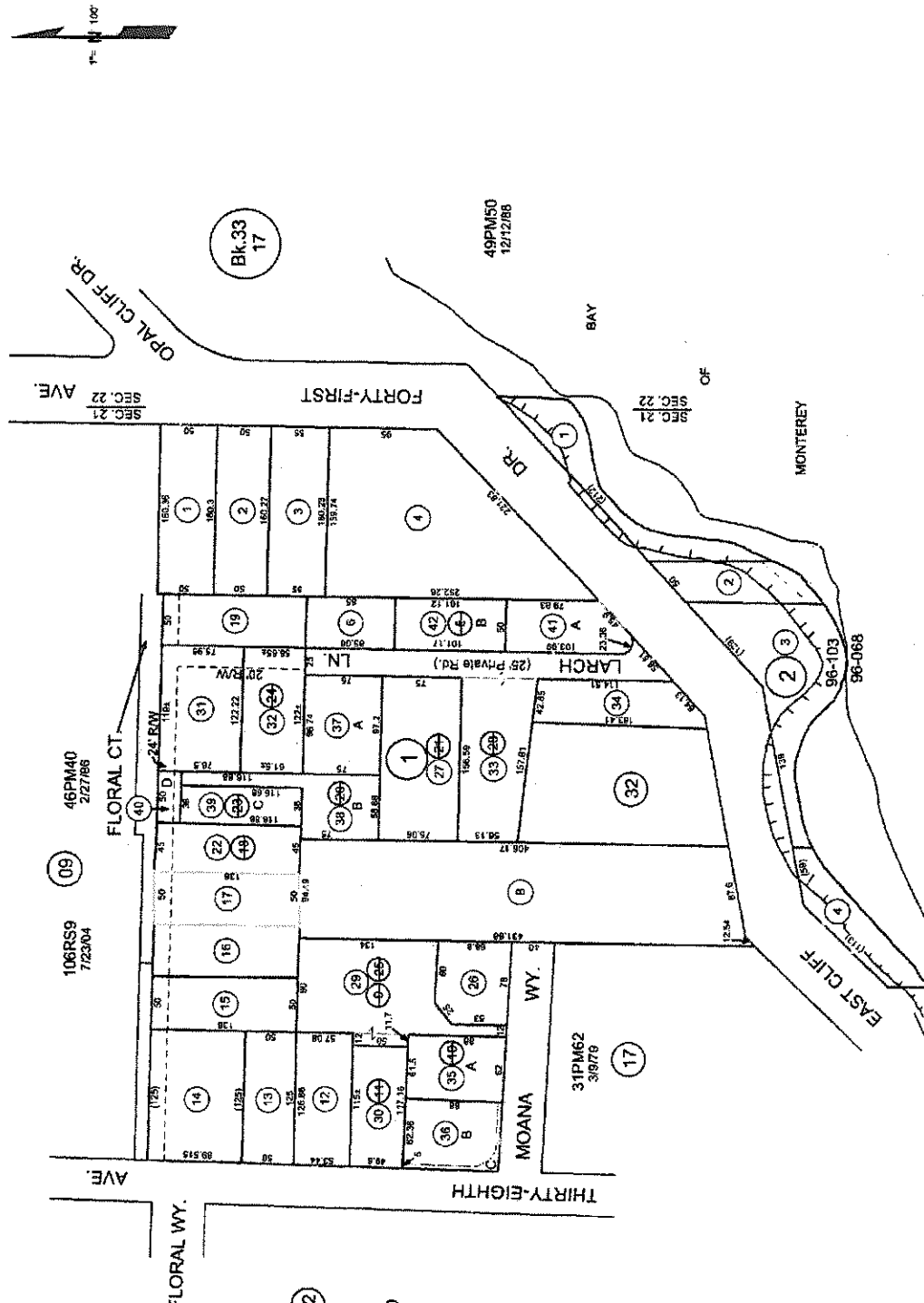
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POR. RANCHO ARROYO DEL RODEO
 N.E. 1/4 SEC. 21, T.11S., R.1W., M.D.B. & M.

Tax Area Code
 96-103

32-18



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

Assessor's Map No. 32-18
 County of Santa Cruz, Calif.
 October, 1998

ENCLOSURE: Redrawn 10/22/98 by
 ROW 4/12/97 from (changed page ref.)
 ROW 3/4/93 from (10/8/93)

Attachment 3

Initial Study



THACHER &
THOMPSON
ARCHITECTS
P.O. BOX 1000
SANTA CRUZ, CA 95062
TEL: 831.438.1111
WWW.TTARCH.COM

PLEASURE POINT
ROADHOUSE
23905 East Cliff Dr.
Santa Cruz, CA 95062

Piero Family Investments
3210 Fillmore Street #3
San Francisco CA 94123

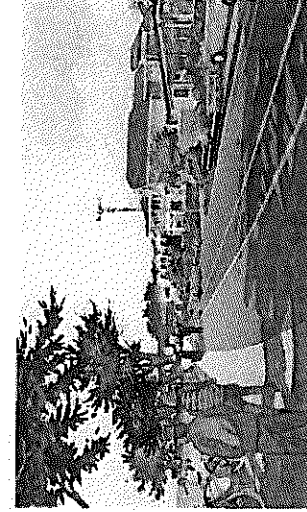
EIGHT TOWNHOUSES • PLEASURE POINT



EAST CLIFF DRIVE LOOKING EAST



MOANA LOOKING EAST



EAST CLIFF DRIVE LOOKING WEST

PROJECT TEAM

OWNER: PIERO FAMILY INVESTMENTS
3210 FILLMORE STREET #3
SAN FRANCISCO, CA 94123
CONTACT: CHUCK METRO
CMETRO@PIEROFAMILYINVESTMENTS.COM

ARCHITECT: THACHER & THOMPSON ARCHITECTS
897 CEDAR STREET, SUITE 100
SANTA CRUZ, CA 95062
TEL: 831.438.1111
CONTACT: MATTHEW THOMPSON
MATTHEW@TTARCH.COM

CIVIL
ENGINEER: PIERO ENGINEERS, INC.
1100 W. SAN CARLOS AVENUE
SANTA CRUZ, CA 95060
TEL: 831.438.1111
CONTACT: DAVID LAMBERT
DLAMBERT@PIEROFAMILYINVESTMENTS.COM

LANDSCAPE
ARCHITECT: ELLEN COOPER LANDSCAPE ARCHITECT
2000 W. SAN CARLOS AVENUE
SANTA CRUZ, CA 95062
TEL: 831.438.1111
CONTACT: ELLEN COOPER
ECOOPER@ELLENCOOPER.COM

GEOTECHNICAL
ENGINEER: PACIFIC OCEAN ENGINEERING INC.
1100 W. SAN CARLOS AVENUE
SANTA CRUZ, CA 95060
TEL: 831.438.1111
CONTACT: MICHAEL BALLEW
MBALLEW@PACIFICENGINEERING.COM

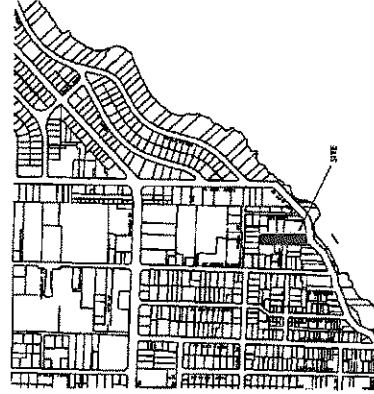
SHEET INDEX

ARCHITECTURAL
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A2 NEIGHBORHOOD CONTEXT
A3 SITE PLAN AND DATA
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CIVIL
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C02 PRELIMINARY SITE GRADING & DRAINAGE PLAN
C03 PRELIMINARY SITE UTILITY PLAN - LAYOUT
C04 PRELIMINARY SITE UTILITY PLAN - SECTION - LAYOUT
C05 PRELIMINARY SITE SPOWATER POLLUTION CONTROL PLAN
C06 TERRITATIVE PLAN - LAYOUT

LANDSCAPE
L1 PLANTING PLAN

VICINITY MAP



PROJECT DESCRIPTION

THE PROJECT IS LOCATED ON A 1.25-ACRE SITE, ALSO KNOWN AS THE ROADHOUSE SITE, WHICH IS CURRENTLY UNDEVELOPED. THE SITE IS ADJACENT TO EAST CLIFF DRIVE, A NARROW STREET WHERE CARS ARE SUBORDINATE TO PEDESTRIANS AND BIKES. THE PLEASURE POINT COMPANY PROVIDES A STRONG FRAMEWORK FOR THE DESIGN OF NEW HOUSING IN THE NEIGHBORHOOD. THE STANDARDS AND GUIDELINES OF THE PLAN HAVE BEEN USED TO GUIDE THE DESIGN OF THE PROJECT. THE PROJECT CONFORMS TO THE ZONING ORDINANCE AND THE PLEASURE POINT PLAN.

THESE NEW HOUSES WILL LINE A NEW STREET IN PLEASURE POINT. THE STREET IS A 7' WIDE ROAD, 15' WIDE SIDEWALK, AND EACH HOUSE IS 20' WIDE. THE STREET IS A 7' WIDE ROAD, 15' WIDE SIDEWALK, AND EACH HOUSE IS 20' WIDE. THE STREET IS A 7' WIDE ROAD, 15' WIDE SIDEWALK, AND EACH HOUSE IS 20' WIDE.

THE COUNTY ZONING SUGGESTS A TOWNHOUSE DENSITY, BUT THE DESIGN TRANSLATES THE TOWNHOUSE DENSITY INTO A MIXTURE OF HOUSE TYPES. THE HOUSES ARE EACH INDIVIDUAL IN A TYPE OF SINGLE HOUSE CHARACTERISTICS OF WHICH MAY BESEEN THROUGHOUT PLEASURE POINT ON PACIFIC GROVE. THE DESIGN IS ASSOCIATED WITH HISTORIC NEIGHBORHOODS.

THE HOUSES ALSO HAVE A MIX WITH THE SMALLEST ABOUT 1,800 SQUARE FEET AND THE LARGEST ABOUT 2,800 SQUARE FEET. THE HOUSES ARE EACH INDIVIDUAL IN A TYPE OF SINGLE HOUSE CHARACTERISTICS OF WHICH MAY BESEEN THROUGHOUT PLEASURE POINT ON PACIFIC GROVE. THE DESIGN IS ASSOCIATED WITH HISTORIC NEIGHBORHOODS.

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THE FULLY DEVELOPED ARCHITECTURAL DESIGN INCLUDES SEVERAL DESIGN STRATEGIES:

- DESIGN THE TOWNHOUSES TO BE COMPATIBLE WITH THE NEIGHBORHOOD AND EXISTING NEIGHBORHOODS.
- DESIGN THE TOWNHOUSES AS COMPOSITIONS OF SMALLER SPACES WITH VARIOUS ROOM SIZES.
- USE A WIDE VARIETY OF MATERIALS, COLORS, AND TEXTURES.
- DESIGN THE TOWNHOUSES TO BE COMPATIBLE WITH THE NEIGHBORHOOD AND EXISTING NEIGHBORHOODS.
- DESIGN THE TOWNHOUSES AS COMPOSITIONS OF SMALLER SPACES WITH VARIOUS ROOM SIZES.
- USE A WIDE VARIETY OF MATERIALS, COLORS, AND TEXTURES.
- DESIGN THE TOWNHOUSES TO BE COMPATIBLE WITH THE NEIGHBORHOOD AND EXISTING NEIGHBORHOODS.

COVER
SHEET

JUNE 10, 2016



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AI

Cover Sheet
APP A1 (10/16)
APP 032-1818E



THACHER & THOMPSON ARCHITECTS
 4000 STATE STREET
 SAN FRANCISCO, CA 94118
 TEL: 415.774.1000
 WWW.TTARCH.COM

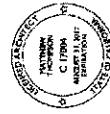
PLEASURE POINT ROADHOUSE

23905 East Cliff Dr.
 Santa Cruz, CA 95062

Pierro Family Investments
 3210 Filmore Street #3
 San Francisco CA 94133

HOUSE 7

JUNE 10, 2016



THIS SEAL IS VALID FOR THE PRACTICE OF ARCHITECTURE IN THE STATE OF CALIFORNIA. IT IS NOT VALID FOR ANY OTHER STATE OR JURISDICTION. THE SEAL IS THE PROPERTY OF THE BOARD OF ARCHITECTURE AND WILL BE FORFEITED IF IT IS USED IN VIOLATION OF THE ARCHITECTURE ACT.

AII

Canny Planning
 APP #151204
 APR 02-181-08

THE BAY VIEW

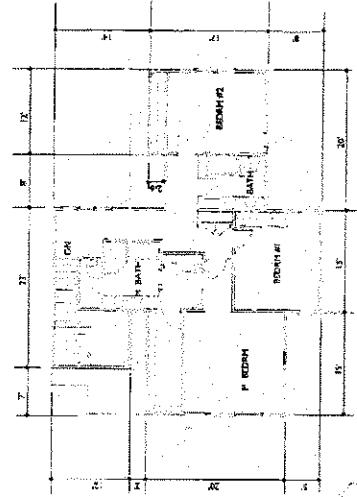
STEEL FLORED ROOF AND ARCHITECTURAL COMPOSITIONS GIVE THIS CONT. LIGHT-FILLED ROOF ON THE CORNER. THE ADJACENT CHIMNEY ROOM HAS LOOKING DOWN THE ROADWAYS TO THE EAST. THE LIVING ROOM HAS FACTORY INSIDINGS THAT WALL WINDOW WITH THE MATERIALS INTO A CORNER. THE LONG SLOPING ROOF ON THE NORTH SIDE ORIENTS THE INTERIOR WALLS TO BE CEMENT PLASTER TO MATCH A BERRY TEXTURED, DASHED FINISH.

THE MATERIALS

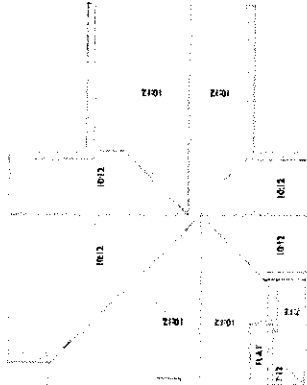
EXTERIOR WALLS	ROOF	CORNER	INTERIORS, DOORTS	WINDOW SASH	PRODUCT	COLOR
					CEMENT PLASTER ROUGH DASHED TEXTURE	
					COMPOSITION	
					CEMENT PLASTER TO MATCH	
					PAINTED NETWORK	
					ALUM. GLAD WOOD	

DATA

FIRST FLOOR RESURFACE	1024 50 FT
GARAGE	402
CORNER	142R
SECOND FLOOR	1112
TOTAL RESURFACE	2199 50 FT

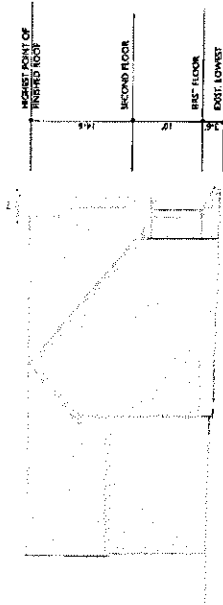


FIRST FLOOR PLAN
 SCALE 1/8" = 1'-0"

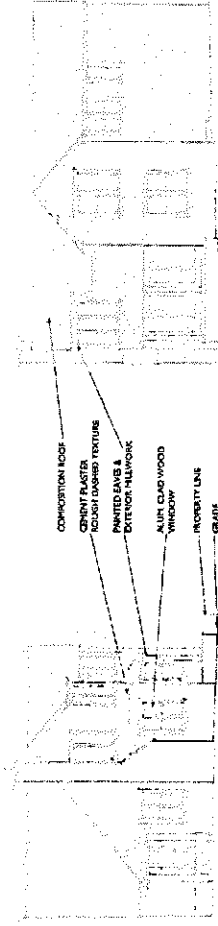


SECOND FLOOR PLAN
 SCALE 1/8" = 1'-0"

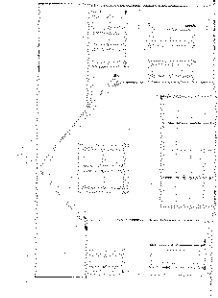
ROOF PLAN
 SCALE 1/8" = 1'-0"



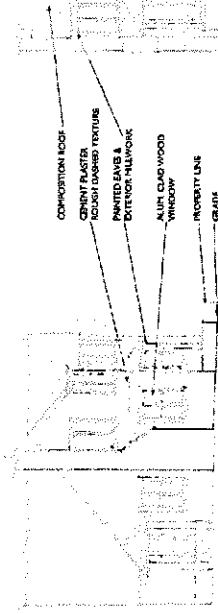
NORTH ELEVATION
 SCALE 1/8" = 1'-0"



WEST ELEVATION
 SCALE 1/8" = 1'-0"



EAST ELEVATION
 SCALE 1/8" = 1'-0"



SOUTH ELEVATION
 SCALE 1/8" = 1'-0"

WEST ELEVATION
 SCALE 1/8" = 1'-0"



THACHER &
THOMPSON
ARCHITECTS

PLEASURE POINT
ROADHOUSE

23905 East Cliff Dr.
Serra Cruz, CA 94062

Pietro Family Investments
2210 Fillmore Street #9
San Francisco CA 94123

NEIGHBOR-
HOOD
CONTEXT

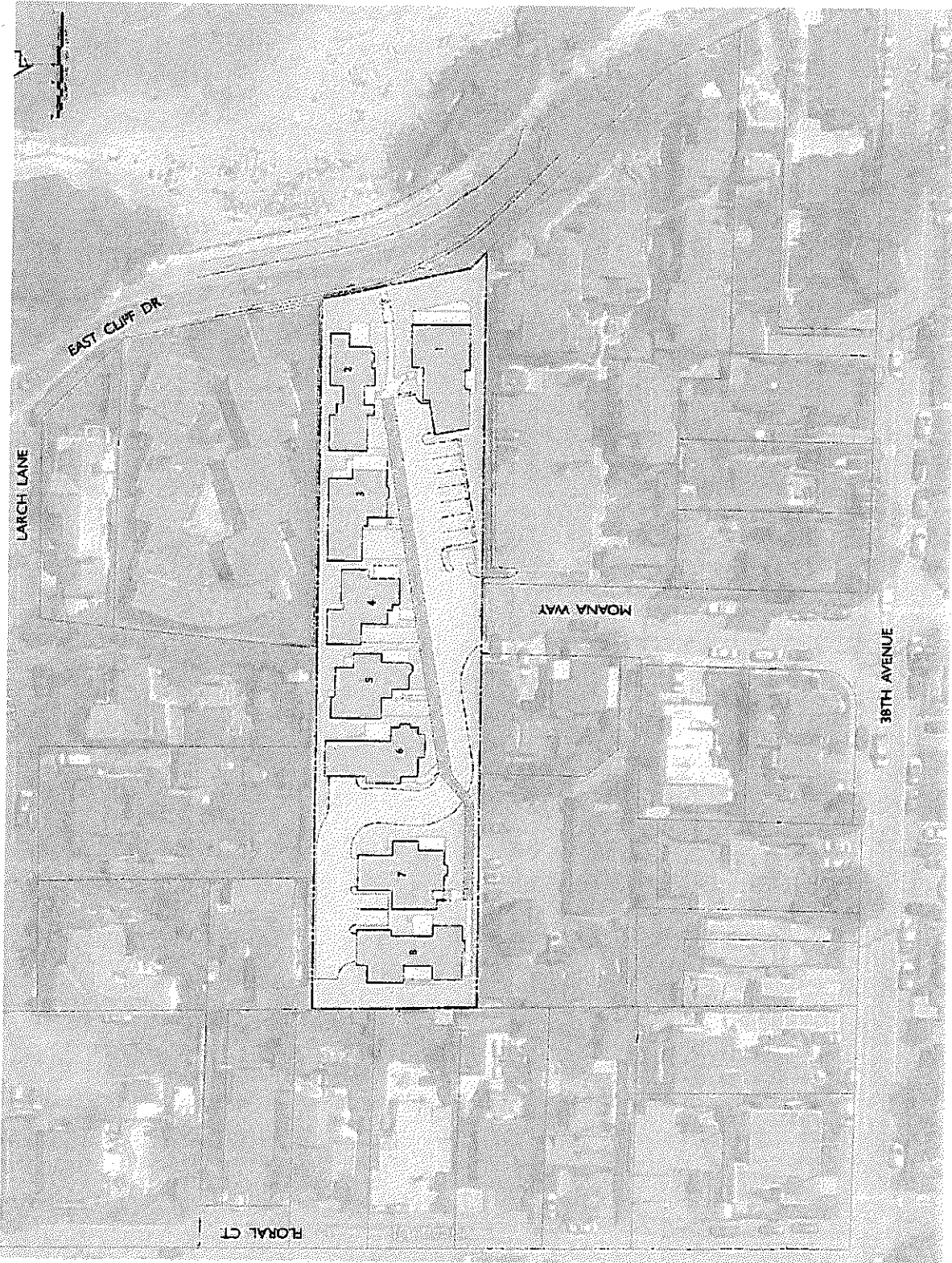
JUNE 10, 2016



THE STATE OF CALIFORNIA
BOARD OF CIVIL ENGINEERS
LICENSE NO. 49888
PIETRO FAMILY INVESTMENTS
2210 FILLMORE STREET #9
SAN FRANCISCO, CA 94123
DATE: 06/10/16

A2

County Planning
APP #131254
APN 012161-09





THACHER &
THOMPSON
ARCHITECTS

PLEASURE POINT
ROADHOUSE

23905 East Cliff Dr.
Santa Cruz, CA 95062

Phelps Family Investments
2210 Illinois Street #23
San Francisco CA 94113

NEIGHBOR-
HOOD
SCALE

JUNE 10, 2016



THE ARCHITECTS' BOARD OF THE STATE OF CALIFORNIA
1001 CALIFORNIA STREET, SUITE 1000
SAN FRANCISCO, CALIFORNIA 94108
TELEPHONE: (415) 774-2300
FAX: (415) 774-2301
WWW.CAARCHITECTS.COM

A3

County Planning
APP #151204
APP 032.18-08

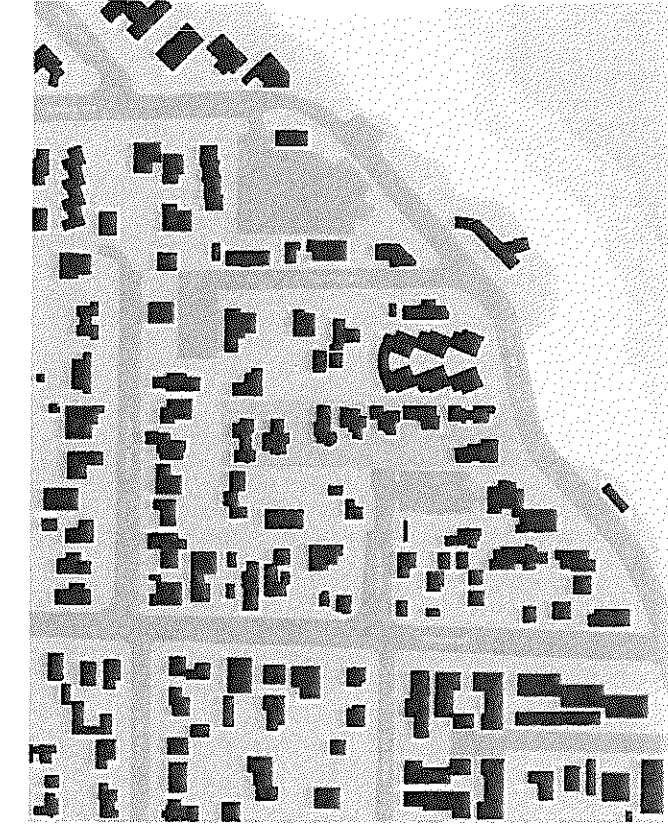
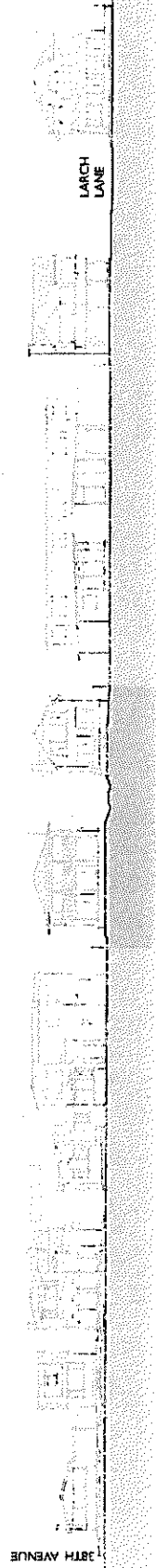


FIGURE -- GROUND ILLUSTRATION



AERIAL PHOTO WITH BUILDING FOOTPRINTS



PANORAMIC ELEVATION FROM EAST CLIFF DRIVE



THACHER & THOMPSON ARCHITECTS
 PROGRAM MANAGER
 1000 CALIFORNIA STREET
 SUITE 1000
 SAN FRANCISCO, CA 94108

PLEASURE POINT ROADHOUSE
 23905 East Cliff Dr.
 Sausalito, CA 94967

Piero Family Investments
 3210 Fillmore Street #3
 San Francisco, CA 94123

SITE PLAN DATA

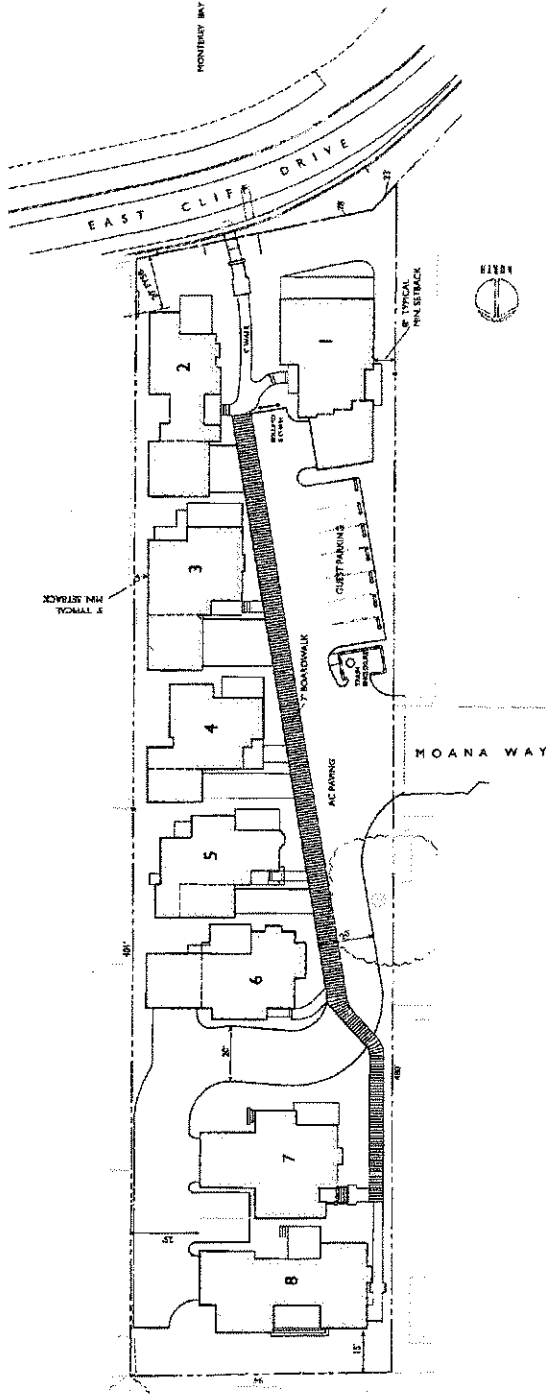
JUNE 18, 2016



THE STATE OF CALIFORNIA
 PROFESSIONAL ENGINEERING
 ANTHONY J. PAPPALARDO
 LICENSE NO. C 17004
 EXPIRES 12/31/17
 REGISTERED OFFICE: 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CA 94108
 OFFICE PHONE: (415) 774-1111
 CELL PHONE: (415) 774-1111
 FAX: (415) 774-1111
 E-MAIL: ANTHONY@PAPPALARDO.COM

A4

County of Marin
 Planning Department
 APR 03-181-08



SITE PLAN
 SCALE: 1" = 30'

SITE DATA

TOTAL LOT AREA	100K
BUILDING COVERAGE	10.2%
PERCH	1.2%
TERRACE	7%
WALKWAY/STEEP	1.0%
CREOSOTE	1.0%
STREET FRONTAGE	884'
ROADWAY WALK	1725'
LANDSCAPE	1240'

FLOOR AREA RATIO

TOTAL GROSS BUILDING AREA	= 20,383 SQ
LESS 20% 5' HOUSING GARAGE CRECH	= 4,186 SQ
ADJUSTED BUILDING AREA	= 16,197 SQ
FLOOR AREA RATIO (FAR)	= 0.17

PARKING DEMAND

8 THREE BEDROOM HOUSES @ 1.5 SPACES PER HOUSE	= 20
CLUST PARKING @ 20K	= 1
TOTAL PARKING DEMAND	= 21

PARKING SUPPLY

THREE CAR GARAGES	= 12 SPACES
ONE CAR GARAGES	= 2
TERRACE SPACES @ ONE CAR GARAGES	= 2
TERRACE SPACES @ TWO CAR GARAGE (HOUSE 7)	= 2
MOANA WAY PARKING BAY	= 7
1 LOT 7.5 A.E.	= 27 SPACES

HOUSING DATA

PERIOD	HOUSE 1	HOUSE 2	HOUSE 3	HOUSE 4	HOUSE 5	HOUSE 6	HOUSE 7	HOUSE 8	TOTAL
1ST FLOOR RESIDENCES	1117	891	762	797	975	843	1026	1482	8094
2ND FLOOR RESIDENCES	1113	1416	1266	1113	994	1034	1172	1383	9160
3RD FLOOR RESIDENCES	2353	2370	3171	2305	1971	1994	2178	2035	17462
GARAGE	482	440	600	740	740	800	600	600	5462
FIRST FLOOR - COVERAGE	1799	1771	1543	1107	1215	1340	1526	1250	10222
GROSS BUILDING AREA	2712	2794	2371	2300	2211	2194	2270	2625	20189
LESS GARAGE CRECH	2467	2544	2346	2295	1994	2171	2374	2600	16589



THACHER & THOMPSON ARCHITECTS
 100 CALIFORNIA STREET, SUITE 200
 SAN FRANCISCO, CALIFORNIA 94102
 TEL: 415.774.1100
 FAX: 415.774.1101

PLEASURE POINT ROADHOUSE
 23905 ERM CREEK DR.
 SAN FRANCISCO, CA 94123

Piero Family Investments
 3210 Fillmore Street #3
 San Francisco CA 94123

HOUSE 3

OCTOBER 30, 2015



THE ARCHITECT HAS PREPARED THESE PLANS TO THE BEST OF HIS KNOWLEDGE AND BELIEF IN ACCORDANCE WITH THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE AND THE CALIFORNIA PLANNING AND ZONING ACT. THE ARCHITECT DOES NOT WARRANT THAT THE PLANS WILL BE CONSIDERED COMPLETE OR THAT THEY WILL BE APPROVED BY THE LOCAL AGENCIES. THE ARCHITECT'S LIABILITY IS LIMITED TO THE PROFESSIONAL SERVICES RENDERED AND DOES NOT EXTEND TO THE CONSTRUCTION OF THE PROJECT OR TO THE PERFORMANCE OF THE CONTRACTOR.

