STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii

February 25, 1997

REF:PB:LT

File No.: MA-2837
180-Day Exp. Date: 5/19/97

MEMORANDUM

TO: Gary Gill, Director
Office of Environmental Quality Control

FROM: Dean Uchida, Administrator
Land Division

SUBJECT: **Finding of No Significant Impact (FONSI) on Conservation District Use Permit Application #MA-2837 for the ~~Cunanan~~ *Single Family Residence; TMK: 4-2-41: 31 and por. 32, Honolua, Maui** *Brennan

The Department of Land and Natural Resources has reviewed the comments received on the draft environmental assessment (DEA) during the public comment period which ended January 7, 1997.

As the approving agency, we have determined that this project will have no substantial impact on the environment.

Please publish the attached final environmental assessment (FEA) in the March 8, 1997 bulletin. We have enclosed a completed OEQC Bulletin Publication Form and four copies of the FEA. An additional copy will be deposited at the Lahaina library by the applicant's agent.

Should you have questions, please call Lauren Tanaka at 587-0385.

Enclosures

1997-03-08-MA-FEA-Brennan

Single Family Residence

Final Environmental Assessment

Brennan Residence
&
Related Improvements

Honolua, Maui, Hawaii
TMK 4-2-04:31 & por.32

CHRIS HART & PARTNERS

Prepared for:

John and Susan Brennan
1112 Mann Road
Mooresville, Indianna 46158

Prepared by:

Chris Hart and Partners
Landscape Architecture and Planning
1955 Main Street, Suite 200
Wailuku, Maui, Hawaii 96793
Phone: 242-1955

FEBRUARY 1997

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I. INTRODUCTION

A. OVERVIEW OF THE REQUEST

Pursuant to Chapter 13-5, Hawaii Administrative Rules, this project involves a request for a Conservation District Use Permit in order to construct a single-family residence and related improvements within the State "Conservation" District located in Honolua, Lahaina District, Island of Maui, Hawaii (TMK 4-2-4:31 and por. 32). The subject property, which measures approximately 3.452 acres, is located within the "Resource" Conservation Subzone.

B. IDENTIFICATION OF THE APPLICANT

Tax Map Key (TMK):	4-2-4:31 & por. 32
Property Owner/Applicant:	John & Susan Brennan 11212 Mann Road Mooresville, Indiana 46158
Planning Consultant:	Chris Hart & Partners Landscape Architecture and Planning 1955 Main Street, Suite 200 Wailuku, Maui, Hawaii 96793 Phone: 242-1955
Accepting Agency:	Department of Land and Natural Resources 1151 Punchbowl Street Honolulu, Hawaii 96813

C. PROPERTY LOCATION AND EXISTING LAND USE

The subject property is located on the west side of the Island of Maui approximately two (2) miles north of Napili, in the *ahupua`a* of Honolua, at Alaelae Point. *See Figure 1.* The subject property is bounded by Honoapiilani Highway to the south and by the Pacific Ocean to the north. *See Figure 2.*

The subject property is currently unoccupied and contains four dilapidated wooden structures as well as piles of debris and abandoned vehicles. A dirt driveway located near the southwest portion of the property provides access off of Honoapiilani Highway.

D. LAND USE DESIGNATIONS

- State Land Use Designation: "Conservation"
  Sub Zone: "Resource"
- West Maui Community Plan: "Conservation"
- Other: "Special Management Area"

E. BACKGROUND INFORMATION

A portion of the subject property, approximately 2.0 acres, was transferred from the Trustees of the Estate of H.P. Baldwin to the Paahana family in 1917. *See Appendix A.* The transfer was in exchange for the loss of the Paahana family's Kuleana lands, which were plowed under, presumably in error, for the planting of pineapple by Honolua Ranch Manager D.T. Flemming in 1913. Records indicate that the Paahana family first constructed a house on the property in 1922. The land served as a dwelling site of one form or another until 1993, when a relative lived on the property without authorization and was evicted through legal action. His dwelling has since been demolished. The property was originally 2 acres size and surrounded entirely by property owned by Maui Land & Pineapple Co., Ltd. and their predecessors. In 1991 a Judgement Quieting, Establishing and confirming title to Real Property awarded to the subject property the 15 foot width of land which separated the parcel from Honoapiilani Highway. This act finally established legal access to the parcel.

In 1995, the Brennan family purchased the property from the descendants of the Paahana family. More recently, the Brennan family acquired an additional 0.982 acres of land adjacent to the property from Maui Land & Pineapple Co., Ltd. The proposed highway access and driveway are located on this acquired property which has since been incorporated into the parcel.

F. PROPOSED ACTION

The applicant proposes to construct a single-story residential dwelling and related improvements. *See Figure Nos. 3 through 9.* The proposed structure incorporates island-style architectural features including split pitch roofs, and covered lanai's. Roof lines and walls are varied in order to reduce the building bulk and massing.

The proposed landscape plan maintains the "roughness" at the east and west edges of the property by preserving the existing ironwood trees and incorporating very little changes to existing conditions. *See Figure5.* The overall intent is to create a naturalistic feeling on the property. The planting plan features the re-establishment of native coastal species along the seaward edge of the property. A number of native species of ornamental trees, shrubs, and groundcover are utilized in areas surrounding the dwelling site.

A dry stacked stone wall will be utilized to identify the property's boundaries. The wall will be constructed of locally quarried blue rock and will be similar to the existing wall delineating the boundary of the single-family residential site approximately 500 feet to the west of the property.

The residence and garage will measure approximately 4,896 square feet and have an approximate maximum height of 23.5 feet. The residence and garage will be constructed of natural-colored stucco with concrete tile roofing. In addition, the proposed project will include the following improvements:

- An arbor (open trellis) which will have an climbing vine.
- Covered lanai areas enclosed by two walls measuring approximately 1,104 square feet.
- A new highway access and paved driveway.
- Installation of new waterline and related improvements.
- Individual wastewater treatment system.
- A shallow asphalt or concrete swale along the makai (north) side of Honoapiilani Highway to prevent embankment erosion (to be discussed further in Section II Drainage and III Drainage).
- Landscape plan and irrigation system which will enhance and further establish naturally occurring native Hawaiian coastal plant colonies.

G. ALTERNATIVES

1. No Action

Alternative land uses under the "no action" option are either not viable or undesirable. The site is not considered viable from an agricultural standpoint based on its relatively small size, rugged topography, and rocky soil characteristics. (See Section II.A.4 Topography and Soils.)

The current site condition is considered undesirable because of piles of litter and debris as well as used automobiles which are scattered throughout the property. (See Section II.A.1 Existing Site Conditions.) The "no action" alternative would not rectify this situation and could lead to future illegal dumping on the property.

Finally, the "no action" alternative would not achieve the Brennan's goal to build a single family residence on the property. The Brennan Family purchased the property from the descendants of the family which historically resided on the property. The property is ideally suited for residential use based on established topographical features and its attractiveness as an oceanfront parcel.

2. Alternative Siting

The proposed house site was chosen based on it's relatively flat topography and available buildable area. Other sites on the property would have required significant grading or filling because of the steep slopes. These other sites would also be more visually intrusive because of their elevation in relation to the Highway. A more western location would require removal of a strand of ironwood trees and would be restricted by the shoreline setback (approximately 66 feet for the subject property). A more eastern location would have a greater impact on the gravesite location and would also involve difficult topographical features. The eastern location would be the most visually intrusive and would also be the most exposed to the constant northeast tradewinds which buffets this section of coastline. In sum, the two other site options were ruled out because of potential impacts to view corridors, lack of suitable building area and other topographical constraints.

3. Alternative Styles, Size and Configuration

The Brennan's chose a well respected local architect in order to develop a pleasing structure that is reflective of contemporary *island style* architecture. The proposed configuration and massing minimize the potential for visual intrusion from the public's perspective. A two story structure was eliminated from consideration based on impacts to public view corridors from the Highway. A monolithic structure with an unaltered roof line would also create an undesirably large building mass. Other architectural styles featuring flat roofs are considered more suited to urban settings and would not be desirable at this location.

The house size and components were chosen based on the Brennan's family size. The Brennan's have three children and a large extended family and plan to relocate to Maui on a full-time basis upon completion of the proposed residence. A reduced house size would not accommodate their needs with respect to their long-term family goals.

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Existing Site Conditions

As noted earlier, the subject property is unoccupied and contains four dilapidated wooden structures as well as scattered piles of debris and abandoned vehicles. *See Figure Nos. 12 & 13.* Some of the debris appears to be associated with the former residential use of the property. This would include household materials and construction materials of the former dwelling.

A total of seven (7) abandoned vehicles were identified within the northern portion of the property. The vehicles may have been dumped at the property by individuals with no connection to the property.

2. Surrounding Land Uses

The subject property is situated along a rugged and rustic coastline approximately one mile northeast of the Kapalua Bay Hotel. Surrounding land uses are reflective of this rural and openspace setting. *See Figure 2.* Surrounding land uses include the following:

- South: Across Honoapiilani Highway is the Kapalua Plantation Estates Subdivision and 18-Hole Golf Course.
- North: Rugged and rustic coastline of the Pacific Ocean.
- West: Single family residence approximately 500 feet west and further west along the coastline is the Kapalua Bay resort complex.
- East: Maui Land and Pineapple, Co. parcel of land. Further (northeast) is the Honolua-Mokuleia Bay Marine Life Conservation District.

3. Climate

Like most areas of Hawaii, Maui's climate is relatively uniform year-round. Characteristic of Hawaii's climate, the subject property experiences mild and uniform temperatures year round, and moderate humidities. The presence of consistent northeasterly tradewinds is a dominating climatic feature at the site for much of the year. Variations in climate on the Island is largely left to local terrain.

Average temperatures at the project site (based on temperatures recorded at Lahaina) range from lows in the 60's to highs in the upper 80's. August is historically the warmest month, while January and February are the coolest. Rainfall at the project site averages approximately 30 inches per year.

4. Topography and Soils

The highest point on the property is a knoll ridge on its eastern border at approximately 80 feet in elevation. This ridge, which contains a strand of Ironwood trees, acts as a partial buffer for the rest of the site from the constant northeast tradewinds. The slope of the subject property varies with the average being 9 %. The property slopes downward from Honoapiilani Highway on the south then levels out near the center of the property at approximately 40 feet in elevation. It appears that this center portion of the property was previously graded for prior residential use. From there, the property continues to moderately slope downward toward the northern limits, which is delineated by steep shoreline cliffs approximately 20 to 30 feet in height and a rugged coastline.

Underlying the subject property are soils belonging to the Waiakoa-Keahua-Molokai association. This soil association is characterized by moderately deep, nearly level to moderately steep, well drained soils that have a moderately fine textured subsoil and is found on low uplands. The soil types specific to the project site is Rock Land (rRK). Rock Land is made up of areas where exposed rock covers 25 to 90 percent of the surface. The rock outcrops and the very shallow soils are the main characteristics. The rock outcrops are mainly basalt and andesite. The soil material associated with the rock outcrops is very sticky and plastic and has a high shrink-swell potential.

5. Flood Hazard

The subject property is located in an area that has been designated by the Flood Insurance Rate Map as Zone "C", an area of minimal flooding. The coastal fringe bordering the property's northern limits is located in Zone "V29". "Zone V29" is designated for areas along the coast inundated by the 100-year coastal flood with wave velocity (wave action). The base flood elevation is determined to be 19 feet MSL.

6. Terrestrial Biota

Alien vegetation dominates the Honolua and Mokuleia Gulch areas below the 1,500 ft. elevation. (Michael T. Munekiyo Consulting, Inc., 1992) A survey by Belt Collins (1979) of the lower part of Honolua Valley and lower northeast portion of Mokuleia Gulch found the most significant plant within the valley area to be large specimen monkey pod trees. Plant and animal life at the subject property are reflective of the site's coastal setting which is consistently exposed to northeast tradewinds and salt spray from waves crashing against the coast. Vegetation consists of stands of Ironwood trees, koa haole, Christmas-berry, red hibiscus, hau, and various grasses and shrubs. In addition, native Hawaiian plants identified within the subject property included `Ohelo kai (Lycium sandwicense), `Ilima papa (Sida fallax), `Akulikuli (Sesuvium portulacastrum), Neme, a.k.a. Kipukai (Heliotropium curravicum), Pa`u o hi`iaka (Jacquemontia ovalifolia), and Sedge (Fimbristylus). (Identified on a site visit with DLNR, Division of Forestry and Wildlife personnel, on 2/26/96.) There are no rare, endangered or threatened species of plants at the site.

Animal life in the project vicinity similarly reflects the natural character of the region. Avifauna typically found in the subject area include the common myna, several species of dove, cardinal, house finch, and house sparrow. Mammals common to this area include cats, dogs, rodents, mongoose. There appear to be a few sea bird nesting sites located along the northeast-facing coastal cliffs which abut the property's boundary.

7. Marine Environment

The subject property's coastal environment is characterized by rugged, wave-cut cliffs (average height 20 feet) that are interspersed with coves which are generally exposed to waves and seas generated by the northeast tradewinds and winter swells generated by northern Pacific storms. As a result of the exposure to this high energy environment, the underwater marine conditions are usually highly turbulent especially during the winter months. In addition, the periodic offshore deposition of debris from the natural drainage ways during storms often creates turbidity plumes.

The State Honolua-Mokuleia Bay Marine Life Conservation District (MLCD) is located to the northeast of the property. *See Figure 10.* The MLCD consists of

two distinct bays receiving waters from adjacent, but separate watershed areas. Honolua Bay, the northern most bay, is the larger of the two with steep shoreline cliffs bordering shallow fringing reefs on each side of the bay. The configuration and orientation of Honolua Bay shelters it from waves under prevailing conditions. This lack of wave stress allows for the establishment of abundant and diverse reef corals along the reef flats. The reef coverage ranks among the highest cover of reef communities in Hawaii. (Michael T. Munekiyo Consulting, Inc., 1992)

Mokuleia Bay (also know as Slaughterhouse Beach) consists of steep shoreline cliffs and a large white sand beach which is accessed via a pedestrian trail from the clifftop at Honoapiilani Highway. Mokuleia Bay is less indented than Honolua Bay, and is therefore less protected. Because of its greater exposure to open ocean conditions, coral communities are not as well established within Mokuleia Bay as within Honolua Bay, thus the corals and fringing reef cover a relatively smaller area. Exposure to ocean swells makes Mokuleia Bay attractive to body surfers and bogey borders.

Shoreline sediment pollution as a result of flooding and land use practices has been a long standing concern within Honolua Bay. The Honolua Watershed Work Plan, prepared by the County of Maui in 1976 noted that "Extensive sediment deposition and discoloration of the ocean along the (Honolua) watershed shore areas occurs with every heavy rainfall. ... The ocean, for a distance of 1/4 to 1/2 mile, stays red for two to four weeks following the normal rainstorm." More recently, concern has been raised about the possibility of chemical pollution from fertilizers entering the marine environment at both Honolua and Mokuleia Bays through surface and groundwater. (Michael T. Munekiyo Consulting, Inc., 1992)

Coastal sediment pollution has not been identified as a problem widely associated with Mokuleia Bay. It does not appear that surface water from Mokuleia Gulch directly discharges into Mokuleia Bay. Honoapiilani Highway, as well as existing golf course improvements (e.g. cart path crossing and golf course play areas) above Mokuleia Bay result in a series of sediment basin conditions for drainage from Mokuleia Gulch, effectively preventing it from entering the bay. (Michael T. Munekiyo Consulting, Inc., 1992)

It is noted that while there is no apparent sediment discharge from Mokuleia Gulch, the sediment plume from Honolua Stream (generated after a large storm) is carried by the prevailing current in the direction of Mokuleia Bay. This phenomenon may temporarily affect the quality of water in Mokuleia Bay. However, it is usually short lived due to the exposure of Mokuleia Bay to turbulent ocean conditions generated by prevailing tradewinds and north and northwest winter swells.

The State Department of Health classifies the waters fronting the property as Class "A", as are nearly all the waters off-shore of the Lahaina District.

8. Air Quality

Air quality in the Kapalua region is considered good as point sources and non-point sources of emission are not significant to generate high concentration of pollutants. The relatively high quality of air can also be attributed to the regions constant exposure to winds which quickly disperse concentrations of emissions. This rapid dispersion is evident during burning of sugar cane in fields located in the Kaanapali region.

9. Noise Characteristics

The primary sources of background noise in the vicinity of the project site is traffic noise from Honoapiilani Highway and natural background conditions (e.g. wind and shoreline surf).

10. Visual Resources

The subject property is located between the shoreline and Honoapiilani Highway. The eastern end of the Island of Molokai and the Pailolo channel can be seen from sections of Honoapiilani Highway fronting the parcel. However, the steep drop-off at the makai edge of the property as well as the stands of Ironwood trees prevent the actual coastline fronting the subject parcel from being visible from the highway. This view shed is not unique along this section of Honoapiilani Highway. There are numerous vantage points of Pailolo Channel and East Molokai along this very scenic Highway as one proceeds east towards and Honolua Bay and Nakalele Point. Mauka views (south) from the project site include the upper slopes of the West Maui Mountains.

11. Archaeological/Historical Resources

An Archaeological Inventory Survey was conducted for the subject property on July 24-28, 1995. *See Appendix B.* The inventory survey consisted of 100%-coverage pedestrian ground survey, limited subsurface test excavations, and historical documentary research (including informant interviews). A total of five archaeological sites consisting of six component features were newly identified during the survey. The identified sites include one permanent habitation site (site 4143) and one that is possibly associated with a permanent habitation (Site 4144); one historic rock wall (boundary) site; one burial site (Site 4142); and one cooking feature associated with a site of indeterminate function (Site 4141).

The archaeological study noted that apart from the *possibility* that Sites 4143 and 4144 are prehistoric, there is a notable lack of sites of prehistoric age in the project area. This may be due to the effects of a small size of the area and that much of the parcel has been subjected to significant land modification activities associated with over 70 years of residential use. The archaeologist also noted that there is a lack of a variety of formal feature types such as platforms, pavements, and trails. Again, this may be due to the small and disturbed nature of the sample area.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The population of the County of Maui has exhibited relatively strong growth over the past decade with the 1990 population estimated to be 100,504, a 41.9% increase over the 1980 population of 70,847. Growth in the County is expected to continue, with resident population projections to the year 2000 and 2010, estimated to be 124,561 and 138,378, respectively.

The West Maui Community Plan region follows the Countywide pattern of population growth, with the region's 1990 population of 14,574, expected to rise to 18,555 by the year 2000 and to 22,633 by the year 2010.

2. Economy

The economy of the West Maui Community Plan region is dependent upon the visitor and agricultural industries. The economy of the Napili area consists of resort, commercial and retail facilities which supports the region's two large industries.

C. PUBLIC SERVICES

1. Recreational Facilities

Recreational opportunities in the Napili and Kapalua resort region include shoreline and picnicking activities at nearby Flemmings Beach Park, "Slaughterhouse" beach, and Honokowai Beach Park as well as other regional beach parks. The State Department of Health's Honolua-Mokuleia Bay Marine Life Conservation District, located immediately adjacent to the property's north-east coastline, is utilized by divers and snorkelers as well as surfers. Fishing is prohibited in the Marine Life Conservation District. Abutting the property's western border are trails which appear to be utilized by the public to access the shoreline. The subject property does not appear to contain any routinely utilized shoreline access trails.

2. Police and Fire Protection

Police protection for the Napili region is provided by the County's Lahaina Police Department, approximately 7.5 miles from the project site.

Fire prevention, suppression, and protection services for the Napili region is provided by the County Department of Fire Control's Napili Station, located approximately 2 miles from the subject area.

3. Solid Waste

Single-family residential solid waste collection service is provided by the County of Maui on a once-a-week basis. Residential solid waste collected by County crews are disposed at the County's 55-acre Central Maui Landfill, located four miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies.

4. Health Care

Maui Memorial Hospital is the only major medical facility on the island. Acute, general and emergency care services are provided by the 145-bed facility. In addition, the West Maui region's residents are served by numerous privately operated medical/dental clinics and offices located in the area.

5. Schools

The Lahaina region is served by the State Department of Education's public school system accommodating elementary, intermediate and high school students.

D. INFRASTRUCTURE

1. Wastewater

Domestic wastewater generated in the West Maui region (Lahaina to Kapalua) is conveyed to the County's Lahaina Wastewater Reclamation Facility located approximately 4.5 miles southeast of the project site.

The subject property is not serviced by the County's Domestic wastewater treatment system. As such, septic tanks are required for wastewater disposal, with the State Department of Health (DOH) as the approving authority.

2. Water

The Lahaina region is served by the Board of Water Supply's (BWS) domestic water system. The system serves the coastal areas from Launiupoko to Kaanapali, and from Honokowai to Napili. The resort areas of Kaanapali and Kapalua are fully served by private water systems.

Two water lines, 6-inch and 4-inch (fire and domestic lines, respectively) are located approximately 200 feet south (mauka) of the subject property within the Plantation Estates subdivision. These lines are owned and operated by Kapalua Water Company, Ltd.

3. Roadways

Honoapiilani Highway is the roadway which provides the only access between West Maui and the rest of the Island. Currently, access to the project site is

provided via a dirt driveway off of Honoapiilani Highway near the southwestern corner of the property. A new access driveway is proposed as part of the project near the southeastern corner of the property. The current driveway will be abandoned.

The posted speed limit on Honoapiilani Highway is 15 miles per hour (mph) in the vicinity of the site due to blind curves along the highway. The proposed driveway for the project site is situated midway between two such curves along an almost straight stretch of road with gentle curves. *See Appendix C.*

4. Drainage

The subject parcel's highest point is a knoll ridge on it's eastern border. The parcel receives some offsite run-off on it's southern side from Honoapiilani Highway and there is evidence of erosion of the highway embankment near the center of the property from this run-off. *See Appendix D.* Existing run-off flows from the high point along the property's eastern and southern border toward the low point along the northern border where it eventually enters the sea.

The existing onsite surface run-off peak volume generated during the 10-year 1-hour design rainstorm is calculated to be 9.05 cfs.

III. PROJECT IMPACT ASSESSMENT

A. PHYSICAL ENVIRONMENT

1. Site Conditions

As previously discussed, the project area has accumulated rubbish and debris from previous periods of use as well as abandonment. Prior to initiation of construction the applicant would remove the dilapidated wooden structures, debris, and abandoned vehicles. The central portion of the site will be restored to a residential use consistent with the historical use of the area. Further, the proposed landscape plan maintains the "roughness" at the east and west edges of the property by preserving the existing ironwood trees and incorporating very little changes to existing conditions. The overall intent is to create a naturalistic feeling on the property. The planting plan features the re-establishment of native coastal species along the seaward edge of the property. A number of native species of ornamental trees, shrubs, and groundcover are utilized in areas surrounding the dwelling site. The dry stacked stone wall to identify the property's boundaries will be consistent with other walls in the area.

The proposed project is viewed as a beneficial and positive action and will enhance and improve the existing conditions of the property.

2. Surrounding Uses

The property has been used in the past for single-family residential purposes. The proposed project represents a re-establishment of that use. The proposed single-story residence and related improvements are consistent and compatible with other surrounding residential uses including Kapalua Plantation Estates and the single-family residences west of the property on the makai side of the highway. *See Figure* 2. The proposed single-family residence and related improvements are not anticipated to have any adverse impacts upon surrounding land uses.

3. Topography

The building site will be situated on the relatively flat area located near the center of the property at an approximate elevation of 40 feet. The proposed driveway will follow existing contours and avoid any steep grades. The

applicant proposes to preserve the natural character of the subject property by maintaining existing topographical features as much as possible. As such, the proposed project will involve minimal grading and will not have a significant impact upon existing topographical features.

4. Terrestrial Biota

There are no known significant habitats of rare, endangered or threatened species of flora located on the project site. The project will involve the removal of the dilapidated wooden structures, debris, and abandoned vehicles as well as the clearing of some various weeds and shrubs for the construction of the project. In order to preserve the natural feeling of the property, the majority of existing ironwood trees will not be disturbed. In addition, the landscape improvement plan will enhance and further establish native Hawaiian plant colonies along the shoreline portion of the property. Thus, the proposed project is not anticipated to have an adverse impact upon existing flora.

There are no known significant habitats of rare, endangered or threatened species of fauna located on the project site. The project will not alter the coastline abutting the property's north-eastern boundary where there appear to be sea bird nesting sites. The proposed house site is approximately 200 feet west or downwind from this section of coastline. Further, the house site is separated from this coastal section by a small ridge running from the Highway to the coast which is covered with ironwood trees. Given this separation in distance and by topographical features, the apparent nesting sites should not be impacted as a result of this project.

5. Marine Resources

Potential impacts to marine resources could occur during the construction and post construction phases due to alterations in storm run-off conditions. Stormwater discharge during large construction projects can lead to increased sedimentation in coastal waters due to prolonged exposure of bare soil. The State Department of Health regulates storm water discharge from construction projects greater than five (5) acres through the National Pollution Discharge Elimination System Permit (NPDES) process. In the case of the proposed project, the entire property is only 3.5 acres in size and, thus, would not trigger the NPDES requirements. It is important to note that the site plan for the project

was developed paying careful attention to existing topography. As a result, the area of disturbance has been minimized. In addition to minimizing the amount of necessary grading for the project the following measures will be implemented as a part of the soil erosion management plan during the site development phase:

1. Minimize the time of construction.
2. Early construction of drainage control features (as identified in the drainage control plan, Appendix D.)
3. Establishment of ultimate ground cover outside of active construction areas as soon as possible.
4. Use temporary berms and cut-off ditches, where needed for control of erosion.
5. Graded areas shall be thoroughly watered after construction activity has ceased for the day and on weekends.

During the post-construction phase, impacts to marine water quality could result from increases in storm water run-off and wastewater disposal. The hydrology report prepared for the project estimated that the increase in impervious surfaces and other ground alterations would result in an additional 0.07 cfs in onsite surface run-off peak volume during the 10-year 1-hour design rainstorm. *See Appendix D.* This would generate an additional 252 cu ft of run-off. In order to mitigate against this increase in flows, the applicant proposes to install three detention (seepage) pits with grated inlets, one at the low point of the driveway and two below the terraces, where run-off patterns converge and can be readily intercepted. The detention of each seepage pit is 201 cu ft, for a total capacity of 603 cu ft, which is more than double the total run-off increase. As a result, there should be no noticeable increase in stormwater run-off as a result of project.

The proposed landscape plan has also been developed with a concern for impacts to nearshore waters. The plan features a shoreline buffer planting strip featuring native groundcovers and shrubs such as Naupaka, Ilima, Pohinahina and Akulikuli which naturally occur at the site and in similar ecological conditions. *See Figure 5.* These plant types were chosen based on their suitability to the windy nearshore environments. As a result, once the plants are

established there will be little need for irrigation or fertilizers. The shoreline buffer planting strip will also serve to filter any stormwater run-off which makes its way from the property to the ocean.

The wastewater disposal system will be regulated by the State Department of Health. *See Appendix E.* A septic tank and leach field will be incorporated utilizing the design and performance standards outlined in Chapter 62, Hawaii Administrative Rules. The leach field will be located at an elevation of approximately 34 feet above sea level. The leach field has been sited in order to maximize the distance to the shoreline as well as the depth between the infiltrator chamber system and sea level. The septic tank will have a maintenance contract which shall include provisions for sludge disposal by a private pumping at a site approved by the State Department of Health. Based on the proposed depth to the water table, distance from the shoreline and proper adherence to the Department of Health's design and performance requirements, the proposed septic tank system should not have a significant impact on marine water quality.

The foregoing discussion demonstrates that appropriate mitigation measures have been incorporated in order to minimize the potential impacts to nearshore waters. It should be noted that the marine environment in the immediate project vicinity is highly turbulent and that in the event that surface run-off or subsurface flows from the septic system enter nearshore waters they will be rapidly diluted. Lastly, the relative degree of potential impacts from this individual dwelling is minimal compared to the influence of naturally occurring as well as developed conditions (e.g. groundwater flows and agricultural golf course development.)

6. Air Quality

Air quality impacts attributed to the project will include dust generated by short-term, construction-related activities. Site work such as grubbing and construction of the residence, for example, may generate some airborne particulates. Dust control measures such as regular watering and sprinkling will be implemented as needed to minimize potential wind-blown emissions. The proposed project is not anticipated to have adverse long-term affect upon the surrounding air quality.

7. Noise

As with air quality, ambient noise conditions may be impacted by construction activities. Heavy construction equipment would be the dominant source of noise during the site construction period. However, once completed, it is anticipated that the project will not have an adverse impact upon existing noise characteristics.

8. Visual Resources

The proposed residence and other related improvements will be located at or below the grade of Honoapiilani Highway which ranges in elevation from 50 to 80 ft. above MSL along the entire property frontage. The proposed finished floor of the residential structure is 40 ft. The highest points along the proposed roof lines are 57.5 ft., 63.5 ft. and 56 ft (from southwest to northeast). The cross sections in *Figure 6* illustrate that the view plane from the highway in the immediate project vicinity is at or above the highest portion of the roof lines. Therefore, a majority of the view shed across Pailolo Channel and of the East end of Molokai from Honoapiilani Highway will be maintained. Further, in order to preserve the natural and openspace character of the property, the majority of existing plants and trees at either end of the property will not be disturbed nor will the topography be significantly altered. Based on the substantial amount of similar vantage points along this scenic highway and the minimal impact to the view shed by the proposed structures, the project is not considered to be a significant impact on visual resources in the area.

9. Archaeological Resources

Based on Federal and State evaluation criteria, three of the project area archaeological sites identified in the Archaeological Inventory Survey are assessed as "No Longer Significant". These sites (4141, 4144, and 4145) are significant solely for the information that has already been collected. The present level of recording is considered sufficient to have recovered all significant archaeological information. No further data collection or recovery is recommended for these sites.

Site 4142 (the historic graves) is considered culturally significant and "Preservation as is" is recommended. These grave sites are associated with the previous residential use of the property. Descendants of the buried individuals

had been previously contacted in order to establish an easement for access and maintenance purposes. This easement was apparently mistakenly located as there is no indication of graves in this identified area, yet surface grave sites were located by the archaeologist approximately 28 ft. to the northeast. Family members were recently contacted in order to verify that the grave sites which were located were indeed those of their relatives. The family members agree that there appears to have been an error in the location of the existing grave easement. *See Appendix G - Letter dated 9/1/96.* As such, the grave site easement will be re-established at the location of the identified grave sites (Site 4142). Access from the highway will be provided to the family members.

The last identified site (4143) is assessed as significant for information content, and further data collection, with no preservation, is recommended. However, if this site is to be preserved and incorporated into the landscaping of the property, further data collection will not be necessary.

Based upon the foregoing findings and mitigation measures, the proposed project is not anticipated to have an adverse impact upon archaeological or historic cultural resources.

B. SOCIO-ECONOMIC ENVIRONMENT

On a short-term basis, the project will support construction and construction-related employment.

On a long-term basis, the construction of the project will not have an impact on employment opportunities, nor will it have an impact upon local population levels.

C. PUBLIC SERVICES

The proposed project is not anticipated to adversely affect public services such as police or fire protection or medical services in terms of service area. Solid Waste collection service for the proposed project site will be provided by private collection companies. Educational and recreational facilities will not be impacted as a result of this project.

D. INFRASTRUCTURE

1. Wastewater

A Sewage Report was prepared for the proposed project. *See Appendix E.* The report concluded that the wastewater design flow for the proposed residence will be 800 gallons per day (GPD). Hawaii Administrative Rules Title II Department of Health, Chapter 62 require that the minimum septic tank size for a four bedroom residence be 1,200 gallon capacity. Accordingly, the applicant is proposing to utilize a 1,250 gallon septic tank system for the treatment of wastewater from the proposed project. The septic tank and leach field will be located on the southeast side of the residence and will meet the wastewater treatment and disposal design and performance requirements of the State Department of Health (DOH). The leach field has been sited in order to maximize the distance to the shoreline as well as the depth between the infiltrator chamber system and sea level. The septic tank will have a maintenance contract which shall include provisions for sludge disposal by a private pumping at a site approved by the State Department of Health.

2. Water

A Domestic and Fire Flow Calculations Report was prepared for the proposed project. *See Appendix F.* The applicant is proposing to extend the two existing 6-inch and 4-inch waterlines from the Plantation Estates via a 15 foot easement to the property. The water lines are owned and operated by Kapalua Water Company, Ltd. Two water meters as well as two standpipes would be placed on these lines. A 3/4" meter would be installed for domestic purposes on the 4-inch line. A 3/4" meter would be installed for irrigation on the 6-inch fire line. The 6-inch fire line would be extended to a standpipe adjacent to the driveway near the turn-around, as well as to the standpipe to be located within the highway right-of-way. The proposed project would not have an impact upon county water systems.

3. Traffic

A Sight Distance Analysis was prepared for the proposed project. *See Appendix C.* The posted speed limit along Honoapiilani Highway in the vicinity of the project is 15 mph. Required sight distances for the subject property (based on 20 mph speed limit) are 225 feet sight distance to the left (D_L) and

150 feet sight distance to the right (D_R). The available sight distances from the proposed driveway are 490 feet left (D_L) and 495 feet right (D_R). Therefore, at the intersection of Honoapiilani Highway with the proposed driveway, the available sight distance exceeds the minimum required.

4. Drainage

The proposed project will result in an increase of 0.07 cfs in onsite surface run-off peak volume during the 10-year 1-hour design rainstorm. *See Appendix D.* This would generate an additional 252 cu ft of run-off. The applicant proposes to place three detention (seepage) pits with grated inlets, one at the low point of the driveway and two below the terraces, where run-off patterns converge and can be readily intercepted. The detention of each seepage pit is 201 cu ft, for a total capacity of 603 cu ft, which is more than double the total run-off increase.

The applicant is also proposing to construct a shallow asphalt or concrete swale along the makai side of Honoapiilani Highway to intercept run-off from Honoapiilani Highway and prevent embankment erosion such as occurs under existing conditions. The applicant will also install a gravel filled detention basin at the discharge end of this swale to protect the embankment and to collect debris. This run-off will be diverted towards the existing Ironwoods tree stand to slowly dissipate towards the shoreline.

As such, the proposed project will have negligible impact on the existing hydrology and adjoining or downstream properties.

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE LAWS

The Hawaii Land Use Law, Chapter 205, Hawaii Revised Statutes, establishes four major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agriculture", and "Conservation". The subject property is located within the State "Conservation" District. Within the "Conservation" District there are established subzones. The following are the established subzones: "Protective", "Limited", "Resource", "General", and "Special". The subject property is located within the "Resource" subzone. Single family residences are identified as a permitted use within the "Resource" subzone subject to the approval of a Conservation District Use Permit by the Board of Land and Natural Resources.

1. Conservation District Use Application

Pursuant to Chapter 13-5-30, Hawaii Administrative Rules (HAR), all land uses within the "Conservation" District require a Conservation District Use Application (CDUA) to be filed with the Department of Land and Natural Resources and approved by the Department or the Board of Land and Natural Resources. As part of the CDUA, proposed land uses are evaluated with respect to criteria established in Sub-Section 13-5-30(c). The project's relationship to the CDUA Criteria is provided below.

Criteria No.1: The proposed land use is consistent with the purpose of the Conservation District.

Response: The purpose of the Conservation District, pursuant to Chapter 13-5-1, HAR, is to regulate land use for the purpose of conserving, protecting, and preserving the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare. As demonstrated in this Environmental Assessment, the proposed project has been designed in order to minimize potential adverse impacts to the area's natural resources and has incorporated appropriate management principles in order to promote long-term

sustainability and health, safety and welfare. The landscape planting plan is designed to be compatible with the surrounding environs, and seeks to enhance and preserve native coastal plant species. Storm run-off will be directed into seepage pits in order to minimize impacts from the increased run-off due to the addition in impervious surfaces. A shoreline planting strip will further buffer the ocean from the negative impacts of non-point source run-off. The use of plants which are well adapted to this windy coastal environment will lesson the need for fertilizers and intensive irrigation. The project has also been designed to be compatible with the existing topography and will result in minimal alterations of terrain. Finally, the proposed re-establishment of residential use will result in the clean up of collected piles of debris and used automobiles. Based on the foregoing, the proposed project is viewed as a beneficial and positive action in terms of the State's natural resources.

Criteria No.2: The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur.

Response: The objective of the "Resource" subzone, pursuant to Chapter 13-5-13, HAR, is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The proposed request represents the re-establishment of residential use of the property, a use which had occurred for approximately 70 years, until 1993. As noted above, the applicant wishes to preserve or improve upon the natural resources of the subject property to the fullest extent possible and has incorporated appropriate design principles and management plans. Through the incorporation of a run-off management plan, shoreline buffer planting strip, uses of species adapted to the area, and sensitive siting of structures, the proposed project represents a long-term sustainable use of the property. The proposed project will preserve and enhance the natural resource features on both ends of the property as well as the shoreline. As documented in this Environmental Assessment, the applicant will comply with Federal and State criteria for protection of archaeological resources which occur on-site. A historic grave site

will be preserved and an access easement has been provided to descendants of the buried individuals.

Criteria No.3: The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawaii Revised Statutes, entitled "Coastal Zone Management", where applicable.

Response: The subject property is located within the Special Management Area (SMA). Construction of a single-family residence is exempt from the SMA requirements. However, the project must comply with Shoreline Setback requirements. For the subject property the shoreline setback line is established at approximately 66 ft., pursuant to the Shoreline Area Rules of the Maui Planning Commission (§12-5-6). The proposed residence is situated mauka (inland) of the shoreline setback line, and, thus does not require a shoreline setback variance (see Figure 3.) In addition, the rules allow for the establishment of landscaping, irrigation, minor structures and paved walkways for public access within the shoreline setback area without a shoreline setback variance. These features require administrative review by the Maui County Planning Department in order to insure that they meet the appropriate definitions for these exempt features. In summary, no shoreline setback variance will be required for the project.

Criteria No.4: The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.

Response: The ocean is the nearest significant natural resource in close proximity to the project. *Figure 10* shows the location of the Honolua Bay-Mokuleia Bay Marine Life Conservation District (MLCD) which was established in order to preserve and protect this unique marine resource. The project site is adjacent to the MLCD and as such care needs to be taken to ensure that no further degradation of this resource takes place.

Potential impacts to marine resources could occur during the construction and post construction phases due to alterations in storm run-off conditions. Stormwater discharge during large construction projects can lead to increased sedimentation in coastal waters due to prolonged exposure of bare soil. The State Department of Health regulates storm water discharge from construction projects greater than five (5) acres through the National Pollution Discharge Elimination System Permit (NPDES) process. In the case of the proposed project, the entire property is only 3.5 acres in size and, thus, would not trigger the NPDES requirements. It is important to note that the site plan for the project was developed paying careful attention to existing topography. As a result, the area of disturbance has been minimized. In addition to minimizing the amount of necessary grading for the project the following measures will be implemented as a part of the soil erosion management plan during the site development phase:

1. Minimize the time of construction.
2. Early construction of drainage control features (as identified in the drainage control plan, Appendix D.)
3. Establishment of ultimate ground cover outside of active construction areas as soon as possible.
4. Use temporary berms and cut-off ditches, where needed for control of erosion.
5. Graded areas shall be thoroughly watered after construction activity has ceased for the day and on weekends.

During the post-construction phase, impacts to marine water quality could result from increases in storm water run-off and wastewater disposal. The hydrology report prepared for the project estimated that the increase in impervious surfaces and other ground alterations would result in an additional 0.07 cfs in onsite surface run-off peak volume during the 10-year 1-hour design rainstorm. *See Appendix D.*. This would generate an additional 252 cu ft of run-off. In order to mitigate against this increase in flows, the applicant proposes to install three detention (seepage) pits with grated inlets, one at the low

point of the driveway and two below the terraces, where run-off patterns converge and can be readily intercepted. The detention of each seepage pit is 201 cu. ft., for a total capacity of 603 cu. ft., which is more than double the run-off increase. As a result, there should be no noticeable increase in onsite stormwater run-off peak volume as a result of project.

The proposed landscape plan has also been developed with a concern for impacts to nearshore waters. The plan features a shoreline buffer planting strip featuring native groundcovers and shrubs such as Naupaka, Ilima, Pohinahina and Akulikuli which naturally occur at the site and in similar ecological conditions. *See Figure 6.* These plant types were chosen based on their suitability to the windy nearshore environments. As a result, once the plants are established there will be little need for irrigation or fertilizers. The shoreline buffer planting strip will also serve to filter any stormwater run-off which makes its way from the property to the ocean.

The wastewater disposal system will be regulated by the State Department of Health. A septic tank and leach field will be incorporated utilizing the design and performance standards outlined in Chapter 62, Hawaii Administrative Rules. The leach field will be located at an elevation of approximately 34 feet above sea level. The leach field has been sited in order to maximize the distance to the shoreline as well as the depth between the infiltrator chamber system and sea level. The septic tank will have a maintenance contract which shall include provisions for sludge disposal by a private pumping at a site approved by the State Department of Health. Based on the proposed depth to the water table, distance from the shoreline and proper adherence to the Department of Health's design and performance requirements, the proposed septic tank system should not have a significant impact on marine water quality.

The foregoing discussion demonstrates that appropriate mitigation measures have been incorporated in order to minimize the potential impacts to nearshore waters. It should be noted that the marine

environment in the immediate project vicinity is highly turbulent and that in the event that surface run-off or subsurface flows from the septic system enter nearshore waters they will be rapidly diluted. Lastly, the relative degree of potential impacts from this individual dwelling is minimal compared to the influence of naturally occurring as well as developed conditions (e.g. groundwater flows and agricultural golf course development.)

Criteria No.5: The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, *appropriate to the physical conditions and capabilities of the specific* parcel or parcels.

Response: The property has been used in the past for single-family residential purposes. The proposed project represents a re-establishment of that use and has been designed in accordance with the previous physical alterations to the property. The applicant proposes to preserve the natural character of the subject property by maintaining existing topographical features as much as possible. The building site will be situated on the relatively flat portion of the property located near the center of the property. The proposed driveway will follow existing contours and avoid any steep grades. As such, the proposed project will involve minimal grading of the property.

The proposed single-story residence and related improvements are consistent and compatible with other surrounding residential uses including Kapalua Plantation Estates and the single-family residences west of the property on the makai side of the highway. *See Figure 2.*

Criteria No.6: The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.

Response: The subject property is located between the shoreline and Honoapiilani Highway. The eastern end of the Island of Molokai and the Pailolo channel can be seen from sections of Honoapiilani Highway fronting the parcel. However, the steep drop-off at the makai edge of the property as well as the stands of Ironwood trees prevent the actual coastline fronting the subject parcel from being visible from the highway. This view shed is not unique along this section of Honoapiilani Highway. There are numerous vantage points of Pailolo Channel and East Molokai along this very scenic Highway as one proceeds east towards and Honolua Bay and Nakalele Point.

The proposed residence and other related improvements will be located at or below the grade of Honoapiilani Highway which ranges in elevation from 50 to 80 ft. above MSL along the entire property frontage. The proposed finished floor elevation of the residential structure is 40 ft. The highest points along the proposed roof lines are at elevations 57.5 ft., 63.5 ft. and 56 ft (from southwest to northeast, respectively). The cross sections in Figure 6 illustrate that the view plane from the highway in the immediate project vicinity is at or above the highest portion of the roof lines. Therefore, a majority of the view shed across Pailolo Channel and of the East end of Molokai from Honoapiilani Highway will be maintained. Further, in order to preserve the natural and openspace character of the property the majority of existing plants and trees at either end of the property will not be disturbed nor will the topography be significantly altered.

The existing beauty of the coastline will be maintained through adherence to a 66 ft. setback for all structures. (The setback from northern shoreline section is approximately 100 feet.) The shoreline planting area, consisting of native groundcovers, will enhance and preserve coastal plant colonies at the site. No physical alterations will be made to the rocky section of the shoreline area.

Prior to construction, the applicant will remove the four dilapidated wooden structures as well as the piles of debris and abandoned vehicles that are located on the site.

Based on the substantial amount of similar vantage points along this scenic highway, the minimal impact to the view shed by the proposed structures, proposed shoreline setbacks, shoreline area enhancement measures, as well as the positive action of cleaning up existing litter and debris, the project is anticipated to improve upon the existing natural beauty and open space characteristics of the property.

Criteria No. 7: Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.

Response: The subject property was recently consolidated and re-subdivided in order to incorporate a 0.98 acre portion of parcel 32 with parcel 31 of TMK: 4-2-04. This action was approved via a departmental permit issued by DLNR on August 23, 1996. The addition of the 0.98 acre northeastern portion of the property allows for the establishment of a safer driveway access that is less visually intrusive than the existing dirt driveway. Locating the driveway in this new location also allows for more visual screening of the proposed dwelling and the driveway itself. In sum, the addition of this land area provides for a better site plan and does not increase the intensity of land use in the Conservation District.

Criteria No.8: The proposed land use will not be materially detrimental to the public health, safety and welfare.

Response: As demonstrated in this EA, the project will comply with all appropriate governmental requirements with regards to public environmental and health concerns during the construction and post-construction phases. At the intersection of Honoapiilani Highway with the proposed property driveway, the available sight distance exceeds the minimum required. Appropriate mitigation measures, which have been identified in this EA, will be incorporated in order to minimize potential adverse effects upon the public's health, safety and welfare.

B. GENERAL PLAN OF THE COUNTY OF MAUI

The General Plan of the County of Maui (1980) update provides long term goals, objectives, and policies directed toward the betterment of living conditions in the County. Addressed are social, environmental, and economic issues which influence future growth in Maui County. The proposed project is consistent with the following General Plan objective and policies:

Objective: To use the land within the County for the social and economic benefit of all the County's residents.

Policies:

- Mitigate environmental conflicts and enhance scenic amenities, without having a negative impact on natural resources.

Objective: To preserve and protect the County's unique and fragile environmental resources.

Policies:

- Preserve for present and future generations the opportunity to experience the natural beauty of the islands.
- Discourage the introduction of noxious foreign species into Maui County's unique island ecosystem.

Objective: To provide a choice of attractive, sanitary and affordable homes for all our residents.

Policies:

- Encourage the construction of housing in a variety of price ranges and geographic locations.

C. WEST MAUI COMMUNITY PLAN

Nine (9) community plan regions have been established in Maui County. Each region's growth and development is guided by a Community Plan which contain objectives and policies in accordance with the County General Plan. The purpose of the Community Plan is to outline a relatively detailed agenda for carrying out these objectives.

The proposed project is located within the West Maui Community Plan region. The proposed project site is designated "Conservation" by the West Maui Community Plan Land Use Map. The project is consistent with the following Goals, Objectives and Policies of the West Maui Community Plan:

Goal:

An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the region's open space areas and natural environmental resources.

Objectives and Policies:

- Protect and enhance the quality of the marine environment.
- Preserve the current State Conservation District and the current State Agriculture District boundaries in the planning region, in accordance with this Community Plan and its land use map. Lands north of Kapalua and south of Puamana to the region's district boundaries should ensure the preservation of traditional lifestyles, historic sites, agriculture, recreational activities and open space.

Goal:

A clean and attractive physical, natural and marine environment in which man-made developments on or alterations the natural and marine environment are based on sound environmental and ecological practices, and important scenic and open space resources are preserved and protected for public uses and enjoyment.

Objectives and Policies:

- Protect all waters and wetland resources. Such resources provide open space and habitat for plant and animal life in the aquatic environment. They are also important for flood control and natural landscape.
- Protect the quality of nearshore and offshore waters. Monitor outfall systems, streams and drainage ways and maintain water quality

standards. Continue to investigate, and implement appropriate measures to mitigate, excessive growth and proliferation of algae in nearshore and offshore waters.

- Emphasize land management techniques such as natural landscaping, regular maintenance of streams and drainage ways and siltation basins, avoidance of development in flood-prone areas, and other measures that maintain stream water quality. Wherever feasible, such management techniques should be used instead of structural solutions, such as building artificial stream channels or diversion of existing natural streams.
- Encourage soil erosion prevention measures and the installation of siltation basins to minimize downstream sedimentation and degradation of nearshore and offshore water quality.
- Promote public/private initiatives in the maintenance, and, where appropriate, landscaping of drainage ways.
- Protect the shoreline and beaches by preserving waterfront land as open space wherever possible. This protection shall be based on a study and analysis of the rate shoreline plus a coastal hazard buffer zone. Where new major waterfront structures or developments are to be approved, preservation should be assured for 50-100 years by employing a shoreline setback based on the rate established by the appropriate study.
- Promote drainage and stormwater management practices that prevent flooding and protect coastal water quality.

Goal

To preserve, protect and restore those cultural resources and sites that best represent and exemplify the Lahaina region's pre-contact, Hawaiian Monarchy, missionary and plantation history.

Objective and Policies:

- Preserve and protect significant archaeological, historical and cultural resources that are unique in the State of Hawaii and Island of Maui.
- Foster an awareness of the diversity and importance of cultural resources and of the history of Lahaina.