A7

County Planning
 APP #15124
 APR 103-181-08

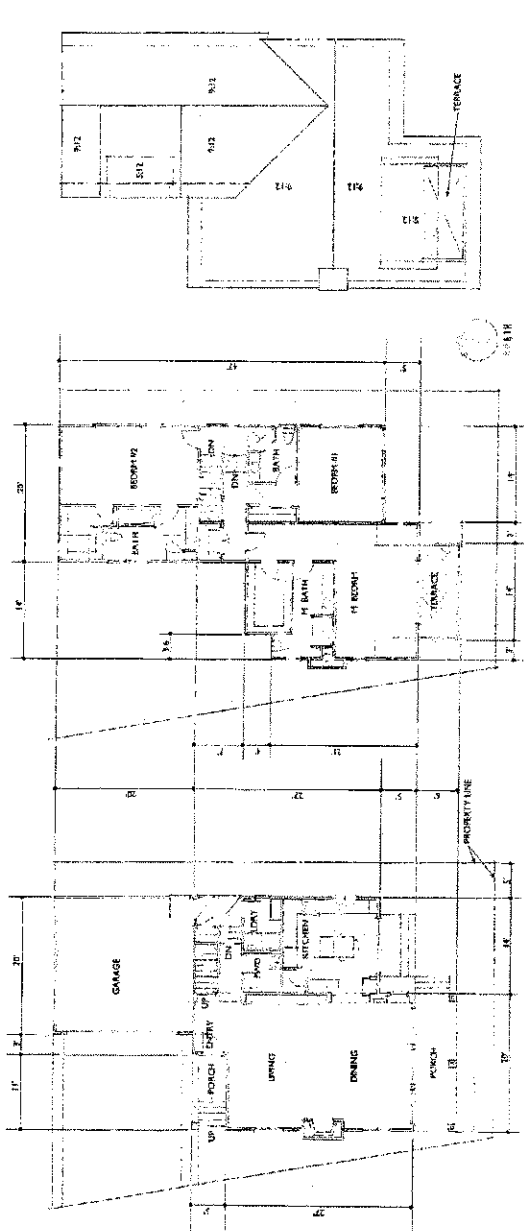
THE BEACH COTTAGE

THE LIVING AND DINING ROOM FORM A GREAT HALL THAT EXTENDS ENERGY UP TO AN OCEAN FRONT PORCH. THE RELATED, PADDLE ROCK UNFINISHED SOLID WOOD PARLOR, BATH, AND A LARGE KITCHEN WITH A BREAKFAST ROOM, THE MASTER BEDROOM OFFICINETO A MODERN BRICK BATH & TUB, AND THE LONG SLOPING ROOF. BACK OF THE SECOND FLOOR BEDROOM HAS A BATH. THE LONG SLOPING ROOF CREATES A VARIETY OF COZY LIVING SPACES AS THE BRICK AND BATH WILL GIVE THE HOUSE THE TENSES QUALITY OF A CLASSIC BEACH COTTAGE.

THE MATERIALS

OUTDOOR WALLS	PRODUCT	COLOR
ROOF	PAINTED CEDAR SHINGLES	
FRONTAGE	COMPOSITION	
BASE	KUNGER BRICK	
TRIM, BAYLE, SOFFIT, BALUNGE	SLIPPER BRICK	
WINDOW/DOOR	PAINTED/NEELWORK	
	ALUM. CLAD WOOD	

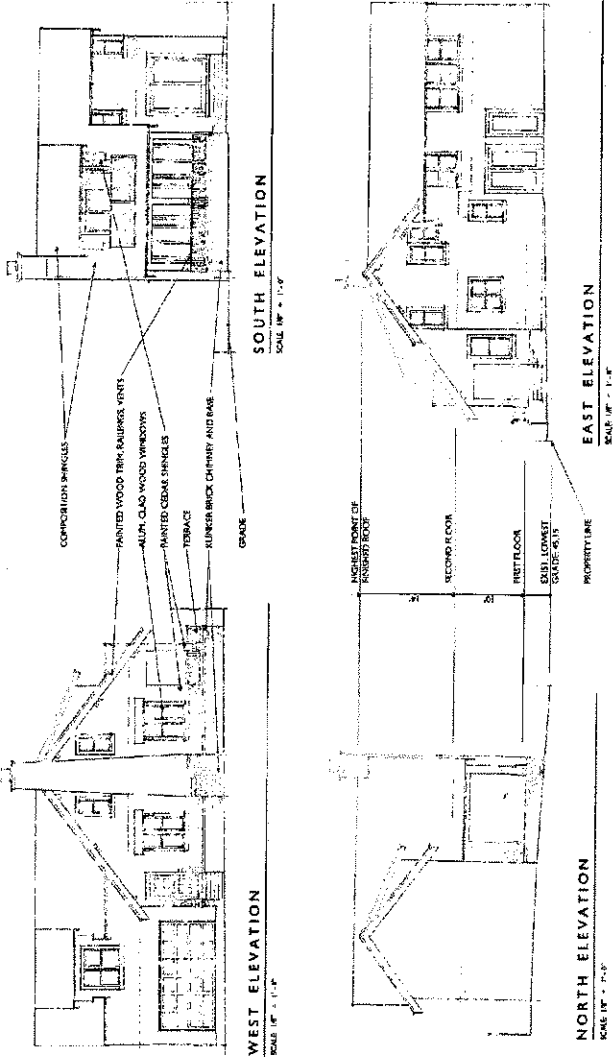
DATA	
FIRST FLOOR RESIDENCE	913 SQ FT
GARAGE	499
CONVARGE	128
SECOND FLOOR	1,008
TOTAL RESIDENCE	2,171 SQ FT



FIRST FLOOR PLAN
 SCALE: 1/8" = 1'-0"

SECOND FLOOR PLAN
 SCALE: 1/8" = 1'-0"

ROOF PLAN
 SCALE: 1/8" = 1'-0"



WEST ELEVATION
 SCALE: 1/8" = 1'-0"

SOUTH ELEVATION
 SCALE: 1/8" = 1'-0"

NORTH ELEVATION
 SCALE: 1/8" = 1'-0"

EAST ELEVATION
 SCALE: 1/8" = 1'-0"



THACHER & THOMPSON ARCHITECTS
 1100 CALIFORNIA STREET
 SAN FRANCISCO, CA 94108
 TEL: 415.774.1000
 WWW.TTARCH.COM

PLEASURE POINT ROADHOUSE
 23905 East Cliff Dr.
 Santa Cruz, CA 95062

Plano Family Investments
 2219 Fillmore Street #3
 San Francisco CA 94133

HOUSE 4

OCTOBER 30, 2015



STATE ARCHITECT
 CALIFORNIA
 AUGUST 31, 2015
 EXPIRES

A8

County Planning
 APP #151201
 APR 03-18-08

THE TOWER

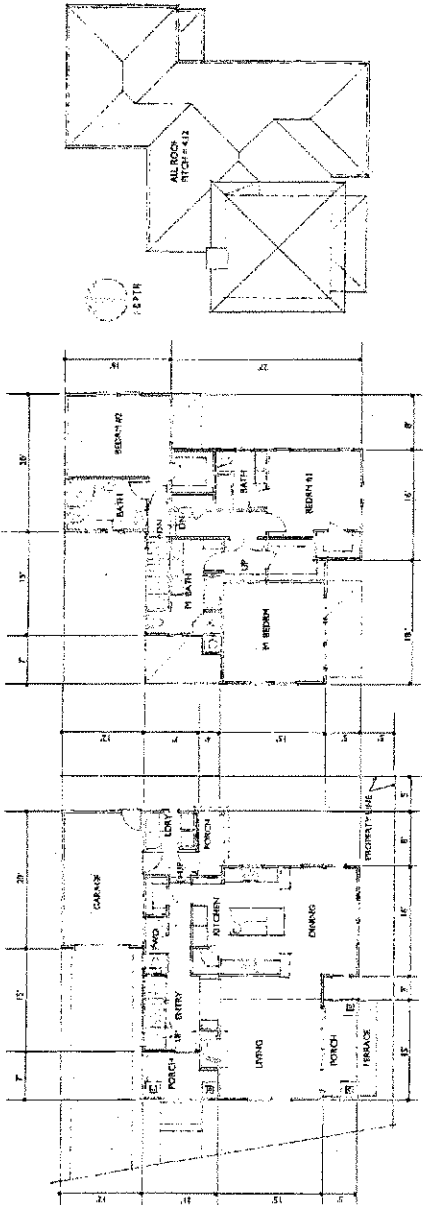
THE TOWER HOUSE USES SMALL ROOF RAIRS TO CREATE ROOMS WITH LOFTY CEILING. WITH THE DESIGN, THE LIVING ROOM AND MASTER BEDROOM BOTH HAVE A VIEW OF THE OCEAN. THE TOWER HOUSE HAS A GABLE ROOF FORMED BY THE ANCHOR POSTS ON THE WALLS THAT HOLD UP THE GABLE WALLS OF THE HOUSE. THE HOUSE HAS THREE PORCHES THAT CREATE A FIRST FLOOR PORCH, A SECOND FLOOR PORCH, AND A LONG BACK PORCH. THE PORCHES ALSO PROVIDE A WIDE STAIRING BACK AND FORTH TO THE EAST. THE LARGE SECOND FLOOR BEDROOMS ALL HAVE BALCONIES ON SITE.

THE MATERIALS

EXTERIOR WALLS	PRODUCT	COLOR
ROOF	5" VERTICAL BOARD SIDING - PAINTED	
CHIMNEYS	COMPOSITION	
FRONT PORCH	CORNET PLASTER	
FRONT PORCH	PAINTED MILLWORK	
FRONT PORCH	ALUM. CLAD WOOD	
FRONT PORCH	PAINTED MILLWORK	
FRONT PORCH	ALUM. CLAD WOOD	
FRONT PORCH	PAINTED MILLWORK	
FRONT PORCH	ALUM. CLAD WOOD	

DATA

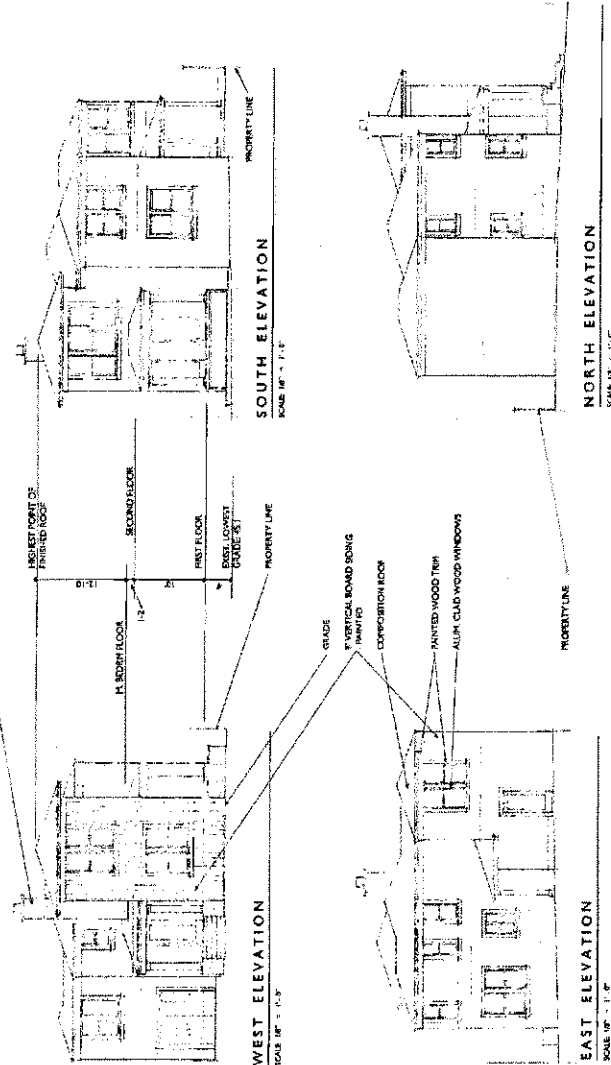
FIRST FLOOR REFERENCE	487.53 FT
GARAGE	246
COVERAGE	1,119
SECOND FLOOR	1,111
TOTAL RESIDENCE	2,230 SQ FT



ROOF PLAN
 SCALE 1/8" = 1'-0"

SECOND FLOOR PLAN
 SCALE 1/8" = 1'-0"

FIRST FLOOR PLAN
 SCALE 1/8" = 1'-0"



WEST ELEVATION
 SCALE 1/8" = 1'-0"

SOUTH ELEVATION
 SCALE 1/8" = 1'-0"

NORTH ELEVATION
 SCALE 1/8" = 1'-0"

GRADE
 5" VERTICAL BOARD SIDING - PAINTED
 COMPOSITION ROOF
 PAINTED WOOD TRIM
 ALUM. CLAD WOOD WINDOWS

CORNET PLASTER - SAND
 PLASTER CHIMNEY

LARGEST PORT OF
 FRONT PORCH

SECOND FLOOR

FIRST FLOOR

FRONT PORCH

PROPERTY LINE

PROPERTY LINE



THACHER & THOMPSON ARCHITECTS
 23905 East Cliff Dr.
 Santa Cruz, CA 95062

PLEASURE POINT ROADHOUSE
 23905 East Cliff Dr.
 Santa Cruz, CA 95062

Pleasure Family Investments
 3210 Fillmore Street #3
 San Francisco CA 94123

HOUSE 5

OCTOBER 30, 2015



THESE PLANS WERE PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A LICENSED ARCHITECT IN THE STATE OF CALIFORNIA. I HEREBY CERTIFY THAT I AM THE ARCHITECT OF RECORD FOR THESE PLANS.

A9

County Filing
 APN 4151304
 APN 021-18-108

THE OCTAGON

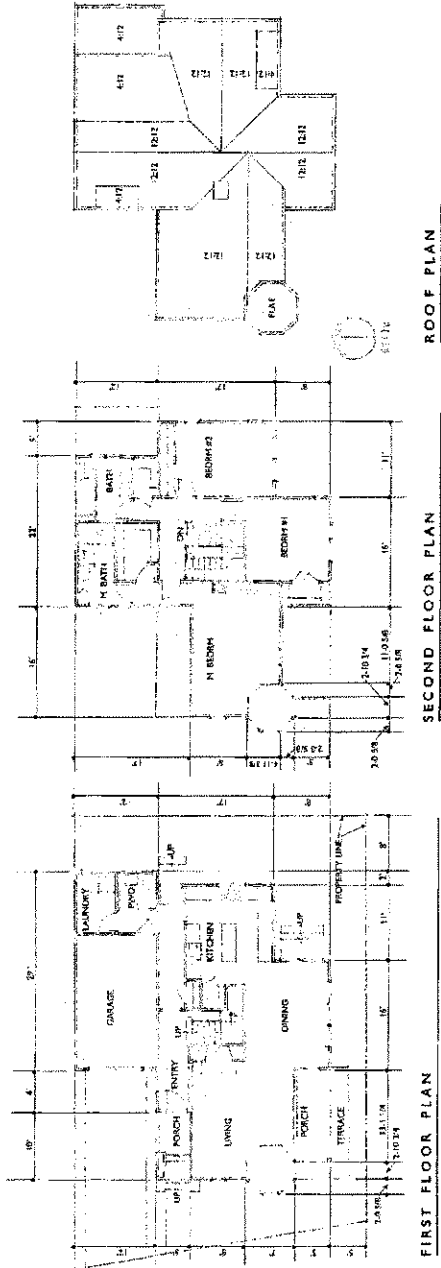
THE MOST OBVIOUS FEATURE OF THIS HOUSE IS THE OCTAGONAL CORNER TOWER. ON THE FIRST FLOOR IT IS A LARGE BUILT UP ROOM IN THE UP AND BUCK. BUT ON THE SECOND FLOOR THE OCTAGONAL TOWER WINDS BACK. THE POCH ROOF REINFORCES THE OCTAGONAL SHAPE. THE WINGS OF THE HOUSE ARE ONLY ABOUT 12 FEET WIDE WHICH PROVIDE THE TOWER WITH A FEELING OF LIGHTNESS. THE TOWER IS A KEY ELEMENT FROM THE MAIN HOUSE DOWN TO ONE STORY BARS. THE COLOR OF THE CORNER TOWER FURTHER CONTRIBUTES TO THE COTTAGE QUALITY OF THE HOUSE.

THE MATERIALS

EXTERIOR WALLS	ROOF	FRONTAGE	TRIM, BASEL COPRIS, TAILWALLS, PEEZER RD	WINDOW SASH	PRODUCT	COLOR
					CEDAR SHINGLES - PAINTED	
					CEMENT PLASTER SAND FLOAT FINISH	
					PAINTED PELLYWOK	
					ALUM. CLAD WOOD	

DATA

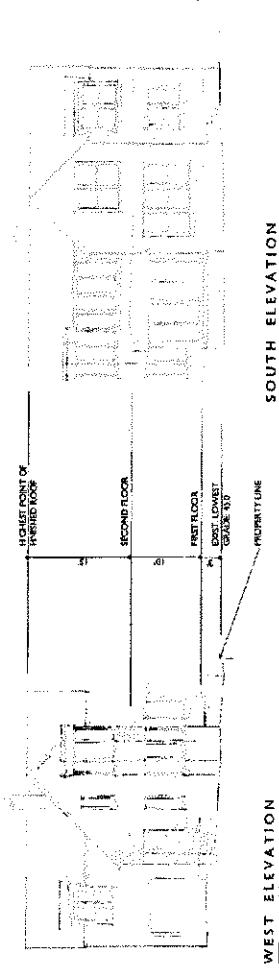
FIRST FLOOR RESURFACE	192	30 FT
GALEAGE	240	
COVERAGE	1215	
SECOND FLOOR	994	
TOTAL RESURFACE	1771	50 FT



FIRST FLOOR PLAN
 SCALE 1/8" = 1'-0"

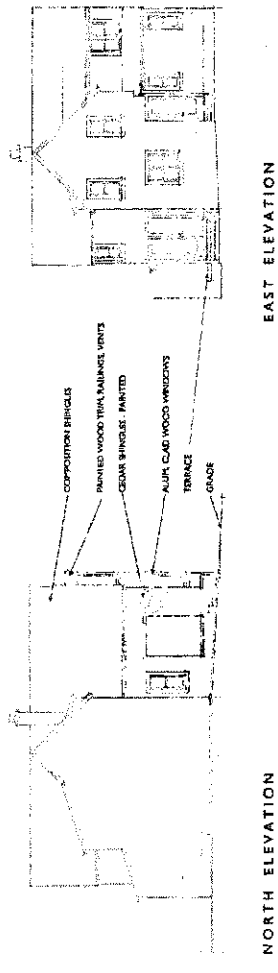
SECOND FLOOR PLAN
 SCALE 1/8" = 1'-0"

ROOF PLAN
 SCALE 1/8" = 1'-0"



WEST ELEVATION
 SCALE 1/8" = 1'-0"

SOUTH ELEVATION
 SCALE 1/8" = 1'-0"



NORTH ELEVATION
 SCALE 1/8" = 1'-0"

EAST ELEVATION
 SCALE 1/8" = 1'-0"

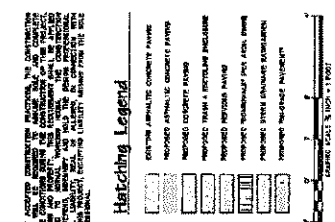
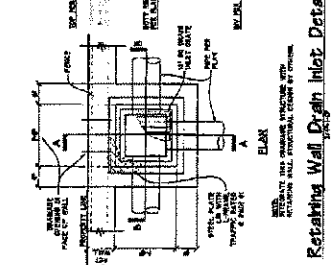
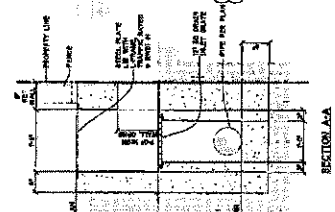
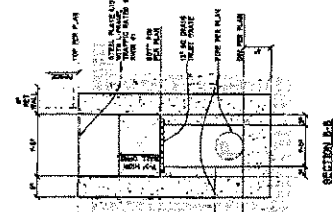
- COMPOSITION BRICKS
- PAINTED WOOD TRIM, PAINTED WINDS
- CEDAR SHINGLES - PAINTED
- ALUM. CLAD WOOD WINDOWS
- TERRACE
- GALEAGE



J.E. HILAND
ENGINEERS
 23905 East Cliff Drive, Santa Cruz, California
 95060

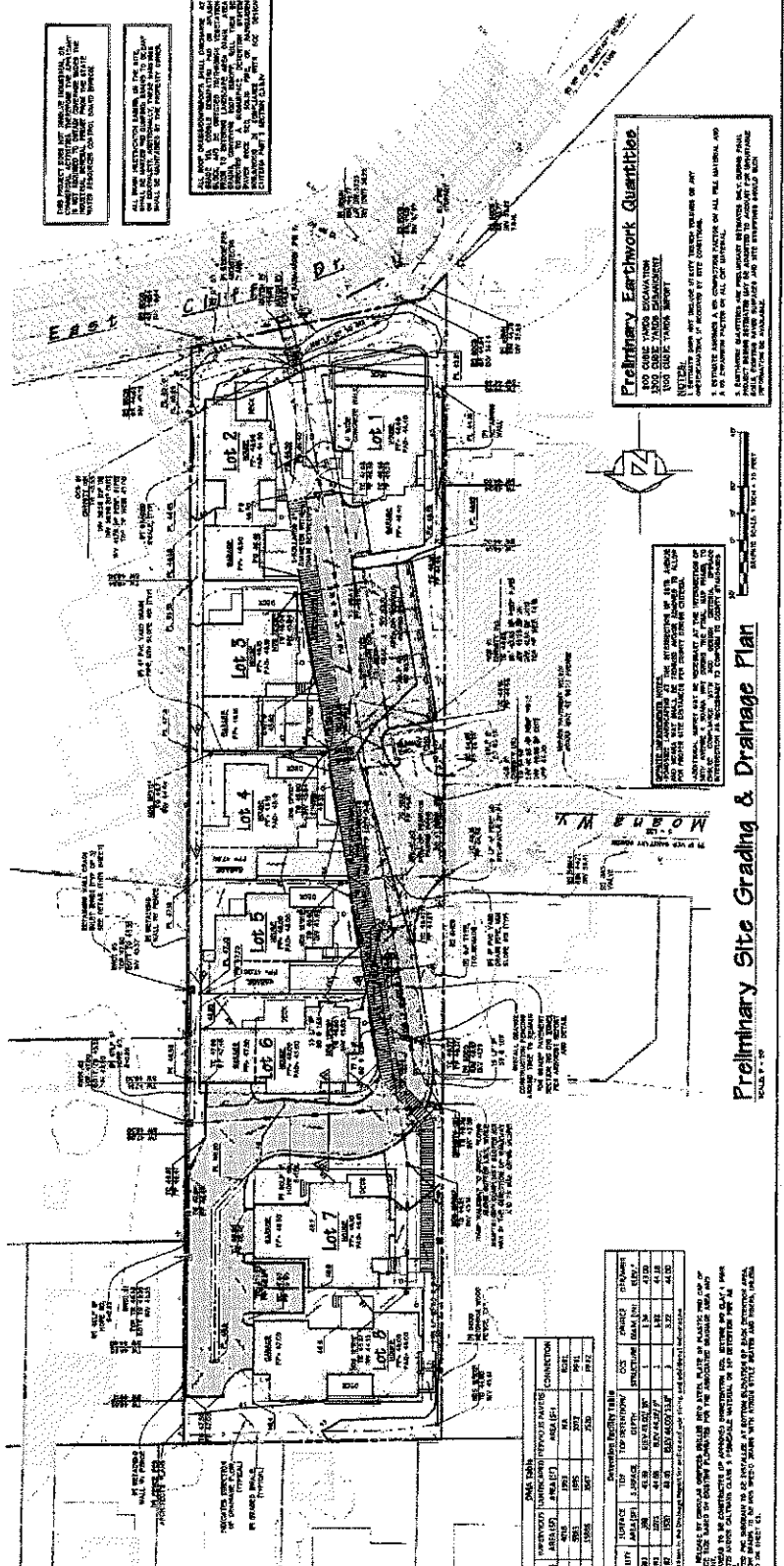
Preliminary Site Grading & Drainage Plan
 Pressure Point Roadhouse
 APR. 03-18-08
 SHEET
 C2

TRACT NO. 1546
 APR. 03-18-08
 SHEET
 C2



NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS AND AGENCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS AND AGENCIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS AND AGENCIES.



Grading Notes:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS AND AGENCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS AND AGENCIES.
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10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS AND AGENCIES.

CUT		FILL		TOTAL	
AREA (SQ. FT.)	VOLUME (CU. YD.)	AREA (SQ. FT.)	VOLUME (CU. YD.)	AREA (SQ. FT.)	VOLUME (CU. YD.)
1	1500	2000	3000	3500	4500
2	1200	1800	2400	3000	3600
3	1000	1500	2000	2500	3000
4	800	1200	1600	2000	2400
5	600	900	1200	1500	1800
6	400	600	800	1000	1200
7	200	300	400	500	600
TOTAL	6500	9000	12000	15500	19500

Preliminary Site Grading & Drainage Plan
 SCALE: 1" = 40'

Preliminary Earthwork Quantities

500 CUBIC YARDS EXCAVATION
 1000 CUBIC YARDS FILL
 1000 CUBIC YARDS TOTAL

NOTES:

1. ESTIMATE BASED ON A COMPUTER ANALYSIS OF ALL PLOTS, AND A 2% DRAINAGE FACTOR ON ALL CUT MATERIAL.

2. ESTIMATE BASED ON A COMPUTER ANALYSIS OF ALL PLOTS, AND A 2% DRAINAGE FACTOR ON ALL CUT MATERIAL.

City of Santa Cruz Water Department Notices

1. ALL WORK IN THE WATER MAINS MUST BE CONDUCTED IN ACCORDANCE WITH THE LATEST VERSION OF THE CITY OF SANTA CRUZ WATER DEPARTMENT STANDARD SPECIFICATIONS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF SANTA CRUZ WATER DEPARTMENT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

3. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE LATEST VERSION OF THE CITY OF SANTA CRUZ WATER DEPARTMENT STANDARD SPECIFICATIONS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF SANTA CRUZ WATER DEPARTMENT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

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Fire Department Notices

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF SANTA CRUZ FIRE DEPARTMENT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

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3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF SANTA CRUZ FIRE DEPARTMENT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

San Jose County Sanitation District General Notices

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE SAN JOSE COUNTY SANITATION DISTRICT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE SAN JOSE COUNTY SANITATION DISTRICT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

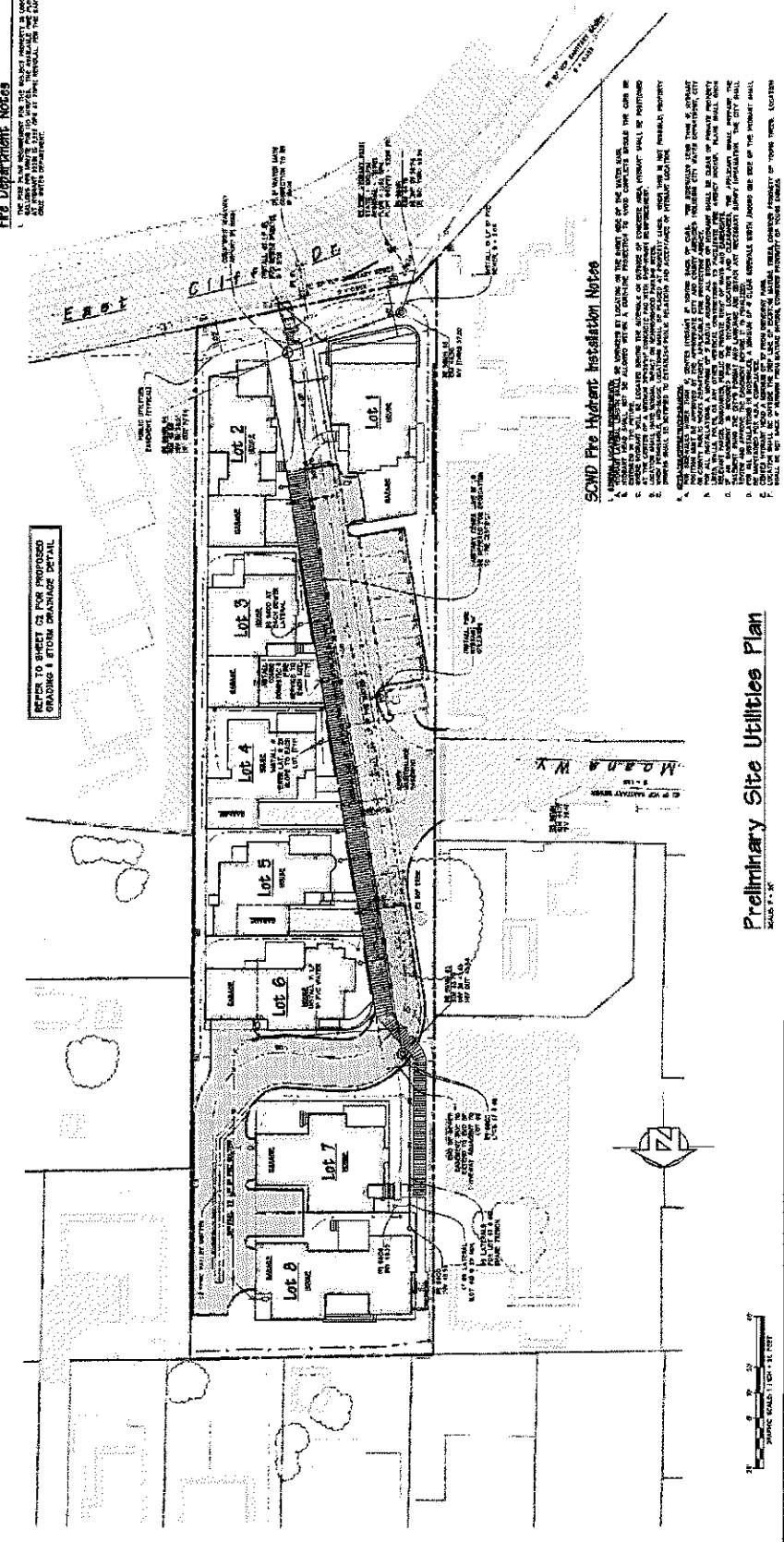
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San Jose County Sanitation District General Notices

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COND Fire Hydrant Installation Notes

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF SANTA CRUZ FIRE DEPARTMENT AND TO SCHEDULE WORK PERIODS, THE TRIBUTARY AND MANIFOLD CONNECTIONS, AND THE LOCATION OF ALL WATER MAINS AND VALVES.

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Preliminary Site Utilities Plan
 SCALE: 1" = 30'



J. C. HILLAND
 ENGINEERS
 22805 East Cliff Drive, Santa Cruz, California
 TEL: (408) 251-1234
 FAX: (408) 251-5678

DATE: APR 03-10-09
 DRAWN BY: JCH
 CHECKED BY: JCH
 PROJECT: Preliminary Private Road Profile & Sections
 TRACT NO. 1586

SCALE: 1" = 10'

DATE: APR 03-10-09

SCALE: 1" = 10'

DATE: APR 03-10-09

SCALE: 1" = 10'

DATE: APR 03-10-09

SCALE: 1" = 10'

DATE: APR 03-10-09

SCALE: 1" = 10'

DATE: APR 03-10-09

SCALE: 1" = 10'

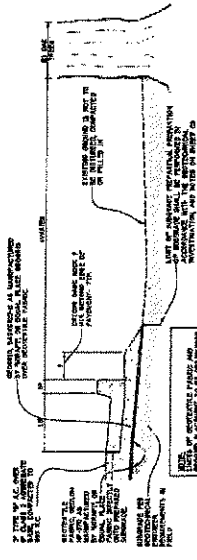
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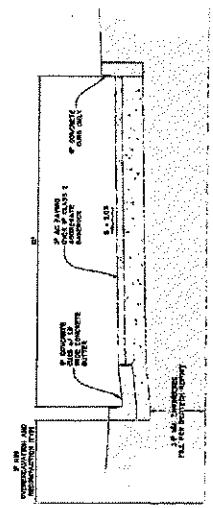
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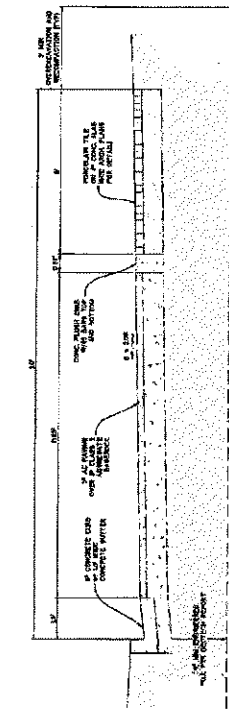
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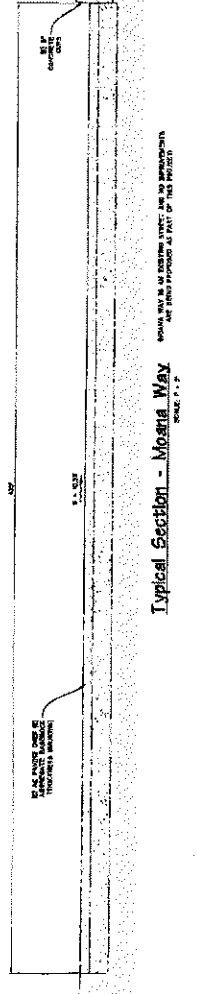
Typical Section "A" - Private Road
 SCALE: 1" = 10'



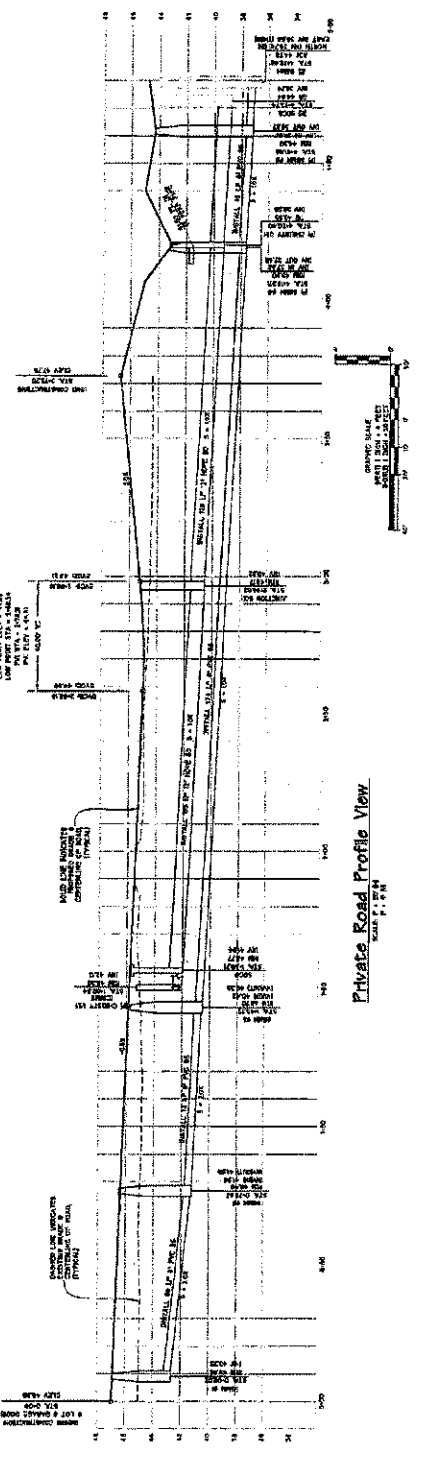
Special Parking Lot Section - On-Grade Pavement
 SCALE: 1" = 10'



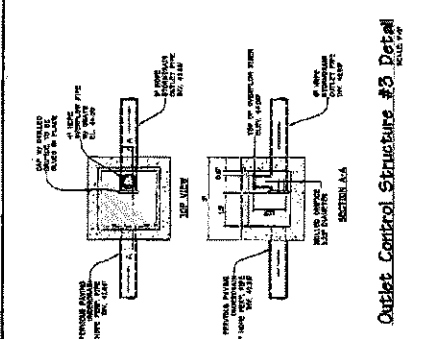
Typical Section "B" - Private Road
 SCALE: 1" = 10'



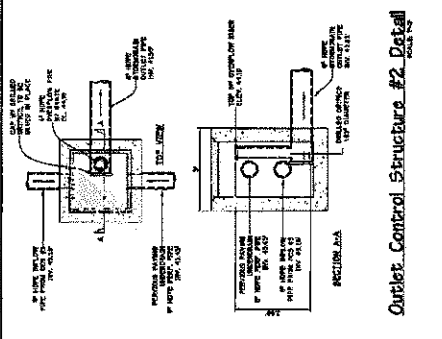
Typical Section - Moana Way
 SCALE: 1" = 10'



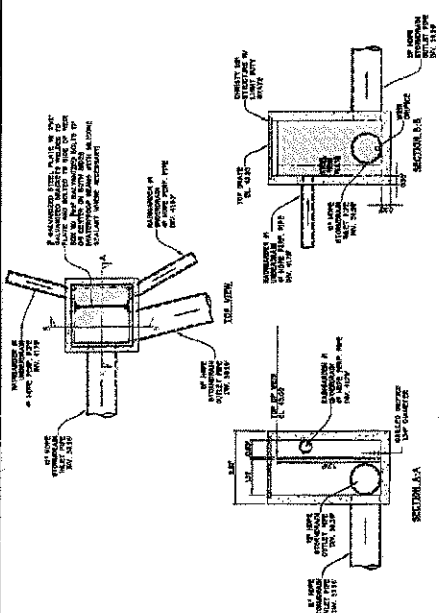
Private Road Profile View
 SCALE: 1" = 10'



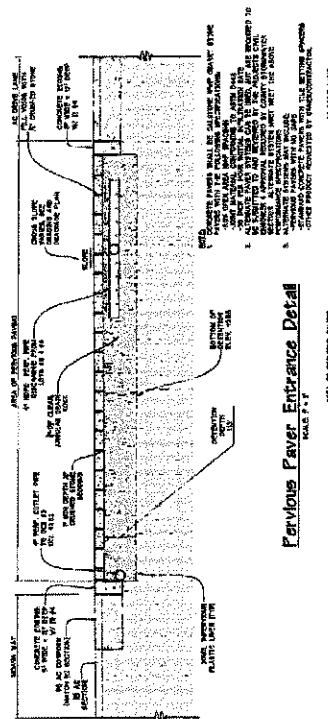
Outlet Control Structure #3 Detail



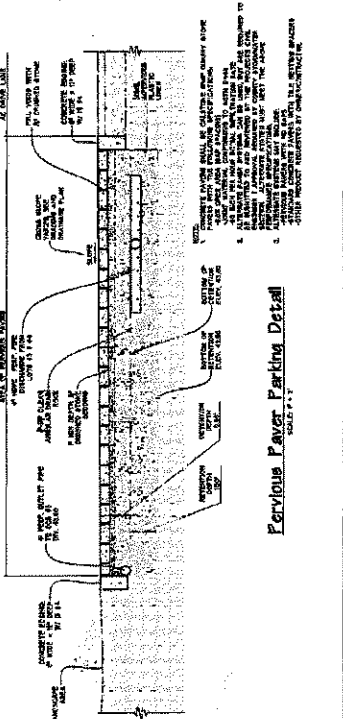
Outlet Control Structure #2 Detail



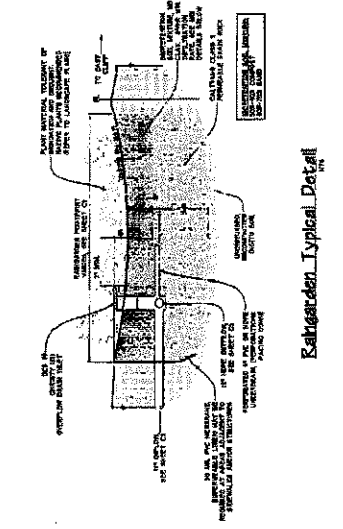
Outlet Control Structure #1 Detail



Pervious Paver Entrance Detail



Pervious Paver Parking Detail



Rain Garden Typical Detail

Erosion Control Notices

1. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES.

County Stormwater Pollution Control Site Headscaping Requirements

ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES.

Inspection Schedule

ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES.

Source Control Notices

ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES.

PREPARATION OF THIS EROSION CONTROL PLAN WAS PROVIDED BY THE CONSULTING ENGINEER, DAVID HANSEN ENGINEERS, INC., 1500 AVENUE 100, SAN JOSE, CALIF. 95128, TEL. (415) 261-1100, FAX (415) 261-1101. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EXISTING TERRAIN AND FOR THE PROTECTION OF THE ADJACENT PROPERTIES.

Figure SC-1 Fibre Roff

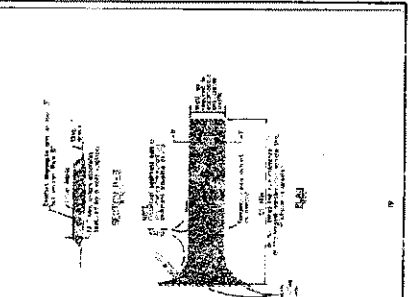


Figure SC-2 Storm Drain Inlet Protection

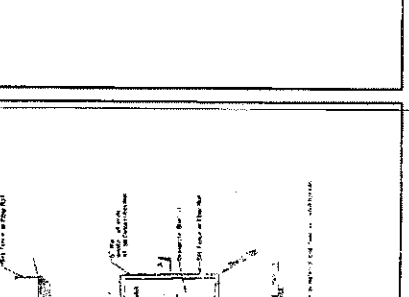
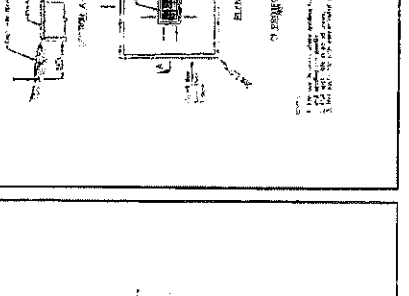
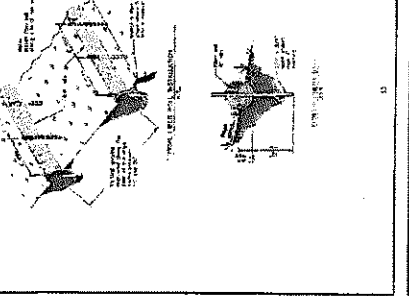


Figure SC-3 Stabilized Construction Exit



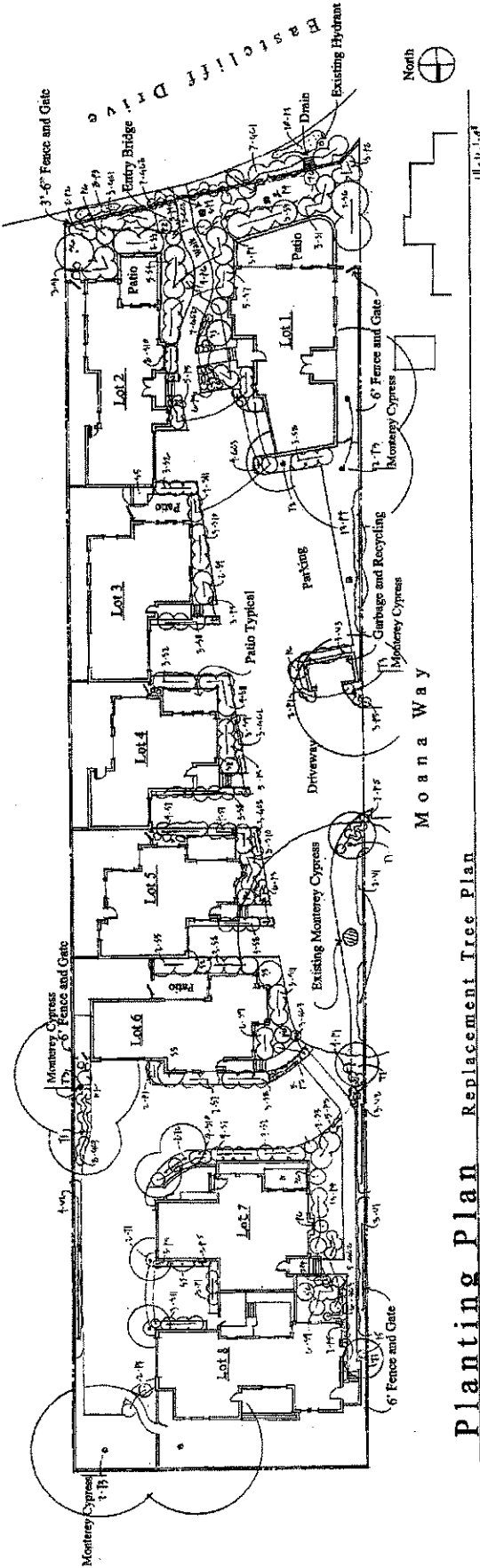
On-Site Treatment Swale Detail



TOTAL DISTURBED AREA
 5450 SQUARE FEET
 2400 ACRES

Preliminary Site Stormwater Pollution Control Plan

SHEET 1 OF 2



Note:
All 13 trees are conditionally required replacement trees for existing trees removed in the past or to be removed. The 6 Monterey Cypress are a conditionally required species to be used on the site.

Planting Notes

1. All trees shall be planted in accordance with the City of San Jose Tree Ordinance and the City of San Jose Tree Ordinance.
2. All trees shall be planted in accordance with the City of San Jose Tree Ordinance and the City of San Jose Tree Ordinance.
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12. All trees shall be planted in accordance with the City of San Jose Tree Ordinance and the City of San Jose Tree Ordinance.
13. All trees shall be planted in accordance with the City of San Jose Tree Ordinance and the City of San Jose Tree Ordinance.

Plant Legend

Tree	Common Name	Size	Qty
T1	Monterey Cypress	18" x 18"	6
T2	Monterey Cypress	18" x 18"	6
T3	Monterey Cypress	18" x 18"	6
T4	Monterey Cypress	18" x 18"	6
T5	Monterey Cypress	18" x 18"	6
T6	Monterey Cypress	18" x 18"	6
T7	Monterey Cypress	18" x 18"	6
T8	Monterey Cypress	18" x 18"	6
T9	Monterey Cypress	18" x 18"	6
T10	Monterey Cypress	18" x 18"	6
T11	Monterey Cypress	18" x 18"	6
T12	Monterey Cypress	18" x 18"	6
T13	Monterey Cypress	18" x 18"	6
T14	Monterey Cypress	18" x 18"	6
T15	Monterey Cypress	18" x 18"	6
T16	Monterey Cypress	18" x 18"	6
T17	Monterey Cypress	18" x 18"	6
T18	Monterey Cypress	18" x 18"	6
T19	Monterey Cypress	18" x 18"	6
T20	Monterey Cypress	18" x 18"	6
T21	Monterey Cypress	18" x 18"	6
T22	Monterey Cypress	18" x 18"	6
T23	Monterey Cypress	18" x 18"	6
T24	Monterey Cypress	18" x 18"	6
T25	Monterey Cypress	18" x 18"	6
T26	Monterey Cypress	18" x 18"	6
T27	Monterey Cypress	18" x 18"	6
T28	Monterey Cypress	18" x 18"	6
T29	Monterey Cypress	18" x 18"	6
T30	Monterey Cypress	18" x 18"	6
T31	Monterey Cypress	18" x 18"	6
T32	Monterey Cypress	18" x 18"	6
T33	Monterey Cypress	18" x 18"	6
T34	Monterey Cypress	18" x 18"	6
T35	Monterey Cypress	18" x 18"	6
T36	Monterey Cypress	18" x 18"	6
T37	Monterey Cypress	18" x 18"	6
T38	Monterey Cypress	18" x 18"	6
T39	Monterey Cypress	18" x 18"	6
T40	Monterey Cypress	18" x 18"	6
T41	Monterey Cypress	18" x 18"	6
T42	Monterey Cypress	18" x 18"	6
T43	Monterey Cypress	18" x 18"	6
T44	Monterey Cypress	18" x 18"	6
T45	Monterey Cypress	18" x 18"	6
T46	Monterey Cypress	18" x 18"	6
T47	Monterey Cypress	18" x 18"	6
T48	Monterey Cypress	18" x 18"	6
T49	Monterey Cypress	18" x 18"	6
T50	Monterey Cypress	18" x 18"	6

Planting Plan Replacement Tree Plan

Attachment 4

Initial Study

MBUAPCD CONSISTENCY DETERMINATION PROCEDURE Ver. 4.0

Data entry Data entered by user.

Consistency Finding NO YES

6	Jurisdiction:	County of Santa Cruz Unincorp				Lead Agency selects from pull down
7	Project Name:	Roadhouse Site 8-lot MLD No. 151204				Lead Agency enters
8	Base Year for this determination:	2010	Project Buildout/ Occupancy Year	2018	Lead Agency enters	
9			Proposed Project Occupied DU	8	Total buildout of Project. Sum of all years, row 26.	

JURISDICTION DATA FROM AQMP & DOF (no data entry)

	Base Year	Period ending January 1st of:					Notes	
		2015	2020	2025	2030	2035		
14	DOF Population	137,873	From Calif. Dept of Finance. Est. for Jan 1 -- released in June of each year.					
15	AMBAG DU Forecast for Jurisdiction	57,498	58,075	59,321	59,808	60,257	60,802	DUs from AMBAG Travel Model, current version.
16	AMBAG Pop Forecast for Jurisdiction	135,173	134,797	137,681	138,822	139,690	141,162	Latest AMBAG Pop. & Employment forecasts.
17	AMBAG Forecast Population/ DU	2.35	2.32	2.32	2.32	2.32	2.32	Row 16/ row 15
18	Estimated Built DUs	57,244	Entry for 2010 is the DOF 1/2010 Housing Unit Estimate. Lead agency may overwrite if they have better data.					

JURISDICTION DUs w/o PROJECT

	2010	2015	2020	2025	2030	2035		
21	Housing Stock (Built DUs, Total)	58,863	58,927	57,247	57,567	57,867	58,207	Lead Agency estimates value at period end.
22	Approved but not Built DUs	64	365	365	365	365	365	Lead Agency estimates value at period end.
23	Total Built & Approved DUs	58,927	59,292	57,612	57,932	58,252	58,572	Sum of Row 21 + 22

PROPOSED NEW PROJECT DUs

	2015	2020	2025	2030	2035		
26	Proposed New Project DUs	8					Data entry by Lead Agency.
27	TOTAL, New Project + Built & Approved DUs	57,300	57,612	57,932	58,252	58,572	Sum of Row 23 + 26

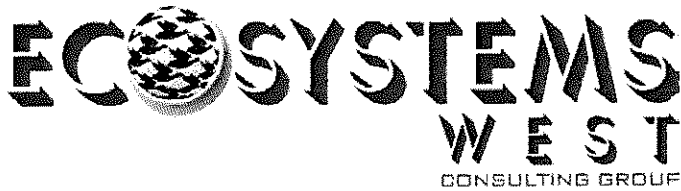
NEW PROJECT CONSISTENCY DETERMINATION

29	Over (Under) AQMP DUs	(775)	(1,709)	(1,876)	(2,005)	(2,230)	Row 27 - Row 15
30	Is the project consistent in this Period?	YES	YES	YES	YES	YES	If Row 30 is (negative) = YES, if positive = NO.

OPTIONS IF INCONSISTENT (Choose one):

	Year:	2015	2020	2025	2030	2035	
38	A. Mitigate the impact by reducing project DUs by this amount:						Preferred option. Reduce project DUs by this amount for the inconsistent period, or redistribute project DUs between periods until all are consistent.
	B. Obtain commitment from AMBAG to add this number of dwelling units to it's next forecast for this Jurisdiction.						Commitmet from AMBAG would enable consistency with the next AQMP.
40	C. OR For EIRs, declare overriding benefit, AND request AMBAG to add the above number of persons and dwelling units to it's next forecast for this Jurisdiction.						

Attachment 5
Initial Study



October 6, 2016

Mathew Johnston, Environmental Coordinator
Planning Department
County of Santa Cruz
701 Ocean Street
Santa Cruz, CA 95060

Re: Biotic Assessment of the Proposed 8-Lot Subdivision Pietro Family Property (Application No. REV161091)

This letter reports the findings of a biotic assessment of Pietro Family property (Assessor's Parcel No. 032-181-08), located at 23905 East Cliff Drive in the Live Oak planning area of Santa Cruz County, California. The proposed development will consist of subdividing the rectangular parcel on the north side of East Cliff Drive into 8 lots for future home development.

The U.S. Soil Conservation Service Soil Survey of Santa Cruz County (1980) classifies the soils on the Pietro Family property as Watsonville loam, thick surface, 0-2 percent slopes. The Watsonville loam, thick surface is characterized as a very deep, poorly drained soil formed in alluvium on coastal terraces. Permeability of the Watsonville loam, thick surface soil type is very slow with slow runoff potential and a slight erosion hazard potential. It supports on the Pietro Family parcel predominantly open ruderal field with a stand of Monterey cypress trees. The water is often perched above the clay layer at times creating a vernal water surface in the winter months.

Bill Davilla of EcoSystems West and Matt Johnston of Santa Cruz County Planning Department conducted a field survey Pietro Family property in early September 2016. During the course of the field visit we observed a rectangular lot bounded on three sides by dense development and on the south end by East Cliff Drive. The habitat on the property is best characterized by an open introduced grass/herb field with a dense stand of Monterey cypress (*Cupressus macrocarpa*) trees in the middle of the parcel along the west fence line. Most of the field is characterized by a mix of native and non-native herbs and grasses. Annual grasses and grass like plants include slender wild-oat grass (*Avena barbata*), Bermuda grass (*Cynodon dactylon*), ryegrass (*Festuca perennis*), tall cyperus (*Cyperus eragrostis*) and a small stand of the native perennial grass, nodding needlegrass (*Stipa pulchra*). The needle grass is likely remnant of the preexisting prairie terrace grasslands that were prominent on the Live Oak terraces back long before

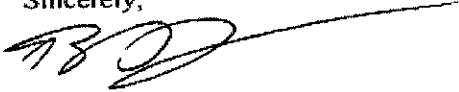
development infill. Herb species include hairy cat's ear (*Hypochoeris glabra*), annual coast plantain (*Plantago bigelovii*), wild radish (*Raphanus sativus*), fennel (*Foeniculum vulgare*), green dock (*Rumex conglomeratus*) and bristly ox-tongue (*Picris echioides*). A few scattered coyote brush shrubs also occur scattered on the southern end of the parcel. Several of these species suggest moist conditions due to the thick surface of the Watsonville loam soil which tends to perch water in the top 4 to 6 inches of the soil surface. A small depression exists in the northern end of the parcel and looking at the 1972 soil top map there is indication that there may have been a more substantial wetted area in or north of the parcel. No significant hydrology indicators were observed and these terraces are noted for their vernal plain conditions during the winter.

No sensitive plant or animal species indigenous in the vicinity of the site were observed on the parcel during the time of our survey. Of interest for this area are historic records for the Santa Cruz tarplant (*Holocarpha macradenia*), one of which is in close proximity to the parcel. No tarplant was observed during the time of this survey and they would have been observable in flower and fruit if they were present. Although conditions of plant cover and soil type are right for this species, it is unlikely that if they were present and that a viable seed bank still exists. No habitat exists for special-status wildlife known to occur in the vicinity of the parcel. However, three mature Monterey cypress trees could provide roosting and nesting habitat for special-status raptors and bats during their breeding periods. Surveys should be conducted of the trees before they are felled, particularly if removal should occur after January 31 through August 31. The trees do not provide a suitable roosting site for Monarch butterflies known to occur in the Moran Lake area to the west due to the unprotected nature of the canopy from the onshore winds.

Based on this preliminary assessment, it is my professional opinion that the proposed development will not result in significant impact to special-status or sensitive biotic resources known within the vicinity of the project.

Should you require further information or clarification, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bill Davilla', with a long horizontal flourish extending to the right.

Bill Davilla
Principal

Attachment 6
Initial Study



COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

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

October 7, 2016

Thacher and Thompson
877 Cedar Street, Suite 248
Santa Cruz, CA 95060

APN: 032-181-08
App #: REV161091

Dear Mr. Thacher:

We have received the completed biotic assessment for this property, prepared by Ecosystems West, dated October 6, 2016. The assessment was required due the potential presence of Santa Cruz tarplant on or around your parcel.

On September 6, 2016, County staff visited the site with Bill Davilla of Ecosystems West, the county's consulting biologist. His letter review of the report is attached. After review of the site and through discussion with the consulting biologist, the County has determined that the subject parcel does not support any listed plant species.

The site does support a grove of three mature Monterey cypress trees which could provide roosting and nesting habitat for special-status raptors and bats during their breeding periods. If any of these trees are proposed to be removed, surveys should be conducted of the trees before they are felled, particularly if removal should occur after January 31 through August 31. The following mitigations should be included in the initial study and applied to any conditions of a development permit:

1. In order to avoid impacts to special status bats, tree removal activities shall be limited to between September 15 and November 1, if feasible.
 - a. If trees must be removed outside of the timeframe above, a qualified biologist shall conduct surveys for special status bats 3-4 weeks prior to site disturbance. If active roosts are present in trees to be retained, roosting bats shall be excluded from trees to be removed prior to any disturbance. In trees to be retained, no disturbance zones, set by the biologist based on the particular species present, shall be fenced off around the subject tree to ensure other construction activities do not harm sensitive species.
 - b. The maternity roosting season for bats is March 1 – July 3. Tree removal should be scheduled outside of the maternal roosting period if special status bats are present. Before any trees are removed during the maternal roosting season, a qualified biologist shall perform surveys. If maternal roosts are present, disturbance shall be avoided until roosts are unoccupied. The biologist shall be responsible for ensuring bat roosts are vacated.
2. In order to avoid impacts to raptors and migratory songbirds, tree removal activities shall be limited to the months between September 15 and February 15, if feasible.

- a. If trees must be removed outside of the timeframe above, a qualified biologist shall conduct surveys for raptor or migratory songbird nests 3-4 weeks prior to site disturbance.
 - i. If active raptor or migratory bird nests are found in trees to be retained, the biologist shall be required to be on site during any initial vegetation or ground disturbance activities (e.g. vegetation clearing, grading, excavation, tree pruning/removal) that could potentially impact listed species. The biologist shall be responsible for setting and maintaining the disturbance buffers from active nests during construction activities, and buffers and exclusionary measures shall be implemented only after consultation with CDFG.
 - ii. If no active nests are present on the subject parcel, tree removal can proceed provided the mitigations in 1. above have been implemented.

Please call me at 831-454-3201 if you have any questions regarding this letter.

Sincerely,



Matthew Johnston
Environmental Planning

Attachment 7

Initial Study

*Maureen Hamb-WCISA Certified Arborist WE2280
Professional Consulting Services*



**TREE RESOURCE EVALUATION
CONSTRUCTION IMPACT ANALYSIS
EAST CLIFF DRIVE
(APN 032-181-08)**

**PREPARED FOR
MATTHEW THOMPSON
THACHER & THOMPSON ARCHITECTS**

JULY 13, 2015

*849 Almar Ave, Suite C #319
Santa Cruz, CA 95060
email: maureenah@shcglobal.net*

*Telephone: 831-763-6919
Fax: 831-763-7724
Mobile: 831-234-7735*

ASSIGNMENT/SCOPE OF SERVICES

Residential development plans have been completed for property located on East Cliff Drive in Santa Cruz County. The project includes the division of a large undeveloped parcel into nine residential units, and an access road from Moana Way.

Three mature Monterey cypress are growing along the western property boundary. The project architect, Matthew Thompson retained me to evaluate the condition of the trees and provide recommendations for tree removal/tree retention based on overall condition and construction related impacts. To complete the analysis I have performed the following:

- Visit the site to complete a visual assessment of three Monterey cypress growing adjacent to the proposed development.
- Rate tree condition as “good”, “fair” or “poor” based on visual assessment.
- Review plans prepared by Ifland Engineering to evaluate potential construction impacts.
- Provide recommendations for tree removal and tree retention based on impacts
- Provide recommendations for protecting the retained tree.

SUMMARY

I have completed an evaluation of the health and structural stability of three trees growing adjacent to the proposed residential development on a large vacant parcel that faces East Cliff Drive in Santa Cruz County. The project includes nine residential units and a roadway that will access the site from Moana Way.

Three large Monterey cypress are growing along the western property boundary. Generally, the trees are in poor condition. Large diameter broken branching is visible throughout the tree canopies. An examination of the tree roots revealed significant decay near the base of two trees.

The structural defects identified in trees #2 and #3 are significant and cannot be mitigated using typical arboricultural treatments such as pruning or cable support systems. They are not suitable for incorporation into the project. Tree #1 can be retained and will be protected during the development.

The proposed roadway is within the Critical Root Zone (CRZ) of the tree. A special pavement section has been designed that eliminates the excavation that can damage or remove roots.

OBSERVATIONS/PROJECT OVERVIEW

The project site is a large undeveloped property surrounded by residential neighborhoods. The property frontage faces East Cliff Drive with an access off of Moana Way.

Tree #1 is a Monterey cypress (*Hesperocyparis macrocarpa*) 61 inches in trunk diameter. The canopy is full; small to medium size dead branching is visible throughout the canopy. The soil at the base of the tree is mounded; ivy and other vegetative debris cover the area. It appears that green waste has been dumped over the root zone for a number of years.



Tree #2 is a Monterey cypress (*Hesperocyparis macrocarpa*) 42 inches in trunk diameter. The canopy is thinning with large diameter dead and broken branching. Fractures are visible on the main stem.

As with tree #1 the soil at the base of the tree is mounded and covered with debris. Areas of decay were visible at the base of the tree. I excavated a small area to inspect structural roots.

A large diameter decayed structural root was unearthed (pictured below).



Tree #3 is a Monterey cypress (*Hesperocyparis macrocarpa*) 24.2 inches in trunk diameter. The tree is in poor health with structural defects. The top of the tree has broken in the past, foliage is dead and discolored. Large diameter dead and broken branching is lodged in the canopy.