- Establish programs to restore, maintain and interpret significant cultural districts, sites and artifacts in both natural and museum settings.
- Ensure that new projects or developments address potential impacts on archaeological, historical, and cultural resources and identify all cultural resources located within the project area as part of initial project studies. Further require that all proposed activity adequately mitigate potential adverse impacts on cultural resources.

D. COASTAL ZONE MANAGEMENT ACT

The subject property is located within the Special Management Area (SMA) of the County of Maui. Pursuant to Hawaii revised Statutes (HRS), § 205A-22, and the SMA Rules for the Maui Planning Commission, § 12-202-12(f), "development" does not include "a single-family residence that is not part of a larger development", and as such, the proposed residence is exempt from the SMA Rules. However, the project must comply with Shoreline Setback requirements. For the subject property the shoreline setback line is established at approximately 66 ft., pursuant to the Shoreline Area Rules of the Maui Planning Commission (§12-5-6). The proposed residence is situated mauka (inland) of the shoreline setback line, and, thus does not require a shoreline setback variance (see Figure 3.) In addition, the rules allow for the establishment of landscaping, irrigation, minor structures and paved walkways for public access within the shoreline setback area without a shoreline setback variance. These features require administrative review by the Maui County Planning Department in order to insure that they meet the appropriate definitions for these exempt features. In summary, no SMA permit or shoreline setback variance will be required for the project.

V. FINDINGS AND CONCLUSIONS

The applicant proposes to construct a single-family residence and related improvements. The proposed use represents the re-establishment of a residential use on the property which had existed for approximately 70 years. As demonstrated in this Environmental Assessment, the proposed single family dwelling has been designed in order to minimize potential adverse impacts to the area's natural resources and has incorporated appropriate management principles in order to promote long-term sustainability and health safety and welfare. The landscape planting plan is designed to be compatible with the surrounding environs, and seeks to enhance and preserve native coastal plant species. Storm run-off will be directed into seepage pits in order to minimize impacts from the increased run-off due to the increase in impervious surfaces. A shoreline planting strip will further buffer the ocean form the negative impacts of non-point source run-off. The use of plants which are well adapted to this windy coastal environment will lesson the need for fertilizers and intensive irrigation. The project has also been designed to be compatible with the existing topography and will result in minimal alterations of terrain. Finally, the re-establishment of residential use on the subject property will result in the clean up of a property which has collected piles of debris and used automobiles.

The proposed project will involve some minor earthwork and construction activities. In the short-term, these activities may generate minor nuisances normally associated with construction activities. All construction activities are anticipated to be limited to normal daylight working hours. Impacts generated from construction activities are not considered adverse.

From a long-term perspective, the proposed project is not anticipated to result in adverse environmental impacts. The proposed project will have a minimal impact upon scenic views from the highway. The project site is located in "Zone C". The project will have no significant negative impact upon archaeological or historic cultural resources.

The project will not have an impact on employment opportunities, nor will it have an impact upon local population levels. Public service needs such as police, medical facilities and schools will not be adversely impacted by the project. Impacts upon

roadways, water, wastewater, drainage, and other infrastructure systems are not considered significant.

In light of the foregoing findings, it is concluded that the proposed action will not result in any significant impacts.

VI. LIST OF AGENCIES AND INDIVIDUALS CONSULTED DURING PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

State of Hawaii

- Department of Transportation, Highways Division
- Department of Land and Natural Resources, Division of Fish and Wildlife
- Department of Land and Natural Resources, Division of Land Management

County of Maui

- Department of Planning
- Department of Public Works and Waste Management, Solid Waste Division

Maui Land & Pineapple Company, Inc.

- Mr. Warren Suzuki, Vice President/Land Management

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FIGURES

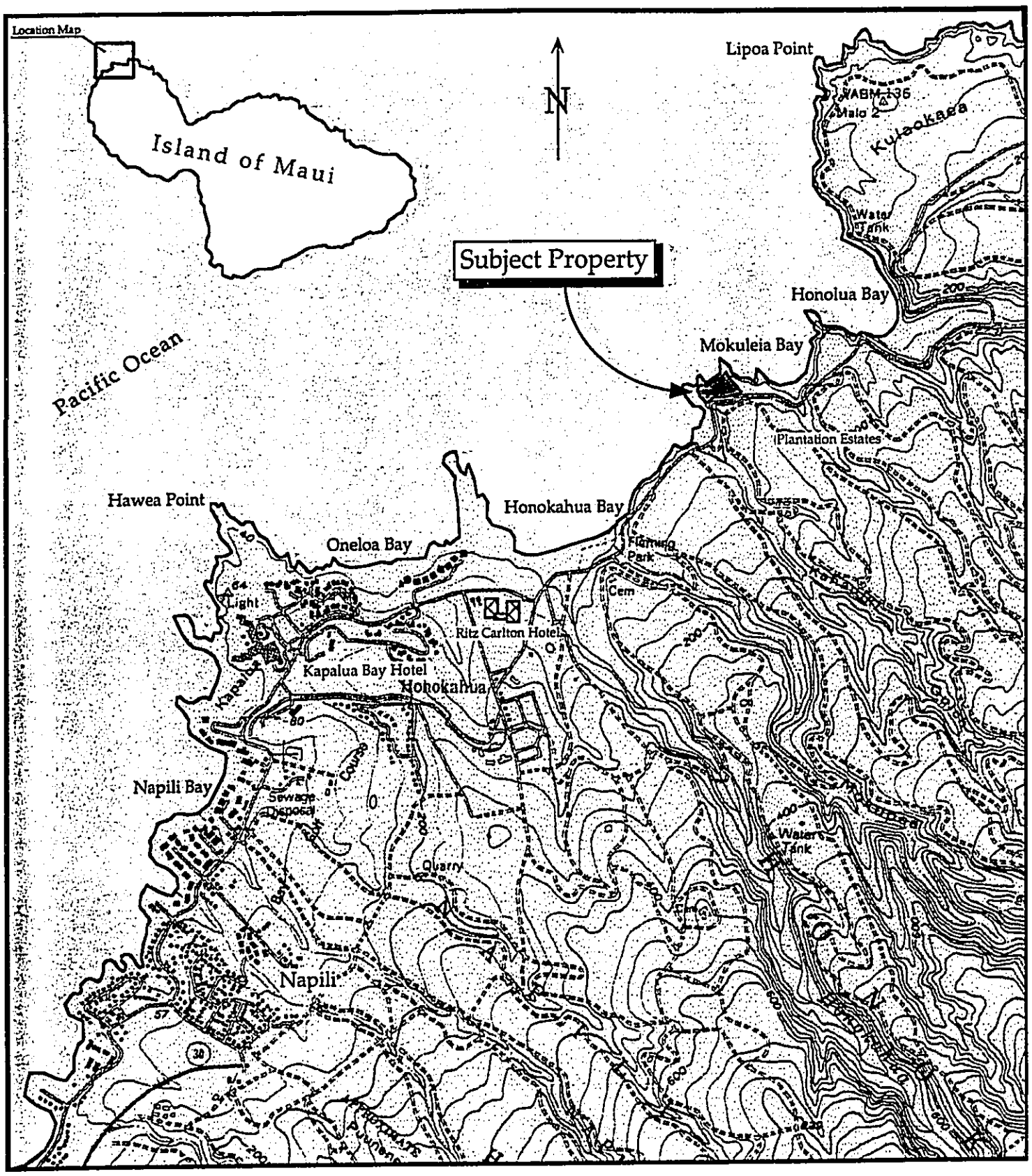


Figure 1 - Regional Location Map

Brennan Property
Honolua, Maui, Hawaii

CHRIS HART & PARTNERS

Scale: 1"=2000'
Source: U.S.G.S. Map Napili Quadrangle

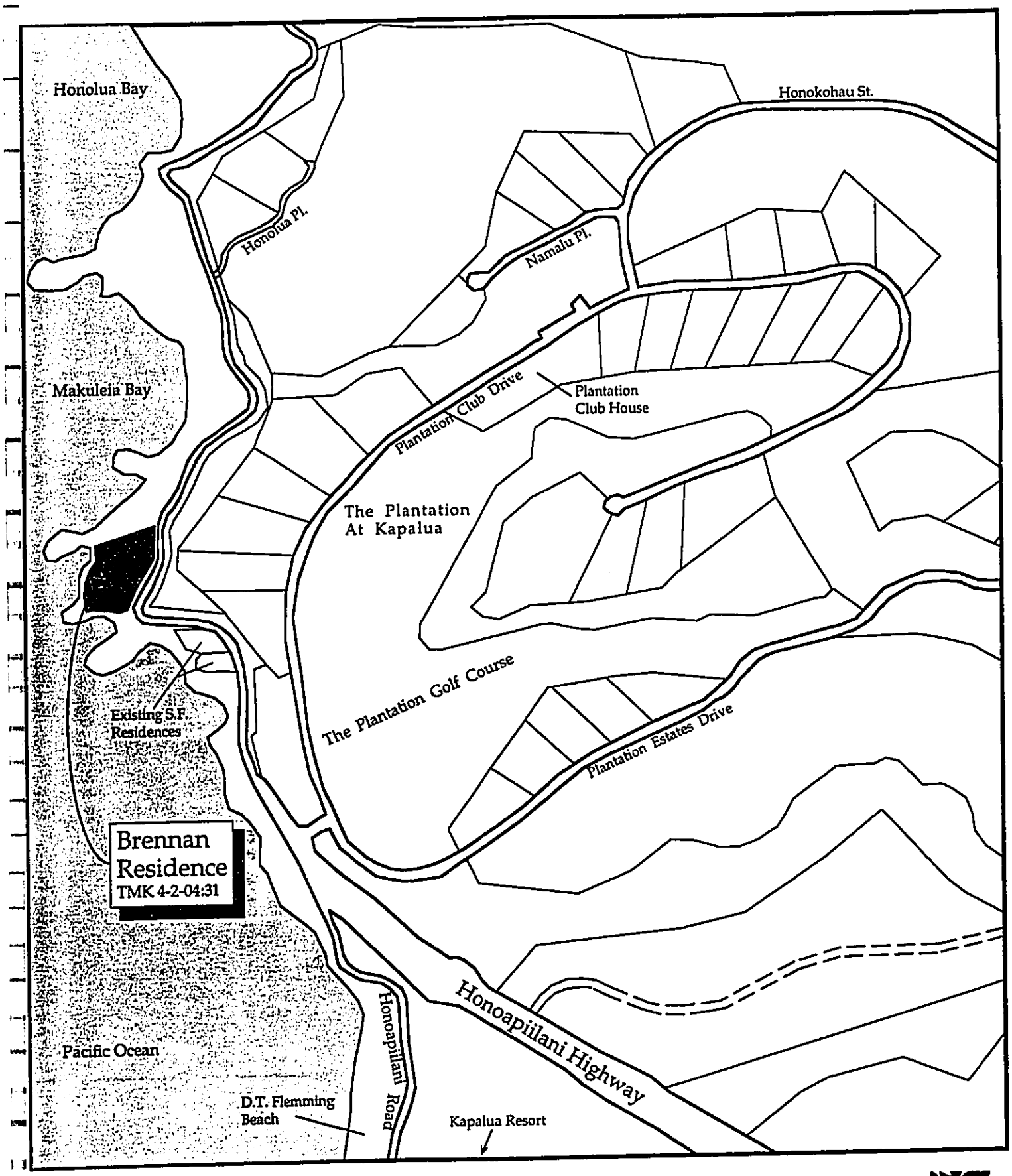


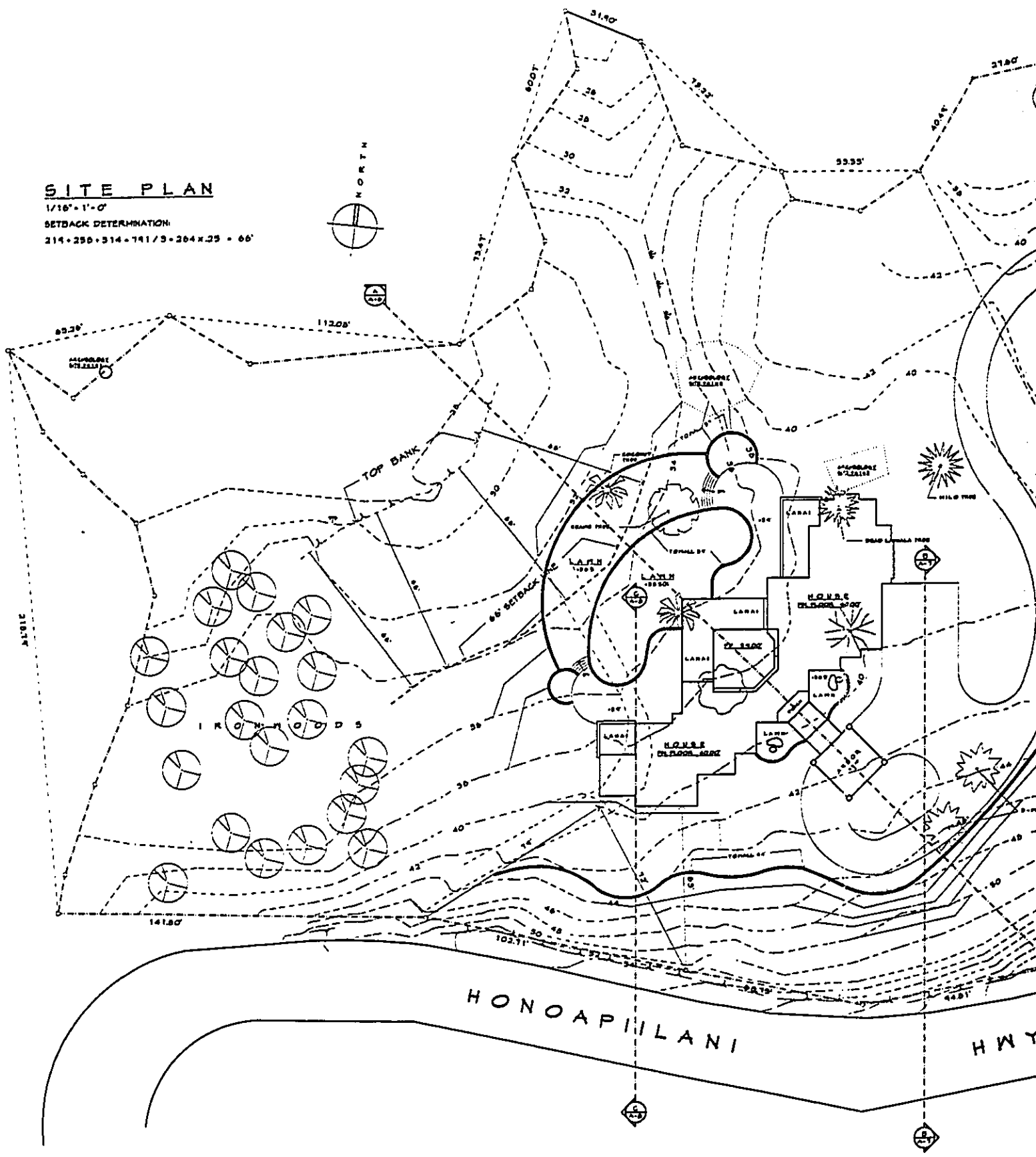
Figure 2 - Project Location Map
Brennan Residence
Honolua, Maui, Hawaii

SITE PLAN

1/16" = 1'-0"

SETBACK DETERMINATION:

214 + 250 + 314 + 791/3 + 264 x .25 = 66'



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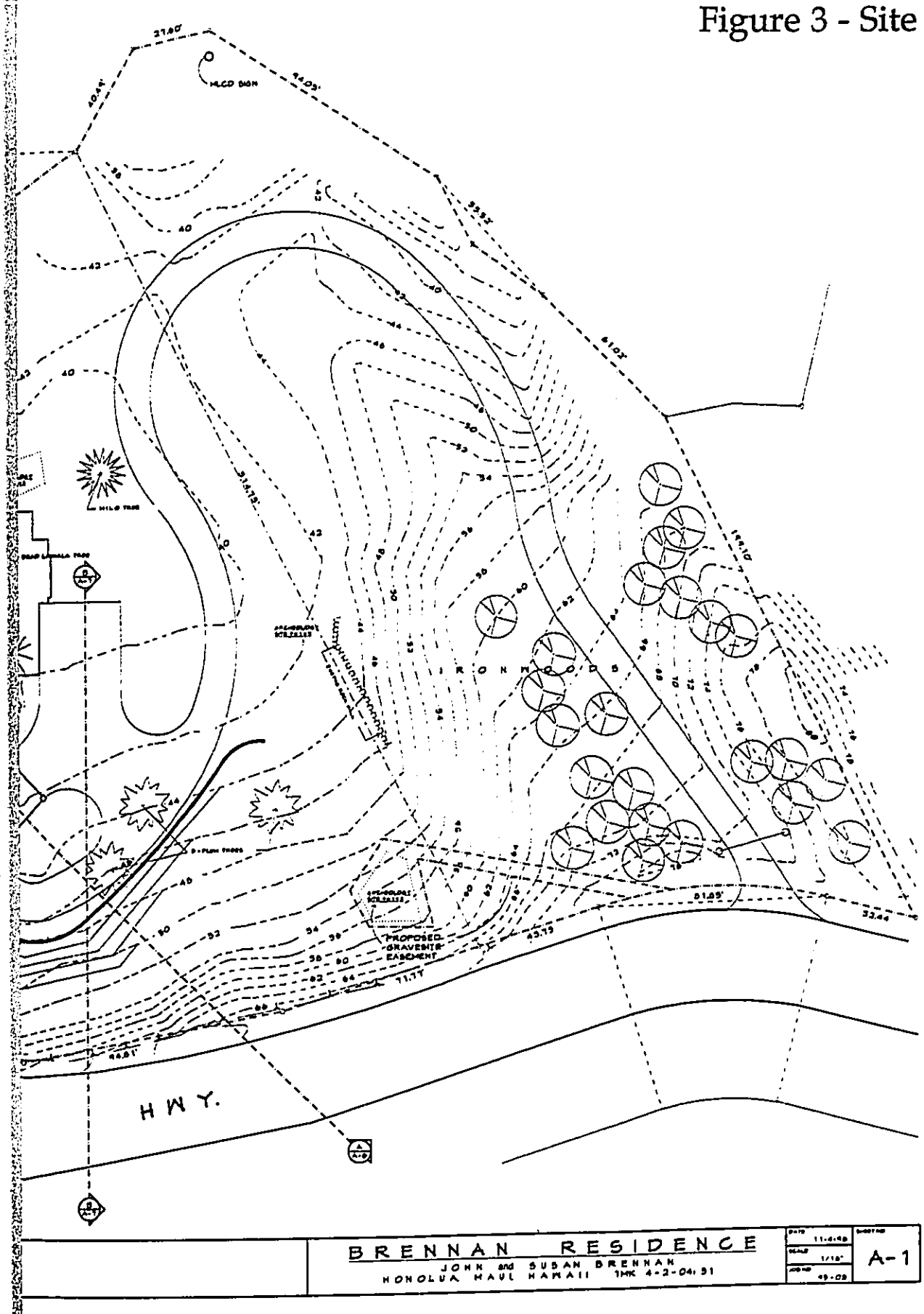
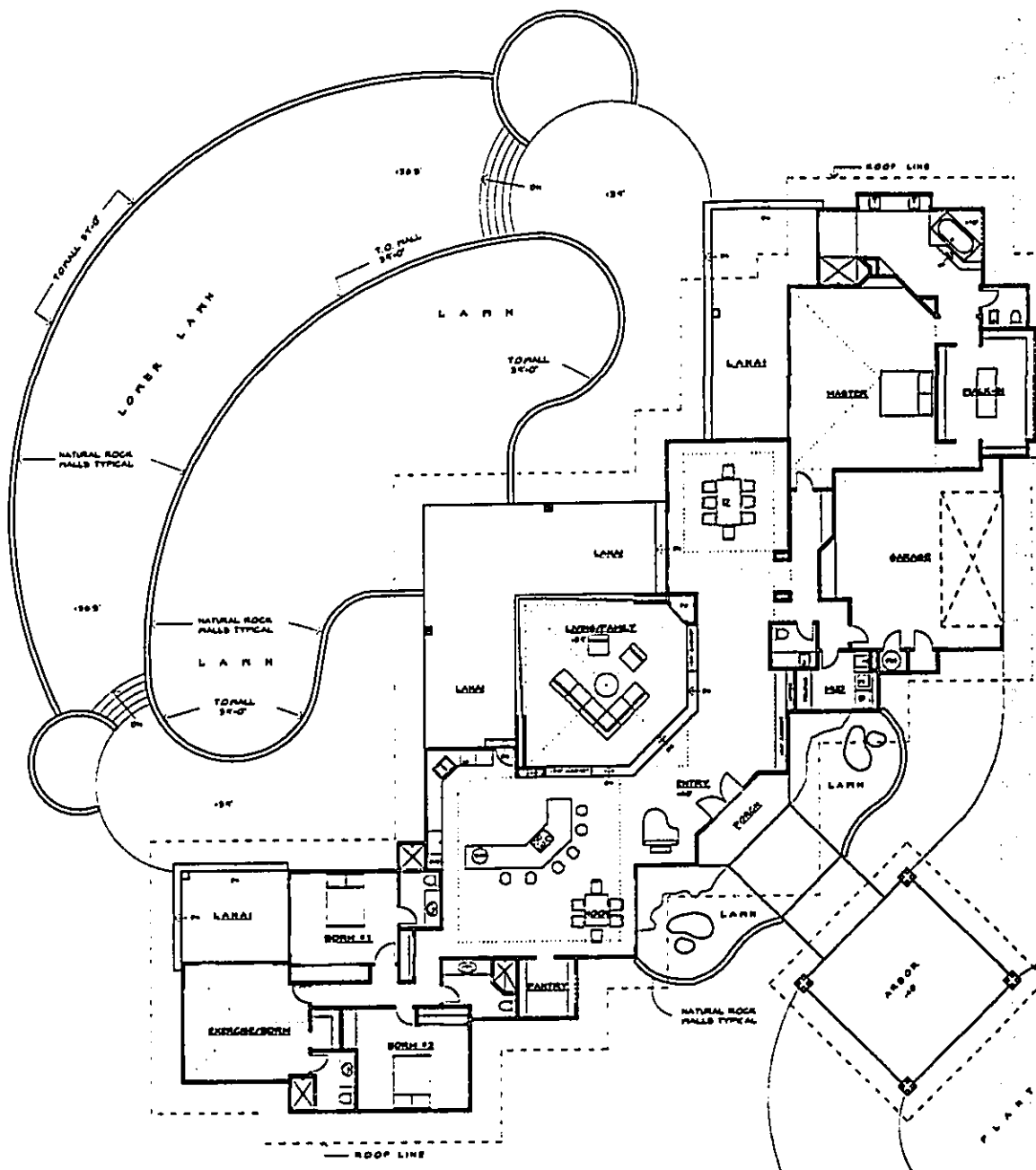
P.O. BOX 306, KULA, MAUI, HAWAII 96790

Figure 3 - Site Plan





FLOOR PLAN

1/8" = 1'-0"

HOUSE + GARAGE	4,896 SF
COVERED LANAI/PORCH	1,074 SF

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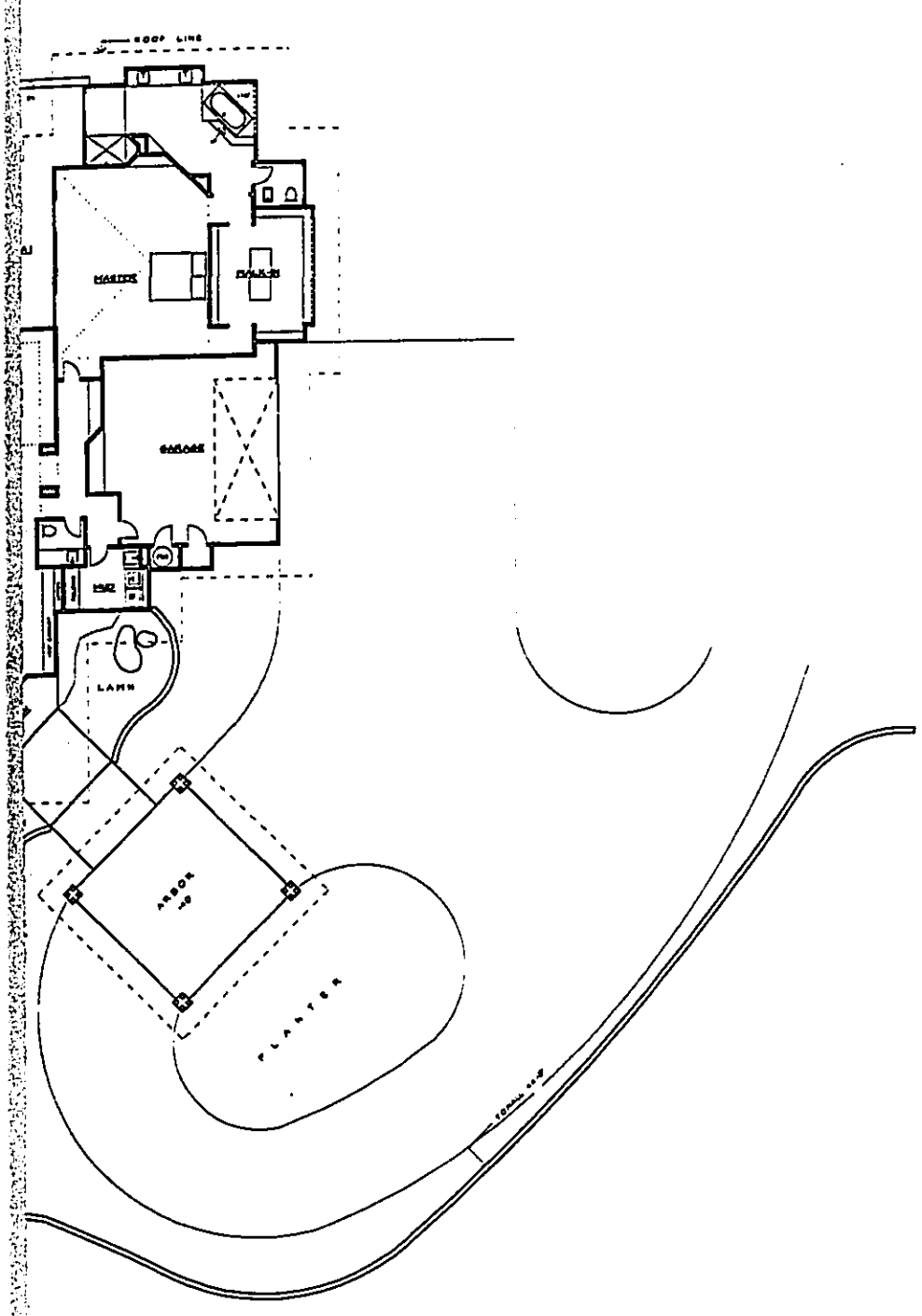
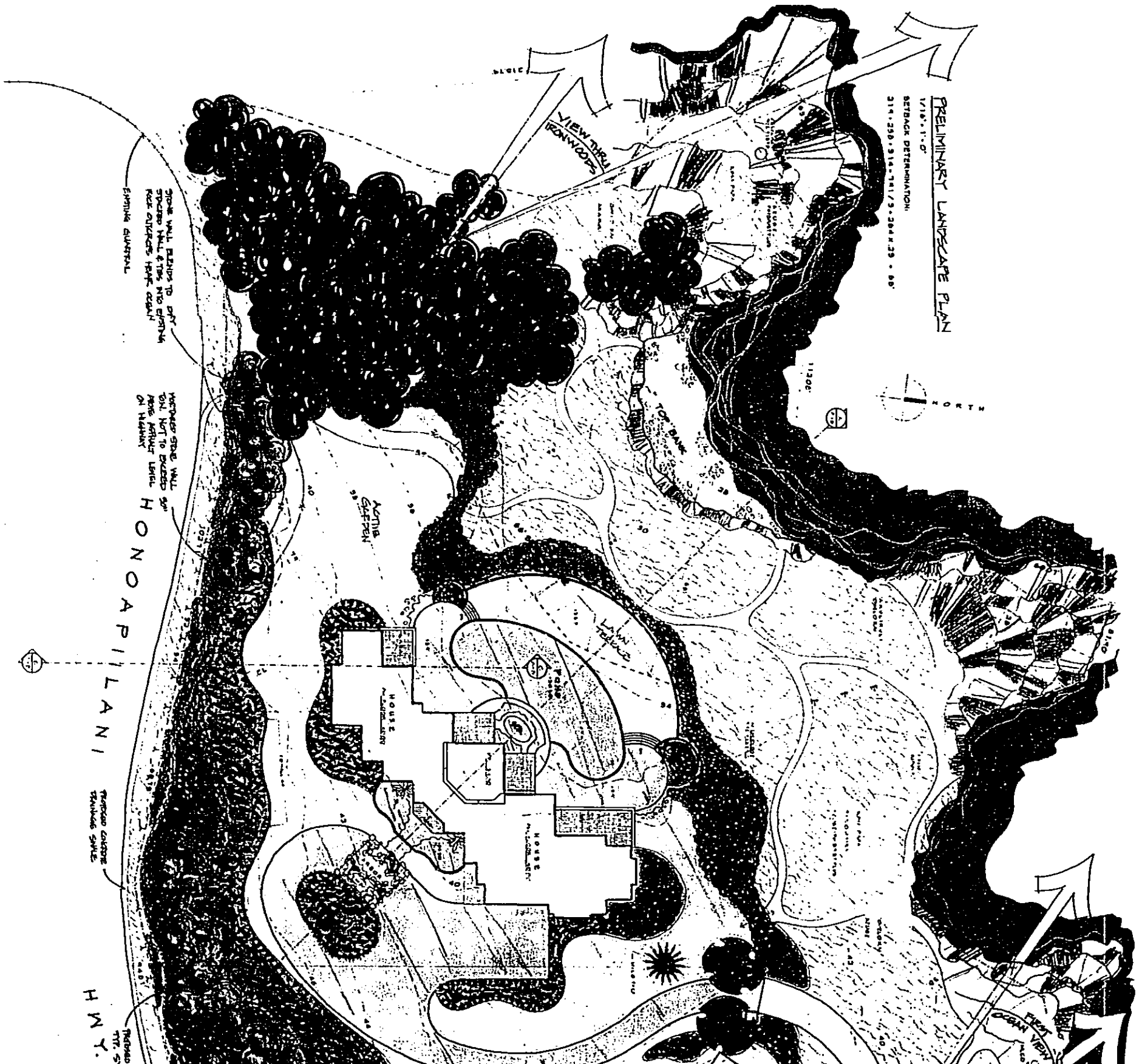
P.O. BOX 306, KULA MAUI HAWAII 96790

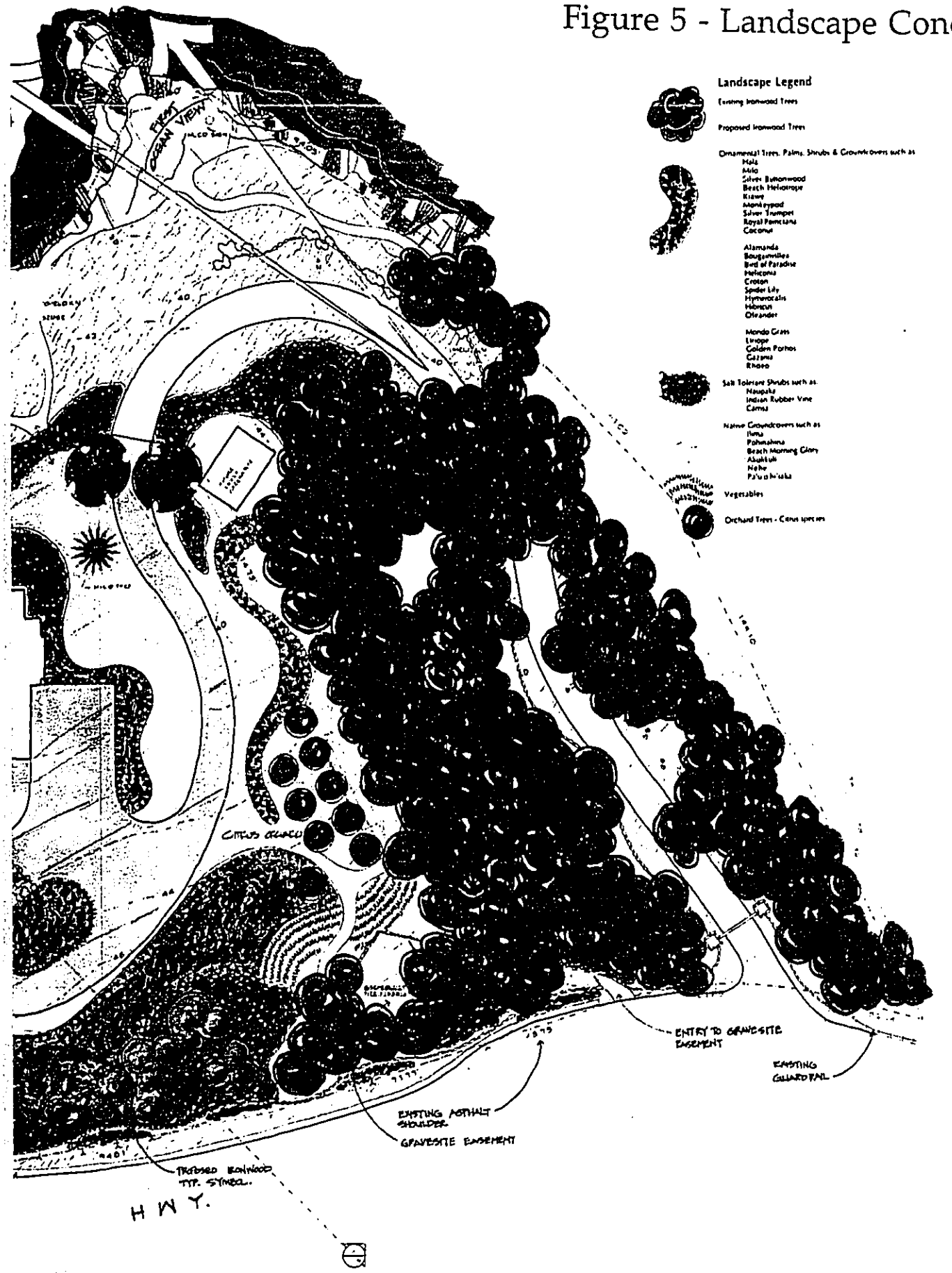
Figure 4 - Floor Plan



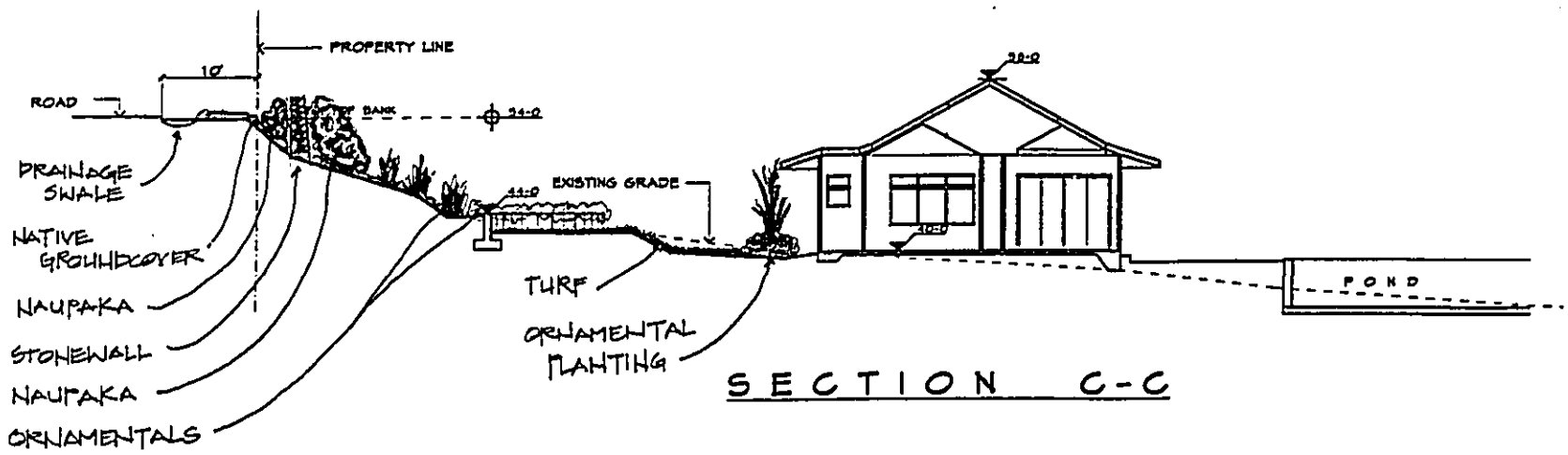


RICHARD S. YOUNG - ARCHITECT
P.O. BOX 360 KULA, MAUI HAWAII 96790

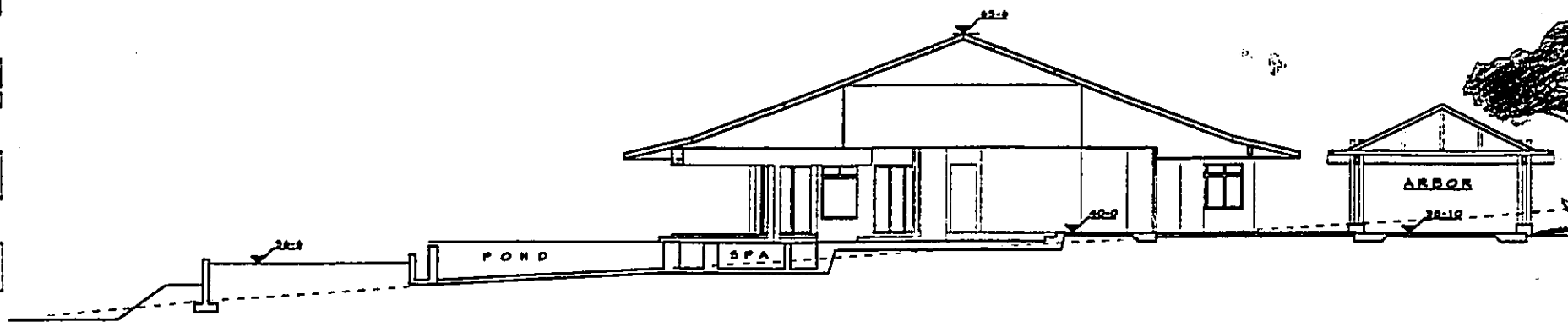
Figure 5 - Landscape Concept Plan



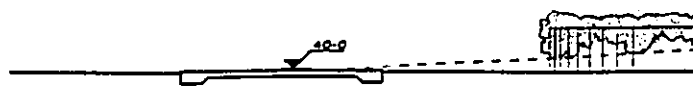
	BRENNAN RESIDENCE JOHN & SUSAN BRENNAN HONOLUA MAUI HAWAII TMK 4-4-2 01 21		A-1



SECTION C-C



SECTION A-A

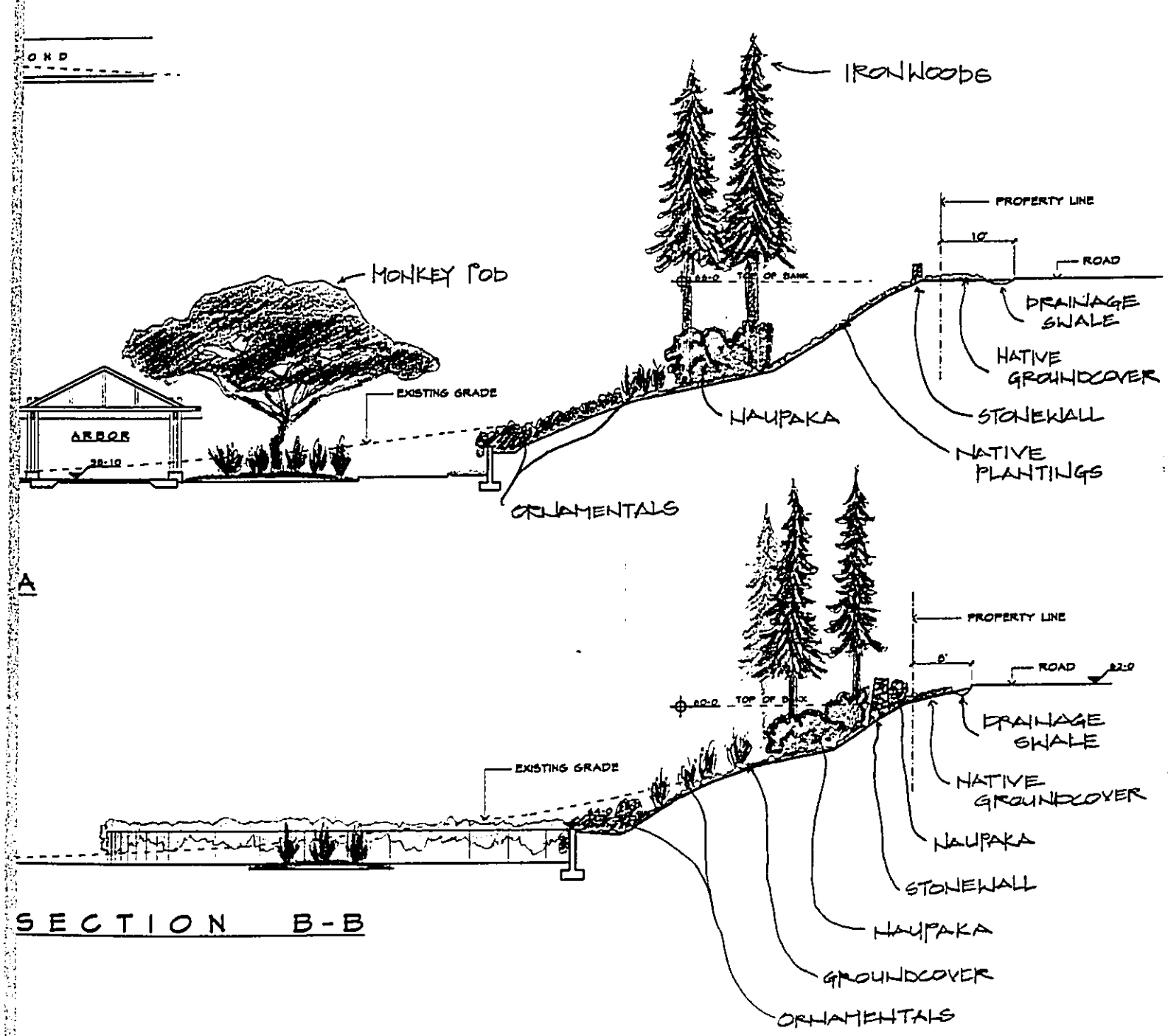


SECTIO

BRENNAN RESIDENCE

HONOLUA, MAUI, HAWAII

Figure 6 - Cross Section



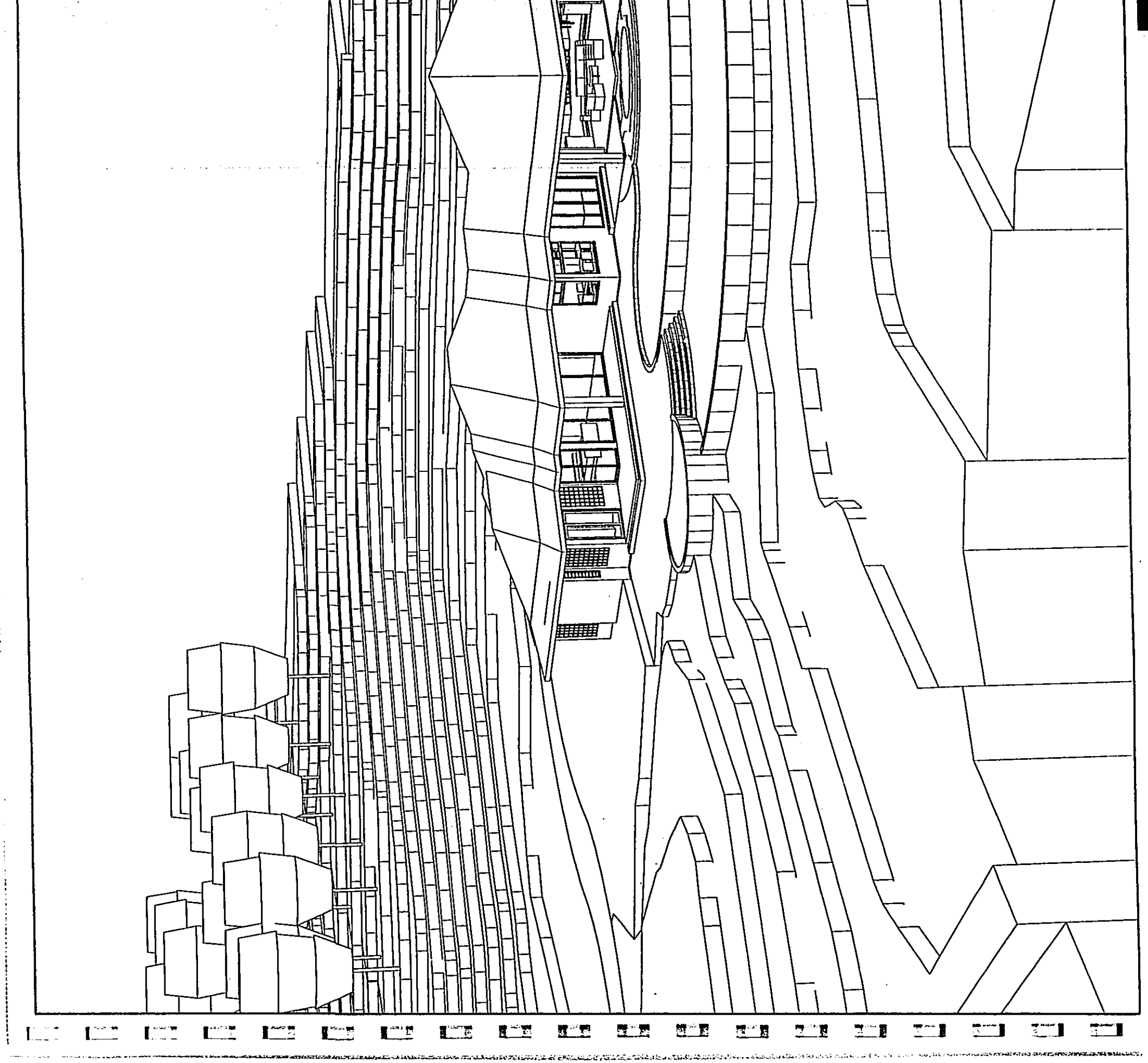
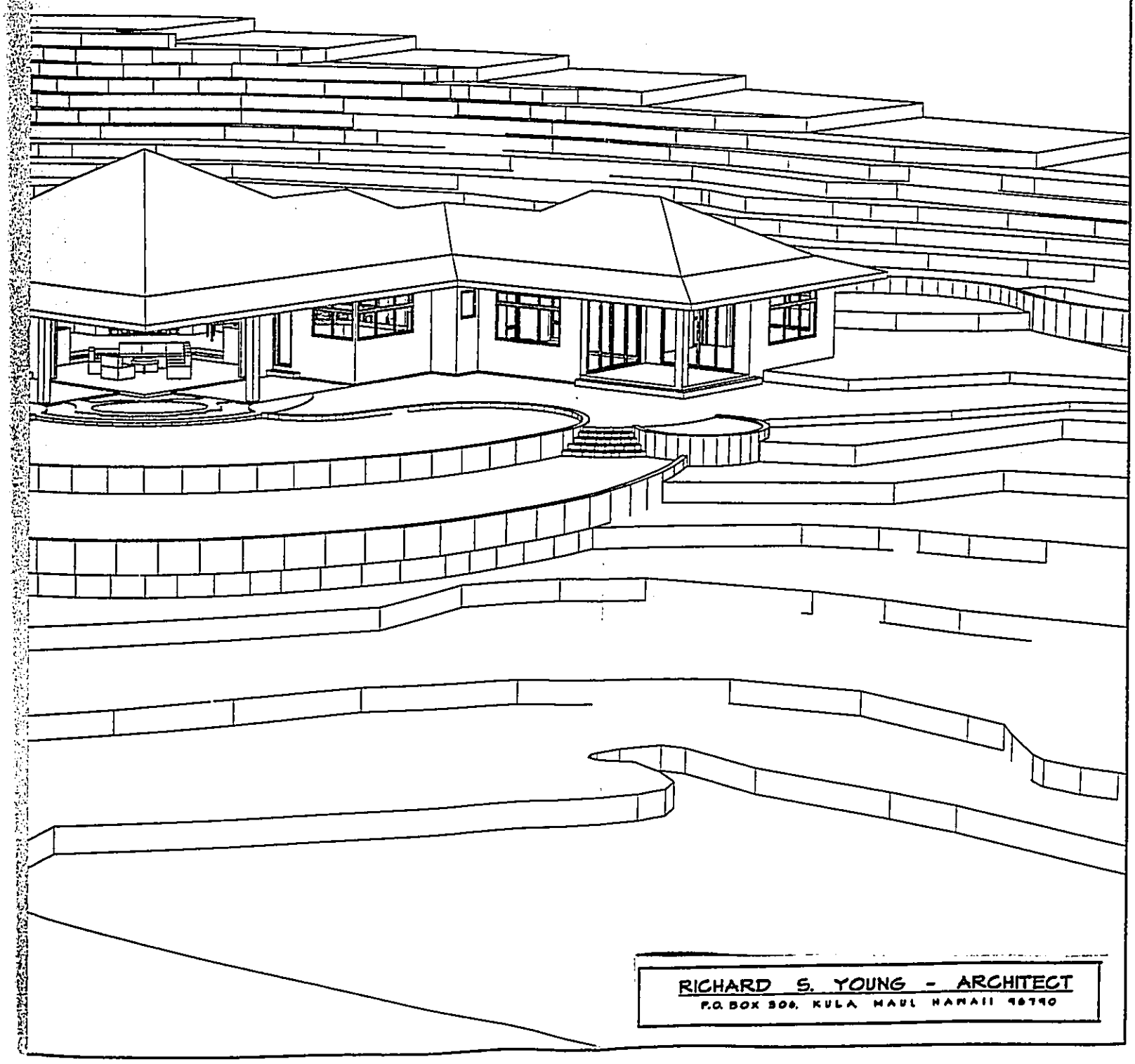


Figure 7 - North-West Elevation



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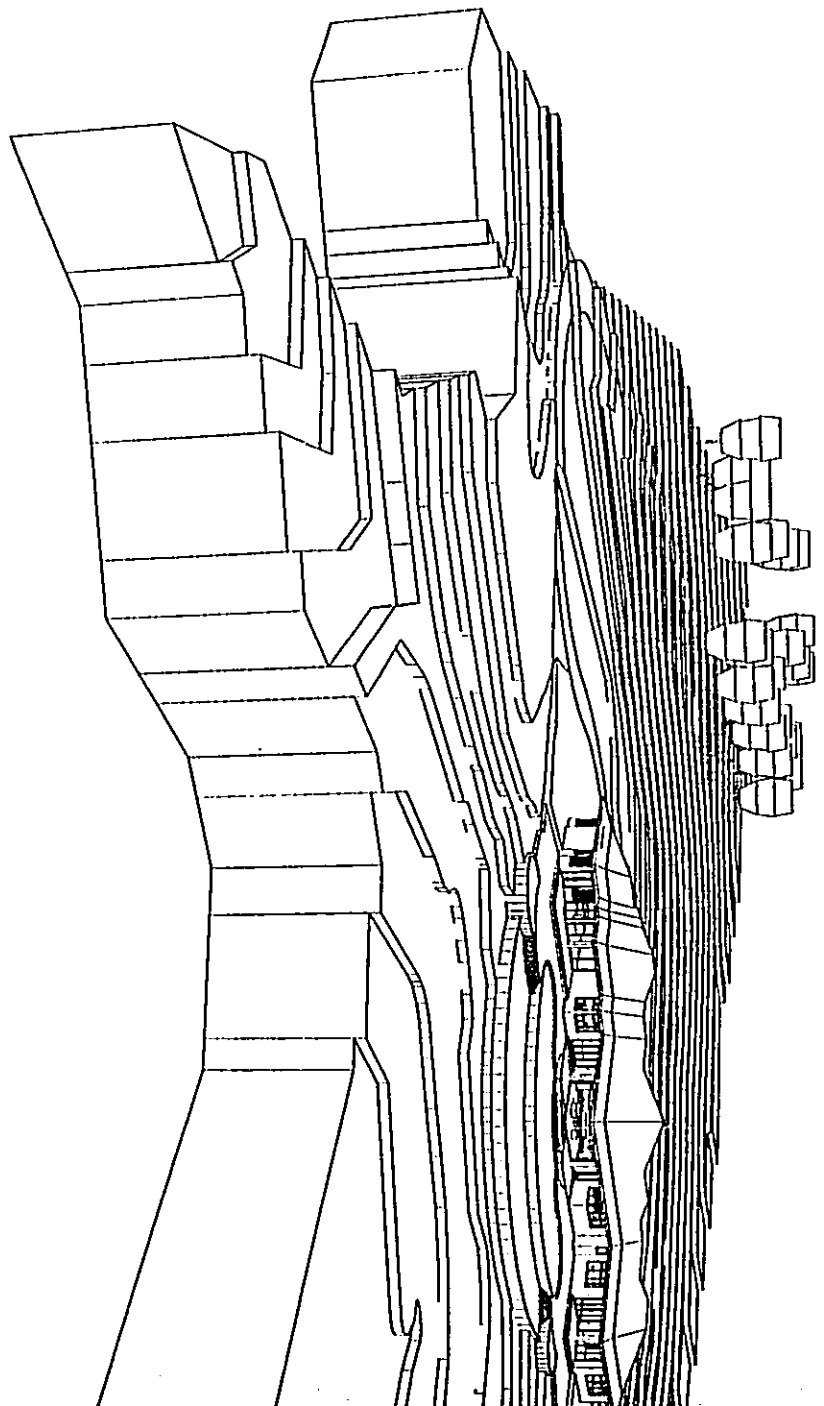
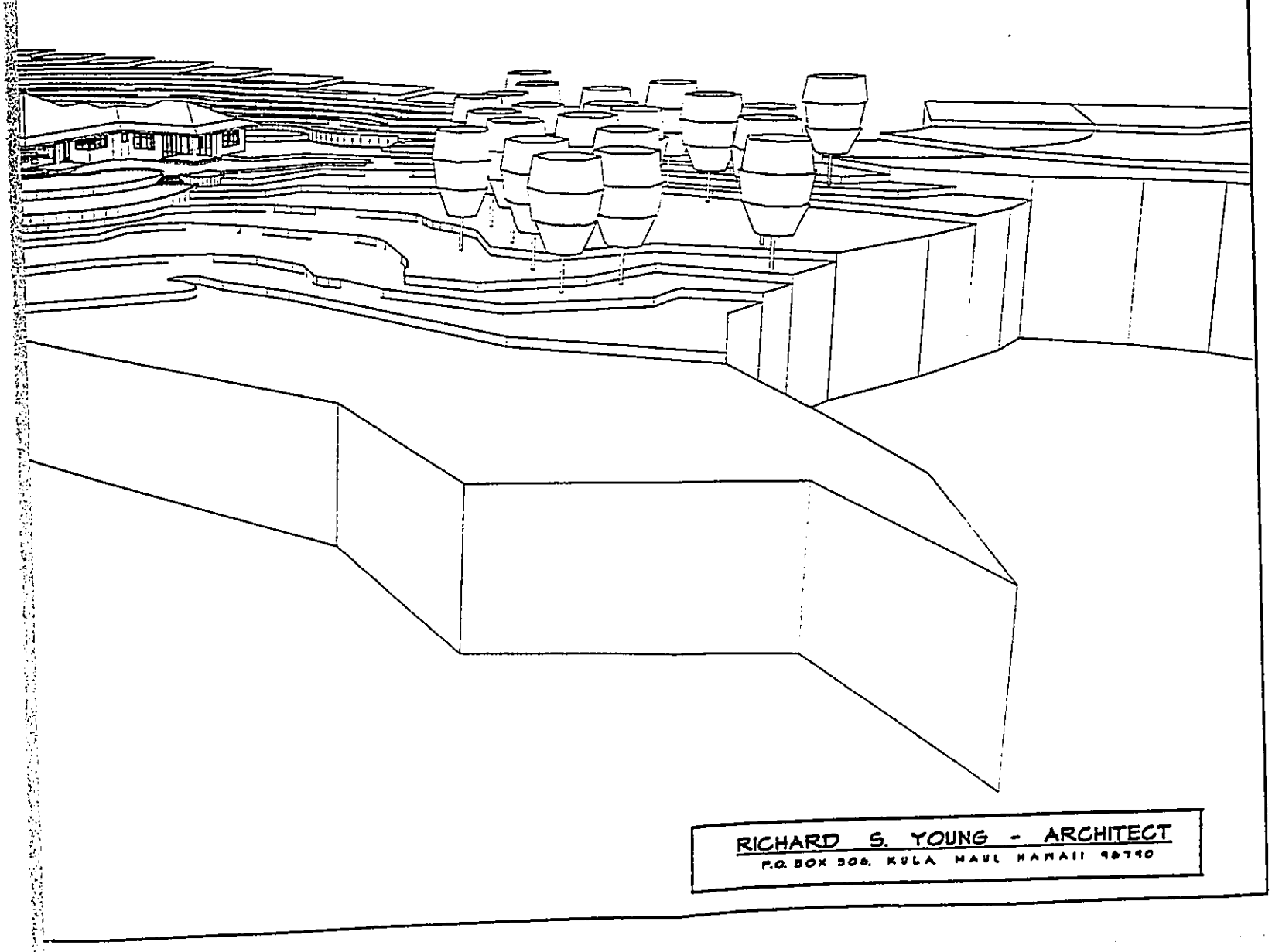


Figure 8 - North-West Perspective



RICHARD S. YOUNG - ARCHITECT
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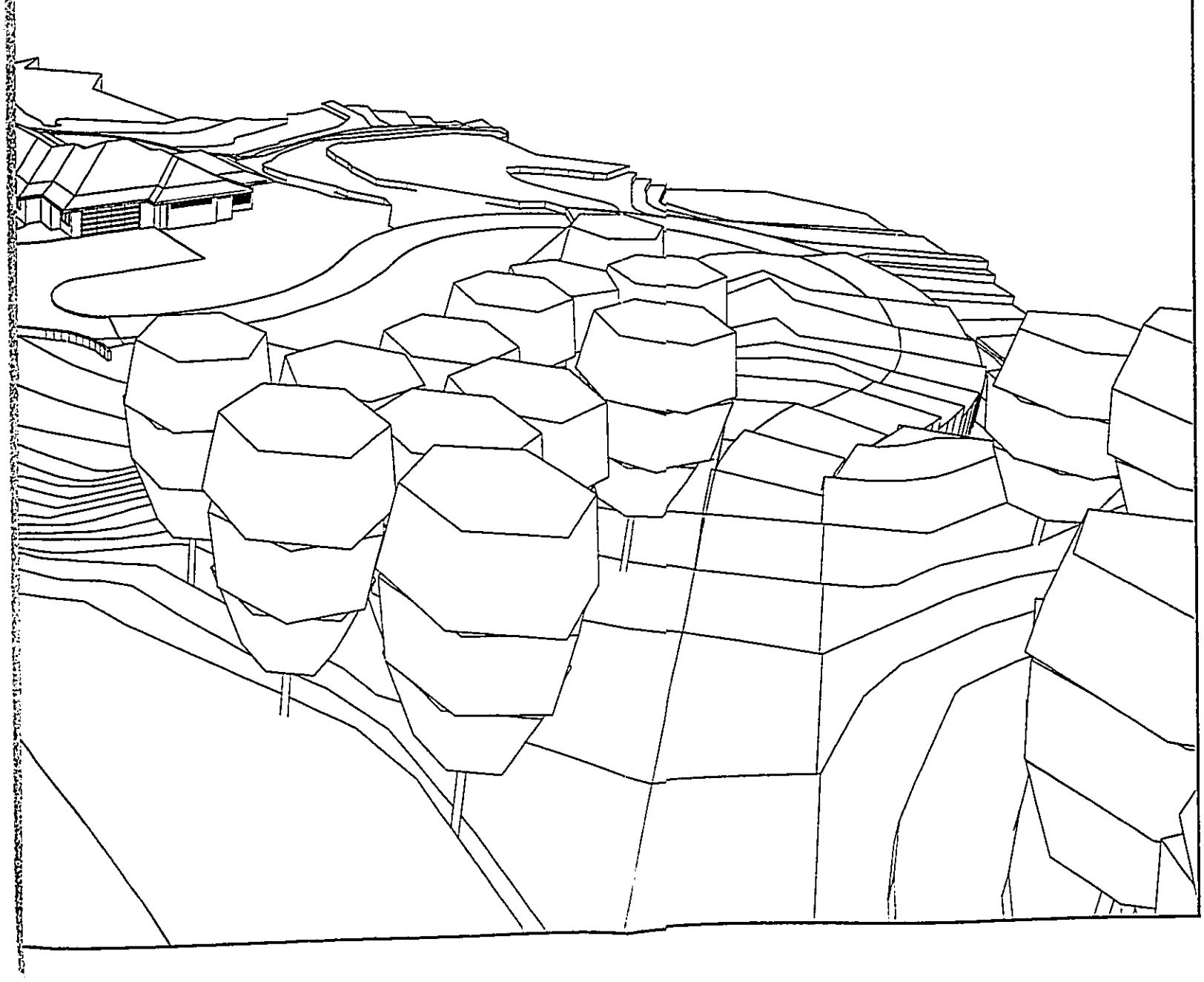
RICHARD S. YOUNG - ARCHITECT
P.O. BOX 306, KULA, MAUI, HAWAII 96790

Figure 9 - East Perspective



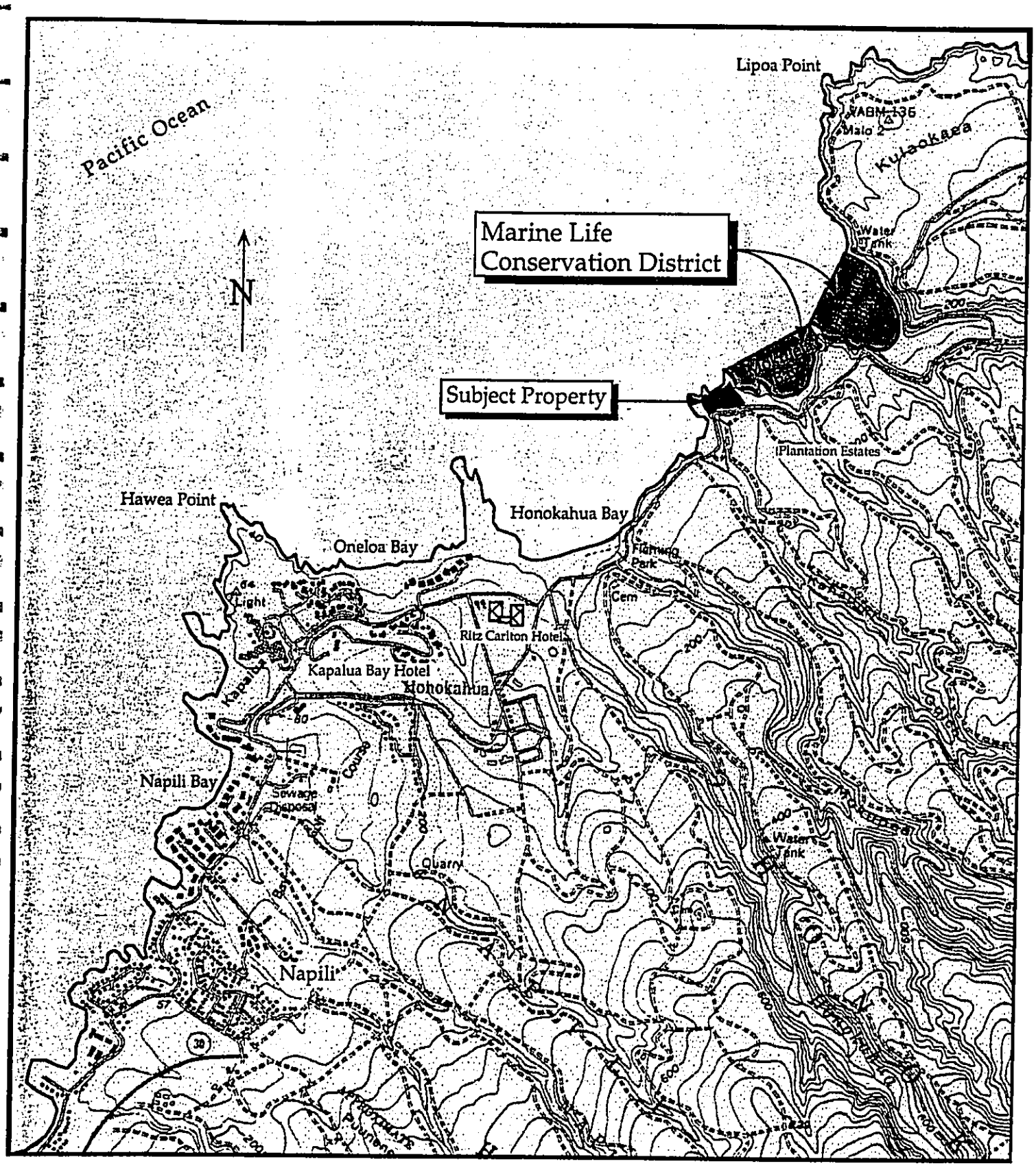
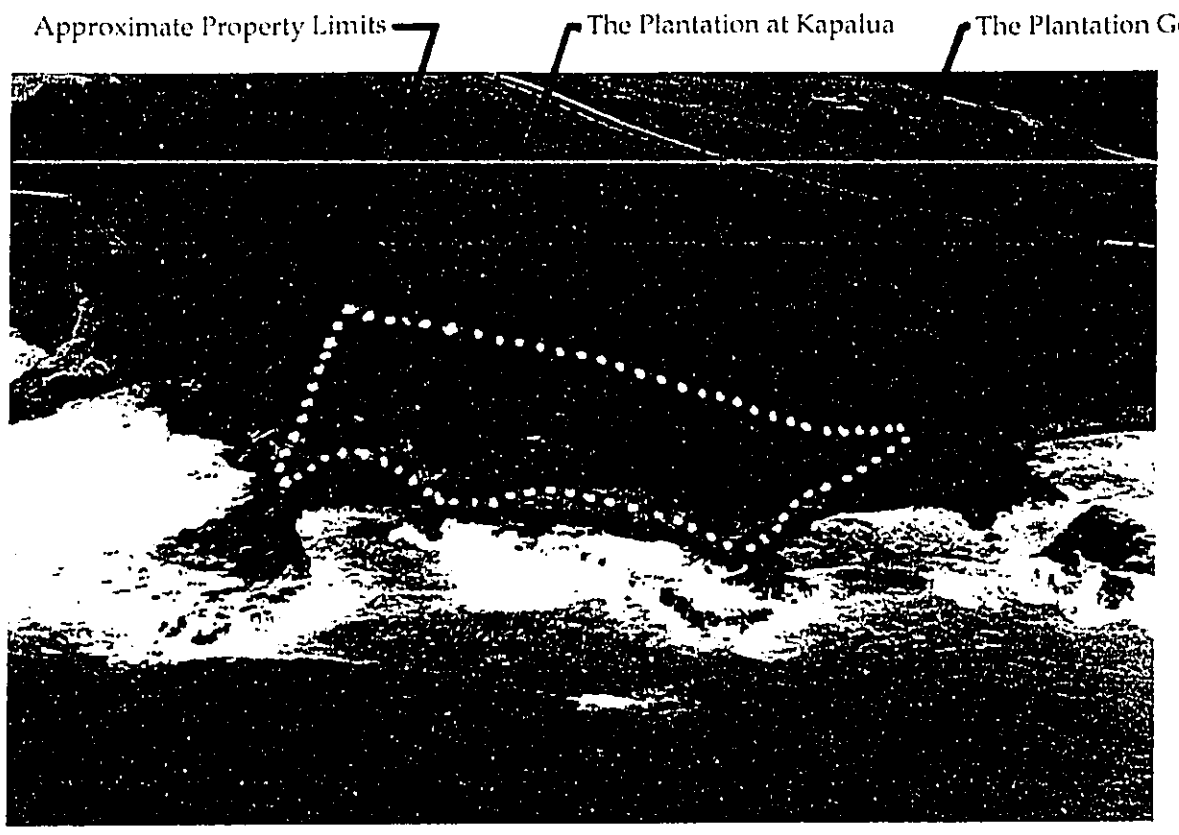


Figure - 10

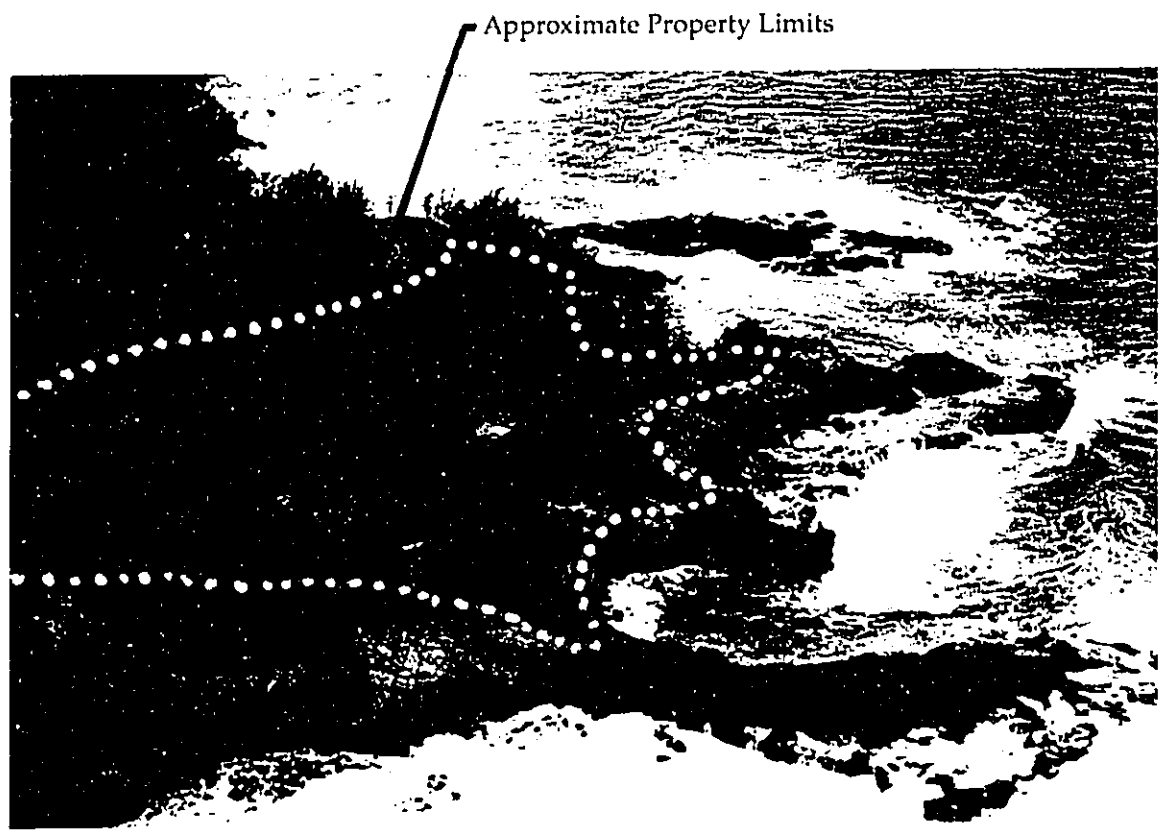
Honolua-Mokuleia Bay
Marine Life Conservation District

CHRIS HART & PARTNERS

Scale: 1"=2000'
Source: U.S.G.S. Map Napili Quadrangle



Aerial Photograph No.1 - North Perspective



Aerial Photograph No.2 - West Perspective

Figure 11

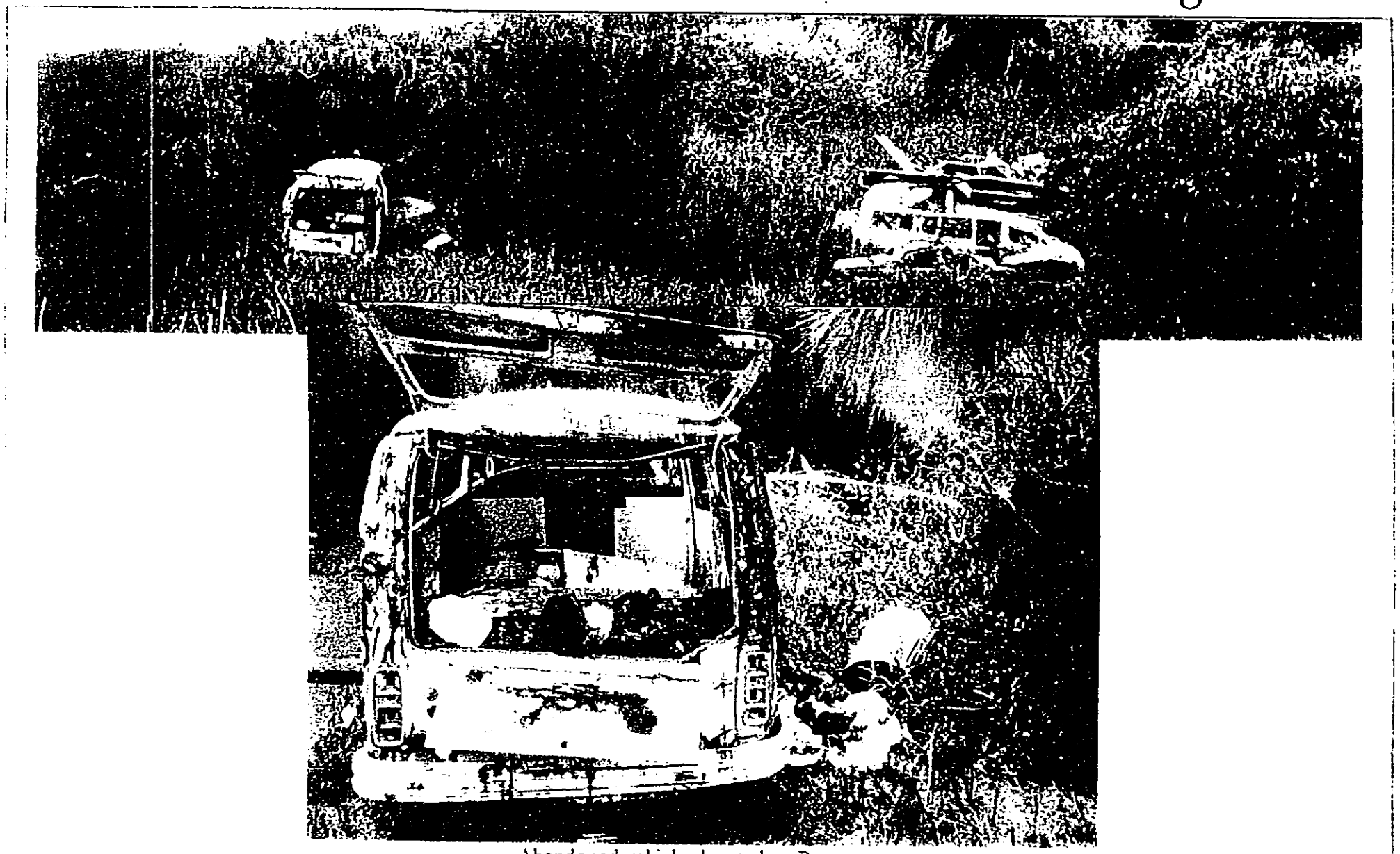
CHRIS HART & PARTNERS

Figure 12

Debris piles located on Property.

Source: *EnviroSearch International, Inc.*

Figure 13



Abandoned vehicles located on Property.

EnviroSearch International, Inc.

APPENDIX - A
Historical Account of Subject Property

Papaho`oholo

TMK: 4:2:4:31 (2.47 acres)
Previously TMK: 4:2:1:7 (2.0 acres)

This report was prepared by

Arleone Dibben -Young
P.O. Box 306, Kula, Hawai`i 96790
(808) 878-3177 Fax 878-6949

Final Report

Papaho`oholo

TMK: 4:2:4:31 (2.47 acres)
Previously TMK: 4:2:1:7 (2.0 acres)

The subject property is located at Papaho`oholo in the Kahauiki area of the ahupua`a of Honolua (Royal Patent 8129, Land Commission Award 8559-B, Apana 23) and was exchanged for kuleana lands at Kahauiki (Royal Patent 7196, Land Commission Award 3925A, Apana 1), and at Nuhamaka (Royal Patent 4773, Land Commission Award 3641, Apanas 1, 2, and 3), both within the ahupua`a of Honolua.

The exchange process began in 1913 shortly after the kuleana lands, the boundary markers, and the Paahana house, were plowed under, presumably in error, for the planting of pineapple by Honolua Ranch manager D.T. Fleming. (According to decendants, the Paahana family was away farming kalo on one of their Honokohau Valley kuleana parcels, at what they called their "rowdy house" - or "party" house.) Land Commission Award 3925A, Apana 1, was located directly across the government road from the subject property in Kahauiki (the future Field 47), within what is today known as the Plantation Estates. Land Commission Award 3641, Apanas 1, 2, and 3 (with the house), was located in the Nuhamaka area where the Plantation Golf Course is today.

The kuleana parcels had been inherited by family members who equally shared one-third undivided interest. The family members are 1) Kapena (wife) and Kaihe (husband), 2) Kalani (wife) and Mailua (husband), and 3) Manoel Paahana (brother) and Julia Paahana Koa (sister). *Only the Paahana land exchange was researched for this report.*

Each sector of the family was promised new land of equal size and value in exchange for their one-third interest in the "lost" kuleana lands. Family members were told that that they would be able to use the land agriculturally and build a house in the same manner as originally stated in the Land Commission Awards, i.e., the kuleana land use would flow with the title. Separate deeds were drawn by the Trustees of the Estate of H. P. Baldwin for each exchange via a $250 "sale" and a $250 "purchase" transaction. The last transaction was the Paahanas, who signed over the final deed to the kuleana lands in 1917, but only after the deed of their new land deed had been written in 1916. Due to a twenty-year contingency in their exchange prohibiting the possession or use of "spirituous liquors" on the property (see Documentation), the final deed was not recorded until 1938.

The Tax Map Key (TMK) system began in 1933, and the Real Property Tax records of the subject property begins in 1936. The shape of the subject property on the TMK maps continually changes until the mid-1940s. On early TMK maps until the present TMK map, the property is continually surrounded by another. The TMK records state that the subject property is classified - and has been in use - as a **House Lot** since 1936, and government maps show the location of the house the Paahanas built on the subject property as early as 1922. The land has served as a residence of one form or another until 1993, when a relative lived on the property without authorization and was evicted through legal action. His dwelling has since been demolished.

In conclusion, the Paahana property was treated by Honolua Ranch, and later by Baldwin Packers, Ltd. and Maui Land & Pineapple, as a kuleana parcel, and was completely surrounded by their land. It was not until 1991 that a Judgment Quieting, Establishing and confirming title to Real Property awarded legal access to the parcel. The following documentation reflects that the subject property has been utilized agriculturally and as a **House Lot** since its exchange for kuleana lands, and that this use was consistent with the original kuleana Land Commission Awards.

Documentation

DLNR/Land Management
Indices of Awards

Land Commission Award 3641, Royal Patent 4773 to Haulili.

DLNR/Land Management
Microfilm, Book 19, Pages 419 - 420

Royal Patent 4773 to Haulili, Kuleana 3691 (same as 3641)
Apana 1
Apana 2 Kula ma Nuhamaka
Apana 3 Pahale (**House Lot**)

This states the kula lands are in the subdivision of Nuhamaka in Honolua.

DLNR/Land Management
Microfilm, Book 8, Page 459

Land Commission Award 3641 to Haulili.
Apana 1
Apana 2 Kula ma Nuhamaka
Apana 3 Pahale (**House Lot**)

This states the kula lands are in the subdivision of Nuhamaka in Honolua.

Item L.C.A. 3641 - R. P. 4773 to Haulili (also numbered 3691) 3 pages

3 Aps. Honolua 5.96 A.
Ap. 1. .....3.36 A.
Ap. 2. Ili o Nuhamaka 1.70 A.
Ap. 3. - .90

This identifies the heirs to Haulili, and the undivided interest between three family sectors, including the Paahanas.

Maui Land & Pineapple Company, Archives
Land Commission Awards of Kaanapali District
Baldwin Packers, Ltd. File 22-9930, V.4, approximately 1940

This document updates the ownership of Item L.C.A. 3641 - R. P. 4773 to Haulili.

DLNR/Land Management
Indices of Awards

Land Commission Award 3925A, Royal Patent 7196 to Puhi.

DLNR/Land Management
Microfilm Box 14, Book 26, Pages 745

Royal Patent 7196 to Puhi, Kuleana 3925A, totaling 5.05 acres.
Aina Kula in the subdivision of Kahauiki in Honolua.

DLNR/Land Management
Microfilm Box 8, Book 8, Page 461

Land Commission Award 3925A to Puhi.
Aina Kula in the subdivision of Kahauiki in Honolua.

Maui Land & Pineapple Company, Archives
Alphabetical Kuleana records for Baldwin Packers, Ltd.
File 22-9930, vol. 1
Circa 1940

This identifies the kuleana parcels exchanged by Julia and David Koa and

Manoel Paahana.
Maui Land & Pineapple Company, Archives
Kuleana Title and Genealogical Records Book for Baldwin Packers, Ltd.
Page 3925A

...B. P. Ltd. - entire int. (in kuleana parcel 3925A) ...

Indicates the ownership status of the kuleana parcels after the exchange.

Julia Paahana Koa and Manoel Paahana to
the Trustees of the Estate of Henry Perrine Baldwin
December 26, 1915 Sold for $250; January 11, 1917 Recorded
Bureau of Conveyances, Liber 452, Pages 162 - 163

This transaction was handled by D. T. Fleming, then the manager of Honolua Ranch, where both the subject property and the kuleana lands were located.

Estate of Henry Perrine Baldwin to Julia Paahana Koa and Manoel Paahana
March 28, 1916 Sold for $250; September 27, 1938 Recorded
Bureau of Conveyances, Liber 1461, Pages 344 - 346

> ...H. A. Baldwin, W. D. Baldwin, F.F. Baldwin, J. P. Cooke and S. A. Baldwin, as Trustees under the Will of Henry P. Baldwin (deceased)...do hereby give grant, bargain, sell and convey...that certain piece or parcel of land situated at Kahauiki...

Contingency:

> ...that at no time during the period of twenty (20) years from the date hereof shall the said above granted premises or any part thereof or building thereon be used or occupied for the purpose of manufacture, sale or other disposition or use of spirituous liquors or any kind, nor shall any spirituous liquors be brought or kept or consumed thereon, by any person or persons whomever...
>
> ...the party of the first part...at any time or times without any notice, demand or resort to any process of law to enter or break into and upon said premises or any building thereon and summarily seize, remove and/or destroy any and all intoxicating liquor there found, using all necessary force therefor, without any liability whatsoever for damages...

Maui Land & Pineapple Company, Archives
File No. 15-H
Baldwin Packers, Ltd., to Alexander & Baldwin, Ltd., Honolulu, T.H.
Letter dated March 3, 1954

> ...was transferred...in exchange for interest, which they (the Paahanas) owned in kuleanas lying within Baldwin Packers' property.

Maui Land & Pineapple Company
Working map for the book *Plantation Days - Remembering Honolua* published in 1987.

This map shows the pineapple fields as they were in approximately 1932.

Plantation Days - Remembering Honolua, published in 1987 by Maui Land & Pineapple

> ...in 1912 D. T. Fleming planted the first 20 acres of pineapples...

Hawaii State Archives
Microfilm Library, Box 10, 2nd Division, Department of Taxation,
Field Assessment Books 1926 - 1965

> Page 1: December 6, 1936; Property is described as a two acre **House Lot** in Honolua. Multiple ownership is shared between Julia Paahana Koa, of Honokohua, and Constance Roseline Paahana Cockett, and is interest is undivided. The tax exemption applies only to Julia Paahana Koa amounting to $234.00. The balance of value of $50.00 to Constance R. Paahana is taxable.
> Page 3: Drawings show a 920 square foot wood framed residence, with plumbing, constructed of T&G pine, with a shingled gable roof.

Real Property Tax Office, Honolulu
Box 11 (Microfilm), 2nd Division - Maui County, History sheets, 1933 - 1958

> November 10, 1938; Deed indicates ownership between Julia Koa and Manoel Paahana.

Real Property Tax Office, Wailuku.
Field Book Land Sheet, 1943 to Present

> Page 1: 1959 Notation: **House Lot**
> Page 2: 1960 Notation: **House Lot**

Hawaii State Archives
Microfilm Library, Box 11, 2nd Division, Canceled TMK Maps
TMK Map 1

> This TMK map has no date, but is before November 16, 1938, because title is held by Manoel Paahana and his sister Julia Paahana Koa. The title changed on April 14, 1939 to Julia P. Koa and Constance Paahana Cockett (daughter of Manoel Paahana). This map indicates the subject property as a new parcel by the dotted lines.

Hawaii State Archives
Microfilm Library, Box 11, 2nd Division, Canceled TMK Maps
TMK Map 2

This TMK map has no date, but it is after April 14, 1939, and before October 21, 1941. The dotted lines are struck-out, and the subject property is drawn by hand to change the shape and shift the location. There is a note with an arrow pointing to the parcel which says "Ask Watson for description from A&B."*

* L. J. Watson was the surveyor for East Maui Irrigation and other subsidiaries of Alexander & Baldwin, Ltd., from approximately 1903 to 1944. It is thought that Watson surveyed the subject property for Baldwin Packers, Ltd., in the early 1940s.

Hawaii State Archives
Microfilm Library, Box 11, 2nd Division, Canceled TMK Maps
TMK Map 3

This TMK was canceled October 21, 1941. The subject property is drawn by hand, with the shape changed and location shifted. The name of Manoel Paahana is erased and is replaced by Constance Paahana. Her married name of Cockett was added later.

Hawaii State Archives
Microfilm Library, Box 11, 2nd Division, Canceled TMK Maps
TMK Map 4

This TMK was canceled March 14, 1951. The date of printing is unknown, but it is believed to have replaced the 1941 TMK map. The subject property now has a new shape and has now been given a TMK number "7." It is completely surrounded on all sides by parcel 2 (138.63 acres), owned by Baldwin Packers, Ltd.

Real Property Tax Office, Wailuku.

This is the current TMK map, showing the subject property completely surrounded by Parcel 32.

Hawaii State Survey Office, Honolulu
Dept. of the Interior, U.S. Geological Survey
1922 Territory of Hawaii
Government Map 1

This map shows the Paahana house.

Bishop Museum - Archives
Hawaiian Territorial Survey by T. F. Murphy
1923 - Preliminary Survey
Government Map 2

This map shows the Paahana house.

Hawaii State Survey Office, Honolulu
Hawaiian Territorial Survey by T. F. Murphy
1923 - Completed Survey
Government Map 3

This map shows the Paahana house.

DLNR/Commission on Water Resource Management, Honolulu
Well Map M1, Honolua Quadrangle
Drawn from 1950 U.S.G.S. Aerial photos
1956 Field Check
Government Map 4

This map shows the Paahana house.

Bishop Museum - Archives
U.S.G.S.
1956
Government Map 5

This map shows the Paahana house.

Bishop Museum - Archives
U.S. Army Corps of Engineers
1959
Government Map 6

This map shows the Paahana house.

Judgment Quieting, Establishing and Confirming Title to Real Property
Civil Case No. 90-0416(1)
Bureau of Conveyances, Document 91-1344400

This document awards title of the 15' width of land separating the subject property from Honoapiilani Highway to the subject property.

Interviews

Doreen Saito

Doreen Saito was born on the subject property in 1931. Her grandfather was Manoel Paahana, and her mother was raised keiki hanai by her aunt Julia Paahana Koa, who lived on the property. Mrs. Saito states the subject property was a land exchange for the aforementioned kuleana parcels.

Ken Nomura

Land surveyor for Alexander & Baldwin Properties, stated the subject property was an exchange for the aforementioned kuleana parcels.

Sylvia Hunt

Employee of Maui Pineapple Company. Manages current records and land transactions, which at times requires archival research. Records indicate the subject property was an exchange for the aforementioned kuleana parcels.

Eunice Garcia

Employee of Maui Pineapple Company, manages historical records and private company archives. Records indicate the subject property was an exchange for the aforementioned kuleana parcels.

Wesley Mulhara

Employee of Maui Pineapple Company, Honolua Plantation, and maintains Honolua pineapple planting records and those of other experimental crops planted by D. T. Fleming when he began managing Honolua Ranch in 1912. Field records go back to 1954, but believes areas where kuleanas were located were planted in pineapple in the early 1900s by D. T. Fleming.

APPENDIX - B
Archaeological Inventory Survey

Report 1658-081495

Archaeological Inventory Survey
Honolua Coastal Parcel

Land of Honolua, Lahaina District
Island of Maui

PHRI Paul H. Rosendahl, Ph.D., Inc.
Archaeological • Historical • Cultural Resource Management Studies & Services

Report 1658-081495

Archaeological Inventory Survey
Honolua Coastal Parcel

Land of Honolua, Lahaina District
Island of Maui (TMK:2-4-2-4:31)

BY

Joseph A. Jimenez, M.A. • *Projects Supervisor*
and
Paul H. Rosendahl, Ph.D. • *Principal Archaeologist*

PREPARED FOR

Mr. John Brennan
c/o The Prudential Maui Realtors
181 Lahainaluna Rd., Suite P
Lahaina, Hawaii 96761

OCTOBER 1995

PHRI Paul H. Rosendahl, Ph.D., Inc.
Archaeological • Historical • Cultural Resource Management Studies & Services
HAWAII: 204 Wainuenue Ave. • Hilo, Hawaii 96720 • (808) 969-1763 • GUAM: P.O. Box 23305 • G.M.F., Guam 96921 • (671) 472-3117

SUMMARY

At the request of Mr. John Brennan, Paul H. Rosendahl, Ph.D., Inc. (PHRI) recently conducted an archaeological inventory survey of the Honolua Coastal Parcel (TMK:2-4-2-4:31), situated in the Land of Honolua, Lahaina District, Island of Maui. The overall objective of the inventory survey was to provide information appropriate and sufficient to satisfy all current historic preservation regulatory review requirements of the Maui County Planning Department (MCPD) and the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD)

The inventory survey was conducted on July 24–28, 1995, under the supervision of Projects Supervisor Joseph A. Jimenez, M.A., assisted by Projects Supervisor James A. Head, B.A. PHRI President and Principal Archaeologist Paul H. Rosendahl, Ph.D., provided overall direction for the project. Field work for the inventory survey required 10 man-days to complete.

Five sites consisting of six component features were newly identified during the survey. The sites included the following formal feature types: firepit, wall, platform, modified outcrop, and terrace. The features comprised the following functional types: cooking, burial, boundary, permanent habitation, and possible habitation.

As part of the field work, two 1 by 1 m test units and two 0.5 by 0.5 m shovel test pits were excavated at three sites (one 1 by 1 m test unit at Site 4143; one 1 by 1 m test unit and one 0.5 by 0.5 m shovel test pit at Site 4144; and one 0.5 by 0.5 m shovel test pit at Site 4145). Subsurface cultural materials were recovered from Sites 4143 and 4144 only.

Three of the project area sites (4141, 4144, 4145) are assessed as "No Longer Significant." These sites are significant solely for the information that has already been collected. No further archaeological data collection or data recovery is recommended for these sites. Site (4142) is considered culturally significant and "Preservation As Is" is recommended, with no further archaeological work. The remaining site (4143) is assessed as significant for information content, and further data collection, with no preservation, is recommended.

Contents

Illustrations

Tables

INTRODUCTION

BACKGROUND

At the request of Mr. John Brennan, Paul H. Rosendahl, Ph.D., Inc. (PHRI), recently conducted an archaeological inventory survey of the Honolua Coastal Parcel (TMK:2-4-2-4:31), situated in the Land of Honolua, Lahaina District, Island of Maui (Figure 1). The overall objective of the inventory survey was to provide information appropriate and sufficient to satisfy all current historic preservation regulatory review requirements of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) and the Maui County Planning Department (MCPD), as contained within Title 13, Subtitle 6, Chapters 146-153 - Department of Land and Natural Resources (DLNR) Rules Governing Procedures for Historic Preservation Review.

The inventory survey was conducted on July 24–28, 1995, under the supervision of PHRI Projects Supervisor Joseph A. Jimenez, M.A., assisted by Projects Supervisor James A. Head, B.A. PHRI President and Principal Archaeologist Paul H. Rosendahl, Ph.D., provided overall direction for the project. The inventory survey required 10 labor-days to complete.

SCOPE OF WORK

The basic purpose of an archaeological inventory survey is to identify—to discover and locate on available maps—all sites and features of potential archaeological significance present within a specified project area. An inventory survey is the initial level of archaeological investigation. It is extensive rather than intensive in scope, and is conducted primarily to determine the presence or absence of archaeological resources. A survey of this type indicates both the general nature and variety of archaeological remains present and the general distribution and density of such remains. It permits a general significance assessment of the archaeological resources and assists in the formulation of recommendations and estimates for any subsequent mitigation work that might be necessary or appropriate. Such mitigative work could include further data collection involving detailed recording of sites and features, and selected test excavations; in addition, mitigation could include further data-recovery excavations, construction monitoring, interpretive planning and development, and/or preservation of sites and features with significant scientific research, interpretive, and/or cultural values.

The basic objectives of the survey were four-fold: (a) to identify all sites and site complexes present within the project area; (b) to evaluate the potential general significance of all identified archaeological remains; (c) to determine the possible impacts of proposed development upon the identified remains; and (d) to define the general scope of any subsequent further data collection and/or other mitigation work that might be necessary or appropriate.

Based on a review of readily available background literature, basic familiarity with the general project area, a preliminary site visit-field reconnaissance conducted on 17 July, 1995, and extensive familiarity with the current requirements of pertinent review authorities, the following specific tasks were determined to constitute an adequate and appropriate scope of work to comply with current inventory level survey requirements:

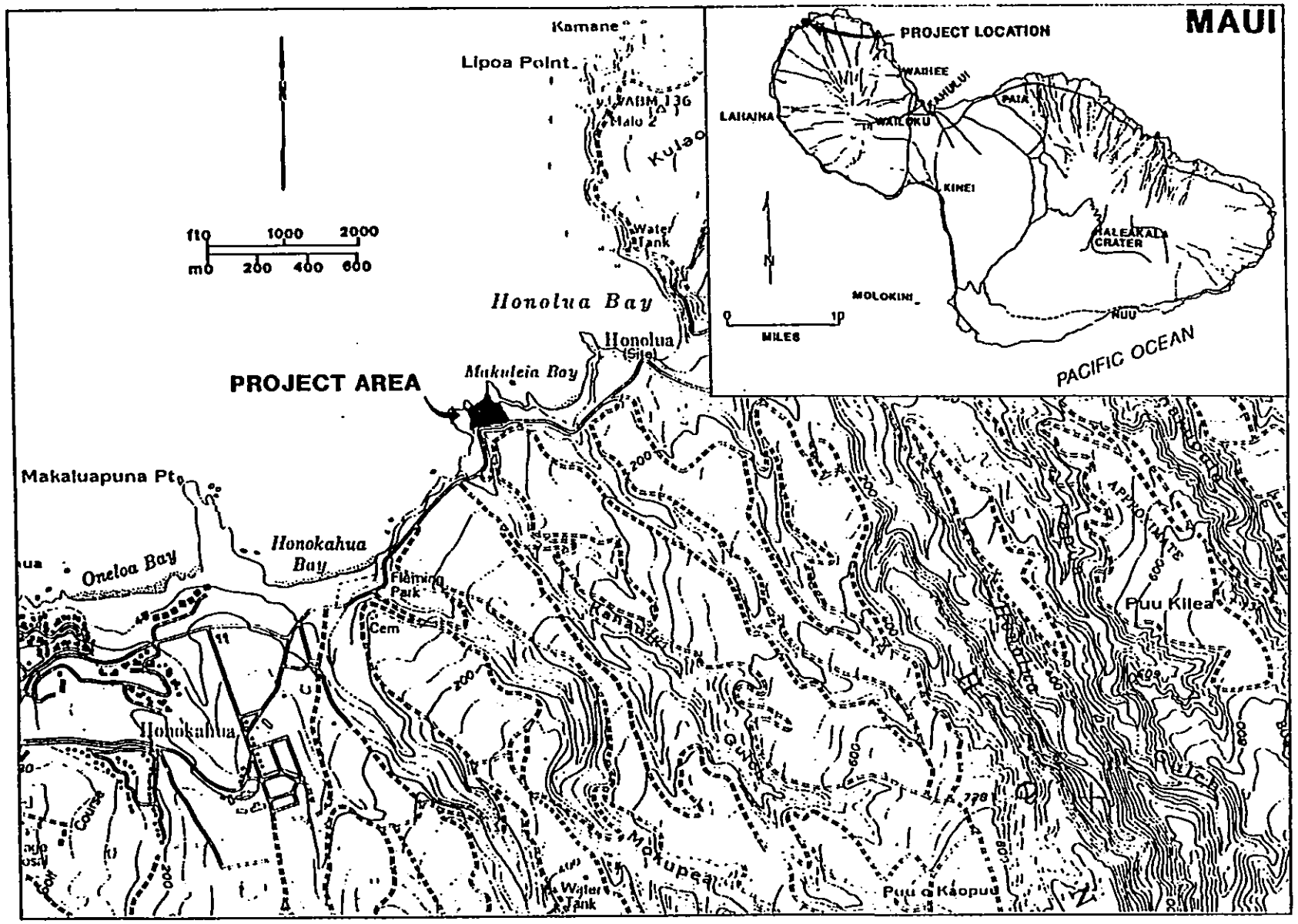


Figure 1. Project Area Location

1. Review archaeological and historical literature relevant to the project area, and conduct historical documentary research (emphasis on readily available literature and documentary sources);

2. Conduct 100% coverage high intensity ground survey of the entire project area, to find and record (a) any previously identified sites and features, and (b) any previously unidentified sites and features;

3. Conduct limited subsurface testing by manual excavations of the project area (a) to determine the presence or absence of potentially significant subsurface cultural features or deposits, and (b) to obtain suitable samples for age determination analyses;

4. Laboratory analyses; the principal areas of analysis include age determination, artifactual analysis, and ecofactual analysis, and

5. Analyze field and historical research data, and prepare appropriate reports.

The inventory survey was carried out in accordance with the current standards for inventory-level survey required by DLNR-SHPD. The significance of all archaeological remains identified within the project area was assessed in terms of (a) the National Register criteria contained in the Code of Federal Regulations (36 CFR Part 60), and (b) the criteria for evaluation of traditional cultural values prepared by the National Park Service (1990). DLNR-SHPD and MCPD both use these criteria to evaluate eligibility for both the Hawaii State and National Registers of Historic Places.