DISCUSSION OF CONSTRUCTION IMPACTS/RECOMMENDATIONS

Tree #1 is approximately five feet from the proposed roadway. Typical road construction methods include excavation and compaction for stability. These activities would impact both the absorbing and structural root systems.

The absorbing root layer is responsible for supplying the tree with moisture and nutrients. Loss of these roots can affect tree health.

The larger woody roots are responsible for keeping the tree upright. Excavation can remove or damage the roots and could lead to instability.

Tree Resource Evaluation/Construction Impact Analysis
East Cliff Drive (APN 032-181-08)
July 13, 2015
Page 4

To avoid damage to tree roots a "no dig" pavement will be utilized adjacent to the tree. Ifland Engineers has documented the details of the pavement on sheet C4 of their plan set.

The loose soil and debris under the canopy will be raked away using manual labor. The pavement will be laid on or near existing grade and the proposed curb will be placed on the pavement to avoid additional excavation.

Pruning to remove dead branching and improve structure should be completed by a qualified contractor prior to the onset of construction.

Trees #2 and #3 cannot tolerate the impacts related to the development and removal will be necessary. Both trees display structural weaknesses that cannot be mitigated. Replacement trees of the same species should be included in the landscape plan developed for the project.

Tree #1 will be retained and protected with exclusionary fencing and straw bale barricades during construction.

Any questions regarding the trees on this development site or the content of this report can be directed to my office.

Respectfully submitted,

Maureen Hamb-Certified Arborist #WE2280

*Maureen Hamb-WCISA Certified Arborist WE2280
Professional Consulting Services*

November 6, 2015

Thacher & Thompson
Attention: Matthew Thompson
matt@tntarch.com



Project: Pietro Family Investments/East Cliff Drive
Phase: Response to Incomplete Application (#151204)

Santa Cruz County Environmental Planning has requested additional information regarding the Monterey cypress trees growing on the above noted project site.

- A. Clear pictures of the trees, indication location, details, signs of failure or disease.
- B. A discussion of general health of the trees



Trees #1-#3 are pictured here (left to right). They are growing on the western property boundary. Residential structures are located under the canopies, beyond the visible fence line.

849 Almar Ave. Suite C #319
Santa Cruz, CA 95060
email: maureenah@shglobal.net

Telephone: 831-763-6919
Fax: 831-763-7724
Mobile: 831-234-7735

The photo below shows the structural defects visible from the ground in tree #2. Broken branching is throughout the canopy. Foliar development at the top of the tree is declining. This pattern of dieback and death is often an indication of damage or disease within the root system.

The growing site over the area of root development is thick with composting debris; old vegetation has held moisture over the structural roots responsible for keeping the tree standing and the roots functioning. This type of debris can initiate the development of detrimental fungus and consequently decay of woody roots. Large diameter decayed roots were unearthed at the base of the tree.



Tree #3 is pictured below. Large and small diameter broken and dead branching is present throughout the canopy. The top of the tree has failed in the past. This type of failure could be caused by structural weaknesses or defects or storm events. There is no clear indication of what caused the past failures.



The branching that remains is long and heavy, causing it to drop down rather than develop horizontally.

- C. Additional analysis regarding the structural defects observed on trees #2 and #3. Specifically:
1. Can the dead and broken branching be removed from tree #2.

Yes, dead and broken branching can be removed to reduce the risk of continued failure. The most significant concern with tree #2 is the decay found within the structural roots. The mass of the tree in conjunction with root decay creates a risk of uprooting, especially during times of high winds and soil saturation.

2. What do the fractures on the main stem of tree #2 indicate. How deep are they.

The fractures could be a natural occurrence within the tree or evidence of stress on the stem from high winds or other natural forces. As stated, root decay is present; the motion of an unstable root system could put torque on the main stems causing fracturing.

The depth of the fractures was not analyzed; the trees were visually assessed from the ground. No diagnostic testing or aerial inspections were completed.

3. Can the dead and discolored foliage and dead and broken branching be removed from tree #3.

Most trees can be pruned to remove dead, broken, crossing or decayed branching. In this tree the removal of all the defective parts would leave the tree without enough branching and foliage to remain healthy.

4. What does the broken top of #3 indicate.

The broken top of the tree could have been caused by a storm event or structural weakness within the stem itself. There are no clear indications as to why this failure occurred.

5. Can the health of tree #3 be improved with irrigation and/or fertilizer.

No, the health of the tree cannot be improved, it is at the end of the mortality spiral and the defects and loss of vigor cannot be mitigated.

6. What are the specific structural defects observed in both trees, and why can't these defect be mitigated.

Tree #2 has clear indications of decay in the supporting roots located under the thick (6-8 inches) of debris that has been thrown over the fence from the adjacent property for many years. The degradation of this plant material and moisture it has allowed to remain in the ground has likely lead to the decay of the roots.

Tree #3 has very little live foliage indicating loss of vigor. Branching throughout the canopy is broken or structurally weak.

Please call my office with any additional questions or comments regarding the cypress trees on this project site.

Respectfully submitted,

Maureen Hamb-Certified Arborist WE2280

Attachment 8

Initial Study



444 Airport Blvd, Suite 106

Watsonville, CA 95076
Phone: 831-722-9446
Fax: 831-722-9158

January 14, 2015

Project No. 14123-SZ68-J56

Pietro Family Investments
c/o Chuck Pietro
325 West Poplar Ave
San Mateo, CA 94402

Subject: **Geotechnical Investigation**
Proposed 9 Unit Residential Development.
23905 East Cliff Drive
Santa Cruz, California
APN 032-181-08

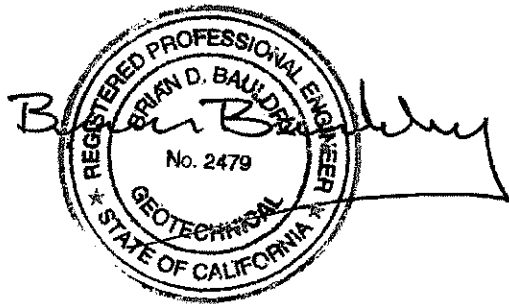
Dear Mr. Pietro,

In accordance with your authorization, we have performed a geotechnical investigation for your nine unit residential project located in the Pleasure Point area of Santa Cruz County, California.

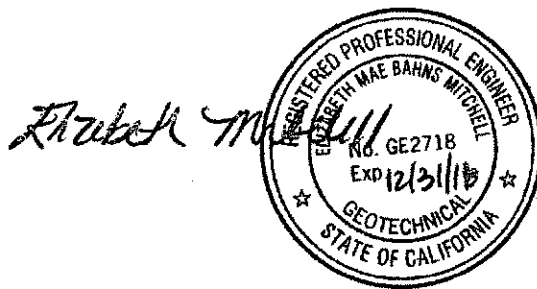
The accompanying report presents our conclusions and recommendations as well as the results of the geotechnical investigation on which they are based. If you have any questions concerning the data, conclusions or recommendations presented in this report, please call our office.

Very truly yours,

PACIFIC CREST ENGINEERING INC.



Brian D. Bauldry, G.E., P. E.
Vice-President – Geotechnical Group
G.E. 2479
Exp. 12/31/16



Elizabeth M. Mitchell, G.E.
President/Principal Geotechnical Engineer
G.E. 2718
Exp. 12/31/16

Copies: 3 to Client, 1 to Thatcher & Thompson Architects, 1 to Ifland Engineers

GEOTECHNICAL INVESTIGATION

PURPOSE AND SCOPE

This report describes the geotechnical investigation and presents results, including recommendations, for your proposed nine unit residential project located at 23905 East Cliff Drive in the Pleasure Point area of Santa Cruz County, California. Our scope of services for this project has consisted of:

1. Discussions with you and other members of the design team including Jon Ifland of Ifland Engineers and Matthew Thompson of Thatcher and Thompson Architects.
2. Review of the pertinent published material concerning the site including our Geotechnical Investigation Report on the neighboring property, County planning maps, preliminary site plans, geologic and topographic maps, and other available literature.
3. The drilling and logging of 5 test borings.
4. Laboratory analysis of retrieved soil samples.
5. Engineering analysis of the field and laboratory results.
6. Preparation of this report documenting our investigation and presenting recommendations for the design and construction of the project.

LOCATION AND DESCRIPTION

The subject project is located at 23905 East Cliff Drive in the Pleasure Point area of Santa Cruz, County, California. The site is a very gently sloping to essentially flat parcel in a well-developed residential neighborhood. The north end of the site contains a shallow closed depression that was observed to pond water for several days following a recent series of storms. The site is currently vegetated with wild grasses, weeds and short ground cover. A couple of large trees are situated along the western perimeter.

The project site is currently not occupied by structures, however, aerial photographs show the site as previously occupied by a single-family dwelling and accessory structures.

The site is located at the following coordinates:

Latitude = 36.96004 degrees
Longitude = -121.96650 degrees

Based upon our review of the preliminary site plan and discussions with the design team, it is our understanding that the proposed project will consist of the construction of 9 single-family dwellings. The proposed project also includes a short private road off Moana Way, a new parking lot, storm water drainage facilities and associated site improvements. We also presume the project will require exterior flatwork, landscaping and attendant utility improvements.

We assume the structures will be one and/or two-stories in height, of wood frame and masonry construction, combined with some concrete slab- on-grade. Structural loading conditions are not known at this time, but are expected to be typical of residential-type construction. Basements and retaining walls are not anticipated. Neither cut nor fill slopes are anticipated. Our office should be contacted for additional recommendations if these anticipated conditions change,

FIELD INVESTIGATION

Soil Borings

Five 6-inch diameter test borings were drilled on the subject parcel on December 5, 2015. Additionally, in April of 2002 we performed a geotechnical investigation of the adjacent parcel to the west. Three of our borings from the 2002 investigation were situated near the western perimeter of the subject parcel and were included in our assessment of the subject project. The location of the test borings are shown on Figure No. 2, Site Map Showing Test Borings. The drilling method used was hydraulically operated continuous flight augers. A geologist from Pacific Crest Engineering Inc. was present during the drilling operations to log the soil encountered and to choose soil sampling type and locations.

Relatively undisturbed soil samples were obtained at various depths by driving a split spoon sampler 18 inches into the ground. This was achieved by dropping a 140 pound down hole safety hammer through a vertical height of 30 inches. The number of blows needed to drive the sampler for each 6 inch portion is recorded and the total number of blows needed to drive the last 12 inches is reported as the Standard Penetration Test (SPT) value. The outside diameter of the samplers used in this investigation was either 3 inches or 2 inches, and is noted respectively as "L" or "T" on the boring logs.

All standard penetration test data has been normalized to a 2 inch O.D. sampler so as to reflect a SPT "N" value. The normalization method used was derived from the second edition of the Foundation Engineering Handbook (H.Y. Fang, 1991). The method utilizes a Sampler Hammer Ratio which is noted as either R_s for non-cohesive soils, or R_c for cohesive soils. This ratio is dependent on the weight of the hammer, height of hammer drop, outside diameter of sampler, and inside diameter of sample. Using the Sampler Hammer Ratio, a correlation can be made from the samplers used in the field to a standard SPT "N" Value. Based on this method, the average correction factor is 0.52 for non-cohesive soils, and 0.65 for cohesive soils.

The soils encountered in the borings were continuously logged in the field and visually described in accordance with the Unified Soil Classification System (ASTM D2488 (Modified), Figure No. 3). The soil classification was verified and or modified upon completion of laboratory testing in accordance with ASTM D2487.

LABORATORY INVESTIGATION

The laboratory testing program was developed to help in evaluating the engineering properties of the materials encountered on the site. Laboratory tests performed include:

- a. Moisture Density relationships in accordance with ASTM test D2937.
- b. Unconfined Compression tests in accordance with ASTM test D2166.
- c. Atterberg Limits tests in accordance with ASTM test D4318.
- d. "R" Value tests in accordance with California test 301.
- e. Gradation tests in accordance with ASTM test D1140.

The results of the laboratory tests are presented on the boring logs opposite the sample tested or within Appendix A.

SOIL CONDITIONS

Regional Geologic and Soil Maps

The surficial geology at the project site is mapped as the Lowest Emergent Coastal Terrace Deposits (Qcl; Pleistocene), which typically consists of generally well sorted sand with relatively continuous layers of gravel deposited in a near shore high-energy environment. The Coastal Terrace Deposits may locally include small areas of fluvial and colluvial silt, sand and gravel.

The surface soils at the project site are mapped on the USDA Soil Survey of Santa Cruz County as Watsonville loam (0% to 2% slopes). The Watsonville Loam is described as typically consisting of silt (ML), clay (CL, CH) and clayey sand (SC). The native soils encountered in our test borings are generally consistent with this description. Typically the main limitations of constructing homes on Watsonville loam are a high shrink-swell potential, low soil strength and very slow permeability.

Soil Borings

The soil encountered at the project site can be generally described as interbedded layers of low and moderately expansive clays, silts, clayey sands and silty sands. The upper 2 to 3 feet of soil was loose to medium dense (sands) or firm (clays and silts). The soils below 3 feet were generally medium dense to very dense. Purisima Formation Sandstone was encountered at depths ranging from 15 to 19½ feet below existing ground surface.

Loose, non-engineered fill was encountered in one of our five borings. The fill was encountered in Boring No. 1, which was located in the southeast corner of the site. The fill was located in the area where aerial photographs show the site being occupied by former structures. The fill was approximately 2½ feet thick. It should be anticipated that additional pods of fill may be located elsewhere on the property.

Appendix A contains the site plan showing the locations of the test borings and the Log of Test Borings presenting in more descriptive forms the soil profile explored in each boring, the sample locations, and the SPT "N" values for each sample. Stratification lines on the boring logs are approximate as the actual transition between soil types may be gradual.

Groundwater was not encountered in any of our borings on the subject site or our borings on the neighboring site to the maximum depth explored of 35 feet. It should be noted that the bore holes were open for only a few hours, which may not have been sufficient time for a stabilized water table to develop.

The groundwater conditions described in this report reflect the conditions encountered during our drilling investigations on December 5, 2014 and April 1, 2002 at the specific locations drilled. It must be anticipated that the perched and regional groundwater tables may vary with location and will fluctuate with variations in rainfall, tides, runoff, irrigation and other changes to the conditions existing at the time our measurements were made.

REGIONAL SEISMIC SETTING

The seismic setting of the site is one in which it is reasonable to assume that the site will experience significant seismic shaking during the lifetime of the project. Mapped active or potentially active faults which may significantly affect the site are listed in the following table. The fault distances are approximate distances based on a review of the following documents:

- Geologic Map of Santa Cruz County, California, Brabb, 1989.
- Map Showing Faults and Their Potential Hazards in Santa Cruz County, California; Hall, Sarna-Wojcicki, Dupré, 1974.

TABLE No. 1, Faults in the Santa Cruz Area

Fault Name	Distance (miles)	Distance (km.)	Direction	Slip Rate* (mm/yr)	MG Max.*
San Andreas	10½	17	Northeast	24	7.9
San Gregorio	12	19¼	West	5	7.3
Zayante – Vergeles	7	11¼	Northeast	0.1	6.8
Monterey Bay – Tularcitos	5	8	Southwest	0.5	7.1

*Source: CDMG, February, 1998

SEISMIC HAZARDS

A detailed investigation of seismic hazards is beyond our scope of services for this project. In general however, seismic hazards which may affect project sites in Santa Cruz County include ground shaking, ground surface fault rupture, liquefaction and lateral spreading, and seismically-induced slope instability. Geotechnical aspects of these issues are discussed below:

Ground Shaking

Ground shaking will be felt on the site during seismic events. Structures founded on thick soft soil deposits are more likely to experience more destructive shaking, with higher amplitude and lower frequency, than structures founded on bedrock. Generally, shaking will be more intense closer to earthquake epicenters. Thick soft soil deposits large distances from earthquake epicenters, however, may result in seismic accelerations significantly greater than expected in bedrock.

Structures built in accordance with the latest edition of the California Building Code have an increased potential for experiencing relatively minor damage which should be repairable. The seismic design of the project should be based on the 2013 California Building Code (CBC) as it has incorporated the most recent seismic design parameters.

TABLE No. 2, The 2013 CBC Seismic Design Parameters

Design Parameter	Specific to Site ASCE 7-05	Reference (See Note 1)
Site Class	D, Stiff Soil	Table 20.3.1 ASCE 7-10
Mapped Spectral Acceleration for Short Periods	$S_s = 1.500 \text{ g}$	Fig. 22-1 ASCE 7-10
Mapped Spectral Acceleration for 1-second Period	$S_1 = 0.600 \text{ g}$	Fig. 22-2 ASCE 7-10
Short Period Site Coefficient	$F_a = 1.0$	Table 1613.3.3(1)
1-Second Period Site Coefficient	$F_v = 1.5$	Table 1613.3.3(2)
MCE Spectral Response Acceleration for Short Period	$S_{MS} = 1.500 \text{ g}$	Section 1613.3.3
MCE Spectral Response Acceleration for 1-Second Period	$S_{M1} = 0.900 \text{ g}$	Section 1613.3.3
5% Damped Spectral Response Acceleration for Short Period	$S_{DS} = 1.000 \text{ g}$	Section 1613.3.4
5% Damped Spectral Response Acceleration for 1-Second Period	$S_{D1} = 0.600 \text{ g}$	Section 1613.3.4
Seismic Design Category (Notes 2)	D	Section 1613.3.5

Note 1: Design values may also have been obtained by using the Ground Motion Parameter Calculator available on the USGS website at <https://geohazards.usgs.gov/secure/designmaps/us/signup.php>

Note 2: Seismic Design Category assumes the structure is **not** a Category IV occupancy as defined by Table 1604.5 of the 2013 CBC. Pacific Crest Engineering Inc. should be contacted for revised Table 2 seismic design parameters if the building has a different occupancy rating from the one assumed.

The recommendations of this report are intended to reduce the potential for structural damage to an acceptable risk level, however strong seismic shaking could result in architectural damage and the need for post-earthquake repairs. It should be assumed that exterior improvements such as pavements, slabs, sidewalks or patios will need to be repaired or replaced following strong seismic shaking. An increased depth of subgrade compaction below exterior improvements will assist in minimizing the damage to these elements.

Ground Surface Fault Rupture

Ground surface fault rupture occurs along the surficial trace(s) of active faults during significant seismic events. Pacific Crest Engineering Inc. has not performed a specific investigation for the presence of active faults on the project site. Since the nearest known active or potentially active fault is mapped approximately 5 miles (approximately 8 km) from the site, the potential for ground surface fault rupture at this site is low.

Liquefaction

Liquefaction tends to occur in loose, saturated fine grained sands, coarse silts or clays with a low plasticity. Based upon our review of the regional liquefaction maps (Dupre', 1975; Dupre' and Tinsley, 1980) the site is located in an area classified as having a low potential for liquefaction. We did not encounter loose cohesionless clean sands or soft to firm coarse silts or low-plasticity clays below a depth of 3 feet in any of our borings. Neither did we encounter clays with a Plasticity Index of 7 or lower (refer to the paper "Liquefaction Susceptibility Criteria for Silts and Clays" by Boulanger and Idriss, 2006). The soils encountered in our test borings were generally medium dense to dense clayey and silty sands and firm to hard clays and silts. In addition, we did not encounter groundwater to the

maximum depth explored of 35 feet. Therefore, we conclude that there is a low potential for liquefaction to occur at this site and cause damage to structures thereon.

Liquefaction Induced Lateral Spreading

Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face, or fails on an inclined topographic slope. Our qualitative analysis of the project site indicates that the potential for liquefaction to occur is low, and consequently the potential for lateral spreading is also low.

Landsliding

Landsliding is not a hazard associated with this site due to the essentially flat topography and significant distance from the coastal bluff, which has been armored against the effects of wave action.

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

GENERAL

1. The results of our investigation indicate that, from a geotechnical engineering standpoint, the property may be developed as proposed provided the recommendations in this report are included in the design and construction of the project.
2. It must be understood that soil and groundwater conditions encountered during construction can differ from those encountered during our subsurface investigation. Some level of uncertainty with respect to the subsurface conditions is inevitable, despite the use of professional care.
3. Our laboratory testing indicates that the near surface clayey soils possess moderately high expansive properties. This analysis was based on Atterberg Limits and Expansion Index tests.
4. Grading and foundation plans should be reviewed by Pacific Crest Engineering Inc. during their preparation and prior to contract bidding.
5. Pacific Crest Engineering Inc. should be notified at least four (4) working days prior to any site clearing and grading operations on the property in order to afford us the opportunity to observe the stripping and disposal of unsuitable materials, and to coordinate this work with the grading contractor. During this period, a pre-construction conference should be held on the site, with at least you or your representative, the grading contractor and one of our engineers present. At this meeting, the project specifications and the testing and inspection responsibilities will be outlined and discussed.
6. Field observation and testing must be provided by a representative of Pacific Crest Engineering Inc., to enable them to form an opinion as to the degree of conformance of the exposed site conditions to those foreseen in this report, the adequacy of the site preparation, the acceptability of fill materials, and the extent to which the earthwork construction and the degree of compaction comply with the specification requirements.
7. Any work related to grading or foundation excavation that is performed without the full knowledge and direct observation of Pacific Crest Engineering Inc., the Geotechnical Engineer of Record, will render the recommendations of this report invalid, unless the Client hires a new Geotechnical Engineer who agrees to take over complete responsibility for this report's findings, conclusions and recommendations. The new Geotechnical Engineer must agree to prepare a Transfer of Responsibility letter. This may require additional test borings and laboratory analysis if the new Geotechnical Engineer does not completely agree with our prior findings, conclusions and recommendations.

PRIMARY GEOTECHNICAL CONSIDERATIONS

8. Based upon the results of our investigation, primary geotechnical considerations for the subject project include the following:

- The site contains expansive clays.
- The site contains loose, non-engineered fill.
- The upper soils are loose, which could result in intolerable settlement.
- There is a potential that remnant foundations, septic tanks, utility lines, root balls and other subsurface obstruction were left in place following the demolition of the former structures.
- Given the high clay and silt content, it should be anticipated that the permeability of the upper soil will potentially be very slow.
- The current site topography, including the shallow closed depression at the north end of the site, pond water.
- The project site is located within a seismically active area and strong seismic shaking is expected to occur within the design lifetime of the project.

9. To mitigate the potential for settlement due to loose foundation zone soils we recommend that the loose foundation zone soils be removed and replaced as engineered fill. This excavation operation will also expose any remnant foundation, subsurface obstructions or deleterious remains from the previous structures. To mitigate the shrink-swell potential of the on-site native clays, we recommend that the engineered fill be either lime-treated or the expansive clays be excavated and removed from the site. The native low-plasticity clays, clayey sands and silty sands, may be used as engineered fill. The low-plasticity clays should be compacted at a moisture content wet of optimum . Details are provided in the "SITE PREPARATION" section of this report.

10. Improvements should be designed and constructed in accordance with the most current CBC and the recommendations of this report to minimize reaction to seismic shaking. Structures built in accordance with the latest edition of the California Building Code have an increased potential for experiencing relatively minor damage, which should be repairable, however strong seismic shaking could result in architectural damage and the need for post-earthquake repairs.

SITE PREPARATION

11. The initial preparation of the site will consist of the removal of all abandoned foundations, abandoned underground utilities, all subsurface obstructions, all existing fill soils, and trees including stumps and root balls. Septic tanks and leach lines, if found, must be completely removed. Soils contaminated with deleterious material should be removed from the site. The extent of this soil removal will be designated by a representative of Pacific Crest Engineering in the field. All debris must be completely removed.

12. All voids, including those created by the demolition or removal of foundations, subsurface obstructions, utilities, septic tanks, leach lines, or trees and root balls must be backfilled with properly compacted non-expansive native soils that are free of organic and other deleterious materials or with approved import fill.
13. Any wells encountered shall be capped in accordance with the requirements and approval of the County Health Department. The strength of the cap shall be equal to the adjacent soil and shall not be located within 5 feet of a structural footing.
14. Surface vegetation and organically contaminated topsoil should then be removed ("stripped") from the area to be graded. This material may be stockpiled for future landscaping. It is anticipated that the depth of stripping may be 2 to 4 inches, however the required depth of stripping must be based upon visual observations of a representative of Pacific Crest Engineering Inc., in the field. The depth of stripping will vary upon the type and density of vegetation across the project site and with the time of year. Areas with dense vegetation or groves of trees may require an increased depth of stripping.
15. It is possible that there are areas of man-made fill on the project site that our field investigation did not detect. Areas of man-made fill, if encountered on the project site will need to be completely excavated to undisturbed native material. The excavation process should be observed and the extent designated by a representative of Pacific Crest Engineering Inc., in the field. Any voids created by fill removal must be backfilled with properly compacted approved native soils that are free of organic and other deleterious materials, or with approved imported fill.
16. Building Areas: Following the stripping and backfilling of voids, the exposed soils in the building areas should be removed to a minimum depth of 42 inches below planned grade, 36 inches below existing grades, or as designated by a representative of Pacific Crest Engineering during construction, whichever is deepest. The base of the excavation should be scarified and the soil moisture conditioned and compacted as an engineered fill. Approved excavated soil may then be placed in thin lifts. Recompact sections should extend 5 feet beyond all building perimeters. *There must be a minimum of 24 inches of engineered fill under all foundation elements.*
17. Slab-on-Grade Floors: In addition to the site preparation described in item 16 above, we recommend that the upper 12 inches of the building pad subgrade beneath slab-on-grade floors be comprised of either adequately compacted lime-treated native soil or Class 2 aggregate base. The capillary break layer must not be considered as part of the building pad subgrade.
18. Pavement Areas: Following the stripping and backfilling of voids, the exposed soils in the pavement and flatwork areas, including but not limited to roadways, driveways, parking areas, concrete flatwork and improved patio areas, must be removed to a minimum depth of 24 inches below planned grade or as designated by a representative of Pacific Crest Engineering during construction, whichever is deepest. The base of the excavation should be scarified and the soil moisture conditioned and compacted as an engineered fill. Approved excavated soil may then be placed in thin lifts. Recompact sections should extend 3 feet beyond all pavement and flatwork area. *The grading should result in a minimum of 24 inches of recompact material below all roadway and flatwork sections.*

19. All native and import fill should be placed in maximum 8 inch lifts, before compaction. The moisture content of the un-treated native soil or import fill at the time of compaction should be as follows:

- Coarse grained native soils and import fill: within 1% to 3% of the laboratory optimum value.
- Approved low-plasticity native clays: 2 to 4 percent above the laboratory optimum value.

On-site expansive clays left untreated are not appropriate for use as structural soil. The native soils should be lime treated to create soil with adequate strength and lower expansion properties. If lime treatment is not used, the native non-expansive clayey and silty soils will likely require spreading and drying before use and the expansive clays will need to be excavated and exported from the site.

Note: If this work is done during or soon after the rainy season, the on-site soils may be too wet in their existing condition to be used as engineered fill. These materials may require a diligent and active drying and/or mixing operation to reduce the moisture content to the levels required to obtain adequate compaction as an engineered fill. If the on-site soils are too dry, water may need to be added. Clays encountered within pavement area excavations may be unstable in their native condition. To create a firm and stable base on which backfilled soils will be founded, these soils may require the addition of a geotechnical stabilizer, further excavation, a combination of both methods, or another suitable method such as import fill.

20. Un-treated native soil or import fill on the project site should be compacted as follows:

- a. In pavement areas the upper 8 inches of subgrade, all aggregate subbase and aggregate base, and all lime treated soil should be compacted to a minimum of 95% of its maximum dry density.
- b. In pavement areas all utility trench backfill should be compacted to 95% of its maximum dry density.
- c. The remaining soil on the project site should be compacted to a minimum of 90% of its maximum dry density.

21. The maximum dry density will be obtained from a laboratory compaction curve run in accordance with ASTM #D1557. This test will also establish the optimum moisture content of the material. Field density testing will be in accordance with ASTM Test #D2922.

22. The use of imported fill will likely be necessary on this project. The import fill material should be:

- a. free of organics, debris, and other deleterious materials,
- b. granular in nature, well graded, and contain sufficient binder to allow utility trenches to stand open,
- c. free of rocks in excess of 2 inches in size,
- d. have a Plasticity Index between 4 and 12,
- e. have a minimum Resistance "R" Value of 30, and be non-expansive.

23. Samples of any proposed imported fill planned for use on this project should be submitted to Pacific Crest Engineering Inc. for appropriate testing and approval not less than 4 working days before the anticipated jobsite delivery. Imported fill material delivered to the project site without prior submittal of samples for appropriate testing and approval must be removed from the project site.

24. We recommend field density testing be performed in maximum 2 foot elevation differences. In general terms, we would recommend at least one compaction test per 200 linear feet of utility trench or retaining wall backfill, and at least one compaction test per 2,000 square feet of building or structure area. This is a subjective value and may be changed by the Geotechnical Engineer based on a review of the final project layout and exposed field conditions.

CHEMICAL TREATMENT

25. Chemical (lime) treatment should be in accordance with the CALTRANS Standard Specifications, Chapter 24, and following the modifications outlined below.

26. The lime treatment operation should be performed by a specialty contractor who specializes in the chemical treatment of soils. The lime treatment should be performed with the appropriate specialized equipment including metered chemical spreading machines and soil pulverizer machines.

27. The lime chemical used shall be Calcium Oxide ("High Cal - CaO") in un-hydrated dry powdered form. Magnesium Oxide (also known as Dolomitic Quicklime) is not appropriate for use on this project.

28. The soil should be treated with 4% by weight Calcium Oxide powder.

29. In building areas, the depth of lime treatment should extend to a minimum depth of 24 inches below all foundation elements, 42 inches below planned grade, 36 inches below existing grades, or as designated by a representative of Pacific Crest Engineering during construction, whichever is deepest. For pavement areas, lime treatment should extend to a minimum depth of 24 inches below the finish subgrade elevation. Lime treatment should extend a minimum of five feet (measured horizontally) beyond the edge of all building foundation elements and a minimum of 12 inches beyond the edge of all pavement and sidewalk sections.

30. The chemically treated material should not include any gravel or rocks over 2 inches in nominal dimension.

31. The mixing of the lime and the native soil must be diligent, thorough, and must completely mix all lime powder into the soil to create a homogenous mixture across the entire treated area. A representative of Pacific Crest Engineering Inc. should observe the mixing process to ensure adequate mixing across the entire treated area and provide further recommendations as necessary.

32. The treated soil should be compacted to a minimum relative compaction of 95% of its maximum dry density. The compaction of the soil should be in lifts no deeper than 9 inches in loose thickness prior to compaction. Lift depth may be increased to 18 inches if, and only if, the contractor can demonstrate to the sole satisfaction of Pacific Crest Engineering Inc. that the specified compaction can be obtained with thicker lifts.
33. No second-mix lime treated soil shall be placed over first-mix lime treated soil for any reason.
34. Compaction of the second-mix lime treated soil shall take place within 24 hours of the second-mix operation being completed.
35. Field density testing will be in accordance with ASTM test D6938 and laboratory analysis will be in accordance with ASTM test D1557.
36. A curing seal is not necessary.
37. All lime treatment operations must be observed and tested by a representative of Pacific Crest Engineering Inc., to allow us to form an opinion as to the effectiveness of the treatment, the degree of conformance of the work with our recommendations and the project plans and specifications, and to provide further recommendations, as necessary.
38. The addition of lime to the soil elevates the pH of the soil considerably. The landscape architect should be contacted for recommendations regarding the impact to existing trees and plants surrounding the proposed structure foundations and pavement areas and request recommendations for the new landscaping which will be tolerant of the elevated soil pH.

CUT AND FILL SLOPES

39. We do not anticipate this project will have any significant cut or fill slopes. Should project requirements change, please contact our firm for additional requirements.

EROSION CONTROL

40. The surface soils are classified as having a moderate potential for erosion. Therefore, the finished ground surface should be planted with ground cover and continually maintained to minimize surface erosion. For specific and detailed recommendations regarding erosion control on and surrounding the project site, you should consult your civil engineer or an erosion control specialist.

FOUNDATIONS - SPREAD FOOTINGS

41. At the time we prepared this report, the grading plans had not been completed and the structure location and foundation details had not been finalized. We request an opportunity to review these items during the design stages to determine if supplemental recommendations will be required.

42. Considering the soil characteristics and site preparation recommendations, it is our opinion that an appropriate foundation system to support the proposed structures will consist of reinforced concrete spread footings bedded into adequately compacted engineered fill, as described above. This system could consist of continuous exterior footings, in conjunction with interior isolated spread footings or additional continuous footings or concrete slabs.

43. Footing widths and depths should be based upon the allowable bearing value but not less than the minimum widths and depths as shown in the table below.

TABLE No. 3, Minimum Footing Widths and Depths

Number of Stories	Footing Width	Footing Depth
1 or 2	15 inches	18 inches

Please note: The minimum footing embedment is measured from the lowest existing and adjacent soil grade and should not include any concrete slab-on-grade, capillary break and sand cushion in the total depth of embedment.

44. The footing excavations should be thoroughly saturated prior to placing concrete. A representative of Pacific Crest Engineering Inc. should observe the footing excavations and make recommendations regarding the length of time the footings should be saturated prior to placing concrete. If the engineered fill does not include lime treatment, the saturation period may be 48 hours or more. Footings excavated in lime treated soil may need little saturation if concrete is placed soon after the excavations are dug.

45. The footing excavations must be free of loose material prior to placing concrete.

46. Footings constructed to the given criteria may be designed for the following allowable bearing capacities:

- 2,000 psf for Dead plus Live Load
- a 1/3rd increase for Seismic or Wind Load

Please note: In computing the pressures transmitted to the soil by the footings, the embedded weight of the footing may be neglected.

47. Provided our recommendations are followed during design and construction, total settlement due to applied dead and live loads is not expected to exceed tolerable limits.

48. All footings should be excavated into adequately compacted engineered fill. No footings shall be constructed with the intent of placing engineered fill against the footing after the footing is poured, and counting that engineered fill as part of the embedment depth of the footing.

49. Footings may be assumed to have a "coefficient of friction" of 0.30 between the base of footing and the soil.

50. Footings may be assumed to have a lateral bearing pressure resistance value of 250 psf below the ground surface.

51. All grade beams, thickened slab edges and other foundation elements which impart structure loads to the soil (from dead, live, wind or seismic loads) should be considered "footings" and constructed according to the recommendations of this section, including required depths below lowest adjacent soil grade.

52. Footing excavations must be observed by a representative of Pacific Crest Engineering Inc. before placement of formwork, steel and concrete to ensure the footings are embedded into proper material and the footing excavations have been adequately moisture conditioned.

53. The footings should contain steel reinforcement as determined by the Project Civil or Structural Engineer in accordance with applicable CBC or ACI Standards.

SLAB-ON-GRADE CONSTRUCTION

54. Concrete slab-on-grade floors may be used for ground level construction on engineered fill. The upper 12 inches of the slab subgrade should consist of either adequately compacted lime-treated native soil or Class 2 Aggregate Base. The capillary break should not be considered as part of the slab subgrade.

55. Slabs may be structurally integrated with the footings. If the slabs are constructed as "free floating" slabs, they should be provided with a minimum ¼ inch felt separation between the slab and footing. The slabs should be separated into approximately 15' x 15' square sections with dummy joints or similar type crack control devices.

56. All concrete slabs-on-grade should be underlain by a minimum 6 inch thick capillary break of ¾ inch clean crushed rock (no fines). It is recommended that neither Class II baserock nor sand be employed as the capillary break material.

57. Where floor coverings are anticipated or vapor transmission may be a problem, a vapor retarder/membrane should be placed between the capillary break layer and the floor slab in order to reduce the potential for moisture condensation under floor coverings. We recommend a high quality vapor retarder at least 10 mil thick and puncture resistant (Stego Wrap or equivalent). The vapor retarder must meet the minimum specifications for ASTM E-1745, Standard Specification For Water Vapor Retarder. Please note that low density polyethylene film (such as Visqueen) may meet minimum current standards for permeability but not puncture resistance. Laps and seams should be overlapped at least six inches and properly sealed to provide a continuous layer beneath the entire slab that is free of holes, tears or gaps. Joints and penetrations should also be properly sealed.

58. Floor coverings should be installed on concrete slabs that have been constructed according to the guidelines outlined in ACI 302.2R and the recommendations of the flooring material manufacturer.

59. Currently, ACI 302-1R recommends that concrete slabs to receive moisture sensitive floor coverings be placed directly upon the vapor retarder, with **no sand cushion**. ACI states that vapor retarders are not effective in preventing residual moisture within the concrete slab from migrating to the surface. Including a low water-to-cement ratio (less than 0.50) and/or admixtures into the mix design are generally necessary to minimize water content, reduce soluble alkali content, and provide workability to the concrete. As noted in CIP 29 (*Concrete in Practice by the National Ready Mixed Concrete Association*), placing concrete directly on the vapor retarder can also create potential problems. If environmental conditions do not permit rapid drying of bleed water from the slab surface then the excess bleeding can delay finishing operations (refer to CIP 13, 19 and 20). Most of these problems can be alleviated by using a concrete with a low water content, moderate cement factor, and well-graded aggregate with the largest possible size. **With the increased occurrence of moisture related floor covering failures, minor cracking of floors placed on a vapor retarder and other problems discussed here are considered a more acceptable risk than failure of floor coverings, and these potential risks should be clearly understood by the Client and Project Owner.**

60. If a sand layer is chosen as a cushion for slabs without floor coverings, it should consist of a clean sand. Clean sand is defined as 100 percent passing the #4 sieve, and less than 5 percent passing the #200 sieve.

61. Requirements for pre-wetting of the subgrade soils prior to the pouring of the slabs will depend on the specific soils and seasonal moisture conditions and will be determined by a representative of Pacific Crest Engineering Inc. at the time of construction. It is important that the subgrade soils be properly moisture conditioned at the time the concrete is poured. Subgrade moisture contents should not be allowed to exceed our moisture recommendations for effective compaction, and should be maintained until the slab is poured.

Please Note: Recommendations given above for the reduction of moisture transmission through the slab are general in nature and present good construction practice. Moisture protection measures for concrete slabs-on-grade should meet applicable ACI and ASTM standards. Pacific Crest Engineering Inc. are not waterproofing experts. For a more complete and specific discussion of moisture protection within the structure, a qualified waterproofing expert should be consulted to evaluate the general and specific moisture vapor transmission paths and any impact on the proposed construction. The waterproofing consultant should provide recommendations for mitigation of potential adverse impacts of moisture vapor transmission on various components of the structure as deemed appropriate.

62. Slab thickness, reinforcement, and doweling should be determined by the Project Civil or Structural Engineer. The use of welded wire mesh is not recommended for slab reinforcement.

UTILITY TRENCHES

63. Utility trenches that are parallel to the sides of the building should be placed so that they do not extend below a line sloping down and away at a 2:1 (horizontal to vertical) slope from the bottom outside edge of all footings.

64. Utility pipes should be designed and constructed so that the top of pipe is a minimum of 24 inches below the finish subgrade elevation of any road or pavement areas. Any pipes within the top 24 inches of finish subgrade should be concrete encased, per design by the Project Civil Engineer.

65. For the purpose of this section of the report, backfill is defined as material placed in a trench starting one foot above the pipe, and bedding is all material placed in a trench below the backfill.

66. Unless concrete bedding is required around utility pipes, free-draining clean sand should be used as bedding. Sand bedding should be compacted to at least 95 percent relative compaction.

67. Approved imported clean sand should be used as utility trench backfill. The use of native soil as backfill is not recommended with the exception of the top 12 inches of the trench. Backfill in trenches located under and adjacent to structural fill, foundations, concrete slabs and pavements should be placed in horizontal layers no more than 8 inches thick. This includes areas such as sidewalks, patios, and other hardscape areas. Each layer of trench backfill should be water conditioned and compacted to at least 95 percent relative compaction. Clean sand is defined as 100 percent passing the #4 sieve, and less than 5 percent passing the #200 sieve.

68. Utility trenches which carry "nested" conduits (stacked vertically) should be backfilled with a control density fill (such as 2-sack sand/cement slurry) to an elevation one foot above the nested conduit stack. The use of pea gravel or clean sand as backfill within a zone of nested conduits is not recommended.

69. All utility trenches beneath perimeter footing or grade beams should be backfilled with controlled density fill (such as 2-sack sand/cement slurry) to help minimize potential moisture intrusion below interior floors. The length of the plug should be at least three times the width of the footing or grade beam at the building perimeter, but not less than 36 inches. A representative from Pacific Crest Engineering Inc. should be contacted to observe the placement of slurry plugs. In addition, all utility pipes which penetrate through the footings, stemwalls or grade beams (below the exterior soil grade) should also be sealed water-tight, as determined by the Project Engineer or Architect.

70. A representative from our firm should be present to observe the bottom of all trench excavations, prior to placement of utility pipes and conduits. In addition, we should observe the condition of the trench prior to placement of sand bedding, and to observe compaction of the sand bedding, in addition to any backfill planned above the bedding zone.

71. Jetting of the trench backfill is not recommended as it may result in an unsatisfactory degree of compaction.

72. Trenches must be shored as required by the local agency and the State of California Division of Industrial Safety construction safety orders.

RETAINING WALLS AND LATERAL PRESSURES

73. The site is essentially flat. Retaining and basement walls are not anticipated. Should basement or retaining walls be proposed, supplemental geotechnical design and construction recommendations will be required.

SURFACE DRAINAGE

74. Following completion of the project we recommend that storm drainage provisions and performance of permanent erosion control measures be closely observed through the first season of significant rainfall, to determine if these systems are performing adequately and, if necessary, resolve any unforeseen issues.

75. Surface water must not be allowed to pond or be trapped adjacent to the building foundations nor on the building pad nor in the parking areas.

76. All roof eaves should be guttered, with the outlets from the downspouts provided with adequate capacity to carry the storm water from the structures to reduce the possibility of soil saturation and erosion. The connection should be in a closed conduit which discharges at an approved location away from the structures and the graded area. We would recommend a discharge point which is at least 10 feet from any foundation.

77. Final grades should be provided with a positive gradient away from all foundations in order to provide for rapid removal of the surface water from the foundations to an adequate discharge point. Soil grades should slope away from foundation areas at least 5 percent for the first 10 feet. Impervious surface areas should slope away from foundations at least 2 percent for the first 10 feet. The Project Civil Engineer, Architect or Building Designer should refer to 2010 CBC Section 1804.3 for further information. Concentrations of surface water runoff should be handled by providing necessary structures, such as paved ditches, catch basins, etc.

78. Irrigation activities at the site should not be done in an uncontrolled or unreasonable manner.

79. The building and surface drainage facilities must not be altered nor any filling or excavation work performed in the area without first consulting Pacific Crest Engineering Inc. Surface drainage improvements developed by the project civil engineer must be maintained by the property owner at all times, as improper drainage provisions can produce undesirable affects.

PAVEMENT DESIGN

80. The soils that will comprise the pavement subgrade will in all likelihood be the brown clayey sand and sandy clay that predominates the site. An "R" Value test was run on a sample of this earth material. The test produced an "R" Value of 19. We used an "R" Value of 19 for the design of the pavement sections noted below. This must be verified in the field and, if necessary, modifications made to these tentative sections.

81. For design purposes, the following traffic indices are suggested*:

- Parking stalls T.I. = 4½
- Traffic aisles T.I. = 5

*Pacific Crest Engineering Inc. has not performed a site specific traffic study to determine the actual traffic indices associated with this project. These values are for general design purposes only and the values may need modification. Traffic volume and equivalent axle loads that exceed the assumed TI could be destructive to the pavement, resulting in an accelerated rate of deterioration and the need for increased maintenance.

82. The following tables provide a flexible pavement design which is based on the Caltrans Highway Design Manual – Chapter 600 and a 20 year design life.

TABLE No.5, Recommended Pavement Sections

Material	Native Soils	
	4½	5
Asphalt Concrete	3 inches	3½ inches
Class 2 Aggregate Base, R=78 min.	6 inches	7 inches

Material	Lime Treated Soils	
	4½	5
Asphalt Concrete	2½ inches	3 inches
Class 2 Aggregate Base, R=78 min.	6 inches	6 inches

83. To have the selected pavement sections perform to their greatest efficiency, it is very important that the following items be considered:

- a. Properly scarify and moisture condition the upper 8 inches of the subgrade soil and compact it to a minimum of 95% of its maximum dry density, at a moisture content 1 to 3% over the optimum moisture content for the soil.
- b. Provide sufficient gradient to prevent ponding of water.
- c. Use only quality materials of the type and thickness (minimum) specified. All aggregate base and subbase must meet Caltrans Standard Specifications for Class 2 materials, and be angular in shape. All Class 2 aggregate base should be ¾ inch maximum in aggregate size.
- d. The use of “recycled” materials, such as asphaltic concrete for aggregate base is not recommended.
- e. Compact the base and subbase uniformly to a minimum of 95% of its maximum dry density.

- f. Use ½ inch maximum, Type “A” medium graded asphaltic concrete. Place the asphaltic concrete only during periods of fair weather when the free air temperature is within prescribed limits by Cal Trans Specifications.
- g. Place ¼ gallon per square yard of SG-70 prime coat over the aggregate base section, prior to placement of the asphaltic concrete.
- h. **Porous pavement systems which consist of porous paving blocks, asphaltic concrete or concrete are not recommended due to the expansive nature and slow permeability of the native soils and the resulting increased potential for a shorter pavement life. These pavement systems should only be used with the understanding by the Owner of the increased potential for pavement cracking, rutting, potholes, etc.**
- i. Maintenance should be undertaken on a routine basis.

PLAN REVIEW

84. We respectfully request an opportunity to review the project plans and specifications during preparation and before bidding to ensure that the recommendations of this report have been included and to provide additional recommendations, if needed. These plan review services are also typically required by the reviewing agency. Misinterpretation of our recommendations or omission of our requirements from the project plans and specifications may result in changes to the project design during the construction phase, with the potential for additional costs and delays in order to bring the project into conformance with the requirements outlined within this report. Services performed for review of the project plans and specifications are considered “post-report” services and billed on a “time and materials” fee basis in accordance with our latest Standard Fee Schedule.

Attachment 9
Initial Study



COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

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

August 5, 2015

Thacher and Thompson
877 Cedar Street, Suite 248
Santa Cruz, CA 95060

**Subject: Review of Geotechnical Engineering Investigation - Report by Pacific Crest Engineering; Dated January 2015; Project: 14123-SZ68-J56
APN 032-181-08, Application #: 151204**

Dear Thacher and Thompson,

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

1. All construction shall comply with the recommendations of the report.
2. Final plans shall reference the report and include a statement that the project shall conform to the report's recommendations.
3. Prior to building permit issuance a *plan review letter* shall be submitted to Environmental Planning. After plans are prepared that are acceptable to all reviewing agencies, please submit a geotechnical plan review letter that states the project plans conform to the recommendations of the geotechnical report. *Please note that the plan review letter must reference the final plan set by last revision date.* The author of the report shall write the *plan review letter*.
4. Please submit an electronic copy of the soils report in .pdf format via compact disk or email to: Joseph.Hanna@santacruzcounty.us. Please note that the report must be generated and/or sent directly from the soils engineer of record.

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

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

Please note that this determination may be appealed within 14 calendar days of the date of service. Additional information regarding the appeals process may be found online at: http://www.sccoplanning.com/html/devrev/plnappeal_bldg.htm.

(over)

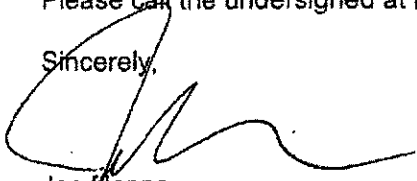
Review of Geotechnical Engineering Investigation - Report, Project: 14123-SZ68-J56

APN: 032-181-08

Page 2 of 3

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

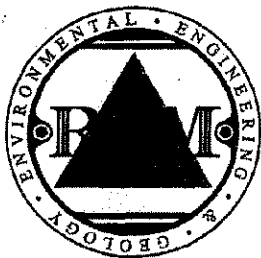
Sincerely,

A handwritten signature in black ink, appearing to read 'Joe Hanna', written over a large, light-colored scribble or mark.

Joe Hanna
County Geologist

Cc: Antonella Gentile, Environmental Planning
Pacific Crest Engineering
Wendy Hoffman

Attachment 10
Initial Study



PHASE I ENVIRONMENTAL SITE ASSESSMENT AND LIMITED PHASE II SOIL INVESTIGATION

Pleasure Point Roadhouse
2-3905 East Cliff Drive
APN 032-181-08
Santa Cruz, California

Prepared for:
Santa Cruz County Redevelopment Agency
701 Ocean Street, Room 510
Santa Cruz, California 95060

Prepared by:
RRM, Inc.
2560 Soquel Avenue, Suite 202
Santa Cruz, California 95062

September 13, 2007

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1.0 EXECUTIVE SUMMARY

The Santa Cruz County Redevelopment Agency (SCCRDA) requested this Phase I Environmental Site Assessment (ESA) for the real property located at 2-3905 East Cliff Drive, Santa Cruz, California (Property) (Figures 1 and 2). The Santa Cruz County Assessors Office identifies the Property as Assessor's Parcel Number (APN) 032-181-08. RRM, Inc. (RRM) performed the ESA in accordance with the American Society of Testing and Materials (ASTM) Standard Practice E 1527-05. The ASTM Standard specifies minimum requirements for ESAs that include the following components: records review, site reconnaissance, interviews, and report preparation.

The following information was obtained from the historic records review, aerial photograph review, interviews, site inspection, and regulatory agency file review.

- The subject Property is across East Cliff Drive from the beaches along Monterey Bay in the unincorporated Live Oak area east of Santa Cruz, California. The Property is bounded to the south by East Cliff Drive and to the north, east, and west by residential parcels. The Property is comprised of one parcel with an approximate area of 38,750 square feet (approximately 0.89 acre).
- Surface topography in the Property vicinity is generally flat. The surface elevation at the Property is approximately 40 feet above mean sea level (msl). The nearest surface water to the Property is Monterey Bay, which is located across East Cliff Drive to the south of the Property.
- Eight permanent structures are currently present on the southern half of the Property. The northern half of the Property is undeveloped and overgrown with shrubs, grasses, and berry vines. A dwelling, divided into several apartments, is located near the southeast corner of the Property. North of the dwelling, along the eastern Property boundary, are a shower/sauna house and a carport. Along the western Property boundary are a structure formerly used as the service station bathroom, three cabins, and a carriage house. All structures on the Property are of wood-framed construction with wooden siding. The roofs of the structures are covered with composite shingles. Interior divisions in the structures are constructed of plaster, wood, or sheetrock. A few feet southeast of the former service station bathroom is a concrete, in-ground service sump formerly used for auto repair at the service station.
- Historic aerial photographs, historic topographic maps, reports of historical research prepared for the current Property owner and Santa Cruz County, and an interview with a representative of the current Property owner were used to ascertain former Property uses. From these sources, it appears that development occurred on the Property as early as 1902 when the dwelling and carriage house were built as a residence and outbuilding. The cabins, carport, shower/sauna house, and the former service station bathroom were developed on the Property in the 1920s and 1930s. As of the mid to late 1920s, the ground floor of the dwelling had been converted to a store and service station office. At that time, the Property was used as the Cozy Beach Cottages, a tourist resort. Historic records indicated that the current owner, who purchased the Property in 1972, performed additional alterations to the structures. The more recent alterations included division of the dwelling into apartments, reconfiguration of the porches on the dwelling, conversion

of the former service station bathroom into living quarters, and minor structural alterations to the cabins and carriage house. Although service station operations reportedly ceased in the early 1970s, the gasoline dispensers reportedly were present at the Property until the early 1990s. Since the 1972 purchase of the Property, it has reportedly been used as a multi-unit residential property.

- Small containers of hazardous materials were located throughout the structures on the Property including cleaners, pesticides, oils, fuels, adhesives, and paints during an inspection performed on August 15, 2007. All hazardous materials observed were intact, in label containers, and appeared to be in good condition. The current Property owner's representative reported that the former tenants, who had recently been asked to leave pending the redevelopment of the Property, had left the materials at the Property. On the date of the Property inspection, the current owner's representative began the process of consolidating these hazardous materials for removal from the Property.
- Because of the former use of the Property as a service station and because the Property was developed and used at a time when heating oil was commonly used and stored in underground tanks, SCCRDA requested that RRM contract a subsurface locator to perform a magnetic survey of the Property to evaluate the presence of magnetic anomalies that might be indicative of an abandoned steel underground storage tank (UST). The magnetic survey, performed on August 27, 2007, did not reveal the presence of any underground magnetic objects other than utility conduits for power, gas, water, and sewer. The areas of the Property surveyed for magnetic anomalies were limited to accessible exterior areas not covered with heavy vegetation.
- Using historic aerial photographs, RRM identified the approximate location of the former service station dispenser pumps. The location of former product storage tanks could not be determined using the aerial photographs reviewed for this assessment. At the request of SCCRDA, RRM performed limited soil and groundwater sampling activities near the former dispenser islands and the former service sump. Soil samples were analyzed for the presence of petroleum hydrocarbons, volatile organic compounds (VOCs), total lead, and other metals related to service station activities. Groundwater was not encountered in the borings. Soil samples from the former service station area did not contain detectable concentrations of petroleum hydrocarbons or VOCs. Metals concentrations detected in the soil samples appeared to be consistent with natural occurring concentrations of these elements in soil samples collected throughout California.
- During the Property inspection, an abandoned automobile engine block was observed near the southwest corner of the carriage house. RRM also observed an area of stained soil on the floor of the furnace room located inside the former dwelling. At the request of SCCRDA, RRM collected and analyzed shallow soil samples in these areas for the presence of petroleum hydrocarbons; the sample collected from near the engine block was also analyzed for metals associated with waste oil. No detectable concentrations of petroleum hydrocarbons were found in the soil sample collected from the furnace room. Motor oil range petroleum hydrocarbons and total lead were detected in a shallow soil sample [at 1.5 feet below ground surface (bgs)] collected from near the engine block at concentrations that exceed regulatory action limits for these contaminants. A

deeper sample from the engine block boring also contained motor oil and heavy metals, but at concentrations that were below regulatory action limits.

- Seven sites were identified in the vicinity of the Property where known environmental conditions had been present using an environmental background report obtained from RRM's vendor, Environmental Data Resources, Inc. (EDR). Based on the distance of these sites in relation to the Property and RRM's familiarity of the extent of regional hydrocarbon impacts, it is not likely that contaminants from any known sources have migrated into soil or groundwater at the Property.
- RRM performed a limited inspection of materials used in the construction of the buildings located on the Property. This inspection did not include sampling of materials for lead or asbestos content. Based on the age of the buildings and additions, some of the construction materials may contain asbestos or lead.

This assessment has revealed no evidence of recognized environmental conditions in connection with the Property, as defined by ASTM Standard Practice 1527-05, except for the following:

- Motor oil and lead impact is present in shallow soils near the abandoned engine block at concentrations that exceed regulatory action limits. This impact appears to be the result of motor oil leaking from the engine block.

Based on the findings of this assessment, RRM recommends the following:

- All hazardous materials left at the Property by the former tenants should be consolidated, removed from the Property, and properly disposed.
- The engine block found behind the carriage house along the western Property boundary should be removed from the Property and properly disposed or recycled. Following removal of the engine block, a limited remedial excavation should be performed to remove soils impacted with motor oil and lead. Confirmation soil samples should be collected to determine the effectiveness of the remedial excavation. Soils excavated from this area should be characterized and disposed at an appropriate landfill.
- Depending on the future development plans for the Property, the service sump located near the southwest corner of the Property should be properly decommissioned under permit by Santa Cruz County Environmental Health Services (SCCEHS). Additional soil sampling beneath the sump may be required by SCCEHS.
- Based on the age of the structures on the Property, a lead and asbestos survey is warranted prior to demolition or renovation activities involving the structures. If lead impact is discovered in building materials, additional lead sampling to evaluate the presence of lead in shallow soils around the structures may be warranted.

2.0 INTRODUCTION

2.1 Purpose of this Assessment

The purpose of this ESA was to determine the potential for soil and groundwater contamination resulting from the use of hazardous substances or petroleum products on or near the Property identified as 2-3905 East Cliff Drive located in the unincorporated Live Oak District of Santa Cruz County, California. This ESA has been performed pending a planned transaction involving the Property.

2.2 Detailed Scope of Services

Limitations of this assessment are presented in Section 2.3. Special terms and conditions for this assessment are presented in Section 2.4.

The steps included for this ESA are as follows:

- **Site Reconnaissance.** Accessible areas of the Property and Property vicinity were physically inspected in order to identify possible hazardous waste storage, dumping, or contamination.
- **Records Review.** A review of reasonably ascertainable records was conducted; sources included regulatory agency files, lists and databases, topographical maps, and aerial photographs.
- **Interviews.** The current Property owner was interviewed in order to establish current and previous Property uses, current and previous use of hazardous materials, and hazardous waste practices at the Property.
- **Report Preparation.** The information gathered for this ESA was compiled, and the findings are presented in this report.

Each of the steps of the Phase I ESA is described in detail in Sections 3.0 through 7.0; a description of assessments performed in addition to the ESA outside the ASTM standard are presented in Section 8.0; the findings of this assessment are presented in Section 9.0, opinions regarding the findings are presented in Section 10.0, and the conclusions of this assessment are presented in Section 11.0. The signatures and qualifications of environmental professionals performing the Phase I ESA are presented in Section 12.0.

2.3 Exceptions and Limitations

We have developed and performed appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and as defined in ASTM Practice E1527-05. Exceptions to ASTM Practice E1527-05 are as follows:

- **Historical Fire Insurance Maps Review.** RRM requested copies of Sanborn Fire Insurance Maps (Sanborns) from EDR, who own the Sanborn collection. EDR reported that Sanborns are not available for the Property vicinity.

This Phase I ESA is based strictly on the information obtained during this assessment. This ESA does not include the testing or sampling of radon, pesticides, molds, or polychlorinated biphenyls. Determining all

historic hazardous materials and/or hazardous waste practices for the Property is not practicable and is beyond the scope of this assessment. Where applicable, the physical testing of site media was performed and additional testing is recommended in order to provide a greater degree of confidence.

This Phase I ESA is provided expressly for use by the SCCRDA and other governmental agencies of Santa Cruz County. No other use or disclosure is intended or authorized by RRM. All reasonable care and professionalism in carrying out this Phase I ESA was taken by RRM. However, no warranty or guarantee of any kind whatsoever, expressed or implied, is made or intended other than ordinarily exercised professional standards. There are inherent risks associated with Phase I ESAs. No matter how detailed a Phase I ESA is performed, all potential hazardous material or hazardous waste locations may not be determined. RRM's findings, interpretations, and recommendations are based solely on the strength of information obtained and/or reviewed.

2.4 Special Terms and Conditions

SCCRDA requested two scopes of work that were performed in addition to the requirements set forth in ASTM Standard Practice E 1527-05.

- A magnetic survey was performed at the Property to identify potential magnetic anomalies related to former uses of the Property as described in Section 8.1.
- Two direct-push and two hand auger soil borings were advanced at the Property to evaluate potential impacts from the former uses of the Property. Soil samples were collected from borings and laboratory analyzed to assess potential petroleum hydrocarbon, VOC, and metals impacts from former uses of the Property as further described in Section 8.2.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The subject Property is comprised of one parcel totaling approximately 38,750 square feet (0.89 acre) situated in the unincorporated Live Oak district of Santa Cruz, California. The Santa Cruz County Assessors office identifies the parcel as APN 032-181-08. The Property location is shown on the Soquel, California Quadrangle of the United States Geologic Survey (USGS) 7.5-minute topographic map series (Figure 1).

3.2 Site and Vicinity General Characteristics

The Property is situated across the coast road (East Cliff Drive), north of the coastal bluffs overlooking the Pacific Ocean. Topography in the Property vicinity is predominantly flat along above the bluffs, with a steep slope toward the beach and coastline to the south. Land use in the Property vicinity is primarily residential. The nearest surface water is Monterey Bay, located across East Cliff Drive to the south of the Property.

3.3 Current Use of the Property

Currently, the Property is unoccupied. Access to the Property is limited by the use of chain-link fence at the Property boundaries.

3.4 Descriptions of Structures, Roads, Other Improvements on Property

There are eight permanent structures currently located on the southern approximately one half of the Property. The main structure, known as the roadhouse, is located near the southeast corner of the Property and was built as a single-family dwelling but is currently divided into several apartments. To the north of the roadhouse are a sauna/bathhouse and a carport.

Located across the entrance driveway from East Cliff Drive, near the southwest corner of the Property, is a small structure that was formerly a service station bathroom but has been converted to living quarters. Near this structure is a concrete pad with a shallow sump, currently covered with a wooden hatch. This sump was reportedly the service sump or "grease pit" associated with the former use of the Property as a service station.

Three small cabins are present along the western Property boundary to the north of the former service station bathroom. To the north of the cabins is a carriage house that has also been converted to living quarters. The carriage house is located along the western Property boundary, south of the entrance drive from Moana Way.

All the structures on the Property are of wood framed construction with wooden siding. The roofs of the structures are covered with composite roof shingles. Interior divisions and ceilings in the structures are constructed on wood paneling, plaster, or sheetrock. Floors in the structures are hardwood, covered with vinyl floor covering or carpeting, bare concrete, or open soil.

An unpaved driveway is present along the western portion of the Property linking the two access points from East Cliff Drive and Moana Way. The northern approximately one half of the Property (north of the Moana Way entrance) is an undeveloped area covered with grass and berry bushes, with other vegetation around the perimeter. A site map is presented as Figure 2. Site photographs are presented in Attachment A.

3.5 Current Uses of the Adjoining Properties

The parcels adjacent to the Property to the north, east, and west are occupied by residential developments. To the south of the Property is East Cliff Drive; across East Cliff Drive from the Property is a steep cliff leading to a public beach next to Monterey Bay.

4.0 USER AND OWNER PROVIDED INFORMATION

4.1 Title Records

The Property is comprised of one parcel. The current owner of the parcel is Ms. Leila Naslund. According to the Santa Cruz County Assessor's office, Ms. Naslund purchased the Property in 1972.

4.2 Environmental Liens or Activity and Use Limitations

During this assessment, RRM interviewed Ms. Wendy Hoffman, a representative of the current Property owner. Ms. Hoffman reported that she has no knowledge of environmental liens or activity and use limitations related to the Property. SCCRDA also reported no knowledge of environmental liens or activity and use limitations related to the Property based on review of the title report for the Property.