PROJECT AREA DESCRIPTION

The project area consists of c. 2.47 acres within Parcel 31, situated directly *makai* (downslope) of the Honoapiilani Highway, on a mostly level terrace c. 40–50 ft (13–16 m) AMSL (above mean sea level) The project area is bounded by the Pacific Ocean to the north and west, the Honoapiilani Highway on the south, and by land owned by Maui Land and Pineapple on the east.

Soils in the project area consist of Molokai silty clay loam of the Waiakoa-Keahua-Molokai association, occurring on pahoehoe rockland (Foote et al. 1972). These well-drained soils formed in material weathered from basic igneous rock. They can be nearly level or moderately steep, and mainly occur at elevations ranging from nearly sea level to 1,000 ft.

Rainfall in the general vicinity of the project area amounts to 20-25 inches per year (Foote et al. 1972). Vegetation in the project area is dense, and consists primarily of introduced genera, including *koa haole* (*Leucaena glauca* L., Benth.) ironwood (*Casuarina equisetifolia* L., *Casuarina glauca* Seib), Christmas-berry, (*Schinus terebinthifolius* Raddi), red hibiscus (*Hibiscus rosa-sinensis* L.), *hau* (*Hibiscus tiliaceus* L.), and various grasses and shrubs. Mature open stands of ironwood occur along the bank of the rocky beach in the southwest corner of the project area. Dense thickets of small *koa-haole* trees now occupy areas that were most likely cleared formerly, when the project area was utilized as a residence.

Fauna are almost exclusively historically introduced taxa. Birds observed included the, zebra dove (*Geopelia striata*) and spotted dove (*Streptopelia chinensis*), Japanese white-eye (*Zosterops japonicus*), red-crested cardinal (*Paroaria coronata*) and northern cardinal (*Cardinalis cardinalis*), house finch (*Carpodacus mexicanus*) and house sparrow (*Passer domesticus*), and the common mynah (*Acridotheres tristis*). Migratory birds included wandering tattlers (*Heteroscelus incanus*). Mammals observed in the project area were limited to one species, the mongoose (*Herpestes auropunctatus*).

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Previous archaeological investigations within West Maui and the current project area have been previously summarized by Guerriero et al. (1993), from which much of the following discussion has been extracted. The distribution of prehistoric site types as well as analyses and interpretation of site function and significance, constitute the primary focus of these summaries. The purpose of the review is to assess the possible nature and extent of prehistoric Polynesian settlement in West Maui, with particular regard to patterns of habitation and resource exploitation that may have been revealed in the archaeological record.

W. Walker 1929

This investigation, conducted in 1928 and 1929, and written up in 1931, involved a partial assessment and inventory of the larger sites around Maui Island, and like similar studies on other islands during this period many, if not most, of the recorded sites (266) were *heiau*. The sites closest to the current project area were Puhalakau (Ai Maia) Heiau (Site 17) and Honuaula (Site 18), both of which are in Honolua, less than a mile north of the current project area. Puhalakau Heiau was reportedly a *heiau* for Kuula, and a fisherman's *ko'a* on the beach below had been washed away. South of the current project area were: Kahauiki Heiau (Site 16), reported for Honokahua; Halulukoakoa Heiau (Site 11) in the Mala area, reportedly a *heiau* of human sacrifice, with only a few remnants surviving at the time of survey; Kahana Heiau (Site 12) in Mahinahina, also nearly completely destroyed; Mailepai Heiau (Site 13) in Mailepai, also destroyed; Hihiho Heiau (Site 14) in Kahana, also destroyed; and a rectangular stone wall enclosure (Site 15) in 'Alaeloa. North of the present project area, in Honokahau, were Iliilikea Heiau (Site 19) and Maiu Heiau (Site 20) (Walker 1931).

Kirch 1973

This survey was conducted on behalf of Maui Land and Pineapple Company, in connection with the Honolua Development Area. The study area consisted of a coastal strip of land extending from Fleming Beach (at Kapalua) to Fleming Park at Honokahua Bay, and included four inland gulches During the survey the Honokahua Burial Site (BPBM D13-9 [SIHP 1342]) was initially identified. One *in situ* burial was noted eroding out of the wave-cut beach bank, and other bones and fragments were found scattered on the dune surface. Kirch did not attempt to determine the exact extent of the burial ground, but simply remarked that the "...sand dunes rising behind Honokahua Beach...contain an indeterminate number of human (presumably prehistoric) burials" (Kirch 1973a:11).

Other sites identified during the survey include: BPBM D13-1 (SIHP 1346), a complex of eight features at Hawea Point, interpreted as a temporary Hawaiian settlement for intermittent marine exploitation for the period post-dating AD 1500; BPBM D13-2 (SIHP 1347), a cave shelter situated under the cliff face at Hawea Point; BPBM D13-3 (SIHP 1348), a stone terrace

platform situated on a promontory overlooking Oneloa Bay, between Hawea Point and Makaluapuna Point; BPBM D13-4 (SIHP 1343), a terrace, enclosure, pavements and midden deposit comprising an aboriginal house site, located on Makaluapuna Point; BPBM D13-5, stone walls composing a cattle enclosure, located on Parcel 2-H of the original proposed Ritz-Carlton hotel site; BPBM D13-6 (SIHP 1345), a midden deposit located on the south bank of Honokahua Stream drainage, on the east side of Fleming Park; BPBM D13-7 (SIHP 1340), a boulder grindstone, also located on the east side of the Park; and BPBM D13-8 (SIHP 1341), a similarly located midden deposit closely resembling SIHP 1345 but containing a historic button.

Moore 1974

Just north of the present project area, in Honolua Valley, Bishop Museum surveyed and recorded 13 archaeological sites. A wide range of site types was reported, including a possible coastal fishermen's camp, an area thought to be the location of the now-destroyed Puhalakau Heiau, inland dry-agricultural terraces and fields, and a complex series of walls, platforms, and enclosures thought to represent the Honuaula Heiau. Eleven sites were interpreted as prehistoric, and two as historic. Many sites in the lower valley had been modified historically. Comparatively intact prehistoric sites indicated that the chief economic pursuits of the Hawaiians there were the exploitation of inshore marine resources and the cultivation of dryland crops.

Griffin and Lovelace 1977

The study area for this project was south of the current project area, and the study consisted of intensive survey of a coastal corridor between Honokawai and Alaeloa, in connection with proposed realignment of the Honoapiilani Highway through Kaanapali. Sites along the highway realignment included two walls, a trail, and a small midden deposit. The latter feature yielded radiocarbon dates confirming occupation several centuries prior to western contact. Five inland gulches were also investigated. Two sites of interest encountered in Honokawai Gulch, included Site 1207, which consisted of boulders covered with about 46 petroglyphs (in an area of approximately 100 square meters); and Site 1208, which was composed of a number of stone wall alignments in an area of about 0.3 by 138 meters (on the north slope of the gulch).

A.T. Walker and Rosendahl 1985

South of the present project area, at Kahana, a proposal by the U.S. Department of Agriculture, Soil Conservation Service, to establish a desilting basin was accompanied by a program of subsurface archaeological reconnaissance. The program was undertaken in order to evaluate possible subsurface accumulations of cultural materials at several previously recorded prehistoric sites (Kaschko 1974). Detailed recording and test excavations had already been undertaken at several of these sites by the Bishop Museum (Komori 1983), whose findings suggested the possibility that additional significant cultural material may have remained buried within the vicinity, and that the material reflected historic cattle ranching. The Walker and Rosendahl 1985 evaluation suggested, on the other hand, that the project area sites represented an inland portion of the agricultural component of the traditional Hawaiian land use system, with historic period re-use of the area following initial displacement of native Hawaiians with the introduction of commercial sugar cane and pineapple cultivation.

Rogers and Rosendahl 1992

North of the present project area, in Honokahau, PHRI conducted a survey and recording project of two *heiau* sites—the Iliilikea and Maiu Heiau (Walker's Sites 19 and 20). Additional

structures and features of the *heiau* were identified and recorded, and the previously known boundaries of these sites were expanded. The survey revealed an unsuspected site complexity and integrity. It was noted that further study of the *heiau* would contribute significantly to the understanding of prehistoric and proto-historic (18th century) cultural patterns on the north coast of Maui.

Kapalua Hotel Development Parcel 2-H, 1986

Recent work south of the present project area includes three studies conducted by PHRI within the original Ritz-Carlton hotel site (Hotel Development Parcel 2-H). These studies for Parcel 2-H involved three phases of archaeological investigation—reconnaissance survey, intensive survey and testing, and data recovery/mitigation excavations.

In early 1986, vegetation grubbing associated with initial clearing for access roads needed for engineering studies exposed five areas of disturbed skeletal material. During a reconnaissance survey consisting of a non-systematic pedestrian survey, human skeletal remains were identified in six different areas. As a result, the survey resulted in the expansion of the Honokahua Burial area (Site 1342) boundaries to the south and west. On the basis of the reconnaissance survey, it was recommended that a more detailed intensive survey be conducted in the parcel (Haun and Rosendahl 1986).

A formal intensive archaeological survey was subsequently conducted, which included both surface survey and systematic soil coring and test excavations. A total of eight archaeological sites were recorded for Parcel 2-H, the most significant of which was the previously recorded Honokahua Burial Site (BPBM D13-9 [SIHP 1342]). Intensive use of the parcel as a cemetery was documented, tentative boundaries for the burial area were defined, and areas of probability (high, medium, or low, in terms of anticipated density of burials) were formulated. Other prehistoric sites reported in the parcel included remnants of a prehistoric trail (SIHP 2015), and a buried aboriginal cultural deposit (SIHP 2016). Three sites were historic and associated with ranching—the Honolua Ranch Stables (a complex with numerous features), a concrete water trough, and a previously recorded enclosure (BPBM D13-5). Two other sites in Parcel 2-H—a walled shelter located near a trail and a recent hearth, and a rubble pile—were indeterminate in age (Donham 1986).

In March 1987 data recovery and mitigation excavations within Hotel Development Site 2-H were undertaken, and field work continued until December 1988, when work was suspended. Interim results of the archaeological field work were made available in an informational report (Donham 1989), in which the Honokahua Burial area (SIHP 1342) was described as a multi-component burial site with over 1,000 prehistoric interments. Radiocarbon dating indicated initial utilization of the coastal area may have been as early as AD 600. The final report for the archaeological investigation is currently in preparation (Donham, in prep.).

Guerriero and Charvet-Pond 1993

Paul H. Rosendahl, Ph.D., Inc. (PHRI), conducted an archaeological monitoring and data recovery program at the Revised Kapalua Ritz-Carlton Hotel Site, at Honokahua. The consisted of archaeological monitoring of construction excavations and other related activities, and limited subsurface excavation and data recovery in three delimited areas composing the revised hotel project site: Area I, Proposed Revised Hotel Site; Area II, Proposed Tennis Court Complex; and Area III, Proposed Beach Facilities Complex.

During the archaeological monitoring, nine sites containing 43 component features were identified. Formal feature types included 14 deposits (seven prehistoric cultural deposits and seven historic refuse areas), eight structures (post-contact, western-style constructions), nine firepits (six prehistoric and three historic), a prehistoric trail remnant, and stone-faced terracing. There were also ten human burials. Six of the sites (2869, 2870, 2871, 2872, 2874, 2875) were located in project Areas I and II, and the remaining three sites (1342A, 2873, and 2876) were located in project Area III. Site functions included prehistoric burial (Site 1342A), prehistoric transportation and communication (Site 2876), prehistoric and historic habitation (Sites 2869, 2870, 2871, 2873, 2874, 2875) and agriculture (Site 2872). Six radiocarbon dates obtained from prehistoric Sites 1342A and 2873 suggested cultural activity in the project area may have occurred as early as AD 1270, and as late as the modern period.

The data from the 1993 project were evaluated in terms of Rosendahl's (1972) settlement-pattern model for Lapakahi on Hawaii Island, which essentially postulated pioneering Polynesian settlement in coastal regions and subsequent expansion into upland areas for dryland agriculture. Later settlement exhibited a fluid land-use pattern, with *ahupua'a* inhabitants periodically migrating between lowland coastal and upland garden plots. The findings of the 1993 study suggest that aboriginal settlement at Honokahua may have followed a similar "transient" pattern.

SUMMARY OF HISTORICAL DOCUMENTARY RESEARCH

In ancient times, the waters off west Maui, between the Honolua-Honokahua Bays and Ma'alaea were important fisheries, and 'Ālaʻelaʻe promontory was probably a fish-spotting point. It is possible that a *ko 'a* (fisherman's shrine) was located near the point, but had washed away as, was reported by Walker (1931).

In 1931 Bishop Museum archaeologist Winslow Walker described three archaeological sites in the general vicinity of the current project area. A small, irregular platform (Site 16), a *heiau* (Site 17), and the remains of another "old stone platform," (Site 18). He also noted that a *ko 'a* formerly on beach had washed away, and that a portion of the old trail system that circled the island passed nearby. Handy (1940) reported that in ancient times the area probably supported fishing communities and isolated fishermen, who probably also raised sweet potatoes and, to a lesser extent, taro.

Following the Mahele of the mid 1800s, the land of Honolua was awarded to the chief, and later King of Hawai'i, William Lunalilo (LCA 8559-B). Following his death the land was sold, and large areas were turned over to ranching. Subsequently substantial portions of land in this area were tuned to sugar and pineapple cultivation.

SETTLEMENT PATTERNS

Polynesian settlement in the Hawaiian Islands is thought to have occurred first in the comparatively lush environments of windward regions, with settlement gradually expanding to drier, presumably less hospitable, "marginal" leeward environments. However, although the premise is sound in terms of recognizing a basic necessity for an abundance of easily exploitable resources for pioneering settlement, there is some evidence to suggest that the concept of what constitutes a "marginal" environment needs to be reexamined, and that early Polynesian occupations—whatever their specific nature—were occurring in other than specifically windward locales. A charcoal sample derived from an aboriginal habitation site on the arid leeward coast of Oahu yielded one of the earliest radiocarbon dates from the Hawaiian Islands, AD 145-600 (Charvet-Pond and Davis 1992 [initially reported in Davis and Haun 1987]). This and similar early dates from other sites suggest pioneering Polynesian settlement in Hawaii occurred nearly 2,000 years ago and was not necessarily confined to windward regions.

Largely due to the infrequency of early sites, the nature of pioneering settlement in Hawaii is as yet poorly understood; however, it is thought that early Polynesian colonization and modest expansion in the first millennium were followed in the second millennium by explosive population growth and expansion to nearly all accessible regions of the islands. A chronological model that distinguishes a five-period Hawaiian settlement/cultural sequence has been proposed. The first period, Colonization (AD 300-600), is followed by the Developmental Period (AD 600-1100). These centuries of early settlement are followed by a period of rapid Expansion (AD 1100-1650), followed by the Proto-historic period (AD 1650-1775), and the Historic (post western-contact) era (Kirch 1985). Although subsequent research will undoubtedly refine the model, as it stands, Kirch's sequence provides a useful baseline for analysis and is cited throughout this report.

West Maui

As noted above, recent research suggests that pioneering settlement may not have been restricted to the windward regions, which in turn suggests that hospitable environments—those providing sufficient exploitable resources for initial as well as subsequent settlement—may have included landscapes that by western standards appear harsh. Evidently the coastal environment of West Maui appeared somewhat marginal and uncompromising to early archaeological surveyors of the region. In commenting on the paucity of prehistoric aboriginal sites within the Honolua Development Area (Honokahua to Kapalua), Hawaii archaeologist P.V. Kirch noted that:

> The local environment [was] apparently not favorable to the kinds of economic pursuits engaged in by prehistoric Hawaiians. None of the streams in the area are permanent, precluding their use for irrigation. The ridge areas would perhaps have been suitable for dryland cultivation, especially of sweet potato [*Ipomea batatas* (L.) Lam.]...The few sites that were found seem to relate to marine exploitation. (Kirch 1973b:2)

The overall impression conveyed was that the region was a poor one; however, additional data from other sources suggest that Kirch's initial assessment may require some modification. Stearns (1942) reported several perennial streams radiating from the summit of West Maui, including Honolua Stream, that is located approximately 1/2 mile north of the current project area. In addition, historic documentation implies that wetland agriculture—as well as dryland—

was traditionally practiced. Finally, a radiocarbon date of AD 600 from a deposit at the Honokahua Burial Site, south of the project area, suggests that initial settlement of the region may have occurred early in the Hawaiian cultural sequence, which in turn suggests that the Honokahua-Honolua coastal area may not have been environmentally marginal at all, but on the contrary, perhaps particularly suitable for pioneering occupations as well as subsequent expansion.

The Ahupua'a

Kirch's cultural sequence posits a period of rapid expansion beginning as early as about AD 1100 and continuing to about AD 1650. This was followed by a proto-historic (or late-prehistoric) period of continuing geographic expansion, social struggle (in the form of frequent warfare), and amplification and reification of social, political, and economic systems. At the time of western contact in 1778, one of the primary units of Hawaii's sophisticated geopolitical land-use system was the *ahupua'a*—a land division that, ideally, consisted of a wedged-shaped parcel reaching from the sea (including offshore) to the mountain tops. All accounts indicate the *ahupua'a* was of central importance to the prehistoric Hawaiian economy, and that by encompassing all major ecological zones—usually defined by elevation and vegetation distribution—the archetypal *ahupua'a* provided access to the full range of natural resources necessary to sustain a resident population. Several ecological zonation systems have been devised for Hawaii, and most recognize a basic distinction between coastal lowland dry forest and upland rainforest regions. The nature of Hawaiian patterns of settlement, resource exploitation, and economic exchange with regard to these differing ecologies—and the manner in which the *ahupua'a* functioned in ancient Hawaii—is a focus of continuing inquiry. The current project area is entirely within the *ahupua'a* of Honokahua, and borders Napili Ahupua'a on the west and Honolua on the east.

Settlement Models

Settlement models facilitate the integration of spatially diverse data sets into a common research framework and permit assessment of localized settlement patterns and adaptations in terms of their larger implications—in this case, with respect to the *ahupua'a* of Honolua, the Lahaina District of West Maui, Maui Island as a whole, and settlement in the Hawaiian Islands in general. One model for Hawaiian settlement, based on work in Lapakahi, Kohala, Hawaii, proposed that initial settlement was at the seacoast and focused on marine exploitation. The subsistence economy presumably also included local dryland gardening and periodic forays into the valleys and mountains, the latter to both supplement the food supply and obtain necessary raw materials. Over time, settlement gradually expanded at the coastal area and into upland agricultural areas. The inland expansion into more extensive dryland farming augmented the agrarian base and added a significant inland component to the Hawaiian land-use system. Residences were located at both coastal and upland areas, and in the uplands these were inferred to be extended-use habitations—that is dwellings that were utilized repeatedly on a more or less regular basis for extended periods of time (Rosendahl 1972).

This model implies that the coastal environment was initially sufficient to meet most of the needs of a pioneering population and that settlement of the uplands did not occur until later in the cultural sequence, presumably when social pressures necessitated further expansion. It also implies that during later settlement—that is, during most of the period of occupation of Lapakahi—the local population was periodically moving back and forth between the coastal fishing areas and the upland garden plots. In a more recent study on the south coast of East Maui, in an environment similar to that of Lapakahi, settlement was thought to be similar to that

elucidated in Rosendahl's study, except that pattern of migration (or "transience") appeared to be reversed. It was remarked that:

> ...most of the [coastal] sites excavated seem to have been temporary shelters for persons exploiting marine resources. As the lower elevations or coastal areas of Kahikinui and Honua'ula are not conducive to agriculture (in terms of low rainfall and poor edaphic conditions), it may be that a pattern of transience between coast and inland slopes existed. In other words, persons who normally resided in an upland agricultural habitat may have utilized the coastal shelters as temporary or seasonal bases for expanding their range of resource exploitation. The similarities in ecology and settlement patterns between the Lapakahi area of Hawai'i...and those of Kahikinui are worth noting. (Chapman and Kirch 1979:36)

Postulated Settlement

In West Maui the geology is ancient, and geological evolution combined with climatic factors has resulted in a complex landscape that exhibits exceptional ecological diversity within a relatively small land area. Soils are well-developed and well-drained, rainfall is adequate at the coast and increases with elevation, freshwater is plentiful, offshore is relatively shallow with abundant marine resources, and inland, the mountains and valleys are readily accessible and provide the full range of exploitable econiches as well as suitable environments for both dryland and wetland agriculture. It is very likely that West Maui may have provided ideal conditions for pioneer settlement and subsequent settlement expansions. The archaeological sites in the region—*heiau*, habitations, burials, trails, petroglyphs, and dryland and pondfield agricultural sites—indicate that a wide array of activities were conducted in the region during prehistory, although the specific activities as well as the temporal sequence for the activities are not yet clear.

The settlement model proposed for Lapakahi, with initial settlement occurring at the coast and subsequent expansion inland, may be applicable as well to Honolua, except that expansion in Honolua may have included upland wetland agriculture as well as dryland gardening. The environment would have supported such an adaptive strategy, which presumably would have further enabled population expansion. That two *heiau* are located in the lower Honolua valley suggests that the region was able to support a substantial population and that these agrarian strategies did occur. Overall, however, the keynote behavior of the Lapakahi settlement model—with its potential application to Honolua—is transience, that is, the periodic movement of the *ahupua 'a* inhabitants back and forth between the coastal zone and inland agricultural lands. The model implies repeated and probably extended occupations in both zones, although which area would constitute the permanent, or primary, zone of occupation—in Honolua at least—remains to be demonstrated.

The current project area is entirely within the coastal zone of Honolua Ahupua'a. The coastal zone has been defined for the region as extending 400-600 m inland from the shoreline, and prehistorically it may have been utilized for permanent and temporary habitation in conjunction with a wide variety of subsistence activities, including gardening, livestock husbandry, fishing, shell fishing, aquaculture, and the harvesting of marine and terrestrial flora. Additionally, ceremonial sites and human burials were also located in the coastal zone, and were most commonly encountered in or near areas of aggregated permanent habitation (Donham 1990). In the current project area the coastal zone encompasses a marine landscape. Prehistoric aboriginal activity near the shore included burial, permanent or temporary habitation, and harvesting of marine resources, while in the inland terrestrial areas activities may have included

habitation, dryland gardening, livestock husbandry, and possibly, small-scale pondfield agriculture. Following Western contact and the consequent collapse of the Hawaiian land-use system, the lands were utilized variously for cattle grazing and other livestock management, and then for pineapple cultivation. Most recently the land was used as a residence of the Kamaka family until the 1950's, followed by a series of periodic homesteaders.

FIELD METHODS

The project area was surveyed by way of topographically oriented pedestrian sweeps. The interval between sweeping crew members was c. 10.0–15.0 m, depending on vegetation and terrain. The ground survey focused on identifying surface structural and portable remains. With the exception of the immediate ground surface (which was obscured by grass), visibility during the ground survey was good. The grass would have concealed surface midden scatters, but not structural features The survey was facilitated by a photocopy copy of a tax map of the project area (1"=400' scale), which included the Honoapiilani Highway and showed adjacent parcels.

As sites were identified they were assigned sequential PHRI temporary numbers prefixed by the PHRI project number "1658-", beginning with 1658-1*. Subsequently, all identified sites were assigned State Inventory of Historic Places (SIHP) permanent site numbers (See Table 1 for a correlation of site numbers). All sites were plotted on a photocopy copy of a tax map of the project area (1"=400' scale). All site locations have subsequently been surveyed by Norman Saito Engineering Consultants, Inc.

Table 1. Correlation of Site Numbers

SIHP	PHRI Temp No.
4141	1658-1
4142	1658-2
4143	1658-3
4144	1658-5
4145	1658-6

State Inventory of Historic Places (SIHP) numbers. SIHP numbers are five-digit numbers prefixed by 50-50-01 (50=State of Hawai; 50 = Island of Maui 01=USGS 7.5' series quad map [1983, "Napili, Hawaii"].

All identified sites and component features were cleared of vegetation, recorded on standard PHRI site record forms, and photographed using 35 mm black-and-white film. Detailed recording of sites included written descriptions, measurements, and plan maps. Site dimensions were determined, and plan maps were created, with the aid of metric tape and compass. Two 1.0 by 1.0 m test units and two 0.5 by 0.5 m shovel test pits were excavated at three sites (Sites 4143, 4144, and 4145 [PHRI temporary numbers]) in order to identify subsurface cultural deposits and to recover materials suitable for radiocarbon dating. Using hand tools, excavation of the test units proceeded on the basis of natural layers. Because natural layers generally exceeded 10 cm in depth, excavation proceeded on the basis of arbitrarily determined 10 cm levels within natural strata. Excavation of all test units was terminated when the soft, deteriorating bedrock was encountered.

To facilitate recovery of portable remains, all material collected from the test units was screened through 1/4-inch and 1/8-inch mesh. Excavation of the shovel test pits followed the same procedures except all soil was screened through 1/4 inch mesh only. Soil samples were described in detail using standard procedures and terminology described in the *Soil Survey Manual* (Soil Survey Staff 1962). Upon completion of the excavation, the test units were photographed, and a profile of one of the exposed faces was drawn. Then each unit was backfilled and the areas around them returned to their condition prior to field work.

* *Temporary Site No. 1658-4 was later determined to be modern, and not an archaeological site.*

FINDINGS

Five sites consisting of six component features were newly identified during the survey. Figure 2 shows the locations of all identified sites, and Table 2 provides summaries of identified sites and features, including PHRI Cultural Resource Management (CRM) value mode assessments. The sites included the following formal feature types: firepit, rock wall, enclosure, modified outcrop, and stone alignment. The features comprised the following functional types: cooking, burial, boundary, permanent habitation, garbage disposal and possible habitation.

SITE 4141

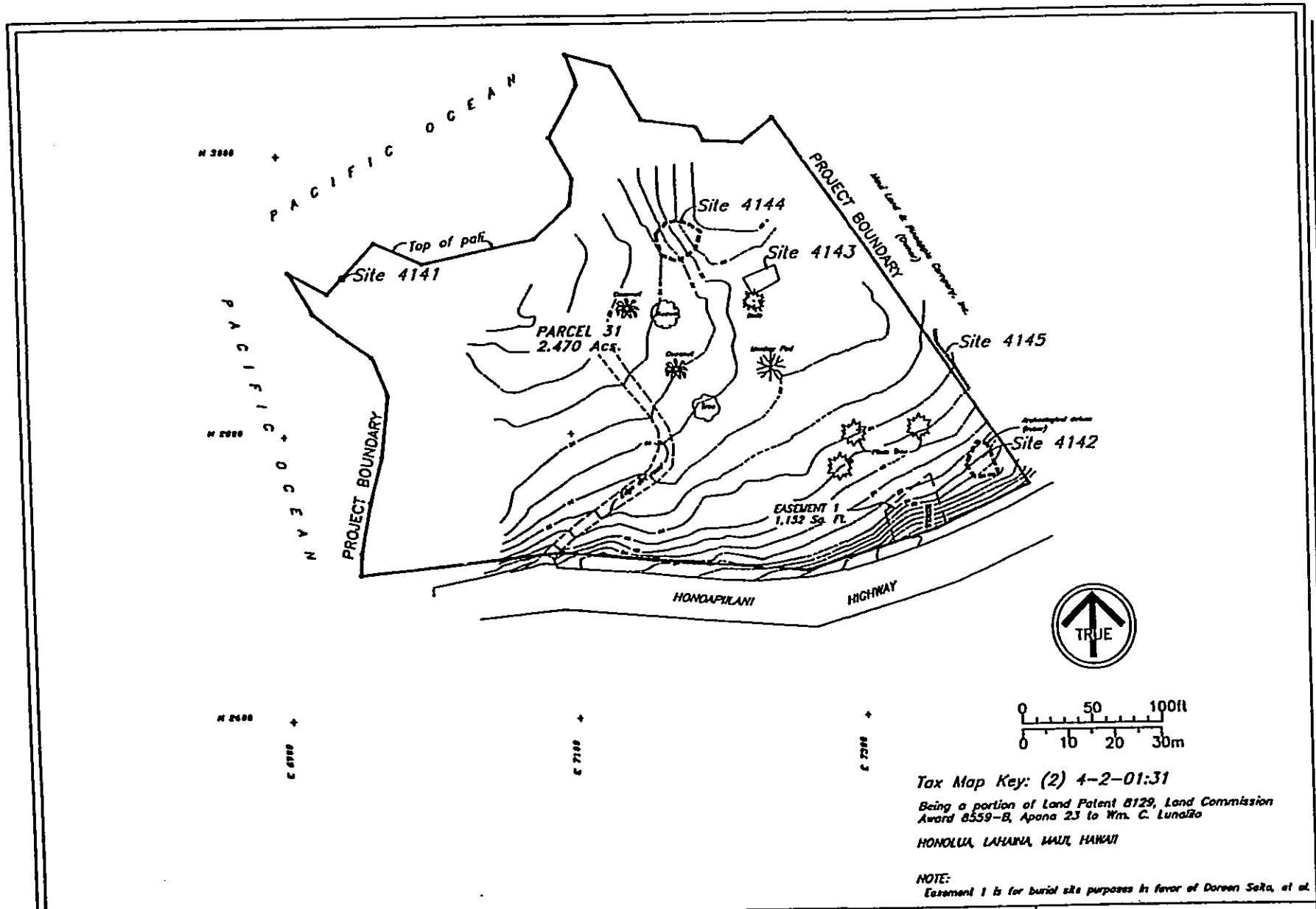
Cooking function was assigned to the subsurface fire feature observed in the steep soil bank above the rocky coastline of the parcel (Site 4141). The feature, as observed, is a charcoal and ash concentration, including a distinct lens of charcoal and ash, below which there is a concentration of small basalt rocks (7-10 cm diameter) that appear to be thermally altered. The presence of thermally altered rocks in the feature suggest a cooking function for this fire feature rather than other possible functions such as a signal fire. Figure A-1, in Appendix A, illustrates the feature in profile as it was observed in the soil bank.

SITE 4142

Burial function was assigned to this site, consisting of a complex of four small terraces in the southeast corner of the parcel (Figure A-2, Figure 3). The walls of these small terraces are low, ranging from a single course of aligned basalt cobbles (*mauka-makai* walls) to retaining walls 0.40-0.50 m high (east-west). Inside the southeastern terrace is an empty "Mason" type glass jar, buried in the ground up to the neck, and a similar mayonnaise jar was observed on the surface. These jars could have served as receptacles for flowers or plants. Burial function was assigned to this site based on several lines of evidence.

A copy of a survey map, prepared in 1991 by Norman Saito Engineering Consultants, Inc., showed a 1,152 sq. ft. easement in the SE corner of the parcel, which was established around the approximate location of the grave sites of four members of the Kamaka family. At the time the field work was performed, the corners of the parcel to be surveyed were not marked, and the approximate location of the terraces appeared to correspond quite well with the location of the easement as represented on the survey map. Therefore, the terraces of Site 4142 were interpreted to be the historic graves, and they were not tested for subsurface indications of human remains or cultural deposits. Subsequent to the completion of the fieldwork, Norman Saito Engineering Consultants, Inc. returned to the project area to re-survey the parcel, and at the same time, survey the exact locations of the identified archaeological sites. Upon completion of their map, it was noted that Site 4142 was located c. 28 ft to the NE of the easement, and that no archaeological features had been identified inside the easement.

In summary, Site 4142 is not located in the easement, but it is very close to where a Kamaka family member remembered the approximate location of the family graves, nearly 40 years after vacating the property (the easement was established based on this recollection). Where the easement is located, no surface indications of graves were noted during the archaeological survey reported here. More recently, on September 21, 1995, Mr. Bruce Rainey, of The Prudential



Tax Map Key: (2) 4-2-01:31

Being a portion of Land Patent 8129, Land Commission Award 8559-B, Apana 23 to Wm. C. Lunalilo

HONOLUA, LAHAINA, MAUI, HAWAII

NOTE:
Easement 1 is for burial site purposes in favor of Doreen Saito, et al.

PHRI PAUL H. ROSENDAHL, Ph.D., INC.
ARCHAEOLOGICAL • HISTORICAL • CULTURAL
RESOURCE MANAGEMENT STUDIES & SERVICES

Archaeological Inventory Survey
Honolua Parcel, Maui County
PHRI Project 95-1658

Figure 2.
PROJECT AREA & SITE LOCATIONS

Table 2. Summary of Identified Sites and Features

*SIHP Site No.	Formal Site/Feature Type	Tentative Functional Interpretation	#CRM Value Mode Asses. R	I	C	+Field Work Tasks DR	SC	EX
4141	Fire pit	Cooking	L	L	L	+	-	-
4142	Terrace (4)**	Burial	L	L	H	+	-	-
4143	Platform	Perm. Habitation	H	H	M	-	-	+
4144	Complex (2)	Poss. Habitation	L	L	L	+	-	+
A	Modified outcrop	Garbage disposal	L	L	L	+	-	+
B	Alignment	Poss. habitation	L	L	L	+	-	+
4145	Wall	Boundary	L	L	L	+	-	-

* *State Inventory of Historic Places (SIHP) numbers, SIHP numbers are five digit numbers prefixed by 50-50-01 (50=State of Hawaii; 50=Island of Maui; 01=USGG 7.5' quad map [1983, "Napili, Maui, Hawaii"].*

\# *Cultural Resourse Management Value Mode Assessment—Nature:*
R = scientific research
I = interpretive
C = cultural
—Degree: H = high, M = moderate, L = low.

\+ *Field Work Tasks Completed: DR = detailed recording (scaled drawings, photographs, and written descriptions), SC = surface collections, EX = test excavations.*

** *(#) = Number of component features within complex.*

Figure 3. Site 4142, View to South (Neg. 4920-3)

Maui Realtors, went to the project area with Mr. Clement Kamaka who has been the family member performing most of the maintenance of the family graves. During the site visit, Mr. Kamaka confirmed that the terraces of Site 4142 are indeed the family gravesites.

SITE 4143

Permanent habitation function was assigned to this single platform feature (Figure A-3). The feature is a rectangular platform lined by a single course of basalt cobbles (mostly slabs) placed in the ground like kerbstones (Figure 4). The interior of the platform is slightly higher than the surrounding ground surface, and basalt rock and gravel paving was observed in several areas near the edges of the platform. A broken basalt pestle was found on the surface near the center of the interior. Based on criteria used by Cordy (1981) to distinguish permanent and temporary habitation sites (features), Site 4143 is most likely a permanent habitation. Cordy's criteria for distinguishing between permanent and temporary habitation sites are based on site location and the structural complexity and scale of the site. Site 4143 appears to be structurally complex (basalt slabs placed end to end below the surface, a slightly raised and paved interior, a length/width ratio of 2:1), and has an interior surface area of 27.75 m².

A single 1.0 by 1.0 m test unit (TU-2) was placed adjacent to the south wall of the platform. A thin and discontinuous "pavement" composed of small flat basalt cobbles was removed from the south half of the unit, from which marine shell, glass, a plastic button, and *kukui* nut fragments were also recovered. Below this thin and discontinuous pavement a single 30-42 cm thick layer of dark brown (7.5YR3/2) silty clay loam was excavated in four arbitrary 10 cm levels. The only portable remains recovered from beneath the pavement was a bone fragment from an unidentified medium-sized mammal. Excavation of TU-2 was terminated when the soft, deteriorating bedrock was encountered. Figure A-3, the plan view of the site, shows the placement of TU-2. Figure A-4 is a post-excavation photograph of TU-2, and Figure A-5 provides a view of the south face profile of TU-2.

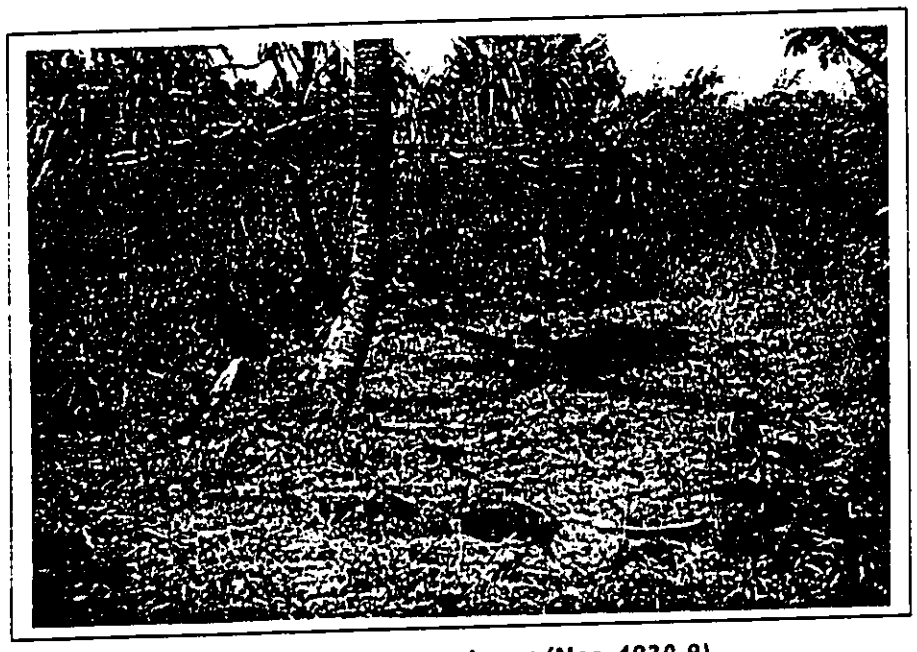


Figure 4. Site 4143, View to West-southwest (Neg. 4920-9)

SITE 4144

A possible habitation function was assigned to this site, which is composed of two features, a modified outcrop (Feature A) and a small rock alignment with surface midden (Feature B) (Figure A-6). Feature A consists of c. 0.5 m² basalt boulder outcrop, that has water-worn and angular cobbles stacked and piled on the SW (downhill)) side of the outcrop. A leg bone of a large land mammal, glass fragments, and porcelain fragments were observed on the surface of, and in the immediate vicinity of, the feature. The presence of surface and subsurface midden at both features suggests a habitation function for this site.

A single 1.0 by 1.0 m Test Unit (TU-1) was excavated in the largest part of the piled rock modification of Feature A. Between 15-30 cm of piled water-worn and angular basalt cobbles were first removed. From these a beer bottle labeled "DAINIPPON BREWER CO LTD", one golf ball, and various window-glass fragments were recovered, but not collected. Below the piled rocks a single 18-26 cm thick layer of black (10YR2/1) gravelly silty clay was excavated in three arbitrary 10-cm levels. Level 1 of Layer I contained numerous glass and metal fragments, bones from at least one cf. *Bos taurus*, from a large mammal, and from an unidentified fish. *Kukui* nut fragments were also recovered, and charcoal was observed but not recovered. Level 2 of Layer I contained one fine-grained basalt flake, a small quantity of small mammal bones, *kukui* nut fragments, and charcoal. Level 3 of Layer I contained only charcoal. Based on the portable remains recovered from the upper levels of TU-1 (including the "architectural" layer) this feature appears to be a historic trash pile. It is possible that Levels 2 and 3 represent a prehistoric or early historic component of this site, but they are clearly not associated with the construction of the feature. Figure A-6 illustrates Features A and B in plan view, showing the placement of the excavation units. Figure A-7 provides a view of the east-face profile of TU-1.

Feature B consists an alignment of five basalt cobbles set in the ground in a vertical position. To the east of the alignment there is a relatively flat area of significant soil deposits, where a midden of water-worn coral and gastropod shells was observed.

A single 0.5 by 0.5 m shovel test pit (STP-1) was excavated ca 1.0 m east of the alignment. A single layer of very dark brown (10YR2/2) silty clay loam was excavated in 20 cm arbitrary levels to a depth of 30 cm below surface, where the soft deteriorating bedrock was encountered. Portable remains recovered from Level 1 include small quantities of marine shell, *kukui* nut fragments, and charcoal. Level 2 also produced *kukui* nut fragments and charcoal, which was submitted for radiocarbon dating analysis (see Data Analysis section for a discussion of the results of the radiocarbon analysis).

SITE 4145

Boundary function was assigned to the rock wall feature (Site 4145). This wall is located just outside and parallel to the eastern boundary of the property line as surveyed by Norman Saito Engineering. It is likely that this wall functioned as a property boundary between the project area parcel and the Maui Land and Pineapple Co. property.

A single 0.5 by 0.5 m shovel test pit (STP-2) was excavated on the southwest side of the wall. A single layer of dark brown (7.5YR3/2) silt loam was excavated to a depth of 22 cm below surface, where deteriorating bedrock was encountered. No cultural materials, formed tools, intact cultural lenses, buried cultural deposits, or evidence of human remains were identified. Figure A-8 illustrates the feature in plan view, showing the placement of STP-2.

DATA ANALYSES

AGE DETERMINATION

The purpose of age determination analysis is to provide initial chronological data to aid in assessing the relative significance of cultural deposits in a project area. One dating sample (charcoal) collected from a shovel test pit in Feature B at Site 4144 was of sufficient size for age determination analysis and was processed by Beta Analytic, Inc. of Miami, Florida.

The sample was processed according to standard procedures, and processing proceeded normally. The resulting radiocarbon age determination is summarized in Table 3. The age for the sample is reported as a range corresponding to the calendric age ± two standard deviations. Ranges were calibrated using the tables provided in Stuiver and Pearson (1986) Method A, which correct for variations in atmospheric carbon over time.

The sample produced multiple calendric ranges spanning a 426 year period extending from AD 1528 to 1954. Within this range, examination of the two-sigma probability distribution values for this sample (Stuiver and Pearson 1986: Method B) combined AD 1631-1708 (28%) and AD 1712-1883 (53%) to achieve an 81% probability that the actual age of the sample falls between AD 1631-1883.

Table 3. Radiocarbon Age Determination - Site 4144

PHRI Lab. No. RC-	Lab. No. BETA-	Provenience	C-14 Age Yrs. BP (one sigma)	C-13/ C-12 Ratio	C-13 Adjusted C-14 Age Yrs. BP	*Calendric Range Yrs. BP
1663	85034	Feature B, STP-1, Layer I 20-40 cmbs	210 + 50 BP	-24.8	210 + 50 BP	1528-1555 1633-1704 1720-1820 1916-1954

ECOFACTUAL REMAINS

All ecofactual remains recovered from the project area underwent laboratory analysis which involved splitting the sample into two size classes by passing it through 1/4-in and 1/8-in mesh screens. All of the material retained in the 1/4-in screen was sorted to the lowest taxonomic level possible, while the material retained in the 1/8-in screen was inspected for artifacts and taxa not encountered in the larger portion of the sample. Each category of invertebrate material was then bagged and individually weighed. Marine shell identifications were verified using Kay (1979). Vertebrate faunal remains were submitted to Dr. Alan Ziegler of Kaneohe, Oahu for identification. A tabulation of the remains is presented in Table 4.

Table 4. Detailed Distribution of Ecofactual Remains

Site	4143	-	-	4144	-	-	-	-	-	-	-	
Fea	-			Fea.A				Fea.B				
Unit	Tu-2		Site	Tu-1			Sub	Stp-1		Sub	Site	Grand
Lay/lev	I-1	I-2	Total	I-1	I-2	I-3	Total	I-1	I-2	Total	Total	Total
Mollusca												
Gastropoda												
Cypraeidae	2.35	-	2.35	-	-	-	0.00	11.07	-	11.07	11.07	13.42
Conidae	90.17	-	90.17	-	-	-	0.00	-	-	0.00	0.00	90.17
Subtotal Gastropoda	92.52	0.00	92.52	0.00	0.00	0.00	0.00	11.07	0.00	11.07	11.07	103.59
Vertebrates												
Osteichthyes												
Unident. fish	-	-	0.00	0.07	-	-	0.07	-	-	0.00	0.07	0.07
Mammalia												
Bovidae												
Bos taurus	-	-	0.00	260.36	-	-	260.36	-	-	0.00	260.36	260.36
Order and family indeterminate												
S-to-M mammal	-	-	0.00	-	0.02	-	0.02	-	-	0.00	0.02	0.02
Medium mammal	-	2.09	2.09	5.03	-	-	5.03	-	-	0.00	5.03	7.12
Large mammal	-	-	0.00	26.59	-	-	26.59	-	-	0.00	26.59	26.59
Subtotal Mammalia	0.00	2.09	2.09	291.98	0.02	0.00	292.00	0.00	0.00	0.00	292.00	294.09
Total Vertebrate	0.00	2.09	2.09	292.05	0.02	0.00	292.07	0.00	0.00	0.00	292.07	294.16
Vegetal Remains												
Euphorbiaceae												
Aleurites moluccana	1.09	-	1.09	3.51	1.87	-	5.38	28.93	1.39	30.32	35.70	36.79
Other												
Charcoal	-	-	0.00	-	10.52	6.94	17.46	6.93	11.30	18.23	35.69	35.69
Subtotal Vegetal Remains	1.09	0.00	1.09	3.51	12.39	6.94	22.84	35.86	12.69	48.55	71.39	72.48
Total	93.61	2.09	95.70	295.56	12.41	6.94	314.91	46.93	12.69	59.62	374.53	470.23

The amount of ecofactual remains recovered from the project area was very small, and ecofactual remains were recovered only from Sites 4143 and 4144. Remains were dominated by vertebrate fauna but included two types of marine gastropods, vegetal material and wood/plant charcoal. Ecofactual specimens deriving from Site 4143 consisted of 2.35g of *Cypraea*, 90.17g of *Conus* (one large specimen), 1.09g of *kukui (Aleurites moluccana)* and 2.09g of bone from an indeterminate medium mammal.

Material from Site 4144 was recovered from Features A and B. Feature A yielded 0.07g of unidentified fish bone, 5.05g of small to medium and medium mammal bone, 260.36g of *Bos Taurus* or Bovine bone, 5.38g of *kukui (Aleurites moluccana)* and 17.26g of charcoal. Feature B excavations included 11.07g of *Cypraea*, 1.39g of *kukui (Aleurites moluccana)* and 18.23g of charcoal. According to Dr. Ziegler, the vertebrate faunal remains from Site 4144 may represent butchering refuse, although no butcher marks were apparent on the samples. Also included was a cranial fragment, possibly domestic cattle or horse.

Discussion

The results of the ecofactual analysis, were based on a small sample, and the collection included a very limited variety of invertebrate and vertebrate remains. Because of this, the general scarcity of remains recovered may not accurately reflect subsistence patterns in the project area.

PORTABLE ARTIFACTS

A total of 21 portable artifacts or artifact fragments were recovered from the project area, at Sites 4141, 4143 and 4144. Of this number, four artifacts are classified as indigenous and 17 artifacts are classified as historic. A detailed tabulation of artifacts by feature and unit is presented in Table 5. The results of the artifactual analysis are discussed below.

Indigenous Artifacts

The term "indigenous artifacts" generally describes artifacts made by indigenous people (in this case Hawaiian) regardless of whether the raw material is imported or of local origin. Because it is often impossible to determine the place of manufacture of many artifacts made from imported materials, however, in this discussion of the current assemblage, indigenous artifacts are defined as those manufactured through application of conventional Hawaiian manufacturing techniques, using locally available raw materials. The inventory of indigenous items contains one artifact classified as a domestic item, two artifacts classified as flaked stone, and one artifact of uncertain function. The overall indigenous artifact inventory is described by functional category below.

Domestic Items

A single artifact was classified as a domestic item, or an item employed in association with a habitation. The item is a pestle manufactured from aphanitic basalt (Cat. No. 2). It has a weathered break on one side that extends from the midsection to the base (Figure 5). The surface of the base is polished to the extent of finished adzes. The pestle derives from the surface of Site 4143 and measures 154.0 mm in length, 37.0 mm in width at the top and 59.0 mm at the base, and 47 mm thick at the top and 51.9 mm thick at the base.

Table 5. Detailed Distribution of Portable Artifacts

Category	Site 4141	4143	-	-	4144	-	-	
Feature					Fea A	-		
Unit			Tu-2	(4143)	Tu-1		(4144)	
HF-1				Site			Site	Grand
Lay/Lev		Surf	1-1	Total	1-1	1-2	Total	Total
Indigenous								
Domestic Items								
Basalt								
Pestle	-	1	-	1	-	-	0	1
Subtotal Domestic Items	0	1	0	1	0	0	0	1
Flaked Stone								
Basalt	-	-	-	0	-	1	1	1
Volcanic glass	1	-	-	0	-	-	0	1
Subtotal Flaked Stone	1	0	0	0	0	1	1	2
Uncertain Function								
Basalt								
Modified	-	-	-	0	1	-	1	1
Subtotal Uncertain Function	0	0	0	0	1	0	1	1
Total Indigenous	1	1	0	1	1	1	2	4
Non-Indigenous								
Construction Materials								
Metal								
Hardware	-	-	-	0	2	-	2	2
Glass								
Window pane	-	-	1	1	-	-	0	1
Subtotal Construction Materials	0	0	1	1	2	0	2	3
Domestic Items								
Glass								
Bottle	-	-	-	0	2	-	2	2
Bottle fragments	-	-	1	1	7	-	7	8
Fragments	-	-	-	0	1	-	1	1
Subtotal Domestic Items	0	0	1	1	10	0	10	11
Miscellaneous								
Metal								
Fragment	-	-	-	0	1	-	1	1
Vinyl								
Fragment	-	-	-	0	1	-	1	1
Subtotal Miscellaneous	0	0	0	0	2	0	2	2
Personal Adornment								
Plastic								
Button	-	-	1	1	-	-	0	1
Subtotal Personal Adornment	0	0	1	1	0	0	0	1
Total Non-Indigenous	0	0	3	3	14	0	14	17
Total	1	1	3	4	15	1	16	21

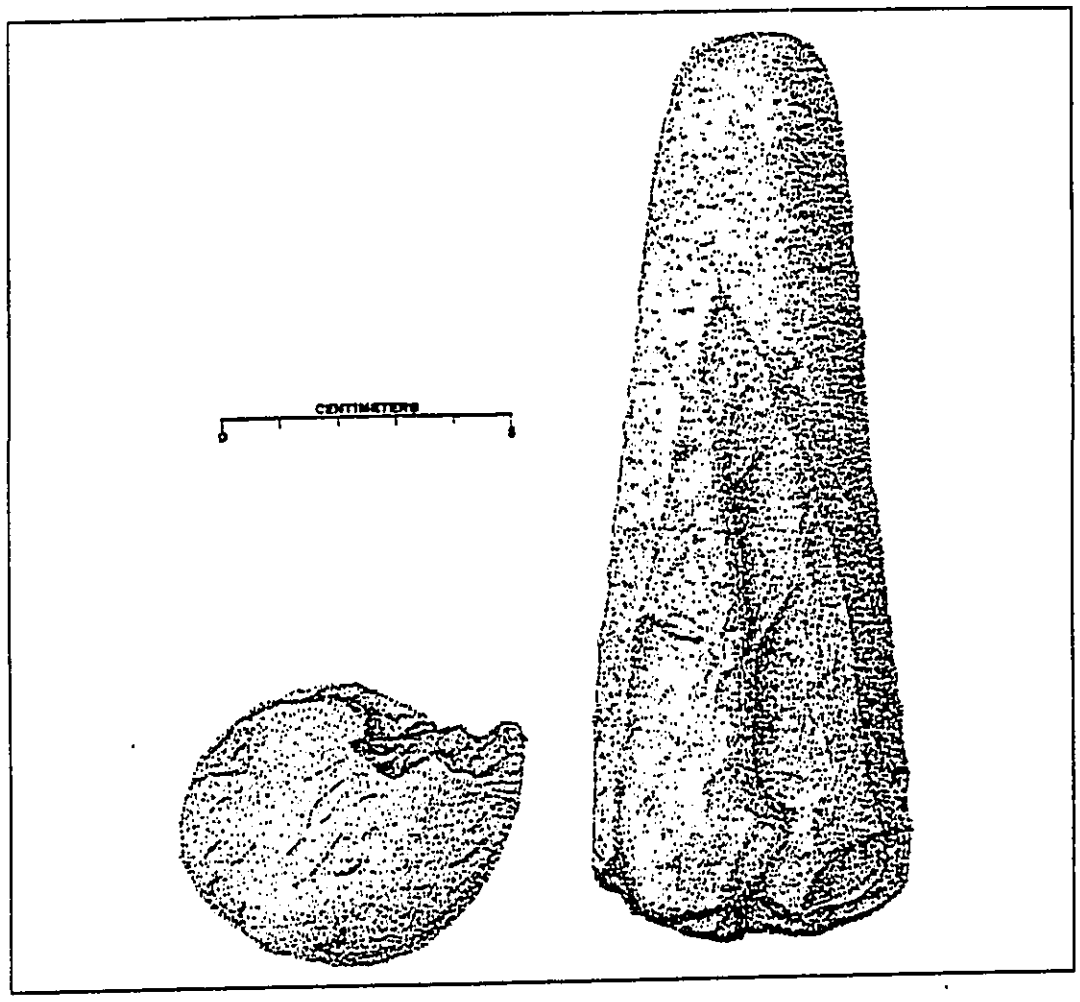


Figure 5. Basalt Pestle, Cat. 2; Site 4143, Surface

Stone pestles were a common *kapa*-dyeing implement. They were used with stone mortars to manufacture dye by grinding to a powder the charcoal derived from roasting *kukui* nuts (*Aleurites moluccana*) or burning sugar cane. The black powder was then combined with *kukui* or *kamani* oil and the mixture applied to finished *kapa* (Buck 1964:188-189).

Flaked Stone

Two artifacts comprise the flaked lithic category. Of these, one is manufactured from basalt and the other is manufactured from volcanic glass. The flaked stone artifacts derive from Sites 4141 and 4144.

The flaked stone artifacts are evaluated with respect to flake/core type following established procedures for evaluating flaked stone material (Sullivan and Rozen:1985), lithic debitage is categorized based on presence or absence of three variables; a single interior surface, a point of applied force, and margins. The categories are interpretation-free, as they are not linked to any particular reduction technique. Complete flakes have all three variables, including the point of applied force, where the bulb of percussion intersects the striking platform. Based on these criteria, the flaked stone inventory comprises two complete flakes.

The basalt flake (Cat. No. 16) was recovered from excavations at Feature A of Site 4144. The flake measures 29.0 mm in length, 35.0 mm in width, and 8.0 mm in thickness.

The volcanic glass flake (Cat. No. 1) derives from a horizontal feature at Site 4141. The flake measures 8.0 mm in length, 9.0 mm in width, and 3.0 in thickness.

Uses for flaked lithic artifacts have been suggested by Barrera and Kirch (1973), who observed:

> The possible functions...are many and varied. Basaltic glass holds a fine sharp edge and the tools make excellent cutting and scraping implements. They may have been used in food preparation, for cutting and scraping plant materials, or for delicate woodworking... [t]hese artifacts are extremely common, being found in virtually every type of [Hawaiian] site. The suggestion, then, is that the ubiquitous basaltic glass flakes functioned as a prehistoric "pocketknife", to use a modern analogy...(1973:185-6)

To date, however, no systematic testing of basalt or volcanic glass flakes has been performed to verify the above assertions. Such a testing program would necessarily include replication studies, residue analysis, and edge wear analysis; with the results being used to address research questions such as: does volcanic glass really hold a sharp edge, and for how long on what kinds of material; and what evidence is there that flaked lithics were used as scraping tools? A testing program of this scale is clearly beyond the scope of the present project, but should be considered a goal for future work on lithics in the Hawaiian Islands.

Uncertain Function

The artifact in this category is a modified waterworn basalt cobble. Typically, artifacts which were fragmentary, artifacts in such poor condition that they were unidentifiable are included in this group. This specimen (Cat. No. 3) is manufactured of aphanitic basalt and exhibits two facets modified to a near polish, perhaps from use as an abrader. It measures 62.0 mm in length, 63.0 mm in width, and 33.0 mm in thickness and derives from Site 4144.

Historic Artifacts

Most of the historic artifacts were recovered from Site 4144 during the current investigation. The overall historic artifact inventory consists of items classified as construction materials, domestic items, personal adornment and miscellaneous items.

Three artifacts were classified as Construction items. Of the three, two are corroded door knob plates (Cat. No. 15). They are manufactured of brass and measure 100.0 mm in length, 85.0 mm in diameter and range from 6.0-15.0 mm in thickness. Both items derive from Feature A of Site 4144. The other construction item is a fragment of windowpane glass (Cat. No. 19) which also derives from Site 4144. It measures 42.0 mm in length, 20.0 mm in width, and 2.5 mm in thickness.

The domestic item category comprises two bottles, eight bottle fragments, and one glass fragment. One of these domestic category items derives from Site 4143, the remainder derive from Site 4144. The first bottle (Cat. No. 15) is a translucent, clear bottle with a plain panel. It is embossed at the shoulder on front and back with an unknown mark. It also resembles a type of spice bottle noted by Putnam (1965:231). It has a gradual shoulder curve, a small mouth external

thread neck finish (1924-present) and was probably manufactured with an automatic bottle machine, because seams extend the entire length of the bottle (Fike 1987). The base is slightly concave with a Blake profile and embossed with a triangle and numeral "3". It measures 120 mm in height and is 41 mm in width and 32 mm in thickness. The second bottle is a 6.5 ounce soda bottle (Cat. No. 5) that is missing the mouth and neck finish. It is manufactured of clear glass (1880-present) and decorated with "HOWDY," embossed both horizontally and vertically forming a cross. It has a round base finish and is embossed at the base with "L". Bottle fragments include a clear soda base fragment (Cat. No. 6), two clear wide-mouth external thread fragments (Cat. No. 8), a milk mouth/neck fragment (Cat. No. 9), two body fragments (Cat. No. 7, 11) with embossing that appears to represent "P.M. Co. Dairy," a clear neck/shoulder/body fragment (Cat. No. 10), and an amethyst deep-lip neck finish fragment (Cat. No. 18). Amethyst glass was used from 1880-1925 (Carter IN Cordy 1978:93). The remaining item is a non-diagnostic amber glass fragment (Cat. No. 12).

One personal adornment item was recovered from Site 4143. The item is a plastic two-hole sew-through button (Cat. No. 17). It is olive green and measures 10 mm in diameter and 1.5 mm in thickness.

The final historic artifacts are classified as miscellaneous items. This category includes a corroded metal fragment (Cat. No. 13) and a vinyl record fragment (Cat. No. 14). Both items derive from Site 4144.

Discussion

In general, the sample of artifacts encountered during the current investigation was small, suggesting a narrow range of prehistoric activities in the project area. Activities could include *kapa*-making as indicated by the presence of the stone pestle, commonly used in the production of kapa-dyeing. Stone tool manufacture and use is another possibility based on the presence of flaked stone items and the modified basalt and may have been accompanied by food processing and craft production activities which relied on the use of flaked stone tools.

The non-indigenous inventory, predominantly composed of bottle glass, is very narrow in content. Bottle markings and characteristics indicate that the two bottles and other bottle fragments were manufactured anywhere after 1886 and could likely have been deposited in the project area through late historic period occupation or dumping activities.

CONCLUSION

DISCUSSION

The archaeological inventory survey of the c. 2.47 acre Honolua coastal parcel project area consisted of 100%-coverage pedestrian ground survey, limited subsurface test excavations, and historical documentary research (including informant interviews). A total of five archaeological sites consisting of six component features was identified.

With the exception of Site 4141, the sites identified during this project are generally clustered in the eastern one-third of the parcel. This is not too surprising since the western two-thirds of the project area have been more heavily impacted by late historic period and recent residential building and associated activities. Even though the eastern one-third of the parcel contains significant scatters of modern trash (including a substantial pile of junked cars), it does not appear to have been subjected to the same types or degrees of land modifications associated with historic period and modern residential activities that the rest of the project area has.

Because the survey area is small, highly disturbed, and the identified sites few, the results of this project do not directly confirm or contradict the proposed settlement patterns for the Honolua Ahupua'a. Predictably, there is evidence of permanent habitation (Site 4143, and possibly Site 4144, though the lack of remains makes such a determination extremely difficult). Unfortunately, no directly datable materials were recovered from the limited test excavation undertaken at Site 4143, and the portable remains recovered are ambiguous. The radiocarbon date from Site 4144 could be late prehistoric, but there is an equal chance that it dates to the early post-contact period. That marine shell was present at both habitation sites suggests that the earlier inhabitants took advantage of the rich marine resources available immediately offshore.

Apart from only the *possibility* that Sites 4143 and 4144 are prehistoric, there is a notable lack of sites of prehistoric age in the project area. This may be due to the effects of a small sample area and that much of the parcel has been subjected to significant land modification activities. Also, there is a lack of a variety of formal feature types such as platforms, pavements, and trails. Again this may be due to the small and disturbed nature of the sample area.

The sites identified during this survey project add to the inventory of identified sites in the *ahupua'a*. Added to the list are one permanent habitation site (Site 4143) and one that is possibly associated with a permanent habitation (Site 4144); one historic rock wall (boundary) site; one burial site (Site 4142); and one cooking feature associated with a site of indeterminate function (Site 4141).

GENERAL SIGNIFICANCE ASSESSMENTS AND RECOMMENDED GENERAL TREATMENTS

The Assessment Process

The six significance categories used in the site evaluation process are based on both the National Register criteria for evaluation, as outlined in the Code of Federal Regulations (36 CFR Part 60), and on criteria used by the State of Hawaii. The State Historic Preservation Office uses these criteria for evaluating cultural resources. This general evaluation process *re* federal significance is guided by two bulletins prepared by the National Park Service entitled "Guidelines for Evaluating and Documenting Traditional Cultural Properties" (*Bulletin 38*, National Park Service 1990) and "How to Apply the National Register Criteria for Evaluation" (*National Register Bulletin 15)*. The National Register Criteria embody four types *of* cultural value: Criteria A through D. Criteria A and B define significance through *association*; Criterion C defines significance through *design* or *construction* value; and Criterion D defines significance in terms of *information* value. Sites may be considered significant under one or more of these criteria. A brief discussion of each of these criteria will now be presented, including a presentation of the two additional criteria used in the State of Hawaii (Criterion E and NLS).

In conformity with the National Register criteria for evaluation, sites with potential cultural significance are evaluated first under Criterion A, which defines significant resources as those that are "associated with events that have made a significant contribution to the broad patterns of our history" (National Register Bulletin 15:12). These can be either a specific event in prehistory or history, or a pattern of events or a historic trend that made a significant contribution to the development of a community, a State, or the nation." Examples of sites in Hawai'i that are evaluated as significant under Criterion A may include, famous Hawaiian battlefields (i.e., Kuamo'o Battlefield), or landmarks (i.e., a mountain top) important in Hawaiian legends, the first landing place of early explorers (i.e., Cook on Kaua'i), and important locations in the history of the Hawaiian monarchy (i.e., Thomas Square, where the Hawaiian kingdom was formally restored from England in 1843; or Iolani Palace, where the monarchy was overthrown in 1893), and structures related to World War II.

Sites associated with an important individual in history are evaluated under Criterion B, which defines significant resources as those that "are associated with the lives of persons significant in our past" (National Register Bulletin 15:14). Significant individuals in history "refers to individuals whose activities are demonstrably important within a local, State, or national historic context" (ibid.). Examples of sites evaluated as significant under Criterion B include the residences of famous past individuals, such as royalty (i.e., Kamehameha III, Queen Liliuokalani), famous writers, artists, educators, missionaries, politicians, and businessmen. The traditional residential complex of Keakealaniwahine (a chiefess of high rank), in Holualoa, would be a good example of an example of a prehistoric residence known from oral history that would be evaluated under this criterion.

Sites that are potentially significant as representative examples of site types are evaluated under Criterion C, which defines significant resources as those that "embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction" (National Register Bulletin 15:17). Examples of the types of historic sites that might be evaluated as significant under Criterion C in Hawaii

include, but are not limited to: (a) plantation structures—i.e., manager's residence or camp housing; (b) buildings specific to the ranching period—i.e., structures typical of a local style, such as turn-of-the-century ranch houses on Lana'i or those found in Waimea, Hawai'i; (c) historic churches with unique architecture—i.e., Mokuaikaua church in Kailua-Kona, or (d) a neighborhood that embodies the values of an ethnic group—i.e., Honolulu's Chinatown. Prehistoric sites that might be evaluated as significant under this criterion could be excellent examples of the various types of structures, including trails, walls, agricultural terraces, habitation platforms, or *heiau*.

Sites determined to be potentially significant for information content fall under Criterion D, which defines significant resources as ones that "have yielded, or may be likely to yield, information important in prehistory or history" (National Register Bulletin 15:21). While most archaeological sites are initially evaluated as significant under Criterion D, after the evaluative process of an inventory survey, or the data recovery process of a mitigation program, the research potential of some sites may be exhausted (i.e., after extensive mapping, testing, surface collection, historical research, etc.). In these cases, the sites may maintain their information content *value* but lose their information content *significance*. Hence, the sites will be considered as "No Longer Significant" (NLS).

Sites determined to be potentially significant for having cultural value to native Hawaiians and other ethnic groups of the State of Hawaii fall under Criterion E. While the previous four criteria are all presented in the federal guidelines, Criterion E was established by the State of Hawaii in a document entitled "Draft Rules Governing Procedures for Historic Preservation Review" (Draft Rules 1994). Criterion E defines significant resources as ones that "have an important traditional cultural contribution or value to the native Hawaiian people or to other ethnic groups of the state" (Draft Rules 1994). Examples of sites that could be evaluated as significant under Criterion E may include *heiau*, cemeteries, burials, and trails. Criterion E is concerned with a property's intrinsic value to a cultural group, rather than the property's being considered an example of a "type" *per se*.

In keeping with Federal and State guidelines, in addition to the strength of the evaluation based on the significance categories presented above, PHRI makes recommendations for further work on historic properties that are made based on three considerations. First, properties can lose their cultural significance, or have their significance diminished, if the condition and integrity of the property, or of the property's setting, have been sufficiently altered. Second, the nature of the proposed impacts is considered in making recommendations for further work or preservation. If a site lies in an area slated for grading, it will more likely be recommended for further work than a site that can be preserved, and hence "data banked" for future research. Lastly, concerning the preservation and interpretation for the benefit of the general public of sites and clusters of sites that are representative of general settlement patterns within a region (i.e., a discontinuous district), decisions for preservation of this type are made in consultation with the State Historic Preservation Office, in order to meet long-term planning goals of that office.

Specific Assessments and Recommendations

General significance assessments and recommended general treatments for all identified sites are summarized in Table 6. To further facilitate client management decisions regarding the subsequent treatment of resources, the general significance of the archaeological sites identified during the current survey was also evaluated in terms of potential scientific research, interpretive, and/or cultural values (PHRI CRM [Cultural Resource Management] value modes).

Table 6. Summary of General Significance Assessments and Recommended General Treatments

*SIHP Site No.	Functional Type	Significance Category						Recommended Treatment			
		A	B	C	D	E	NLS	FDC	NFW	PID	PAI
4141	Cooking	-	-	-	-	-	+	-	+	-	-
4144	Perm. Habitation	-	-	-	-	-	+	-	+	-	-
4145	Boundary	-	-	-	-	-	+	-	+	-	-
Subtotal		0	0	0	0	0	3	0	3	0	0
4142	Burial	-	-	-	-	+	-	-	-	-	+
Subtotal		0	0	0	0	1	0	0	0	0	1
4143	Poss. Habitation	-	-	-	+	-	-	+	-	-	-
Subtotal		0	0	0	1	0	0	1	0	0	0
Total		0	0	0	1	1	3	1	3	0	1

General Significance Categories:

A = Important for historical contribution to significant events and/or broad patterns of history;

B = Important for association with the lives of important individuals in history

C = Excellent example of site type at local, regional, island, state, or national level (PHRI=interpretive value);

D = Important for information content, further data collection necessary (PHRI=research value);

E = Culturally significant (PHRI=cultural value)

NLS = No longer significant, significant data collected, important for information content only, no further data collection necessary (PHRI=research value, SHPO=not significant); and

Recommended General Treatments:

FDC = Further data collection necessary (detailed recording, surface collections, and limited excavations, and possibly subsequent data recovery/mitigation excavations);

NFW = No further work of any kind necessary, sufficient data collected archaeological clearance recommended, no preservation potential;

PID = Preservation with some level of interpretive development recommended (including appropriate related data recovery work);

PAI = Preservation "as is", with no further work (and possible inclusion into landscaping, or possibly minimal further data collection necessary

* *State Inventory of Historic Places (SIHP) numbers, SIHP numbers are five-digit numbers prefixed by 50-50-01 (50=State of Hawaii; 50=Island of Maui; 01=USGS 7.5' series quad map [1983, "Napili, Maui, Hawaii"].*

Research value refers to the potential of archaeological resources for producing information useful in the understanding of cultural history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. *Interpretive value* refers to the potential of archaeological resources for public education and recreation. *Cultural value* refers to the potential of archaeological resources to preserve and promote cultural and ethnic identity and values. CRM assessments for individual sites are presented in Table 2, the summary of identified sites and features. Correlations between PHRI CRM value modes and the federal and state criteria are presented in the key for Table 6.

Specific Assessments and Recommendations

Based on the above Federal and State evaluation criteria, three of the project area sites are assessed as "No Longer Significant" (NLS). These sites (Sites 4141, 4144, and 4145) are significant solely for the information that has already been collected (Table 6). The present level of recording is considered sufficient to have recovered all significant archaeological information. No further archaeological data collection or data recovery is recommended for these sites.

Site 4142 (the historic graves) is considered culturally significant (Criterion E) and "Preservation as is" (PAI) is recommended, with no further archaeological work.

The remaining site (4143) is assessed as significant for information content (Criterion D), and further data collection (FDC) is recommended. If this site is to be preserved and incorporated into the landscaping of the property, further data collection will not be necessary. In this case, an adequate buffer zone should be placed around the feature to prevent damage during construction and potential future indirect impacts (i.e., erosion). However, any landscaping activity at this site should be monitored by a qualified archaeologist to mitigate the potential impact to the site caused by ground disturbing activity.

Lastly, it should be noted that the above evaluations and recommendations are based on the findings of an inventory-level survey only. There is always the possibility, however remote, that potentially significant unidentified cultural remains might be encountered in the course of future development activities. In such a situation, archaeological consultation should be sought immediately.

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APPENDIX A: SITE DESCRIPTIONS

STATE NO.: 4141 **PHRI TNO.:** 1658-1
SITE TYPE: Fire pit
TOPOGRAPHY: Undulating
VEGETATION: Ironwood, grasses
ELEVATION: 30 feet amsl
CONDITION: Poor
INTEGRITY: Unaltered
PROBABLE AGE: Prehistoric
FUNCTIONAL INTERPRETATION: Cooking
OVERALL DIMENSIONS: 0.55 m by 0.15 m (extending an unknown distance into the bank)
DESCRIPTION: The feature appears as a charcoal and ash concentration eroding out of the soil bank above the rocky coastline of the parcel. Near the center of the feature there is a distinct lens of charcoal and ash, below which is a concentration of small basalt rocks (7-10 cm diameter) that appear to be thermally altered. One volcanic glass flake, and one piece of coral were noted as portable remains. This site is located at the NW corner of the project area.

Site 4141 had the following stratigraphy. A profile is shown in Figure A-1:

Layer	*Description*
HF-1	very dark brown (7.5YR 2.5/2 moist) silt loam, brown (7.5YR 4/2 dry); weak, very fine to fine structure; soft, very friable, slightly sticky, non-plastic consistence.
I	dark brown (7.5YR 3/3 moist) silt loam, brown (7.5YR 4/3 dry); weak, very fine to medium structure; soft, very friable, non-sticky, non-plastic consistence.
II	brown (7.5YR 4/2 moist) silt loam, brown (7.5YR 5/2 dry); weak, fine to medium structure; soft, very friable, slightly sticky, non-plastic consistence; no cultural material present.

STATE NO.: 4142 **PHRI TNO.:** 1658-2
SITE TYPE: Enclosed terrace (4)
TOPOGRAPHY: Undulating
VEGETATION: Koa-haole, iron wood, Christmas-berry
ELEVATION: 50 feet amsl
CONDITION: Fair-good
INTEGRITY: Unaltered
PROBABLE AGE: Historic-Modern
FUNCTIONAL INTERPRETATION: Burial
OVERALL DIMENSIONS: 7.5 m by 6.0 m by 0.2-0.5 m
DESCRIPTION: There are four small connected and enclosed terraces on the slope to the northwest below the highway (Figure A-2). To the north is a ridge also running to the NW. This ridge is a bit higher and covered in ironwood. The soil areas within the small enclosures are more

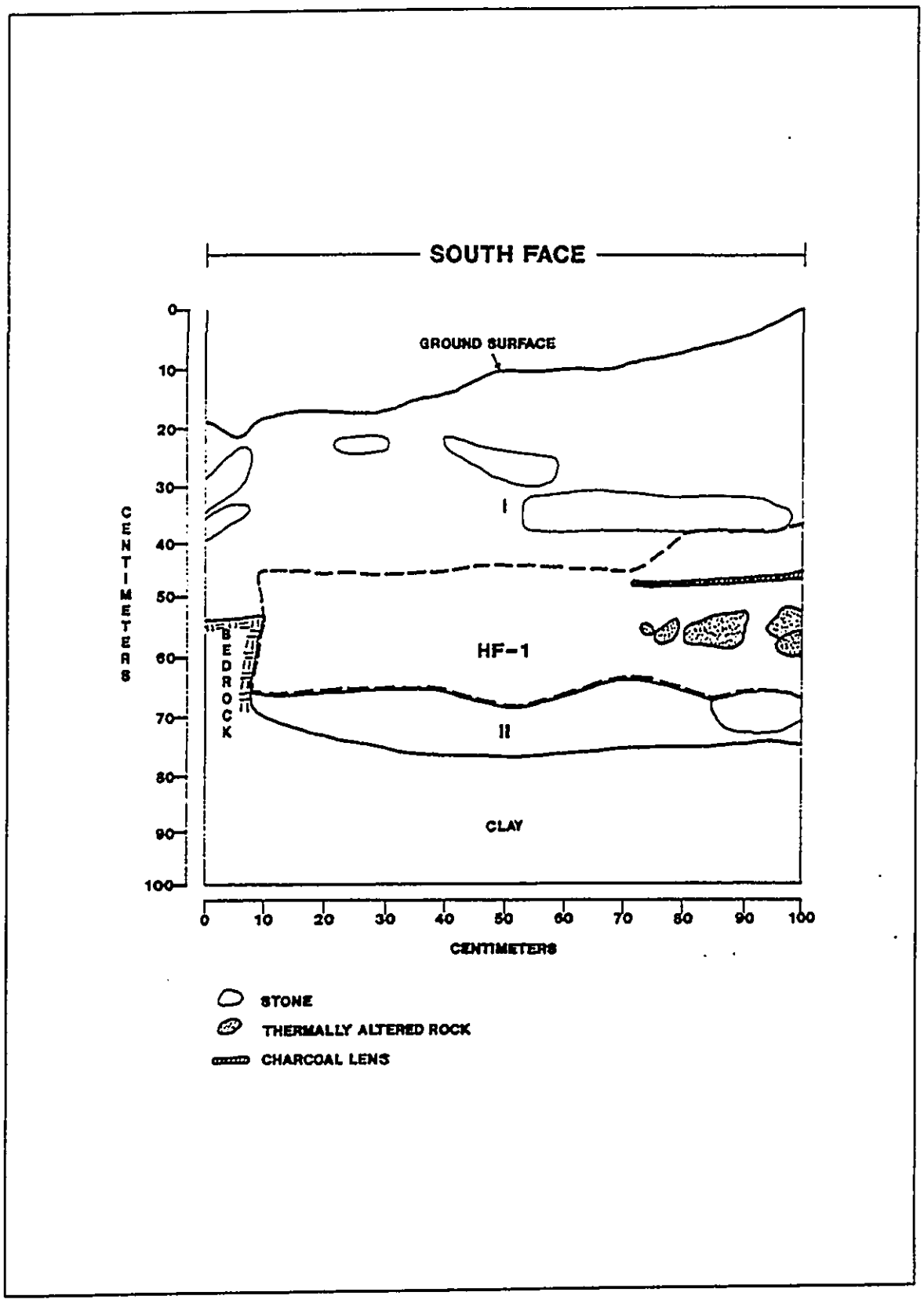

Figure A-1. Site 4141, Feature Profile

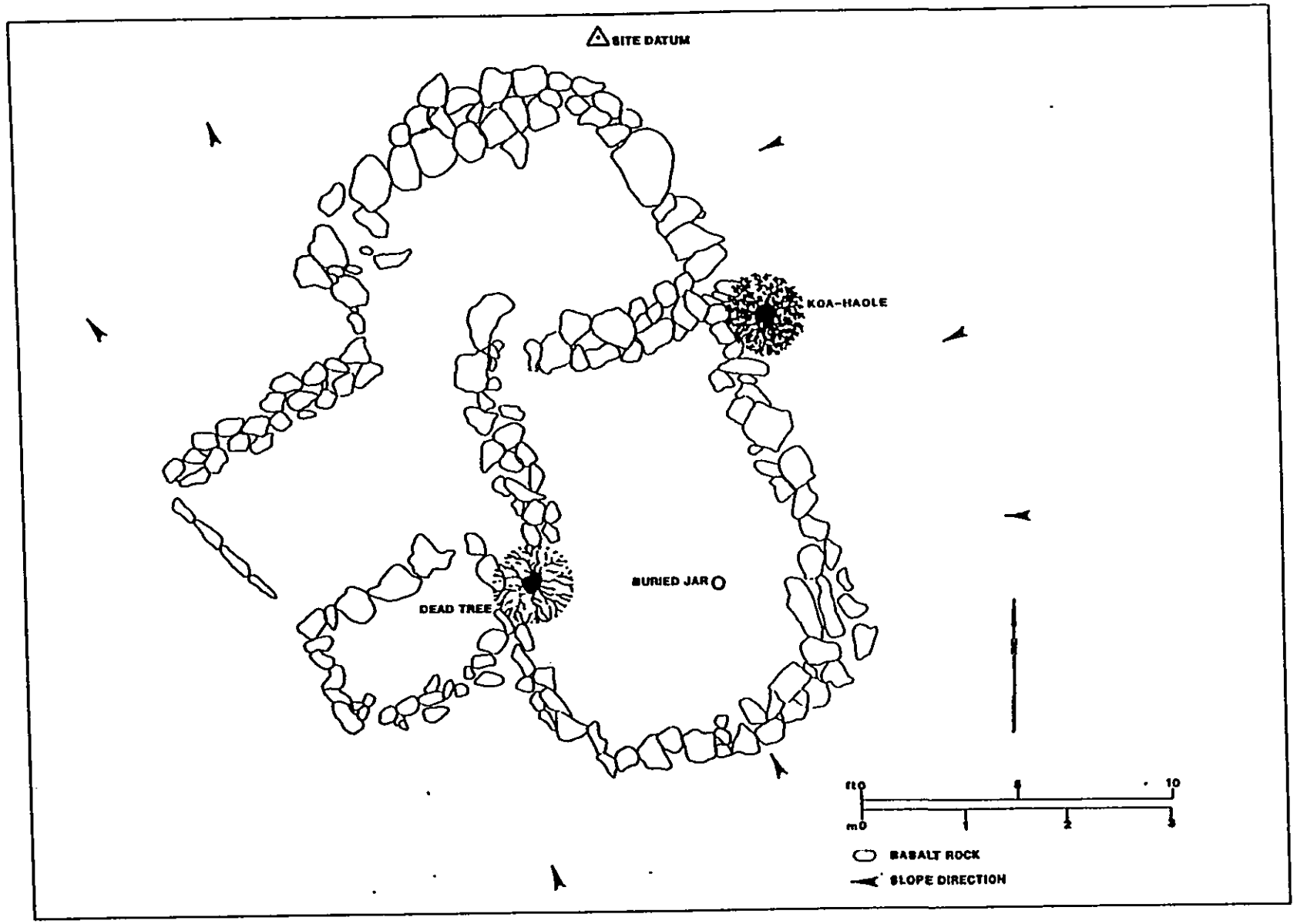

Figure A- 2. Site 4142, Plan Map

level than the surrounding terrain, creating a terrace-like appearance. The northernmost *(makai)* wall ranges between 0.40 and 0.50 m high and is a retaining wall constructed of medium cobbles to small boulders (size range 0.20-0.40). Overall length is c. 6.0 m with bearing of c. 40-220°. There are narrow alignments extending up-slope to the next retaining wall. The middle wall is constructed mostly of medium cobbles and small boulders placed in an alignment (range c. 0.30-0.50). The upper half of the site is made up of two enclosed terraces as well. The example on the SE is larger (4.6 by 3.4 m) than the one on the SW (2.1 by 1.7). There is also a wall on the upslope side, more informal than either of the lower walls, but utilizing materials of similar size. The upper wall also appears to serve a retaining function. Portable remains consist of two quart Mason-type jars, one buried upright (to the base of the neck) in the SE enclosure), and one on the surface. The one on the surface is a mayonnaise jar with "Best Foods" embossed on the base. Less than 0.50 m of a silty organic deposit is present. This site is located near SE corner of project area.

PHRI TNO.: 1658-3

STATE NO.: 4143
SITE TYPE: Platform
TOPOGRAPHY: Flat at feature and rising c. 4.0 m, to a ridge on the north. Also a slight rise (c.2-3 m) to modified outcrop containing Site 4144, to west (c. 280°).
VEGETATION: *Lauhala*, false *mamane*, coconut, *koa-haole*, shrubs and grasses
ELEVATION: 40 feet amsl
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Late prehistoric
FUNCTIONAL INTERPRETATION: Permanent habitation
OVERALL DIMENSIONS: 7.50 m by 3.70 m
DESCRIPTION: The feature is a rectangular platform bordered by mostly upright basalt slabs (Figure A-3). Size of the slabs ranges from small (c. 0.10-0.15 m) to medium (0.5-0.7 m), with the majority sitting vertically. The ends are one row wide, for the most part, but the sides have up to three or more vertical stones. There appear to be some areas of interior paving, especially around the interior corners and at the SE corner where there are two flat stones (c. 0.5 by 0.5) that appear to be sitting on the surface. There is a probable entrance on the *makai* end, with a possible entry stone (0.4 by 0.5 m) placed as a step. One shaped basalt pestle was found near the center, one large *Conus* near the SE corner, and small coral pieces near the north and west interior corners. A soil deposit of up to 0.15 m is present on the west side interior. This site is *mauka* of shoreline *pali* and just *makai* of two-track road through the parcel.

Test Unit 2 was placed in Site 4143 (Figure A-4, Figure A-5), and revealed the following stratigraphy:

Site 4143
TU-2, South Face

Layer	*Description*
I	10-57 cmbd, 29-34 cm in thickness; black (10YR2/1 moist) silty clay loam, dark brown (7.5YR 3/2 dry); strong, medium, granular structure; hard, very friable, slightly sticky, slightly plastic consistence; common, medium tubular roots; no cultural material present.

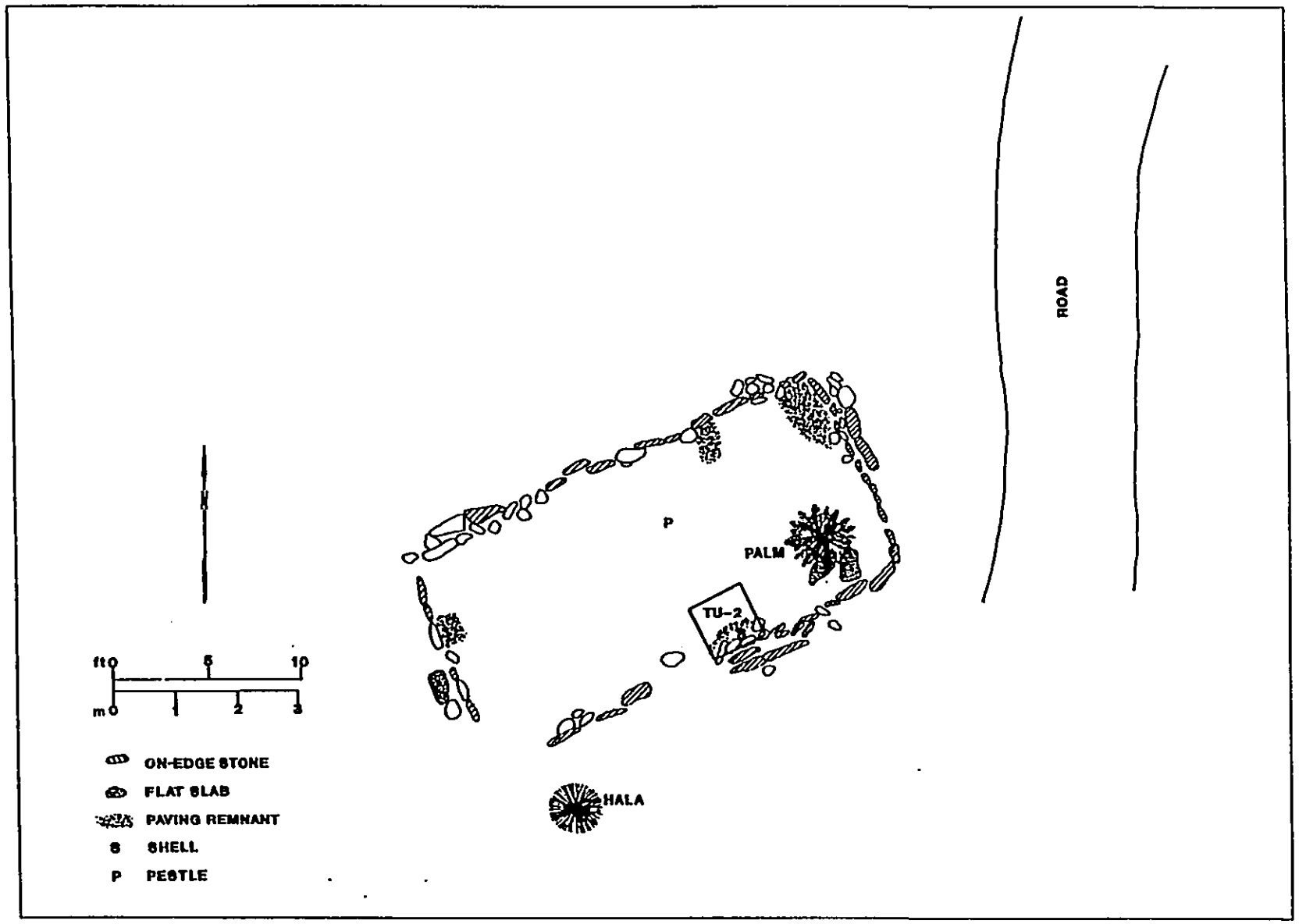

Figure A-3. Site 4143, Plan Map

Figure A-4. Site 4143, Test Unit 2, Post-excavation, View to South (Neg. 4920-26)

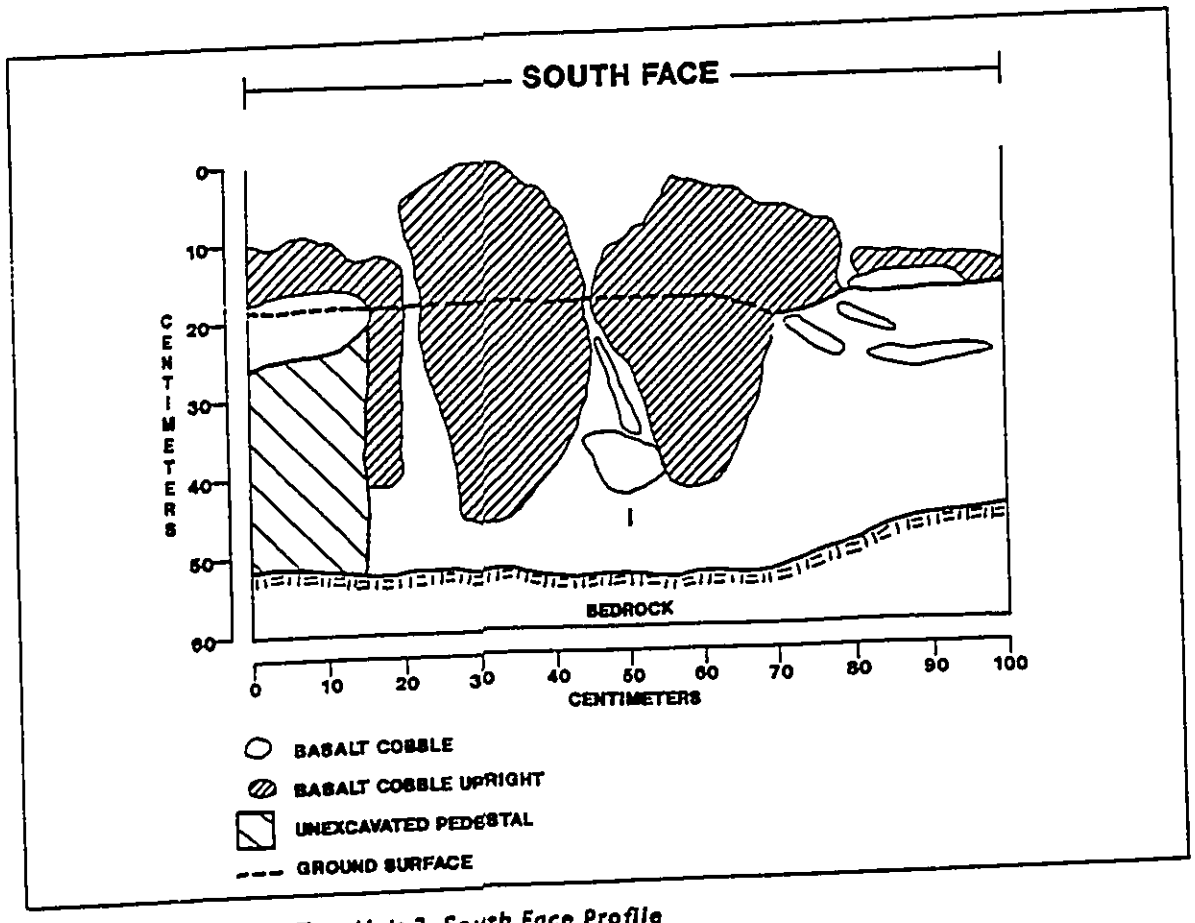

Figure A-5. Site 4143, Test Unit 2, South Face Profile

STATE NO.: 4144 **PHRI TNO.:** 1658-5
SITE TYPE: Complex (2)
TOPOGRAPHY: Gently undulating
VEGETATION: *Koa-haole*, Christmas-berry, *panini* cactus, ironwood
ELEVATION: 40 feet amsl
CONDITION: Good
INTEGRITY: Unaltered
PROBABLE AGE: Historic
FUNCTIONAL INTERPRETATION: Possible habitation
OVERALL DIMENSIONS: 20.0 m by 6.0 m
DESCRIPTION: This site complex consists of two features, a modified outcrop (Figure A-6), and an alignment (Feature B). The site is located less than 20.0 m from the steep bank of the rocky shoreline.

FEATURE A: Modified outcrop
ADJACENT TERRAIN: Gently undulating
VEGETATION: *Koa-haole*, Christmas-berry, ironwood, grasses
ELEVATION: 40 ft. amsl
FUNCTION: Garbage disposal
DIMENSIONS: 7.0 m by 5.0 m
CONDITION: Fair-good
INTEGRITY: Unaltered
DESCRIPTION: Feature consists of a c. 5 m² basalt boulder outcrop, that has water-worn and angular cobbles stacked and piled on the SW (downhill) side of the outcrop. The corners are square to regular. A couple of large coral cobbles are in the piled rocks on the north end of the outcrop but ecofacts are not noted. Glass, porcelain, and animal bones were noted on the surface of the feature and in the immediate vicinity. A single test unit (TU-1) was placed in Feature A (Figure A-7), and revealed the following stratigraphy:

Site 4144
Feature A, TU-1
East Face

Layer	*Description*
I	52-113 cmbd; black (10YR 2/1); gravelly, silty clay; very dark brown (7.5YR 3/2); strong, medium, granular structure; hard, very friable, slightly sticky, slightly plastic consistence; common, medium tubular roots; common, micro interstitial pores; cultural material present;

FEATURE B: Alignment
ADJACENT TERRAIN: Gently undulating
VEGETATION: *Koa-haole*, Christmas berry, ironwood, grasses
ELEVATION: 40 ft amsl
FUNCTION: Possible habitation
DIMENSIONS: 2.0 m by 1.0 m by 0.45 m
CONDITION: Fair
INTEGRITY: Unaltered
DESCRIPTION: This feature consists of 5 basalt cobbles (30-60 cm in length) set in the ground in an upright position. The alignment is oriented c. 340/160°, which is basically parallel to the orientation of the modified outcrop face that has been modified. To the east of the alignment

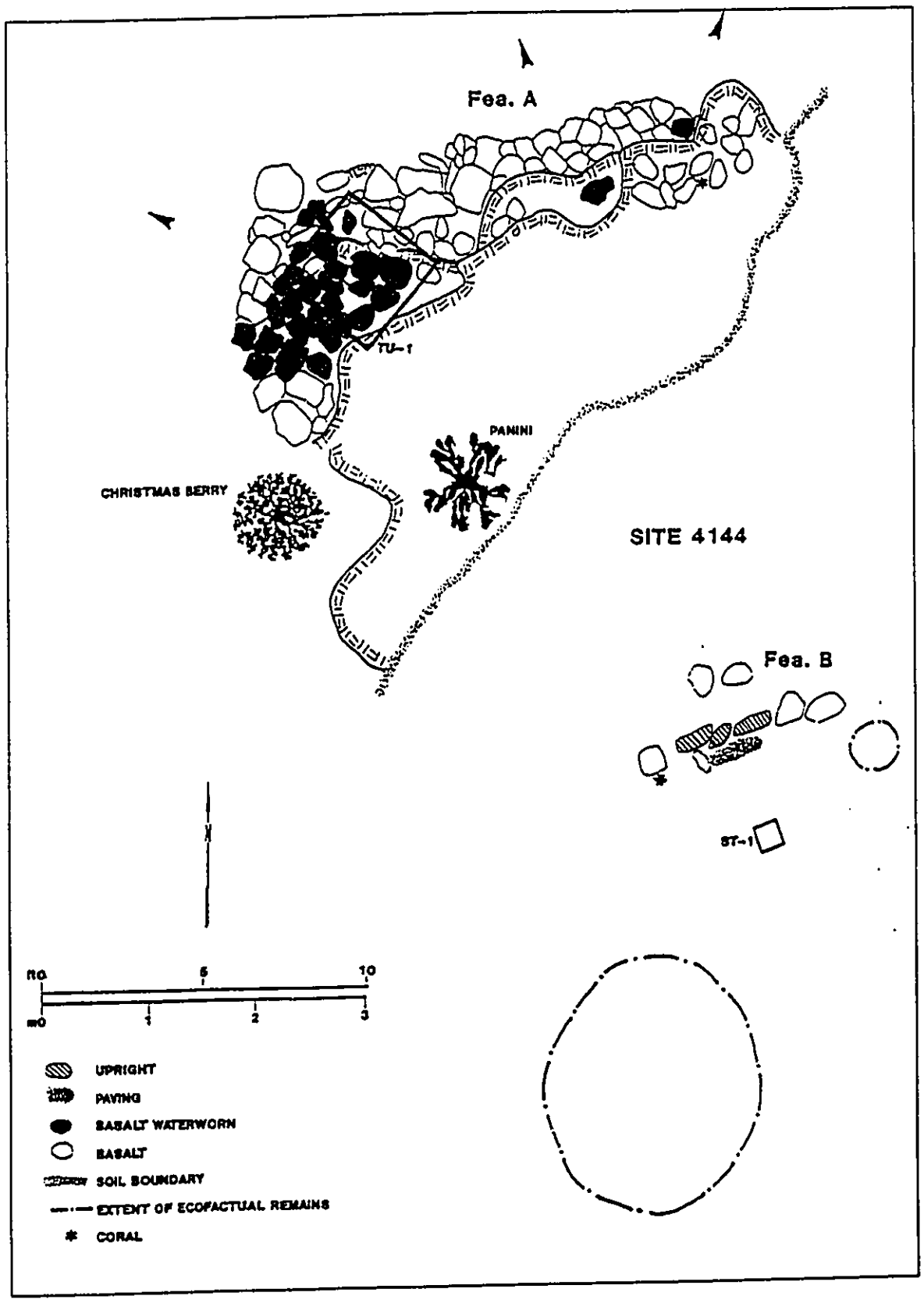

Figure A-6. Site 4144, Plan Map

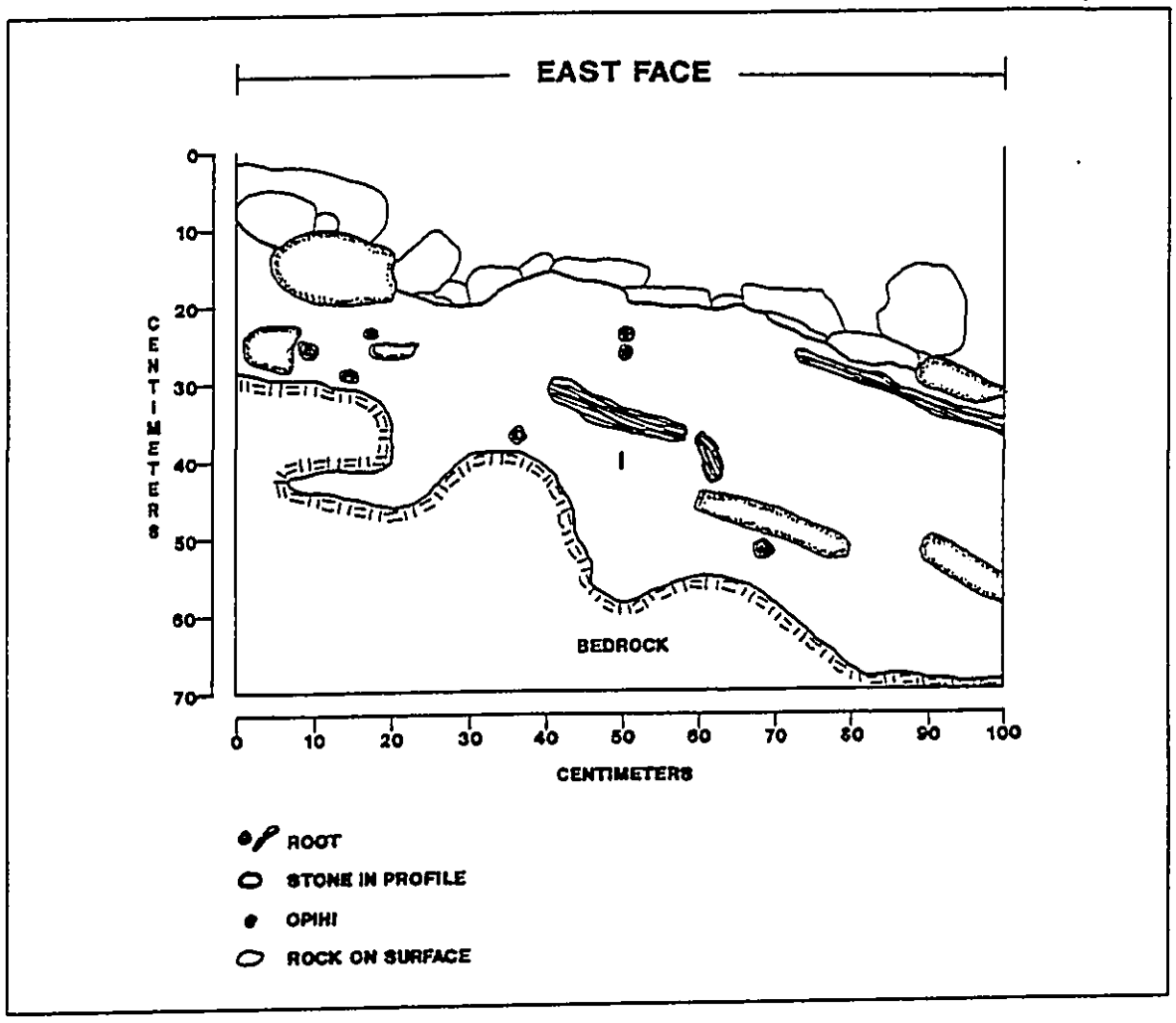

Figure A-7. Site 4144, Feature A, Test Unit 1, East Face Profile

there is a relatively flat area with significant soil deposits that is about the highest point of the survey area. A surface midden of water-worn coral and gastropod shells was observed in this area. This site is located near Site 4143, and may be associated with it. This feature is c. 2.5 m east of the top of the Feature A modified outcrop, and 19.0 m at 115° to Site 4143 datum.