4.3 Specialized Knowledge

The SCCRDA reported that the agency is not aware of any specialized knowledge or experience that is material to recognized environmental conditions in connection with the Property as defined by 40 CFR 312.28.

4.4 Commonly Known or Reasonably Ascertainable Information

The only commonly known information that is material to recognized environmental conditions in connection with the Property as defined by 40 CFR 312.28 is the former use of the southern edge of the Property as a gasoline service station. This use is further detailed in the historic background section below. This use of the Property was also reported in recent newspaper articles about the Property and was chronicled in recent historic research performed regarding the Property.

4.5 Valuation Reduction for Environmental Issues

Representatives of SCCRDA indicated that the purchase price being paid for the Property reasonably reflects the fair market value of the Property.

4.6 Owner, Property Manager, and Occupant Information

No property manager is currently employed for the Property. Members of the current Property owner's family live locally and were able to provide RRM with access to the Property during this assessment. Because the rental units are currently vacant, there are currently no occupants or tenants at the Property and access is currently restricted by use of a chain link fence.

4.7 Reason for Performing Environmental Site Assessment

The purpose of this ESA was to determine the potential for soil and groundwater contamination resulting from the use of hazardous substances or petroleum products on or near the Property. The ESA was performed at the request of the SCCRDA in preparation for a planned transaction involving the Property.

5.0 RECORDS REVIEW

The purpose of the records review was to obtain and review records in order to identify recognized environmental conditions associated with the Property and conditions on surrounding properties that may have contamination to soil or groundwater at the subject Property. Information obtained from the following sources has been incorporated into this assessment:

- EDR Report

- Santa Cruz County Environmental Health Services (SCCEHS) File Review
- Historical Topographic Maps
- Historical Aerial Photographs
- Historical Address Listings

5.1 Standard Environmental Record Sources

5.1.1 EDR Report Summary

EDR provides a research service that examines databases maintained by the U.S. Environmental Protection Agency (US EPA), the California Department of Toxic Substances Control (DTSC), California Environmental Protection Agency (Cal-EPA), California Integrated Waste Management Board, California Department of Health Services (Cal-DHS), the California State Water Resources Control Board (SWRCB), and other federal, local and state agencies. Listed below is a summary of findings of the EDR Report. The search radius for each of these lists is determined by ASTM standard E 1527-05 (for the ASTM specified Federal, State, and Local records) or was determined by EDR based on the type of records searched. Additional information regarding the databases searched, including the search radius for each list, can be obtained from the EDR Report, which is presented as Attachment B.

The following records sources were searched by EDR as part of this assessment:

ASTM Specified Federal Records

- US EPA – National Priorities List (NPL)
- US EPA – Proposed National Priorities List Sites (Proposed NPL)
- US EPA – National Priority List Deletions (Delisted NPL)
- US EPA – Federal Superfund Liens (NPL RECOVERY)
- US EPA – Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
- US EPA – CERCLIS No Further Remedial Action Planned (CERC-NFRAP)
- US EPA – Resource, Conservation and Recovery Act (RCRA) Corrective Action List (without Treatment, Storage, and Disposal [TSD]) (CORRACTS)
- US EPA – RCRA Treatment, Storage, and Disposal (RCRA – TSD)
- US EPA – Resource Conservation and Recovery Act – Large Quantity Generators (RCRA – LQG)
- US EPA – Resource Conservation and Recovery Act – Small Quantity Generators (RCRA – SQG)
- US EPA – Emergency Response Notification System (ERNS)
- US EPA – Engineering Controls Site List (US ENG CONTROLS)
- US EPA – Sites with Institutional Controls (US INST CONTROL)
- United States Geological Survey (USGS) – Indian Reservations (INDIAN RESERV)
- US EPA – Indian Leaking Underground Storage Tank List (Indian LUST)

- US EPA – Indian Underground Storage Tank List (Indian UST)

ASTM Specified State and Local Records

- DTSC – CalSites Database (HIST CAL-SITES)
- Cal-DHS – California Bond Expenditure Plan (CA Bond Exp. Plan)
- DTSC – School Property Evaluation Program (SCH)
- SWRCB – Toxic Pits Cleanup Act Sites (Toxic Pits)
- Integrated Waste Management Board – Solid Waste Information System (State Landfill)
- SWRCB – Waste Discharge System (CA WDS)
- SWRCB – Waste Management Unit Database and Solid Waste Activity Tracking List (WMUDS/SWAT)
- Cal-EPA – “Cortese” Hazardous Waste and Substances Site List (Cortese)
- Cal-EPA – California Leaking Underground Storage Tank Report (LUST)
- Cal-EPA – California Underground Storage Tank List from the Facility Inventory Database (CA UST FID)
- SWRCB – Spills, Leaks, Investigations, and Cleanups Cases (SLIC)
- SWRCB – California Underground Storage Tank Reports (UST)
- DTSC – Deed Restriction Listing (DEED)

5.2 Additional Environmental Record Sources

In addition to the lists specified by ASTM several other federal, state, and local databases were searched by EDR. The following supplemental records sources were searched by EDR as part of this assessment:

Supplemental Federal Records Searches Provided by EDR

- United States Department of Transportation – Hazardous Materials Information Reporting System (HMIRS)
- USGS – Department of Defense Sites (DOD)
- United States Army Corps of Engineers – Formerly Used Defense Sites (FUDS)
- US EPA – Brownfields Sites List (US BROWNFIELDS)
- United States Department of Justice – Superfund (CERCLA) Consent Decrees (CONSENT)
- US EPA – Records of Decision (ROD)
- United States Department of Energy – Uranium Mill Tailings Sites (UMTRA)
- US EPA – Open Dump Inventory (ODI)
- US EPA – Toxic Chemical Release Inventory System (TRIS)
- US EPA – Toxic Substances Control Act (TSCA)
- US EPA – Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)/Toxic Substances Control Act (TSCA) [FIFRA/TSCA Tracking System (FTTS)]
- US EPA – Section 7 Tracking Systems (SSTS)

- US EPA – Integrated Compliance Information System (ICIS)
- United States Drug Enforcement Administration – Clandestine Drug Labs (US CDL)
- United States Department of the Navy – Land Use Control Information System (LUCIS)
- US EPA – Radiation Information Database (RADINFO)
- US EPA – PCB Activity Database System (PADS)
- United States Nuclear Regulatory Commission – Material Licensing Tracking System (MLTS)
- United States Department of Labor Mine Safety and Health Administration – DOL – Mines Master Index File (MINES)
- US EPA – Facility Index System/Facility Registry System (FINDS)
- US EPA – RCRA Administrative Action Tracking System (RAATS)

Supplemental State and Local Records Searches Provided by EDR

- California Department of Conservation – Recycler Database (SWRCY)
- SWRCB – California Historic Underground Storage Tank List (HIST UST)
- SWRCB – California Aboveground Petroleum Storage Tank Facilities (AST)
- SWRCB – Statewide Environmental Evaluation and Planning System (SWEEPS UST)
- California Office of Emergency Services – California Hazardous Material Incident Report System (CHMIRS)
- Cal-EPA – Proposition 65 (Notify 65)
- DTSC – Voluntary Cleanup Program Properties (VCP)
- DTSC – Cleaner Facilities (DRY CLEANERS)
- RWQCB – Los Angeles Region – Well Investigation Program Case List (WIP)
- DTSC – Clandestine Drug Labs (CDL)
- DTSC – State Response Sites (RESPONSE)
- CAL-EPA – Facility and Manifest Data (HAZNET)
- CAL-Air Resources Board – Emissions Inventory Data (EMI)
- DTSC – EnviroStor Database (ENVIROSTOR)

EDR Proprietary Records Searches

- Manufactured Gas Plants (compiled by EDR)

EDR Records Search Findings

The records search performed by EDR resulted in the following listings:

- Four Cortese sites were identified within 0.50-mile of the Property.
- Two SWRCY sites were identified within 0.50-mile of the Property.
- Five LUST sites were identified within 0.50-mile of the Property.
- One SLIC site was identified within 0.50-mile of the Property.

Several of the twelve sites identified by EDR were listed in more than one database. All the sites identified were located more than 0.25-mile from the Property along Portola Drive to the north.

5.2.1 Orphan Sites and Review of EDR Site Listing Relevance

The EDR report also contained a list of orphan sites. The location of these sites could not be identified by EDR based on site location information contained in various databases. There were five orphan sites listed. None of the orphan sites listed appeared to be located on the Property or within close enough proximity to have had an effect on soil and groundwater conditions at the Property.

5.3 SCCEHS File Review

RRM performed further review of the EDR report to confirm the locations of sites listed and determine the relevance of each site with respect to the subject Property. Based on a review of the listings in the EDR report, the distance of these sites from the Property, and the conditions reported by EDR, RRM determined that none of the EDR listed sites warranted further review. This determination was largely based on the distance of the identified sites from the Property (all greater than 0.25-mile) and RRM's familiarity with regional hydrocarbon plumes based on earlier work assignments.

RRM staff visited the offices of SCCEHS to search the SCCEHS computer system for files related to the subject Property. RRM also performed a search for other sites in the vicinity of the Property that had not been listed by the EDR report. The SCCEHS file system did not appear to include any files for the Property. The additional searches for the Property vicinity also did not reveal any sites that were not identified by the EDR report.

5.4 Physical Setting and Historical Use Sources

Several sources were used to evaluate the physical setting and historical uses of the Property. These sources included historical topographic maps, historical aerial photographs, historical street directories, evaluations of the Property history prepared by consultants representing the current Property owner, the County of Santa Cruz, other interested parties [obtained from the Santa Cruz County Board of Supervisors (SCCBOS) agenda], and an interview with a representative of the current Property owner. The following details RRM's inquiry regarding the physical setting and historical uses of the Property.

5.5.1 Historical Topographic Maps

Topographic Maps (topos) are created by the United States Geological Survey. Historical topos for the Property and Property vicinity were purchased from EDR. EDR reported that topos were available from 1914, 1954, 1968, 1980, and 1994.

The Property vicinity was shown as a largely undeveloped area on the 1914 topo. The only roadways present in the Property vicinity on the 1914 topo were East Cliff Drive, 36th Avenue, Portola Drive, and 41st Avenue. Structures were shown on the north side of East Cliff Drive on this topo. Based on the location, it appeared that one of the structures depicted may have been the former dwelling that is currently present on the Property.

5.5.3 Polk and Haines Directories

Polk and Haines City Directories are annual street directories that provide tenant and/or owner information for specific addresses. A limited collection of Polk Directories and Haines City Directories that included listings for the City of Santa Cruz and surrounding areas were available at the Santa Cruz Public Library.

The earliest listing for the Property in the historic directories at the library was dated 1950, when A.V. Peterson was listed as the resident of the Property. Mr. Peterson was also listed as the resident in the directory dated 1955. The directories dated 1960, 1965-66, and 1970 listed Ms. Ida Peterson as the resident at the Property. Other historic records, as detailed below, have listed Anton and Ida Peterson as the former owners of the Property.

Beginning with the 1975 directory, persons other than the current Property owner were listed at the Property. These persons were presumably Property tenants. All available directory listings for the Property appeared to be residential listings.

5.5.4 Historical Use Information Provided by the Current Property Owner Representative

As reported by Ms. Hoffman, Ms. Naslund purchased the Property in 1972 and has never occupied the Property except as a temporary vacation residence. Ms. Hoffman reported that the Property had always been used for residential tenancy during Ms. Naslund's ownership.

5.5.5 Historical Use Information Obtained from the Board of Supervisors Agenda

Substantial historical review, documented in numerous pages of historical reports, were available from the SCCBOS on-line agenda. This historical review was performed at the request of the current Property owner, the County of Santa Cruz, and other interested parties relating to the planned redevelopment of the Property. The following is a brief summary of this review as it pertains to this assessment.

The Property was originally part of the Rodeo Rancho during the period of Mexican land grants. This Rancho was deeded to Mr. Walter Lynsky following California statehood. Mr. Lynsky used the Property and other parcels in the Property vicinity as a large wheat field along the Cliffs above Monterey Bay.

In approximately 1900, the Property was purchased by Mr. John Henchy who developed the main roadhouse structure and the carriage house in approximately 1902 as a family residence. After moving his family to Capitola, Mr. Henchy converted the roadhouse to a saloon. The Property was reportedly also owned by Mr. Nicholas Neary and Mr. John Menzel during the early twentieth century.

In 1926, the Property was purchased by Mr. Anton Peterson and Mrs. Ida Peterson, who developed the Property as a tourist resort. Mr. Peterson developed several of the other structures on the Property in connection with use as the Cozy Cove Cottages. The cabins, service station bathroom, and other service station facilities, including the dispenser pumps formerly located along East Cliff Drive, were built by Mr. Peterson in the late 1920s. The carport and sauna/shower building were built by Mr. Peterson in the early 1930s. During this period of use, it was reported that the northern, undeveloped portion of the Property may have been used for tent camping.

Ms. Naslund purchased the Property in 1972, discontinued the service station operations, and made alterations to the structures on the Property for use by residential tenants. These alterations included division of the main structure into apartments and conversion of the former service station bathroom and the carriage house into living quarters. Since 1972, the Property has been leased to residential tenants.

5.5 Historical Use Summary for the Property and Adjoining Parcels

Aerial photographs, historic topographic maps, historic street directories, information from the current Property owner, and historic review information from the SCCBOS agenda were used to ascertain former Property uses. Based on a review of these sources, it appeared that the Property had been developed as a single family dwelling as early as 1902.

In the mid to late 1920s, the Property was converted to use as a tourist resort. This conversion included addition of rental cabins and a gasoline service station at the Property. The service station was reportedly closed in the early 1970s. Since the purchase of the Property by the current owner in 1972, the Property has been used by residential tenants.

Other parcels in the Property vicinity appear to have historically been used for residential purposes. A residential development was present on the parcel to the west of the Property as early as 1943. The parcels to the east and north of the Property were developed for residential purposes sometime prior to 1956. By 1984, parcels in the Property vicinity were developed as today, with the exception of the parcel directly west of the southern portion of the Property, which was redeveloped since 2003.

6.0 SITE RECONNAISSANCE

6.1 Methodology

RRM staff physically inspected the Property on August 15, 2007. The purpose of the Property inspection was to further evaluate current and previous environmental conditions for the presence of contamination from hazardous materials, petroleum hydrocarbons, and hazardous waste. During the inspection, all structures on the Property were opened by Ms. Hoffman, and RRM viewed all accessible interior and exterior areas of the Property.

The inspection of several areas of the Property, primarily in the northern undeveloped area of the Property, was limited due to heavy overgrowth of berry bushes and other plants.

6.2 General Site Setting and Exterior Observations

The Property is set in a primarily residential area across East Cliff Drive from a public beach. Residential parcels are present to the north, east, and west. The eight permanent structures on the Property are in run down condition indicative of limited maintenance performed in the last several years.

Several of the interior and exterior surfaces of the structures on the Property are covered with faded paint. Performing an assessment for the presence of leaded paint was outside the scope of this assessment. Based on the age of the structures, some of the paints used at the Property may contain lead.

Areas of debris were observed throughout the Property. The debris piles appeared to mainly be comprised of waste vegetation, however, other wood, metal, and plastic debris and some household trash appeared to be present in the debris piles. Further evaluation of the debris pile contents was limited by the heavy overgrowth in several areas of the Property.

6.3 Hazardous Materials in Connection with Identified Uses

Several small hazardous materials containers were observed throughout the Property, mainly in interior or covered locations. Materials observed included cleaners, pesticides, oils, fuels, adhesives, and paints. All hazardous materials observed were intact, in labeled containers, and appeared to be in good condition. The materials were reportedly left at the Property by former tenants.

6.4 Other Conditions Noted

During the Property inspection, an abandoned engine block was observed in the tall grass between the carriage house and the western Property boundary. The oil pan of the engine block was rusted through and an area of minor oil staining appeared to be present on the adjacent ground surface. Minor oil staining was also observed on the bare earth floor of the furnace room in the main roadhouse structure.

The service sump of the former service station remains near the southwest corner of the Property and is covered with a wooden hatch cover. RRM removed the wooden cover to further assess the condition of the sump during the Property inspection. The sump appeared to be approximately 3 feet in depth. Approximately six inches of water was present in the bottom of the sump along with some debris and sediment. There was no apparent hydrocarbon sheen on the water in the sump. No piping appeared to be present in the sump sidewalls.

A pole-mounted electrical transformer is located on a utility pole at the southeast corner of the Property. The transformer appeared to be intact and in good condition.

7.0 INTERVIEWS

7.1 Interviews with Current Owner's Representative

Ms. Wendy Hoffman, a representative of the current Property owner, was interviewed on August 15, 2007. The purpose of the interview was to further evaluate current and previous environmental conditions for the presence of contamination from hazardous materials, petroleum hydrocarbons, and hazardous waste.

Ms. Hoffman reported that she was not aware of the storage of hazardous materials, petroleum products, or the use of above or underground tanks at the Property. She also stated that she was not aware of any liens or governmental notification relating to past or current violations of environmental laws by users of the Property. In addition, Ms. Hoffman stated that she was not aware of any hazardous substances or petroleum products having been stored, dumped, buried, or burned on the Property.

8.0 ASSESSMENTS PERFORMED IN ADDITION TO ASTM STANDARD E 1527-05

8.1 Magnetic Survey

Because of the former use of the site as a service station and the common use of heating oil tanks to power heaters during the period of use of the structures on the Property, RRM recommended the performance of a limited magnetic survey to identify any magnetic anomalies that may indicate the presence of UST at the Property. At the request of SCCRDA, a limited magnetic survey was performed by RRM's subcontractor, Cruz Brothers Locators (Cruz).

On August 27, 2007 Cruz surveyed all accessible areas of the developed portion of the Property. The areas of the Property surveyed for magnetic anomalies were limited to accessible exterior areas not covered with heavy vegetation. During the survey, Cruz was able to locate several subsurface utility conduits for power, gas, water, and sewer. The survey did not reveal the presence of any underground magnetic objects that would be indicative of a UST.

8.2 Limited Soil and Groundwater Assessment

SCCRDA requested that RRM perform a limited soil and groundwater investigation at the Property to assess potential soil and groundwater impacts from the former service station facilities at the Property and to further evaluate areas of apparent oil staining near the engine block and in the furnace room of the main structure. On August 29, 2007, RRM contracted Environmental Control Associates (ECA), a State of California licensed drilling contractor, to advance two direct-push borings (SB-1 and SB-2) near the former service station facilities at the locations shown on Figure 3. In addition, RRM field staff advanced two shallow hand auger borings: one (HA-1) near the abandoned engine block and one (HA-2) beneath the earthen floor of the furnace room; these locations are also shown on Figure 3.

Direct-push soil borings were advanced using 2-inch diameter pneumatically driven Geoprobe[®] drilling equipment. Soil samples for lithologic description and laboratory analysis were collected at selected intervals by advancing a 2-inch diameter core sampler with acetate liners into undisturbed soil during drilling. Hand auger soil samples were collected by first hand augering to the target depth and then advancing a hand-driven sampler fitted with pre-cleaned brass soil sampling tubes into undisturbed soils at the bottom of the borings.

The soil borings were logged for lithologic description by an RRM geologist, under the direction of a California State-Licensed Professional Geologist, using the Unified Soil Classification System and standard geologic techniques. Samples selected for laboratory analysis were labeled, sealed with Teflon sheets and plastic end caps, put into sealed plastic bags, and then placed in an iced cooler for transport to the laboratory under chain-of-custody. All down hole drilling equipment was cleaned between borings. Upon completion of soil sampling activities, the borings were backfilled with cement grout.

Boring SB-1 was drilled approximately five feet south of the service sump. Boring SB-2 was drilled between the approximate locations of the former gasoline dispensers, as determined using historic aerial photographs. Soils encountered during the advancement of the borings consisted of silty sand, sandy silt, silty sand with gravel, and sands to a depth of 23.5 feet bgs, the maximum depth explored. Drilling refusal due to indurated soils was encountered at 23.5 feet in boring SB-1 and at 20 feet bgs in boring SB-2.

Groundwater was not encountered in either of the two direct-push borings. Soil boring logs are presented in Attachment D.

In both direct-push borings, soil samples were collected for laboratory analysis at a depth of approximately 10 feet bgs and deeper samples were collected and placed on hold at the laboratory for possible analysis pending results of shallow samples. The 10-foot sample from boring SB-1 was analyzed for motor oil range total petroleum hydrocarbons (TPHmo) using Environmental Protection Agency (EPA) Method 8015, gasoline range total petroleum hydrocarbons (TPHg) and VOCs using EPA Method 8260B, and the five metals associated with waste oil [cadmium, chromium, lead, nickel, and zinc (collectively LUFT metals)] using EPA Method 6010. The 10-foot sample from boring SB-2 was analyzed for gasoline range total petroleum hydrocarbons (TPHg) and gasoline related VOCs (benzene, toluene, ethyl benzene, xylenes, and methyl tert-butyl ether) using EPA Method 8260B, and total lead using EPA Method 6010.

In both hand auger borings, soil samples were collected for laboratory analysis at a depth of approximately 1.5 feet bgs. In boring HA-1, a sample was also collected at a depth of approximately 4 feet bgs and placed on hold at the laboratory for possible analysis pending results of the shallower sample. The samples collected from boring HA-1 were analyzed for TPHmo using EPA Method 8015 and LUFT metals using EPA Method 6010. The 1.5-foot sample collected from boring HA-2 was analyzed for an extractable range fuel scan using EPA Method 8015; this fuel scan method quantifies the petroleum hydrocarbons diesel, motor oil, Stoddard solvent (mineral spirits), and kerosene. All analyses were performed by Entech Analytical (Entech) of Santa Clara, California, a California State-certified laboratory.

8.2.1 Soil Analytical Results

No detectable concentrations of TPHg, TPHmo, or VOCs were found in the samples from borings SB-1 and SB-2. In the sample collected from boring SB-1, chromium was detected at a concentration of 22 parts per million (ppm), lead was detected at a concentration of 3.5 ppm, nickel was detected at a concentration of 11 ppm, and zinc was detected at a concentration of 23 ppm. Cadmium was not detected in the sample from SB-1. In the sample collected from boring SB-2 lead was detected at a concentration of 8.9 ppm.

In the shallow sample collected from 1.5 feet bgs in boring HA-1, TPHmo was detected at a concentration of 4,000 ppm, chromium was detected at 22 ppm, lead was detected at 540 ppm, nickel was detected at 7.3 ppm, and zinc was detected at 210 ppm. Because of these detections, RRM requested that Entech analyze the 4 feet bgs sample from boring HA-1. In this sample, TPHmo was detected at 16 ppm, chromium was detected at 24 ppm, lead was detected at 8.3 ppm, nickel was detected at 11 ppm, and zinc was detected at 38 ppm. Cadmium was not detected in either of the samples from boring HA-1.

Extractable range petroleum hydrocarbons quantified as motor oil, diesel, kerosene, or Stoddard solvent were not detected in the sample collected from boring HA-2. Tabulated soil analytical results, certified analytical reports, and chain-of-custody documentation are presented in Attachment E.

8.2.2 Discussion

Based on a study coauthored by the Air Force Center for Environmental Excellence and the California Department of Toxic Substances Control (DTSC)¹, concentrations of LUFT metals reported for this site, with the exception of elevated lead and zinc concentrations in the 1.5 feet bgs sample from HA-1, appear to fall within the range of naturally occurring metals in soils and groundwater in California. Thus, the majority of the LUFT metals detected appear to be the result of natural conditions and not impact from former uses of the Property.

The California Regional Water Quality Control Board (RWQCB) has issued Environmental Screening Levels (ESLs)² to provide risk guidance criteria for the presence of various chemicals in site soil, soil-gas, or groundwater. Per the RWQCB: "the presence of a chemical in soil, soil gas or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment".

The ESLs are grouped in several lookup tables depending on depth of impact, the potential for groundwater use as drinking water, and site use for residential or commercial/industrial purposes. For guidance with this project, RRM referred to the tables of ESLs for shallow soils at residential sites, where groundwater is a potential source of drinking water. These criteria were selected because of the planned future park use of the Property and because the Central Coast RWQCB has designated all groundwater in the region as a potential source of drinking water.

The concentrations of two contaminants, TPHmo and lead in the 1.5 feet bgs soil sample collected from HA-1 near the engine block, exceeded the residential ESLs. In the case of both of these contaminants, the deeper 4 feet bgs sample had detectable concentrations but they were below the applicable ESLs. Thus, the extent of the motor oil and lead impact near the former engine block appears to be relatively limited. However, if the shallow lead impact is the result of other potential lead sources, such as leaded paint from the exterior walls of the carriage house, the area of lead impact may be more widespread. The results of a leaded paint survey, as recommended in the following, will help to resolve the understanding of any potential impacts from leaded paints in shallow soils around the building. A recommendation for further work to remedy the motor oil and heavy metals impact from the engine block is presented in the following.

9.0 FINDINGS

The following information was obtained from the historic records review, aerial photograph review, interviews, site inspection, regulatory agency file review, and limited Phase II investigation activities performed at the Property.

The subject Property is across East Cliff Drive from the beaches along Monterey Bay in the unincorporated Live Oak area east of Santa Cruz, California. The Property is bounded to the south by

¹ *Naturally Occurring Concentrations of Inorganic Chemicals in Ground Water and Soil at California Air Force Installations*, Phillip Hunter, Air Force Center for Environmental Excellence and Brian Davis, California Department of Toxic Substances Control.

² *Screening for Environmental Concerns At sites With Contaminated Soil and Groundwater*, California Regional Water Quality Control Board, San Francisco Bay Region. Interim Final, February 2005

East Cliff Drive and to the north, east, and west by residential parcels. The Property is comprised of one parcel with an approximate area of 38,750 square feet (approximately 0.89 acre).

Surface topography in the Property vicinity is generally flat. The surface elevation at the Property is approximately 40 feet above mean sea level (msl). The nearest surface water to the Property is Monterey Bay, which is located across East Cliff Drive to the south of the Property.

Eight permanent structures are currently present on the southern half of the Property. The northern half of the Property is undeveloped and overgrown with shrubs, grasses, and berry vines. A dwelling, divided into several apartments, is located near the southeast corner of the Property. North of the dwelling, along the eastern Property boundary, are a shower/sauna house and a carport. Along the western Property boundary are a structure formerly used as the service station bathroom, three cabins, and a carriage house. All structures on the Property are of wood-framed construction with wooden siding. The roofs of the structures are covered with composite shingles. Interior divisions in the structures are constructed of plaster, wood, or sheetrock. A few feet southeast of the former service station bathroom is a concrete, in-ground service sump formerly used for auto repair at the service station.

Historic aerial photographs, historic topographic maps, reports of historical research prepare for the current Property owner and Santa Cruz County, and an interview with a representative of the current Property owner were used to ascertain former Property uses. From these sources, it appears that development occurred on the Property as early as 1902 when the dwelling and carriage house were built as a residence and outbuilding. The cabins, carport, shower/sauna house, and the former service station bathroom were developed on the Property in the 1920s and 1930s. As of the mid to late 1920s, the ground floor of the dwelling had been converted to a store and service station office. At that time, the Property was used as the Cozy Beach Cottages, a tourist resort.

Historic records indicated that the current owner, who purchased the Property in 1972, performed additional alterations to the structures. The more recent alterations included division of the dwelling into apartments, reconfiguration of the porches on the dwelling, conversion of the former service station bathroom into living quarters, and minor structural alterations to the cabins and carriage house. Although service station operations reportedly ceased in the early 1970s, the gasoline dispensers reportedly were present at the Property until the early 1990s. Since the 1972 purchase of the Property, it has reportedly been used as a multi-unit residential property.

Small containers of hazardous materials were located throughout the structures on the Property including cleaners, pesticides, oils, fuels, adhesives, and paints during an inspection performed on August 15, 2007. All hazardous materials observed were intact, in labeled containers, and appeared to be in good condition. The current Property owner's representative reported that the former tenants, who had recently been asked to leave pending the redevelopment of the Property, had left the materials at the Property.

Because of the former use of the Property as a service station and because the Property was developed and used at a time when heating oil was commonly used and stored in underground tanks, SCCRDA requested that RRM contract a subsurface locator to perform a magnetic survey of the Property to evaluate the presence of magnetic anomalies that might be indicative of an abandoned steel UST. The magnetic survey, performed on August 27, 2007, did not reveal the presence of any underground magnetic objects other than utility conduits for power, gas, water, and sewer. The areas of the Property

surveyed for magnetic anomalies were limited to accessible exterior areas not covered with heavy vegetation.

Using historic aerial photographs, RRM identified the approximate location of the former service station dispenser pumps. The location former product storage tanks could not be determined using the aerial photographs reviewed for this assessment. At the request of SCCRDA, RRM performed limited soil and groundwater sampling activities near the former dispenser islands and the former service sump. Soil samples were analyzed for the presence of petroleum hydrocarbons, volatile organic compounds (VOCs), total lead, and other metals related to service station activities. Groundwater was not encountered in the borings. Soil samples from the former service station area did not contain detectable concentrations of petroleum hydrocarbons or VOCs. Metals concentrations detected in the soil samples appeared to be consistent with natural occurring concentrations of these elements in soil samples collected throughout California.

During the Property inspection, an abandoned automobile engine block was observed near the southwest corner of the carriage house. RRM also observed an area of stained soil on the floor of the furnace room located inside the former dwelling. At the request of SCCRDA, RRM collected and analyzed shallow soil samples in these areas for the presence of petroleum hydrocarbons; the sample collected from near the engine block was also analyzed for metals associated with waste oil. No detectable concentrations of petroleum hydrocarbons were found in the soil sample collected from the furnace room. Motor oil range petroleum hydrocarbons and total lead were detected in a shallow soil sample collected from near the engine block at concentrations that exceed regulatory action limits for these contaminants. A deeper sample from the engine block boring also contained motor oil and heavy metals, but at concentrations that were below regulatory action limits.

Seven sites were identified in the vicinity of the Property where known environmental conditions had been present using an environmental background report obtained from RRM's vendor, Environmental Data Resources, Inc. (EDR). Based on the distance of these sites in relation to the Property and RRM's familiarity of the extent of regional hydrocarbon impacts, it is not likely that contaminants from any known sources have migrated into soil or groundwater at the Property.

RRM performed a limited inspection of materials used in the construction of the buildings located on the Property. This inspection did not include sampling of materials for lead or asbestos content. Based on the age of the buildings and additions, some of the construction materials may contain asbestos or lead.

10.0 OPINION

We offer the following opinion as to whether the all appropriate inquiry conducted in accordance with 40 CFR Part 312 has identified conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances on, at in, or to the subject Property.

12.0 SIGNATURES AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

The following defines the specific qualifications of the EPs who performed this assessment. Further detail regarding these qualifications can be obtained by contacting RRM.