STATE NO.: 4145 **PHRI TNO.:** 1658-6
SITE TYPE: Wall
TOPOGRAPHY: Undulating
VEGETATION: *Koa-haole*, ironwood, Christmas berry, grass
ELEVATION: 45 feet amsl
CONDITION: Fair
INTEGRITY: Altered
PROBABLE AGE: Historic
FUNCTIONAL INTERPRETATION: Boundary
OVERALL DIMENSIONS: 17.0 m by 1.0 m by 0.40 m
DESCRIPTION: The feature is a c. 17.0 m long section of low wall, constructed of basalt cobbles and boulders (Figure A-8). Some are water-worn, and others are angular. Most of the wall consists

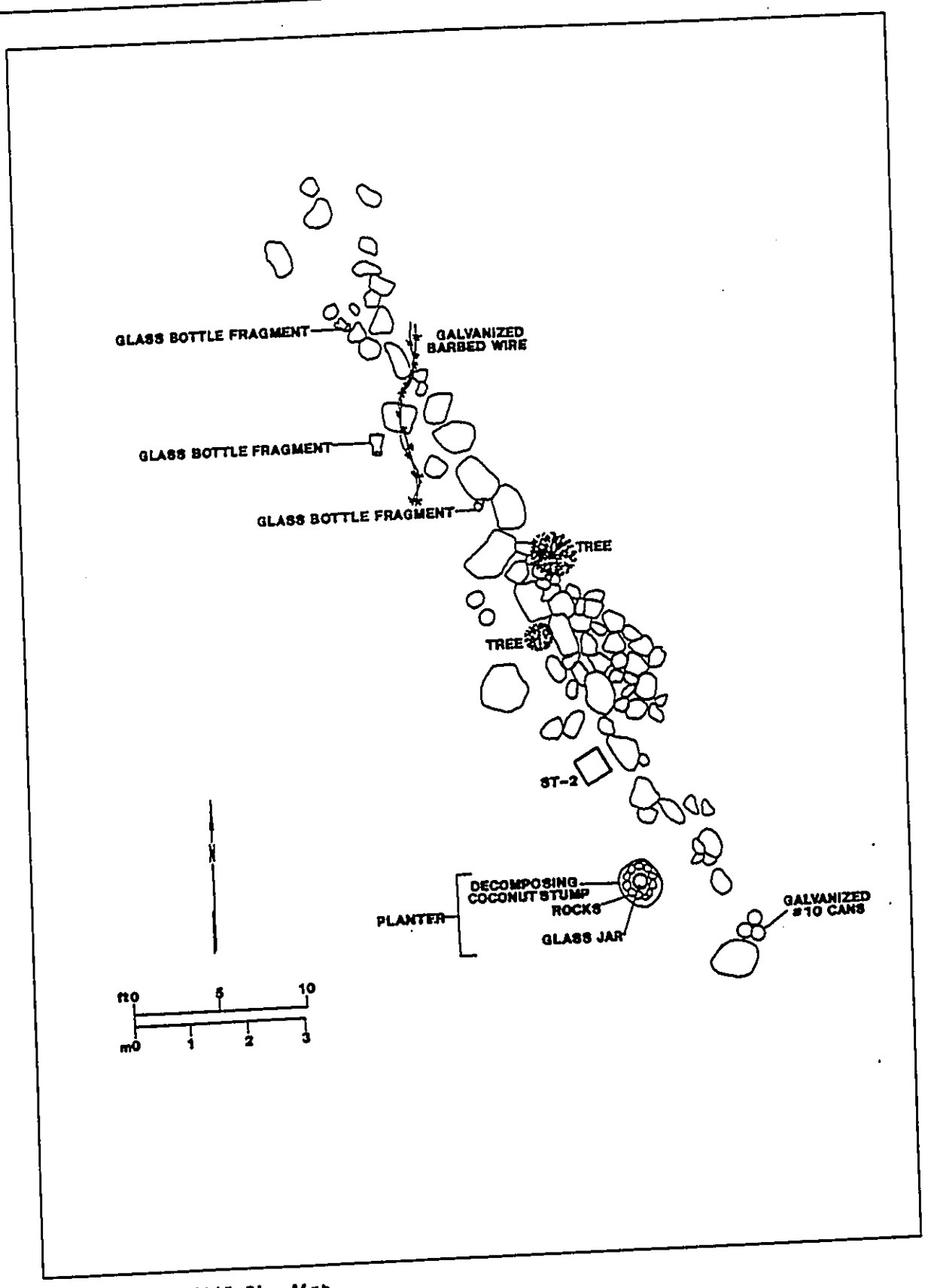

Figure A-8. Site 4145, Plan Map

of only one-course construction, but there are sections that are two courses high. For the most part, the single-course boulders are neatly placed and aligned, with smaller cobbles stacked on the eastern side of the boulder alignment. The wall is oriented *mauka-makai* at c. 326°. Near the south end, c. 1.0 m west, there is a one-gallon pickle jar placed in the ground with small cobbles around it, functioning as a planter. Modern historic glass bottles, barbed wire, and an enamel-plated metal bowl were noted. A soil deposit of less than 15 cm has also been noted. This site is located 17.5 m at 340° from Site 4142 datum, and is just outside the eastern boundary of the property line as surveyed by Norman Saito Engineering. It is likely that this wall functioned as a property boundary between the project area parcel and the Maui Land and Pineapple Co. property.

APPENDIX B: HISTORICAL DOCUMENTARY RESEARCH by Kepā Maly

INTRODUCTION

The study area is situated in the *ahupua'a* of Honolua, Lāhainā District, on island of Maui. The parcel is on the inland or southern portion of the promontory that forms 'Āla'ela'e Point, just *makai* (shoreward) of the Honoapi'ilani Highway. Mokulē'ia Bay is situated on the eastern side of the promontory, and the small cove of Kahauiki is situated on the western side. In the course of conducting this limited historical background study, several resources were consulted, they include Ashdown (1971), Clark (1989), Fleming (1933), Fornander (1973), Handy (1940), Handy and Handy (1972), Kamakau (1961, 1964, 1976, 1991), Malo (1959), Puku'i and Elbert (1986), Puku'i, Elbert, and Mo'okini (1974), Thrum (1909), and Walker (ms. 1931). Only limited information was located in the course of this study, and no specific reference to 'Āla'ela'e Point.

'Āla'ela'e may be interpretively translated as meaning "Clear, bright," or "Burning-clearly or brightly" (cf. *māla'e* and *la'ela'e*). The ocean waters of the western portion of Maui, between the Honolua-Honokahua bays and Ma'alaea were important fisheries for the island of Maui. It is likely that the 'Āla'ela'e promontory was one of the fish-spotting points used by local native fishermen of the area, and like so many coastal points, there is a possibility that a *ko'a* (fisherman's shrine) or traditional site dedicated to gods of the fishermen was located near the point. A review of the published writings of Malo, Kamakau, Fornander, Thrum, Walker, Fleming, and Ashdown (publication dates cited above), offered no discussions on the presence or absence of a shrine or other Hawaiian sites.

CULTURAL SITES AND ETHNOGRAPHIC STUDIES

In 1928 and 1929, Winslow Walker conducted a survey of archaeological sites of the island of Maui (Walker ms. 1931). Walker's writings provide readers with three site descriptions for archaeological sites in the Kahauiki and Honolua areas, to the west and east of 'Āla'ela'e Point:

Site 16
Name: Kahauiki
Location: Mauka to Kahauiki Camp a short distance up the west side of a gulch of the same name.
Description: A small irregular platform of stones whose walls have been taken for stock pens.

Site 17
Name: Puhalakau (Ai Maia)
Location: Makai to Honolua Park along shore.
Description: Heiau for Kuula. Level space showing some paving with some small stones. Modern stone walls and houses built on the site obliterating its outlines.

Remarks: Fisherman's ko'a formerly on beach has been washed away. Informant, Kepuhi Keahi at Honolua.

Site 18
Name: Honuaula
Location: Honolua Gulch just east of bend in road.
Description: Remains of old stone platforms and walls. Measures 29 ft. on south, 46 on west, 54 on east. North wall 3 ft. thick. Whole interior formerly paved with stone, now largely removed to build pens. Remarks: Informant, Sam Manuua [written in pencil, "Manowa?"].

One of the ancient architectural features for which the area is noted, is the ancient "*ala-loa*" (long path), a formal trail system which encircled the island of Maui. Legendary accounts attribute the construction of this trail to the time of the chief Kiha-a-Pi'ilani in the early 1500s. Architecture of the trail ranges from formal trail alignments with kerbing to sections paved with stones, while the portion along the beaches and dunes simply followed the shifting contours of the beaches. It is possible that a portion of the ancient *ala loa* may have crossed through the study area parcel. Walker's 1931 manuscript contains a section titled "Ancient Paved Trails," and his texts note that:

> The north end of West Maui also is traversed by a paved trail. Sections of it can be seen from Honolua to Honokohau and Kahakuloa. It is paved with beach rocks and has a width of four to six feet. Disregarding elevations and depressions it takes the shortest route between two points that is possible for foot travel. This trail is also spoken of as the Kihapiilani Trail (Walker ms. 1931:301).

Honolua resident Martha R. Fleming (1933) reported on the history and descriptions of the trail in her publication "Old Trails of Maui." Handy and Handy (1972) excerpt and summarize Fleming's narratives (Fleming 1933:3-9):

> ...Much of the *Alaloa* has been covered or obliterated, mainly in the course of recent road building; but a great many miles of it can still be seen today. This road was built in about 1516 by Kihapiilani [Kiha son of the chief Pi'ilani], after his conquest and unification of the whole island. It was paved with stones along much of its extent, hence it was referred to as the "*Kipapa* (pavement) of Kihapi'ilani" [Kipapa-a-Pi'ilani]. Beaches were used as crossings where gulches come down to the shore. There were no bridges; and beaches also were used along the seashore in many localities described below. Travelers were sometimes ferried across streams by canoe, or along the shore, as between Olowalu and Maalaea, around the rough southern tip of West Maui. In crossing rushing torrents (on the northeast coast of East Maui) the ingenious native would swing himself over by means of ropes made from trailing vines. It was not unusual for the natives to diversify a long journey by swimming around points that jutted out into the ocean' (Fleming 1933:7 IN Handy and Handy 1972:489).

Mrs. Fleming (1933:5) relates that, in building the road:

> The *Ali'i* had a line of men stand from the sea and hand stones along the line till the reached the required place. Here the stones were artfully put into position. The trail was paved with flat, hard beach stones... (ibid.).

While describing the trail from Honokōhau towards Honolua, then past the study area parcel and on towards Lāhainā, Fleming (1933) comments:

> East of Honokohau, along the flat mile or so, the trail is now non-existent. Evidently it was not needed on these level flats. But it is in the best of condition as it winds down the steep pali near the ocean at Honokohau and after crossing the mouth of the stream shoots up the western pali. Again it is seen at Punalau, and still again crossing Pohakupule gulch. At one time it was very distinct on the West Maui Golf Course between the fifth and sixth holes. However, the enthusiastic golfer has so often removed the troublesome "pohaku" to aid the erring ball, that the old trail has lost its identity.
>
> Leaving the golf course, the trail is almost obliterated to Lahaina and beyond. The cultivation of cane as well as pineapple has greatly interfered with its path... (Fleming 1933:4).

Handy (1940) provides readers with a brief account of the traditional community of this area may have looked like, and how both the land and marine resources may have been used:

> On the south side of western Maui the flat coastal plain all the way from Kihei and Maalaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red *lepo* [dirt] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population which presumably inhabited this leeward coast ate more sweet potatoes that taro with their fish. Almost no sweet potatoes are planted in this section now, however, which is partly due to the displacement of Hawaiians by Orientals on the industrialized sugar and pineapple plantations (Handy 1940:159).

Citing a communication with ranch and pineapple plantation manager David T. Fleming, Handy describes taro cultivation in the valleys above the study area:

> In all three valleys which you mention—Honokowai, Honokohua [Honokahua] and Honolua, as well as Kahana, there was considerable taro raised in olden times; as a matter of fact, a great deal was raised in Honokowai, where there must have been 30 0r 40 acres under cultivation at one time... Honokohua did not have much taro land, but Honolua and Kahana had several acres each (1940:106).

Handy and Handy (1972) provide additional documentation:

> North of Lahaina are five valleys watered by streams draining the western slopes of the West Maui watershed: Honokawai [Honokōwai], Kahana, Honokahua, Honolua, and Honokohau. The first four all had extensive *lo'i* [taro field pond] lands in the valley bottoms, where terraces rose tier on tier in symmetrical stone-faced *lo'i*... (1972:494).

TRANSITIONS IN LAND TENURE AND LAND USE

Following the 1848 westernization of the Hawaiian land ownership system, the land of Honolua, including the study area, was awarded to the chief, and later King of Hawai'i William Lunalilo (LCA 8559-B). Following the death of the King, his estate and trust manager sold the land, and large areas were turned over to ranching. In 1972, Inez Ashdown published a study of the land, prepared for Maui Land and Pineapple Company, Inc. Ashdown reports:

> In 1890, Henry Baldwin visited Honolua where he visited with Richard C. Searle and his wife, a Hawaiian Chiefess, who was one of the descendants of the Kamehameha, Konia, Lunalilo, Davis, and Young Families. The families of this area lived simply, in the 'old style,' ranching cattle and horses, raising taro in Honokohau, and going fishing or obtaining fish from the Kapukapu pond at Honokowai. Henry saw that there was an opportunity to put the surrounding lands into production, and he began leasing and purchasing some of the lands. Around 1892, Henry and his son Frank rode their horses, returning to Honolua, with the idea of expanding the coffee and ranching activities, and investing in the businesses of taro growing and fishing.
>
> Mr. Searle was hired as manager, and over the years, Honolua Ranch profited, and Baldwin continued acquiring land in the region. His acquisitions included the Campbell-Damon holdings in Honolua and Honokahua, and the lands of various families including descendants of Kale Davis and James Young Kanehoa. Eventually, Honolua Ranch had its own *poi* shops in Lahaina and Wailuku, and the ranch had a butcher shop in Lahaina as well (Ashdown 1972:18-34).

Henry P. Baldwin died on July 8, 1911, and in 1912 Richard Searle, Sr. retired, and a new manager was needed for Honolua Ranch. Thus it was at that time that David T. Fleming came to be manager of the ranch (ibid.). It was under Fleming's management that the cattle ranching activities were converted to the pineapple plantation and Baldwin Packers and Maui Land and Pineapple Company, Ltd. were formed (Clark 1989:64).

A 1930 map tracing of a portion of the Baldwin Packers Ltd. lands (Figure B-1), includes the boundaries of the Brennan parcel. At the time the map was surveyed, the study area parcel was shown as being owned by Julia Kea and Manuel Po'ohana, both of whom owned a 1/2 share of the lot. Current land and court records show the lot being held in undivided shares by members of the Kamaka and Fleming families. Additionally, a small portion of the lot on the southeastern corner of the property, along side Honoapi'ilani Highway has been identified as a small family cemetery (Figure 2). Information available in July 1995 indicated that one descendant of the Kamaka family (i.e., Doreen Kamaka-Saito) had claimed that her grandparents are buried on the property. The grave site is reportedly on the southeastern corner of the property, along side Honoapi'ilani Highway.

Informant Contact: July 26, 1995

On July 26, 1995, the author contacted Mr. Clement Kamaka via telephone at his residence near Honolua, Maui. Mr. Kamaka kindly agreed to discuss his recollections of the family's residence on the property and what he remembered about the family grave site. The following information is a paraphrased summary of the discussion.

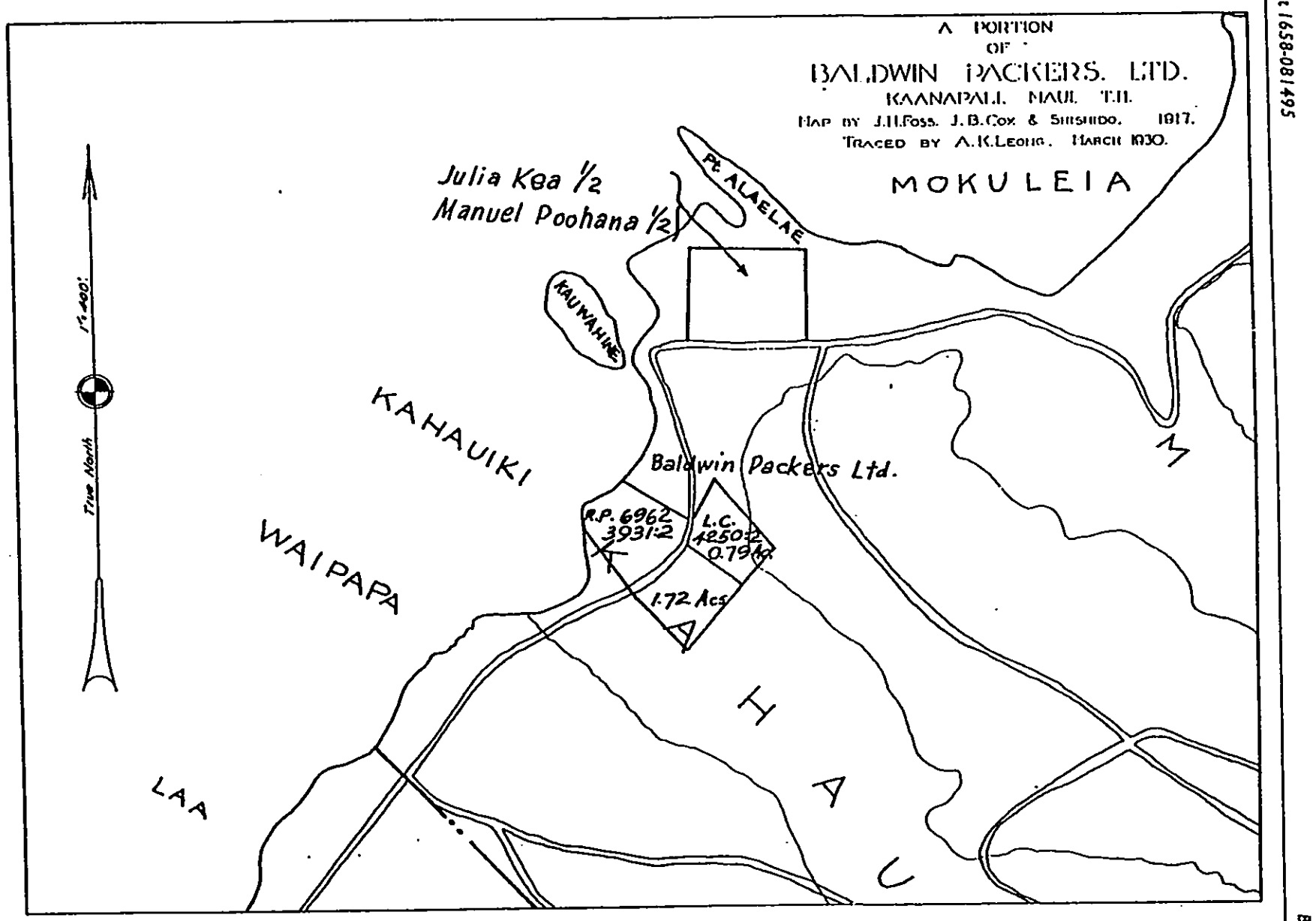

Figure B-1. Portion of 1917 Baldwin Packers, Ltd. Map by Foss, Cox, Shishido

I am 58 years old, and I was raised by my tutu on the lot where we lived until 1941. After that, my father moved our family to O'ahu so he could work. Every summer, my brothers and sisters and I returned to Maui and stayed with my *tutu* Julia Koa who lived on the property until she passed away. The names on the map should be Julia Koa and Manuel Pa'ahana, not "Kea" and "Poohana." Manuel Pa'ahana was my grandfather and Julia Koa was his sister. Fleming got into the property at a time when my *tutu* them needed some money. He loaned them the money and they used half of their property as collateral. After my grandfather died, my *hānai* grandmother got the land. Then the land went from her to David Koa and on down to us.

Julia Koa lived longer than my grandfather and she was also my *hānai* grandmother. She is the one who helped raise us, and we would go stay with her for three months during the summers. We would help take care of the house and do yard work and stuff, and then we would go play and fish. The graves on the lot are my aunt and two of her children. There are at least three graves there, but may be more. My aunt has a son who is still living in the area; his name is Alexander Brown Ross. We've spoken with him about the graves, but I'm the only one who has gone recently to take care of the graves and put flowers like that. I've also tried to do a little work on clearing up the land and put the lock on the gate to try and keep people from going in to camp or make a shelter to live in.

I don't remember my tutu talking about a *ko'a* near the house or at the point, but we would spot fish from along the point. My grandmother taught us how to fish and where the spots were for catching certain kinds of fish. We used to dive in Mokulēia and Kahauiki bays, and we would also fish with bamboo poles. Tutu taught us how to tie *'ōpihi* to the lines as our bait. The fishing was so good—we would catch *uhu, manini*, and all kinds of fish. We would also go night fishing, and helped with the *hukilau* at Honolua Bay too. We mostly got *akule*—so much *akule* in the *hukilau*. The fishermen used canoes and skiffs to take the nets out, and we would join together with all the other people to pull in the nets, divide the fish, and clean up all the nets and boats. Everybody that helped got fish to take home. The fish spotter for the *hukilau* used to stand on the point below the slaughter house and direct the boats to the schools of fish. Its not like that now.

I remember that we had our main house which was fenced, and there was also the outhouse, a shower house, a water line, and the graves, and we could drive up to the house. My grandmother didn't talk to us much about Hawaiian places like a *ko'a*, the old trail, or stuff like that that may have been around our place. I do remember that some times we would find Hawaiian stones hidden in cracks in the rocks on the slope up towards the highway. We also used to pound our own *poi* too, and it is possible that something like the broken pounder they found could have been left behind.

As a family, we have discussed how to take care of the graves, and that's something that still needs to be worked out with this sale.

On September 21, 1995, Mr. Bruce Rainey of The Prudential Maui Realtors, went to the project area with Mr. Clement Kamaka who has been the family member performing most of the

maintenance of the family graves. During the site visit, Mr. Kamaka confirmed that the terraces of Site 4142 are indeed the family gravesites.

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APPENDIX - C
Sight Distance Analysis

SIGHT DISTANCE ANALYSIS

for the proposed

Brennan Residence

at Honolua, Maui, Hawaii

T.M.K. (2) 4-2-04:31

Prepared for:
John & Susan Brennan

Prepared by:
Gholkar & Associates, Inc.
48 Market Street
Wailuku, Maui, HI 96793

This report was prepared by
me or under my supervision.

Satish K. Gholkar

June 1996

INTRODUCTION

This report presents a sight distance analysis for the proposed driveway for a new residence for John and Susan Brennan located off of Honoapiilani Highway, Honolua, Maui, Hawaii (T.M.K. (2) 4-2-04:31 and por. 32). The proposed improvements include a 4,925-sq ft house with porte cochere and carport and turn-around driveway.

The site contains approximately 3.450 acres, and lies within a conservation district area. It is bordered by undeveloped land flanking Alaelae Point on the north, the Pacific Ocean on the west and south, and a green belt buffer for Kapalua Plantation Estates across Honoapiilani Highway on the east. The proposed improvements are entirely consistent with established land use.

EXISTING CONDITIONS

The site is located off Honoapiilani Highway, a two-lane winding road which has a posted speed limit of 15 miles per hour (mph) in the vicinity of the site due to blind curves. The proposed driveway is situated midway between two such curves along an almost straight stretch of road with gentle curves.

See **Figure 1** for site map.

REQUIRED SIGHT DISTANCES

The sight distances for the subject property, based on 20 mph, are as follows:

- D_L= 225 feet
- D_R= 150 feet

where D_L= sight distance to the left.
where D_R= sight distance to the right.

Figure 2 shows required sight distances.

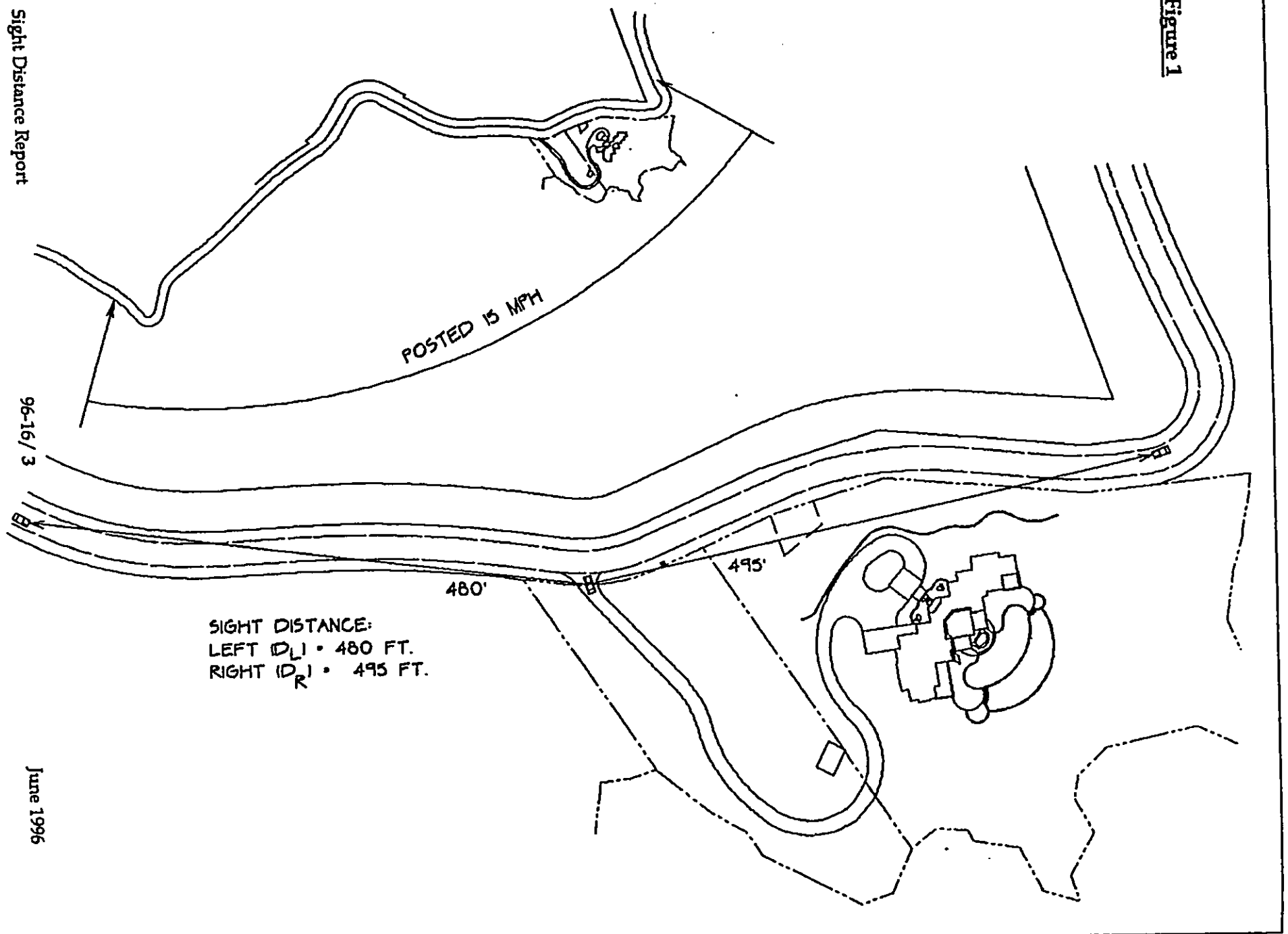
CONCLUSION

The posted speed limit along Honoapiilani Highway in the vicinity of the property is 15 mph. The available sight distances from the proposed driveway are 490 feet left (D_L) and 495 feet right (D_R). Therefore, at the intersection of Honoapiilani Highway with the proposed driveway, the available sight distance exceeds the minimum required (See **Figure 1**).

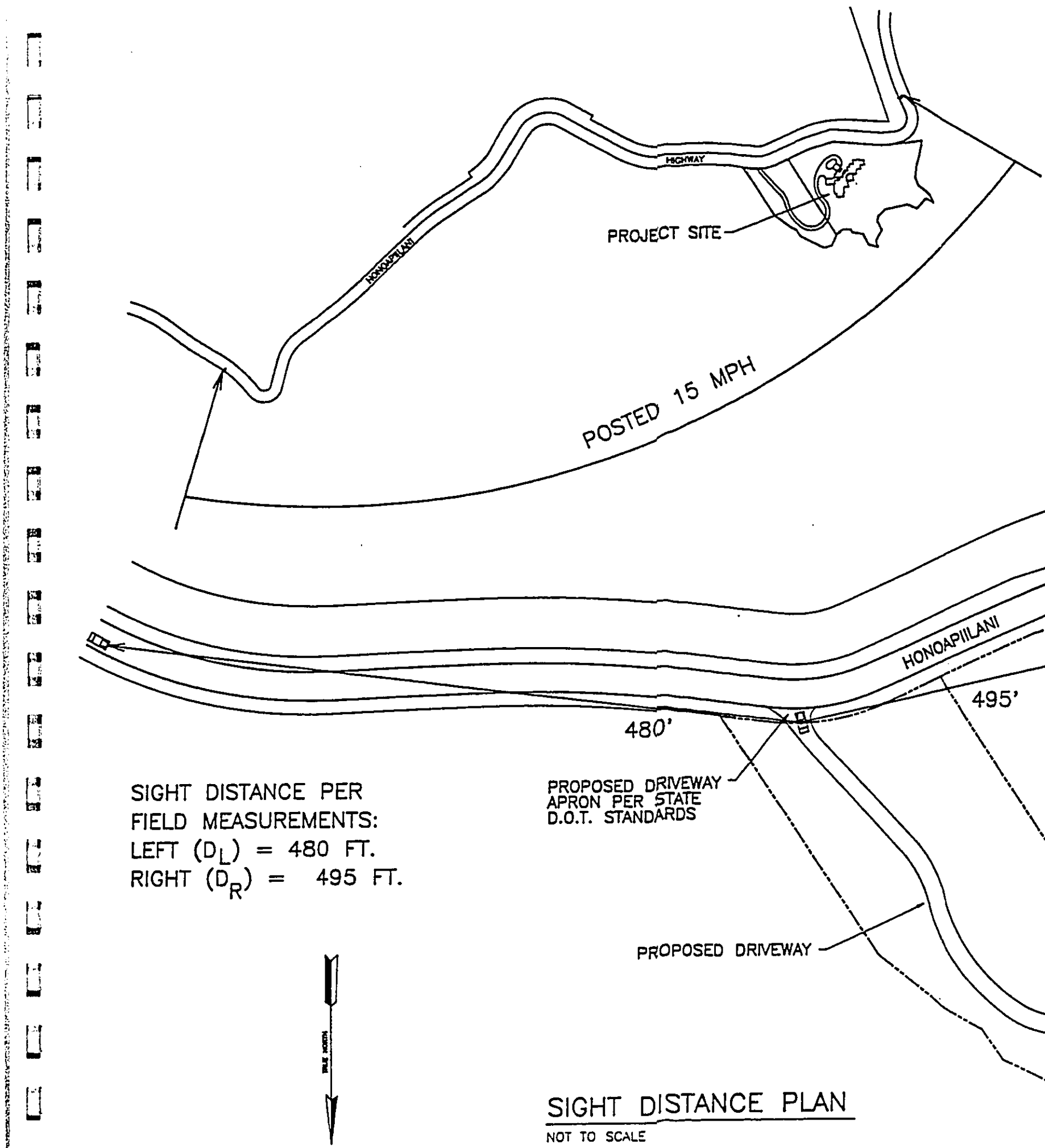
Figure 1

Sight Distance Report

96-16/3



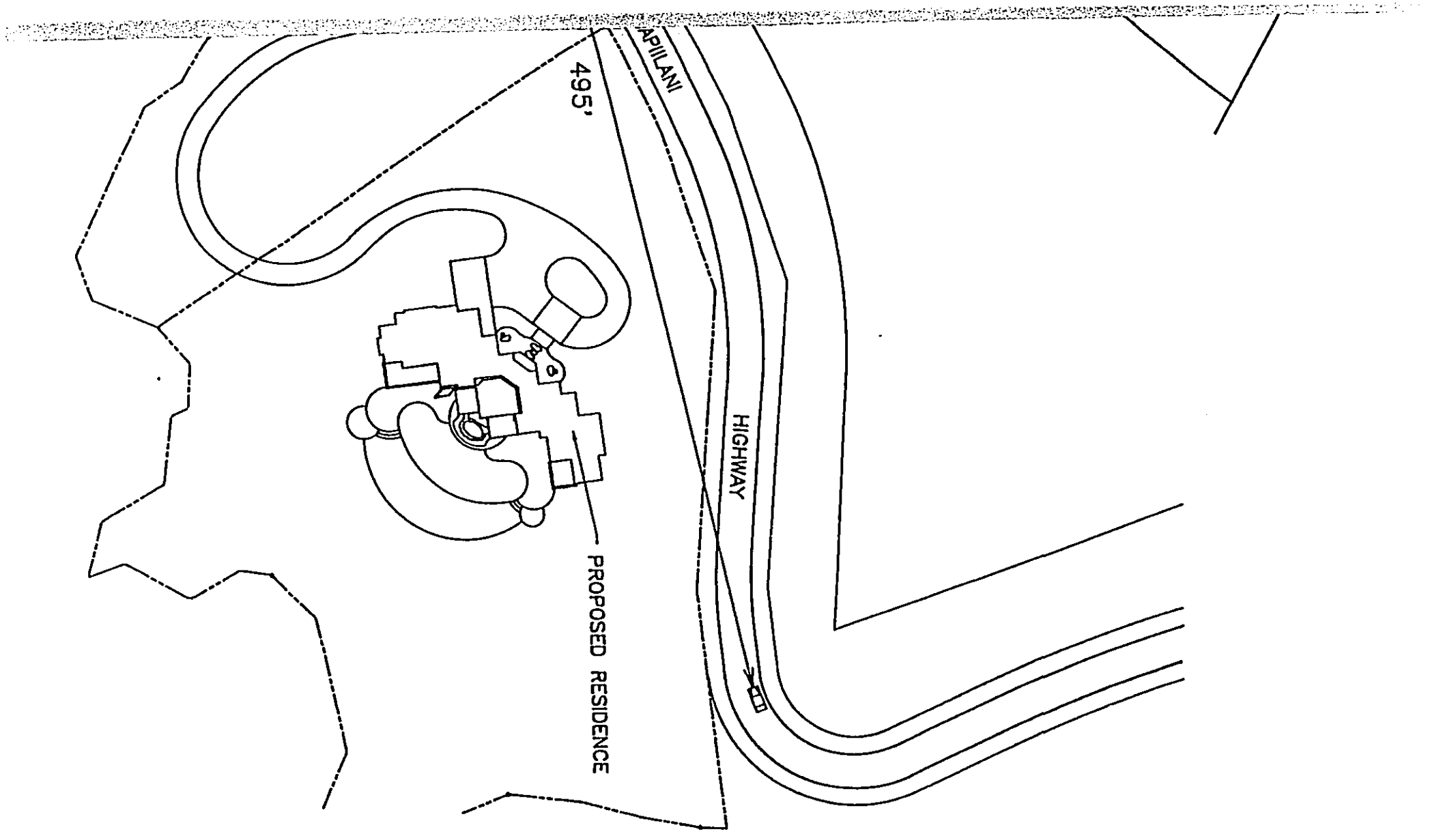
June 1996



SIGHT DISTANCE PER
FIELD MEASUREMENTS:
LEFT (D_L) = 480 FT.
RIGHT (D_R) = 495 FT.

SIGHT DISTANCE PLAN

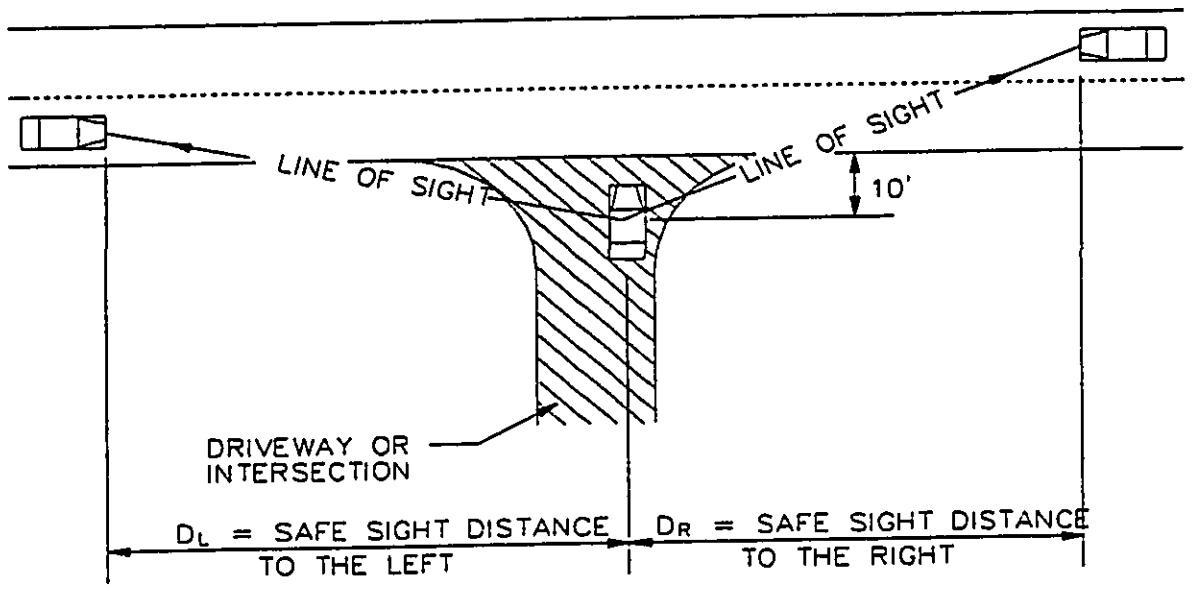
NOT TO SCALE



C-3	ONSITE & OFFSITE IMPROVEMENTS FOR THE BRENNAN RESIDENCE HONOLUA, MAUI, HAWAII TMK: 4-2-04: 31	Gholkar & Associates, Inc. Structural & Civil Engineering	48 Market St. Wailuku, Hawaii 96793 Tel.No.(808) 242-8088 FAX (808) 244-3303	SIGHT DISTANCE

Figure 2

D - Distance Along Road



WHEN MEASURING SIGHT DISTANCE, ASSUME THE DRIVER'S EYE LEVEL IS 3.5 FEET ABOVE THE GROUND AND APPROACH VEHICLES ARE 4 FEET HIGH

APPENDIX - D
Hydrology and Soil Erosion Control Report

HYDROLOGY ANALYSIS

and

SOIL EROSION CONTROL REPORT

for the proposed

Brennan Residence

at Honolua, Maui, Hawaii

T.M.K. (2) 4-2-04:31

Prepared for:
John & Susan Brennan

Prepared by:
Gholkar & Associates, Inc.
48 Market Street
Wailuku, Maui, HI 96793

This report was prepared by
me or under my supervision.

Satish K. Gholkar

June 1996

INTRODUCTION

The following report presents results of a hydrology analysis for the proposed residence and improvements for John and Susan Brennan at Honolua, Maui, Hawaii, also described as T.M.K. (2) 4-2-04 parcel 31 (2.470 acres) and a portion of parcel 32 (0.982 acre). It is situated at elevations 22 to 80 feet southerly of Alaelae Point and Makuleia Bay and is bound by undeveloped rocky coastline on the east and southwest, and Honoapiilani Highway on the south.

The purpose of this analysis is to prepare hydrologic calculations for existing and future conditions, to establish any storm water impacts resulting from the proposed subdivision improvements, and to outline mitigative measures as indicated. The report details the methodology, existing and future site conditions and calculated runoffs, and hydrologic conclusions.

Reference **Figure 1** for vicinity map and **Figure 2** for proposed site plan.

METHOD OF ANALYSIS

The hydrology for the drainage area which contains less than 5 acres will be computed by the Rational Method as specified by the Rules for the Design of Storm Drainage Facilities in the County of Maui, adopted July 1995.

The Rational Method gives the resultant of the storm water runoff as a peak discharge amount at a point. For sheet flow runoff, this peak discharge amount is the total over the entire surface area. The Rational Method utilizes four hydrologic and watershed characteristics for its analysis which are:

1) Time of concentration (Tc)
2) Rainfall intensity (I)
3) Runoff coefficient (C)
4) Drainage area (A)

The Rational Method calculates the peak discharges with the following equation:

$$Q = CIA$$

where:

Q = Peak discharge, cubic feet per second (cfs)
C = Runoff coefficient
I = Rainfall intensity, inches per hour (in./hr.)
A = Total contributing area, acres (ac.)

The time of concentration (Tc) for the design storm is developed by estimating the travel time for the various overland flow watercourses. The watercourses for existing conditions consist mainly of overland surface flow areas while the future developed condition watercourses shall remain the same. The time of concentration for the flow through each watercourse is determined upon the following parameters:

1) Watercourse as a percent of total tributary area
2) Length of run of watercourse in feet
3) Type of watercourse

The design storm is the 10-year 1-hour storm event and is considered in the analyses of both the existing and future developed surface water runoff conditions. The design storm event is determined by the Rainfall-Frequency *Atlas of the Hawaiian Islands* prepared by the U.S. Weather Bureau, dated 1962. The time of concentration (Tc) and the design storm are used to develop the rainfall intensity (I) needed for the rational equation.

The runoff coefficient (C) is basically a percent of the land covered by an impervious surface. Weighted runoff coefficients are developed by using C values for different land uses and types given in the Storm Drainage Standards. The following equation is used to determine the weighted average runoff coefficient:

$$C_{weighted} = \frac{A1C1 + A2C2 + A3C3 \ldots}{A1 + A2 + A3 \ldots}$$

where An is the area of contribution.

The drainage area (A) is determined by calculating the area, in acres, upstream of the point where the peak discharge is to be determined.

After all the hydrologic parameters are found, a hydrograph can be generated to determine the volume of storm water runoff. The volume of storm water runoff is used to calculate the storage volumes needed in the design of any storm water systems such as dry wells and detention/retention basins. The modified Rational Method gives a good approximation of the storm water runoff volume.

SOIL TYPE

The "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972), page 119, " describes the soil at the site and surrounding vicinity as Rock Land (rRk), where exposed rock covers 25 to 90 percent of the surface. The rock outcrops are mainly basalt or andesite.

Reference **Figure 3** soil map Sheet Number 91.

ELEVATION AND FLOOD ZONE

The site lies at approximately 22 to 80 feet above mean sea level and is within Zone C (area of minimal flooding). The coastal fringe below the pali is in the coastal high hazard zone.

Reference **Figure 4**, Federal Emergency Management Agency Community Panel Map Number 150003 0139.

EXISTING DRAINAGE CONDITION

The subject parcel's highest point is a knoll ridge on its eastern border. The parcel receives some offsite runoff on its southerly side from Honoapiilani Highway and there is evidence of severe erosion of the highway embankment near the center of the property from this runoff. The site terrain slopes gently at an average 9% from Honoapiilani Highway on the south toward the northerly coast.

The existing onsite surface runoff peak volume generated during the 10-year 1-hour design rainstorm is calculated to be **9.05 cfs.**

Reference **Figure 5**, Existing Drainage Plan.
Reference **Appendix A** for hydrologic calculations.

FUTURE DRAINAGE CONDITION

It is proposed to demolish the existing ramshackle structures on the property and to build a new house with decorative pools, porte cochere, carport, driveway and greenhouse. The placement of retaining walls to divert the runoff will mitigate the increased impervious surface area by increasing the time of concentration and permitting increased percolation. In addition it is proposed to construct a shallow asphalt swale alongside the highway to prevent embankment erosion such as occurs under existing conditions. (See **Site Plan with Typical Swale Section.**)
Aside from these mitigative measures care has been taken to maintain existing drainage patterns. The area along the immediate shore (approximately 0.5 acre, rough stony land) is to remain undisturbed.

A future **0.07 cfs increase** in onsite surface runoff peak volume generated during the 10-year 1-hour design rainstorm was calculated. This would generate an additional **252 cu ft** of runoff. It is proposed to place three 8 ft. diameter x 4 ft. deep detention (seepage) pits with grated inlets, one at the low point of the driveway just north of the carport and two below the terraces, where runoff patterns converge and can be readily intercepted (see **Site Plan.**) The combined detention capacity of these seepage pits is **603.0 cu ft**, more than double the runoff increase.