- **Project Scientist Edward Buskirk** has a Bachelor of Science degree from the University of Michigan dated 1985 and has been performing work involved with environmental site assessments and remediation since 1987. Mr. Buskirk is a State of California Registered Environmental Assessor.
- **Project Geologist Matthew Paulus** has a Bachelor of Science degree in geology from Rutgers University dated 1995 and has been performing work involved with environmental site assessments and remediation since 1997. Mr. Paulus is a California State-Licensed Professional Geologist.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional pursuant to 40 CFR.10.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

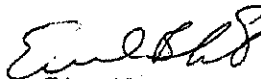
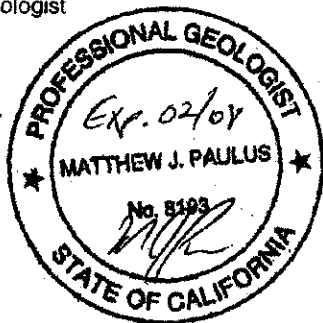
PHASE I ENVIRONMENTAL SITE ASSESSMENT

Pleasure Point Roadhouse
2-3905 East Cliff Drive
APN 032-131-08
Santa Cruz, California
September 13, 2007

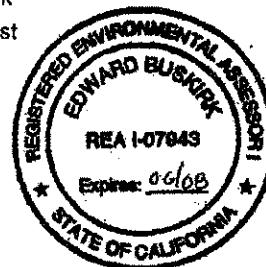
Sincerely,
RRM, Inc.

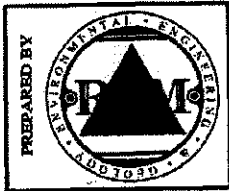
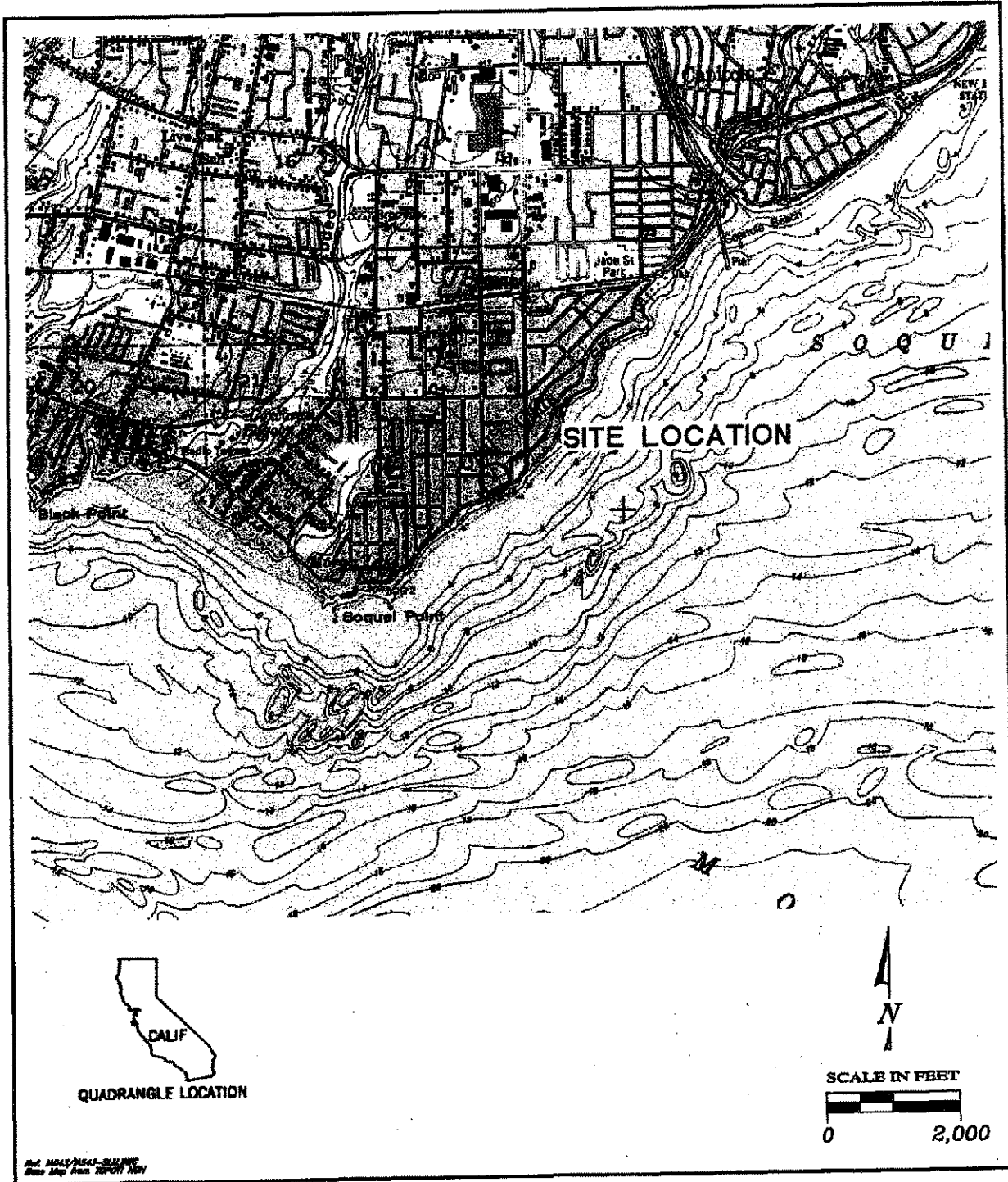


Matthew J. Paulus
Project Geologist
PG 8193



Edward Buskirk
Project Scientist
REA 1 07943



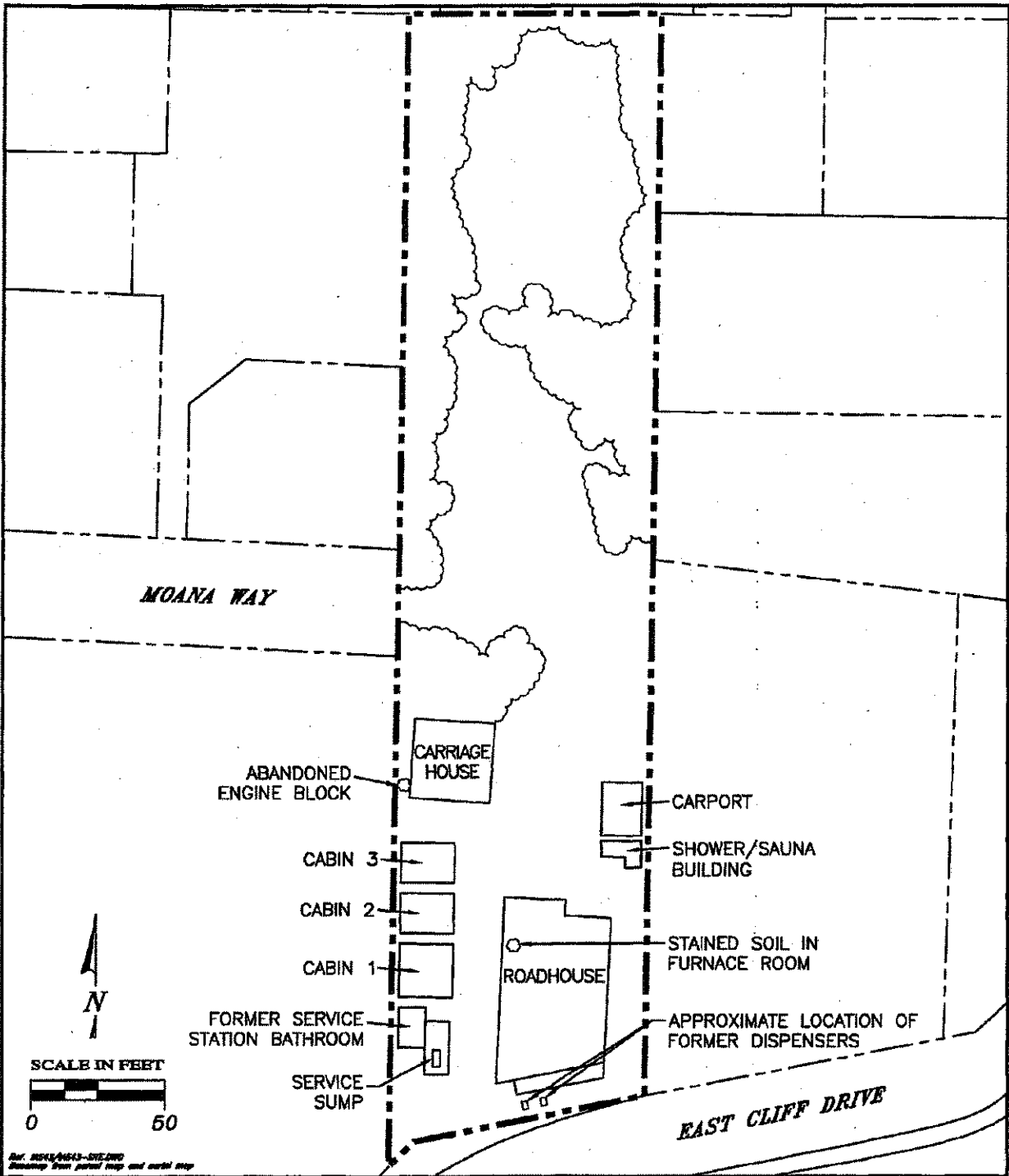


PREPARED BY

SITE LOCATION MAP

PLEASURE POINT ROADHOUSE
 2-3905 East Cliff Drive
 Santa Cruz, California

FIGURE:
1
 PROJECT:
 IA543



	SITE MAP	FIGURE: 2 PROJECT: IA543
	PLEASURE POINT ROADHOUSE 2-3905 East Cliff Drive Santa Cruz, California	

SANTA CRUZ COUNTY SITE MITIGATION LIST

APN	#	DR STREET NAME	ST TYPE	CITY	SITE NAME	(NOTE)	GLOBAL ID	ROW#	CASE STATUS	LEAD AGENCY	LEAD AGENCY CLOSURE LETTER	EHS WKR	IRON-LEAD AGENCY CLOSURE LETTER	POTENTIAL CONTAMINANTS OF CONCERN
	155	CHESTNUT	ST	SC	UNDEVELOPED LAND/UNION ICE HOUSE		T0608799980		CLOSED	EHS	4/2/2001	SB		Gasoline
005-951-04	207	CHURCH	ST	SC	CHURCH STREET T/LC/FORMER SANTA CRUZ SENTINEL BLDG		T10009001572		CLOSED	RWOCB	12/19/2013	SB		
	208	CHURCH	ST	SC	T.L ANTHONY GROUP					RWOCB		TE		Metals
004-261-47	3825	CLARES	ST	CAP	MC WHORTERS					EHS		SB		Paint/WP
		CLIFF	DR	APT	SCCSD RID PUMPING STATION		T0608700227		CLOSED	RWOCB				Diesel
		CLIFF	DR	APT	SCCSD RID DEL MAR PUMP STATION		T0608700386	28	CLOSED	RWOCB	4/14/2014	SC		Diesel
	2-1503	E CLIFF	DR	SC	EAST CLIFF DRY CLEANERS		SL0688766369	106	CLOSED	RWOCB	2/11/2003	RC	10/22/2002	PCE
	2-3010	E CLIFF	DR	SC	SARKIS KHANZADIAN		COM			EHS		JD		Metals
	2-3905	E CLIFF	DR	SC	PLEASURE POINT ROADHOUSE PROPERTY		T10000082787	274	CLOSED	EHS	12/14/2010	RC		
	3905	E CLIFF	DR	SC	PLEASURE POINT ROADHOUSE PROPERTY	*REFER TO 2-3905 E CLIFF DR	T10000081576							
004-084-12	175	W CLIFF	DR	SC	DREAM INN		COM			EHS		SB		Asbestos
044-213-11	610	CLUBHOUSE	DR	APT	APTOS SEASCAPE GOLF COURSE		T0608769833		CLOSED	EHS	12/15/1993	RC		Gasoline
058-104-06	451	COAST	RD	SC	PACIFIC WEST BANK				CLOSED	MMAG	2/1/1995	TE		HCMetals
058-141-02	1401	COAST	RD	SC	WILDER RANCH BURN DUMP				CLOSED	EHS	7/6/2009	SB		M/Burnfish
	2101	COAST	RD	SC	STATE OF CALIFORNIA					EHS		JD		Diesel
	5322	COAST	RD	SC	JOHN STEPHENSON				CLOSED	EHS	8/30/1997	JD		Drug Lab
	5511	COAST	RD	SC	LORENZI RANCH		T0608700048		CLOSED	EHS	5/16/1994	TE		Gasoline
025-071-20	1506	COMMERCIAL	WY	SC	BELSCOTT COMPANY, LLC		T10000080041	349		EHS		JG		Diesel, Motor Oil, Barium, Copper, Lead, Zinc
025-071-20	1506	COMMERCIAL	WY	SC	NORM BEI					EHS		JD		Metals
	1524	COMMERCIAL	WY	SC	CHEVRON STATION 9-2231		T0608700027		CLOSED	EHS	12/4/1995	JD		HC / Gasoline

*Column: * Indicates SCCEHS has no file. **Column: COM = Complaints, ER = Emergency Responses, DL = Drug Labs, STU = Study

Attachment 11
Initial Study



WATER DEPARTMENT

212 Locust Street, Suite C, Santa Cruz CA 95060 Phone (831) 420-5210 Fax (831) 420-5201

July 8, 2015

Matt Pietro
135 Stonepine Road
Hillsborough, CA 94010

Re: **PROPOSED 9-LOT SUBDIVISION AT 23905 EAST CLIFF DRIVE**

Dear Mr. Pietro:

This letter is to advise you that the subject parcel is located within the service area of the Santa Cruz Water Department and potable water is currently available for normal domestic use and fire protection. Service will be provided to each and every lot upon payment of the fees and charges in effect at the time of service application and upon completion of the installation, at developer expense, of any water mains, service connections, fire hydrants and other facilities required for the development under the rules and regulations of the Santa Cruz Water Department. The development will also be subject to the City's Landscape Water Conservation requirements.

At the present time:

the required water system improvements are not complete; and
financial arrangements have not been made to the satisfaction of the City to guarantee payment of
all unpaid claims.

This letter will remain in effect for a period of two years from the above date. It should be noted, however, that City Council may elect to declare a moratorium on new service connections due to drought conditions or other water emergency. Such a declaration would supersede this statement of water availability.

If you have any questions regarding service requirements, please call the Engineering Division at (831) 420-5210. If you have questions regarding landscape water conservation requirements, please contact the Water Conservation Office at (831) 420-5230.

Sincerely,

Rosemary Menard
Water Director

Attachment 12
Initial Study

Drainage Calculations

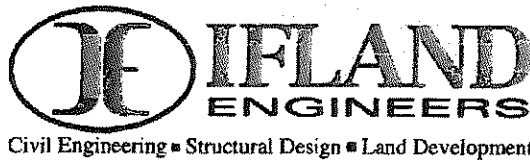
For

Pietro Family Investments

East Cliff Drive,
Santa Cruz, California
APN: 032-181-08

May 2015
Revised: March, 2016

Job# 14020



5300 Soquel Avenue Suite 101
Santa Cruz, CA 95062
(831) 426-5313 FAX (831) 426-1763
www.iflandengineers.com

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Appendix A

- Drainage Exhibit – Pre-Development
- Drainage Exhibit – Post-Development
- Civil Plan Sheet C2

Appendix B

- Santa Cruz County Figures SWM 17
- CASQA Section 4 BMP Introduction Sheet
- CASQA BMP SD-11 & SD-20

Appendix C

- NRCS Soils Information

Appendix D

- Pacific Crest Infiltration Testing Information
- Pacific Crest Support Letter

Introduction

The subject property is a 0.9 acre parcel located on East Cliff Drive, in Santa Cruz, Ca. Currently, the property is a vacant lot and relatively flat with runoff contained on site. Access to the property is through Moana Way.

Proposed site improvements include 9 houses with a new guest parking lot behind new trash enclosure, one low retaining wall along the eastern property line and another on the western side. There will a boardwalk that has porcelain tile on top of concrete and part of the proposed private road.

The following drainage calculations have been completed in conformance with the drainage regulations as mandated by the County of Santa Cruz Design Criteria.

Existing Conditions & Site Run-on

The project site is flat with slopes of less than 2%, generally from east to west. There are no onsite drainage facilities, but a single drain inlet is located along the northern edge/right of way of East Cliff Drive.

The site receives run-on from adjacent parcels to the east, as shown on the Existing Drainage Map found in Appendix A. The most southerly property's drainage is contained onsite by way of a private drainage system. The most northern property has portions of the roof area discharging towards the subject parcel, as well as minimal vegetation.

Adjacent parcels to the north generally drain in an east to west direction parallel to the subject parcel. From site investigations it does not appear the subject parcel receives any run-on from the north.

Per the NRCS Web Soil Survey, the underlying soils are made up of Watsonville loam with a permeability rate of 0.67 in/hr for the upper layer and 0.15 in/hr for the deeper strata (3.5'-5'), as shown in Appendix C. However, site specific infiltration testing was performed by Pacific Crest Engineering, Inc. and the measured infiltration rates were found to be much slower. Upon further investigation the site appears to be impermeable with a percolation rate of 0.01 in/hr. Therefore, the site does not currently retain any runoff, and will not retain runoff post construction. Refer to Appendix D for Geotechnical tested infiltration rates and methodology.

Proposed Development

The proposed project is approximately 25,578 sf of impervious area consisting of 9 townhouses, 8 parking spaces and a private road with a boardwalk path. Development will also include a fire access turnaround at the entrance of parcel along Moana Way which will be constructed of both pervious material and rigid pavement. Because the new impervious area is greater than 5,000 sf, the project proposes to retain and detain runoff from all impervious surfaces post construction. This will be achieved by use of low impact development features and Best Management Practices, such as reducing impervious surfaces through the application of permeable material, and the construction of rain gardens and bioswales when appropriate.

Runoff Reduction Strategies

The following list describes the means by which the project meets the design criteria discussed in Part 3, Section C.3.c. of the Santa Cruz County Design Criteria Handbook, June 2014 Edition.

- i) There are no creeks or natural drainage features onsite; no strategy is required in this instance.
- ii) The compaction of soils located underneath raingardens, or sections of permeable pavement, shall be minimized.
- iii) Care will be taken to minimize the disturbance to native vegetation with respect to clearing and grading activities. Only vegetation that must be removed for construction, site access, and fire protection will be disturbed.
- iv) The planned development of the project site shall be concentrated within the least sensitive areas, thereby minimizing impervious surfaces and thus leaving the land in a natural, undisturbed state to the greatest extent possible.
- v) In order to minimize stormwater runoff, direct roof, driveway, parking lot, sidewalk, walkway, patio and other impervious surface runoff shall be directed onto vegetated areas in a manner consistent with the California building code. Additionally, permeable surface shall be utilized within the main entrance and guest parking area.

Water Quality Treatment

Water quality treatment has been addressed as outlined in the Santa Cruz County Design Criteria Part 3 section 3.b.iv. The development proposes to use pervious pavement areas, a raingarden, and bioswales to meet the County of Santa Cruz Design Criteria stormwater requirements. The pervious pavement areas are to be located at both the new entrance and guest parking areas, while the raingarden is to be located at the southernmost portion of the site, as shown on the Proposed Drainage Map found in Appendix A. These stormwater facilities will treat runoff from the new impervious surfaces. Furthermore, bioswales will be utilized throughout the site to improve water quality. The locations of the bioswales are shown on Sheet C2 of the civil plans found in Appendix A. Water quality treatment will be obtained through the various processes that occur at each detention facility, as well as the channeling of flow through vegetated bioswales prior to the merging of those flows with other aspects of the stormwater drainage system per CASQA BMP SD-11 & SD-20.

Retention (2-year / 2-hr storm) NOT OBTAINABLE

As described in the existing conditions section above, retention is not feasible on this site, with measured infiltration rates of approximately 0.01 in/hr. Therefore, per the Santa Cruz County Design Criteria Part 3, Section C.3.b.iv, a Non-Retention Based Treatment System shall be utilized to enhance water quality.

Detention (10-year / 15-min Storm)

Required detention volumes were determined using the modified rational method, County figure SWM-17, for the 10yr 15 minute design storm with a 10-year pre-development release rate. There are 4 detention facilities located on site and they are sized to detain runoff per the Santa Cruz CDC. These detention facilities are located throughout the site, as detailed in Table 1, shown below.

Table 1: Detention Facility Locations

Detention Facility	Location
Raingarden #1	Adjacent to East Cliff Drive
Pervious Pavers #1	Guest Parking
Pervious Pavers #2	Entrance at Moana Way
Detention Pipe	East of Lot 7

Drain rock, with a void space of 40%, and bioretention soil mixture (BSM), with a void ratio of 25%, will be utilized for detention purposes underneath the pervious paver and raingarden systems, respectively. The detention facility to the east of Lot 7 shall consist of a 40 foot long, 24" diameter pipe. The release rate of each drainage area will be controlled by an outlet control structure with a weir and orifice.

Controlled Release

Each detention system ultimately discharges to the existing catch basin located to the southwest of the subject parcel. This existing catch basin then discharges to Monterey Bay.

Runoff flows from drainage areas 1-3 are directed through the media located in the pervious paver and raingarden detention areas, where perforated subdrains shall be utilized to handle the outflows of the detention systems. Each subdrain is sized to convey the associated volume of water from each respective drainage area. The perforated pipes will then be connected to an outlet control structure which will control runoff per the calculations below.

Run-on Control

Storm water run-on from adjacent properties east of the subject parcel will be controlled with 3 separate NDS drain inlets, strategically located at the 3 low spots of each adjacent parcel; refer to civil sheet C2, found in Appendix A for the locations of these drain inlets.

This run-on will discharge into the proposed storm drain system, via an 8" storm drain pipe, at the adjacent controlled released structure (OCR#4), downstream of the overflow riser, so as to not comingle with onsite detention. It will then flow through the stormwater system to be discharged into the storm drain catch basin located at East Cliff drive.

Table 2: 8" Pipe Capacity and 25yr flowrate

Given Input Data:		Computed Results:	
Shape.....	Circular	Flowrate.....	1.2774 cfs
Solving For....	Flowrate	Area.....	0.3491 ft2
Diameter.....	8.0000 in	Wetted Area.....	0.3491 ft2
Depth.....	8.0000 in	Wetted Perimeter...	25.1327 in
Slope.....	0.0080 ft/ft	Perimeter.....	25.1327 in
Manning's n...	0.0110	Velocity.....	3.6593 fps
		Hydraulic Radius.....	2.0000 in
		Percent Full.....	100.0000%
		Full flow Flowrate....	1.2774 cfs
		Full flow Velocity.....	3.6593 fps
Proposed 25-Yr Flow (Q25) = 0.18 Cfs < 1.28 Cfs Available →Therefore, 8" Pipe To Convey Offsite Run-On Is Adequate**			

Previously, the subject parcel drained naturally across the site, and eventually the runoff entered the existing drain inlet at the southwest corner of subject property within East Cliff Drive. The proposed stormwater system will collect the stormwater flows and convey them to the same location. The existing 18" storm drain that crosses East Cliff Drive is fairly new and in good condition, with sufficient

capacity to handle both the existing runoff and the additional projected runoff resulting from the creation of new impervious surfaces. The results of the pipe capacity calculations performed to determine the available capacity of the aforementioned existing 18" pipe are shown in Table 3, below.

Table 3: Pipe Capacity Calculation for Existing 18" Storm Drain Pipe across East Cliff Drive

Given Input Data:		Computed Results:	
Shape.....	Circular	Flowrate.....	11.5069 cfs
Solving For.....	Flowrate	Area.....	1.7671 ft2
Diameter.....	18.0000 in	Wetted Area.....	1.7671 ft2
Depth.....	18.0000 in	Wetted Perimeter...	56.5487 in
Slope.....	0.0120 ft/ft	Perimeter.....	56.5487 in
Manning's n...	0.0130	Velocity.....	6.5116 fps
		Hydraulic Radius.....	4.5000 in
		Percent Full.....	100.0000%
		Full flow Flowrate....	11.5069 cfs
		Full flow Velocity.....	6.5116 fps

Storm Drain & Detention Calculations

The assumptions made for purposes of the storm drain detention calculations are shown below in Table 4.

Table 4: Assumptions made for Storm Drain Detention Calculations

$P_{60} = 1.38$	$C_{pre} = 0.50$
$I_{10} = 2.01$	$C_{post} = 0.90$
$I_{25} = 2.41$	
*Post construction C-values have been taken at C=0.90 for all post construction surfaces: impervious, overbuild areas, and remaining landscaping, due to underlying infiltration rates.	

Drainage Area #1:

This drainage area consists of the impervious areas associated with Lots #1 & #2, as well as the walkway that connects to East Cliff Drive. The drainage areas are detailed on the Proposed Drainage Map, found in Appendix A. Roof drains with splash blocks, or equivalent, will be utilized to direct flow towards the proposed bioswales, which will then direct flow to the proposed raingarden. Water quality treatment for this area will be provided by the bioswales and raingarden, while controlled release will be provided by Outlet Control Structure #1, as shown on the Proposed Drainage Map found in Appendix A.

TOTAL AREA = 5,979 sf
 IMPERVIOUS AREA = 4,018 sf
 LANDSCAPED AREA = 1,961 sf

Surface Area: 398 sf
 10yr Detention depth: 1.50 ft

Table 5: Per Figure SWM-17 (10-yr/15 min. Storm Event)

Required Detention Volume (cf)	139
Required Release Rate (cfs)	0.093
Provided Detention Volume (BSM) (398sf X 1.5ft X 0.25)	149

Table 6: Orifice Calculations for the 10-yr/15 min. Storm Event

Given Input Data:	
Solving for	Diameter
Flowrate	0.0930 cfs
Coefficient	0.6100
Headwater	3.7400 ft
Tailwater	0.0000 ft
Computed Results:	
Diameter	1.3423 in
Velocity	9.4631 fps
<i>Discharge controlled by a Christy u21 drain box with weir plate and orifice sized according to above calculations. Perforate subdrains will convey runoff from detention area to box.</i>	

Drainage Area #2:

This drainage area consists of the southernmost portion of the private road, the driveways of Lots #1-#3, the walkway entrance of lot #3, and the roof areas of lots #3 and #4. Downspouts from lots #3 & #4 shall utilize splash blocks, or equivalent, to direct flow to bioswales which then discharge to the detention facility underneath the guest parking, as shown on Sheet C2 of the civil plans found in Appendix A. Additionally, flows will be directed to this same detention facility via sheet flow along the private road. Water quality treatment for this area will be provided by both the bioswales and pervious pavement, while controlled release will be provided by Outlet Control Structure #2, as shown on the Proposed Drainage Map found in Appendix A.

TOTAL AREA = 8,990 sf
 IMPERVIOUS AREA = 5,983 sf
 PERVIOUS PAVE. = 1,072 sf
 LANDSCAPED AREA= 1,935 sf

Surface Area: 1,072 sf
 10yr Detention depth: 0.75 ft

Table 7: Per Figure SWM17 (10-yr/15 min. Storm Event)

Required Detention Volume (cf)	209
Required Release Rate (cfs)	0.140
Provided Detention Volume (BSM) (1,072sf X 0.75 ft X 0.40)	322

Table 8: Orifice Calculations for the 10-yr/15-min. Storm Event

<p>Given Input Data:</p> <p>Solving for Diameter</p> <p>Flowrate 0.1400 cfs</p> <p>Coefficient 0.6100</p> <p>Headwater 2.6800 ft</p> <p>Tailwater 0.0000 ft</p> <p>Computed Results:</p> <p>Diameter 1.8217 in</p> <p>Velocity 8.0106 fps</p>	<p><i>Discharge controlled by a Christy U23 drain inlet at the low corner of the pervious material. A perforated subdrain will convey runoff from detention area to inlet. Discharge pipe will extend into DI and be equipped with a cap (with drilled orifice, see above calculation) and 4" riser pipe to extend to headwater elevation, above.</i></p>
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Drainage Area #3:

This drainage area consists of the middle section of the private road, as well as the impervious areas associated with Lots #5-#7, the proposed walk located at the northwest area of the site and the trash enclosure near the entrance to the site. Roof drains with splash blocks, or equivalent, will direct flows to bioswales which will then be utilized to collect flows in NDS catch basins. These flows will then be directed to the detention area underneath the pervious pavers located at the entrance to Moana way, as shown on the Proposed Drainage Map found in Appendix A. Additionally, flows will be directed to this same detention system via sheet flow along the private road. The water quality treatment for this area will be provided by bioswales and pervious pavement, while controlled release shall be provided by Outlet Control Structure #3, as shown on the Proposed Drainage Map found in Appendix A.

TOTAL AREA = 13,340 sf
IMPERVIOUS AREA = 10,089 sf
PERVIOUS PAVE. = 750 sf
LANDSCAPED AREA= 2,501 sf

Surface Area: 750 sf
10yr Detention depth: 1.08 ft

Table 9: Per Figure SWM17 (10-yr/ 15 min. Storm Event)

Required Detention Volume (cf)	310
Required Release Rate (cfs)	0.208
Provided Detention Volume (cf) (750sf X 1.08ft X 0.4)	324

Table 10: Orifice Calculations (10-yr/ 15 min. Storm Event)

Given Input Data:	
Solving for	Diameter
Flowrate	0.2080 cfs
Coefficient	0.6100
Headwater	1.0800 ft
Tailwater	0.0000 ft
Computed Results:	
Diameter	2.7054 in
Velocity	5.0852 fps
<i>Discharge controlled by a Christy U23 drain inlet at the low corner of the pervious material. A perforated subdrain will convey runoff from detention area to inlet. Discharge pipe will extend into DI and be equipped with a cap (with drilled orifice, see above calculation) and 4" riser pipe to extend to headwater elevation, above.</i>	

Drainage Area #4:

This drainage area consists of the roof areas of Lots #8 and #9, the roof area of the garage located at the northeast corner of the site, and the northeastern portion of the private road. Roof drains with splash blocks, or equivalent, shall direct flow to the bioswales which will then be utilized to collect flows in NDS catch basins. The flows will then be directed to the Detention Pipe located to the east of Lot #7. Additionally, flows will be directed to the NDS located to the east of Lot #7 via the proposed concrete valley gutter and a section of flush curb, as shown on Sheet C2 of the civil plans found in Appendix A. The water quality treatment for this area will be provided by the bioswales, while controlled release shall be provided by Outlet Control Structure #4, as shown on the Proposed Drainage Map found in Appendix A.