Reference **Figure 6**, Future Drainage Plan.
Reference **Appendix A** for hydrologic calculations.

CONCLUSION

It is our professional opinion that the proposed improvements will have negligible impact on the existing hydrology and adjoining properties.

EROSION CONTROL STUDY

As indicated above, the soils at the project sites and surrounding vicinities consist predominantly of Rock Land (rRk), where exposed rock covers 25 to 90 percent of the surface. The rock outcrops are mainly basalt or andesite. These soils have a soil erodibility factor (K) of 0.10 according to the "Erosion and Sediment Control Guide for Hawaii, SCS (March, 1981)."

The Universal Soil Loss Equation (USLE) is used to estimate the maximum average annual soil loss during construction. This equation is stated as follows:

E = R K LS C P, where

R = Rainfall Factor = 190 tons/acre/year
K = Soil Erodibility Factor = 0.10
(L = Grade Length = 400)
(S = Grade Slope = 15%)
LS = Slope Length Factor = 5.13
C = Cover Factor = 1.00 (Bare Soil)
P = Control Practice Factor = 1 (Non-agricultural)

E = 190 x 0.10 x 5.13 x 1 x 1 = 97.5 tons/acre/year

Allowable Erosion Rate:

Maximum erosion rate x construction area = 5,000 tons/year
Graded site area = 1.6 acres
Allowable Erosion Rate (E) = 5,000/1.4= 3,571 tons/acre/year

Severity Rating Number:

H = (2 F T + 3 D) A E, where

H = Severity Rating Number
F = Downstream Hazard = 4
D = Coastal Water Hazard = 4
T = Duration of Site Work in Years = 0.5
A = Construction Area in Acres = 1.4
E = Uncontrolled Erosion Rate in Tons/Acre/Year = 97.5

H = (2 x 4 x 0.5 + 3 x 4) (1.4 x97.5) = 1642,
less than the maximum allowable value of 50,000.

APPENDIX A

HYDROLOGY CALCULATIONS

From Rainfall-Frequency Atlas of Hawaiian Islands:
10-year 1-hour rainfall for subject property = 2.3 inches
Total subject area = 3.452 acres

EXISTING CONDITION

1. Runoff coefficient (C), (ref. Rules for the Design of Storm Drainage Facilities in the County of Maui, July 14, 1995, Table 1):

Pervious (grass, open areas, etc., 50%)	
Infiltration (slow)	0.14
Relief (rolling, 5-15%)	0.03
Vegetal cover (good)	0.03
Development type (residential)	0.40
	0.60
Impervious (rock outcrops, etc., 50%)	
Infiltration (negligible)	0.20
Relief (rolling, 5-15%)	0.03
Vegetal cover (none)	0.07
Development type (residential)	0.40
	0.70

Weighted C = 0.65

2. Time of concentration (Tc), (Ibid., Plates 1 and 2), reference Figure 7:

Tributary	Length of Run	Equiv Cover	Slope	Tc
E1	230 feet	aver grass	9.0%	13.4 minutes
E2	550 feet	aver grass	7.0%	20.1 minutes
E3	270 feet	aver grass	9.0%	14.3 minutes
E4	120 feet	poor grass	10.0%	7.8 minutes
E5	150 feet	poor grass	14.0%	7.9 minutes

3. Rainfall intensity (I), (Ibid., Plate 4), reference Figure 7:
For tributary E1: I_{10} = 4.4 in/hr
For tributary E2: I_{10} = 3.8 in/hr
For tributary E3: I_{10} = 4.3 in/hr
For tributary E4: I_{10} = 5.2 in/hr
For tributary E5: I_{10} = 5.2 in/hr

4. Peak runoff (Q):

For tributary E1:	Q = CIA = 0.65 (4.4) (0.281) =	0.80 cfs existing
For tributary E2:	Q = CIA = 0.65 (3.8) (2.551) =	6.30 cfs existing
For tributary E3:	Q = CIA = 0.65 (4.3) (0.263) =	0.74 cfs existing
For tributary E4:	Q = CIA = 0.65 (5.2) (0.178) =	0.60 cfs existing
For tributary E5:	Q = CIA = 0.65 (5.2) (0.181) =	0.61 cfs existing
	Total Peak Runoff =	**9.05 cfs existing**

FUTURE CONDITION

1. Future tributary areas:
   - F1 = 0.281 acre, 0.141 acre pervious, 0.140 acre impervious
   - F2 = 0.901 acre, 0.571 acre pervious, 0.330 acre impervious
   - F3 = 1.413 acre, 0.573 acre pervious, 0.840 acre impervious
   - F4 = 0.178 acre, 0.080 acre pervious, 0.098 acre impervious
   - F5 = 0.181 acre, 0.091 acre pervious, 0.090 acre impervious
   - F6 = 0.443 acre, 0.155 acre pervious, 0.288 acre impervious
   - F7 = 0.053 acre (exclusion: pond in sump condition for design storm)

2. Runoff coefficient (C):
   - F1: C = (0.141) (0.60) + (0.140) (0.70) = 0.65
   - F2: C = (0.571) (0.60) + (0.330) (0.70) = 0.64
   - F3: C = (0.573) (0.60) + (0.840) (0.70) = 0.66
   - F4: C = (0.080) (0.60) + (0.098) (0.70) = 0.66
   - F5: C = (0.091) (0.60) + (0.090) (0.70) = 0.65
   - F6: C = (0.155) (0.60) + (0.288) (0.70) = 0.66

3. Time of concentration (Tc), (Ibid., p.122, Plate 3), reference **Figure 8:**

Tributary	Length of Run	Equiv Cover	Slope	Tc
F1	230 feet	aver grass	9.0%	13.4 minutes
F2	400 feet	dense grass	8.0%	22.6 minutes
F3	480 feet	aver grass	9.0%	18.1 minutes
F4	120 feet	poor grass	10.0%	7.8 minutes
F5	150 feet	poor grass	14.0%	7.9 minutes
F6	355 feet	aver grass	11.0%	11.7 minutes

4. Rainfall intensity (I), (Ibid., Plate 4), reference **Figure 8:**

For tributary F1: I_{10} = 4.4 in/hr
For tributary F2: I_{10} = 3.65 in/hr
For tributary F3: I_{10} = 3.95 in/hr
For tributary F4: I_{10} = 5.2 in/hr
For tributary F5: I_{10} = 5.2 in/hr
For tributary F6: I_{10} = 4.6 in/hr

5. Peak runoff (Q):

For tributary F1: Q = CIA = 0.65 (4.4) (0.281) = 0.80 cfs future
For tributary F2: Q = CIA = 0.64 (3.65) (0.901) = 2.10 cfs future
For tributary F3: Q = CIA = 0.66 (3.95) (1.413) = 3.68 cfs future
For tributary F4: Q = CIA = 0.66 (5.2) (0.178) = 0.61 cfs future
For tributary F5: Q = CIA = 0.65 (5.2) (0.181) = 0.61 cfs future
For tributary F6: Q = CIA = 0.66 (4.6) (0.443) = 1.34 cfs future

Total Peak Runoff = 9.14 cfs future

Runoff Summary

9.14 cfs future runoff rate
9.05 cfs existing runoff rate
+0.07 cfs net increase

Detention Capacities

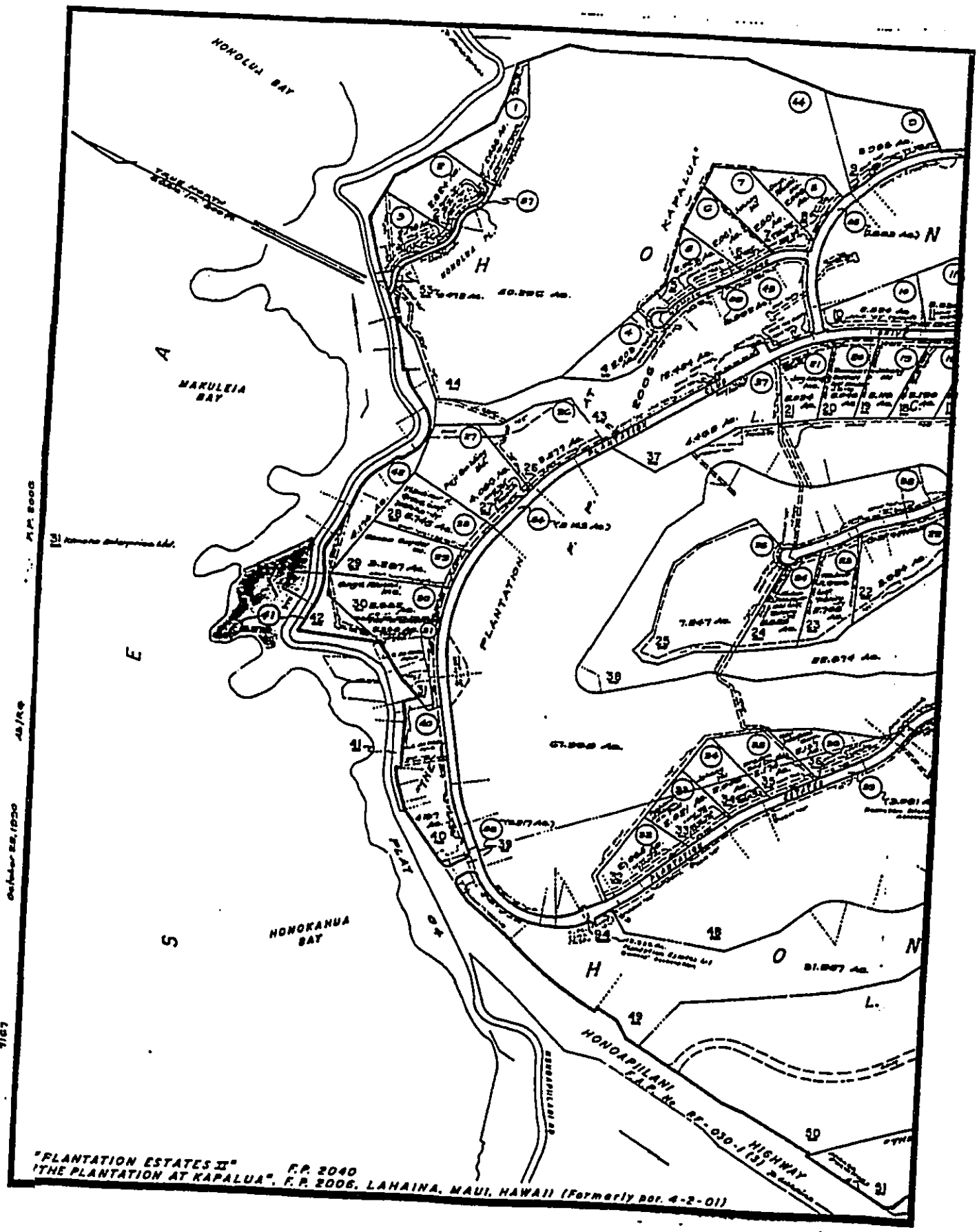
Required detention capacity = 0.07 x 60 x 60 = 252 cu ft

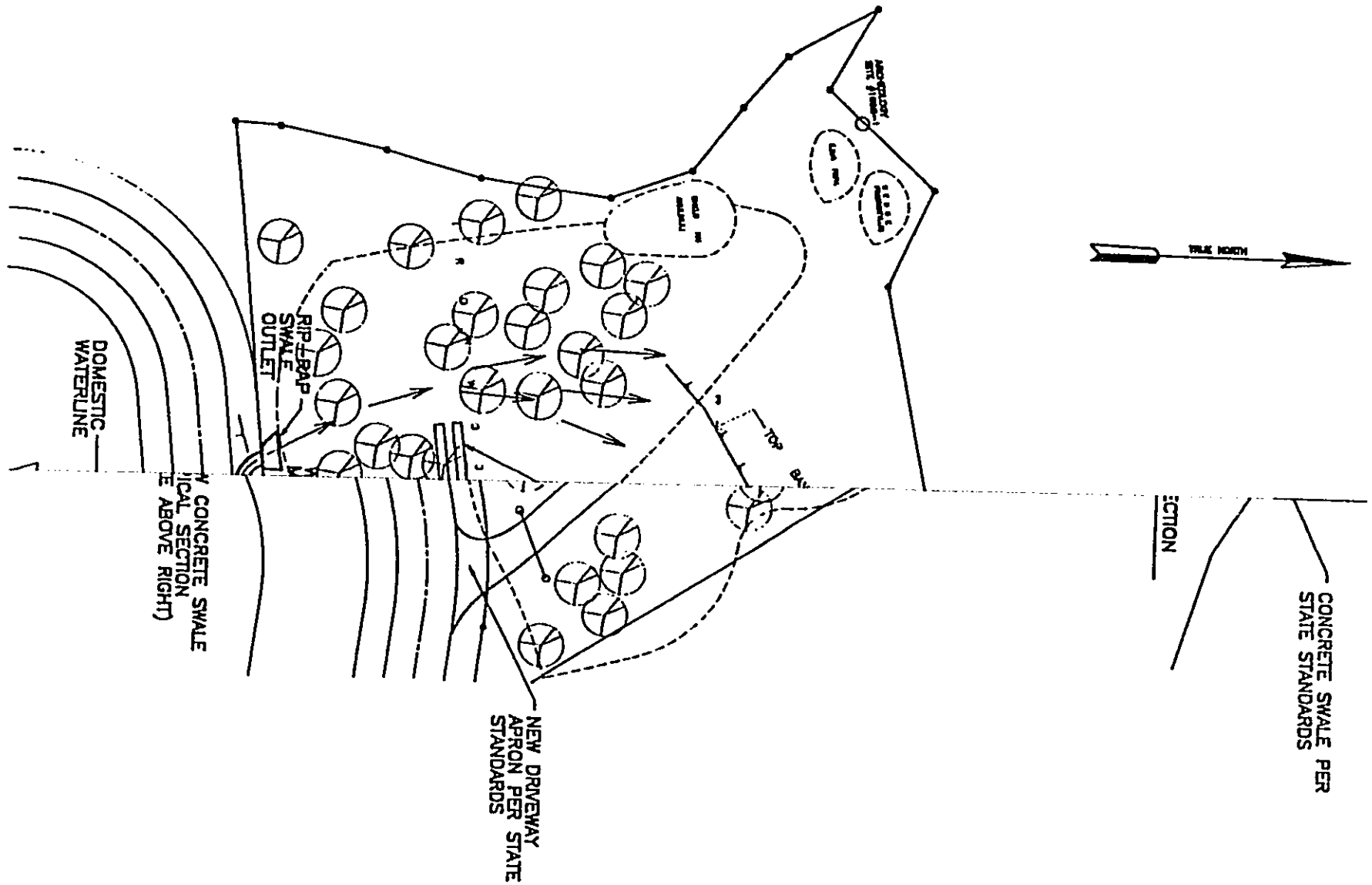
Detention pit capacity = $\frac{\pi d^2 h}{4} = \frac{3.14\ (64)\ 4}{4}$ = 201.0 cu ft

Number of detention (seepage) pits required = 252/201.0 = 1.25 = **2 pits**

Number of detention pits provided = **3 pits**

Therefore we are providing a capacity of 603.0 cu. ft. which is almost 2.5 times required capacity.

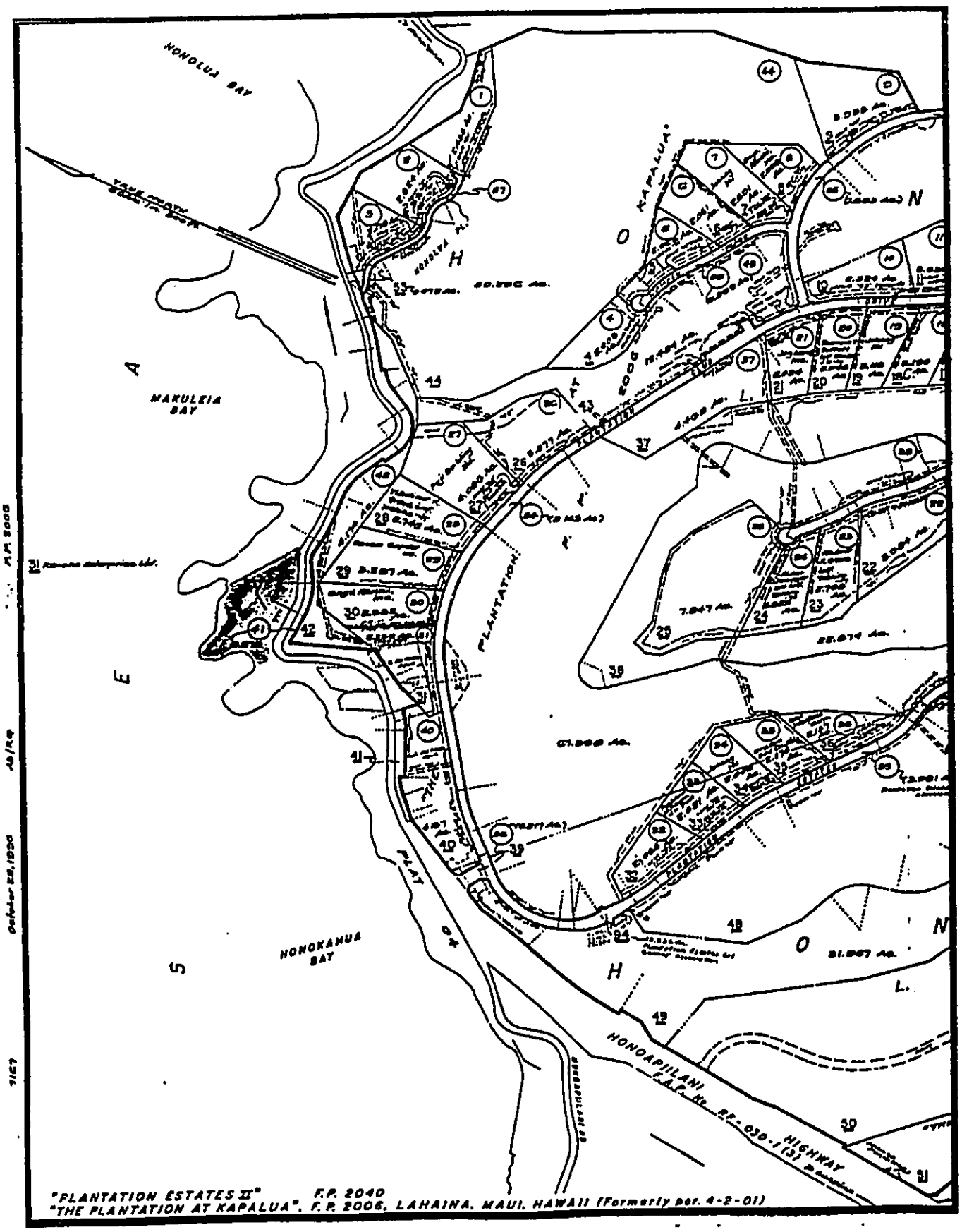

HONOLUA BAY
MAKULEIA BAY
HONOKAHUA BAY
KAPALUA
PLANTATION
HONOAPIILANI HIGHWAY
"PLANTATION ESTATES II"
"THE PLANTATION AT KAPALUA". F.P. 2006. LAHAINA, MAUI, HAWAII (Formerly por. 4-2-01)
F.P. 2040



C-1	ONSITE & OFFSITE IMPROVEMENTS FOR THE BRENNAN RESIDENCE HONOLUA, MAUI, HAWAII TMK: 4-2-04: 31	Gholkar & Associates, Inc. Structural & Civil Engineering	48 Market St. Wailuku, Hawaii 96793 Tel.No.(808) 242-8088 FAX (808) 244-3303	SITE PLAN	JAMES K. GHOLKAR LICENSED PROFESSIONAL ENGINEER No. 9883-S HAWAII, U.S.A.

CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING


HONOLUA BAY
MAKULEIA BAY
HONOKAHUA BAY
KAPALUA
PLANTATION
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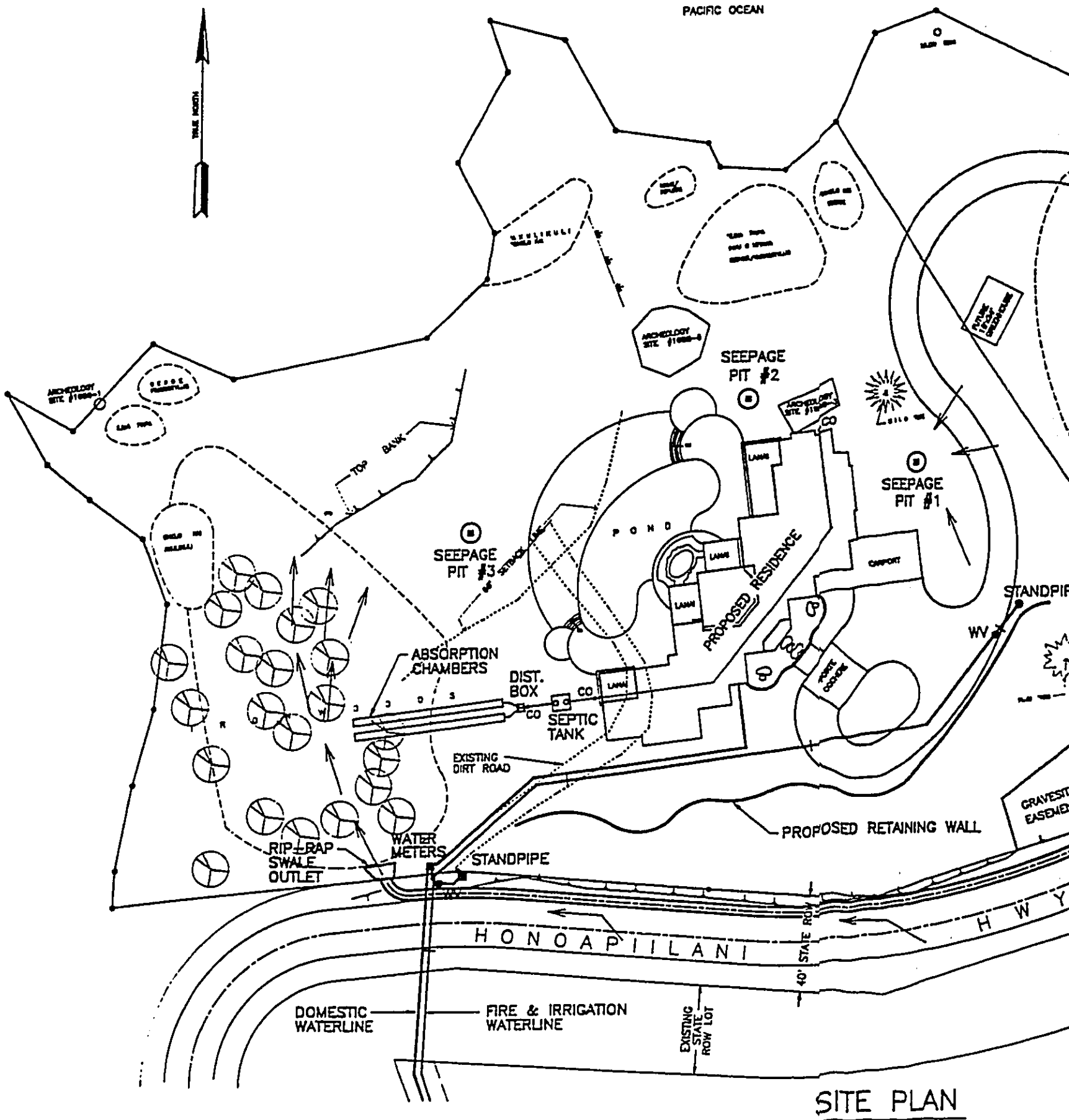
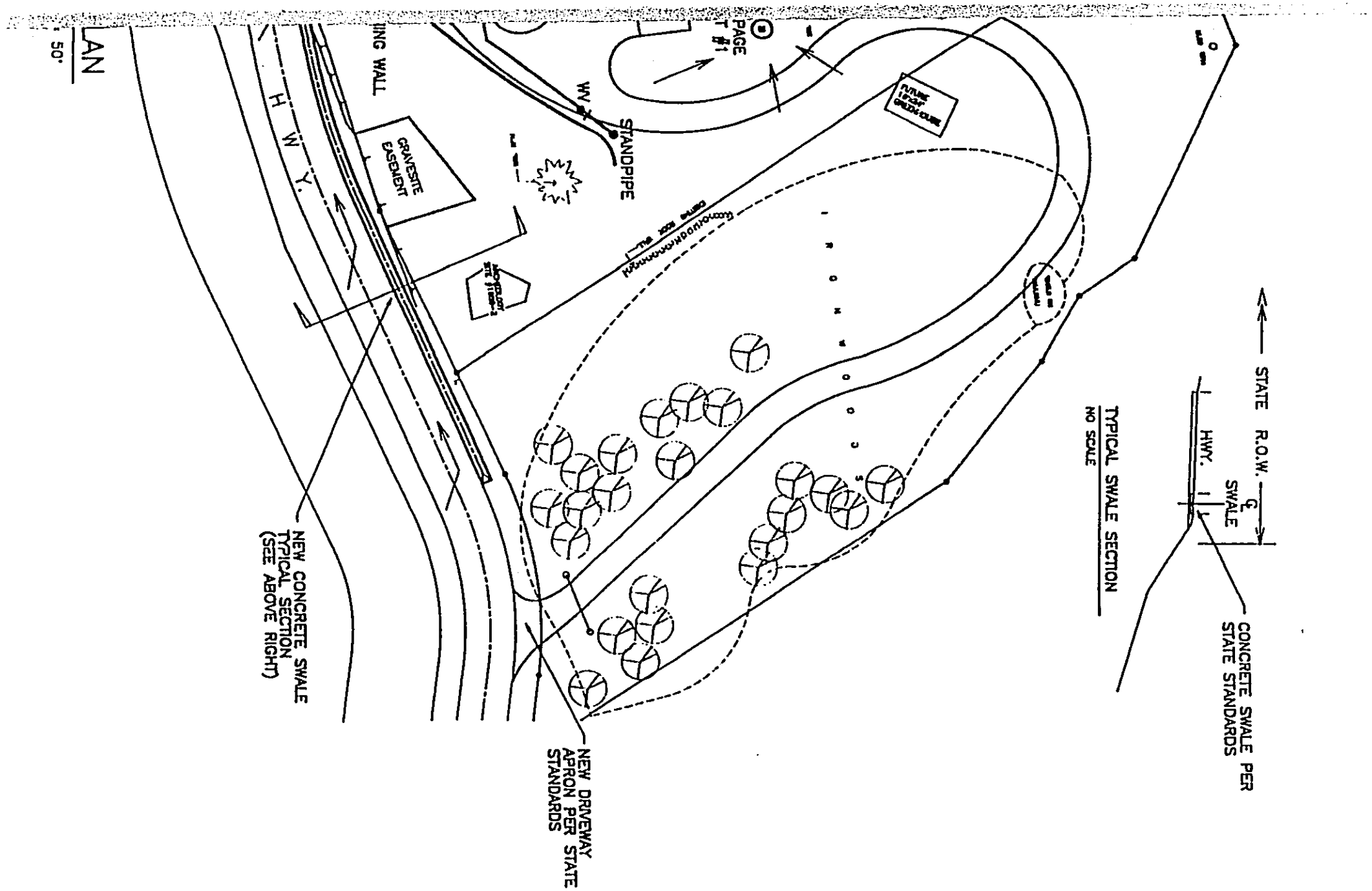
"PLANTATION ESTATES II" F.P. 2040
"THE PLANTATION AT KAPALUA", F.P. 2006, LAHAINA, MAUI, HAWAII (Formerly por. 4-2-01)



SITE PLAN

SCALE: 1" = 50'



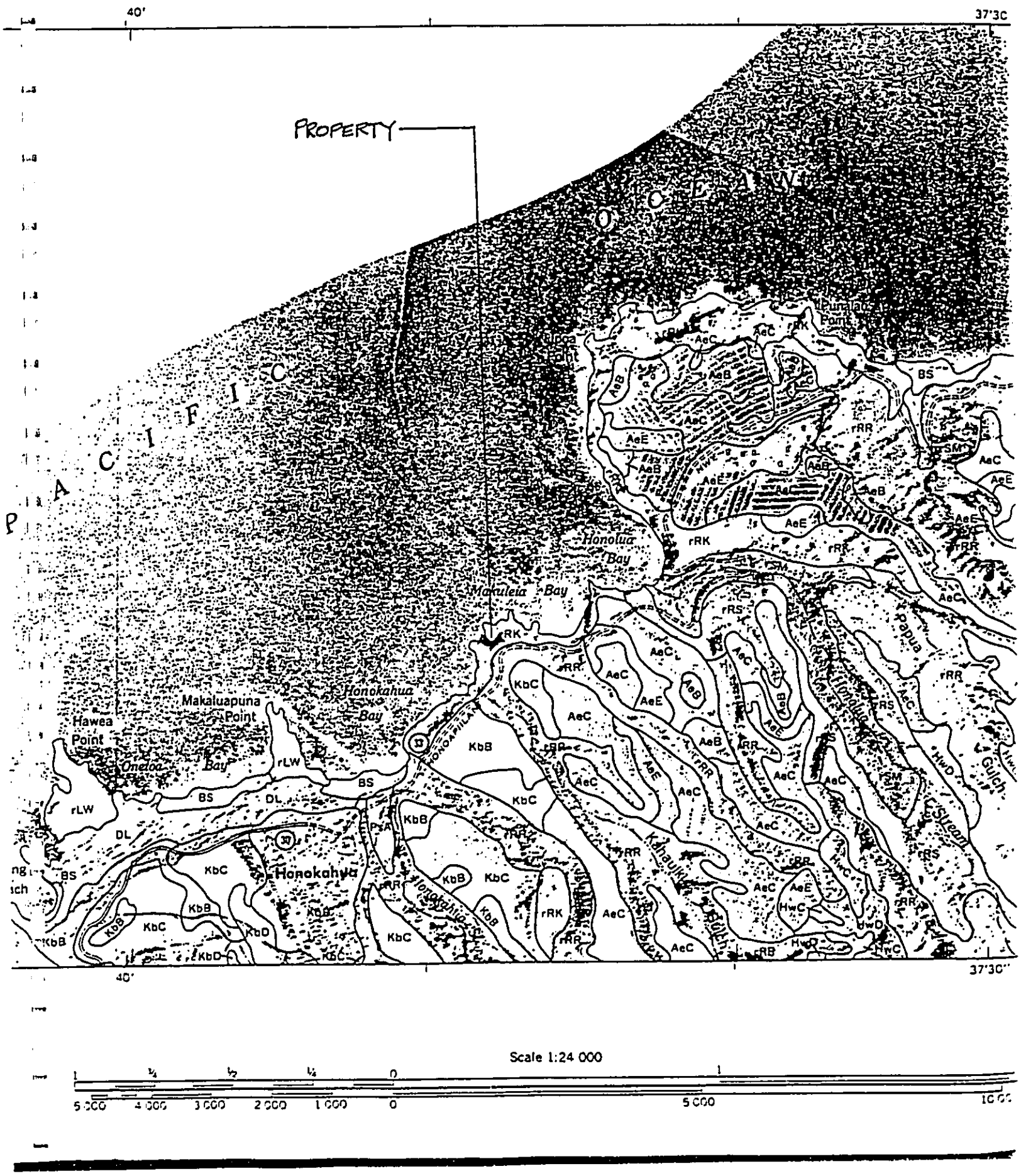
C-1	ONSITE & OFFSITE IMPROVEMENTS FOR THE **BRENNAN RESIDENCE** HONOLUA, MAUI, HAWAII TMK: 4-2-04: 31	Gholkar & Associates, Inc. Structural & Civil Engineering	48 Market St. Wailuku, Hawaii 96793 Tel.No.(808) 242-8068 FAX (808) 244-3303	SITE PLAN

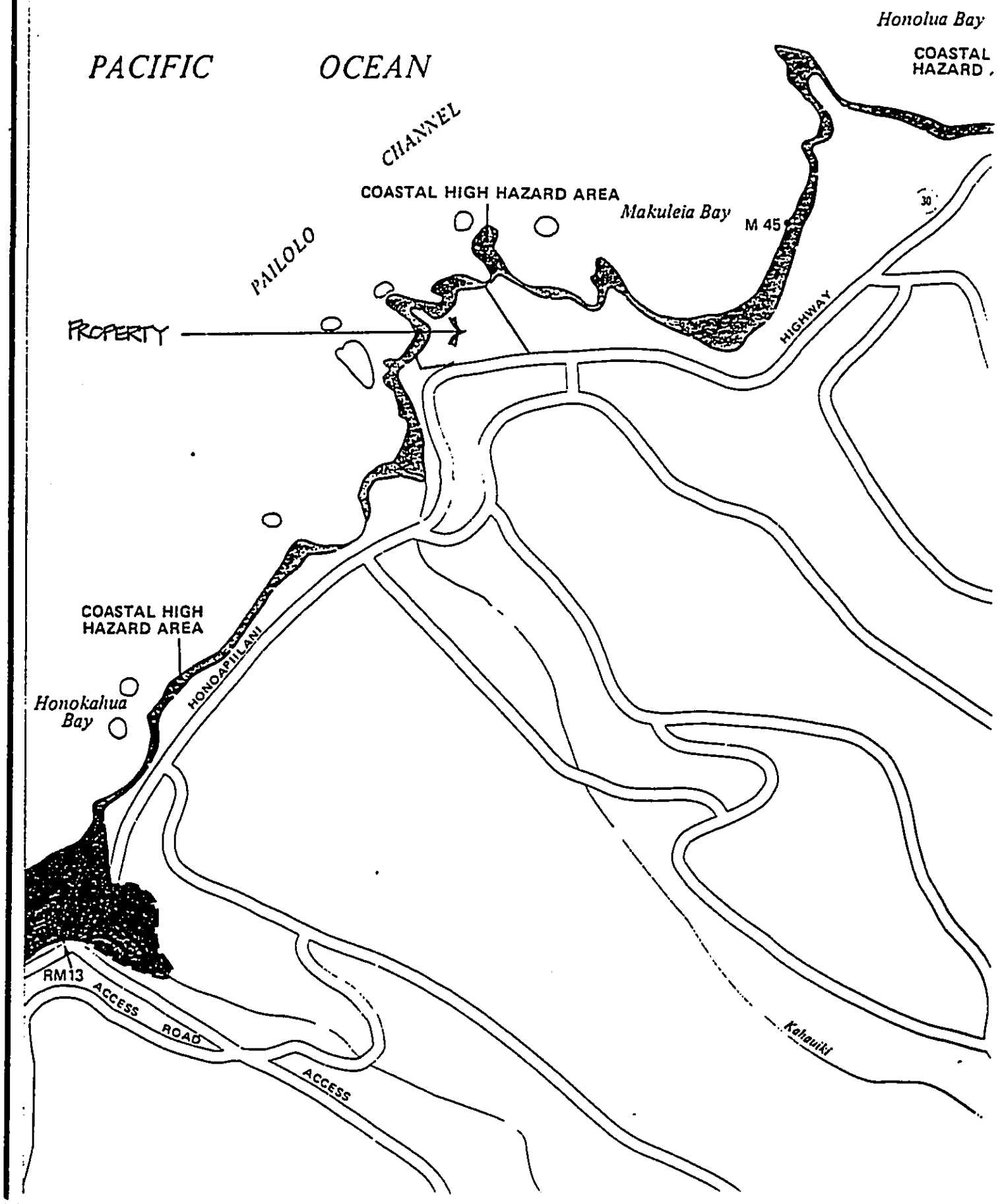
EROSION CONTROL PLAN

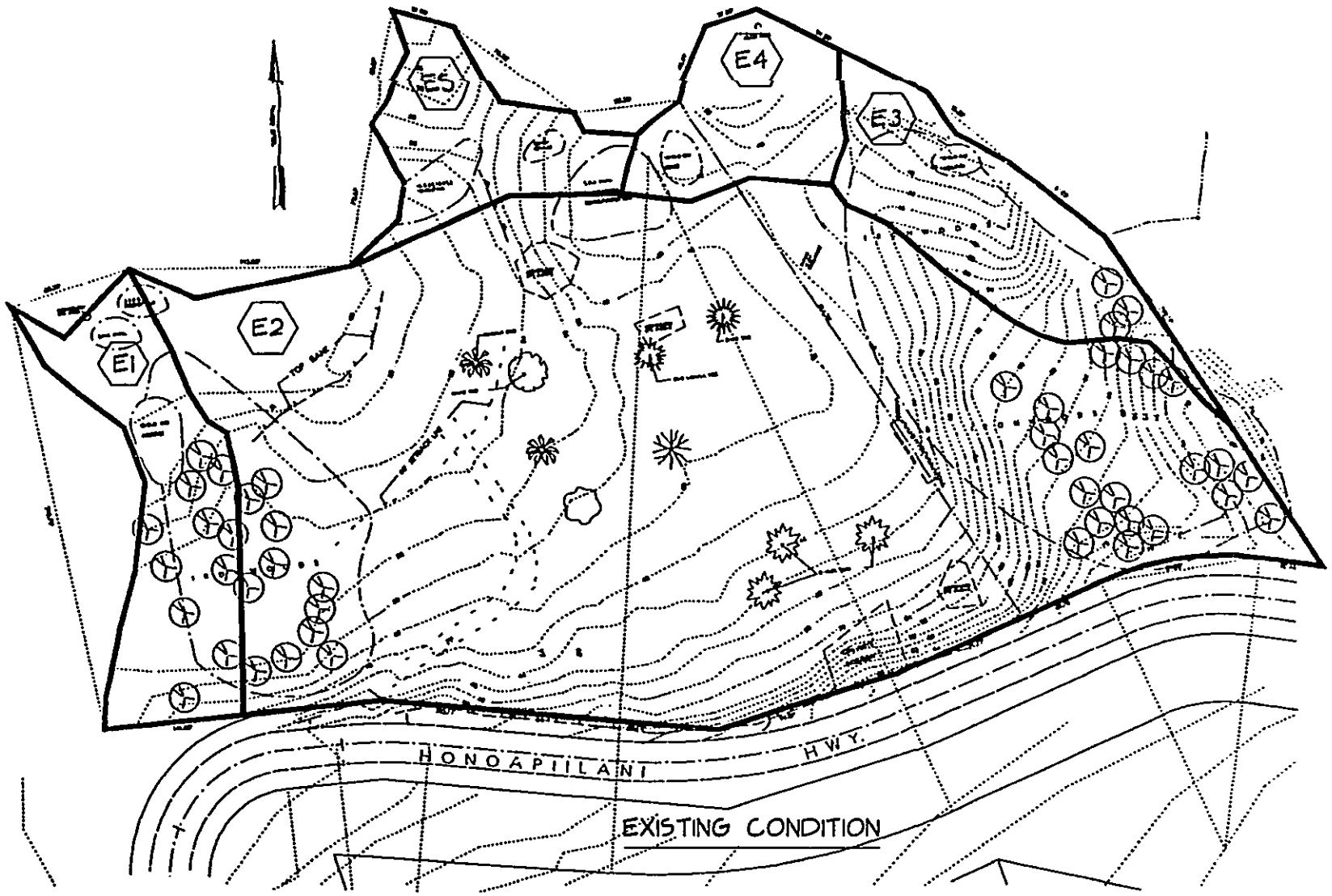
Erosion control measures will be guided by Chapter 20.08, "Soil Erosion and Sedimentation Control", of the Maui County Code. Specific measures shall include where appropriate:

1. Keeping grading to the absolute minimum required.
2. Replanting exposed areas as soon as practicable following any clearing, grading or excavation with indigenous flora.
3. Construction of berms, swales, or pits to intercept runoff from exposed areas.

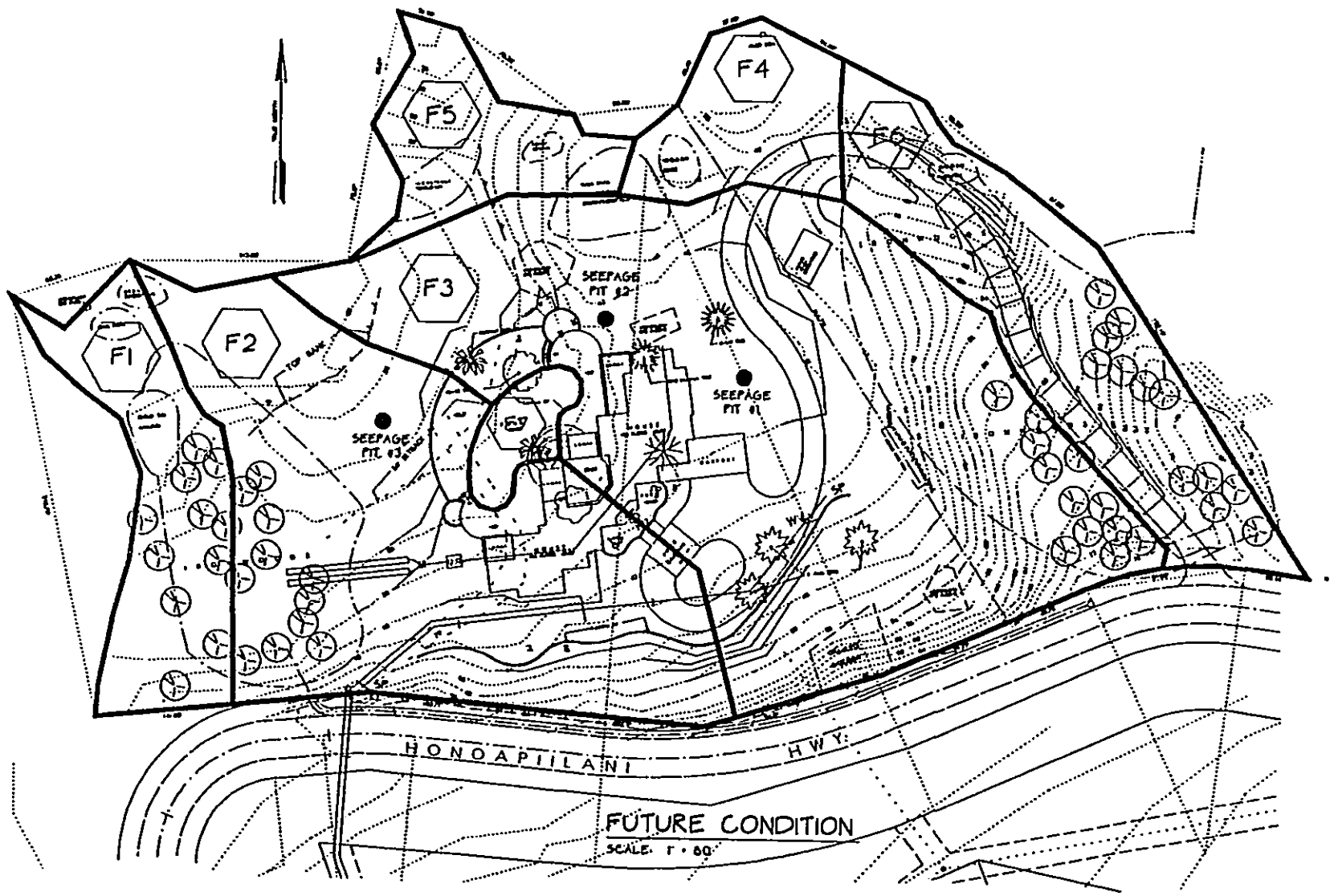
MAUI ISLAND, HAWAII — SHEET NUMBER 91




PACIFIC OCEAN
Honolua Bay
COASTAL HAZARD
CHANNEL
COASTAL HIGH HAZARD AREA
Makuleia Bay
M 45
PAILOLO
PROPERTY
HIGHWAY
30
COASTAL HIGH HAZARD AREA
HONOAPIILANI
Honokahua Bay
RM13
ACCESS ROAD
ACCESS
Kahauiki



EXISTING CONDITION



FUTURE CONDITION

SCALE: 1" = 60'

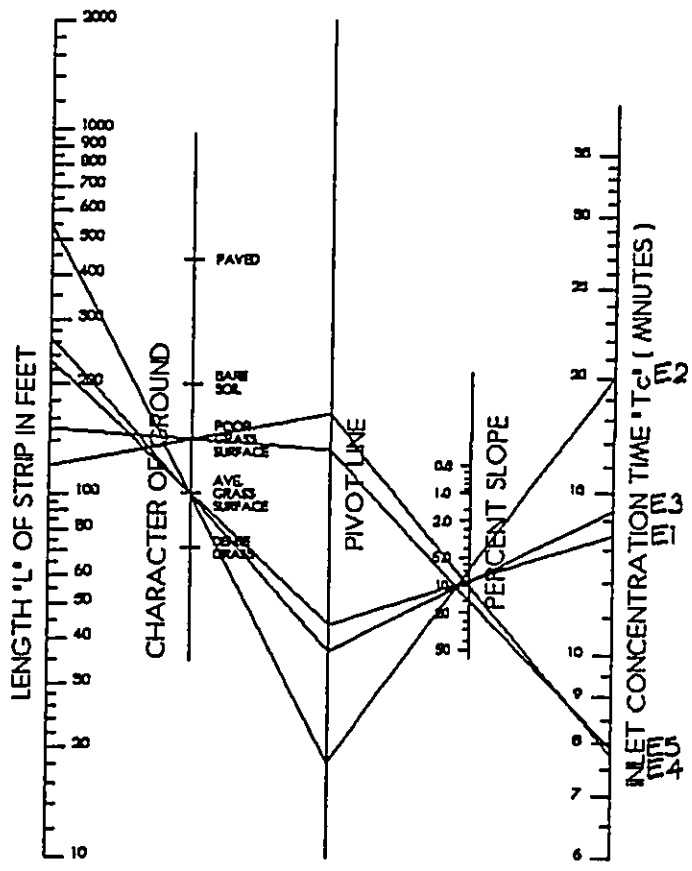
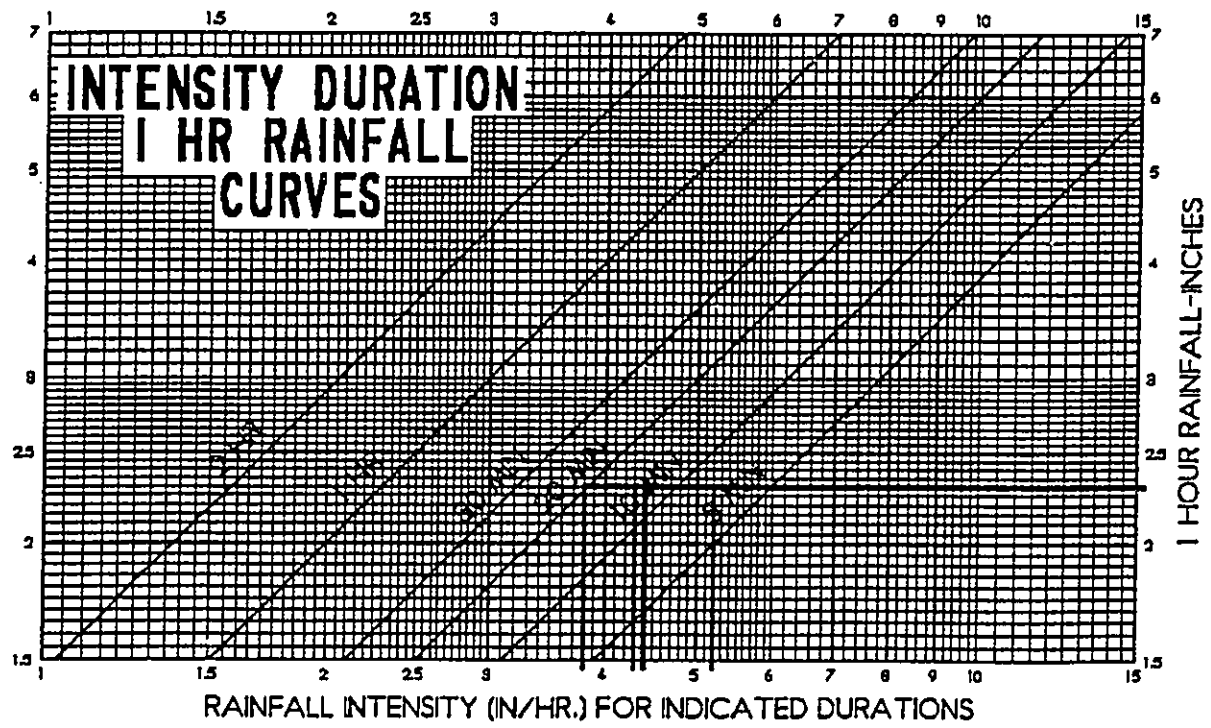


Plate 3

Overland Flow Chart

Plate 4



10-YEAR STORM
EXISTING CONDITION

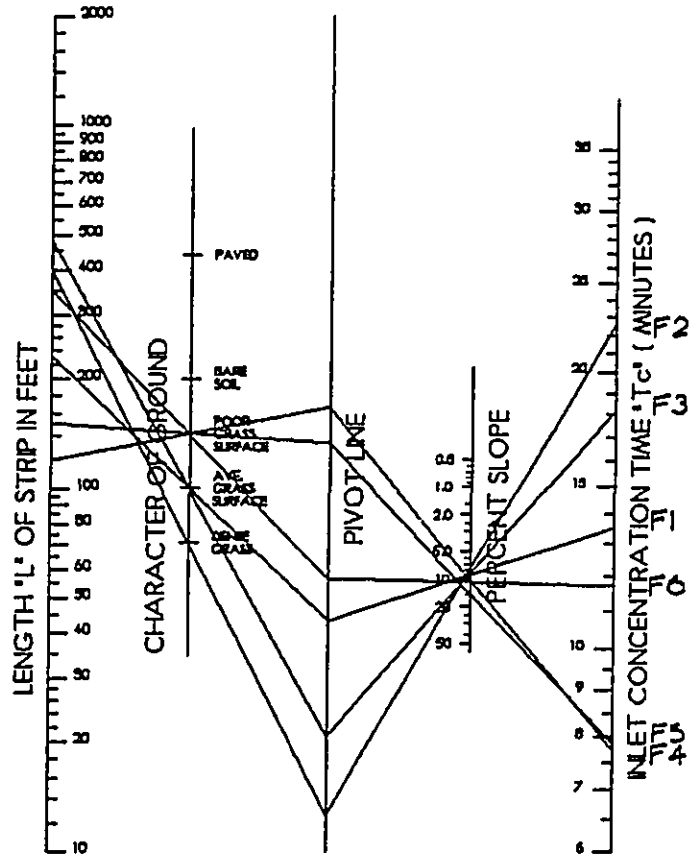
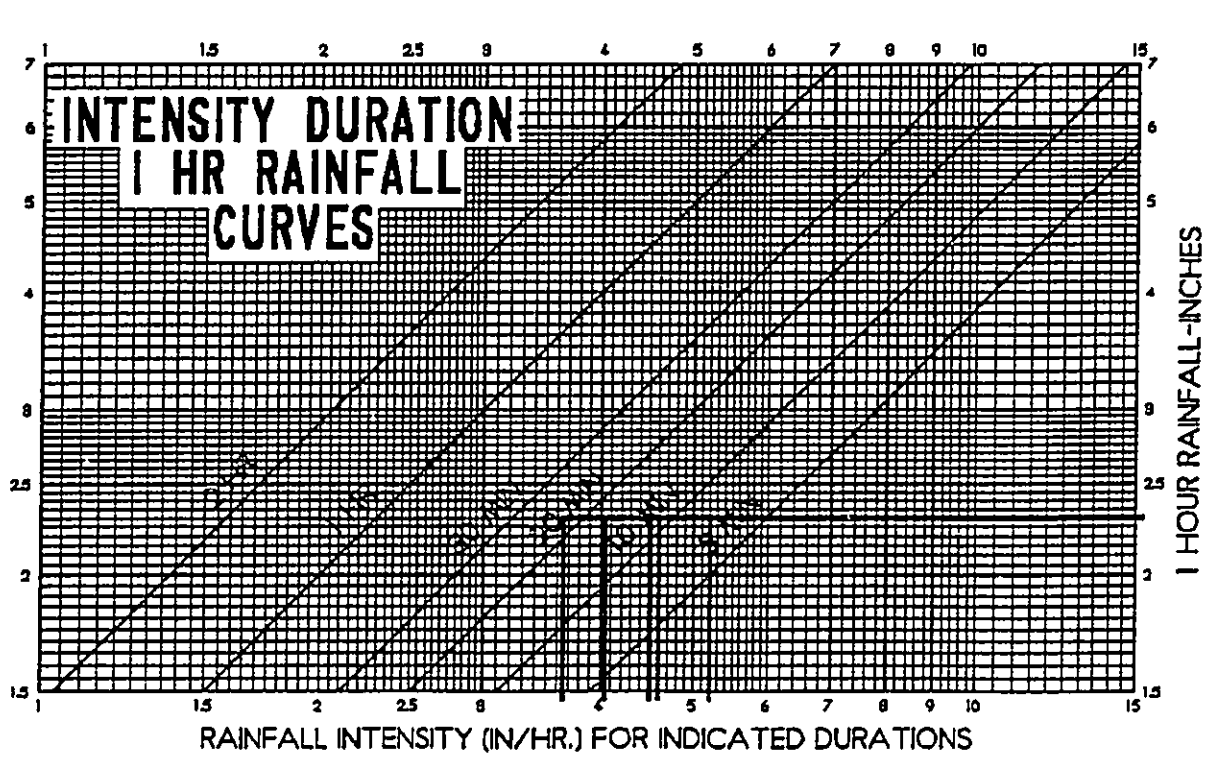


Plate 3

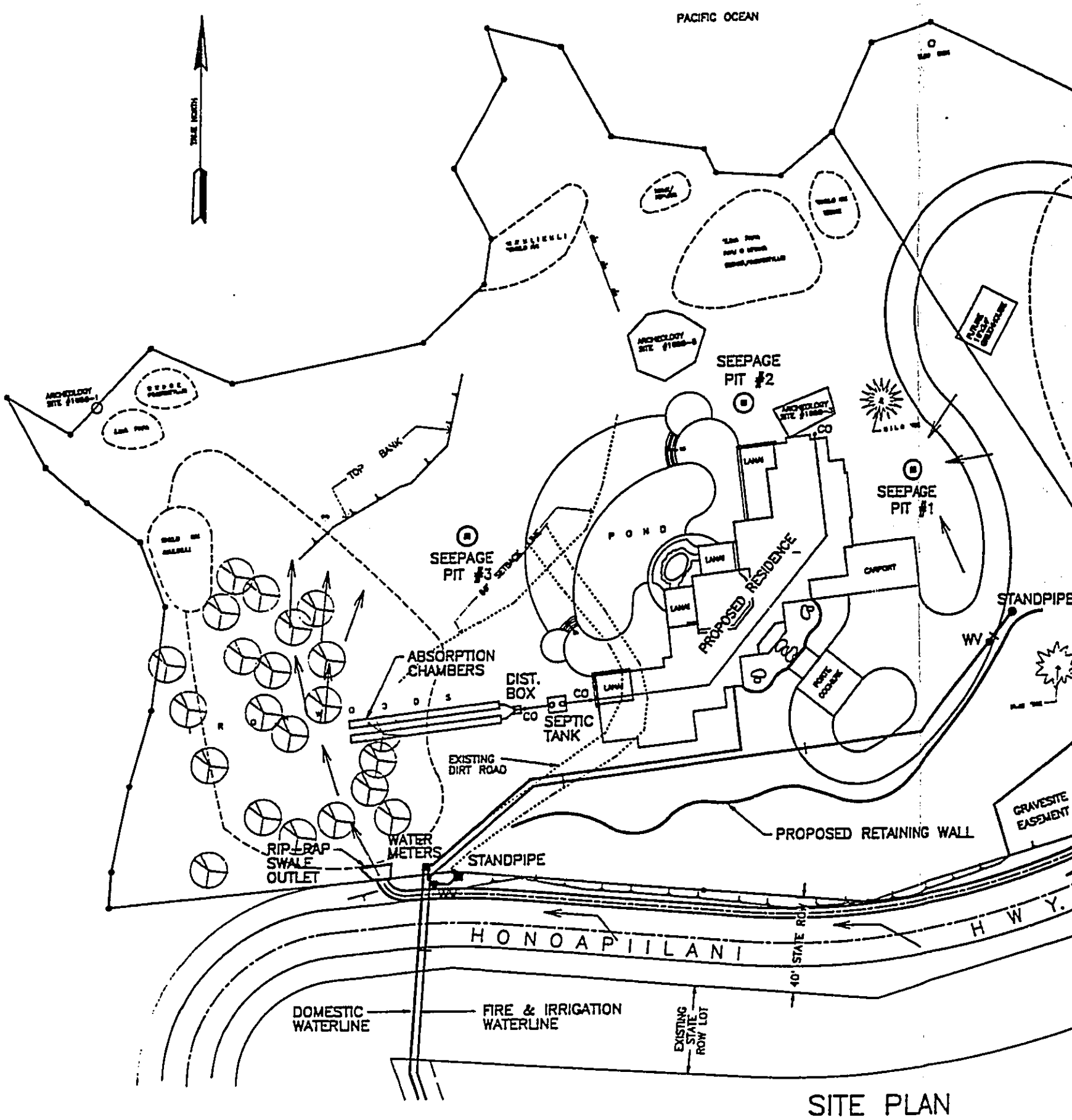
Overland Flow Chart

Plate 4



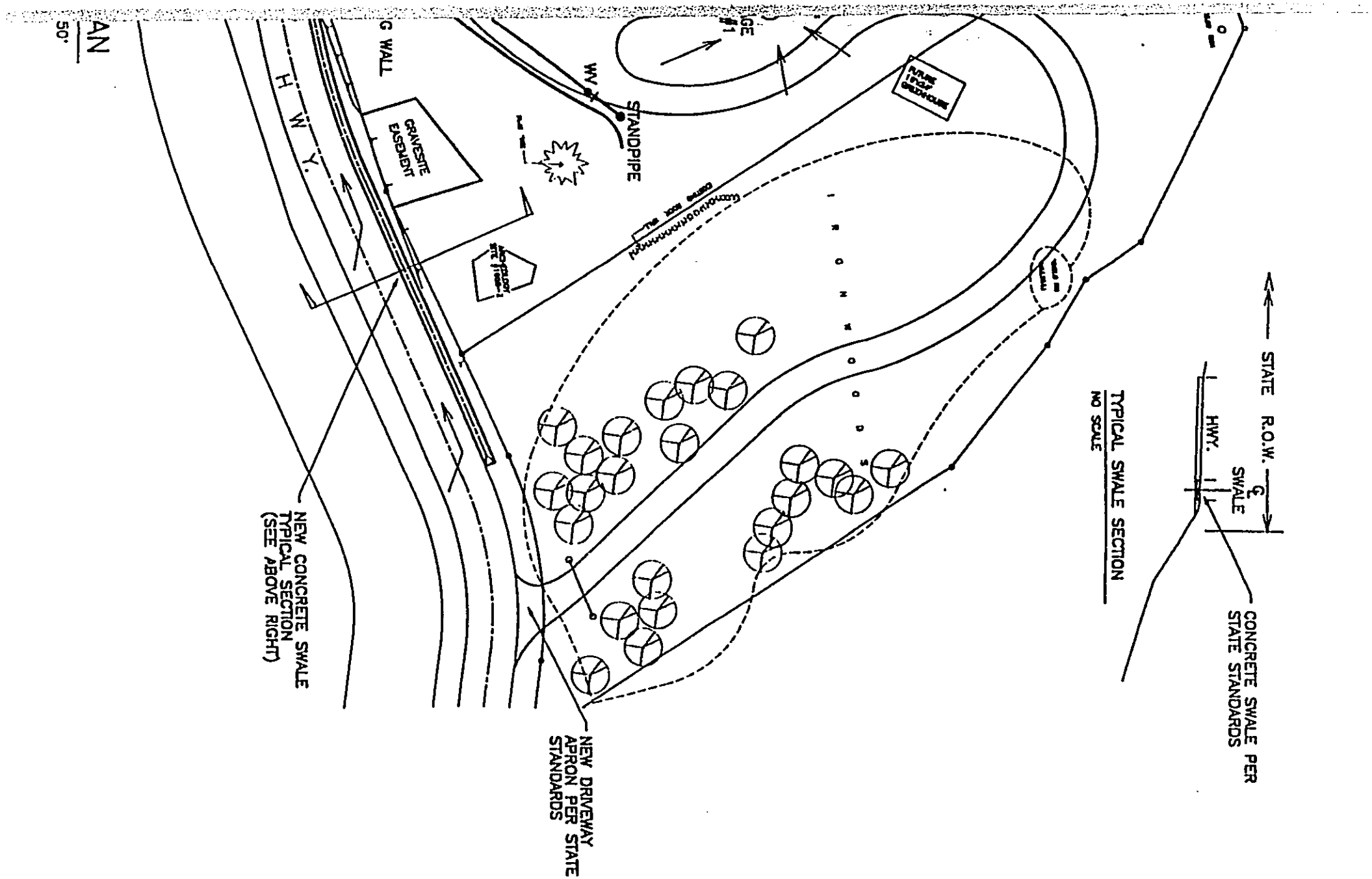
10-YEAR STORM
FUTURE CONDITION

APPENDIX - E
Sewage Report



SITE PLAN

SCALE: 1" = 50'



C-1	ONSITE & OFFSITE IMPROVEMENTS FOR THE **BRENNAN RESIDENCE** HONOLUA, MAUI, HAWAII TMK: 4-2-04: 31	Gholkar & Associates, Inc. 48 Market St. Wailuku, Hawaii 96793 Structural & Civil Engineering Tel/Fax.(808) 242-8088 FAX (808) 244-3303	SITE PLAN	

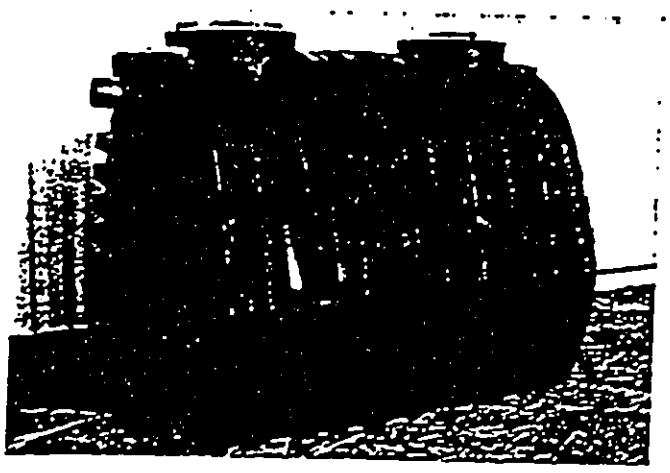
Hawaii

ROTOTECH Industries of Hawaii

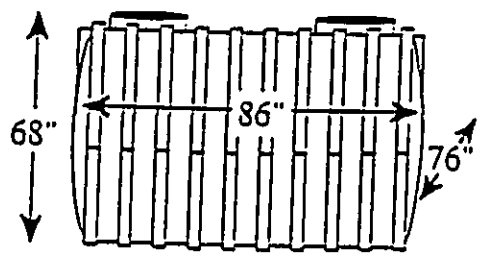
Manufacturer of Quality Containers

P.O. Box 4547 • Hilo, HI 96720 • (808) 966-5454 • (800) 870-5494 • Fax (808) 966-5455

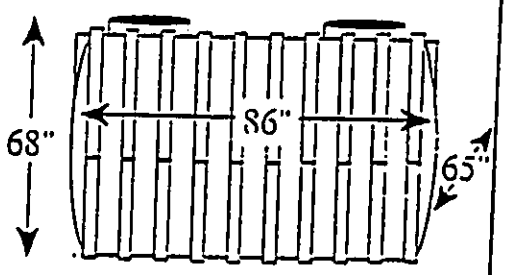
- Approved by the State of Hawaii and manufactured in Hilo, Hawaii
- For use in new home construction and septic system replacement
- Made with heavy duty polyethylene that is unaffected by soil chemicals and by chemicals and gases present in sewage
- Will not rust or corrode and does not require protection as other tanks do
- A seamless, one-piece leakproof tank that is designed for quick, easy installation and durability
- Can be ordered as a single or double compartment tank depending on your specifications
- Comes with a twist on manhole cover – no more screws – manhole extensions also available
- Lifetime warranty



Model: JV-425
1250 Gallon Septic Tank



Model: JV-400
1000 Gallon Septic Tank



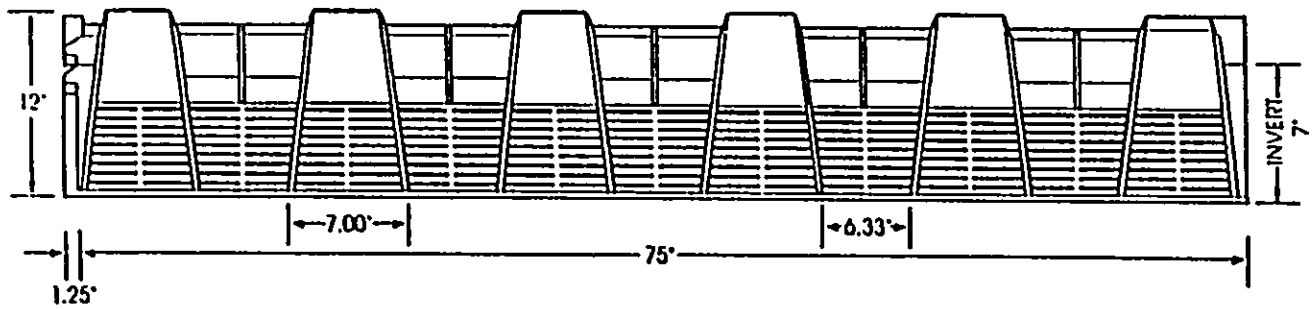
SPECIFICATIONS:	JV-425	JV-400
Height:	68 inches	68 inches
Length:	86 inches	86 inches
Width:	76 inches	65 inches
Weight (empty):	425 lbs.	400 lbs.
Entry diameter:	20 inches	20 inches

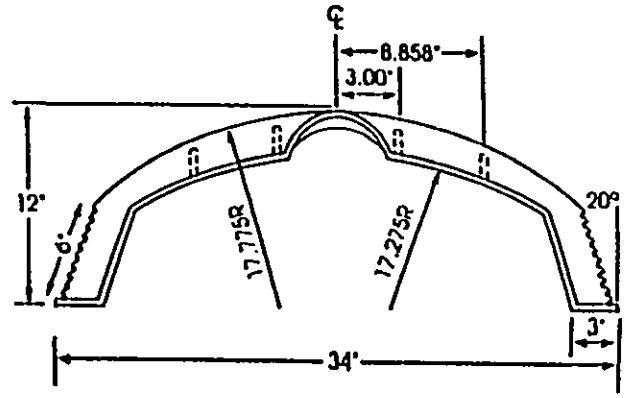
Your local distributor is:

For all your plastic tank needs use ROTOTECH Industries of Hawaii

THE STANDARD INFILTRATOR® CHAMBER

No Scale





Standard Infiltrator® Chamber	
Size	3' x 6.25' x 1'
Weight	27 lbs.
Volume	10.3 ft³ (77 gal.)

INFILTRATOR® is a Registered Trademark of Infiltrator Systems, Inc. • 4 Business Park Road • Old Saybrook, CT 06475 • (800) 221-4436 • fax (203) 388-6810

SEPTIC SYSTEM INSTALLATION NOTES

1. Septic tank must be installed level on undisturbed or compacted soil.

2. "Infiltrator" modules are to be installed per manufacturer's recommendations.

3. Septic system installer to take care not to compact the soil in the absorption area. Rake bottom surface of absorption chamber to remove any "smearing" caused by excavation equipment.

4. Installer to verify existing conditions and confirm that the system may be installed per the construction drawings and in accordance with State Health Department requirements. Notify the engineer of any deviations prior to installation of septic system.

5. All septic tank manholes and cleanouts are to be extended to grade.

6. Provide a calder coupling for pipe connections at each end of septic tank.

7. All sewerline pipe is to be 4" dia. ABS Schedule 40 or PVC ASTM D3034.

8. Install a cleanout to grade on sewerline 10'-0" prior to septic tank.

9. Provide solid pipe w/ no joints for minimum 10'-0" before and after septic tank.

10. Installer to provide the engineer and/or architect with a minimum of four (4) photographs of the system installation:

    - Septic tank installed with inlet/outlet exposed
    - Open excavation of absorption chamber bottom surface (raked)
    - "Infiltrator" modules installed w/ inlet pipe in place
    - Finished grading/landscaping in place with sewer cleanouts

11. Installer to submit as-built drawings to engineer and/or architect after completion of system installation.

SEWAGE REPORT

for the proposed

Brennan Residence

at Honolua, Maui, Hawaii

T.M.K. (2) 4-2-04:31

Prepared for:
John & Susan Brennan

Prepared by:
Gholkar & Associates, Inc.
48 Market Street
Wailuku, Maui, Hawaii 96793
Phone: 242-8088

SATISH K. GHOLKAR

This report was prepared by
me or under my supervision.

June 1996

This report details the sewage flow and disposal method for a proposed single family residence at Honolua, Maui, Hawaii, which is described as TMK (2) 4-2-04:31 and por. of 32.

Design of the system is by Hawaii Administration Rules Title II, Department of Health, Chapter 62, Water Systems.

FLOW RATE

The future residence is a four bedroom, 4,925 sq. ft. dwelling. Assuming two persons to each bedroom, full occupancy would be 8 people.

From Table I, 11-62-08: Single Famiily Dwelling = 100 GPD/Person

4 Bdrms x 2 Persons/Bdrm x 100 GPD/Person = 800 GPD

Design flow is 800 GPD.

Low flow type fixtures will be utilized.

TREATMENT

Wastewater from the residence shall flow into a septic tank located on the southeast side of the building.

The septic tank will be a 1,250 gallon, two compartment, polyethylene tank by Rototech Industries, of Hawaii. Specifications of the tank are attached. Tank size for a four bedroom residence shall be 1,200 gallon minimum capacity, as per Table I-2 (Capacity of Septic Tanks), Appendix I (Private Sewage Disposal Systems), of the Uniform Plumbing Code.

DISPOSAL

The "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972), page 119, " describes the soil at the site and surrounding vicinity as Rock Land (rRk), where exposed rock covers 25 to 90 percent of the surface. The rock outcrops are mainly basalt or andesite.

The proposed disposal system will be placed on top of the existing ground, and will be covered with imported material consisting of sandy loam to the required depth of bury, which will be compacted and sodded.

Ground water level is at least 10 feet below existing grade.

Sandy loam has a maximum absorption capacity of 2.5 gals./sq. ft. of leaching area per day and requires 40 sq. ft. of leaching area/100 gallons. Reference Table I-4 (Design Criteria of 5 Typical Soils), UPC.

Applying this then, 40 sq. ft. /100 gals. x 800 gals. = 320 sq. ft.
And, 320 sq. ft. x 2.5 gals./sq. ft./day = 800 gals./day.

An "infiltrator" chamber system by Infiltrator Systems, Inc. will be installed, utilizing a distribution box and (2) 62.5 ft. lengths of "infiltrator" chamber. (2) x 62.5 linear feet = 125 linear feet.

125 linear feet of chamber x 2.83 sq. ft./linear ft. of chamber = 353.75 sq. ft. of absorption area. (>320 sq. ft.)

The septic tank shall have a maintenance contract which shall include sludge disposal by a private pumping company, such as Valley Isle Pumping, Inc. Sludge disposal shall be to a site approved by the State Health Department.

There are no potable drinking water wells within 1000 ft. of the property, no ponds, lakes or streams within 50 feet, and no large trees within 10 ft. of the absorption chamber or septic tank.

ATTACHMENTS

1. Site Plan
2. Septic Tank Specifications
3. "Infiltrator" Chamber Specifications
4. System Installation Notes

APPENDIX - F
Domestic and Fire Flow Calculations

DOMESTIC & FIRE FLOW CALCULATIONS

for the proposed

Brennan Residence

at Honolua, Maui, Hawaii

T.M.K. (2) 4-2-04:31

Prepared for:
John & Susan Brennan

Prepared by:
Gholkar & Associates, Inc.
48 Market Street
Wailuku, Maui, Hawaii 96793
Phone: 242-8088

SATISH K. GHOLKAR

This report was prepared by
me or under my supervision.

June 1996

PROJECT DESCRIPTION

The proposed project consists of a residence and improvements for John and Susan Brennan at Honolua, Maui, Hawaii, also described as T.M.K. (2) 4-2-04 parcel 31 (2.470 acres) and a portion of parcel 32 (0.982 acre). It is situated at elevations 22 to 80 feet southerly of Alaelae Point and Makuleia Bay and is bound by undeveloped rocky coastline on the east and southwest, and Honoapiilani Highway on the south.
The proposed improvements include a 4,925 sq. ft. house with fish ponds and a porte cochere and carport, a paved driveway and a greenhouse. The site and immediate shoreline are within an area designated as a Conservation District. The proposed improvements are entirely consistent with established land use.

DOMESTIC FLOW

It is proposed to extend the two existing 6" and 4" lines from the Plantation Estates (Line "D") to the property and to install two water meters: a 3/4" meter for domestic use on the 4" line and a 3/4" meter for irrigation on the 6" fire line. The 6" line would be extended to a standpipe adjacent to the driveway near the porte cochere turn-around, in addition to the standpipe to be located witihin the highway right-of-way. An easement would be granted to Kapalua for the on-site line and standpipe.

Reference - "Uniform Plumbing Code (UPC) 1985, Appendix A."

The requirements for each occupancy category are as follows:

Fixture	Quantity	Fixture Units Per Fixture	Total Fixture Units
Master Bedroom:			
Lavatory	2	1	2
Tub/Jaccuzi	1	2	2
Shower	1	2	2
Water Closet, Low Volume	1	3	3
Mud Room:			
Lavatory	1	1	1
Water Closet, Low Volume	1	3	3
Laundry Sink	1	2	2
Washer/Dryer	1	2	2
Bedroom 1:			
Lavatory	1	1	1
Shower	1	2	2
Water Closet, Low Volume	1	3	3

Bedroom 2:			
Lavatory	1	1	1
Shower	1	2	2
Water Closet, Low Volume	1	3	3
Exercise Room:			
Lavatory	1	1	1
Shower	1	2	2
Water Closet, Low Volume	1	3	3
Kitchen:			
Sink	1	2	2
Bar Sink	1	1	1
Dishwasher	1	2	2
TOTAL FIXTURE UNITS			40

Referencing Chart A-3 (Estimate Curves for Demand Load) of the 1985 UPC, 40 fixture units equals 25 gallons per minute (gpm).

Referencing Chart A-4 and Table 10-2 of the 1985 UPC, the indicated need is for a 3/4" meter and a 1-1/2" building supply line.

Irrigation

Water for irrigation is to be metered separately off the fire line. Estimated peak water demand for irrigation is 30 gpm.

FIRE FLOW

It is proposed to extend the existing 6-inch fire line and 4-inch waterline (Line "D") of the Plantation Estates which run from Plantation Club Drive, within a 15-foot easement parallel to the greenbelt boundary, and then across Honoapiilani Highway to the property. A 3/4" domestic meter would be placed on the 4" line, and a standpipe and 3/4" irrigation meter installed on the 6" fire line. The 6" line would continue to the turn-around near the porte cochere where a second standpipe would be installed. An easement would be granted to Kapalua Development for the section of fire line within the property.

1. References:
   "Fire Suppression Rating Schedule" by Insurance Service Office, Edition 6-80.
   "Commercial Fire Rating Schedule" by ISO Commercial Risk Services, Inc., Revision 8 (3-85).

2. Class of Construction:
   CMU Construction, Tile Roof
   CSP Construction Class 4
   Occupancy Combustibility Class C-2

3. Effective Area (A):
   A = 4,925 sq ft

4. Construction Coefficient (F):
   F = 0.8

5. Occupancy (O_i):
   Occupancy Factor, O_i = 0.85

6. Exposure (X_i) and Communication (P_i):

   Distance: N = >100', E = >100', S = >100', W = >100'
   $\Sigma X_i = 0.0 + 0.0 + 0.0 + 0.0 = 0.0$ [FSRS Table 330.A]
   $\Sigma P_i = 0.0 + 0.0 + 0.0 + 0.0 = 0.0$ [FSRS Table 330.B]
   $\Sigma(X_i+P_i) = 0.00$
   $(X+P)i = 1.0 + \Sigma(X_i+P_i) = 1.0 + 0.00 = 1.00$

7. Construction Factor (C_i):

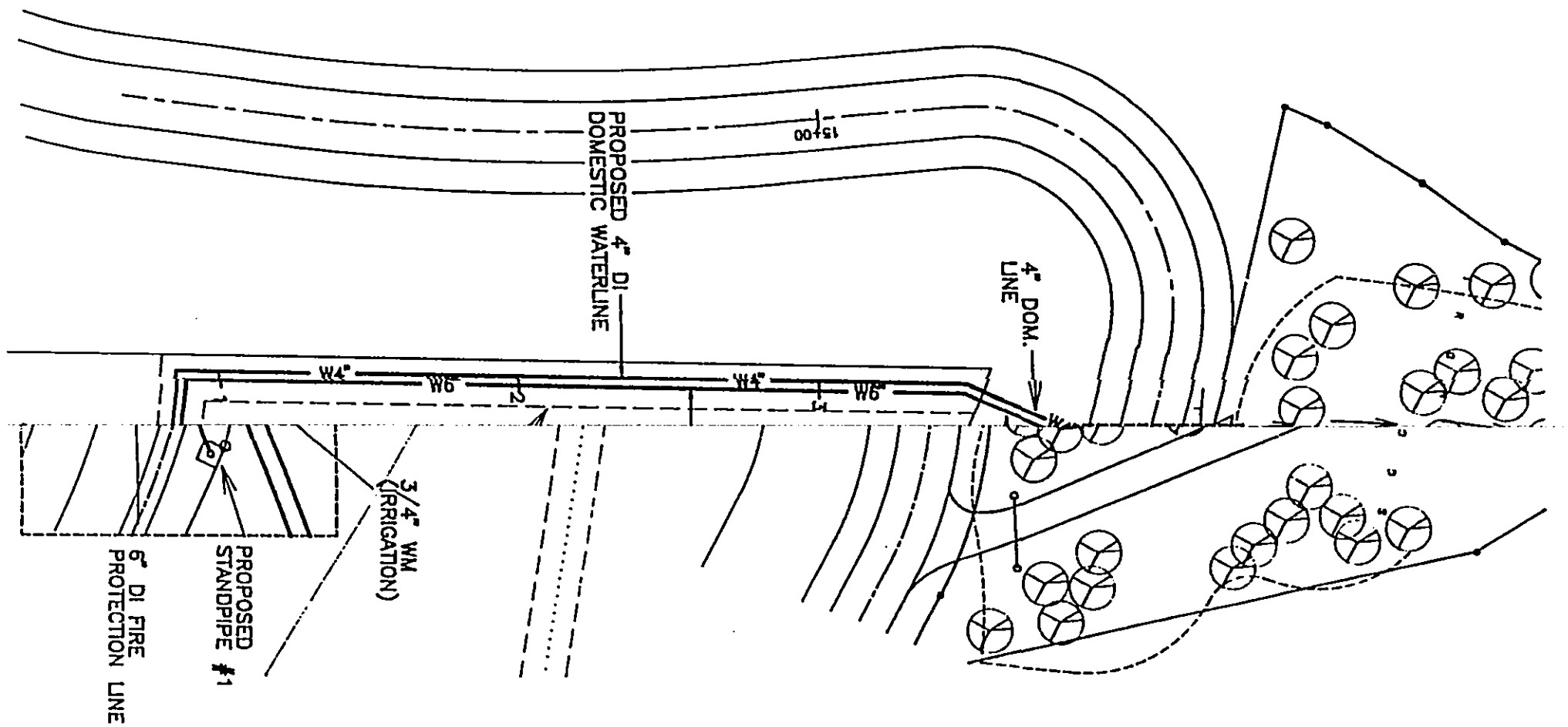
   $C_i = 18\ (F)\ SQRT(A)$

   $C_i = 18\ (0.8)\ SQRT(4,925) =$ 1,011 gpm

8. Needed Fire Flow (NFF_i):

   $NFF_i = (C_i)\ (O_i)\ (X+P)_i$ [FSRS 340.]

   NFF_i = 1,011 (0.85) (1.00) = 859 gpm
   or <u>750 gpm</u> (rounded to nearest 250 gpm)



C-2	ONSITE & OFFSITE IMPROVEMENTS FOR THE **BRENNAN RESIDENCE** HONOLUA, MAUI, HAWAII TMK: 4-2-04: 31	**Gholkar & Associates, Inc.** Structural & Civil Engineering	WL PLAN	

APPENDIX - G
Letter from Descendants
dated 9/01/96

RICHARD S. YOUNG
ARCHITECT

1 September 1996

Doreen Saito
2414 Kaulula`au Street
Honolulu, Hawai`i 96813

Aloha, Doreen,

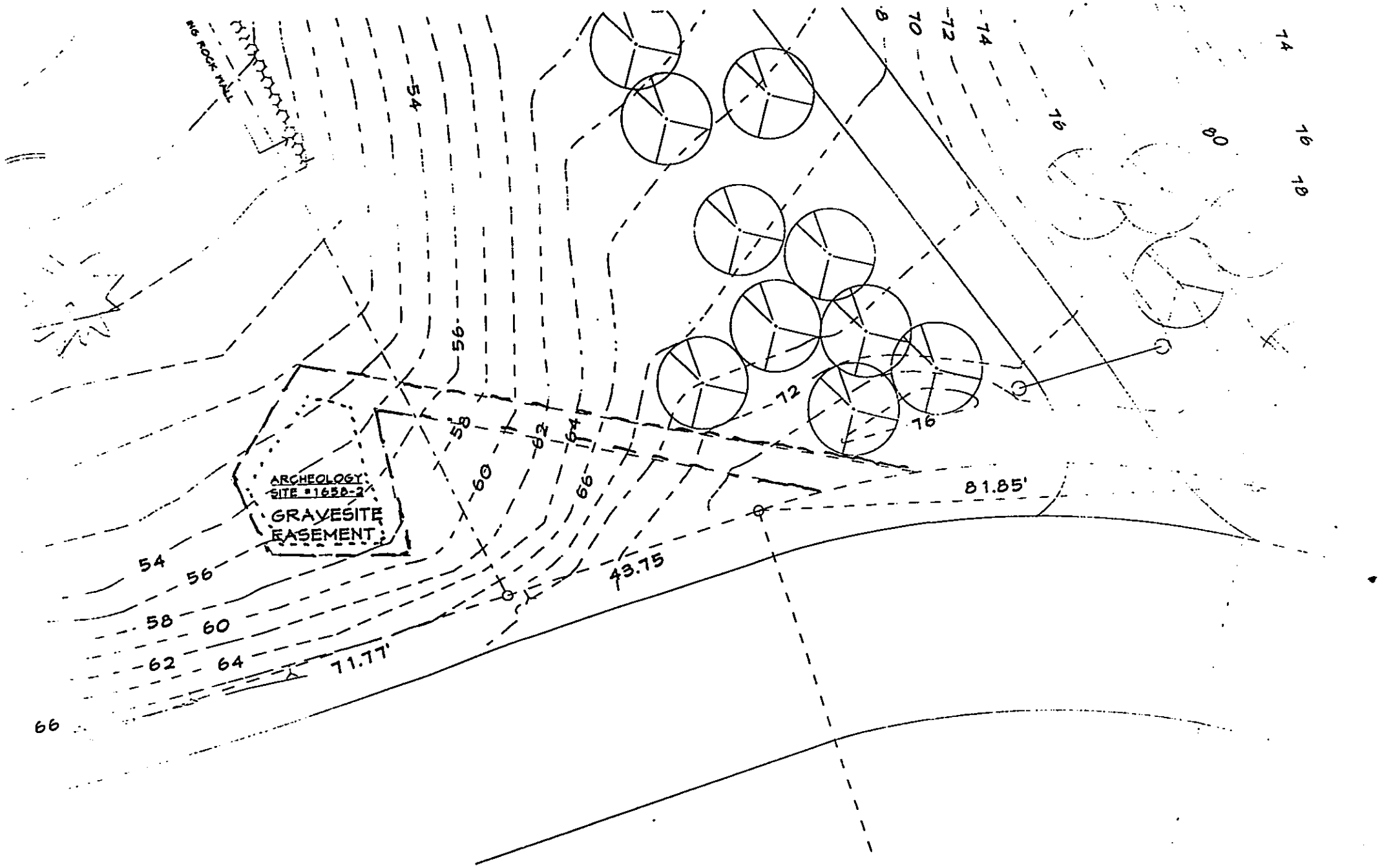
Thank you for flying to Maui on August 21st to view the existing gravesite easement at Papaho`oholo and help determine that the gravesites indicated in the archaeological survey are, in fact, the actual gravesites that were meant to be within the easement.

Enclosed you'll find a site plan of the gravesites with a new estimated easement indicated in dotted lines. This access is tentative, and the final access will be determined by an area with the least steep angle and a new survey. If you approve of this, please sign both copies below, return one and keep one for your files. Upon receipt the Brennan's will begin the process to make the changes.

A hui hou,

Arleone Dibben-Young

Doreen Saito: Doreen K. Saito Date: 9/4/96
John D. Saito 9/4/96


BIG ROCK MESA
54
56
58
60
62
64
66
68
70
72
74
76
80
ARCHEOLOGY SITE #1650-2
GRAVESITE EASEMENT
71.77'
43.75'
81.85'

Draft EA Comments and Responses

L.T.1.

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

MICHAEL W. FOLEY
Director

OWEN CHASHI HIRAGA
Deputy Director

December 18, 1996

RECEIVED
DIVISION OF
LAND MANAGEMENT
DEC 26 2 05 PM '96

RECEIVED
DEPT. OF LAND
AND NATURAL RESOURCES
96 DEC 24 A8:01

Mr. Michael D. Wilson
Department of Land and
Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

RE: Conservation District Use Permit Application for a Single-Family Residence for Mr. and Mrs. John Brennan at TMK: 4-2-004: 31 and por. of 32, Honolua, Lahaina, Island of Maui, Hawaii (File No. MA-2837)

The Maui Planning Department has reviewed the above-referenced application and has the following comments:

1. The subject properties are located within the special management area of the County of Maui. Pursuant to Hawaii Revised Statutes (HRS), § 205A-22, and Special Management Area Rules for the Maui Planning Commission, §12-202-12f, "development" does not include "a single-family residence that is not part of a larger development", and as such, the proposed residence is exempt from the Special Management Area Rules.

2. TMK: 4-2-004: por. of 32 is a shoreline parcel subject to the provisions of the Shoreline Setback Area Rules. Pursuant to HRS, §§12-5-10 and 12-5-11, landscaping, irrigation, minor structures, and paved walkways for public access may be permitted in the setback area with the approval of the Planning Director.

3. The conservation lands located north of Kapalua Resort are largely undeveloped lands providing valuable open-space areas especially those properties along the shoreline from the end of the Kapalua Bay Resort towards Kahakuloa. The construction of a single-family residence totaling approximately 4,896 sq. ft. and formalized landscaping and rock walls introduces a more urbanized character to the area in contrast to the existing wind-blown wilderness appearance.

Further, although the application states that the single-family residence is similar to the nearby Plantation Estates, it should be noted that these lots were developed as an agricultural subdivision with no public review. These are essentially undeveloped lots which are mauka and not immediately adjacent to the State highway, and located at a higher elevation which are not readily visible from the public highway due to a grove of ironwoods along the highway. The subject properties, on the other hand, are below the State highway at a lower elevation, and although the applicant has made an attempt to nestle the residence into the existing topography, it should be noted that the roof structure will be highly visible from the public roadway due to the grade differences.

Careful consideration should be given to the siting, scale, massing, height, materials and architectural details of the structure to ensure that the existing wilderness character of the area is not adversely impacted and preserved as much as possible. Any residence constructed on this lot should not detract from the natural beauty of the area.

4. Further, urban-type uses should, as much as possible, be restricted to those areas planned for such uses such as the Kapalua Resort, and should not encroach into our conservation lands which provide valuable open space and wilderness areas. In addition, the urban areas provide necessary urban services such as sewers and water. The applicant has stated that a septic system is to be utilized for wastewater disposal. Due to the project's location along the shoreline and immediately adjacent to Mokulela Bay, and the nearby Honolua Bay, we question whether this is an appropriate method of disposal.

Although the applicant states that they are re-establishing a residential use that was begun 70 years ago, that in itself is not adequate justification for approval. The type of residences built 70 years ago were smaller plantation-style dwellings which, in most cases, were associated with some form of agricultural or fishing use of the land. The application provides no information on the residence that existed on the lot at one time. The approximately 4,896 sq. ft. residence can be considered a luxury vacation home rather than the primary residence of the property owner whose address is in Indiana.

Thank you for the opportunity to comment. If additional clarification is required, please contact Ms. Colleen Suyama, Staff Planner, of this office.

Very truly yours,

DAVID W. BLANE
Planning Director

DWB:CMS:osy

c: Gwen Ohashi Hiraga, Deputy Planning Director
Clayton Yoshida, AICP, Planning Program Manager
Colleen Suyama, Staff Planner
Charles Villalon, Jr., Staff Inspector
Project File
CZM File-Exemption
General File
[illegible]

CHRIS HART & PARTNERS

February 18, 1997

Mr. David Blane, Director
Planning Department
County of Maui
250 S. High Street
Wailuku, HI 96790

Dear Mr. Blane:

RE: Conservation District Use Permit Application for a Single-Family Residence for Mr. and Mrs. John Brennan at TMK: 4-2-04:31 and por. of. 32, Honolua, Lahaina, Island of Maui, Hawaii (File No. MA-2837)

Thank you for your letter regarding the above-referenced application. The following are responses to your comments in the order they were received:

1. A statement will be added in the Final Environmental Assessment (FEA) indicating that the proposed residence is exempt from the Special Management Area Rules of the Maui Planning Commission.

2. A statement will be added in the FEA to provide clarification regarding features which may be allowed within the shoreline setback area.

3. We have made reference to the Plantation Estates development in order to place the proposed residence within a regional land use context. At present the majority of the Plantation Estates lots are undeveloped, however upon future buildout there will be five single family residences immediately across Honoapiilani Highway from the proposed residence. In addition, three lots have been developed for single family residential use further north, on Honolua Place. These lots have been introduced to the luxury market, and we can expect that relatively large homes will be constructed in the future. The relevant point is that the subject property is considered to be within the Kapalua Resort development envelope which extends to the northeastern boundary of Plantation Estates. Thus, the proposed project is within an area characterized by low density single

family residential development and is not incompatible with existing and planned land use patterns.

Careful consideration has been given to siting, scale, massing, height, materials and details of the structure, in order to enhance the existing character of the area as follows:

Existing character. As noted in the Environmental Assessment (EA), the existing property contains a number of dilapidated structures and associated rubbish piles. These features will be removed as part of the subject request, thus, eliminating an existing "eyesore".

Landscape plan. The proposed landscape plan seeks to maintain and enhance the significant natural features of the site. The ironwood tree groves on both sides of the property will remain in place. The ridge feature to the northeast will remain and will serve as a buffer from northeasterly tradewinds. This feature will also provide a visual buffer of the proposed residence from the Honolua-Mokuleia Marine Life Conservation District. In addition, the shoreline area will be enhanced through the establishment of naturally occurring native Hawaiian coastal plant colonies.

The bank which slopes from the highway to the proposed residence will be planted with shrubs in order to reduce potential visual impacts from the highway. These shrubs will also provide a source of privacy and screening to reduce the impacts of the highway on the single family use.

Lot coverage and open space. The proposed residence will occupy only 3.26% of the 3.452 acre parcel. The northeastern portion of the property which will remain in a naturalistic setting is roughly 1 acre in size. The naturalistic setting on the southwestern portion of the property is roughly .5 acre in size. The shoreline buffer planting strip fronting the residence is approximately .6 acre in size. Other natural perimeter landscape areas amount to approximately .5 acre. These naturalistic open space areas total approximately 2.6 acres or roughly 75 % of the subject property. This large percentage of naturalistic open space setting will help to preserve the character of the property.

Siting. As noted in the EA, the structure has been sited on a low flat building pad in the middle of the property below the highway embankment in order to minimize impacts to existing public view corridors. Disturbance to existing topographic features is minimized through the proposed siting. Any other site location on the subject property would involve a much greater degree of impact to existing view corridors and natural features. Further, the proposed residence is situated so that it will not be visible from the northeast (Honolua-Mokuleia MLCD.)

Architectural character. Careful consideration has been given to the proposed architectural style and massing in order to reduce potential impacts to the public. A low level one story structure with a varying roof line, minimizes the roof mass and reduces the impact which could result from a two story or monolithic structure. The hipped roof is reflective of contemporary *island style* architecture and minimizes the potential for a bulky appearance.

Height. The roof line of the proposed residence will be located at or below the grade of the Highway fronting the property. Highway elevations range from 50 ft. to 80 ft. above MSL along the entire property frontage. The highest points of the rooflines are 57.5 ft., 63.5 ft. and 56 ft. above MSL (from southwest to northeast.) The cross sections in Figure 6 illustrate that the view plane from the highway in the immediate project vicinity is at or above the highest portion of the roof lines.

4. As noted above, the proposed structure is adjacent to the Plantation Estates subdivision and considered within the developed boundaries of the Kapalua Resort area. Water service will be provided via the system serving Plantation Estates, owned and operated by Kapalua Water Company, Ltd. The applicant will be required to construct and operate an individual wastewater system pursuant to the requirements of the State Department of Health. The proposed system will include a septic tank for primary treatment and removal of solids. The septic tank retains solids and allows for aerobic digestion of organic matter. The septic tank allows the clarified effluent to discharge to a leach field with absorption chambers. The leach field allows for the dissipation of the wastewater effluent over a larger surface area than a typical cesspool or injection well. The leach field has been situated in order to maximize the depth to groundwater and distance from the ocean. The system will be design and operated to meet the requirements of the State Department of Health (Chapter 62, Title II, Department of Health, Hawaii Administrative Rules.) No significant impacts to nearshore waters are anticipated.

We take exception to your implication that the proposed residence is inappropriate since it "... can be considered a luxury vacation home rather than the primary residence of the property owner whose address is in Indiana." First, the applicant's home address is irrelevant. Second, as stated on page 5 of the Draft EA, upon completion of the structure it will become the primary residence of the Brennan's who, at present, are involved in substantial activities and investments on the island of Maui.

Thank you for reviewing and commenting on the Draft EA. If there are any questions, please contact Mr. Rory Frampton of my office.

Sincerely,

CHRISTOPHER L. HART
Landscape Architect - Planner

cc: John Brennan
Paul Mancini, Esq.
Richard Young, AIA.
William Kennison, BLNR
Philip Ohta, Maui Land Agent

BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

1996

December 17, 1996

Michael D. Wilson, Director
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

Attention: Lauren Tanaka

Dear Mr. Wilson:

Subject: Draft Environmental Assessment (EA) for Brennan Single Family Residence, Honolua, West Maui; TMK: 4-2-4: por 31 & 32

Please include the following in the final EA:

1. Indicate the status of Shoreline Setback Variance permit.

2. What are the anticipated start and end dates of the project?

3. Consult with the State Historic Preservation Division regarding an archeological mitigation plan that includes notification of this division in the event that significant remains are uncovered during project construction.

4. Consult with neighboring landowners and document your findings in the final EA.

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,

GARY GILL
Director

c: John and Susan Brennan
Rory Frampton, Chris Hart

CHRIS HART & PARTNERS

February 18, 1997

Mr. Gary Gill, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Draft Environmental Assessment (EA) for the Brennan Single Family Residence, Honolua, Lahaina, Island of Maui; TMK 4-2-04:31 & por. of 32

Thank you for your letter regarding the above-referenced application. The following are responses to your comments in the order they were received:

1. The subject property is a shoreline parcel subject to the provisions of the Shoreline Setback Area rules of the Maui Planning Commission and Hawaii Revised Statutes (Chapter 205A.) Pursuant to the Planning Commission's rules, the shoreline setback line for the subject property is 66 feet. The proposed residence is situated mauka (inland) of the shoreline setback line, and, thus does not require a shoreline setback variance. (See Figure 3, Site Plan, in the Draft EA.) In addition, the rules allow for the establishment of landscaping, irrigation, minor structures and paved walkways for public access within the shoreline setback area without a shoreline setback variance. These features require administrative review by the Maui County Planning Department in order to insure that they meet the appropriate definitions for these exempt features. In summary, no shoreline setback variance will be required for the project.

2. It is anticipated that construction will start approximately 8 months after approval of Conservation District Use Application by the Board of Land and Natural Resources. Construction is estimated to take approximately one year.

3. An archaeological inventory survey has been prepared for the subject property and is currently under review by the State Historic Preservation Division (SHPD). According to Sara Collins of the SHPD, in the event that historic remains are encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall contact SHPD which shall assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

4. Maui Land & Pineapple Company, Inc. owns the surrounding property. Mr. Warren Suzuki, Vice President/Land Management, has been contacted and has indicated that the company has no objections or concerns regarding the subject request (telephone conversation on 12/23/96.)

Thank you for reviewing and commenting on the Draft EA. If there are any questions, please contact Mr. Rory Frampton of my office.

Sincerely,

CHRISTOPHER L. HART
Landscape Architect - Planner

cc: John and Susan Brennan
Paul Mancini, Esq.
Richard Young, AIA
William Kennison, BLNR
Philip Ohta, Maui Land Agent

LANDSCAPE ARCHITECTURE AND PLANNING
1955 MAIN STREET, SUITE 200 · WAILUKU, MAUI, HAWAII 96793-1706 · PHONE: 808-242-1955 · FAX: 808-242-1956