TOTAL AREA = 5,395 sf
IMPERVIOUS AREA = 4,150 sf
LANDSCAPED AREA= 1,245 sf

Surface Area: 70.8 sf (estimation per SWM17)
10yr Detention depth: 1.77 ft (estimation per SWM17)

Table 11: Per Figure SWM17 (10-yr/ 15 min. Storm Event)

Required Detention Volume (cf)	125
Required Release Rate (cfs)	<i>0.084</i>
Total Detention Provided (cf) (24" Diam. X 40 ft length)	125.7

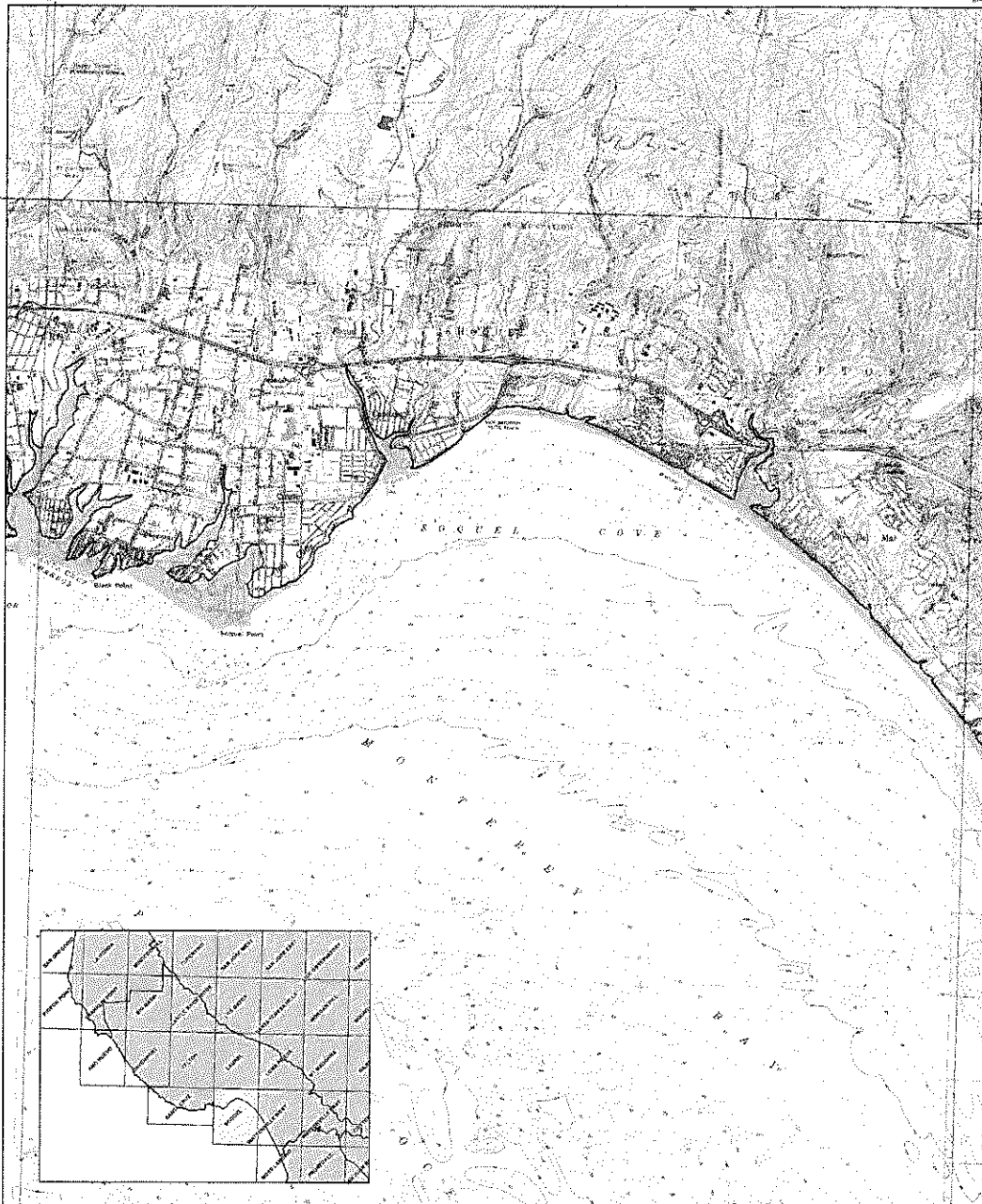
Table 12: Orifice Calculations (10-yr/ 15 min. Storm Event)

Given Input Data:	
Solving for	Diameter
Flowrate	0.0840 cfs
Coefficient	0.6100
Headwater	2.1500 ft
Tailwater	0.0000 ft
Computed Results:	
Diameter	1.4651 in
Velocity	7.1749 fps
<i>Discharge controlled by a NDS 18" square box within raingarden, grate set 3" above bottom surface. A perforated subdrain will convey runoff from detention area to box. Inlet pipe will extend into NDS box and be equipped with a cap (with drilled orifice, see above calculation) and 4" riser pipe to extend to headwater elevation, above.</i>	

Conclusion

This development utilizes pervious paving, raingarden, and bioswales to provide adequate water quality treatment with respect to stormwater runoff. The use of these measures in conjunction with perforated subdrains and outlet control structures ensures that the proposed development conforms to County design requirements as specified in Part 3, Sections C, H, and I of the County of Santa Cruz Design Criteria. As demonstrated above the underlying soils have little to no permeability, and therefore the project has been designed detain the 10-year/15min storm. We believe the above design, in conjunction with the civil plan drawings, provides a drain system that is efficient and more than adequate for the proposed development.

Attachment 13
Initial Study



METHOD OF PREPARATION

Initial tsunami modeling was performed by the University of Southern California (USC) Tsunami Research Center (TRC) through the California Emergency Management Agency (CEEMA) by the National Tsunami Hazard Mitigation Program. The tsunami modeling process utilized the MOST (MOST: Modeling Open-Shore Tsunami) system program (Version D), which allows for wave evolution over a variable bathymetry and topography shelf for inundation modeling (Tsun and Gardner, 1992; Tsin and Gardner, 1996).

The bathymetry/topographic data that were used in the tsunami models consist of a series of nested grids. Near-shore grids with a 3 m resolution (75 to 90 meters) resolution or higher, were utilized to "steep High Water" sea level conditions, representing a conservative sea level for the extended use of the tsunami modeling and mapping.

A suite of tsunami source events was selected for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, subduction interfaces (Table 1). Local tsunami sources that were considered include offshore seamount thrust faults, including faults on the San Juan Bautista coast and large subduction interfaces capable of significant seafloor displacement and tsunami generation. Distant tsunami sources that were considered include great subduction zone events that are known to have occurred historically (1960 Chile and 1964 Alaska earthquakes) and others which can occur around the Pacific Ocean "Ring of Fire".

In order to enhance the detail from the 75- to 90-meter inundation grid data, a method was developed utilizing higher resolution digital topographic data (2 m - contours resolution) that better define the location of the maximum inundation line (L1). (Doolittle Survey, 2002; Hartman, 2002; NOAA, 2004). The location of the enhanced inundation line was determined by using digital imagery and terrain data on a GIS platform with correlation given to historic inundation information (Lander et al., 2002). The information was verified, where possible, by field work coordinated with local county personnel.

The accuracy of the inundation line shown on these maps is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the models. Thus, although an effort has been made to identify a credible upper bound to inundation at any location along the coastline, it remains possible that actual inundations could be greater in a major tsunami event.

This map does not represent inundation from a single tsunami event. It was created by estimating inundation results for an ensemble of source events affecting a given region (Table 1). For this reason, not all of the inundation regions in a particular area will not likely be inundated during a single tsunami event.

Intermap Technologies, Inc., 2000, Intermap product handbook and quick start guide Intermap NEXTmap document on 5-meter resolution data, 112 p.
Lander, J.F., Lockridge, P.A., and Quigley, M.J., 1993, Tsunami Affecting the West Coast of the United States 1952-1967. National Oceanic and Atmospheric Administration, Office for Coastal Resources, NOAA Technical Memorandum Data Center Key to Geophysical Research Description No. 29, NOAA, NESDIS, NODC, 242 p.
National Atmospheric and Oceanic Administration (NOAA), 2004, Interim Electronic Systems Architecture Roadmap (ISAR) Digital Elevation Models from GeoSAR platform (Eva/Delta) 5-meter resolution data.
Tsun, V.V., and Gardner, F.J., 1997, Implementation and Testing of the Method of Tsunami Subling (MOST), NOAA Technical Memorandum ERL PMEL-112, 11 p.
Tsun, V.V., and Synalakis, C.E., 1998, Numerical modeling of tsunamis wave propagation. Journal of Waterways, Port, Coastal and Ocean Engineering, ASCE, 124 (4), 410-417.
U.S. Geological Survey, 1992, Digital Elevation Models: National Mapping Program Technical Instructions. Data Users Guide 5, 49 p.

TSUNAMI INUNDATION MAP FOR EMERGENCY PLANNING

State of California - County of Santa Cruz
SOQUEL QUADRANGLE

July 1, 2009

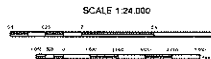


Table 1. Tsunami sources included for the Santa Cruz County coastline.

Sources (M = moment magnitude used in modeled event)	Area of Inundation Map Coverage	Inundation Line		
		Proximal	Scarp	Distal
Local Sources	Monterey Canyon Landslide			
	California Subduction Zone (CAL SUB) (M 8.0)	X	X	X
	Central Atlantic Subduction Zone #1 (CASZ 1)	X	X	X
	Central Atlantic Subduction Zone #2 (CASZ 2)	X	X	X
	Central Atlantic Subduction Zone #3 (CASZ 3)	X	X	X
Distant Sources	1960 Chile Subduction Zone (M 9.5)	X	X	X
	1964 Alaska Earthquake (M 9.2)	X	X	X
	Japan Subduction Zone #1 (JASZ 1)	X	X	X
	Kuril Islands Subduction Zone #2 (KISZ 2)	X	X	X
	Kuril Islands Subduction Zone #3 (KISZ 3)	X	X	X
	Philippine Subduction Zone #1 (PASZ 1)	X	X	X
	Philippine Subduction Zone #2 (PASZ 2)	X	X	X
	Philippine Subduction Zone #3 (PASZ 3)	X	X	X
	Marshall Subduction Zone (MSZ)	X	X	X

MAP EXPLANATION

- Tsunami Inundation Line
- Tsunami inundation Area

PURPOSE OF THIS MAP

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local informational, coastal education, planning uses only. The map and the information presented therein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purposes.

The inundation map has been compiled with best currently available scientific information. The inundation line represents the maximum considered tsunami surge from a number of sources, yet realistic, tsunami sources. There may be more events due to a lack of known occurrences in the historical record. This map includes no information about the probability of any tsunami affecting any area within a specific period of time.

Please refer to the following websites for additional information on the construction and/or intended use of the tsunami inundation map:
State of California Emergency Management Agency, Earthquake and Tsunami Program <http://www.ca.gov/emergency/earthquake/tsunami/index.cfm>
University of Southern California - Tsunami Research Center <http://www.usc.edu/earthquake/2005/index.php>
State of California Geological Survey, Tsunami Information <http://www.geosurvey.ca.gov/geosurvey/tsunami/index.htm>
National Oceanic and Atmospheric Agency Center for Tsunami Research (NCTR) <http://www.pmel.noaa.gov/tsunami/index.html>

MAP BASE

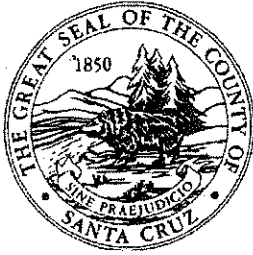
Topographic base maps prepared by U.S. Geological Survey as part of the 7.5-minute Quadrangle Map Series (originally 1:24,000 scale). Tsunami inundation line boundaries may reflect updated digital orthographic and topographic data that can differ significantly from contours shown on the base map.

DISCLAIMER

The California Emergency Management Agency (CEEMA), the University of Southern California (USC), and the California Geological Survey (CGS) make no representation or warranties regarding the accuracy of this inundation map nor the data from which the map was derived. Neither the State of California nor USC shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any party or any third party on account of its using this map.



Attachment 14
Initial Study



Santa Cruz County Sanitation District

701 OCEAN STREET, SUITE 410, SANTA CRUZ, CA 95060-4073
(831) 454-2160 FAX (831) 454-2089 TDD: (831) 454-2123

JOHN J. PRESLEIGH, DISTRICT ENGINEER

JULY 16, 2015

MATT PIETRO
135 STONEPINE ROAD
HILLSBOROUGH, CA 94010

SUBJECT: SEWER AVAILABILITY AND DISTRICT'S CONDITIONS OF SERVICE
FOR THE FOLLOWING PROPOSED DEVELOPMENT:

APN: 032-181-08

PARCEL ADDRESS: 23905 EAST CLIFF DRIVE

PROJECT DESCRIPTION: 9 SINGLE FAMILY HOMES

Sewer service is available for the subject development upon completion of the following conditions. This notice is effective for one year from the issuance date to allow the applicant the time to receive a *tentative map*, development or other discretionary permit approval. If, after this time frame, this project has not received approval from the Planning Department, then a new sewer service availability letter must be obtained by the applicant. If, for whatever reason, any approval by the Planning Department of a *tentative map* for this project is withdrawn, is revoked, or has expired, then this determination of availability will be considered to have expired and will be invalid.

Proposed location of on-site sewer lateral(s), clean-out(s), and connection(s) to existing public sewer must be shown on the plot plans of the building permit applications.

Existing lateral(s) must be properly abandoned (including inspection by District) prior to issuance of demolition permit or relocation or disconnection of structure. An abandonment permit for disconnection work must be obtained from the District.

A sewer connection can be issued, and final charges determined, after the District and, as needed, other Department of Public Works divisions have reviewed and approved the final engineered sewer improvement plans.

On the map, show all adjacent or impacted roads and easements on the map.

On the improvement plans, show all adjacent or impacted roads and easements, and all on- and off-site sewer improvements needed to provide service to each lot or unit proposed. These plans must conform to the County's "Design Criteria."

MATT PIETRO
PAGE 2

The configuration of the site does not appear readily accommodate 9 separate lots, each independently connected to a public main. Therefore, plans indicating the proposed lot location and arrangement are required before it can be determined where and how the homes might be connected. It is possible, depending on the arrangement, that a sewer extension permit and/or homeowners association agreement may be required.

Depending on the sewer system design, the applicant may be required to form a homeowners' association with ownership and maintenance responsibilities for all on-site sewers for this project; reference to homeowner's association shall be included on the Final Map and in the Association's recorded CC&R's which shall be recorded. Applicant shall provide a copy of said CC&R's to the District prior to the filing of the final map.

The plans shall show all existing and proposed plumbing fixtures on floor plans of building applications. Completely describe all plumbing fixtures according to table T-702.1 of the California Plumbing Code.

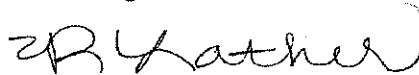
Backflow preventive devices may be required.

No downstream capacity problem or other issue is known at this time. However, downstream sewer requirements will again be studied at time of Planning Permit review, at which time the District reserves the right to add or modify downstream sewer requirements.

Yours truly,

JOHN J. PRESLEIGH
District Engineer

By:



Rachél Lather
Senior Civil Engineer

BH:tlp/257

c: Property Owner: Pietro Family Investments
3210 Fillmore St. #3
San Francisco, CA 94123

(REV. 3-01)

Attachment 15
Initial Study

Pleasure Point Roadhouse Project

Santa Cruz County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	8.00	Dwelling Unit	0.90	17,401.00	23

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	61
Climate Zone	5	Operational Year	2018		

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MW/hr)	641.35	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot size is larger than the default lot size.

Construction Phase - Site is vacant. No demolition is required. Grading may take longer than one day due to the import of fill material.

Grading -

Demolition -

Road Dust - Speed limits within a few miles of the project site are 35 mph or less.

Woodstoves - All units have wood burning fireplaces.

Solid Waste - The landfill gas at Buena Vista Landfill is captured and used to power an electric generator. A flare is not used.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	8,000.00	17,401.00
tblLandUse	LotAcreage	0.50	0.90
tblProjectCharacteristics	OperationalYear	2014	2018
tblRoadDust	MeanVehicleSpeed	40	30

2.0 Emissions Summary

**2.2 Overall Operational
Unmitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
Area	0.5997	7.7700e-003	0.7015	2.5000e-004		0.0873	0.0873	0.0873	0.0873	0.0873	8.2637	3.6004	11.8641	7.7600e-003	6.5000e-004	12.2285
Energy	1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005		7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	20.2899	20.2899	6.5000e-004	2.8000e-004	20.3912
Mobile	0.0382	0.0823	0.4124	7.9000e-004	0.0564	1.0100e-003	0.0574	0.0151	9.3000e-004	0.0160	0.0000	58.4892	58.4892	3.1100e-003	0.0000	58.5546
Waste						0.0000	0.0000		0.0000	0.0000	0.7470	0.0000	0.7470	0.0442	0.0000	1.6741
Water						0.0000	0.0000		0.0000	0.0000	0.1654	1.1551	1.3204	0.0170	4.1000e-004	1.8059
Total	0.6390	0.0991	1.1177	1.1000e-003	0.0564	0.0891	0.1455	0.0151	0.0890	0.1041	9.1760	83.5346	92.7106	0.0727	1.3400e-003	94.6542

2.2 Overall Operational Mitigated Operational

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Area	0.5997	7.7700e-003	0.7015	2.5000e-004		0.0873	0.0873		0.0873	0.0873	8.2637	3.6004	11.8641	7.7600e-003	6.5000e-004	12.2285
Energy	1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	20.2899	20.2899	6.5000e-004	2.8000e-004	20.3912
Mobile	0.0382	0.0823	0.4124	7.9000e-004	0.0564	1.0100e-003	0.0574	0.0151	9.3000e-004	0.0160	0.0000	58.4892	58.4892	3.1100e-003	0.0000	58.5546
Waste						0.0000	0.0000		0.0000	0.0000	0.7470	0.0000	0.7470	0.0442	0.0000	1.6741
Water						0.0000	0.0000		0.0000	0.0000	0.1323	0.9706	1.1029	0.0136	3.3000e-004	1.4912
Total	0.6390	0.0991	1.1177	1.1000e-003	0.0564	0.0891	0.1455	0.0151	0.0890	0.1041	9.1430	83.3501	92.4930	0.0693	1.2600e-003	94.3395

3.0 Construction Detail

Construction Phase

ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.22	0.23	4.69	5.97	0.33

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/13/2017	5	10	
2	Site Preparation	Site Preparation	1/14/2017	1/16/2017	5	1	
3	Grading	Grading	1/17/2017	1/18/2017	5	2	
4	Building Construction	Building Construction	1/19/2017	6/7/2017	5	100	
5	Paving	Paving	6/8/2017	6/14/2017	5	5	
6	Architectural Coating	Architectural Coating	6/15/2017	6/21/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 35,237; Residential Outdoor: 11,746; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area
Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0200e-003	0.0524	0.0429	6.0000e-005	3.6300e-003	3.6300e-003	3.4600e-003	3.4600e-003	3.4600e-003	3.4600e-003	0.0000	5.3697	5.3697	1.0600e-003	0.0000	5.3919
Total	6.0200e-003	0.0524	0.0429	6.0000e-005	0.0000	3.6300e-003	3.6300e-003	0.0000	3.4600e-003	3.4600e-003	0.0000	5.3697	5.3697	1.0600e-003	0.0000	5.3919

3.2 Demolition - 2017
Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	2.6700e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3516	0.3516	2.0000e-005	0.0000	0.3521
Total	2.0000e-004	3.0000e-004	2.6700e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3516	0.3516	2.0000e-005	0.0000	0.3521

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0200e-003	0.0524	0.0429	6.0000e-005		3.6300e-003	3.6300e-003	3.4600e-003	3.4600e-003	3.4600e-003	0.0000	5.3697	5.3697	1.0600e-003	0.0000	5.3919
Total	6.0200e-003	0.0524	0.0429	6.0000e-005	0.0000	3.6300e-003	3.6300e-003	3.4600e-003	3.4600e-003	3.4600e-003	0.0000	5.3697	5.3697	1.0600e-003	0.0000	5.3919

3.2 Demolition - 2017
Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	3.0000e-004	2.6700e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3516	0.3516	2.0000e-005	0.0000	0.3521
Total	2.0000e-004	3.0000e-004	2.6700e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3516	0.3516	2.0000e-005	0.0000	0.3521

3.3 Site Preparation - 2017
Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-004	6.3400e-003	3.6200e-003	0.0000	3.9000e-004	3.9000e-004	3.9000e-004	3.5000e-004	0.0000	3.5000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
Total	6.3000e-004	6.3400e-003	3.6200e-003	0.0000	2.7000e-004	3.9000e-004	6.6000e-004	3.0000e-005	3.5000e-004	3.8000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364

3.3 Site Preparation - 2017
Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
MT/yr																

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-004	6.3400e-003	3.6200e-003	0.0000	3.9000e-004	3.9000e-004	3.9000e-004	3.5000e-004	3.5000e-004	3.5000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
Total	6.3000e-004	6.3400e-003	3.6200e-003	0.0000	1.2000e-004	3.9000e-004	5.1000e-004	1.0000e-005	3.5000e-004	3.6000e-004	0.0000	0.4336	0.4336	1.3000e-004	0.0000	0.4364
MT/yr																

3.3 Site Preparation - 2017
Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176

3.4 Grading - 2017
Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0105	8.5800e-003	1.0000e-005	7.3000e-004	7.3000e-004	7.3000e-004	6.9000e-004	0.0000	6.9000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784
Total	1.2000e-003	0.0105	8.5800e-003	1.0000e-005	7.5000e-004	7.3000e-004	1.4800e-003	6.9000e-004	0.0000	1.1000e-003	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784

3.4 Grading - 2017
Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	6.0000e-005	5.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0703	0.0703	0.0000	0.0000	0.0704
Total	4.0000e-005	6.0000e-005	5.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0703	0.0703	0.0000	0.0000	0.0704

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MIT/yr																
Fugitive Dust					3.4000e-004	0.0000	3.4000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0105	8.5800e-003	1.0000e-005	7.3000e-004	7.3000e-004	7.3000e-004	6.9000e-004	0.0000	6.9000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784
Total	1.2000e-003	0.0105	8.5800e-003	1.0000e-005	3.4000e-004	7.3000e-004	1.0700e-003	6.9000e-004	6.9000e-004	8.8000e-004	0.0000	1.0739	1.0739	2.1000e-004	0.0000	1.0784

3.4 Grading - 2017

Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	6.0000e-005	5.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0703	0.0703	0.0000	0.0000	0.0704
Total	4.0000e-005	6.0000e-005	5.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0703	0.0703	0.0000	0.0000	0.0704

3.5 Building Construction - 2017

Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9339
Total	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9339

**3.5 Building Construction - 2017
Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-004	4.3700e-003	7.8700e-003	1.0000e-005	3.2000e-004	7.0000e-005	3.9000e-004	9.0000e-005	6.0000e-005	1.5000e-004	0.0000	1.0221	1.0221	1.0000e-005	0.0000	1.0223
Worker	1.2100e-003	1.7800e-003	0.0160	3.0000e-005	2.3700e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1095	2.1095	1.4000e-004	0.0000	2.1124
Total	1.8100e-003	6.1500e-003	0.0239	4.0000e-005	2.6900e-003	9.0000e-005	2.7900e-003	7.2000e-004	8.0000e-005	8.0000e-004	0.0000	3.1317	3.1317	1.5000e-004	0.0000	3.1347

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9338
Total	0.0637	0.6337	0.4020	5.7000e-004		0.0428	0.0428		0.0394	0.0394	0.0000	52.5954	52.5954	0.0161	0.0000	52.9338

3.5 Building Construction - 2017
Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-004	4.3700e-003	7.8700e-003	1.0000e-005	3.2000e-004	7.0000e-005	3.9000e-004	9.0000e-005	6.0000e-005	1.5000e-004	0.0000	1.0221	1.0221	1.0000e-005	0.0000	1.0223
Worker	1.2100e-003	1.7800e-003	0.0180	3.0000e-005	2.3700e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1095	2.1095	1.4000e-004	0.0000	2.1124
Total	1.8100e-003	6.1500e-003	0.0239	4.0000e-005	2.6900e-003	9.0000e-005	2.7900e-003	7.2000e-004	8.0000e-005	8.0000e-004	0.0000	3.1317	3.1317	1.5000e-004	0.0000	3.1347

3.6 Paving - 2017
Unmitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.6000e-003	0.0246	0.0181	3.0000e-005	1.5000e-003	1.5000e-003	1.5000e-003	1.3900e-003	1.3900e-003	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.6000e-003	0.0246	0.0181	3.0000e-005	1.5000e-003	1.5000e-003	1.5000e-003	1.3900e-003	1.3900e-003	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384

3.6 Paving - 2017
Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	GH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.7000e-004	2.4000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3164	0.3164	2.0000e-005	0.0000	0.3169
Total	1.8000e-004	2.7000e-004	2.4000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3164	0.3164	2.0000e-005	0.0000	0.3169

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	GH4	N2O	CO2e
Off-Road	2.6000e-003	0.0246	0.0181	3.0000e-005	1.5000e-003	1.5000e-003	1.5000e-003	1.3900e-003	0.0000	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384
Paving	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.6000e-003	0.0246	0.0181	3.0000e-005	1.5000e-003	1.5000e-003	1.5000e-003	1.3900e-003	0.0000	1.3900e-003	0.0000	2.4243	2.4243	6.7000e-004	0.0000	2.4384

3.6 Paving - 2017

Mitigated Construction Off-Site

Category	toms/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	2.7000e-004	2.4000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3164	0.3164	2.0000e-005	0.0000	0.3169
Total	1.8000e-004	2.7000e-004	2.4000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3164	0.3164	2.0000e-005	0.0000	0.3169

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

Category	toms/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	0.2722					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397
Total	0.2730	5.4600e-003	4.6700e-003	1.0000e-005	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397

**3.7 Architectural Coating - 2017
Unmitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	0.2722				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	5.4600e-003	4.6700e-003	1.0000e-005	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397
Total	0.2730	5.4600e-003	4.6700e-003	1.0000e-005	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	4.3000e-004	0.0000	0.6383	0.6383	7.0000e-005	0.0000	0.6397

3.7 Architectural Coating - 2017
Mitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.0382	0.0823	0.4124	7.9000e-004	0.0564	1.0100e-003	0.0574	0.0151	9.3000e-004	0.0160	0.0000	58.4892	58.4892	3.1100e-003	0.0000	58.5546
Unmitigated	0.0382	0.0823	0.4124	7.9000e-004	0.0564	1.0100e-003	0.0574	0.0151	9.3000e-004	0.0160	0.0000	58.4892	58.4892	3.1100e-003	0.0000	58.5546

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Condo/Townhouse	52.72	57.28	48.56	152,045	152,045
Total	52.72	57.28	48.56	152,045	152,045

4.3 Trip Type Information

Land Use	Miles						Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by	
Condo/Townhouse	10.80	7.30	7.50	44.00	18.80	37.20	18.80	37.20	86	11	3	

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.493512	0.037574	0.233760	0.143549	0.049865	0.006906	0.012880	0.004830	0.000942	0.002887	0.009149	0.000702	0.003444

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	tms/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9.9205	9.9205	4.5000e-004	9.0000e-005	9.9587
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9.9205	9.9205	4.5000e-004	9.0000e-005	9.9587
NaturalGas Mitigated	1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	10.3693	10.3693	2.0000e-004	1.9000e-004	10.4324
NaturalGas Unmitigated	1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	10.3693	10.3693	2.0000e-004	1.9000e-004	10.4324

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	tms/yr										MT/yr					
	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O
Condo/Townhouse	194314	1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	10.3693	10.3693	2.0000e-004	1.9000e-004	10.4324
Total		1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	10.3693	10.3693	2.0000e-004	1.9000e-004	10.4324

5.2 Energy by Land Use - NaturalGas
Mitigated

Land Use	NaturalGas Use kBTU/yr	tons/yr										MT/yr					
		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Condo/Townhouse	194314	1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	10.3693	10.3693	2.0000e-004	1.9000e-004	10.4324
Total		1.0500e-003	8.9500e-003	3.8100e-003	6.0000e-005	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	7.2000e-004	0.0000	10.3693	10.3693	2.0000e-004	1.9000e-004	10.4324

5.3 Energy by Land Use - Electricity
Unmitigated

Land Use	Electricity Use kWh/yr	MT/yr					CO2e
		Total CO2	CH4	N2O	CO2e	CO2e	
Condo/Townhouse	34101.5	9.9205	4.5000e-004	9.0000e-005	9.9587	9.9587	
Total		9.9205	4.5000e-004	9.0000e-005	9.9587	9.9587	

5.3 Energy by Land Use - Electricity
Mitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
		MT/yr			
Condo/Townhouse	34101.5	9.9205	4.5000e-004	9.0000e-005	9.9587
Total		9.9205	4.5000e-004	9.0000e-005	9.9587

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior
Use Low VOC Paint - Residential Exterior

Category	tons/yr															
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.5997	7.7700e-003	0.7015	2.5000e-004	0.0873	0.0873	0.0873	0.0873	0.0873	0.0873	8.2637	3.6004	11.8641	7.7600e-003	6.5000e-004	12.2285
Unmitigated	0.5997	7.7700e-003	0.7015	2.5000e-004	0.0873	0.0873	0.0873	0.0873	0.0873	0.0873	8.2637	3.6004	11.8641	7.7600e-003	6.5000e-004	12.2285

6.2 Area by SubCategory
Unmitigated

SubCategory	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.0272					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0680					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5020	6.8100e-003	0.6184	2.4000e-004		0.0869	0.0869	0.0869	0.0869	0.0869	8.2637	3.4657	11.7293	7.6300e-003	6.5000e-004	12.0910
Landscaping	2.5600e-003	9.6000e-004	0.0831	0.0000		4.5000e-004	4.5000e-004	4.5000e-004	4.5000e-004	4.5000e-004	0.0000	0.1348	0.1348	1.3000e-004	0.0000	0.1376
Total	0.5997	7.7700e-003	0.7015	2.4000e-004		0.0873	0.0873	0.0873	0.0873	0.0873	8.2637	3.6004	11.8641	7.7600e-003	6.5000e-004	12.2285

6.2 Area by SubCategory
Mitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
tons/yr																
MT/yr																
Consumer Products	0.0680					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5020	6.8100e-003	0.6184	2.4000e-004		0.0869	0.0869	0.0869	0.0869	0.0869	8.2637	3.4657	11.7293	7.6300e-003	6.5000e-004	12.0910
Landscaping	2.5600e-003	9.6000e-004	0.0831	0.0000		4.5000e-004	4.5000e-004	4.5000e-004	4.5000e-004	4.5000e-004	0.0000	0.1348	0.1348	1.3000e-004	0.0000	0.1376
Architectural Coating	0.0272					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.5997	7.7700e-003	0.7015	2.4000e-004		0.0873	0.0873		0.0873	0.0873	8.2637	3.6004	11.8641	7.7600e-003	6.5000e-004	12.2285

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System
- Use Water Efficient Landscaping

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.1029	0.0136	3.3000e-004	1.4912
Unmitigated	1.3204	0.0170	4.1000e-004	1.8059

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Condo/Townhouse	0.52123274	1.3204	0.0170	4.1000e-004	1.8059
	0.328603				
Total		1.3204	0.0170	4.1000e-004	1.8059

7.2 Water by Land Use

Mitigated

Land Use	Mgal	MT/yr			
		Total CO2	CH4	N2O	CO2e
Condor/Townhouse	0.4168867 0.308558	1.1029	0.0136	3.3000e-004	1.4912
Total		1.1029	0.0136	3.3000e-004	1.4912

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

Category/Year	MT/yr			
	Total CO2	CH4	N2O	CO2e
Mitigated	0.7470	0.0442	0.0000	1.6741
Unmitigated	0.7470	0.0442	0.0000	1.6741

8.2 Waste by Land Use

Unmitigated

Land Use	Waste Disposed tons	MT/yr			
		Total CO2	CH4	N2O	CO2e
Condo/Townhouse	3.68	0.7470	0.0442	0.0000	1.6741
Total		0.7470	0.0442	0.0000	1.6741

Mitigated

Land Use	Waste Disposed tons	MT/yr			
		Total CO2	CH4	N2O	CO2e
Condo/Townhouse	3.68	0.7470	0.0442	0.0000	1.6741
Total		0.7470	0.0442	0.0000	1.6741

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation