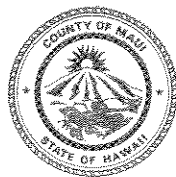


ALAN M. ARAKAWA
Mayor
MICHAEL W. FOLEY
Director
WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

October 13, 2004

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

RECEIVED
OCT 18 P 1:56
OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Dear Ms. Salmonson:

RE: Final Environmental Assessment (DEA) for the Proposed Wailea Parcel MF-9 Condominium Project located at TMK: 2-1-008: 119, Wailea, Kihei, Island of Maui, Hawaii (EA 2004/0008)

The Maui Planning Commission at its regular meeting on October 12, 2004, accepted the Final Environmental Assessment (FEA) for the subject project, and issued a Finding of No Significant Impact (FONSI). Please publish the FEA in the November 8, 2004, Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the FEA. If you have any questions, please call Ms. Kivette A. Caigoy, Environmental Planner, of our office at 270-7735.

Sincerely,

Handwritten signature of Michael W. Foley in black ink.

MICHAEL W. FOLEY
Director of Planning

MWF:KAC:do
Enclosures

c: Wayne A. Boteilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
Colleen Suyama, Staff Planner
Project File (w/enclosures)
General File
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2004-11-08 FONSI
WAILEA CONDOMINIUM

FINAL
HRS CHAPTER 343
ENVIRONMENTAL ASSESSMENT

WAILEA PARCEL MF-9

TMK: (2) 2-1-008:119
Wailea, Maui, Hawaii

Prepared for:
Wailea MF-9 Associates LLC
1885 Main Street, Suite 104
Wailuku, Maui Hawaii 96793

Prepared by:
Chris Hart and Partners
Landscape Architecture and Planning
1955 Main Street, Suite 200
Wailuku, Hawaii 96793
Phone: 242-1955
Fax: 242-1956



SEPTEMBER 2004

FINAL
HRS CHAPTER 343
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SEPTEMBER 2004

CORRECTION

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

FINAL
HRS CHAPTER 343
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SEPTEMBER 2004



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Appendix H:	Cultural Impact Assessment Report
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I. PROJECT INFORMATION

A. PURPOSE OF THE PROJECT

This Environmental Assessment pursuant to HRS Chapter 343 is filed in conjunction with applications for a Special Management Area (SMA) Use Permit and Step 2 Planned Development Approval for the development of a 120 unit residential condominium project at TMK 2-1-08: 119, Wailea, Maui. Given the Hotel District zoning of the property, it is intended that these units may be used as vacation rental accommodations. Since the proposed project will require offsite roadway, drainage and other improvements that may occur on public lands, the Applicant is filing this HRS Chapter 343 Environmental Assessment.

B. PROJECT PROFILE

Tax Map Key:	TMK 2-1-08: 119
Proposed Project:	Resort Residential Condominium Project
Existing Land Use:	Vacant lot
Lot Size:	30.167 acres
Access:	Wailea Alanui Drive

C. IDENTIFICATION OF THE OWNER/APPLICANT

Owner/Applicant:	Wailea MF-9 Associates LLC 1885 Main Street Suite 104 Wailuku, Hawaii 96793 Phone: (808) 242-8979 Fax: (808) 242-8973
	Contact: Mr. Martin W. Quill, Manager

D. CONSULTANT

Land Use Planners:	Chris Hart & Partners, Inc. 1955 Main Street, Suite 200 Wailuku, Maui, HI 96793-1706 Phone: (808) 242-1955 Fax: (808) 242-1956
Contact:	Mr. Chris Hart, ASLA



E. ACCEPTING AGENCY

Agency: Maui Planning Commission
C/o Department of Planning
County of Maui
250 S. High Street
Wailuku, Maui, HI 96793

Phone: (808) 270-7735
Fax: (808) 270-7634

F. PRE-CONSULTED PUBLIC AGENCIES AND PRIVATE INTERESTS

(See: Appendix "B")

PUBLIC AGENCIES

1. Department of Planning, County of Maui
2. Department of Public Works and Environmental Management, Engineering Division, County of Maui
3. Department of Water Supply, County of Maui
4. Department of Housing and Human Concerns, County of Maui
5. Department of Fire Control

PRIVATE INTERESTS

1. Wailea Community Association
2. Adjacent landowners of the Golf Vistas and Golf Estates residential subdivisions

G. CONSULTED PUBLIC AGENCIES AND PRIVATE INTERESTS

The Draft Environmental Assessment for the Wailea Parcel MF-9 Condominium was published on July 23, 2004. Publication initiated a 30-day public review period ending on August 22, 2004. The Draft EA was mailed to agencies below. All comment letters and responses are found in Appendix "J".



PUBLIC AGENCIES:

Federal

1. Natural Resource Conservation Services
2. U.S. Army Corp of Engineers

State

1. Department of Health
2. Department of Transportation
3. Department of Land and Natural Resources
4. Historic Preservation Division
5. Department of Accounting and General Services
6. Department of Education
7. Land Use Commission
8. Office of Hawaiian Affairs

County

1. Department of Public Works and Environmental Management
2. Department of Water Supply
3. Department of Parks and Recreation
4. Fire Department
5. Police Department
6. Department of Housing and Human Concerns
7. Department of Planning

PRIVATE INTERESTS:

1. Maui Electric Company
2. Wailea Community Association
3. Golf Vistas & Golf Estates Property (See: Appendix "K")
Owners



II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

The project site is situated within the Wailea Resort on the southern end of the Kihei-Makena region of Maui (See: Figures No. 1 and No. 2). More particularly, the project site is located on the *mauka* side of Wailea Alanui Drive in the vicinity of the Grand Wailea Hotel and Spa and Four Seasons Hotel at the Wailea Resort. The site is also bounded on three-sides by the Wailea "Blue" Golf course. It is further identified as TMK (2) 2-1-08: 119, Wailea, Maui, Hawaii.

B. EXISTING LAND USE

The project site, which comprises an area of approximately 30.167 acres, is a vacant lot that is maintained with kiawe trees and shrub vegetation. A limited network of paved and unpaved roads have been established on the property, as the site was temporarily used as a construction staging area during the hotel development activities that took place on the west or *makai* side of the site across from Wailea Alanui Drive.

As noted, the proposed project is situated within the Wailea Resort, which was one of three resort destination areas designated and zoned by the County of Maui in the early 1970's on the Island of Maui. This resort destination was intended to be a master planned resort community with all of the amenities and facilities catering to island visitors. Included were lands for hotel and resort-related commercial development, golf courses, single family and multi family residential projects, and public uses, including five (5) improved public beach rights of ways and sites for community park and other public uses. Within the State of Hawaii, the Wailea Resort is recognized as one of the premier master planned resort developments and has served as a model for other resort developments within the State.

C. LAND USE DESIGNATIONS

State Land Use Classification:	Urban District
Kihei-Makena Community Plan:	Hotel (H) and Open Space (OS) (See: Figure No. 6))

County Zoning:	H-1 Hotel District and Open Zone (See: Figure No. 7)
Flood Zone Designation:	Zone "C" (minimal flood hazard potential) (See: Figure No. 4)
Other Designations:	Special Management Area (See: Figure No. 8)

D. SURROUNDING LAND USES

1. North: Wailea Blue Golf Course Fairway No. 5;
2. East (*Mauka*): Wailea Blue Golf Course Fairway No. 4;
3. South: Wailea Blue Golf Course Fairway No. 3; and
4. West (Across Wailea Alanui Drive): Grand Wailea Resort Hotel and Spa.

E. ALTERNATIVES CONSIDERED

The following alternatives were considered:

1. No Action: This alternative would forego improvements to the project.

Positive Impacts: By leaving the property in its existing undeveloped state, the impacts associated with construction would be avoided.

Negative Impacts: The County would not realize higher tax revenues associated with development of the property. Businesses and services at the Wailea Resort and on the island would not benefit from spending by occupants of a development on the property. The high carrying costs of the property would be a burden for the landowner to absorb for an indefinite period of time and likely result in the sale of the property. The existing unmaintained kiawe & vegetative shrubs are not consistent with the character or image of Wailea as a World Class Resort Destination.

2. Deferred Action: This alternative would delay development to a later time.



Positive Impacts: There would be no immediate construction-related impacts associated with development.

Negative Impacts: A delay in commencing development would result in uncertainties related to market conditions, interest rates, construction costs, and availability of infrastructure. These considerations along with the carrying costs of the property would be financially burdensome for the landowner. The existing unmaintained kiawe & vegetative shrubs are not consistent with the character or image of Wailea as a World Class Resort Destination.

3. Hotel Project: This alternative would include approximately 350-450 rooms, accessory uses (i.e. restaurant/bar; retail uses; activity center), and recreational facilities.

Positive Impacts: The project would create long-term job opportunities associated with the management, service and/or maintenance of the hotel and its related support uses. The developer would also be required by the County to participate in the development of needed affordable housing. Also, the project would support the demand for visitor accommodations on the island and other commercial development at the Wailea Resort and in the region.

Negative Impacts: During grading and construction activities, there would be short-term construction related impacts related to dust, soil erosion from wind and rain, increased ambient noise levels and intermittent traffic congestion. The project would generate relatively high levels of vehicular traffic along Wailea Alanui Drive during post development conditions.

4. High Density Residential Condominium Project: This project would include approximately 250 to 300 units with unit sizes in the 1,200 to 1,500 square foot range.

Positive Impacts: The project would result in higher County real property tax revenues. To maintain the option of transient vacation rental use, the developer would participate in the development of affordable housing as required by the County. The project would support other commercial development at the Wailea Resort and in the region.

Negative Impacts: During grading and construction activities, there would be short-term construction related impacts related to dust,



soil erosion from wind and rain, increased ambient noise levels and intermittent traffic congestion. The project would result in relatively high levels of vehicular traffic along Wailea Alanui Drive.

5. Single Family Residential Subdivision: This project would include approximately 59 to 65 lots.

Positive Impacts: The project would result in less vehicular traffic impacts along Wailea Alanui Drive. The project would involve less grading of property and the potential for dust and soil erosion from wind and rain.

Negative Impacts: The project would generate lower real property tax revenues for the County, in comparison with a hotel project or a higher density residential condominium project.

6. Lower Density Residential Condominium Project: This project would include approximately 120 to 145 units with units averaging approximately 2,500 square feet in size.

Positive Impacts: The project would contribute to lower volumes of traffic along Wailea Alanui Drive. The project would result in higher County real property tax revenues. To maintain the option of transient vacation rental use, the developer would participate in the development of affordable housing as required by the County. The project would support other commercial development at the Wailea Resort and in the region.

Negative Impacts: During grading and construction activities, there would be short-term construction related impacts related to dust, soil erosion from wind and rain, increased ambient noise levels and intermittent traffic congestion. The project would contribute to vehicular traffic impacts along Wailea Alanui Drive.

F. DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the development of a 120 unit residential condominium project and related improvements (See: Figures No. 10. 1 through No. 10.11). As permitted under the zoning, it is intended that the project will be used for residential or vacation rental purposes or short term occupancy less than six (6) months per year.

The residential condominium units will be contained within 20 six-plex buildings and will reflect a two-story building elevation and an orientation



to provide views of the ocean overlooking the Grand Wailea Resort Hotel and Spa. The project will also include two private recreational facilities, a manager's office, extensive landscape planting, and driveway accesses along Wailea Alanui Drive. The driveway access will be signalized and opposite the driveway access to the Grand Wailea Resort and Spa ballroom entrance. A secondary access for emergency purposes only is proposed along the north property boundary and will be improved with a grasscrete stabilized surface.

The project will contain 309 parking spaces, as follows: garages (120 spaces); trellis covered guest parking/carports (180 spaces); and uncovered guest parking (9 stalls). The County's parking requirement for the proposed project is 240 stalls.

The existing natural drainage way on the south end of the property will be maintained primarily as a natural open area with walking paths for project resident use. A swimming pool and cabana will be situated on the south side of the drainage way.

The estimated timetable for start of project construction is June 2005 and November 2006 for completion of construction. The estimated timetable for full occupancy of the project is the Year 2008.

The estimated valuation of the proposed project is \$130 million.

Architectural Design Concept: The overall design style for the project can best be described as Hawaiian Plantation. The Plantation style has evolved in various places around the world with tropical climates. Variations of the Plantation style are found in Florida and along the southeast coast of the United States, as well as in Bermuda and the Bahamas. The common elements of this style are large roof overhangs supported by columns, which allow for oversized windows that can be protected from the sun, and numerous covered porches, which are called verandas in the South and lanais in Hawaii.

Hawaiian Plantation is distinctly different from the others and has evolved over the years. The distinctions include the use of double pitched roofs; lava rock as wall surfaces and battered walls around lanai and in landscaping; natural finished koa and teak woods on doors, windows and beams; and earth tone colors on the exterior surfaces and roofs that pick up the unique colors of Hawaii, including the lush greens of vegetation and the rusty red colors found in soils.

The exterior design of the project has incorporated features of the Hawaiian Plantation style. Included are double pitched roofs with large overhangs, large windows, and rock walls surrounding the covered lanai.



The roof material will be a green tile with the color to be selected to blend with color of the slopes of Haleakala in the background.

The placement of buildings generally reflects the existing topography of the site. The buildings step up and move away from Wailea Alanui Drive towards the upper or *mauka* portion of the site. Landscape planting will be incorporated in the spaces above, below and between buildings to establish a natural setting. Also, water features will be used to enhance the appearance of the project.

Other Aspects: The project will incorporate drought tolerant and native plant species to minimize irrigation demand. The reclaimed water line from the County's Kihei Wastewater Reclamation Facility does not extend to the Wailea Resort. The cost to construct such a connection would be cost prohibitive for purposes of the proposed project.

The developer intends to incorporate energy conservation measures as part of the proposed development in the final construction plans. The developer will utilize the Guidelines for Sustainable Building Design in Hawaii from the State Office of Environmental Quality Control as a reference document. Consideration will be given to the following measures in the final construction plans:

- Use of spectrally selective tints or spectrally selective low-e glazing with a Solar Heat Gain Coefficient (SHGC) of 0.4 or less;
- Maximize efficiencies for lighting, ventilation, Heating, Air Conditioning (HVAC) and other equipment;
- Provide individual electrical metering for each unit to encourage energy accountability;
- Use lamps and ballasts with the highest efficiency, compatible with the desired level of illumination;
- Maximize day lighting through the use of vertical fenestration, light shelves, sky lights, clerestories, building form and orientation;
- Use "Smart Building" monitor/control systems when appropriate and feasible;
- Use of variable speed drives on pumping systems and fans for cooling towers and air handlers;
- Install water conserving, low flow fixtures;
- Install an efficient landscape irrigation system; and
- Incorporate drought tolerant plants, shrubs, ground covers and trees appropriate for the Wailea environment to minimize the need for irrigation.

G. PURPOSE AND NEED

The proposed project is an infill development within the Wailea Resort that was established in the early 1970's as a resort destination area. In a recent study of visitor accommodations, Maui has the highest number of single and multi family residential units that are used as vacation rentals. It is estimated that over 17,000 residential units on Maui are used as visitor accommodations.

With amendments to the County's zoning code in 1989 and 1991, vacation rental use is allowed only in the Hotel District and not in the Residential or Apartment Districts. Since hotel-zoned properties are in limited supply and there is a demand for vacation rental units, the development of these properties for hotel or short term rental use is a highly desired use.

The proposed project would be compatible with other uses within the Wailea Resort and is consistent with the concept of a resort destination area offering a range of amenities and projects catering to visitors.

H. MAJOR LAND USE, DEVELOPMENT AND CONSTRUCTION APPROVALS

1. Special Management Area (SMA) Use Permit includes a public hearing and approval by the Maui Planning Commission.
2. Step 2 Planned Development Approval pursuant to Maui County Code Chapter 19.32, for concurrent processing with the SMA Use Permit application and approval by the Maui Planning Commission.
3. Step 3 Planned Development Approval by the Maui Planning Commission.
4. Grading/Grubbing Permit approval from the Department of Public Works and Environmental Management, County of Maui (DPWEM).
5. National Pollution Discharge Elimination System (NPDES) General Permit from the Department of Health, State of Hawaii.
6. Building, Electrical and Plumbing Permits for the dwelling units from the DPWEM.



III. DESCRIPTION OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. The project site is currently vacant and maintained with Kiawe trees and shrub vegetation. Historically, the site was used temporarily as a construction staging area for nearby hotel projects. As previously mentioned, the site is located within the Wailea Resort that is recognized as one of the premier resort destination areas in the State of Hawaii.

The project site is bounded on three (3) sides by the Wailea Blue Golf Course, which provides a buffer from the Wailea Golf Estates subdivision to the east (*mauka*) and the Wailea Golf Vistas subdivision to the southeast.

Potential Impacts and Mitigation Measures. The proposed project is located within an area that is zoned and community planned for hotel use. The proposed project is consistent with the concept of a resort development envisioned within the Wailea Resort.

Cross sections were prepared to evaluate the ocean view impact of the proposed project on the fairway lots of Wailea Golf Estates and Golf Vistas subdivisions (See: Figures No. 11.1 through No. 11.4). Pad elevations of the fourteen (14) Golf Estates fairway lots and thirteen (13) Golf Vista fairway lots were compared to the roof heights of proposed buildings across the way. For the Golf Estates subdivision, the pad elevations are higher than the roof elevations of project buildings across the way. For the Golf Vista subdivision, *makai* views from Lot Nos. 26 and 27 may be slightly affected, since the pad elevations are 175 feet and 183 feet, respectively, and the roof elevation of Building M is 187 feet. In this latter instance, it should be noted that the distance from the fairway boundary of Lot Nos. 26 and 27 to Building M is 400 feet and 360 feet, respectively. This distance results in minimizing the building's visual impacts. It should also be noted that Building M is located to the northern periphery of the primary view plane from these lots.



2. Topography and Soils

Existing Conditions. The Wailea Resort lies on the southwestern edge of the slopes of Haleakala Volcano. Locally, the average elevation ranges from approximately 70 to 185 feet above mean sea level and is characterized by moderate topographic relief (10% slope) from *mauka* to *makai* (east to west direction). Onsite relief directs storm water towards the western portion of the property. Storm water flow along Wailea Alanui Drive is both a northerly and southerly direction. The subject property is situated approximately 1,500 feet *mauka* (east) of the shoreline.

According to the U.S. Department of Agriculture, the soil on the project site is Makena loam, stony complex, 3 to 15% slopes, (MXC) (See: Figure No. 5). The Makena soil series consists of well-drained soils developed in volcanic ash. Stony land occurs on low ridges and makes up about 30 to 60 percent of the complex. Permeability is moderately rapid, runoff is slow to medium, and the erosion hazard is slight to moderate. The shrink-swell potential is low. Depth to bedrock is 3.5 to 5 feet.

According to the Soils Investigation Report, sub-surface test pits were excavated to depths of 0.25 to 8 feet below existing grade. No groundwater was encountered in any of the explorations at the time of this investigation.

Potential Impacts and Mitigation Measures. The proposed use can be designed to meet the topographic and soils conditions of the site. With the exception of the natural drainage way on the southern end, the project site will be cleared, grubbed and graded to finish grades. Characteristics of soil loss and measures of erosion control are determined at different stages of project construction using the Universal Soil Loss Equation. The computed soil loss rates for the proposed project are as follows:

Construction Condition	Soil Loss Rate (tons/(acre*year))
Existing	0.68
Cleared and Grubbed	0.72
Finished Graded and Landscaped	1.30
Future	1.63

Assuming a maximum allowable soil loss rate for the project site and surrounding areas is 5 tons/acre/year, the computed soil loss rates for both construction conditions and the future condition are lower than the maximum allowable soil loss rate.



According to the Preliminary Drainage and Soil Erosion Control Report, the following best management practices (BMPs) will be utilized to meet State and County requirements:

- Measures to control erosion and other pollutants shall be in place before any earth moving is initiated;
- Exposed earth should be watered periodically for dust control to avoid nuisance to adjacent properties;
- Any graded area that will be left idle for 30 days or more shall be mulched or grassed;
- Washing down construction equipment and vehicles, and concrete truck drums at the site is prohibited. Wash water shall not be discharged into drainage systems; and
- Should the contractor choose to have an onsite maintenance/storage/stockpile area, the contractor shall install proper secondary containment structures, such as, gravel berms and silt fences, around the designated project area to prevent storm water from transporting suspended debris, pollutants and contaminants from the site to the existing County drainage systems and nearby State waters. The rain water accumulated within the designated area shall be naturally evaporated or infiltrated into the ground during construction.

According to the Preliminary Drainage and Soil Erosion Control Report, the following temporary erosion control measures are recommended:

- Crushed rock construction entrances for each ingress and egress;
- Silt fences for perimeter sediment control;
- Silt fence-filter combinations around all drain inlets; and
- Water and mulching included in the completion of all grading work to prevent dust, erosion and sedimentation.

Permanent erosion control measures include grass for all graded areas left exposed as soon as finished grades are established. All remaining, exposed earthen areas within the site will be landscaped with foliage, such as, trees, shrubs and bushes. An irrigation system will be installed for ground keeping.

The final BMPs will be noted in the project construction plans.

3. Flood and Tsunami Zone

Existing Conditions. According to the Federal Flood Insurance Rate maps, the project site is classified as Zone C, an area of minimal flood hazard potential (See: Figure No. 4).



Potential Impacts and Mitigation Measures. Proposed drainage improvements are discussed in the "Drainage section" of this report. Final drainage improvements will comply with MCC Chapter 20.08, Grading, and County drainage rules and will be submitted to the Department of Public Works and Environmental Management (DPWEM) as part of the grading and building permit applications.

4. Terrestrial Biota (Flora and Fauna)

Existing Conditions. A Biological Resources Survey was conducted to inventory the plant, animal and bird life found on the subject property (See: Appendix "I"). In terms of the botanical survey, the vegetation throughout the site is dominated by two species, buffelgrass and kiawe that together comprise at least 95% of the biomass. Most of the rest of the other 59 plant species identified are ephemeral annuals that all but disappear during the hot, dry summer and fall seasons. A total of eight native plant species were found within the project area, all of which are common lowland species in Maui County. No threatened or endangered plants listed by the U.S. Fish and Wildlife Service are found on the site nor do any plants proposed as a candidate for such status. No wetlands occur on the site.

During field investigations, the two mammal species observed on the site included Axis deer and mongoose, both of which are commonly found in the region. An evening survey was done to look for the native Hawaiian hoary bat. When present in an area, these bats can be easily identified as they forage for insects by distinctive flight patterns visible in the twilight. No evidence of the presence of this activity was observed in excellent visibility conditions and with plenty of flying insects present.

A number of bird species were observed during field investigations. Fourteen species of non-native birds were identified, including the Common mynah, House sparrow, Gray francolin, Spotted dove, American cardinal, Cattle egret, Spotted munia, Barred dove, Warbling silverbill, Java sparrow, House finch, Japanese white-eye, Red crested cardinal, and Mockingbird. No native species were seen.

Also, the field investigation found no evidence of the native Blackburn's sphinx moth, which is on the Federal Endangered Species List.

Potential Impacts and Mitigation Measures. The proposed project will not impact any known major wildlife habitat, wetland, or rare, threatened or endangered species of plant, bird or animal life.

It is recommended that some of the native plant species found on site be incorporated as part the project's landscape planting palette. Also, as a precaution to some seabirds, such as the endangered Dark rumped petrel and the common Wedge-tailed shearwater nesting on the slopes of Haleakala and coastal sites, it is recommended that all significant outdoor lighting be shielded and down lit, since these birds can be severely disoriented by bright lights causing them to crash and be maimed or killed by cats or dogs or by vehicles.

5. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of the natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power generating facilities). The impact of land development activities on air quality in the proposed development's locale differs by project phase (site preparation, construction and occupancy) and project type.

In general, the air quality at the Wailea Resort is considered to be relatively good. Non-point source emissions (automobile) are not significant to generate a high concentration of pollutants. The relatively good air quality can also be attributed to the region's exposure to wind, which quickly disperses concentration of emissions. The Kihei-Wailea area is currently in attainment of all criteria pollutants established by the Clean Air Act, as well as the State of Hawaii Air Quality Standards.

Potential Impacts and Mitigation Measures. Air quality impacts attributed to the proposed project could include dust generated by construction-related activities. Site work, such as grubbing, grading and building construction, could generate airborne particulate. Adequate dust control measures that comply with the provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust, will be implemented during all phases of construction. Mitigation measures will include but not be limited to:

- Providing an adequate water source prior to start-up of construction for use in dust control.
- Landscaping and rapid covering of bare areas, including slopes, beginning with the initial grubbing and grading phase.
- Controlling of dust from shoulders, project entrances and other access roads.
- Providing adequate dust control measures during weekends, after hours and prior to daily start-up of construction activities.
- Controlling of dust from debris hauled away from the project site.
- Erecting a dust fence to shield the adjacent projects and residences.



6. Noise Characteristics

Existing Conditions. The level of ambient noise is an important indicator of environmental quality. In an urban environment, noise is due primarily to vehicular traffic, air traffic, heavy machinery, and heating, ventilation and air conditioning equipment. Persistent high noise levels may impact health conditions and an area's aesthetic appeal. Noise levels in the vicinity of the project area are generally moderate with the source attributable to traffic on Wailea Alanui Road.

Potential Impacts and Mitigation Measures. In the short-term, the proposed project could generate some adverse impacts during construction. Noise from heavy construction equipment, such as material-carrying trucks and trailers, would be the dominant source of noise during the construction phase.

To minimize construction-related impacts on the adjacent projects, the developer will limit construction to normal daylight hours and adhere to the Department of Health's Administrative Rules, Chapter 11-46, Community Noise Control." The developer will also work with immediate neighbors to implement other measures to minimize construction-related impacts.

7. Archaeological/Historical/Cultural Resources

Existing Conditions. Scientific Consultant Services, Inc. (SCS) conducted a cultural impact assessment on the proposed development of 30 acres in the Wailea Resort, pursuant to Act 50 (SLH 2000) (See: Appendix "H"). Individuals and/or groups having knowledge of traditional practices and beliefs associated with the project area or knowledge of historical properties within the project area were consulted. The assessment report discusses past political boundaries; traditional settlement patterns; the western contact period; and The Mahele.

Rechtman Consulting, LLC conducted an archaeological inventory survey of the subject 30-acre property (See: Appendix "G"). This survey report has been determined to be acceptable to the State Historic Preservation Division by letter dated April 30, 2004. According to the survey report, two (2) archaeological sites were recorded: a WWII-era training site (Site 5516) consisting of ten features, and a Pre-contact Period temporary habitation shelter (Site 5517) located in a steep drainage way with possible associated petroglyphs.



At Site 5516, the form, orientation, and arrangement of the features fit the pattern that has been previously recorded within suspected and documented WWII training areas on Maui. The discovery of military food ration cans in a refuse pit associated with the features support the interpretation. It is also possible that some of the features at this site may have been used as hunting blinds subsequent to their initial construction.

At Site 5517, Pre-contact individuals likely resided on a temporary basis, and most likely gathered nearby marine resources. This generally supports the model proposed by Cordy (1977) that the lands in the vicinity of the project area between a quarter mile from the shore and five to seven miles inland, were used only intermittently. Pre-contact individuals likely passed through this area when traveling between coastal and upland resource and habitation areas. The association of the petroglyphs with Site 5517 may or may not be important, as it is possible that they were created in modern times.

Potential Impacts and Mitigation Measures. Based on community response, archival research, and alterations to the land occurring from historic activities, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by renovations to the subject parcel. Since such activities were not identified, there are no adverse effects.

No subsurface cultural deposits were found within the four backhoe trenches excavated in the northwestern portion of the project area. Site 5516 is considered significant under Criterion D, but no further work is recommended for the site. Site 5517 is considered significant under Criterion D and E and is recommended for preservation. Site 5517 is located in an area that is not planned for construction activities.

A preservation plan for Site 5517 has been prepared and submitted to the State Historic Preservation Division (SHPD) for approval. The SHPD has reviewed the draft plan and issued comments on suggested revisions. (See: letter dated August 19, 2004 and "Archaeological Preservation Plan for SIHP Site 5517" in Appendix "H.1"). The project archaeologist is finalizing the preservation plan report for re-submittal to the SHPD.

The following are highlights of the preservation plan:

- The preservation strategy for Site 5517 will be "avoidance and protection" (conservation). A recorded preservation easement will run along the top of either side of the gully that contains the site and extend with the gully a distance of 20 feet beyond the site limits. Except for the removal of invasive vegetation and periodic



vegetation maintenance activities, the preservation area will not be subject to improvement.

- Prior to development activities on the property, an interim protective barrier will be placed across the *makai* end of the gully that contains Site 5517. Additionally, avoidance instruction will be issued to all contractors working on the development, and each contractor will be provided a map showing the location of the preservation easement.
- The applicant will legally establish the preservation easement and record this easement with the Bureau of Conveyances. The applicant will also erect the interim protective barrier across the *makai* end of the gully. Upon completion of the project, the preservation responsibility will rest with the newly established homeowners' association.

Beyond that previously discussed, the project archaeologist concludes that further archaeological study is not recommended within the project area.

8. Visual Resources

Existing Conditions. The project site is not identified as a major vista, view plane or scenic resource in the Kihei-Makena Community Plan, the Maui Coastal Scenic Resources Study, or other available planning reference reports.

Potential Impacts and Mitigation Measures. Some of the proposed buildings will be visible while approaching the project site from the north or south on Wailea Alanui Drive. However, extensive landscaping and terraced walls will screen views of the project from Wailea Alanui Drive, such that few, if any, of the proposed structures will be visible from Wailea Alanui along the project frontage.

B. SOCIO-ECONOMIC ENVIRONMENT

Existing Conditions. In the decade from 1990 to 2000, the resident population in the Kihei-Makena region grew from 15,374 to 22,884, representing a 48.8% increase. This region was the fastest growing area on Maui. Based on the 2000 U.S. Census, the population of the Kihei-Makena area was as follows: Kihei CDP (16,749 residents); Maalaea CDP (454 residents); and Wailea-Makena CDP (5,671 residents). The average daily visitor population of the region in 2000 was 16,669.



In 2002, the County of Maui updated its 20-year population forecasts. Baseline population projections for the Kihei-Makena region are as follows: 27,181 residents (2010) and 31,576 residents (2020). (Maui County Community Plan Update Program: Socio-Economic Forecast, Phase I Report, June 14, 2002 prepared for the Maui County Planning Department by SMS)

The baseline projections also reflect a steady but moderate increase in the average visitor census for the Kihei-Makena planning region from 16,079 visitors (1990) to 19,191 visitors (2020) and an increase in the number of visitor units based on suitably designated sites from 7,318 units (1990) to 8,010 units (2020).

The baseline projections also indicate a growing housing demand in the Kihei-Makena planning region from 9,417 units (1990) to 13,948 units (2020).

Potential Impacts and Mitigation Measures. On a short-term basis, the proposed project will support construction and related employment. On a long-term basis, the project will expand the inventory of visitor accommodations in the Kihei region and provide both employment and housing opportunities for the community. Upon completion, the project will also contribute to the County's real property tax revenue base.

C. PUBLIC SERVICES

Existing Conditions. Public services in Kihei include police and fire protection, parks maintenance, solid waste collection services, wastewater treatment facilities, and two (2) elementary schools and an intermediate school.

Potential Impacts and Mitigation Measures. The proposed project is of a limited scale and is not expected to adversely impact public services in the Kihei area. Given the location of the project in a resort destination area and likely use of the units as vacation rentals, the project is not expected to generate substantial demands on public school services and facilities. The project will pay all required assessments for public services prior to obtaining building or occupancy permits. Upon completion, the project will provide increased real property tax revenues to the County of Maui that is used to support various services and programs.

D. INFRASTRUCTURE



1. Water

Existing Conditions. The existing water system in the area of the project site consists of a 16-inch distribution main and a 30-inch transmission main located within the Wailea Alanui Drive right-of-way. There are several water storage tanks in the vicinity of the project located along Kilohana Drive, Wailea Ike Place, Kalai Waa Street and Kaukahi Street.

The Wailea Resort is serviced by the County's Central Maui water system. The State of Hawaii recently declared the Iao aquifer as a ground water control area. The main sources of this system are the designated Iao aquifer, Waihee aquifer, the Iao tunnel and the Iao-Waikapu ditch. Consequently, the County of Maui has discontinued accepting water meter reservations for developments in this area. Under current policy, it is possible to install a lateral and meter prior to having complete building plans provided that water use calculations and fees are provided to the satisfaction of the Department of Water Supply. A request for water meters has been submitted to the DWS along with necessary plans and calculations.

Potential Impacts and Mitigation Measures. The water lines are adequately sized in the area. The Applicant will provide detailed domestic, fire and irrigation calculations at the time of building permit application for review and approval by the County Department of Water Supply.

Potable water demand for the proposed 120-unit project is as follows (See: Appendix "E"):

Type	Fixture Units	Demand (gpm)	Demand (gpd)
Building	4,952	650	80,640
Irrigation	N/A	120	50,000
TOTAL:		770	130,640

A 6-inch compound will be installed for the service lateral in accordance with DWS standards. Water System Standards specify a maximum fire hydrant spacing of 350 feet and fire flow requirements of 1,250 gpm and a 2-hour duration. The sizing of water lines and detector check assembly for the fire line will be designed in accordance with County requirements.

Water conservation measures that will be implemented as part of the proposed project include use of the following: no single-pass cooling; native plant species or climate-adapted plants; low-flow fixtures; a maintenance plan and program for implementation by the homeowner's association to minimize fixture leaks; and drip irrigation of turf and shrubs with controls to regulate flow based on moisture conditions.



The project overlies the Kamaole aquifer. During construction, Best Management Practices (BMPs) will be implemented to minimize infiltration and runoff from construction to protect ground and any surface water sources in the area. BMPs include but are not limited to the following:

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water;
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work;
- Retain ground cover until the last possible date;
- Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil amendments and temporary irrigation. Use high seeding rates to ensure rapid stand establishment;
- Apply fertilizers or biocides as needed and only during periods of low rainfall to minimize chemical run-off;
- Retain run-off onsite to the extent possible;
- Construct drainage structures, detention, silting and debris basins;
- Control dust by proper stockpiling and use non-potable water for dust control;
- Control open vehicles carrying soils, gravel or other particulate matter.

2. Sewer

Existing Conditions. The project site is within the service area of the County's Kihei Wastewater Treatment Facility (KWTF) located north of the Wailea Resort and on the *mauka* (east) side of Piilani Highway. The KWTF's total treatment capacity is 8.0 million gallons per day (MGD).

The existing sewer collection system in the vicinity of the project site consists of a 6-inch gravity line to the north and an 8-inch gravity line to the south, which are privately owned. These lines converge on Wailea Alanui Drive and run to the County-owned Sewer Pump Station (SPS) No. 10. From the SPS, sewage is pumped via twin 12-inch force mains to the 18-inch gravity sewer line at Wailea Ike Drive.

The County's wastewater treatment system appears to be adequate to service the proposed project at this time; however, the capacity of the wastewater system is limited and cannot be guaranteed until building permits are issued.

Potential Impacts and Mitigation Measures. According to the Design Standards used by the Wastewater Management Division, DPWEM, the

proposed project has an estimated waste/sewage flow of 80 gallons per person (gpp) and an assumed residential occupancy of 4 persons per residential unit (See: Appendix "E"). For the proposed 120-unit resort apartment condominium project, the estimated average design flow is 38,400 gallons per day.

Improvements will include installation of an 8-inch wastewater lateral connected to the 12-inch sewer line at Wailea Alanui Drive, and compliance with DPWEM requirements including payment of assessment fees at the time of building permit application.

3. Drainage

Existing Conditions. Storm water runoff currently sheet flows in a *makai* or westerly direction towards Wailea Alanui Drive. Peak discharge for the existing onsite drainage areas (EDA) is as follows:

EDA	Area (acres)	Flow (cfs)
A	2.55	4.46
B	11.64	18.62
C	12.21	16.79
Total		39.87

Peak discharges for the existing offsite drainage areas are as follows (Ref. G in the Preliminary Drainage and Erosion Control Report, Appendix "D"):

Offsite Drainage Area	Flows into EDA	Area (acres)	Flow (cfs)
I-1	A	49.24	103
I-2	B	58.51	150
I-3	C	126.72)	252)
35	C	469.00)	878)
36	C	27.00)	102)
Total for	C	622.72	1,232

Drainage Areas A, B and C flow into culverts under Wailea Alanui Drive (See: Figure 3 of Appendix "D"). These culverts were sized to accommodate flows from areas within the project site and also from outlying areas. The Drainage Master Plan that was prepared for Wailea Development Corporation in 1979 will be utilized to confirm the existing flows into the culverts.



Potential Impacts and Mitigation Measures. The proposed drainage system will be comprised of inlets and piping that connects to the existing culverts at Wailea Alanui Drive (See: Figure No. 14). Drain inlets with dry wells will be located along the roadways to alleviate the runoff from collecting at one central point within each drainage area. Any increase in flow at the bottom of each drainage way will be handled by a sub-surface drainage system and released into the existing natural drainage way at a rate equal to existing conditions. Peak discharges for the future onsite drainage areas (FDA) are as follows:

FDA	Area (acres)	Flow (cfs)
A	2.55	4.46
B	11.64	18.62
C	12.21	16.79
Total		39.87

There will be no increase in peak flows through the existing culverts. Existing offsite flow into drainage area "A" will be redirected along the north perimeter of the property and allowed to discharge into the existing 2-42" CMP culvert under Wailea Alanui Drive. Offsite flow into drainage area "B" along with the onsite surface flow within that area will be conveyed through an underground drainage system and discharge into the existing 48" CMP culvert under Wailea Alanui Drive. For drainage area "C", which is the largest of the three drainage areas, offsite and onsite flow will run through a series of terraced detention basins to slow down the water. Each basin will collect flow and overflow into the next basin so that the runoff will flow into the existing 2-84" CMP culvert at a controlled rate. The basins will be grassed and designed with small pipes at the invert of the basins to eliminate stagnation. Additional drywells and underground detention system will be used throughout the proposed subdivision to detain increase in runoff.

The proposed drainage system will incorporate methods to minimize adverse impacts on downstream waters such as directing runoff flows through a vegetated area, minimizing pavement, planting trees or shrubs across a slope and use of grass swales. The amount of runoff discharged from the project site will not be increased, and the existing drainage pattern will be maintained. The project's drainage report concludes that the construction of the project will not adversely affect the drainage conditions in the adjoining and downstream properties.

A Final Detailed Drainage and Erosion Control Report will be submitted to the DPWEM, including details of the drainage system, for review and approval as part of the filing of grading permit applications.



4. Roadways

Existing Conditions. The project site fronts Wailea Alanui Drive, a four-lane divided County roadway between Okolani Drive and Kaukahi Street with median breaks where adjoining land uses have driveways. It is the only roadway that provides continuous north-south access between the northern boundary of the Wailea Resort at Kihei and its southern limits at Makena. It has a rolling profile and curving alignment between Wailea Ike Drive and Kaukahi Street with a posted speed limit of 30 miles per hour (mph).

Within the Wailea Resort, several roadways provide *mauka-makai* access between Wailea Alanui Drive and Piilani Highway, including Kilohana Drive, Okolani Drive and Wailea Ike Drive. The latter roadway is the southernmost of these roadways and the closest to the project site. It is a four-lane divided roadway with a relatively steep vertical alignment of 9 percent and a posted speed limit of 30 mph.

The intersection of Wailea Ike Drive with Wailea Alanui Drive is a signalized T-intersection. The two (2) *makai* bound lanes of Wailea Ike Drive diverge to form one (1) left turn lane controlled by a traffic signal and a right turn lane controlled by a Yield sign. The southbound approach of Wailea Alanui Drive has two (2) through lanes and a left turn lane with a protected left turn phase. The northbound approach of Wailea Alanui Drive has one (1) through lane and a right turn lane controlled by a Yield sign.

Along Wailea Alanui Drive in the vicinity of the project site are two (2) driveways to The Shops at Wailea commercial center and three (3) driveways at the Grand Wailea Resort Hotel and Spa.

Recently, Wailea Resort Company, Ltd. completed the extension of Kalai Waa Street to Kaukahi Street. Kalai Waa Street is a two-lane, north-south roadway connecting Wailea Ike Drive with Kaukahi Street. Kaukahi Street is a two-lane, *mauka-makai* collector roadway that connects with Wailea Alanui Drive. This roadway extension has created a new route for travelers between Piilani Highway and Makena that has diverted trips from Wailea Alanui Drive. Wailea Resort Company, Ltd. Intends to dedicate both of these roadways to the County of Maui.

Potential Impacts and Mitigation Measures. M&E Pacific, Inc. has prepared a Traffic Impact Analysis Report (TIAR) for the proposed project (See: Appendix "F"). Proposed project improvements will include a signalized driveway access at Wailea Alanui Drive directly across from the ballroom entrance to the Grand Wailea Resort Hotel and Spa. A second emergency access is proposed further north. In addition to the



TIAR, the traffic consultant has also prepared an additional analysis of the intersection of Wailea Ike and Piilani Highway, based upon a request by the State Department of Transportation (See: Appendix "F.1") Traffic counts at the Shops at Wailea driveway were also taken during the morning at the request of the Maui Planning Commission.


The following highlight findings of the TIAR:

- A level of service (LOS) analysis was undertaken for the following intersections that will be directly impacted by the proposed project: (1) Wailea Ike/Wailea Alanui intersection; (2) Wailea Alanui/The Shops at Wailea driveway intersection; and (3) Wailea Alanui/Grand Wailea Resort Hotel and Spa ballroom entrance driveway intersection.
- The projected year for full project occupancy is 2008.
- The analysis compares turn movements and destination (e.g. northbound, southbound, eastbound, and westbound approaches) with the periods, 2004 Existing, 2008 Ambient (includes additional projected traffic), and 2008 w/Project (includes Ambient plus estimated project traffic).
- Table 3 is the Signalized Intersection Level of Service Analysis. The Wailea Ike/Wailea Alanui intersection is currently operating at LOS "C" during all three (3) analyses periods and is forecasted to remain the same under the ambient and total with project conditions, indicating that the proposed project would not have an adverse traffic impact on this intersection. The Wailea Alanui Drive southbound approach is operating at LOS "D" all day, indicating that a lengthening of the signal phase's maximum extension time should be considered. The Wailea Ike *makai* bound left turn movement is operating at LOS "C" in the morning peak. As with the southbound approach, lengthening of the phase's maximum extension time should be considered during the morning peak period. An additional left turn lane is not required. Finally, the Wailea Alanui Drive northbound movement is forecast to change from LOS "C" to LOS "D" in the afternoon peak with increases in the ambient traffic. Lengthening of the phases' maximum extension time should be considered during the afternoon peak period.
- The developer proposes to install a traffic signal and a separate left turn lane on the southbound approach of Wailea Alanui Drive at the main project entrance. With this traffic signal, the intersection is forecast to operate at LOS "A" for all three (3) analyses periods, as denoted in Table 3, Signalized Intersection Analysis. This analysis indicates that the proposed project would not have an adverse traffic impact at this intersection.



- Table 4 includes the Unsignalized Intersection Level of Service Analysis and shows the level of service and average delays (in seconds) on the critical turning movements of the two (2) unsignalized intersections at the Shops at Wailea driveway and the Grand Wailea Resort Hotel and Spa ballroom driveway. The critical turning movements for both intersections include the *mauka* (east) bound movements from the driveways, and the north bound left turn movement from Wailea Alanui Drive. The proposed project would add the *makai* bound project driveway movements to the hotel ballroom intersection.
- As noted in Table 4, Unsignalized Intersection Level of Service Analysis, The Shops at Wailea driveway is operating satisfactorily during the mid-day period but the outbound left turn movement is already experiencing LOS "F" in the afternoon peak. A queue length of three (3) vehicles was calculated, which is consistent with field observations. Afternoon delay on the movement is forecast to increase to 98 seconds with ambient conditions and to 146 seconds with the project. This means that the queue length is forecast to increase from three (3) to four (4) vehicles with these forecast conditions, representing a minimal increase. Although the level of service for the outbound left turn movement would be considered undesirable, the delay is tolerable. There are not enough outbound volumes to warrant an all way stop or a traffic signal. The Shops at Wailea has restricted employee parking to the north parking lot and has reported a reduction in delays for outbound vehicles.
- As noted in Table 4, Unsignalized Intersection Level of Service Analysis, the Grand Wailea ballroom driveway intersection is currently operating satisfactorily during all three (3) analyses periods with LOS "D" or better. With the proposed project and no traffic signal, the outbound left turn movements from the hotel driveway is forecast to operate at LOS "F" with average delays of 103 seconds and average queue lengths of four vehicles. This condition will be mitigated by the proposed installation of a traffic signal at this intersection that will help special event traffic exist the hotel at the end of events.
- The above conditions are indicative of the peak visitor season that runs about four (4) months of the year. Traffic volumes are lower, and traffic operations are better during the off peak eight (8) months of the year. Major mitigation measures should not be considered for undesirable conditions that would occur for only part of the year.

The following are conclusions of the TIAR:

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- The proposed residential condominium project is not expected to have an adverse traffic impact on the roadway system. Mitigation measures would not be required as a result of the proposed project.
 - The signalized Wailea Ike Drive/Wailea Alanui Drive intersection is expected to continue operating at satisfactory levels of service with the additional traffic from other projects in Wailea and Makena, and the proposed project.
 - Traffic from the proposed project is forecast to not have an adverse impact on The Shops at Wailea driveway. The outbound left turn movement is already at LOS "F" and delays would increase with more ambient and project generated traffic. However, the magnitude of the delays and queues in the afternoon peak would be undesirable but still tolerable.
 - The proposed traffic signal at the Grand Wailea Resort and Spa ballroom driveway/project driveway would improve its traffic operations considerably.

5. Solid Waste

Existing Conditions. Private disposal companies are typically retained by businesses for solid waste disposal both during and after construction. Trash materials are disposed of at the County's Central Maui Landfill. Private disposal companies service the Wailea Resort properties.

Potential Impacts and Mitigation Measures. The Applicant will retain a private waste contractor to pick-up and dispose of construction debris and to provide ongoing solid waste collection and disposal services when the new store is up and running.

6. Electricity, Cable Television, and Telephone

Existing Conditions. Underground electrical, cable and telephone lines service the project area.

Potential Impacts and Mitigation Measures. No significant changes in the existing electrical, cable and telephone services are anticipated. All improvements for onsite utilities will be underground.



IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE LAW

Hawaii Revised Statutes Chapter 205 relating to the Land Use Commission establishes the designation of all lands within the State of Hawaii into one (1) of four (4) districts, namely Urban, Agricultural, Rural and Conservation. Within the Urban District, the County has the full authority to zone lands as it determines to be appropriate.

The project site is within the State Urban District.

B. GENERAL PLAN OF THE COUNTY

The General Plan of the County of Maui (1990 Update) provides long-term goals, objectives, and policies directed toward improving living conditions in the County. As stated in the Maui County Charter:

“The purpose of the General Plan is to recognize and state major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development.”

The General Plan identifies five major themes as follows:

1. Protect Maui County's agricultural land and rural identity.
2. Prepare a directed and managed growth plan.
3. Protect Maui County's shoreline and limit visitor industry growth.
4. Maintain a viable economy that offers diverse employment opportunities for residents.
5. Provide for needed resident housing.

The following General Plan Objectives and Policies are applicable to the proposed project:

II. B. Visitor Industry Objectives:

1. To encourage exceptional and continuing quality in the development of visitor industry facilities.



2. To control the development of visitor facilities so that it does not infringe upon the traditional social, economic and environmental values of our community.

Policies

- a. Limit visitor industry development to those areas identified in the appropriate community plans, and to the development of projects within those areas which are in conformance with the goals and objectives of those plans.
- d. Require that new developments contribute their fair share to infrastructural costs.
- f. Encourage the use of local manpower in the construction of visitor facilities, and the use of local manpower at facilities at all employment levels including management in the operation of those facilities.
- h. Relate visitor industry development to housing opportunities for employees.

Analysis. The proposed project is consistent with policies of the adopted General Plan. The project is located within a resort destination area. The developer will pay all required fees and assessments for the project associated with infrastructure and utility connections. The developer intends to bid the project to contractors within the State of Hawaii and expects that local manpower will be maintained. The developer will comply with the County's affordable housing policy.

C. KIHEI-MAKENA COMMUNITY PLAN

Maui County has adopted nine community plans. Each community plan examines the conditions and needs of the planning region and outlines objectives, policies, planning standards and implementing actions to guide future growth and development in accordance with the Maui County General Plan. Each community plan serves as a relatively detailed agenda for implementing the broad General Plan themes, objectives and policies.

The subject property is located within the Kihei-Makena Community Plan region. This Community Plan was amended by Ordinance No. 2641 with an effective date of March 6, 1998.

The following Kihei-Makena Community Plan goals, objectives and policies are applicable to the proposed actions:



LAND USE

Objectives and Policies

- d. Limit hotel uses to those areas presently planned for hotel use, and limit hotel development until adequate public facilities and services are established to meet existing public needs.

HOUSING AND URBAN DESIGN

Objectives and Policies

- e. Implement landscaped setbacks for future multi-family and commercial areas. Developments shall provide space for landscaped pedestrian ways and bikeways.
- f. Incorporate the principles of xeriscaping in all future landscaping.

PLANNING STANDARDS

Land Use Standards

- a. All zoning application applications and/or proposed land uses and developments shall be consistent with the Land Use Map and Objectives and Policies of the Kihei-Makena Community Plan.

Urban Design Standards

a. Building Form

- 3) Limit resort development throughout the region to thirty-five (35) feet in building height for sites near the shoreline. Building height limits may gradually be increased up to seventy-five (75) feet for inland resort development provided that important *mauka/makai* vistas are maintained, and impacts to coastal resources are minimized. Resort community planning and design shall integrate recreational amenities with adequate shoreline setback and public shoreline access provisions.
- 5) All new multi-family and commercial facilities should provide a garden setting appropriate to the region. Setback requirements should be sufficient to allow for street and sidewalk climate-adapted landscaped buffers and interior planting areas.

PART V, LAND USE MAP, Land Use Categories and Definitions

Open Space (OS)

This use is intended to limit development on certain urban and non-urban designated lands which may be inappropriate for intensive development due to environmental, physical, or scenic constraints; this category would include but not be limited to shoreline buffer areas, landscape buffers, drainage ways, view planes, flood plains, and tsunami areas. Other appropriate urban and non-urban uses may be allowed on a permit basis.

Analysis. The proposed resort residential project is consistent with the Hotel designation in the Community Plan. The building height of 29 feet is consistent with the policies in the Community Plan. Landscaping, including native and drought tolerant species, will be incorporated as a project feature.

Improvements are proposed within a portion of the area designated Open Space in the community plan. This area is a natural gulch along the southern end of the property. In the lower or *makai* area, improvements will include a swimming pool, a small pavilion building with restrooms, barbecue grills, landscape planting, and passive recreational provisions (i.e. picnic tables; benches). In the upper portion of the gulch, approximately 3,300 square feet of Building "M" will encroach in the Open Space area. As indicated in Figure 14, Conceptual Grading and Drainage Plan, the passive recreational area and Building "M" encroachment represents a small portion of the Open Space area of the project site. The definition of Open Space in the Community Plan provides that "appropriate urban and non-urban uses may be allowed on a permit basis. Given the minimal structural improvements within the Open Space area, the proposed use within the Open Space area may be approved by the Maui Planning Commission in conjunction with review and approval of the Special Management Area Use Permit.

D. MAUI COUNTY ZONING

The project site is zoned H-1 Hotel District and Open Zone.

Analysis. The proposed project complies with the applicable Hotel District zoning provisions, as follows:

Standard	Required/Allowable	Proposed
Building Heights	Two stories	Two stories (29 feet)
Lot Coverage	25%	21% (277,735 sq. ft.)
Floor Area Ratio	50%	31% (416,840 sq. ft.)



Standard	Required/Allowable	Proposed
Setbacks Front/Rear yards	½ building height (15 ft. min.)	50-120 feet
Side yard	10 feet (1 and 2 stories)	45-140 feet
Parking	240 stalls (2 stalls/unit)	309 stalls (2.58 stalls/unit)

The proposed project is subject to the Planned Development procedures, pursuant to MCC Chapter 19.32. The project relates to the standards of development in MCC Section 19.32.030, as follows:

- (1) The project will meet all the construction standards and requirements of the various governmental agencies.
- (2) The requirement for 20% common protected open space will be met. "Common protected open space" is defined as open space to be owned in common by the individual owners within the development and maintained in open space for their common use and enjoyment. (MCC Section 19.32.030B). The project will maintain 21% common protected open space and 41% as other open space (landscaped areas around buildings and roadways). Therefore, the total project open space is approximately 62% of the total lot area. (See: Figure 13).
- (3) All buildings will be designed by a registered architect.
- (4) Landscaping of the entire development, including along streets, within lots and in the open spaces shall be provided. This standard will be met.
- (5) Adequate recreational and community facilities shall be provided. The project will include a private recreational facility, swimming pool and cabana, and plunge pools in various parts of the project.
- (6) Provision shall be made for adequate and continuing management of all open spaces and community facilities to insure proper maintenance and policing. This standard will be met through the establishment of an apartment owners association, CC&Rs, and retention of a property manager.

The Open Zone designation for the natural drainage way was established before the adoption of the County's Open Space District ordinance. The minimal structural improvements within this area are consistent with improvements in other Open Zone designated areas at the Wailea Resort.



Also, these improvements may be permitted under the Planned Development procedures pursuant to MCC Chapter 19.32. MCC Section 19.32.G. states, "Planned developments proposed on lands including more than one zoning district may permit a mixture of uses, densities and/or dwelling units; provided, that the total density and/or dwelling units of the planned development shall not exceed the combined allowable densities of each of the zones." The project's "common protected open space" is estimated to be 21 percent of the total lot area and exceeds the minimum 20 percent requirement. The proposed 120 unit residential condominium project does not exceed the allowable density permitted in the H-1 Hotel District.

The proposed project will exceed minimum parking requirements as noted below:

Category	Required	Proposed	Difference
Apartment	240 stalls (120 units x 2 stalls/unit)	309 stalls (2.58 stalls/unit) (120 garages) (180 trellised/carpports) (9 open stalls)	+69 stalls

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES


The proposed project is located within the Special Management Area (SMA), pursuant to Hawaii Revised Statutes Chapter 205A and Chapter 202, Special Management Area Rules, Maui Planning Commission. The proposed action qualifies as a "development" and therefore requires a SMA Use Permit. All proposed developments within the SMA are evaluated with respect to SMA objectives, policies and guidelines. This section addresses the project's relationship to applicable coastal zone management considerations, as set forth in HRS Chapter 205A and the SMA Rules and Regulations of the Maui Planning Commission.

1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreation planning and management; and

-
- 
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
- (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - (ii) Requiring placement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or require reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
 - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having standards and conservation of natural resources;
 - (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
 - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing;
 - (viii) Encourage reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

Analysis. The project does not abut the shoreline and is located mauka of Wailea Alanui Road and therefore it will not have a direct impact on coastal recreational opportunities.

2. Historical/Cultural Resources

Objective: Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone



management area that are significant in Hawaiian and American history and culture.

Policies:

- (a) Identify and analyze significant archeological resources;
- (b) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (c) Support state goals for protection, restoration, interpretation, and display of historic structures.

Analysis. As discussed in Section III of this report, based on the previous disturbances and development on the property, there is minimal potential of encountering significant historical or cultural resources. The project area does not appear to hold much archeological significance. As such, the proposed development supports the community's objective of insuring that new development does not disturb historic and prehistoric resources in the coastal zone management area that are deemed to be significant in Hawaiian and American history and culture. The State Historic Preservation Division has reviewed and accepted the project's Archaeological Inventory Survey report.

3. Scenic and Open Space Resources

Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

- (a) Identify valued scenic resources in the coastal zone management area;
- (b) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- (c) Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources; and
- (d) Encourage those developments that are not coastal dependent to locate in inland areas.

Analysis. The project site is located *mauka* of Wailea Alanui Drive and will not affect views to the ocean from a major coastal roadway. As discussed in Section III of this report, numerous scenic resources have been identified in the Kihei-Makena area, which are identified and



discussed in the Maui Coastal Scenic Resources Study, August 1990. However, the project site is not associated with any scenic resources in this study or in the Kihei-Makena Community Plan.

4. Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

- (a) Improve the technical basis for natural resource management;
- (b) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (c) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (d) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses, which violate state water quality standards.

Analysis. As described in Section III of this report, the proposed project will not have a significant direct impact on the region's coastal ecosystem because of its limited scope. With the incorporation of appropriate measures during construction, there should be no significant adverse impacts to near shore waters from point and non-point sources of pollution. There are existing drainage improvements in the area.

5. Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

- (a) Concentrate coastal dependent development in appropriate areas;
- (b) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed



to minimize adverse social, visual, and environmental impacts in the coastal zone management area;

- (c) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - (i) Use of presently designated locations is not feasible;
 - (ii) Adverse environmental impacts are minimized; and
 - (iii) The development is important to the State's economy.

Analysis. The proposed hotel-related use of the property is consistent with the State's urban land use designation, as well as, the County's zoning and community plan designations. The proposed project is within the Wailea Resort an area that has been planned and zoned as a resort destination area since the early 1970's. The proposed project is an infill development within the Wailea Resort.

6. Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

Policies:

- (a) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;
- (b) Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and non-point pollution hazards;
- (c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (d) Prevent coastal flooding from inland projects; and
- (e) Develop a coastal point and nonpoint source pollution control program.

Analysis. Proposed drainage improvements are discussed in the "Drainage section" of this report. Final drainage improvements will comply with MCC Chapter 20.08, Grading, and County drainage rules and will be submitted to the Department of Public Works and Environmental Management (DPWEM) as part of the grading and building permit



applications. The project will be designed to minimize impacts to downstream properties or coastal resources.

7. Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources hazards.

Policies:

- (a) Use, implement, and enforce existing laws effectively to the maximum extent possible in managing present and future coastal zone development;
- (b) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
- (c) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning process and review process.

Analysis. The development of the subject property is being conducted in accordance with applicable State and County requirements. Opportunity for review of the proposed action is provided through the County's Special Management Area (SMA) permitting process. Pre-consultation was undertaken with the County Department of Planning, the Engineering Division, Department of Public Works and Environmental Management, Department of Fire Control, Department of Water Supply and the Department of Housing and Human Concerns. Also, the Applicant attended the annual meeting of the Golf Vistas Homeowners Association and held meetings with several homeowners of the Golf Estates Subdivision. In addition, the Applicant has at least four (4) meetings with the Wailea Community Association Design Committee. Finally, the Applicant has met with the General Manager of the Grand Wailea Resort Hotel and Spa and a representative of the Four Seasons Hotel to review project plans.

8. Public Participation



Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

- (a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program.
- (b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and
- (c) Organize workshops, policy dialogues, and site-specific medications to respond to coastal issues and conflicts.

Analysis. As previously noted, pre-consultation was conducted with adjacent property owners, the Wailea Community Association, and governmental agencies.

During the scheduled public hearings, the public will have an opportunity to review and comment on the proposed project. Landowners located within 500 feet of the project will be notified of the scheduled public hearing dates. Public hearing dates and location maps will also be published in the *Maui News* on two separate occasions. The public will be allowed to participate in the public hearing portion of the Maui Planning Commission's review process.

9. Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

- (a) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (b) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and



- (c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Analysis. The project site does not abut the shoreline, and therefore project development will not impact beach resources. All lands *makai* of the project site and Wailea Alanui Drive are already built out.

10. Marine Resources

Objective: Implement the State's ocean resources management plan.

Policies:

- (a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- (c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (d) Assert and articulate the interest of the state as a partner with federal agencies in the sound management of the ocean resources within the United States exclusive economic zone;
- (e) Promote research, study, and understanding of ocean processes, marine life, and other ocean development activities relate to and impact upon the ocean and coastal resources; and
- (f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Analysis. The proposed project does not involve the direct use or development of marine resources. In addition, with the incorporation of erosion and drainage control measures and BMPs during construction and after construction as identified in this report, there should not be significant adverse impacts to near shore waters from point and non-point sources of pollution. Therefore, the proposed project will not produce any significant impacts on any coastal or marine resources. Again, there is drainage improvements in the area, and the *makai* area along Wailea Alanui Drive have already been built out.



V. HRS CHAPTER 343 SIGNIFICANCE CRITERIA

A finding of no significant impact (FONSI) is anticipated and therefore an environmental impact statement will not be required for the proposed action. This determination has been made in accordance with the following significance criteria specified in Section 11-200-12 of the Department of Health rules relating to Environmental Impact Statements:

- A. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.*

As documented in this report, the proposed project will not result in the loss or destruction of any natural or cultural resource.

- B. *Curtails the range of beneficial uses of the environment.*

The proposed project is consistent with the land use map and policies of the Kihei-Makena Community Plan and applicable zoning regulations. The Wailea Resort was established in the early 1970's as a master planned resort destination area. The proposed project is in keeping with development within the Wailea Resort. It is therefore not expected that the project will curtail the range of beneficial uses of the environment in the project vicinity.

- C. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The project is being developed in compliance with the state's long term environmental goals. As documented in this report, adequate mitigation measures will be implemented to minimize the potential for negative impacts to the environment.

- D. *Substantially affects the economic or social welfare of the community or state.*

The proposed project will result in short term and long term employment opportunities and also contribute to affordable housing opportunities. The proposed project is not expected to create significant long term impacts on the socio-economic environment. The project will contribute significantly to the County's real property tax base.

- E. *Substantially affects public health.*

There are no special or unique aspects of the project which will have an impact on public health.



- F. *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

The proposed addition of 120 residential units is not expected to involve substantial secondary impacts. The project is within a master planned resort destination area and is consistent with policies in the Kihei-Makena Community Plan. The Applicant will pay all required assessments and fees for utility connections and participate in an employee/affordable housing assessment. The latter assessment applies since the units may be used for short or long term rentals as allowed in the Hotel District. Consultation with various governmental agencies has not indicated major issues relative to effects on public facilities.

- G. *Involves a substantial degradation of environmental quality.*

Mitigation measures will be implemented during construction to minimize negative short term impacts such as soil erosion and sedimentation. The project design will incorporate a drainage system that will minimize degradation of the environmental quality.

- H. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The project does not involve a commitment for larger actions on behalf of the applicant or any public agency. In terms of cumulative impacts, the project site is situated within the State Urban District and in proximity to a developing residential area. Infrastructure and utilities are adequate to service the proposed project. The Traffic Impact Assessment Report concludes that the project will not result in significant negative impacts to the roadways in the area. Therefore, the project will not result in cumulative negative impacts on the environment.

- I. *Substantially affects a rare, threatened, or endangered species, or its habitat.*

There are no rare, threatened, or endangered species or habitat at the project site.

- J. *Detrimentially affects air or water quality or ambient noise levels.*

As documented, there will be short term impacts on air and water quality and ambient noise levels during construction; however, mitigation measures will be employed to minimize these impacts. Adverse long-term impacts are not anticipated.

- K. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion prone area, geologically hazardous land, estuary, fresh water, or coastal waters.*



The project site is not an environmentally sensitive area. Compliance with County grading requirements will be met.

- L. *Substantially affects scenic vistas and view planes identified in county or state plans or studies.*

The proposed project will not affect ocean views along Wailea Alanui Drive nor obstruct major view corridors identified in county or state plans or studies.

- M. *Requires substantial energy consumption.*

Upon complete build out of all the lots, energy consumption will be increased; however given existing levels of usage in the area, the increase is considered insignificant.

V. CONCLUSIONS

This Special Management Area Assessment report examines the environmental and socio-economic impacts associated with the development of a vacation rental condominium project, consisting of 120 units and related improvements. The proposed project is located on the *mauka* side of Wailea Alanui Drive on a 30-acre vacant parcel in the vicinity of the Grand Wailea Resort Hotel and Spa.

The proposed development is not anticipated to result in significant environmental impacts to surrounding properties, near shore waters, natural resources, and/or archaeological and historic resources on the site or in the immediate area. Public infrastructure and services including roadways, sewer and water systems, medical facilities, police and fire protection, parks, and schools are or will be adequate to serve the project and are not expected to be significantly burdened by the project. The proposed project is not anticipated to impact public view corridors and is not anticipated to produce significant adverse impacts on the visual character of the surrounding environs.

The subject property is situated within the State Urban District and is zoned and community planned by the County for hotel use as part of the Wailea Resort, a master planned resort destination area originating in the early 1970's. The proposed project also conforms to the H-1 Hotel District standards established for the subject property. Accordingly, the proposed project is in conformance with State and County land use plans and policies, including Chapter 205A, HRS, as well as the Kihei-Makena Community Plan land use map.

In conclusion, the proposed project will not result in significant impacts to the environment and is consistent with the Special Management Area objectives, policies and guidelines, pursuant to HRS Chapter 205A and the Maui Planning



Commission rules and Maui County Code Chapter 19.32 relating to Planned Developments.

This Final Environmental Assessment is consistent with applicable decision making criteria as identified in the Maui Planning Commission's rules and regulations relating to the Special Management Area HRS (Chapter 202) and with the criteria outlined in section §11-200-12 of the Department of Health's rules and regulations relating to environmental impact statements. The document is also consistent with the objectives and policies of the Kihei-Makena Community Plan. The authority has considered all agency and public comments on the Draft Environmental Assessment.

Based on the foregoing analysis and conclusion, the proposed project will not result in significant impacts to the environment and is consistent with the requirements of HRS Chapter 343, and a Finding of No Significant Impact (FONSI) is warranted.

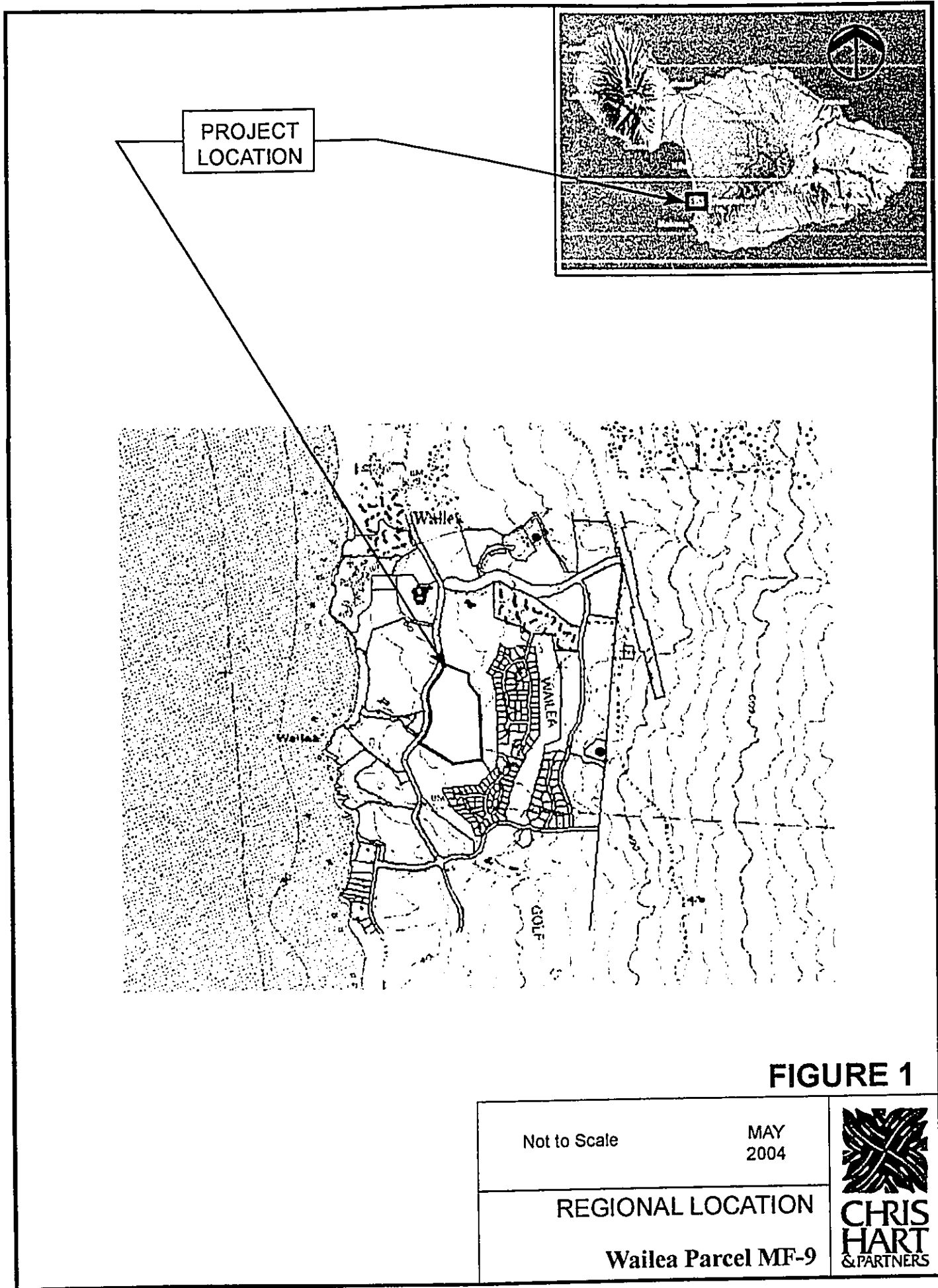


VI. REFERENCES

- County of Maui, Department of Planning. 1991. *The General Plan of the County of Maui, 1990 Update*. Wailuku, Hawaii.
- County of Maui, Department of Planning. 1998. *Kihei-Makena Community Plan*. Wailuku, Hawaii.
- County of Maui, Department of Planning. *Maui County Community Plan Update Program: Socio-Economic Forecast, Phase I Report*. June 14, 2003. Prepared by SMS. Wailuku, Hawaii.
- County of Maui, Office of Economic Development. 1999. *Maui County Data Book*. Wailuku, Hawaii.
- Environmental Planning Associates, Inc. *Maui Coastal Scenic Resources Study*. August 31, 1990.
- Federal Emergency Management Agency. *Flood Insurance Rate Map*. Community Panel Map Number 150003 0330 B (Revised June 1, 1981).
- Island Geotechnical Engineering, Inc., *Report Soils Investigation, Proposed Wailea MF-9 Development, Wailea, Maui, Hawaii, TMK: (2) 2-2-1-08: 119*, March 29, 2004.
- University of Hawaii, Department of Geography. 1983. *Atlas of Hawaii*. Second Edition. Honolulu, Hawaii.
- U.S. Department of Agriculture, Soil Conservation Service in Cooperation with the University of Hawaii, Agricultural Experiment Station. 1972. *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. Washington, D.C.
- Vuich Environmental Consultants, Inc. *Environmental Site Assessment: Phase I Investigation for Vacant Land, Wailea Alanui Drive, Wailea, Hawaii, TMK (2) 2-1-08: 119*, February 18, 2004.


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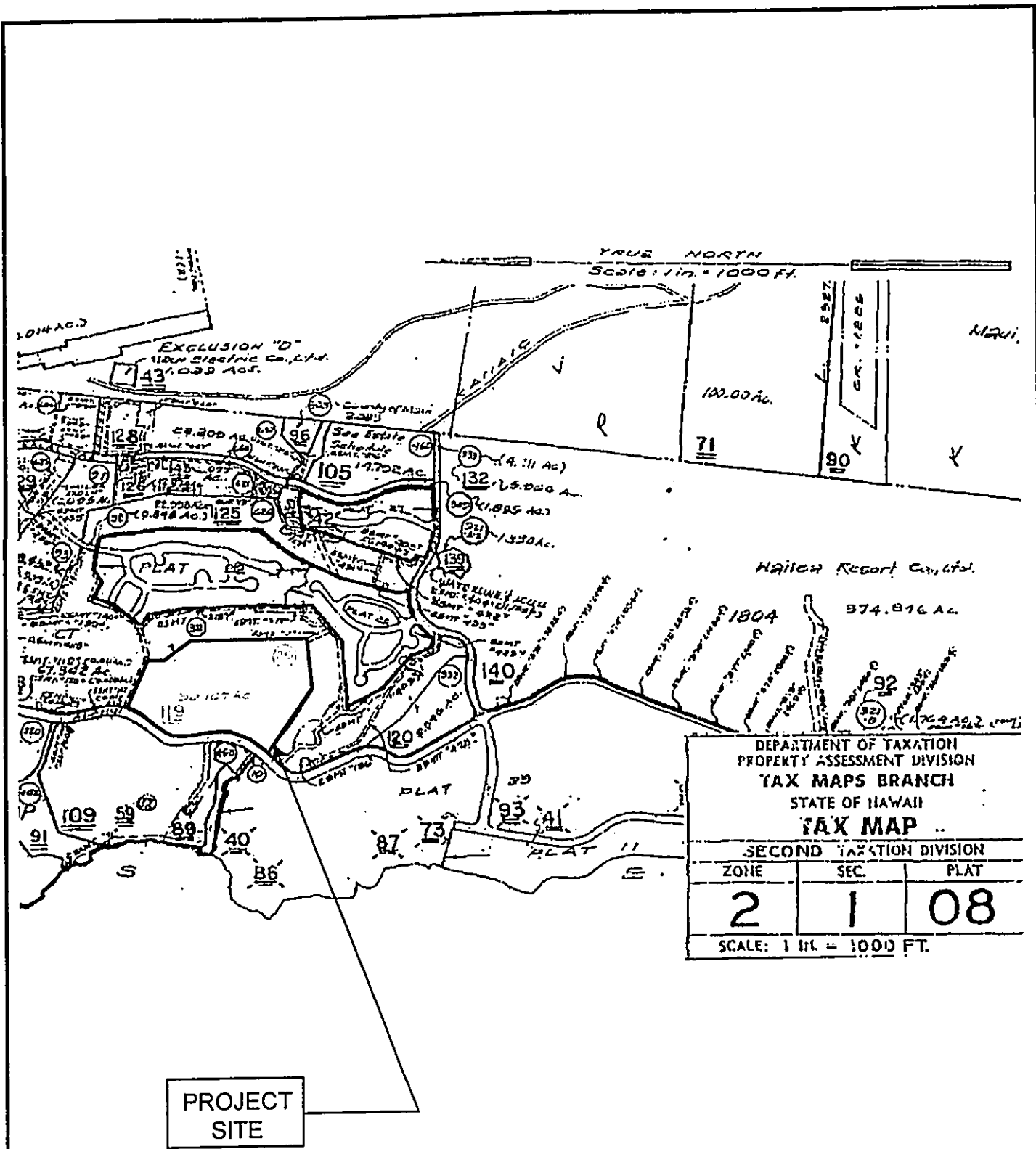
FIGURES



PROJECT
LOCATION

FIGURE 1

Not to Scale	MAY 2004	
<p>REGIONAL LOCATION</p> <p>Wailea Parcel MF-9</p>		




DEPARTMENT OF TAXATION
 PROPERTY ASSESSMENT DIVISION
 TAX MAPS BRANCH
 STATE OF HAWAII
TAX MAP
 SECOND TAXATION DIVISION

ZONE	SEC.	PLAT
2	1	08

SCALE: 1 in. = 1000 FT.

FIGURE 2

Parcel 119 Not to Scale	MAY 2004	 CHRIS HART & PARTNERS
TAX MAP Wailea Lot MF-9		

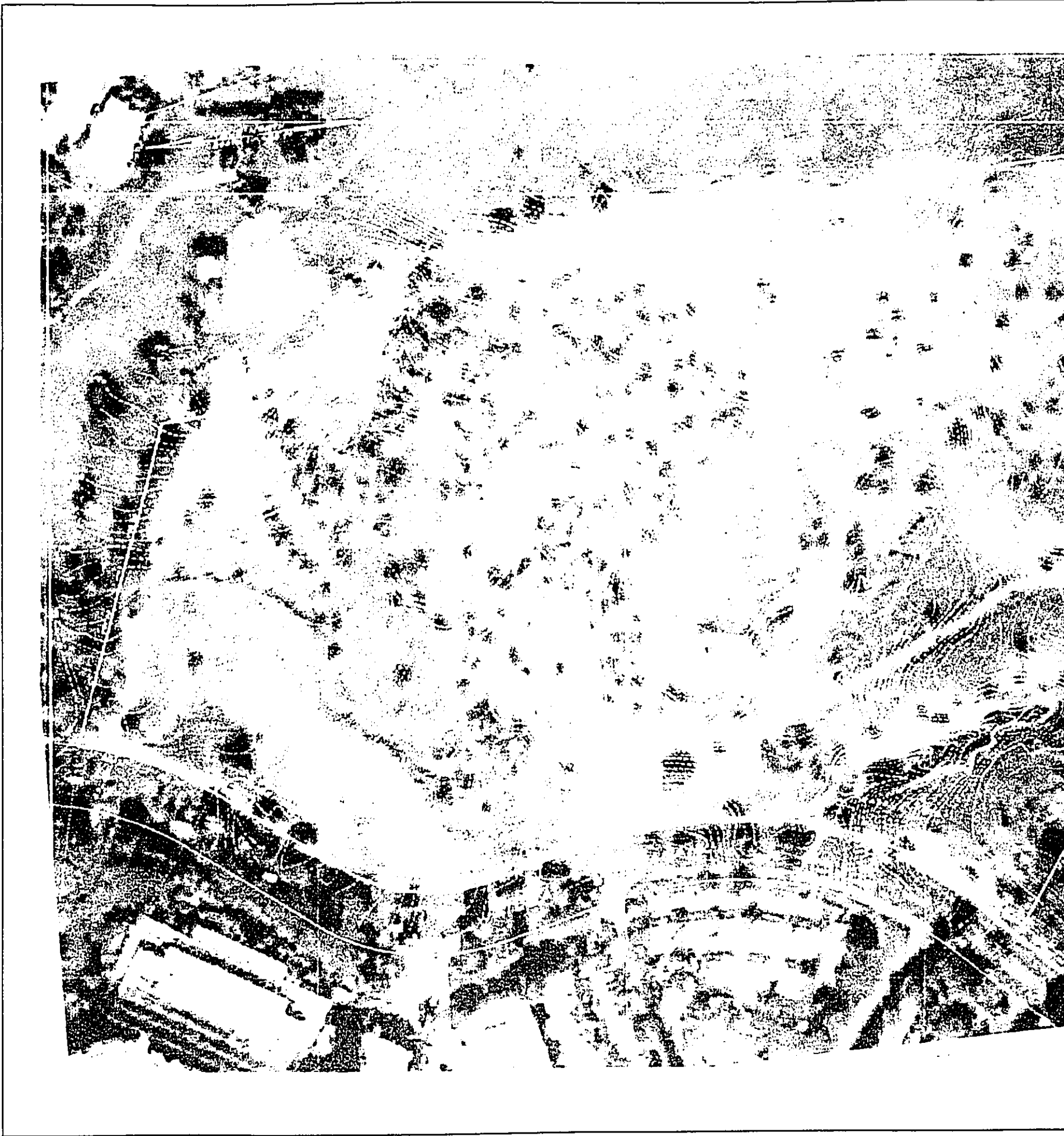




FIGURE 3

Not to scale

MAY
2004

TOPOGRAPHIC/AERIAL MAP
Wailea Parcel MF-9



**CHRIS
HART
& PARTNERS**

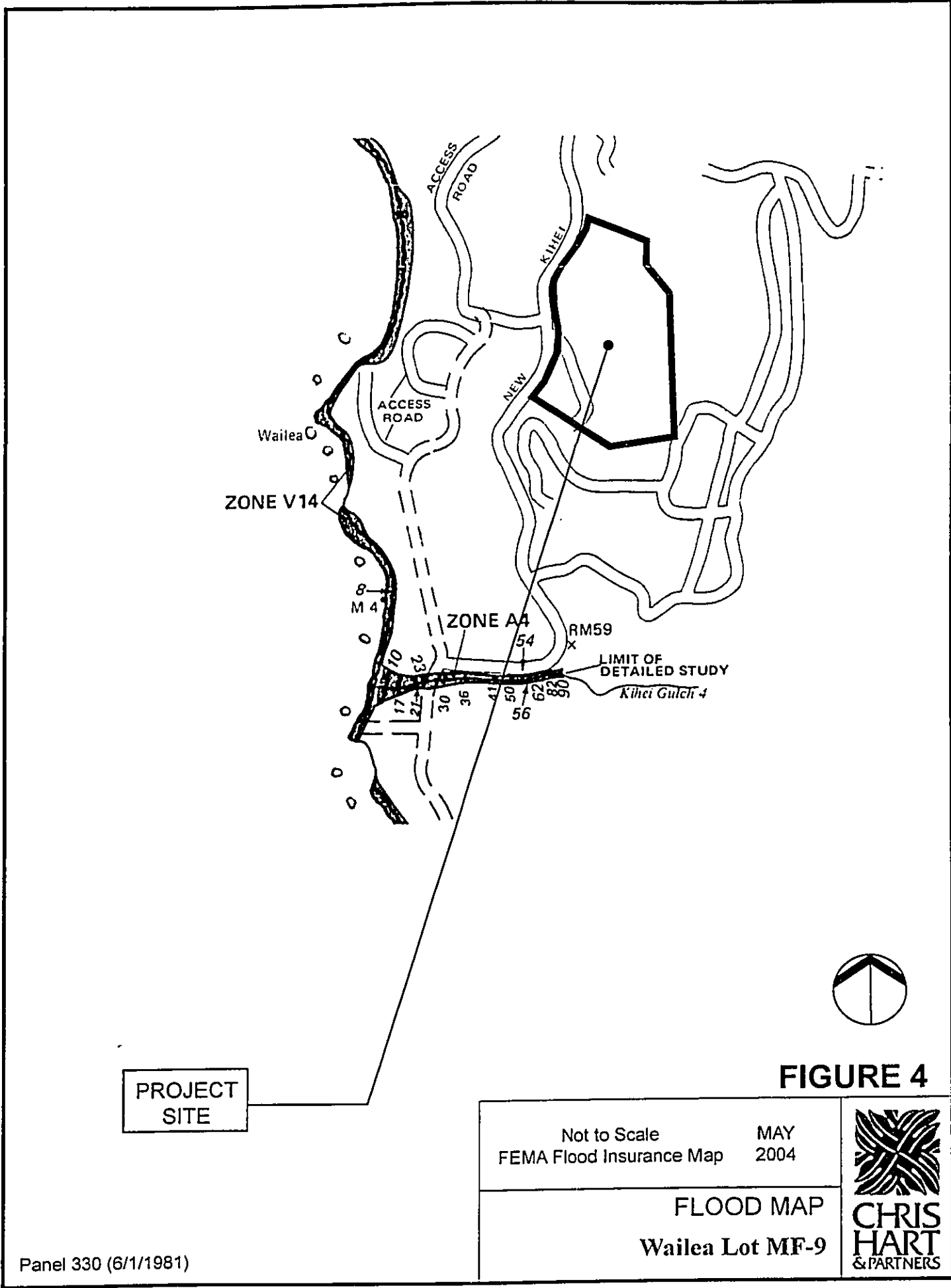



FIGURE 4

PROJECT SITE

Not to Scale FEMA Flood Insurance Map	MAY 2004	 CHRIS HART & PARTNERS
FLOOD MAP Wailea Lot MF-9		

Panel 330 (6/1/1981)

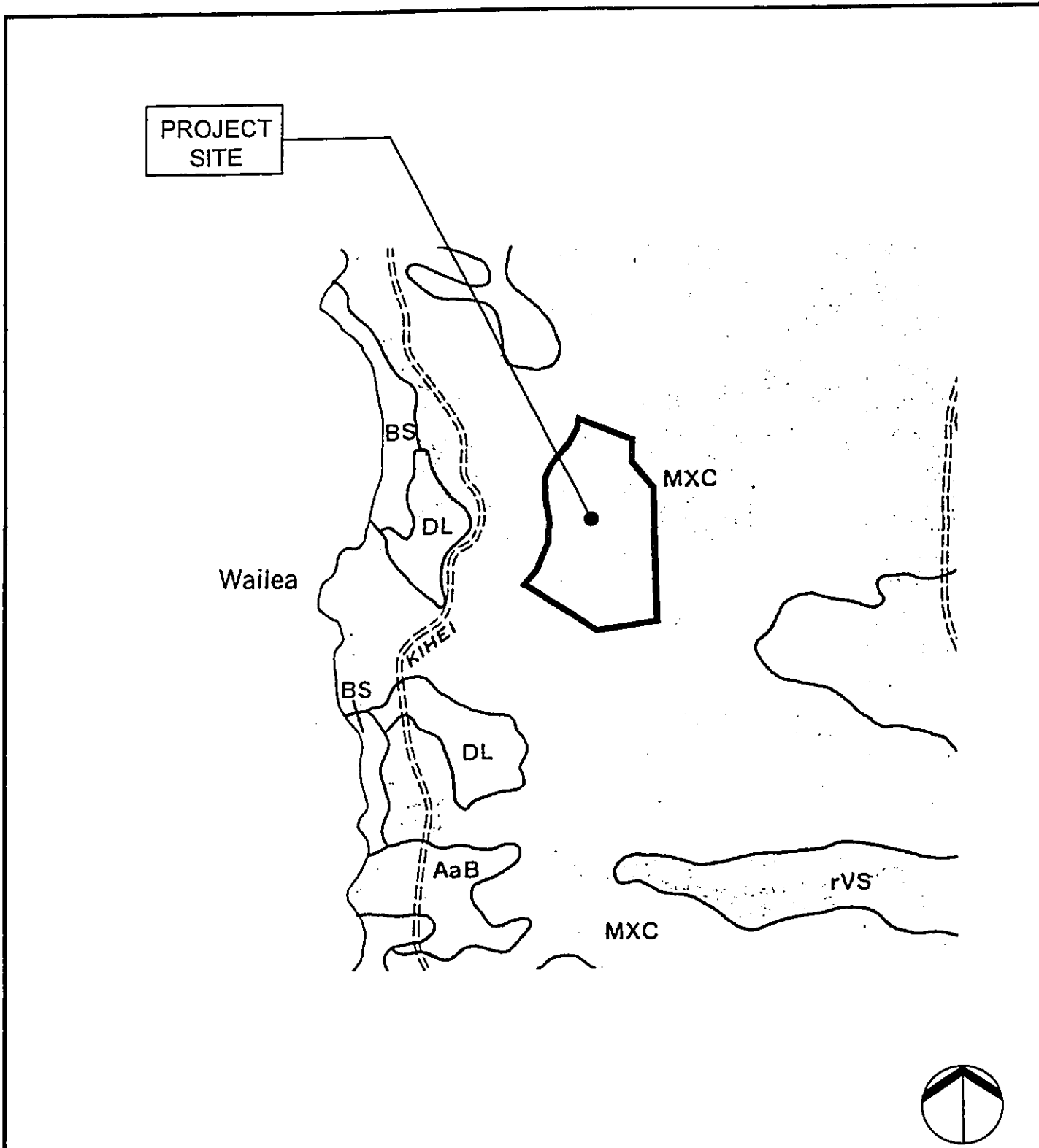

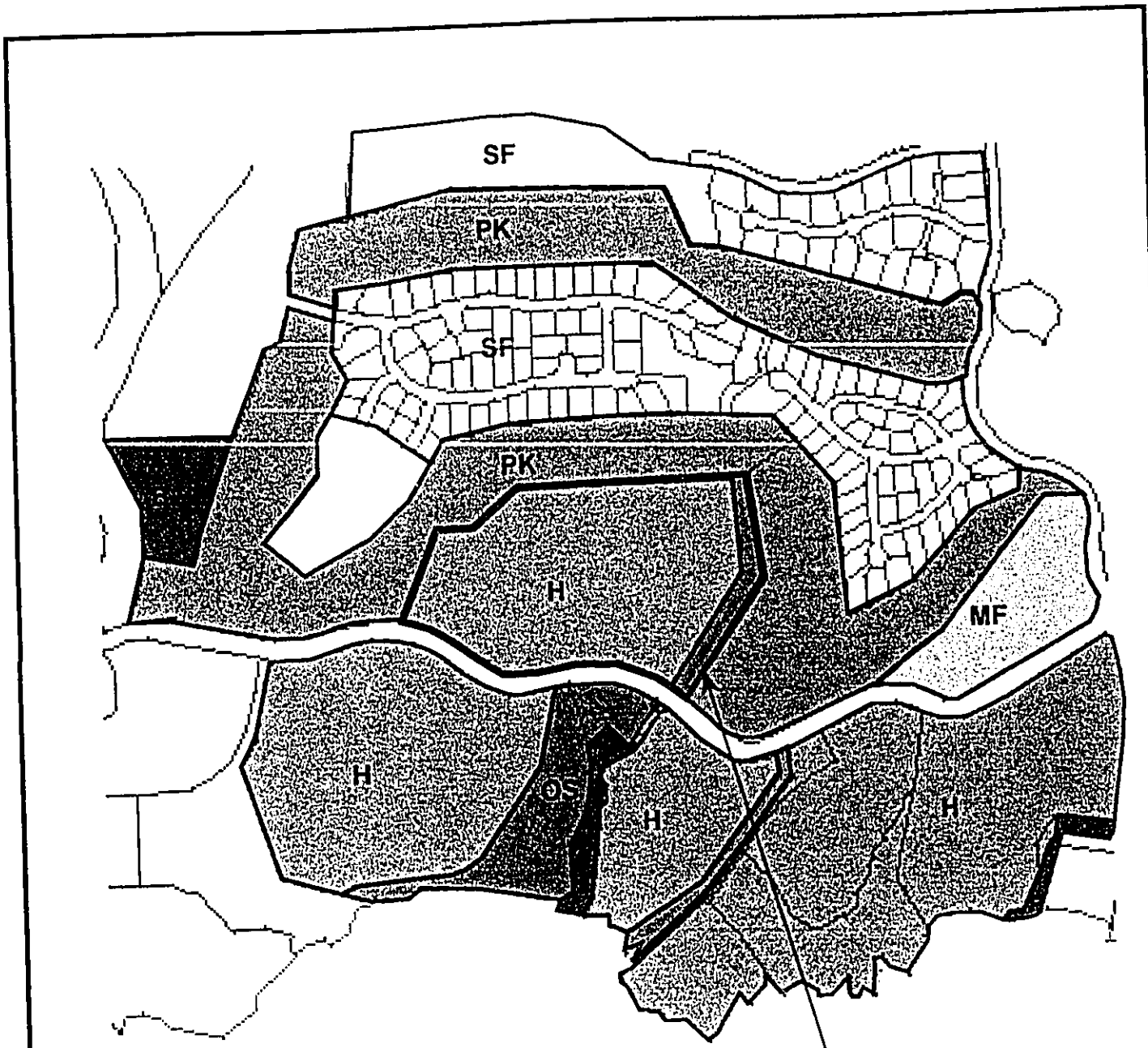
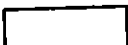
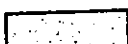

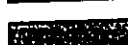

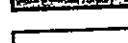
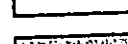



FIGURE 5

Not to Scale	MAY 2004	
<p align="center">SOILS MAP Wailea Lot MF-9</p>		

Source: State of Hawaii, *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai*, April 1972




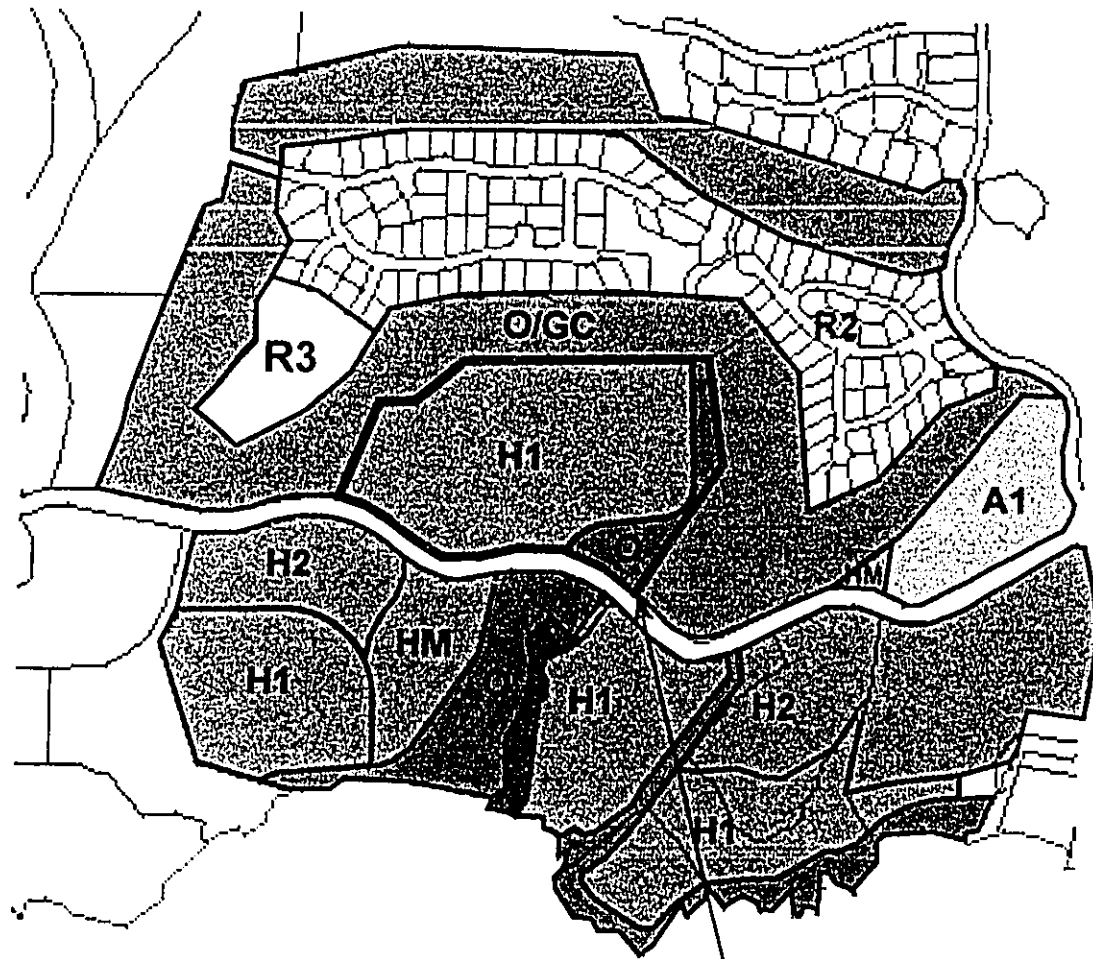
-  Single Family
-  Multi-family
-  Hotel
-  Business/Commercial
-  Open Space
-  Park
-  Park/Golf Course
-  Public








PROJECT SITE



FIGURE 6

MAY 2004	 CHRIS HART & PARTNERS
KIHEI-MAKENA COMMUNITY PLAN Wailea Parcel MF-9	




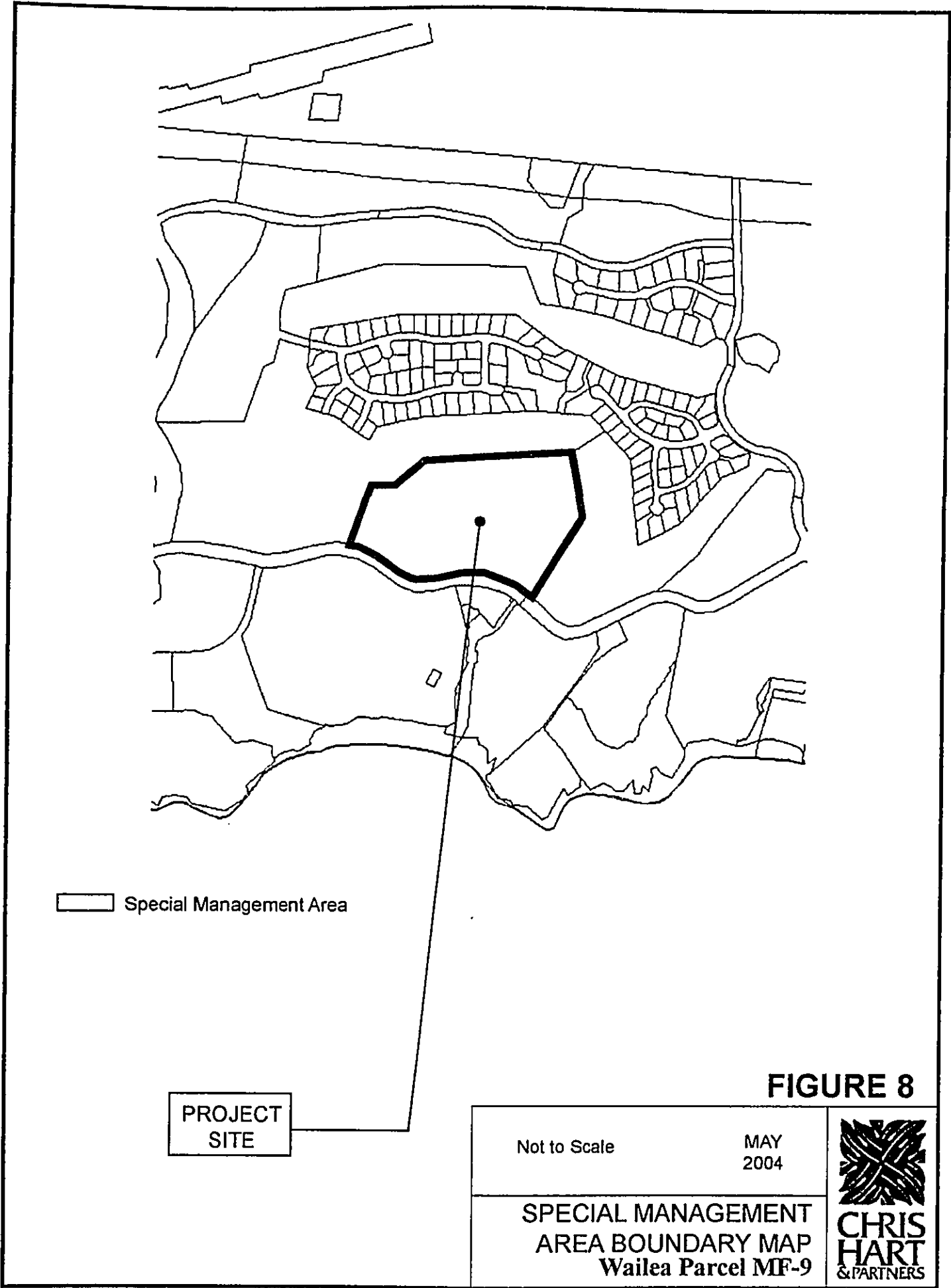
-  Single Family Residential
-  Multi-Family Residential
-  Resort Commercial
-  Hotel
-  Public/Quasi-public
-  Open
-  Open/Golf Course

PROJECT
SITE



FIGURE 7

MAY 2004	 CHRIS HART & PARTNERS
MAUI COUNTY ZONING Wailea Parcel MF-9	



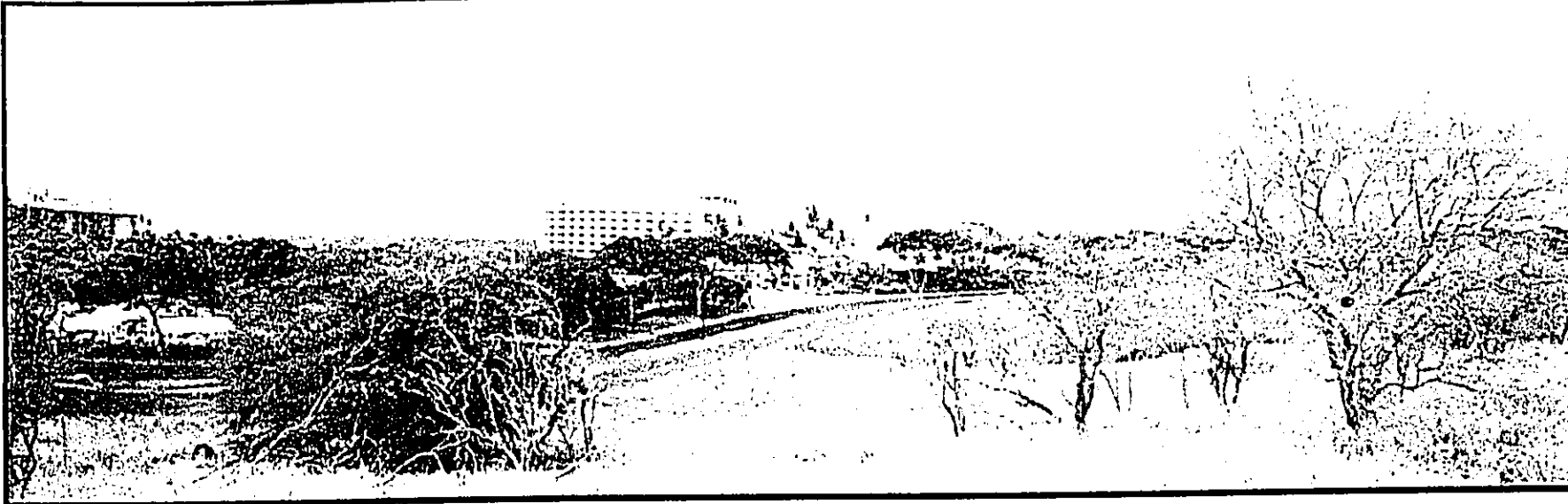


Photo 1: Looking north towards the Grand Wailea Resort.



Photo 2: Looking northwest near mauka boundary.

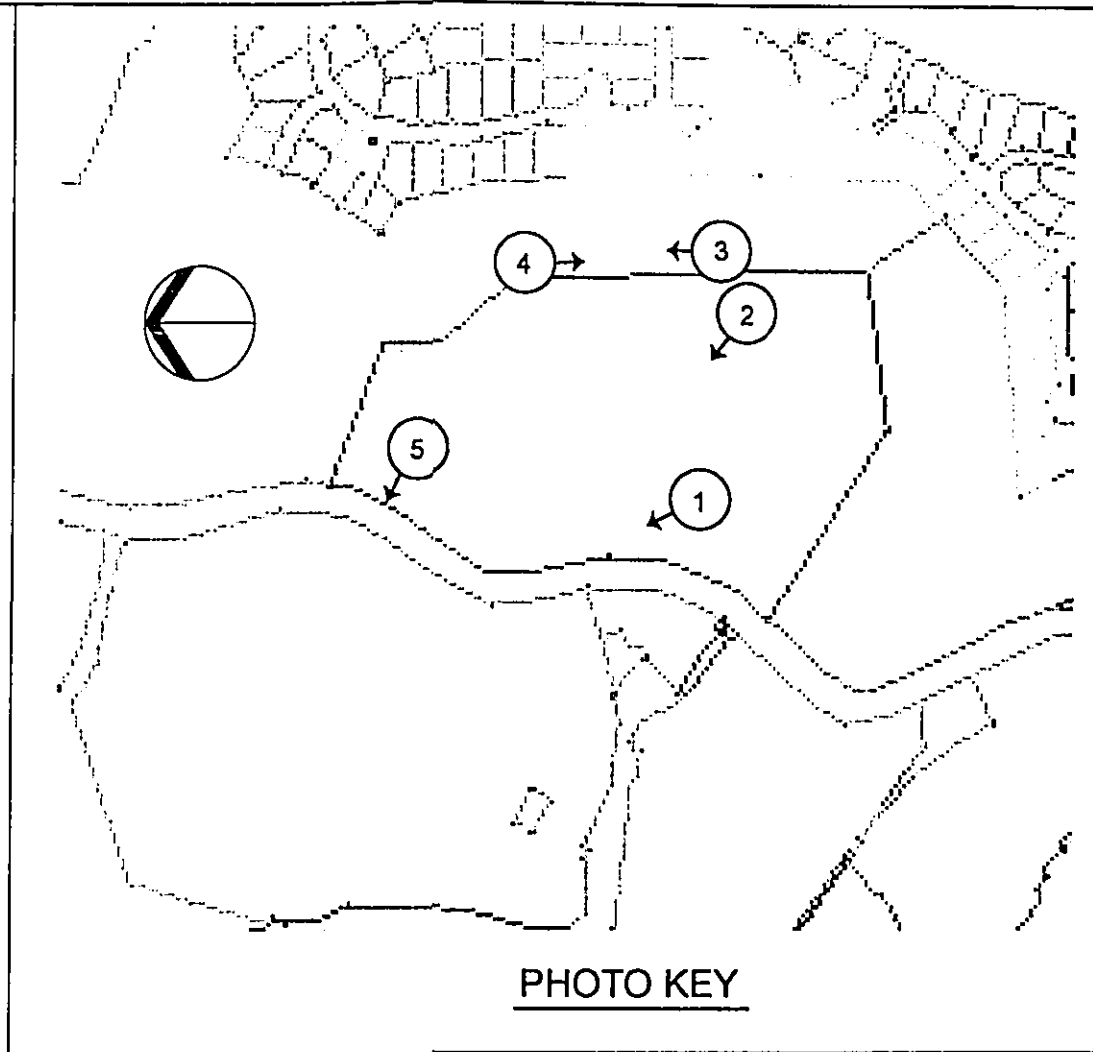


PHOTO KEY



FIGURE 9.1

MAY
2004

PHOTOGRAPHS
Wailea Parcel MF-9



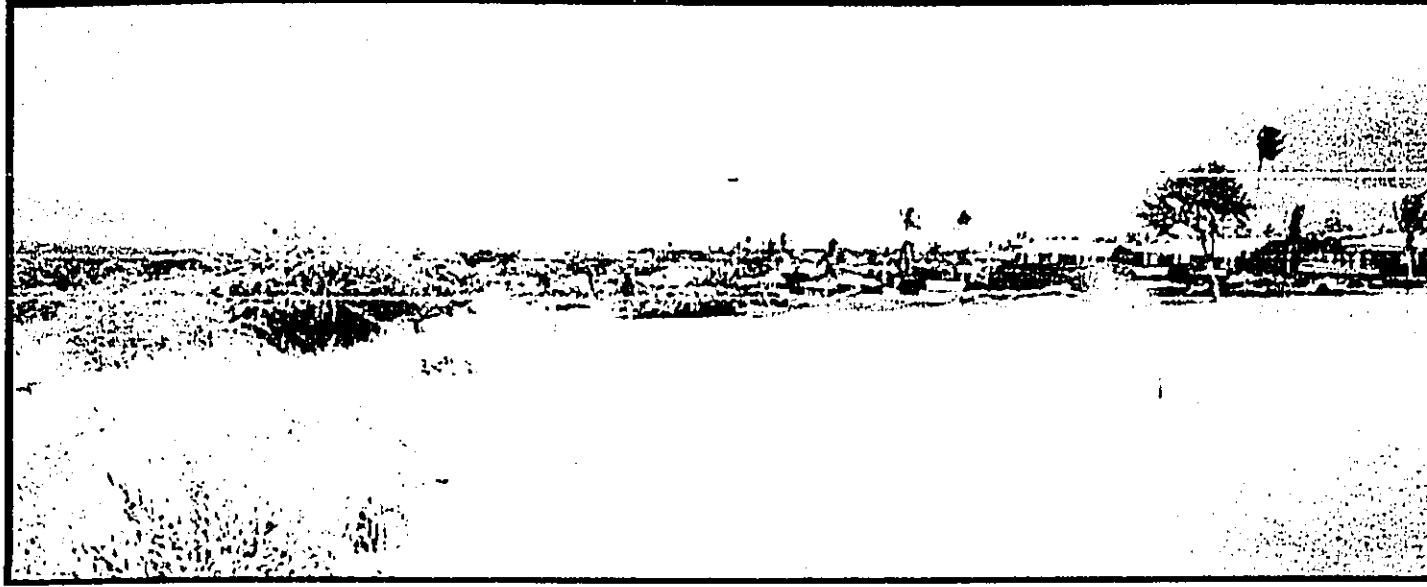


Photo 3: Looking north along mauka boundary. Golf course fairway at center with Golf Estate homes in the background.



Photo 4: Looking south along mauka boundary. Wailea Golf Vista homes in the background.

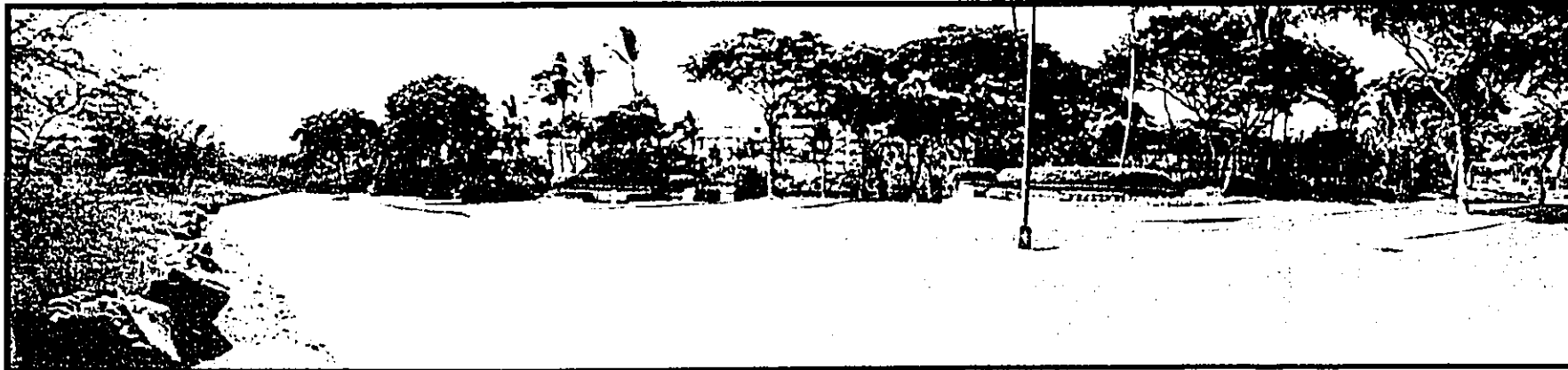


Photo 5: Looking west across Wailea Alanui towards entrance to the Grand Wailea Resort.



Estate homes in the background.

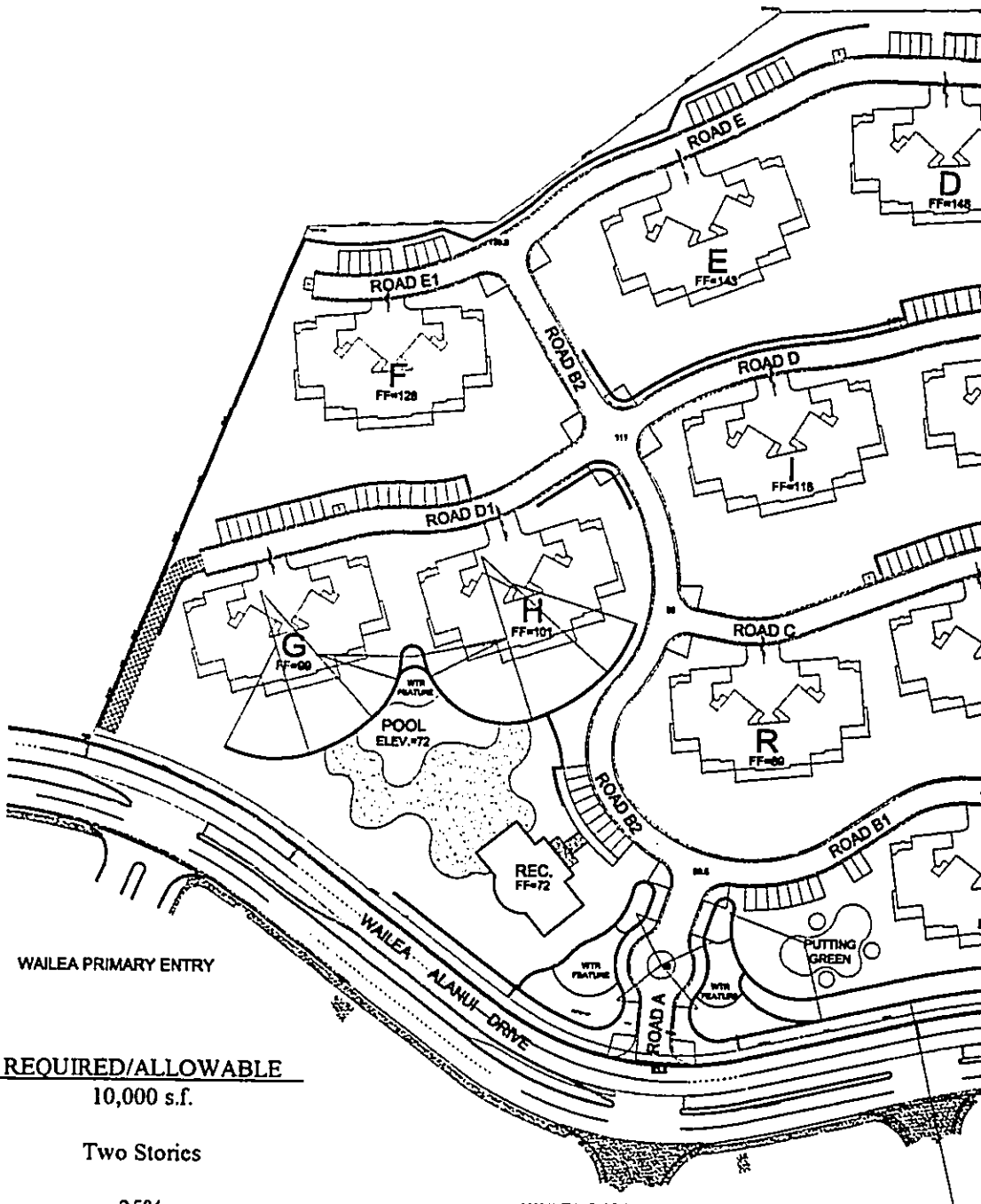


FIGURE 9.2

MAY
2004

PHOTOGRAPHS
Wailea Parcel MF-9





PROJECT STATISTICS

	<u>PROVIDED</u>	<u>REQUIRED/ALLOWABLE</u>
Total Lot Area	30.167 ac. (1,314,074.52 s.f.)	10,000 s.f.
Building Heights	Two Stories (34 feet)	Two Stories
Lot Coverage	277,735 s.f. (21%)	25%
Floor Area Ratio	416,840 s.f. (31%)	50%
Setbacks:		
Front & rear yards	50-120 feet	½ bldg. height (min. 15 feet)
Side yards	45-140 feet	1 & 2 stories 10 feet
Total Parking Spaces:		
Garages	309	240
Trellised/Carports	120	
Open Stalls	180	
	9	
Common protected Open Space	275,925 s.f. (21%)	20%
Other Open Space	543,543 s.f. (41%)	

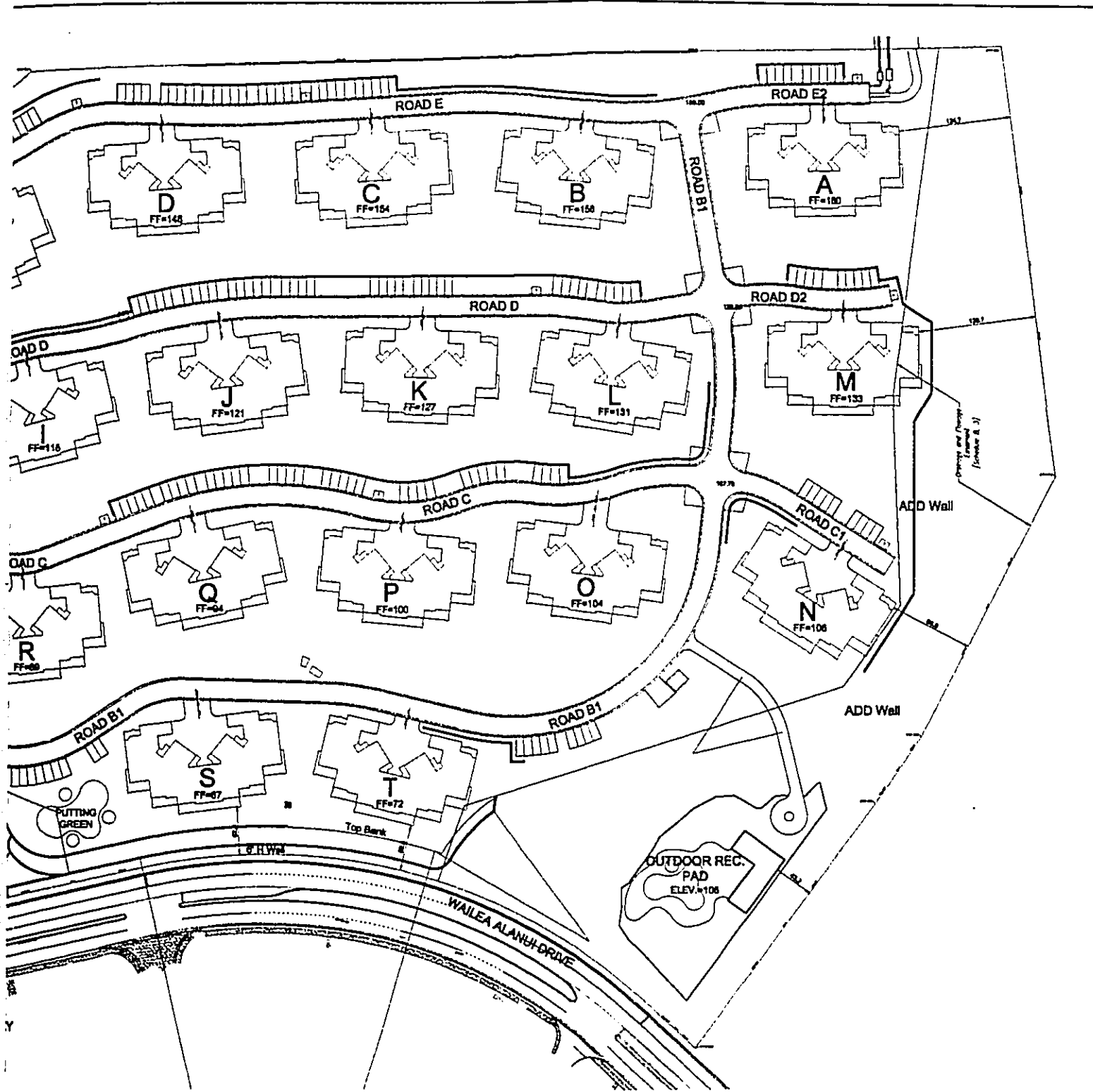



FIGURE 10.1

<p>SEPTEMBER 2004</p>	
<p>PROJECT DATA Wailea Parcel MF-9</p>	
<p>CHRIS HART & PARTNERS</p>	

CORRECTION

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

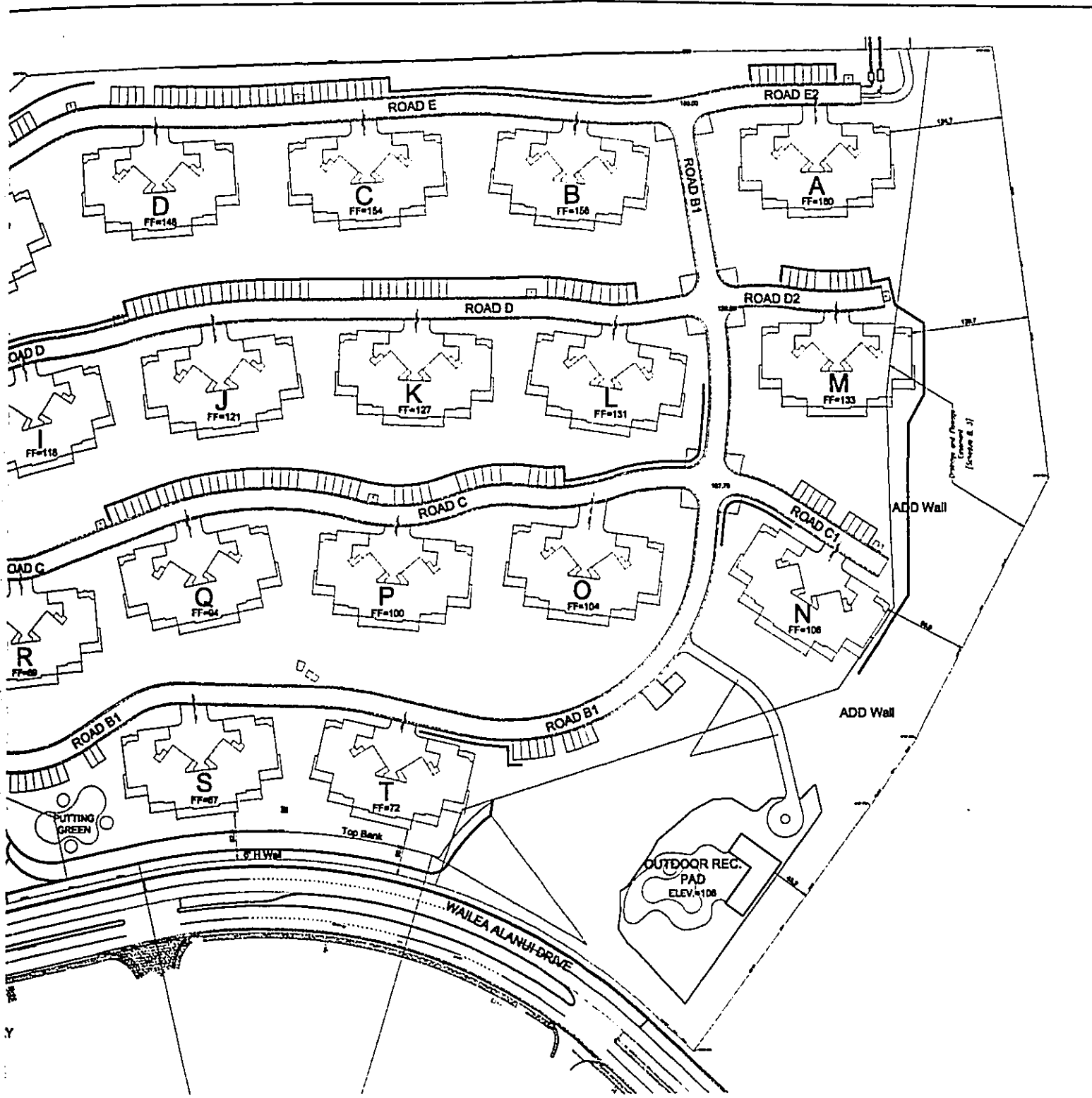

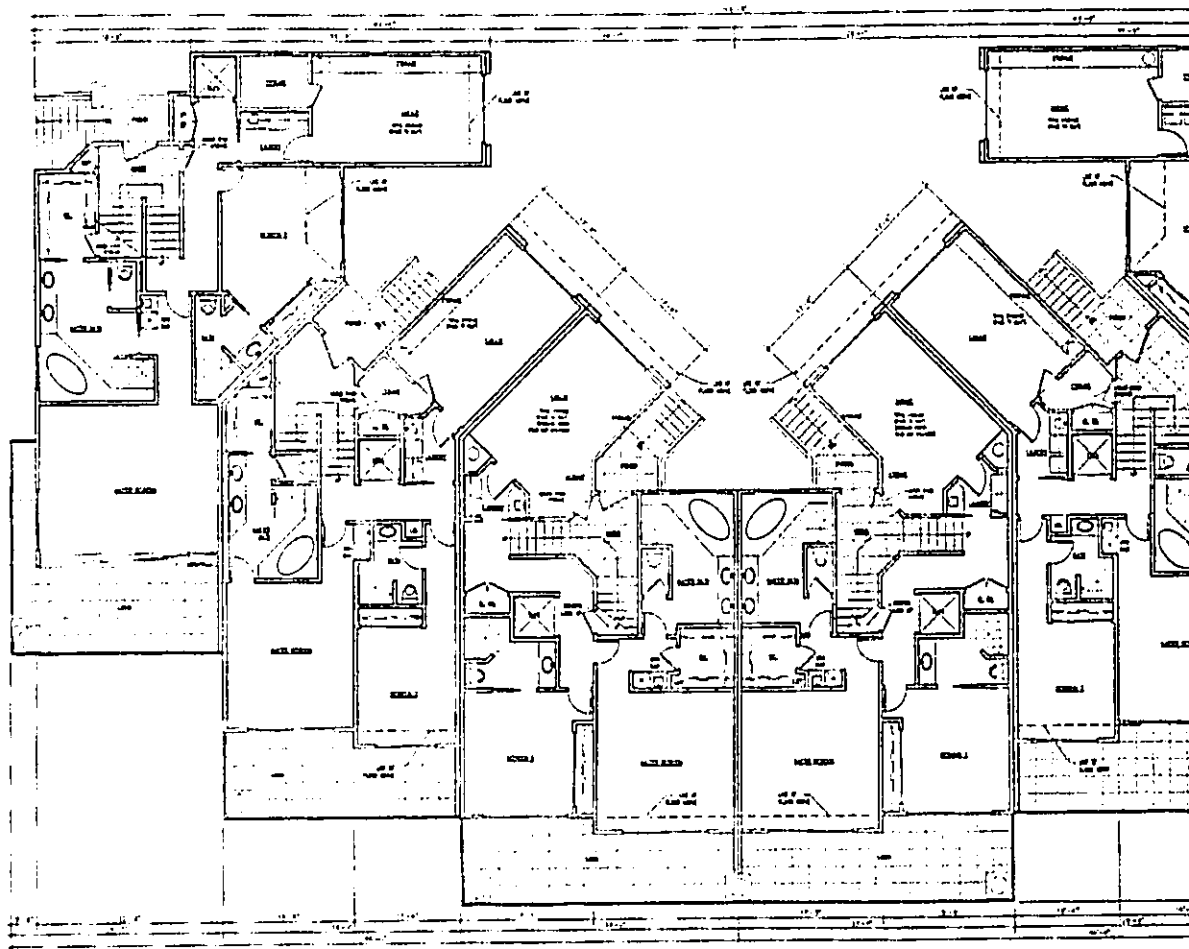
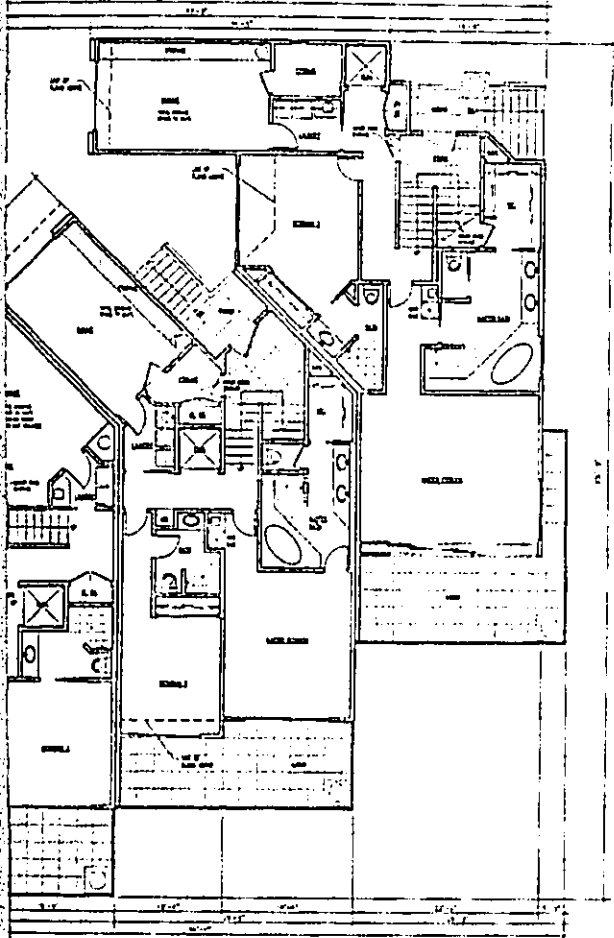


FIGURE 10.1

<p>SEPTEMBER 2004</p>	
<p>PROJECT DATA Wailea Parcel MF-9</p>	
<p>CHRIS HART & PARTNERS</p>	





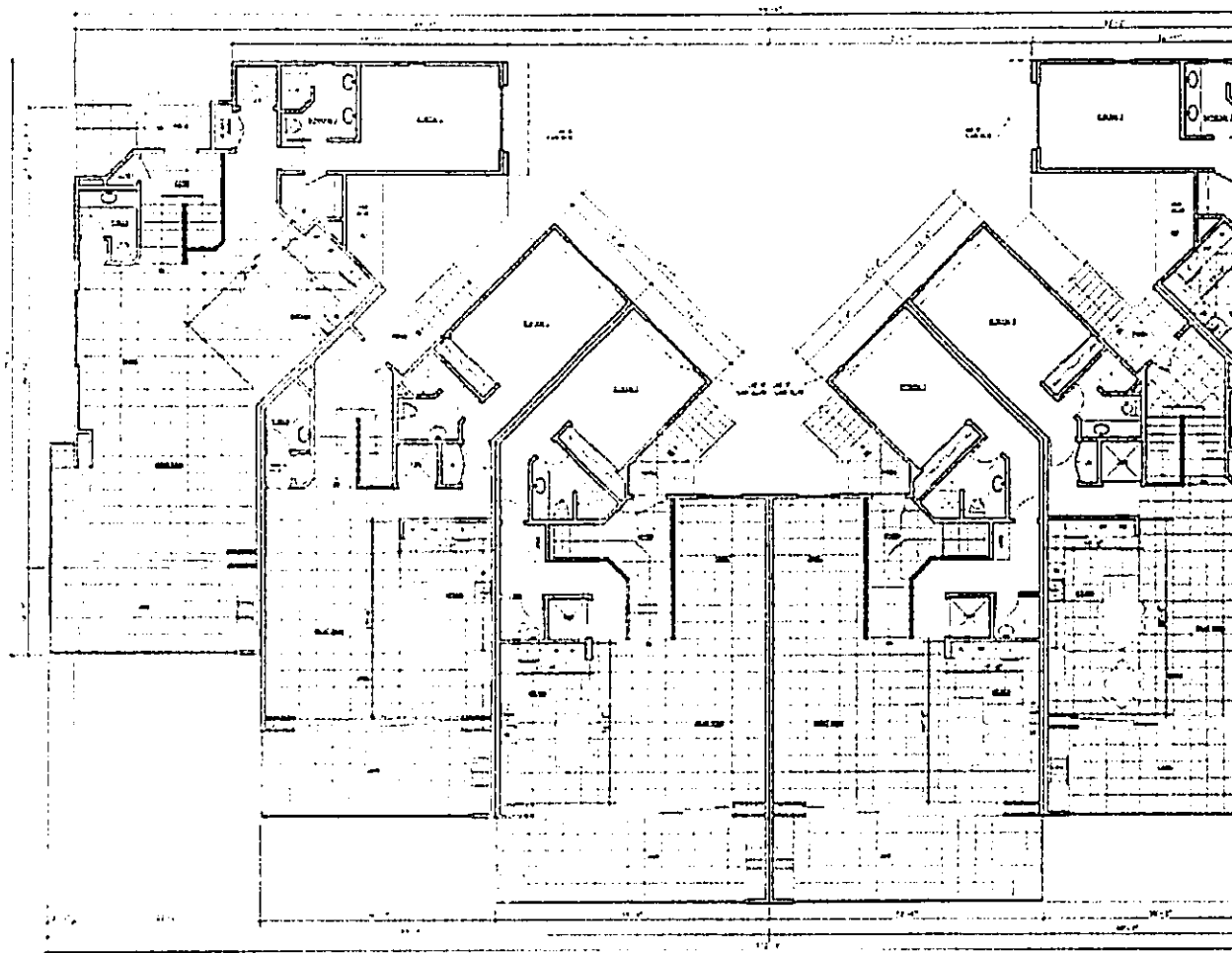
FIRST FLOOR PLAN
1/8"=1'-0"



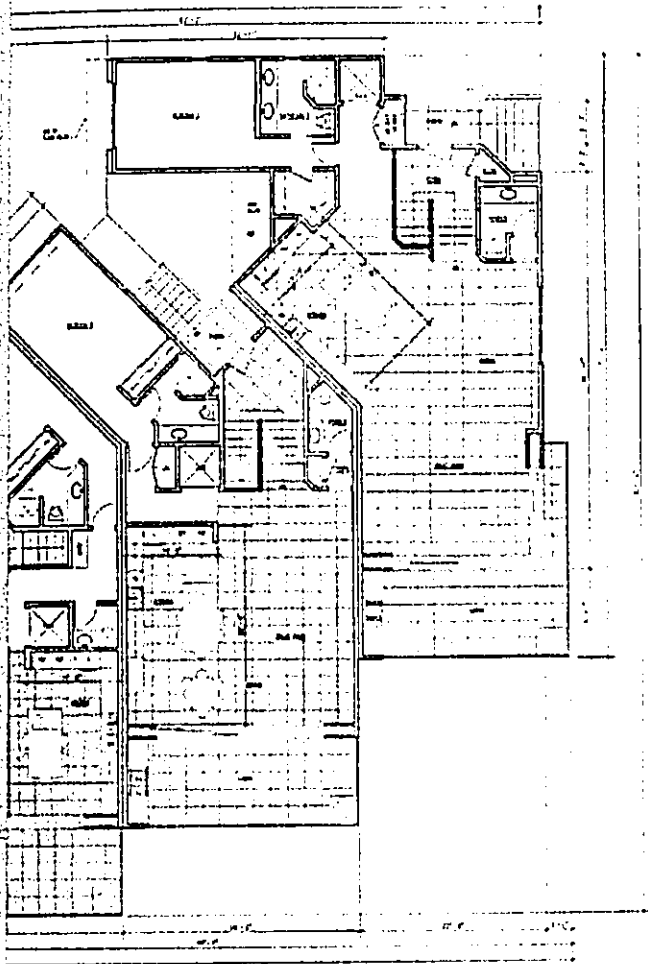
FIGURE 10.2

CHRIS
HART
& PARTNERS

<p>ARCHWEST DEVELOPMENTS INC. 2716 OCEAN PARK BLVD., SUITE 2027, SANTA MONICA, CA 90405 TELEPHONE: (310) 399-4116 FAX: (310) 392-2117</p>	
<p>PROJECT: WALEA PARCEL MF-9</p>	<p>PROJECT OWNER: WALEA MF 9 ASSOCIATES LLC 1835 MAIN STREET, SUITE 104 WAILUKU, HAWAII 96793 TEL: (808) 242-8079</p>
<p>FIRST FLOOR PLAN</p>	
Date	
Scale 1/8" = 1'-0"	
Drawn	
Check	
Sheet	A-1
Of Sheets	



SECO



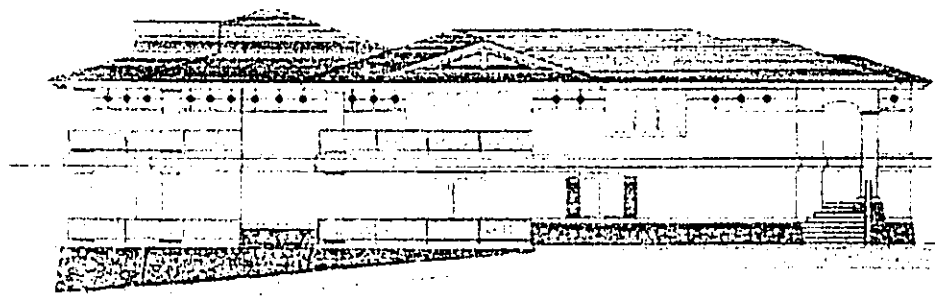
SECOND FLOOR PLAN
1/8"=1'-0"



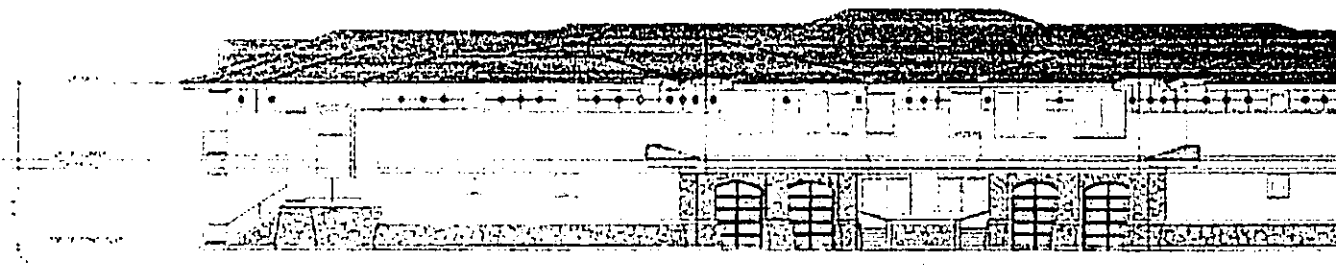
FIGURE 10.3

**CHRIS
HART
& PARTNERS**

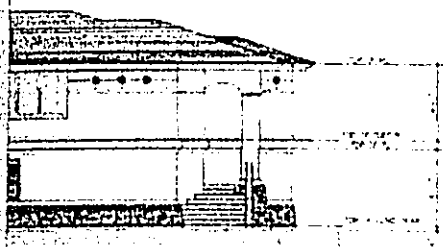
<p>ARCHWEST DEVELOPMENTS INC. 2716 OCEAN PARK BLVD., SUITE 2027, SANTA MONICA, CA 90405 TELEPHONE (310) 392-4118 FAX (310) 392-2117</p>	
<p>PROJECT: WANLEA PARCEL MF-9</p>	<p>PROJECT OWNER: WANLEA INF 9 ASSOCIATES LLC 1885 MAUI STREET, SUITE 104 WAILUKU, HAWAII 96793 TEL.: (808) 242-8373</p>
<p>SECOND FLOOR PLAN</p>	
<p>Scale: 1/8" = 1'-0"</p>	<p>Sheet: A-2</p>



SIDE E

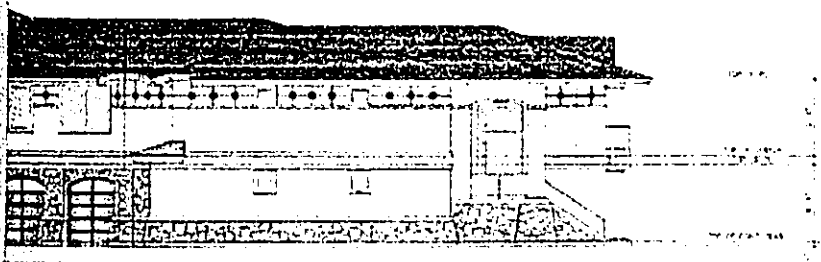


FRONT ELEVATION
1/8"=1'-0"



SIDE ELEVATION

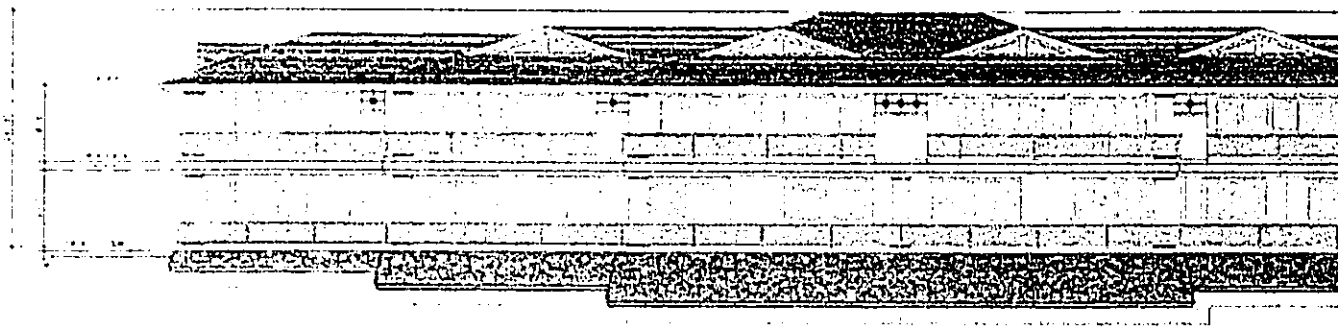
1/4"=1'-0"

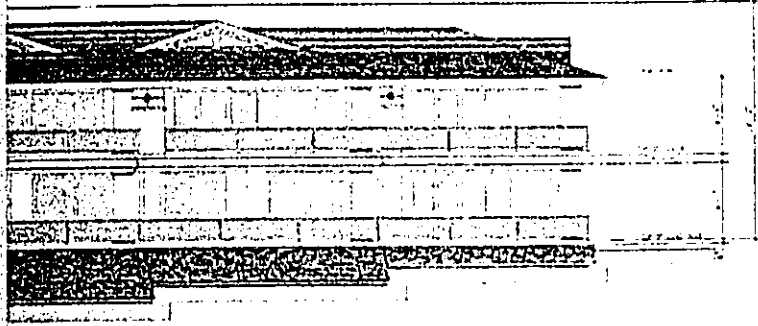


**CHRIS
HART
& PARTNERS**

FIGURE 10.4

ELEVATIONS	PROJECT OWNER WAIIEA MF 9 ASSOCIATES LLC 1885 MAIN STREET, SUITE 104 WAILUKU, HAWAII 96783 TEL. (808) 242-8079	PROJECT WAIIEA PARCEL MF-9	ARCHWEST DEVELOPMENTS INC. 2716 OCEAN PARK BLVD., SUITE 2027, SAJITA MICHICA, CA 93026 TELEPHONE: (310) 359-4116 FAX: (310) 302-2117	DATE	BY
	DATE	DATE	DATE	DATE	DATE
A-4					





REAR ELEVATION

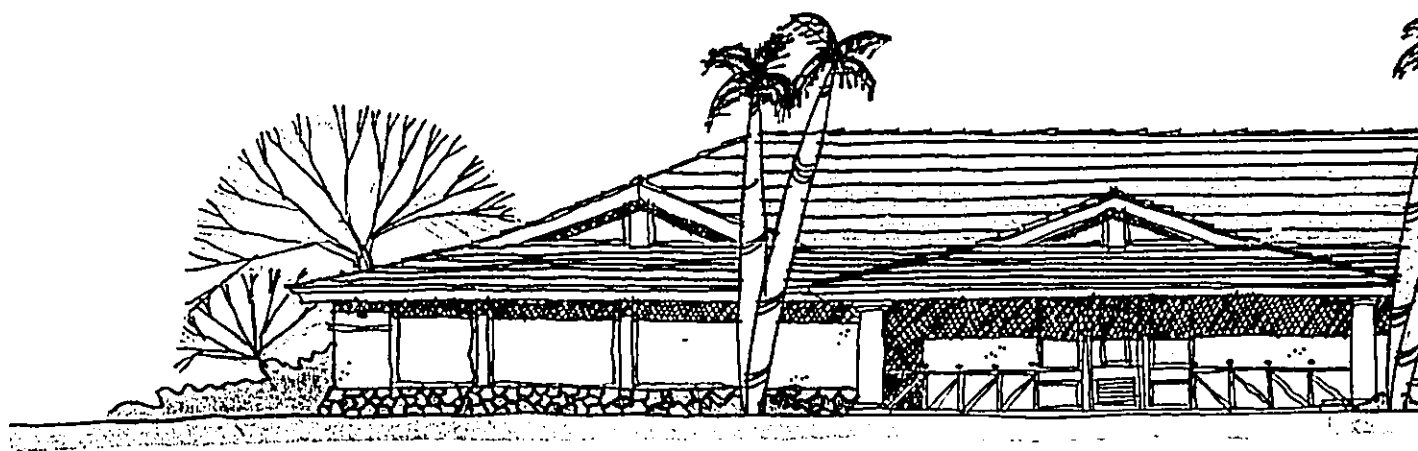
1/8"=1'-0"



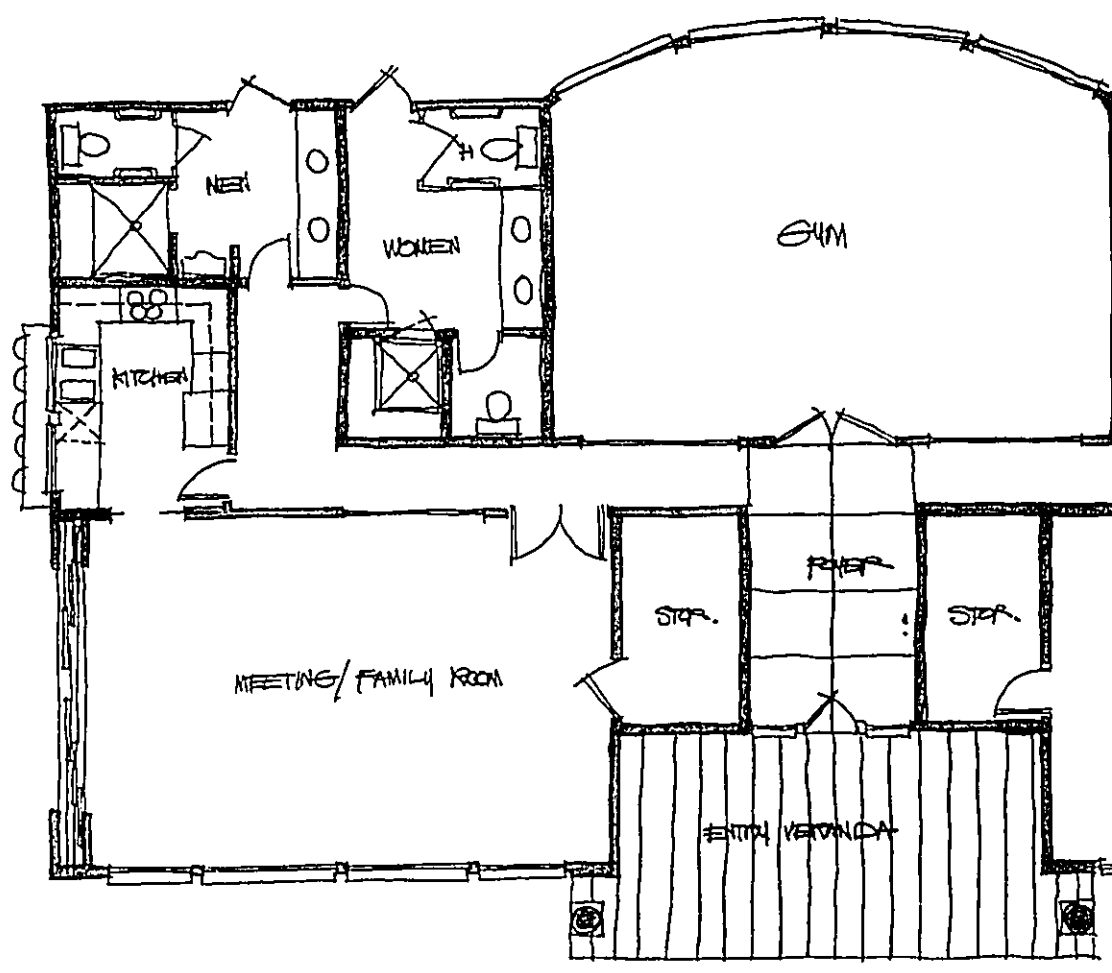
CHRIS HART
& PARTNERS

FIGURE 10.5

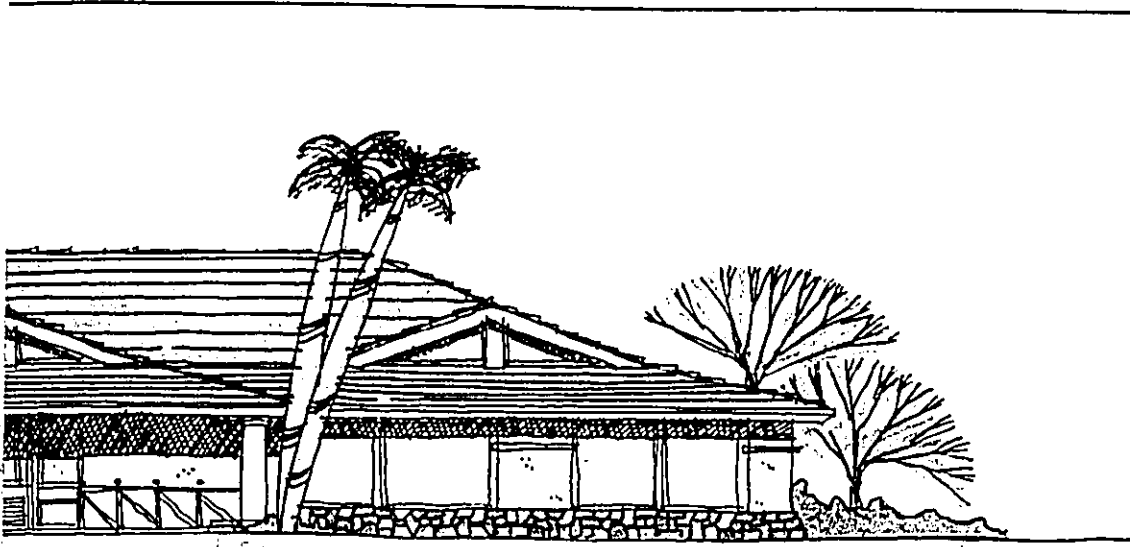
ARCHWEST DEVELOPMENTS INC. 2719 OCEAN PARK BLVD., SUITE 2027, SAJATA MONICA, CA 90405 TELEPHONE: (310) 559-4116 FAX: (310) 352-2117	
PROJECT:	WAILEA PARCEL MF-9
PROJECT OWNER:	WAILEA MF-9 ASSOCIATES LLC 1855 KAHU STREET, SUITE 104 WAIALOANU HAWAII 96793 TEL: (808) 242-9375
ELEVATIONS	
Date	
Scale	1/8" = 1'-0"
Drawn	
Job	
Sheet	A-5
of Sheets	



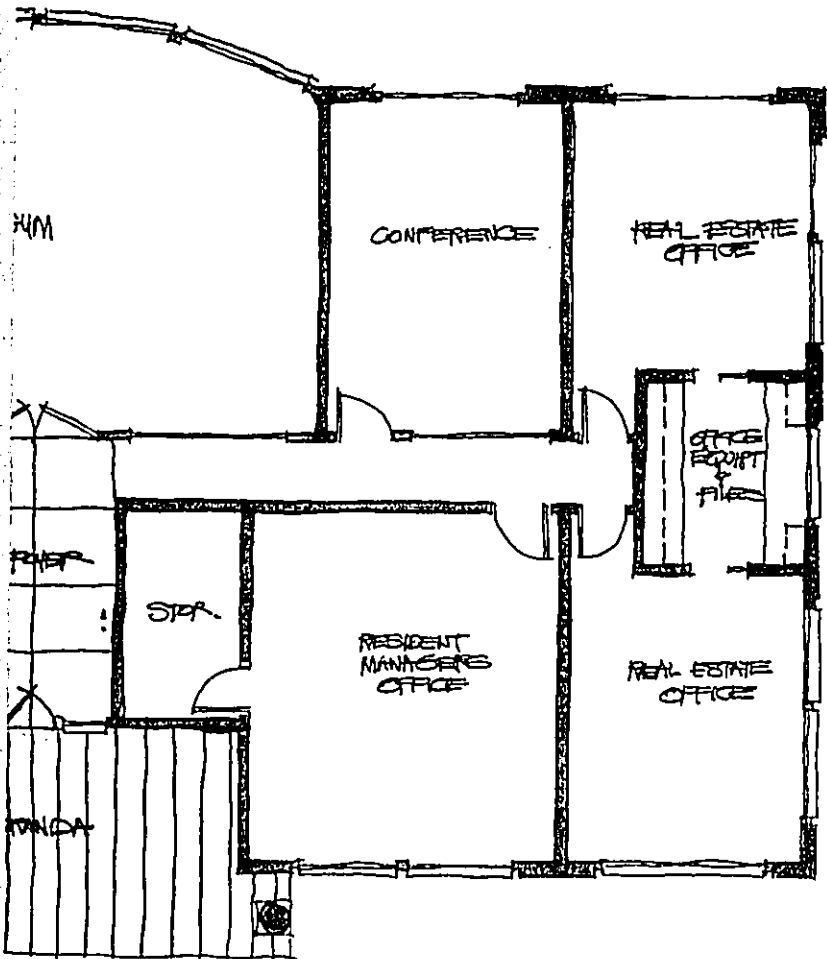
FRONT ELEVATION



FLOOR PLAN



ELEVATION



PLAN

6400sf Total

3/16" = 1'-0" SCALE

COMMUNITY BUILDING

WAILEA PARCEL MF-9

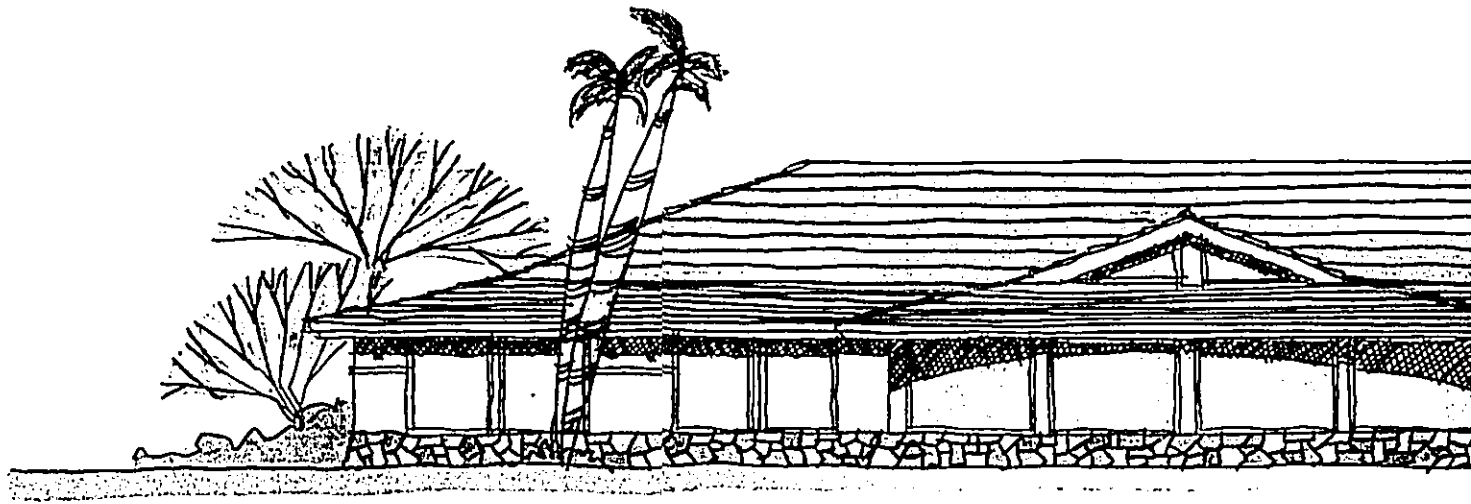
REVISIONS	BY

ARCHITECT:
ARCHWEST DEVELOPMENTS, INC.
 2718 OCEAN PARK BLVD., SUITE 2027, SANTA MONICA, CA 90405
 TELEPHONE: (310) 399-4116 FAX: (310) 392-2117

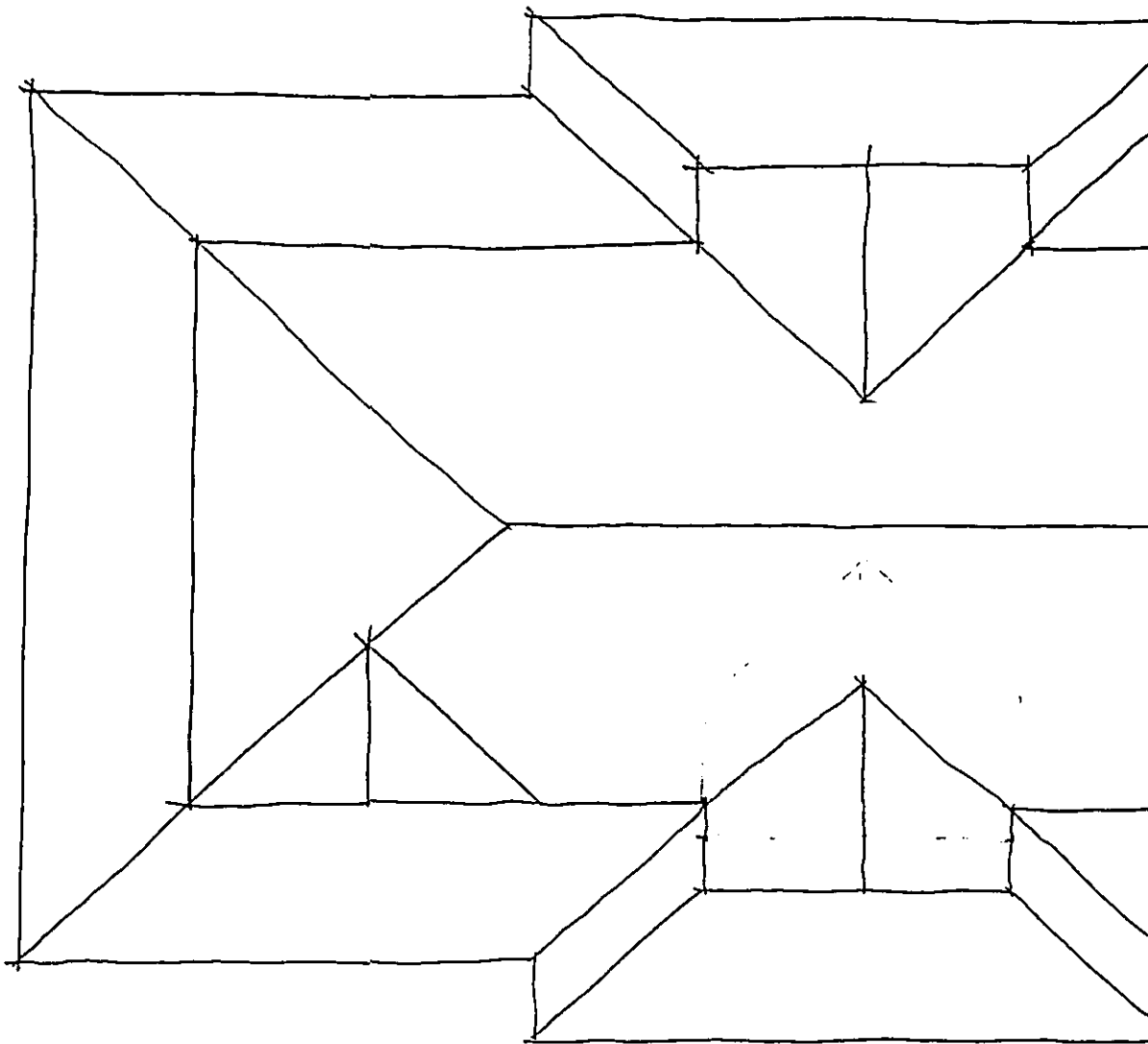
Date	
Scale	
Drawn	
Job	
Sheet	
Of	
Sheet	



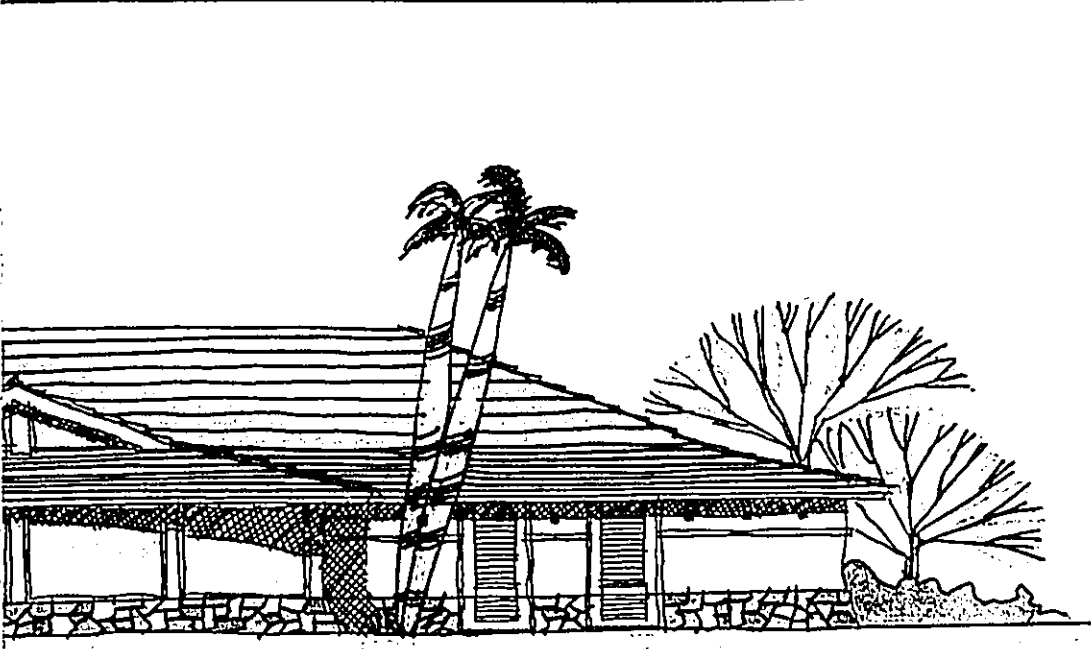
FIGURE 10.6



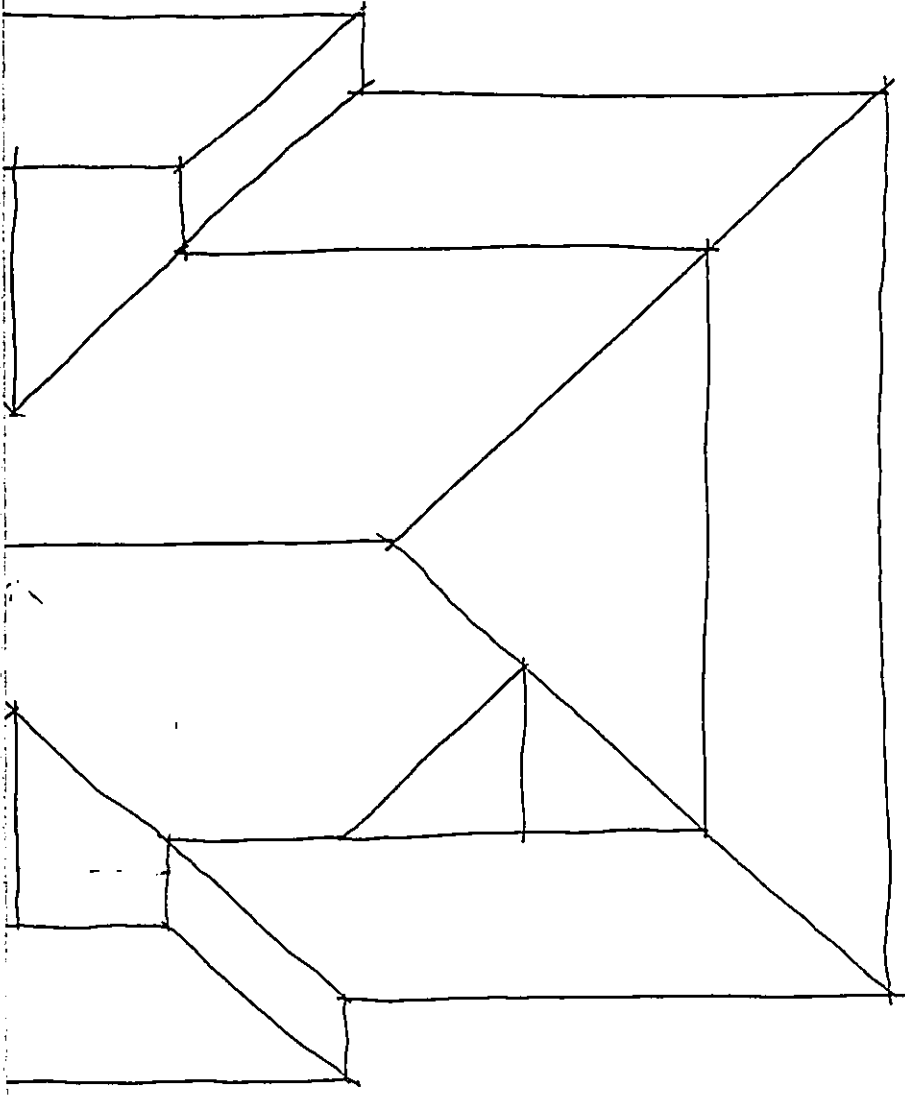
REAR ELEVATION



ROOF PLAN



ELEVATION



PLAN

COMMUNITY BUILDING

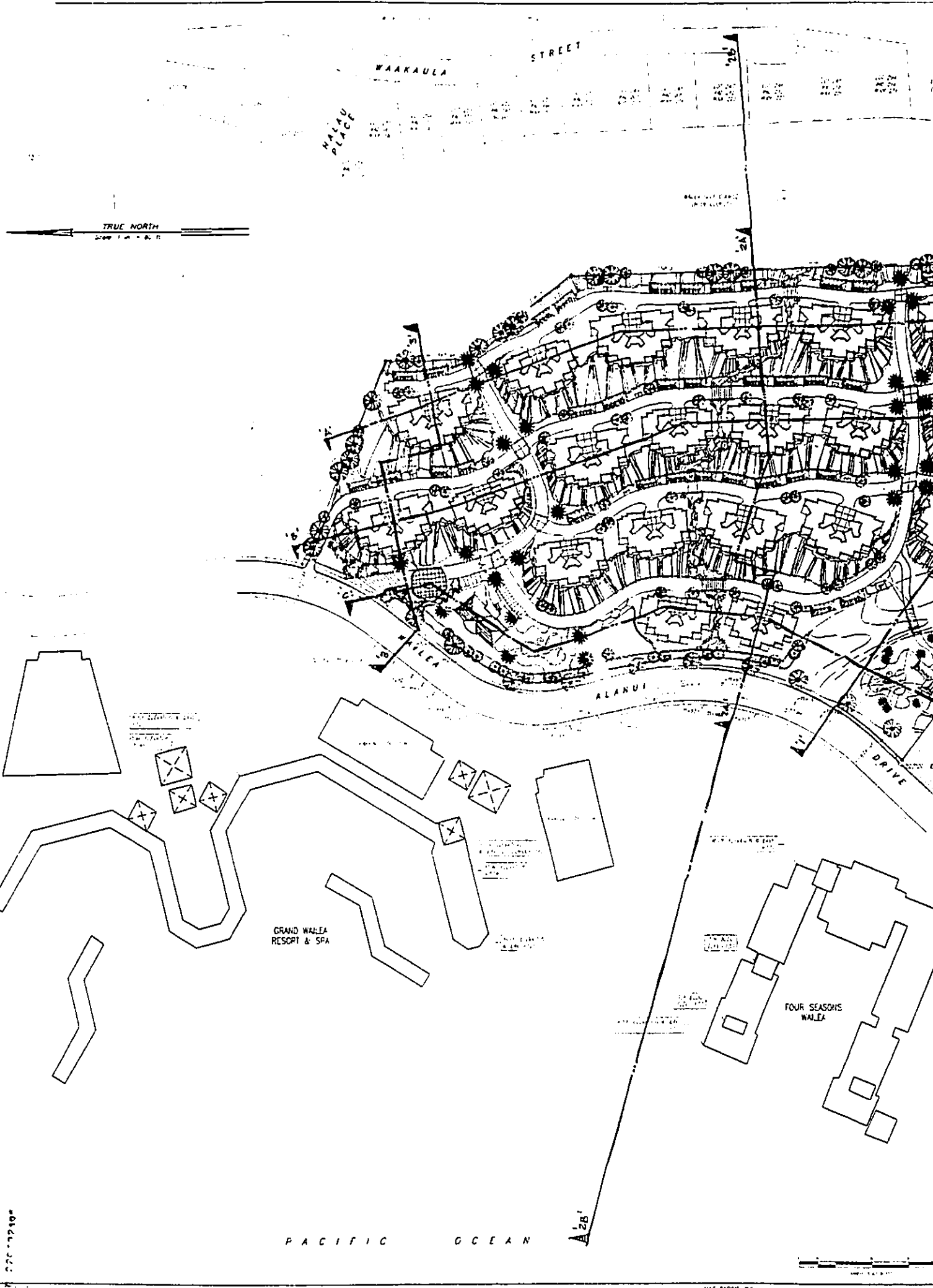
3/16" = 1'-0" SCALE

WAILEA PARCEL MF-9



FIGURE 10.7

DATE																					
REVISIONS																					BY
ARCHITECT: ARCHWEST DEVELOPMENTS, INC. 2716 OCEAN PARK BLVD., SUITE 2027, SANTA MONICA, CA 90405 TELEPHONE: (310) 399-4116 FAX: (310) 392-2117																					
DATE																					
SCALE																					
DRAWN																					
JOB																					
SHEET																					



TRUE NORTH
 1" = 100'

GRAND WALEA
 RESORT & SPA

FOUR SEASONS
 WALEA

PACIFIC OCEAN

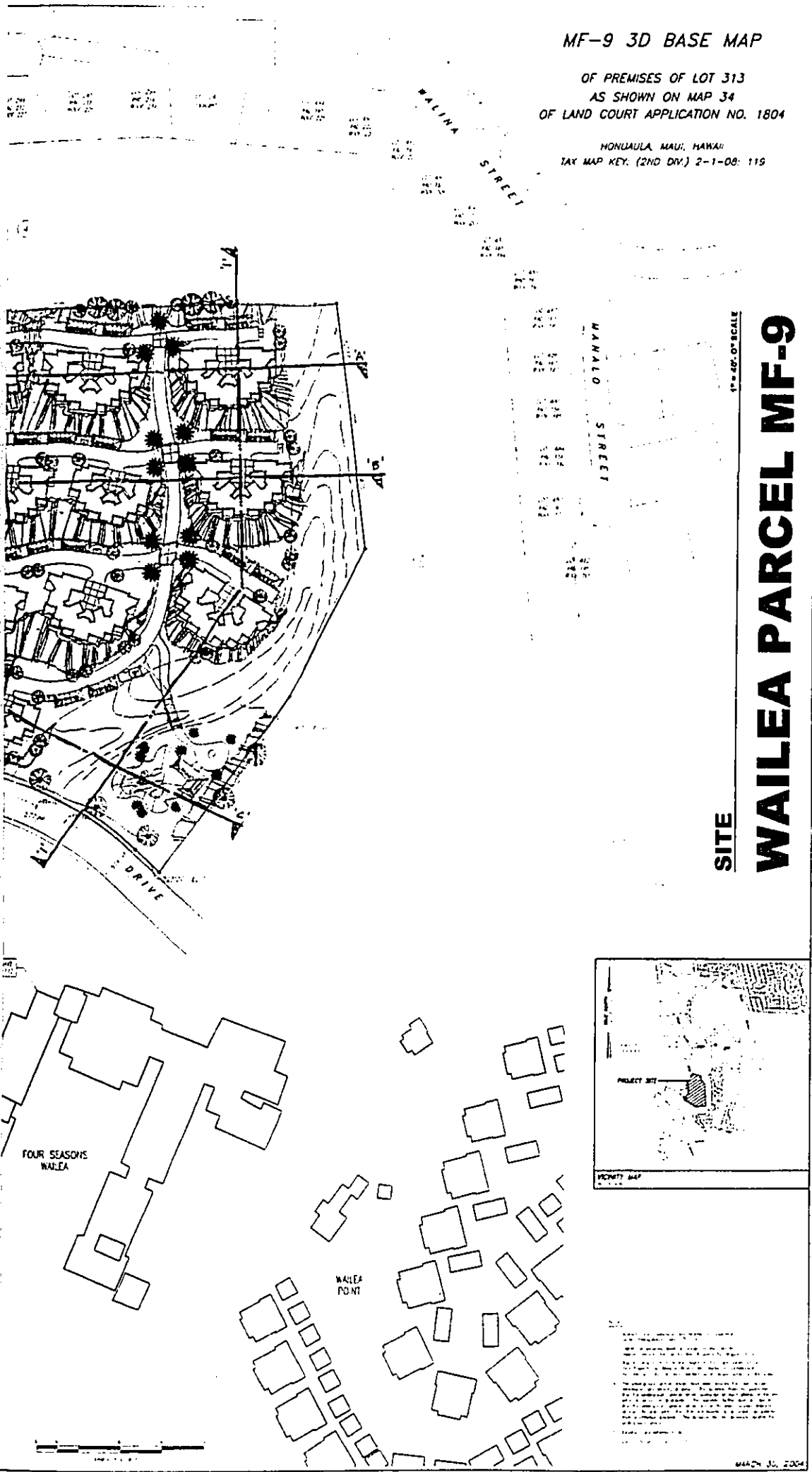
270-7790*

WAT PACE, INC.

MF-9 3D BASE MAP

OF PREMISES OF LOT 313
AS SHOWN ON MAP 34
OF LAND COURT APPLICATION NO. 1804

HONOLULU, MAUI, HAWAII
TAX MAP KEY: (2ND DIV.) 2-1-08: 119

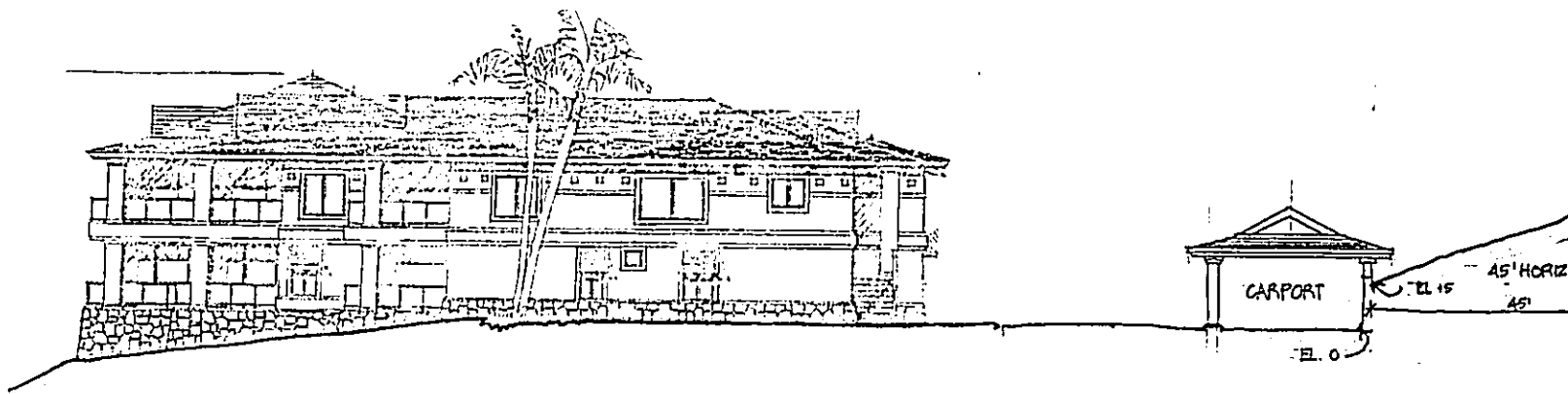


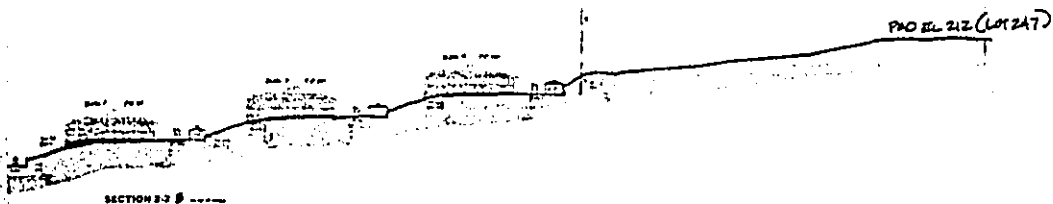
SITE
WAILEA PARCEL MF-9

FIGURE 11.1



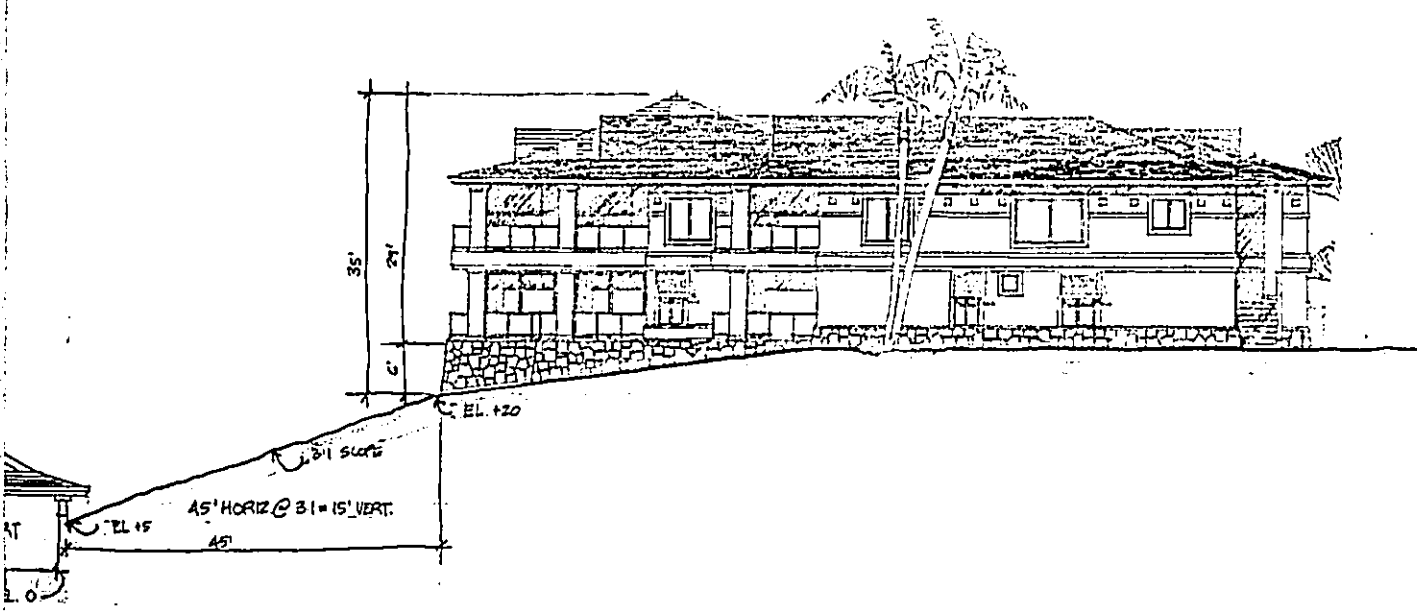
CHRIS
HART
& PARTNERS





SITE SECTIONS

1" = 80'-0" SCALE



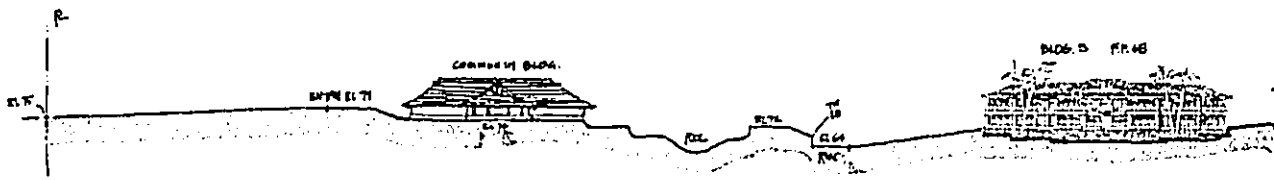
TYPICAL SITE SECTIONS

1/8" = 1'-0" SCALE

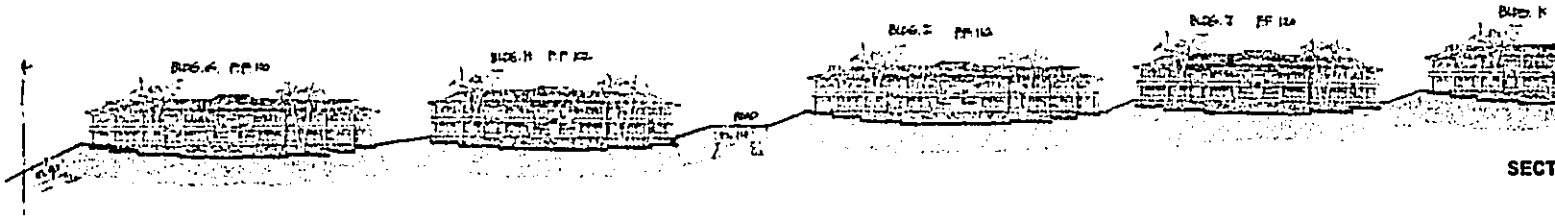


FIGURE 11.2

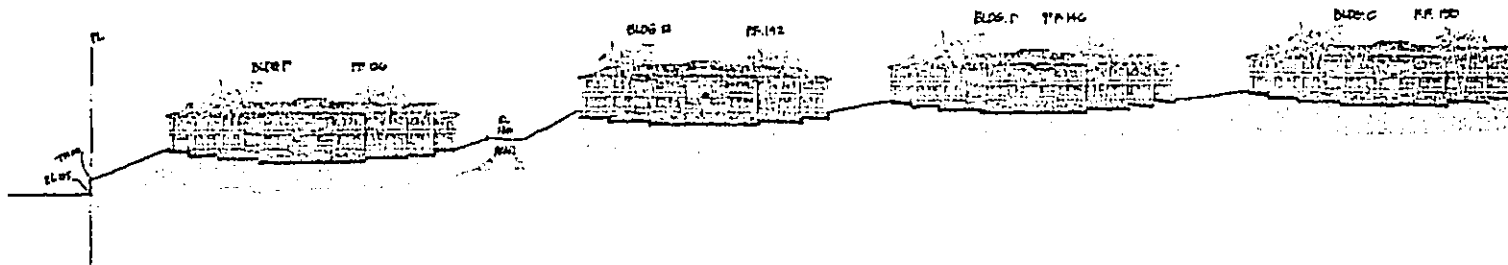
WAILEA PARCEL MF-9

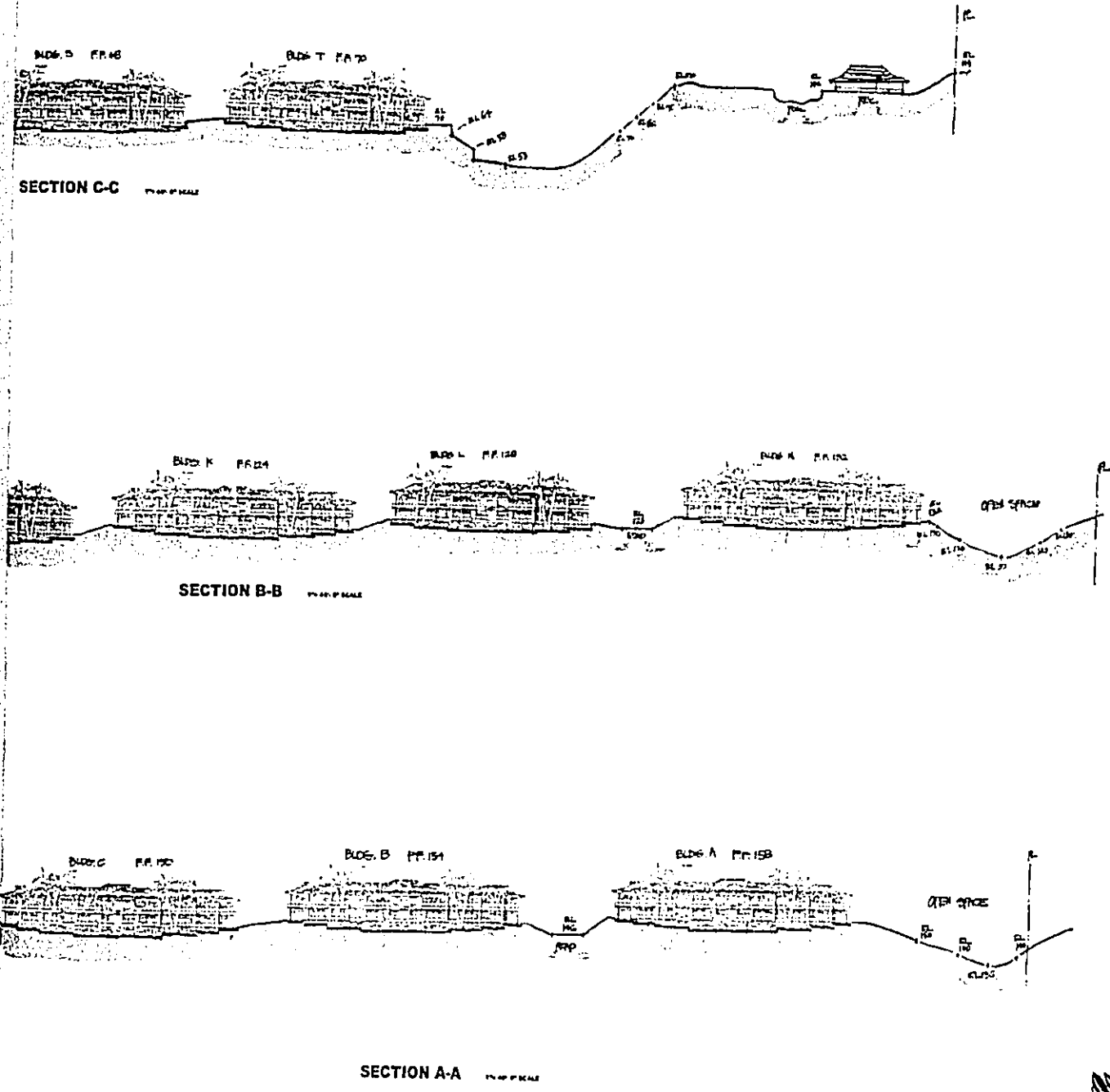


SECTION C-C



SECTION D-D





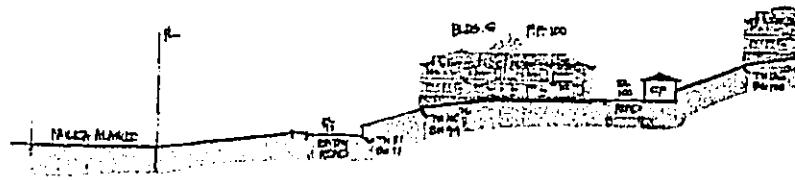
1" = 40' SCALE

SITE SECTIONS

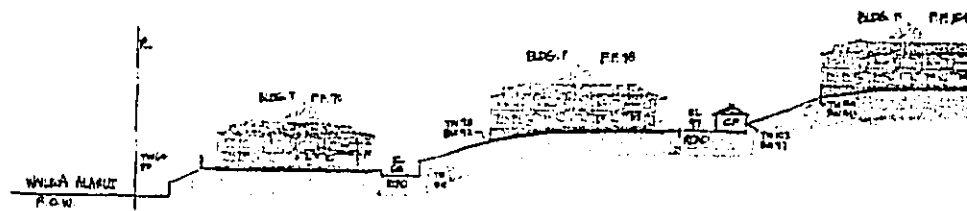
WALEA PARCEL MF-9

FIGURE 11.3





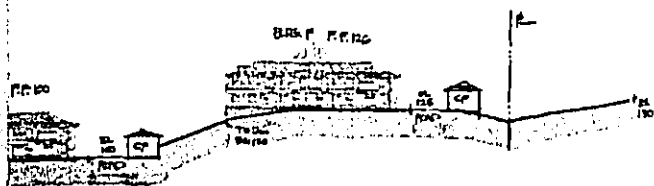
SECTION 3-3



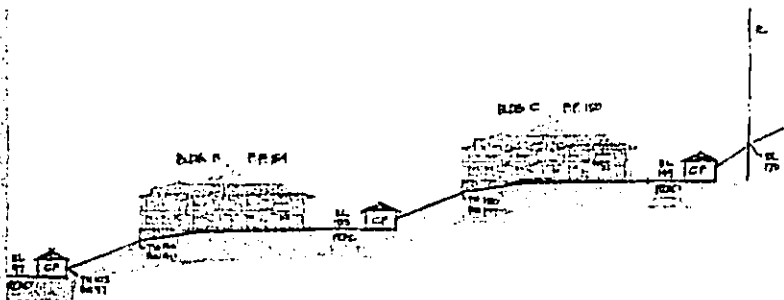
SECTION 2-2



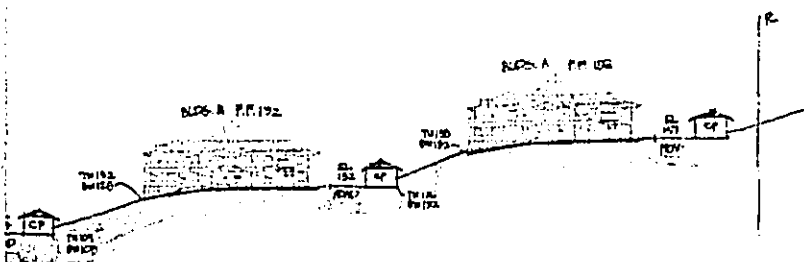
SECTION 1-1



SECTION 3-3 1/4" = 1'-0" SCALE



SECTION 3-4 1/4" = 1'-0" SCALE



SECTION 1-1 1/4" = 1'-0" SCALE

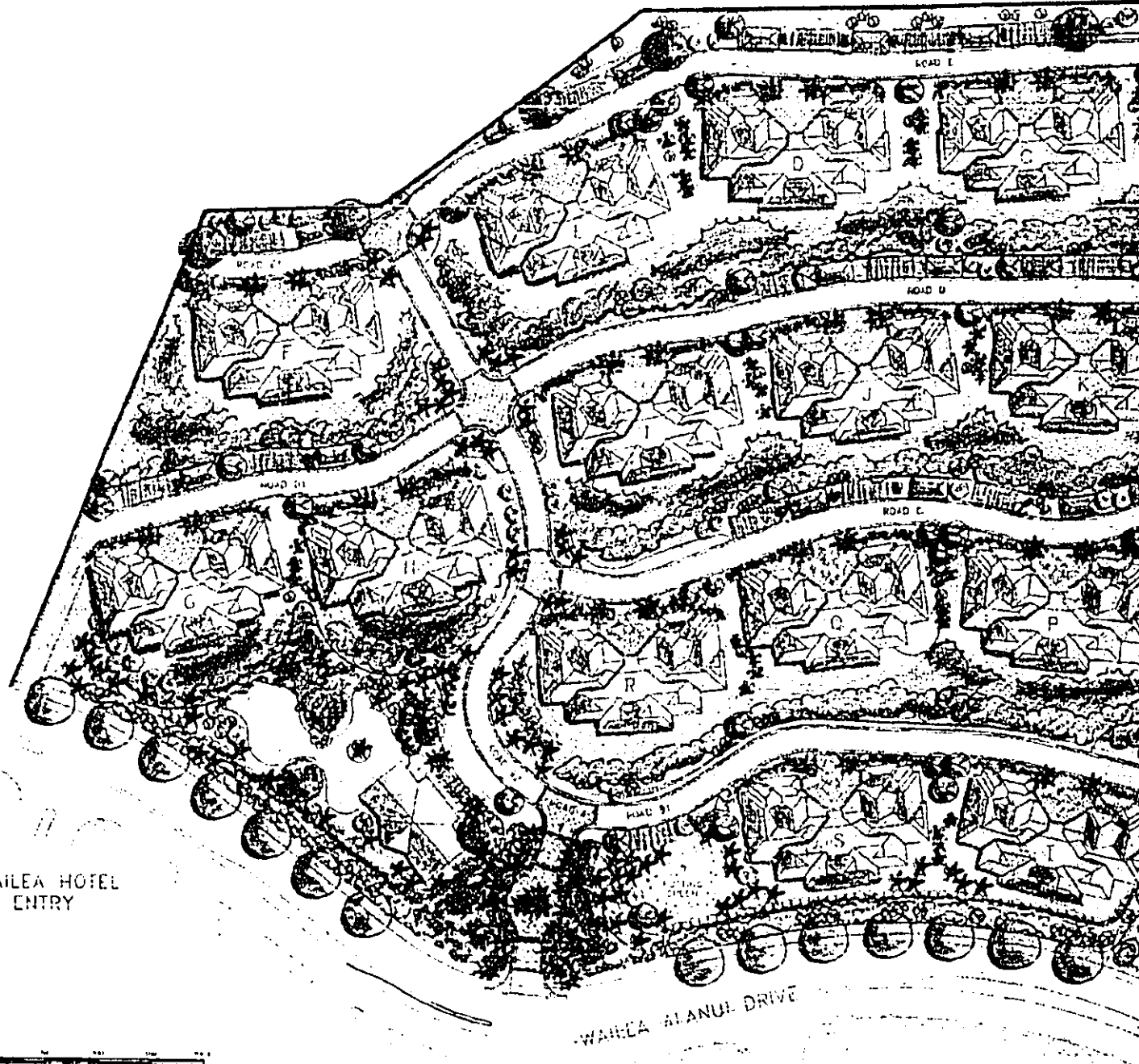
SITE SECTIONS 1" = 40'-0" SCALE

WALEA PARCEL MF-9

FIGURE 11.4



CHRIS HART & PARTNERS



GRAND WAILEA HOTEL
PRIMARY ENTRY



PLANT MATERIAL

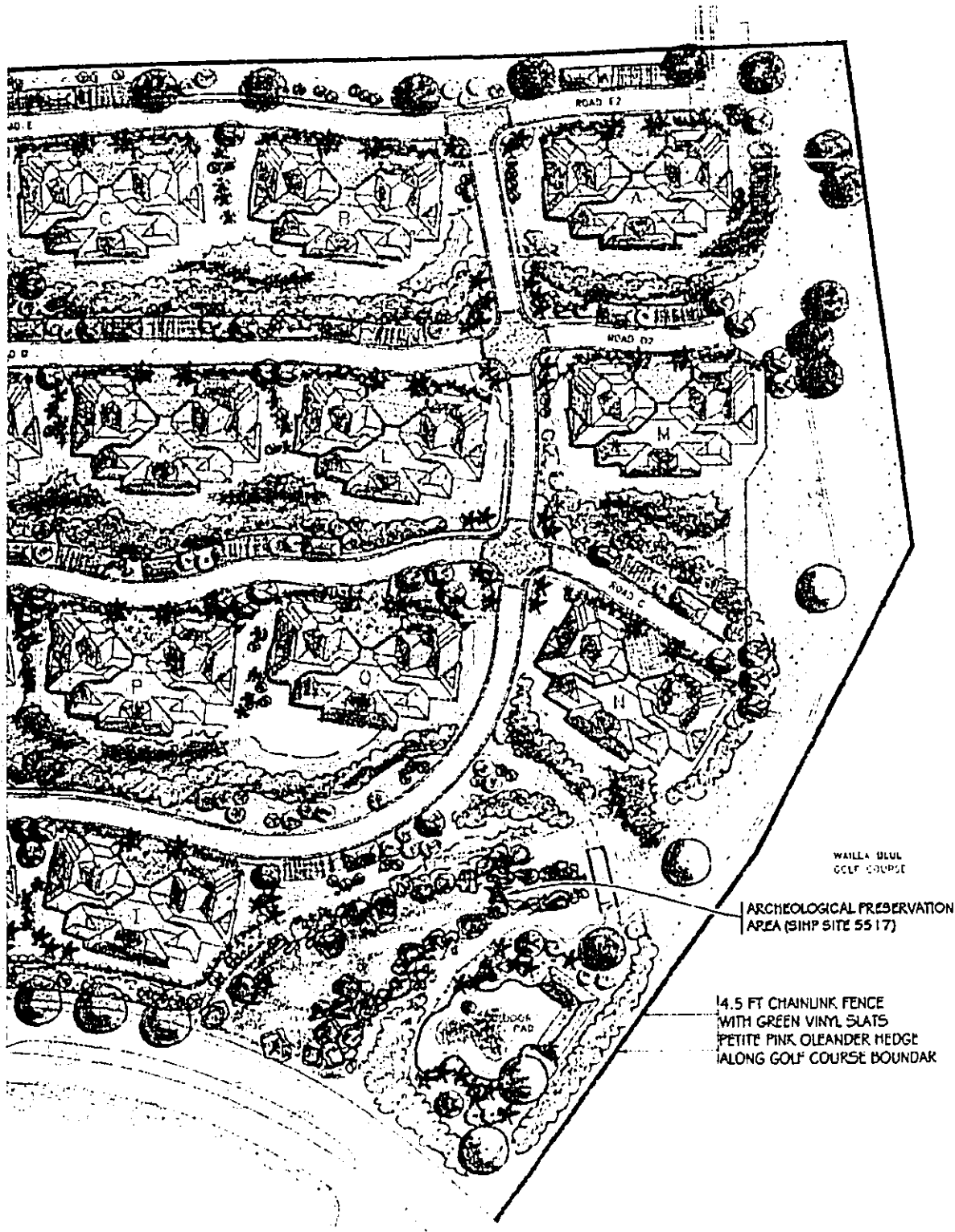
- TREES - PALMS
- ROYAL PALM
 - COCONUT - MIN. 10 FT TRUNK
 - JOANNIS - MIN. 10 FT TRUNK
 - MANILA PALM - MIN. 5 FT TRUNK
 - MACARTHUR PALM - 15 GAL
 - APOCA PALM - 15 GAL
 - PBITAIL PALM - 15 GAL

- TREES - CANOPY
- MOMI FCB - FIELD STOCK
 - RAINBOW SHOWER - FIELD STOCK
 - ORCHID TREE - 25 GAL
 - PLUMERIA - 25 GAL
 - JATROPHA - 15 GAL
 - HAWAIIAN NDU - 25 GAL
 - MAOLE KOU - 15 GAL
 - PINK TECOMA - 25 GAL

- SHRUBS
- NALAPA
 - PITIMBAGO
 - FIRECRACKER
 - GARDENIA
 - GINGER
 - MICONIA
 - JASMINE
 - RAPHS PALM
 - PINK OLEANDER

- GROUNDCOVER
- LANTANA
 - LAUAE FERN
 - LINA PAPA
 - AKIA
 - GOLDEN GLORY
 - SYNCONIUM
 - MEMIGRAPHIS
 - LURLOPE
 - BEACH VITEX

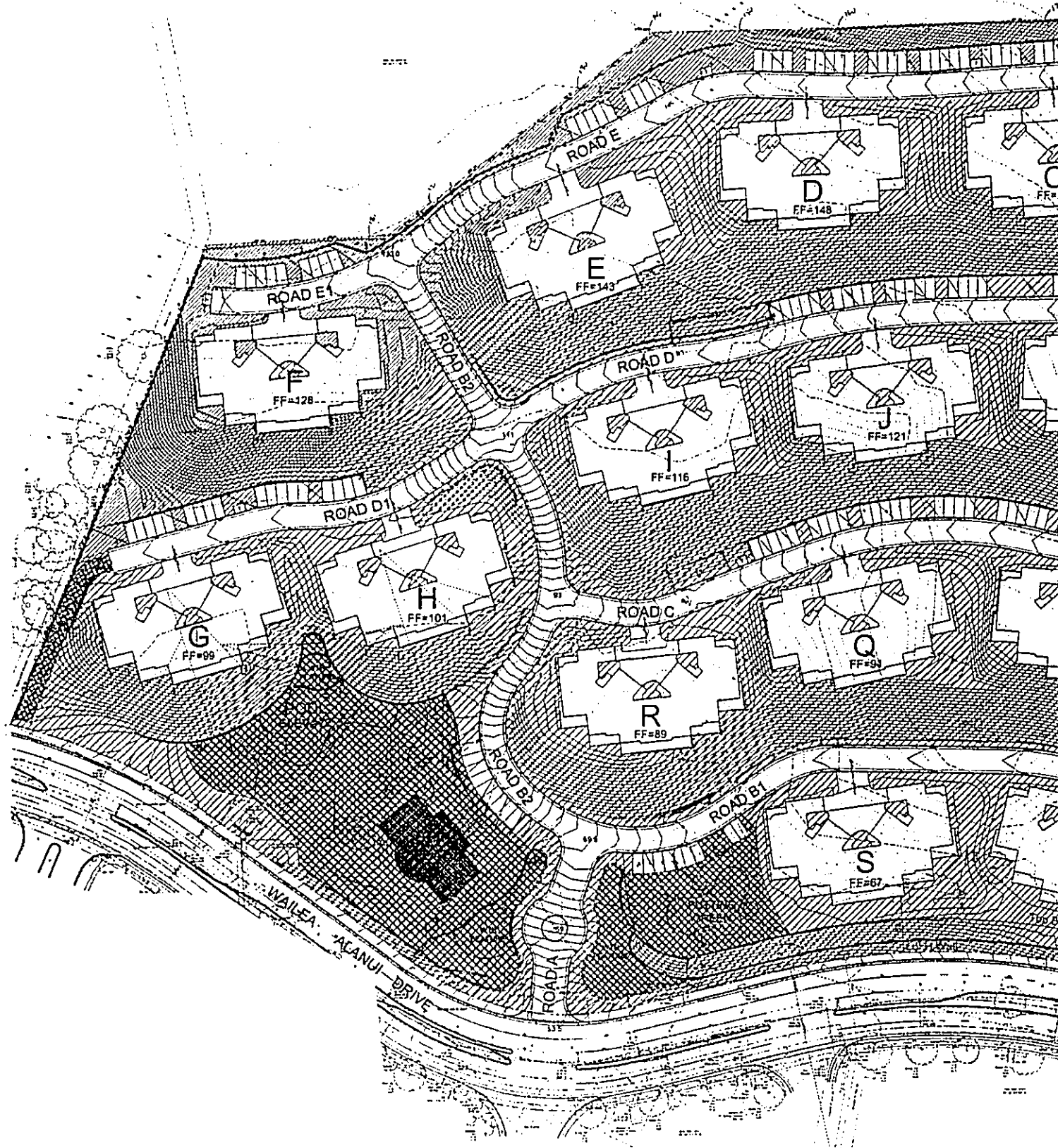
NOTE
ALL LANDSCAPE PLANT MATERIAL
TO BE INSTALLED UNDER AN
AUTOMATIC IRRIGATION SYSTEM



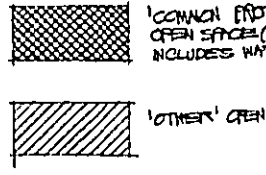
HO'OLEI
 WAILEA, MAUI, HAWAII
LANDSCAPE CONCEPT PLAN
 SEPTEMBER 10, 2004

FIGURE 12





WALEA SECONDARY ENTRY



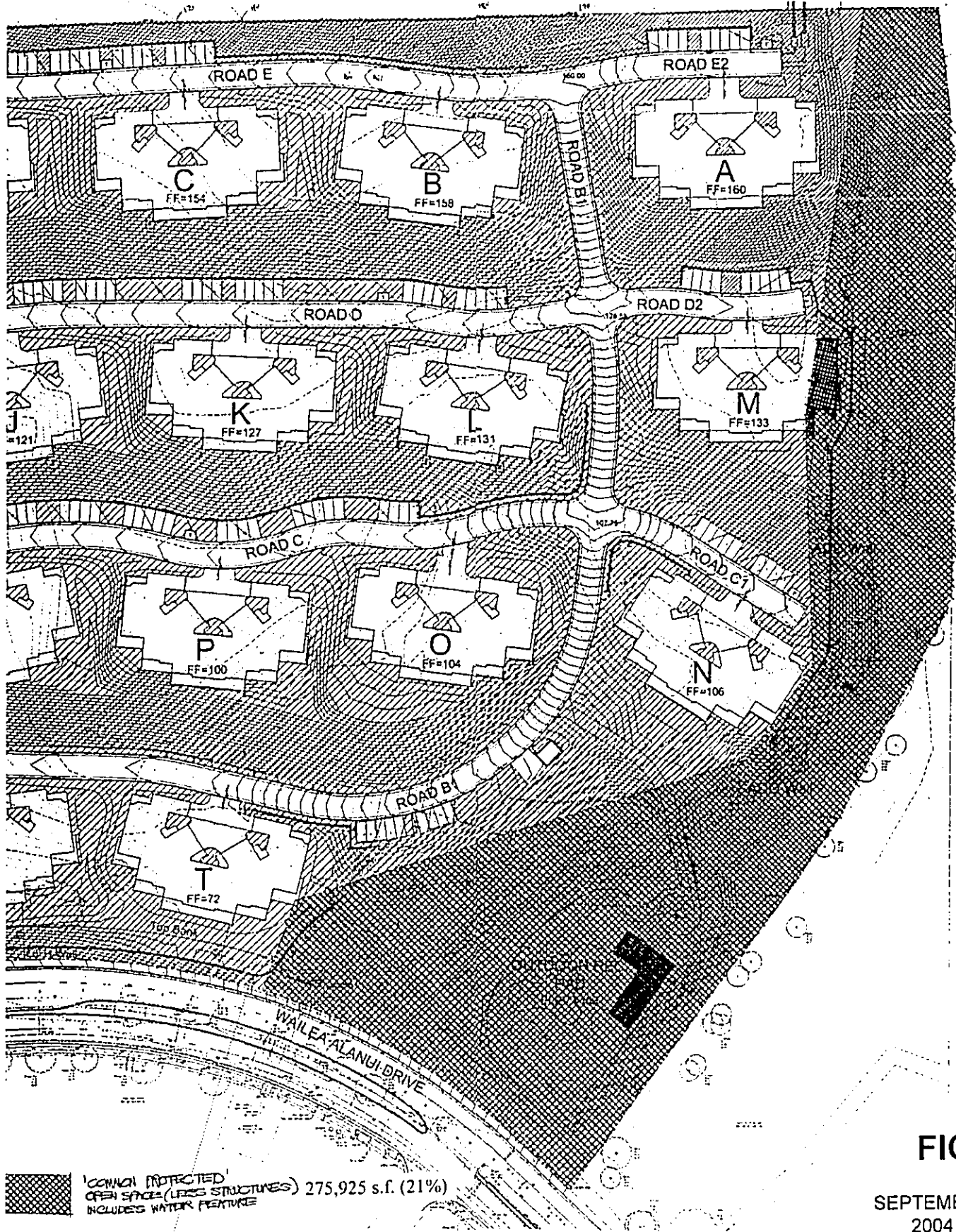


FIGURE 13

SEPTEMBER
2004

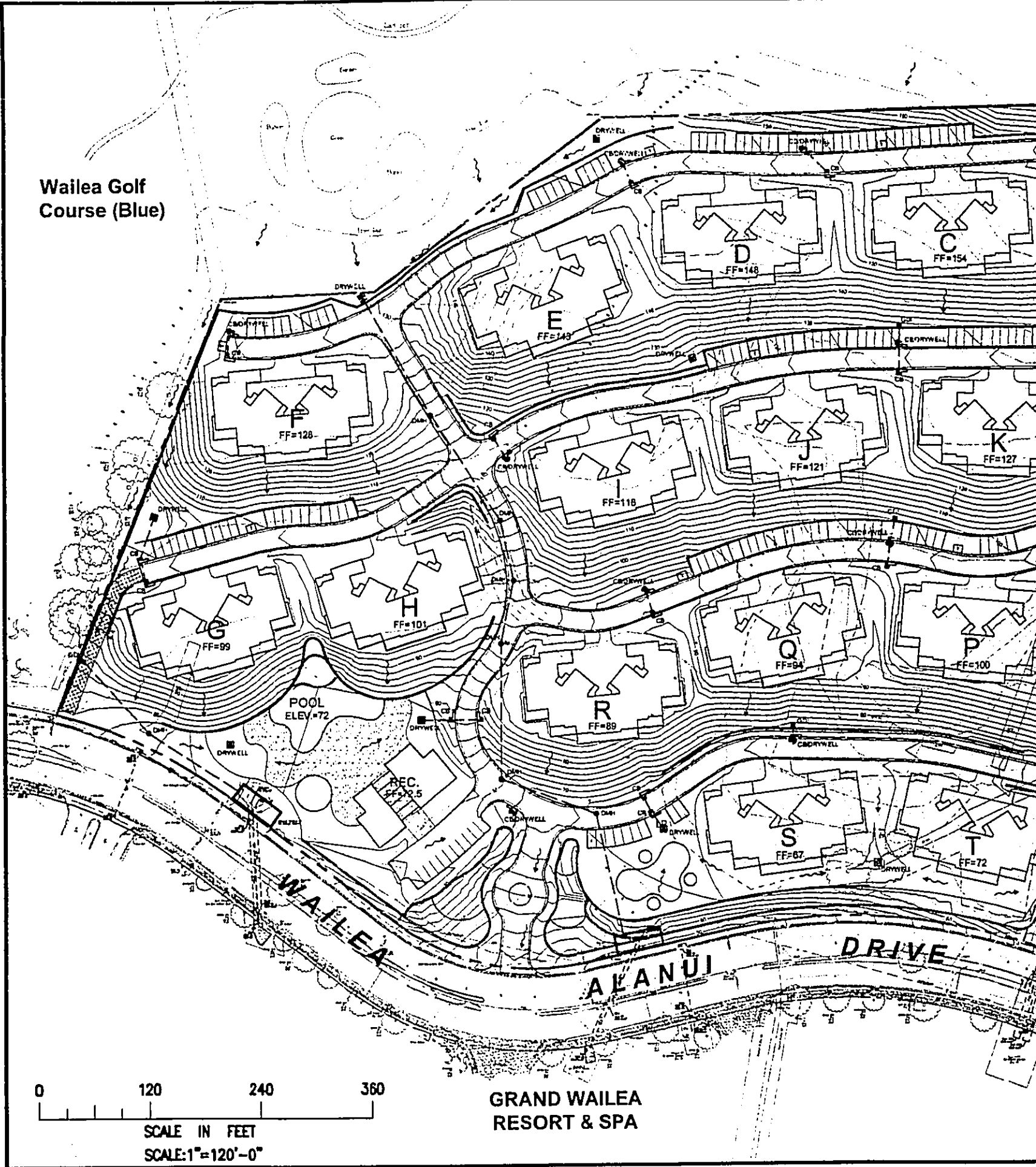


OPEN SPACE ALLOCATION MAP
Wailea Parcel MF-9

Wailea Golf Course (Blue)

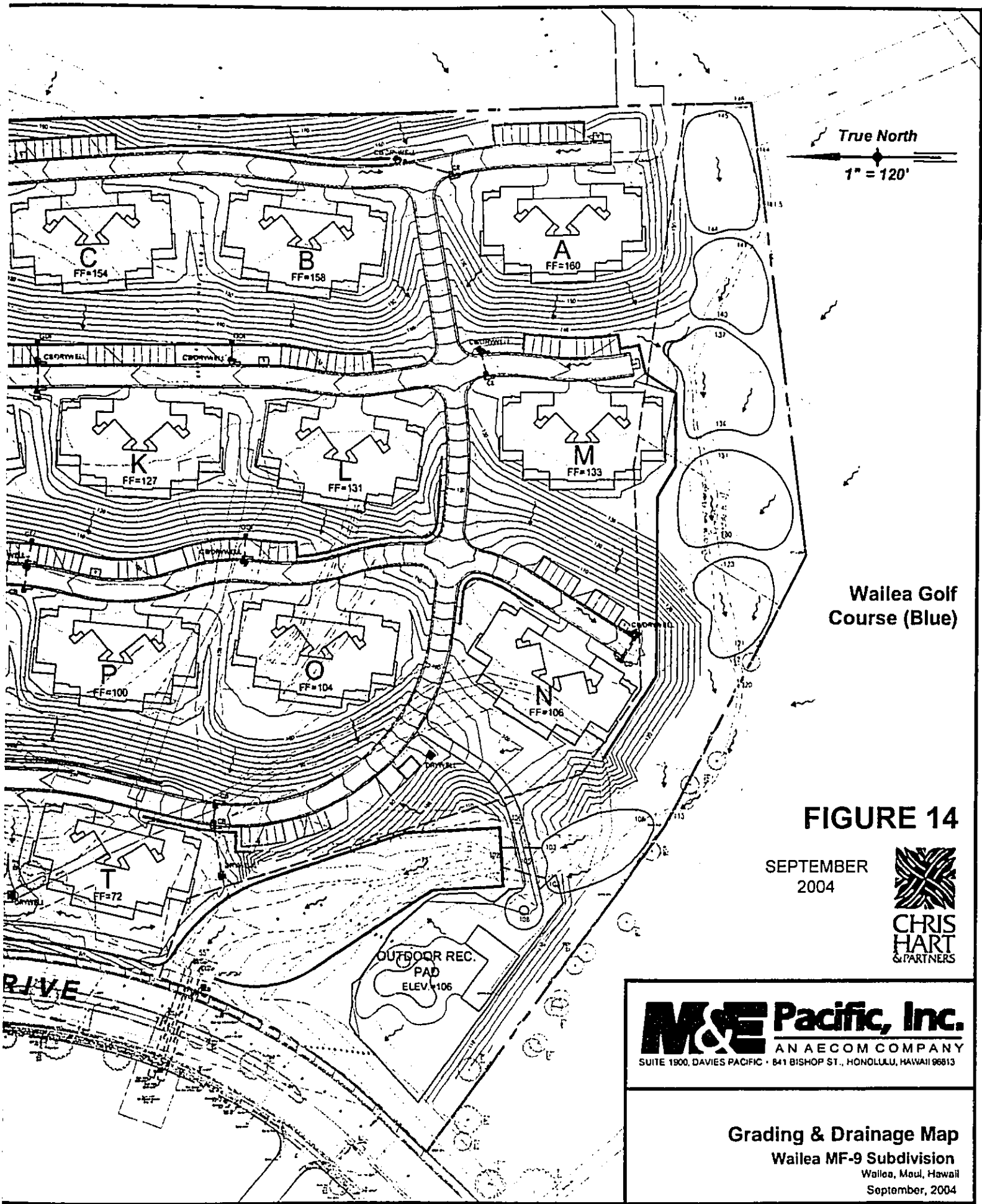
PLOT DATE: September 23, 2004 @ 04:15:26 pm

PATH/FILENAME: P:\Projects\Wailea MF-9\Reports\EA-Creeding & Drainage.dwg



0 120 240 360
SCALE IN FEET
SCALE: 1"=120'-0"

GRAND WAILEA
RESORT & SPA



True North
 1" = 120'

Wailea Golf Course (Blue)

FIGURE 14

SEPTEMBER 2004



M&E Pacific, Inc.
 AN AECOM COMPANY
 SUITE 1900, DAVIES PACIFIC • 841 BISHOP ST., HONOLULU, HAWAII 96813

Grading & Drainage Map
 Wailea MF-9 Subdivision
 Wailea, Maui, Hawaii
 September, 2004

APPENDICES

APPENDIX A
Ownership Documents



TITLE GUARANTY OF HAWAII
INCORPORATED
235 QUEEN STREET • HONOLULU • HAWAII • 96813 • 533-6261

TITLE GUARANTY OF HAWAII, INCORPORATED
HEREBY CERTIFIES THAT THIS IS A TRUE
COPY OF THE ORIGINAL DOCUMENT FILED
AS LAND COURT DOCUMENT NO 3103463 ON
APRIL 30, 2004 AT 8:01 A.M.

TRANSFER CERTIFICATE OF TITLE NO. 695,070

Return by Mail () Pickup () To:
Gino L. Gabrio 521-9335
Cades Schutte LLP
1000 Bishop Street, Suite 1200
Honolulu, Hawaii 96813

TG 200363932 S
TGE 631016009
Kw Ogino

LC-3

Document contains 11 pages

Tax Map Key No.: (2)2-1-008:119

**LIMITED WARRANTY DEED
WITH COVENANTS AND RESERVATIONS**

THIS DEED, made this 30th day of April, 2004, by and between A&B WAILEA LLC, a Hawaii limited liability company, whose address is 822 Bishop Street, Honolulu, Hawaii 96813, hereinafter called the "Grantor", and WAILEA MF-9 ASSOCIATES LLC, a Hawaii limited liability company, whose address is 1865 Main Street, Suite 104, Wailuku, Maui, Hawaii 96793, hereinafter called the "Grantee",

WITNESSETH:

That Grantor, in consideration of TEN DOLLARS (\$10.00) and other valuable consideration to it paid by Grantee, receipt whereof is hereby acknowledged by Grantor, and of the terms, covenants and agreements hereinafter set forth does hereby grant and convey unto Grantee the property described in Exhibit "A" attached hereto and hereby made a part hereof (the "Property").

EXCEPTING AND RESERVING ALSO, HOWEVER, unto Grantor, its successors and assigns, all rights reserved unto Grantor as Declarant under the Master Declaration hereinafter described and under the Additional Declaration also hereinafter described.

TO HAVE AND TO HOLD the same, together with the rents, issues and profits thereof, the improvements thereon, and the tenements, rights, easements, privileges and appurtenances thereunto belonging or appertaining or held and enjoyed therewith unto Grantee, according to the tenancy and estate hereinabove set forth, forever, but subject to the terms of this Deed.

AND Grantor does hereby covenant with Grantee: that Grantor has good right to sell and convey the Property unto Grantee in the manner aforesaid and that the Property is free and clear of all encumbrances made or suffered by the Grantor, except as shown on Exhibit "A" or as herein set forth and real property taxes for the current year which are to be prorated as of the date of closing.

Grantee's Covenants

AND ALSO, in consideration of the foregoing, Grantee, for Grantee, Grantee's heirs, personal representatives, successors, successors-in-trust and assigns, does hereby covenant and agree as follows:

1. Declarations. Grantee does hereby accept and approve the Wailea Community Association Amended and Restated Declaration of Covenants and Restrictions (the "Master Declaration"), and the Additional Declaration of Covenants, Conditions and Restrictions (the "Additional Declaration"), all more particularly described in Exhibit "A", as now or hereafter amended. Grantee does hereby covenant and agree that the Property shall be held, occupied and used by Grantee subject to and in accordance with the terms, covenants, conditions, restrictions and provisions of the Master Declaration and the Additional Declaration, and that Grantee shall pay all assessments and other amounts as therein provided and shall observe and perform all of the terms, covenants, conditions, restrictions and provisions contained therein. Grantee agrees to indemnify, defend and hold Grantor harmless from any failure by Grantee so to comply with, observe and perform the terms and provisions of the Master Declaration and the Additional Declaration.

2. Other Encumbrances. Grantee hereby accepts and approves all of the encumbrances (the "Encumbrances") described in Exhibit "A" and does hereby covenant and agree that the Property shall be held, occupied and used by Grantee subject to and in accordance with the terms, covenants, conditions, restrictions and provisions of the Encumbrances. Grantee further covenants and agrees that Grantee shall not suffer or perform any act or condition within, upon or related to the Property which would constitute a breach of the Encumbrances or cause Grantor to be in breach thereof.

3. Disclaimers. Except as expressly set forth in that certain Purchase and Sale Agreement (the "Purchase Agreement"), dated September 29, 2003, by and between Grantor and Grantee, as amended by First Amendment of Purchase and Sale Agreement dated as of December 23, 2003, it is understood and agreed that neither Grantor nor any company affiliated with Alexander & Baldwin, Inc. (Grantor and such companies shall collectively and individually be referred to as the "A&B Entities") is making and has not at any time made any warranties or representations of any kind or character, expressed or implied, with respect to the Property, including, but not limited to, any warranties or representations as to habitability, merchantability, fitness for a particular purpose, title (other than Grantor's limited warranty of title as set forth in this Deed), zoning, land use entitlements, tax consequences, latent or patent physical or environmental condition, utilities and the availability thereof, operating history or projections, development potential, income to be derived from the Property, valuation, governmental approvals, the nature or quality or condition of the Property (including, without limitation, the water, soil, drainage, or geology of the Property), the suitability of the Property for any and all

activities and uses which Grantee may conduct thereon (including, without limitation, the possibilities for future development of the Property), the compliance of the Property with governmental laws, the truth or accuracy or completeness of any documents or any information provided by or on behalf of any A&B Entity to Grantee or any other matter or thing regarding the Property.

Grantee acknowledges and agrees that, except to the extent expressly provided otherwise in the Purchase Agreement, Grantor is selling and conveying to Grantee and Grantee is accepting the Property "AS IS, WHERE IS, WITH ALL FAULTS", to the maximum extent permitted by law.

Grantee confirms that Grantee has not relied and will not rely on, and none of the A&B Entities is liable for or bound by, any expressed or implied warranties, guaranties, statements, representations, or information pertaining to the Property or relating thereto (including specifically, without limitation, information packages distributed with respect to the Property, if any) made or furnished by any A&B Entity, or any real estate broker or agent representing or purporting to represent Grantor or any other A&B Entity, to whomever made or given, directly or indirectly, orally or in writing, unless specifically set forth in the Purchase Agreement.

Grantee represents to Grantor that Grantee has conducted or will conduct such independent investigations of the Property, including but not limited to, the physical and environmental conditions thereof, as Grantee deems necessary to satisfy itself as to the condition of the Property and the existence or curative action to be taken with respect to any hazardous or toxic substances on or discharged from the Property, and will rely solely upon the same and not upon any information provided by or on behalf of any A&B Entity to any of their agents or employees with respect thereto.

4. Additional Disclaimers. Without limiting the other provisions set forth in this Deed and in the Purchase Agreement, Grantee acknowledges and agrees to the following:

(a) Grantee further acknowledges that the Property is located adjacent to or in the vicinity of existing golf courses (collectively, the "Golf Course"). Operation of the Golf Course and its layout may be revised or modified at any time at the discretion of the owner or operator of the Golf Course. The location of the Property with respect to the Golf Course may result in nuisances, disturbances or hazards to persons and property on or within the Property as a result of golf course operations, including, without limitation, property damage and/or personal injury arising from the use of golf carts, golf balls and/or stray golf balls and from other golf-course-related activities, and noise, traffic and other nuisances incidental to tournaments and maintenance and repair activities (collectively, the "Golf Course Effects").

(b) It shall be Grantee's responsibility to obtain and pay for any additional lines and/or the electrical and telephone companies' agreement to provide electrical and telephone service to the Property. It is understood that Grantor shall not be obligated to pay for any costs associated with any additional lines or placing the electrical or telephone lines underground. The installation of water and sewer lines to be connected to the County of Maui's water and sewer mains (or to lines to be connected to the County of Maui's water and sewer mains), shall be Grantee's responsibility. It shall further be Grantee's responsibility to obtain

and pay for the County of Maui Board of Water Supply's and County Department of Public Works' agreement to provide water and sewer service to the Property. Subject to the provisions of Section 5.1(d) of the Purchase Agreement, it is Grantee's sole responsibility and expense to obtain all water, sewer and other utility service and approvals for the Property, to install all sewer and water lines and utility conduits within the Property and to connect all such lines and conduits to the existing lines, and to pay for all costs and charges imposed by any third party (including the County of Maui) in obtaining water, sewer and other utility services and approvals for the Property; including all costs of placing utility lines underground. Subject to the provisions of Section 5.1(d) of the Purchase Agreement, it is Grantee's responsibility to ascertain the availability of, and Grantee assumes all risk with respect to the availability or non-availability of, water and sewer service for the Property.

(c) Grantee further acknowledges that the Property is located adjacent to or in the vicinity of existing hotels and condominium projects (collectively, the "Hotel/Condominium Uses"). The location of the Property with respect to the Hotel/Condominium Uses may result in nuisances, disturbances or hazards to persons and property on or within the Property as a result of noise, congestion, odors and from other resort-related activities, and traffic and other nuisances incidental to a resort (collectively, the "Resort Effects").

(d) Grantee further acknowledges that (i) the Property is or may be located adjacent to or in the vicinity of various construction activities, including, but not limited to, ongoing residential and commercial and related construction (collectively, the "Development Activities"), (ii) these Development Activities will or may result in noise, dust, vibration and other nuisances, disturbances or hazards to Grantee and to persons and property on or within the Property; (iii) no representations or warranties are made by any A&B Entity, their respective employees or agents concerning plans, or the absence of plans, by Grantor or others for future development of adjacent or nearby properties, and any plans for the future development of adjacent and nearby properties by Grantor or any of the A&B Entities are subject to change in the sole and absolute discretion of Grantor or such A&B Entity or their respective successors and assigns; and (iv) no A&B Entity makes any representations regarding the view from the Property or any view easements or rights, and the views from the Property are not guaranteed and may be altered, diminished, eliminated or blocked entirely by the future development of adjacent or surrounding properties (items (i) through (iv) are hereinafter collectively called the "Development Effects").

5. **Assumption of Risk and Waivers.** Grantee represents and warrants to Grantor that Grantee, in Grantee's sole discretion, has determined that the benefits of owning and enjoying the Property outweigh the risks of the Golf Course Effects, the Resort Effects and the Development Effects (collectively, the "Property Conditions"). Grantee hereby irrevocably agrees to suffer and permit all actions and consequences incidental to the Property Conditions. Grantee hereby covenants and agrees to assume all risks of impairment of Grantee's use and enjoyment of the Property, loss of market value of the Property, and property damage or personal injury arising from the Property Conditions. Grantee assumes the risk that adverse matters, including, but not limited to, adverse physical and environmental conditions and the effect of the Property Conditions, may not have been revealed by Grantee's investigations; and Grantee hereby waives, relinquishes, and releases the A&B Entities (and their respective officers, directors, shareholders, members, managers, employees, and agents) from and against any and

all claims, demands, causes of action (including causes of action in tort), losses, damages, liabilities, costs and expenses (including attorneys' fees and court costs) of any and every kind or character, known or unknown, which Grantee might have asserted or alleged against any or all the A&B Entities (and their respective officers, directors, shareholders, members, managers, employees, and agents) at any time by reason of or arising out of any latent or patent defects or physical conditions, violations of any applicable laws (including, without limitation, any environmental or zoning laws), the Property Conditions (except that Grantee's release shall not preclude Grantee from seeking or asserting any claim based on the negligent or intentional failure of any of the A&B Entities or their successors to adhere to good and prudent development and construction standards and practices in connection with the future development of any property adjacent to the Property), and any and all other acts, omissions, events, circumstances, or matters regarding the Property. Grantee agrees that should any clean-up, remediation, or removal of hazardous substances or other environmental conditions on the Property be required, such clean-up, removal or remediation shall be the responsibility of and shall be performed at the sole cost and expense of Grantee.

6. **Remedies.** The violation or breach of any of the covenants, conditions or agreements contained herein shall give Grantor the right to prosecute a proceeding at law or in equity against Grantee to prevent or enjoin Grantee from violating or breaching any of the covenants, conditions, or agreements, or to cause said violation or breach to be remedied, or to recover damages or other remedies available for such violation or breach. Grantor shall be entitled to recover such attorneys' fees and costs as may have been incurred by Grantor in enforcing its rights hereunder.

7. **Covenants Running with the Land; Duration.** Except as otherwise expressly provided herein, each and all of Grantor's reservations and Grantee's covenants, agreements and conditions contained above are perpetual and intended to run with the land in favor of Grantor, its successors and assigns, and are expressly binding upon the Property, and each portion thereof, and each successive owner of the Property and each person having any right, title or interest in the Property or any portion thereof, unless and until Grantor shall relinquish and permanently waive any of its rights, but only with respect to the specific rights waived, as evidenced by the recordation of a written notice of such waiver in the Office of the Assistant Registrar of the Land Court of the State of Hawaii.

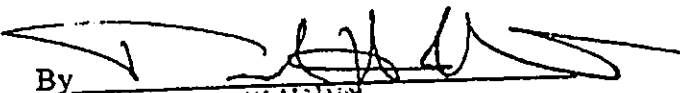
8. **Definition; Joint and Several.** The terms "Grantor" and "Grantee", as and when used herein, or any pronouns used in place thereof, shall mean and include the masculine, feminine or neuter, the singular or plural number, individuals, limited liability companies, partnerships, trustees or corporations and their and each of their respective heirs, personal representatives, successors, successors-in-trust and assigns, according to the context thereof. All covenants and obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention is clearly expressed elsewhere herein.


9. **Counterparts.** The parties hereto agree that this Deed may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same agreement, binding all of the parties hereto, notwithstanding all of the parties are not signatory to the original or the same counterparts. For all purposes, including, without limitation, recordation, filing and delivery of this instrument, duplicate unexecuted and

unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

IN WITNESS WHEREOF, the parties hereto have executed this Deed as of the day and year first above written.

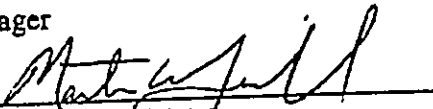
Grantor: A & B WAILEA LLC
a Hawaii limited liability company
By A & B Properties, Inc.
Its Manager

By 
Name: PAUL W. HALLIN
Title: SENIOR VICE PRESIDENT

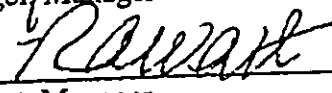
By 
Name: CHARLES W. LOOMIS
Title: ASST. SECRETARY

Grantee: WAILEA MF-9 ASSOCIATES LLC,
a Hawaii limited liability company

By: Wailea MF-9 Developers LLC,
a Hawaii limited liability company, its
manager

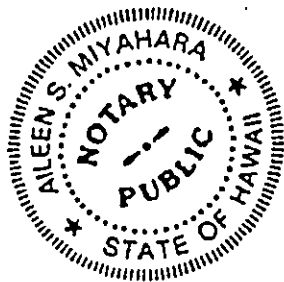
By 
Martin Quill, Manager

By: 
Paul Vogel, Manager

By: 
R.A. Watt, Manager

STATE OF HAWAII)
) SS:
CITY AND COUNTY OF HONOLULU)

On this 28TH day of April, 2004, before me personally appeared PAUL W. HALLIN, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, has been duly authorized to execute such instrument in such capacity.

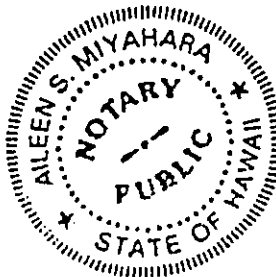


Signature: *Aileen S. Miyahara*
Print Name: AILEEN S. MIYAHARA
Notary Public, State of Hawaii

My commission expires: 7/15/06

STATE OF HAWAII)
) SS:
CITY AND COUNTY OF HONOLULU)

On this 28TH day of April, 2004, before me personally appeared CHARLES W. LOOMIS, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, has been duly authorized to execute such instrument in such capacity.



Signature: *Aileen S. Miyahara*
Print Name: AILEEN S. MIYAHARA
Notary Public, State of Hawaii

My commission expires: 7/15/06

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California }
County of LOS ANGELES } ss.

On 4/26/04 before me, MURIEL M. AQUIN, NOTARY PUBLIC
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")
personally appeared MARTIN QUILL, R.A. WATT + PAUL VOGEL
Name(s) of Signer(s)

- personally known to me
- proved to me on the basis of satisfactory evidence



to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Muriel M. Aquin
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Limited Warranty Deed

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney-in-Fact
- Trustee
- Guardian or Conservator
- Other: _____

Signer Is Representing: _____

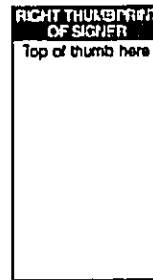


EXHIBIT "A"

All of that certain parcel of land situate at Honuauia, Island and County of Maui, State of Hawaii, described as follows:

LOT 313, area 30.167 acres, as shown on Map 34, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1804 of Matson Navigation Company.

-Note:- Lot 313 shall have direct access to and from Wailea Alanui (Lots 5-A and 5-B, as shown on Map 21), a public road, as set forth by Land Court Order No. 63051, filed June 23, 1982.

Together with perpetual nonexclusive easements over Easement "68", as shown on Map 19, for underground storm drain purposes, Easement "71", as shown on Map 19, for underground sewer line purposes and Easements "394" and "395" for underground storm drain purposes, as shown on Map 72, each affecting Lot 463-B, as shown on Map 72 of said Land Court Application No. 1804, as granted by GRANT OF EASEMENTS, dated April 12, 1999, filed as Land Court Document No. 2538952; and subject to the terms and provisions, including the failure to comply with any covenants, conditions and reservations, contained therein.

Being land(s) described in Transfer Certificate of Title No. 667,228 issued to A&B WAILEA LLC, a Hawaii limited liability company.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED

GRANTOR	:	WAILEA RESORT COMPANY, LTD., a Hawaii corporation
GRANTEE	:	A&B WAILEA LLC, a Hawaii limited liability company
DATED	:	as of October 1, 2003
FILED	:	Land Court Document No. 3003664
RECORDED	:	Document No. 2003-213292

SUBJECT, HOWEVER, TO:

1. Reservation in favor of the State of Hawaii of all mineral and metallic mines.
2. Easement for drainage purposes in favor of the County of Maui and conditions affecting the same in favor of Lots 4, 5, 6, 8, 10 and 12, as set forth in Deed dated April 18, 1973, filed as Land Court Document No. 626880.
3. Designation of Easement "123" (area 0.027 acre) for drainage purposes, as shown on Maps 21 and 34, as set forth by Land Court Order No. 50723, filed July 25, 1978.
4. Designation of Easement "124" (area 0.016 acre) for drainage purposes, as shown on Maps 21 and 34, as set forth by Land Court Order No. 50723, filed July 25, 1978.

5. Designation of Easement "125" (area 0.036 acre) for drainage purposes, as shown on Maps 21 and 34, as set forth by Land Court Order No. 50723, filed July 25, 1978.

6. The terms and provisions, including the failure to comply with any covenants, conditions and reservations, contained in the following:

INSTRUMENT : WAILEA COMMUNITY ASSOCIATION AMENDED AND
RESTATED DECLARATION OF COVENANTS AND
RESTRICTIONS
DATED : July 13, 1998
FILED : Land Court Document No. 2479882

The foregoing Declaration restates the original Declaration dated December 19, 1986, filed as Land Court Document No. 1427923.

7. The terms and provisions, including the failure to comply with any covenants, conditions and reservations, contained in NOTICE TO ALL OWNERS / DEVELOPERS / AUTHORIZED AGENTS, dated November 30, 1988, recorded in Liber 22649 at Page 636, re: Kihei Wastewater Treatment Capacity.

(Not noted on Transfer Certificate of Title referred to herein)

8. The terms and provisions, including the failure to comply with any covenants, conditions and reservations, in NOTICE TO ALL OWNERS / DEVELOPERS / AUTHORIZED AGENTS, dated December 30, 1988, recorded in Liber 22755 at Page 148, re: Kihei Wastewater Treatment Capacity.

(Not noted on Transfer Certificate of Title referred to herein)

9. The terms and provisions, including the failure to comply with any covenants, conditions and reservations, contained in the following:

INSTRUMENT : AGREEMENT FOR THE DEFERRAL OF SUBDIVISION
WATER SYSTEM IMPROVEMENTS
DATED : March 22, 1993
RECORDED : Document No. 93-088224
PARTIES : WAILEA RESORT COMPANY, LTD., a Hawaii corporation,
and the BOARD OF WATER SUPPLY of the COUNTY OF
MAUI

(Not noted on Transfer Certificate(s) of Title referred to herein)

10. The terms and provisions contained in the following:

INSTRUMENT : Grant of Drainage and Flowage Easement
DATED : April 30, 2004
FILED : Land Court Document No. _____
RECORDED : Document No. 2004-_____
PARTIES : A&B WAILEA LLC, a Hawaii limited liability company, and
A&B WAILEA LLC, a Hawaii limited liability company

11. The terms and provisions, including the failure to comply with any covenants, conditions and reservations, contained in the following:

INSTRUMENT : ADDITIONAL DECLARATION OF COVENANTS,
CONDITIONS AND RESTRICTIONS
DATED : April 30, 2004
FILED : Land Court Document No. _____

12. Any unrecorded leases and matters arising from or affecting the same.

13. Encroachments, if any, which would be shown on a correct survey.

APPENDIX B
Pre-Consultation Meeting Minutes and Correspondence

January 26, 2004

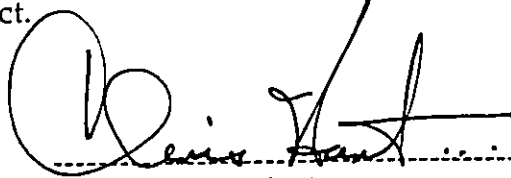
Memorandum

To: Project File
From: Chris Hart, ASLA
Subject: Wailea Resort MF-9 Hotel Condominium Project;
January 20, 2004 Meeting with Maui Planning Department

Rory Frampton and I had an opportunity to meet with Mike Foley and Clayton Yoshida on January 20, 2004, to discuss the County's PD ordinance and clarify the procedure for application and approval regarding the adjustment of the OS Open Space boundary on the site and the ability to develop a private recreational amenity within the OS zoning district.

- **Application Procedure:** Both Mike Foley and Clayton Yoshida agreed that Wailea Resort has been established as a PD since the granting of comprehensive zoning; therefore, we can bypass Step I "tentative" PD approval and move directly to Step II. Step II can be processed simultaneously as a communication item on the Planning Commission agenda with the SMA Permit public hearing.
- **Adjustment of OS Boundary:** Mike & Clayton were agreeable with our proposal to define the Community Plan (CP) OS designation through the PD process, so that it is coincidental with the actual gulch area. Also, Mike agreed that we can propose the development of a private recreational amenity within the CP & OS zoning district, which would be "permitted" in the context of the SMA Permit.

Conclusion: It appears, at this time, that there are no major Planning issues relative to the proposed MF-9 Project.



Chris Hart, ASLA

January 26, 2004

Memorandum

To: Project File

From: Chris Hart, ASLA

Subject: Wailea Resort MF-9 Hotel Condominium Project;
December 22, 2003, Two (2) Meetings with Alice Lee, Director &
Edwin Okubo, Housing Coordinator, Department of Housing &
Human Concerns; Regarding Affordable Housing Requirement
for Wailea Resort MF-9 at TMK 2-1-08: 119, Wailea, Maui,
Hawaii.

Our meeting with Ms. Alice Lee, Director and Mr. Edwin Okubo, Housing Coordinator was held on December 22, 2003, in order to consider possible affordable housing program alternatives. Martin Quill, Steve Jiran and I appreciated the opportunity to discuss the details of CMI Development's proposed 144-unit hotel condominium project located in the heart of Wailea Resort across from the Grand Wailea Hotel. We discussed that our MF-9 site is Community Planned (H) Hotel and Zoned (H-1) (2-story) Hotel District; therefore, and that the project is subject to the requirements of Chapter 2.94 Affordable Housing Policies for Hotel-Related Development of the Maui County Code. Although the units are being designed for long-term residential use, they can also be rented as short-term transient vacation units.

It was noted that our firm was retained by CMI Development, Inc. and Mr. Martin Quill, President to prepare and file the Environmental Assessment (EA) and Special Management Area (SMA) Permit Application for the proposed 144-unit MF-9 Hotel Condominium Project, and we anticipate making our submittal to the Planning Department during the month of May 2004.

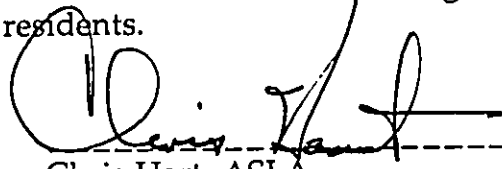
In anticipation, of the EA & SMA submittal, we proposed our affordable housing program as a cash-in-lieu contribution of \$20,000.00 to \$25,000.00 per required affordable housing unit.

Conclusion: On May 3, 2004, a subsequent meeting was held with Ms. Lee and Mr. Okubo to discuss our proposal for affordable housing which was formally submitted by letter dated February 27, 2004. As a result it was agreed that a cash-in-lieu of \$25,000.00 per required affordable housing unit would be acceptable.

Memorandum
To: Project File
Re: Wailea Resort MF-9
Pre-consultation Meetings
Dept. Of Housing & Human Concerns

Also, it was determined that the estimated cash-in-lieu contribution amount for thirty six (36) affordable units would be \$900,000.00, and that such a contribution, at this time, will enhance the feasibility of a much needed South Maui Homeless Shelter similar to the West Maui Shelter.

It was agreed that a cash-in-lieu contribution to the proposed South Maui Homeless Shelter located in the Kihei-Makena Community Plan Region will be a definable and lasting investment toward an affordable housing inventory for many generations of South Maui residents.



Chris Hart, ASLA



Memorandum

DATE: May 21, 2004

TO: CMI Group, Inc.
1885 Main Street Suite 104
Wailuku, Maui, Hawaii 96793

FROM: Diane Y. Kodama

SUBJECT: Wailea MF-9
Meetings with County of Maui

COPIES: Chris Hart & Partners
1955 Main Street Suite 201
Wailuku, Maui, Hawaii 96793

We have met with the County of Maui on multiple occasions from January 2004 to May 2004. The purpose of the meetings was to inform the County of the upcoming project and to coordinate with any future projects that the County anticipates.

The following is a summary of the discussions:

Department of Public Works (DPW)

1. DPW was agreeable to the use of a raised crosswalk across Wailea Ala Nui for residents of MF-9 to cross the street.
2. DPW stated that a secondary emergency access should be considered for public safety.
3. DPW expressed that there was a recent emergency repair to the 84" culvert on the south side of the subject property under Wailea Ala Nui. The culvert could not be repaired to support the full capacity of the pipes due to existing utilities. A Drainage Master Plan was done for Wailea and should be used to support the proposed drainage system.

Fire Department

1. Fire has stated that at least one route to the top of the subdivision shall have a maximum slope of 12% if each unit had fire sprinklers. If each unit is not fire sprinkled then all roads shall have a maximum slope of 12%.
2. If a dead end road is more than 150 lf from the last driveway to the the intersection, a turnaround would be required. A driveway can be used as the turnaround if the proper signage and striping were present.
3. If units were fire sprinkled, a secondary access would not be required by the Fire Department.

Department of Water Supply

1. See attached memos from the Department of Water Supply.

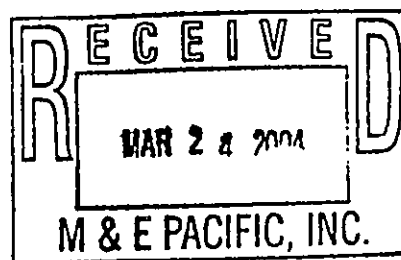
ALAN M. ARAKAWA
Mayor



GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org



March 18, 2004

Ms. Diane Kodama
M & E Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813

Dear Ms. Kodama:

Subject: WAILEA MASTER PLAN PARCEL MF 9
TMK 2-1-008:119

We are responding to your March 5, 2004 letter requesting comments concerning the subject project. We cannot make any commitment to provide water service to this project. Availability of water service will be determined at the time the developer has completed all requirements for meter installation.

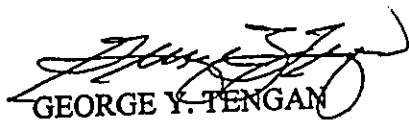
A 6" double check detector assembly as shown on your drawing can only be used for fire protection. It is likely that a 6" line will not be adequate for fire protection.

Based on the domestic and irrigation flow rates provided, a 6" water meter will be too large for this project. Two parallel 3" meters will be more appropriate.

Your daily demand needs to be revised to reflect typical consumption in the Wailea area and water system standards.

Should you have any questions, please contact Myles Fujinaka of our engineering division at (808) 270-7835.

Sincerely,


GEORGE Y. TENGAN
Director

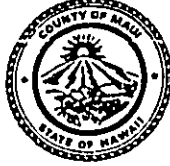
MF:sc

"By Water All Things Find Life"

Printed on recycled paper



ALAN M. ARAKAWA
Mayor



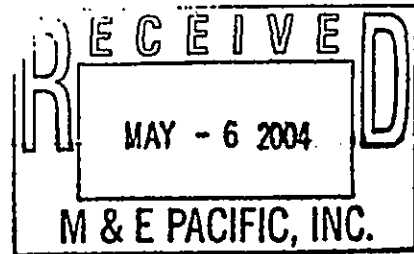
GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 South High Street
WAILUKU, MAUI, HAWAII 96793-2155
Telephone (808) 270-7816 • Fax (808) 270-7833
www.maulwater.org

May 3, 2004

Ms. Diane Y. Kodama
M & E Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, HI 96813



Subject: Wailea Master Plan Parcel MF-9,
Wailea, Maui, Hawaii
TMK: 2-1-08:119

Dear Ms. Kodama:

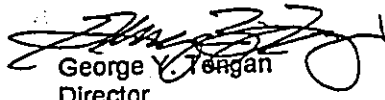
This is in response to your request for comments in proceeding with proposed Wailea MF-9 Subdivision Project. We provide the following information.

The project area is served by the Central Maui System. The main sources of water for this system are the Iao and Waihee aquifers, the Iao tunnel and the Iao-Waikapu Ditch. As of July 21, 2003, the Commission on Water Resource Management has designated Iao aquifer as Groundwater Management Area. DWS will not issue reservations for future meters until new sources are brought on-line. The County will issue meters up to 800,000 gallons per day (GPD) from July 1, 2003 to those ready to receive service. After that, no new meters will be issued until new sources have been brought on-line.

Based on empirical use, water use for 6-inch sized meters for multi-family development in Wailea would be about 133,000 gallons per day. Based on system per-acre standards, water use would be about 150,800 gpd. Whether any source remain to serve this project will be determined once water system construction plans, domestic and irrigation calculations have been approved by our engineering division. We recommend that brackish and/or reclaimed water is used for all irrigation purposes, if feasible.

Should you have any questions, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,


George Y. Tengan
Director
emb

c: engineering division

C:\WPdocs\Correspond\Wailea MF-9 meter applic.wpd

By Water All Things Find Life

CC: CMI

Subject: Wailea MF-9
Date: Fri, 21 May 2004 18:46:45 -0500
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
Thread-Topic: Wailea MF-9
Thread-Index: AcQ/jd0j/LsL1pc6S/6kokMtMHPAkg==
From: "MICHELE OLIVEIRA" <michele@cmidevelopment.com>
To: <jmin@chpmaui.com>
Cc: "Steve Jiran" <steve@cmidevelopment.com>,
"Martin Quill" <martin@cmidevelopment.com>
X-OriginalArrivalTime: 21 May 2004 23:46:51.0693 (UTC) FILETIME=[E3BC65D0:01C43F8D]

John,

Here's what I have so far for consultation meetings for Wailea MF-9:

January 28, 2004 - 1:45PM

Meeting with WCA

Wailea Community Association's offices

Marty, Karen Quill, Steve Jiran and Rebecca Judge met with Phil Johnson, Bob Lloyd and Bud Pikrone to introduce WCA on what we plan to develop on MF-9. There were no official notes taken, however the discussion was positive and Phil, Bob and Bud were looking forward to further details and plans.

*Phil Johnson is to send me a list of attendees..hopefully by this afternoon

March 2, 2004 - 5 PM

Wailea Golf Vistas Annual Meeting

Wailea Marriot

Marty was asked to do a presentation of MF-9 at the annual meeting.

The associations reaction was positive and seemed favorable.

*I've asked Phil Johnson for meeting minutes. He didn't have any, but will try to get a hold of the minutes and send them to me.

April 1, 2004 - 9:30AM

Meeting with Wailea Golf Estates Neighbors

CMI Group Offices

Attendees: Martin Quill, Mary Barr and James Allard, Don and Judy Atkinson

Marty meet with Mary, James, Don and Judy and gave a breif presentation of the developer's plans for MF-9 with current floor, site and elevation plans.

All in attendance were very interested in the project and appreciated the developer taking the time to dicuss the details of the project with them. Some items of discussion were roof line elevations and size of the buildings.

If I get more information by Monday, I'll make sure Rory gets it. If you need any other information John, I'll be more than happy to assist.

Aloha,

Michele Oliveira

CMI Group

1885 Main Street, Suite 104

Wailuku, HI 96793

808.242.8979 p

808.242.8973 f

WAILEA MF-9 ASSOCIATES LLC

1885 Main Street, Suite 104
Wailuku, HI 96793

Phone 808-242-8979
Fax 808-242-8973
Email cmi@cmidevelopment.com

May 20, 2004

Phil Johnson
Wailea Community Association
Design and Covenants Manager
555 Kaukahi St., Suite 214
Wailea, HI 96753

Dear Phil,

Thank you for your prompt response. We have all our design consultants putting together responses to your letter. I wanted to summarize for you what I am planning to bring to the meeting on Thursday May 20th at 1:00p.m. and confirm our discussions.

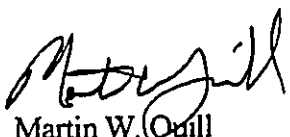
Following your letter:

1. There is a new plan showing all of the items under Item 1 from your letter.
2. There is a new landscape plan which will respond to Item 2.
3. A/C System - We are putting together the A/C system information and will have a preliminary sketch showing what these compounds will look like and where they will be on the site.
Garage Area - Regarding storage, we will partially solve this issue with a 2-foot deep storage built into each garage running the length of the garage. The garages are 12 ft wide which will leave us plenty of room for the car. We will end up with at least 70 ft of storage area prior to our final plans being approved.
Extension of "D" Unit Garage Roofs - We will modify the roofs and include it in our next submittal.
Awnings - The awnings on the windows have been deleted and I will have a drawing showing that. In the meantime, we will be coming up with a sun screening more consistent with the aesthetics we want to achieve.
Propane Tanks - We are still working on this. It has not been decided whether to have propane at all. The current plan is to put tanks somewhere on the carport side of the roads but, again this issue is still unresolved. This would be something that we would come back to you on and have reviewed prior to submitting our final plans.
Round vs. Square Columns - We are working on this issue and will have it resolved prior to our next submission.
Lanai Barbeque Ventilation System - We think we have this resolved and will complete this prior to our plans later on.

Mr. Phil Johnson
May 20, 2004
Page Two

Again, I thank you for your help and guidance. I look forward to seeing you Thursday and coming away with your preliminary approval so we may file our SMA and EA next Monday.

Sincerely,



Martin W. Quill
Manager
Wailea MF-9 Associates LLC

Cc: Chris Hart
John Kilbane
Mel Choy

Martin Quill

From: Susan Locklin [info@wcamaui.com]
Sent: Friday, May 14, 2004 4:29 PM
To: Steve Jiran; Martin Quill
Cc: Clyde Murashige; Colin Moreton; Phil Johnson; Hans Riecke; Barry Rand
Subject: MF-9 Prelim tabled 5-14-04



Image001.png (6 KB) header.htm (4 KB) Image002.gif (8 KB)

VIA EMAIL

May 14, 2004

Marty Quill
CMI Development
3620 Baldwin Ave., Suite 107
Makawao, HI 96768

Re: MF-9 - Preliminary Plans - Tabled

Dear Marty,

Thank you for your presentation of preliminary plans of this project on May 13, 2004. The Design Review Committee tabled a decision until additional detail on the following is received:

1. Revised site plan indicating:
 - * South egress road may be eliminated and a grass crete emergency road placed on the north end of project provided it is connected to internal road system.
 - * Trellis cover for guest parking intermixed with roofed carports for owners.
 - * Conceptual drainage plans and details indicating retention.
 - * Building M is into open space to south; consider moving Buildings A and N south to ease slope concerns.
 - * Selective use of 2:1 slopes, fully landscaped and stabilized, will be considered on final plans. These may be allowed between sides of some buildings and streets. Grading plan as submitted is acceptable for Preliminary Review.
 - * Single line site utility plan
2. Revised landscape plan indicating:
 - * Landscaped "park" area in greenbelt to south.
 - * Safety concern resolved regarding easy ground-level access onto carport roofs.
 - * Monkey pod tree at recreation centers and along Alanui Drive are appropriate.
 - * Monkey pod trees at top of project will not be approved; substitute another species.
 - * Propose street and common area conceptual lighting plan.
 - * Perimeter chain link fence at 4 ½ high with green vinyl slats and hedge on golf course side and landscaped on project side.
3. Architectural concerns:
 - * Provide AC system/ heat pump product information. Resolve location and screening. Resolve and simplify roof plan at connection of 45 degree element to main form.
 - * Storage of 70 square feet at 8 feet in height in garage area, or in combination of storage elements into carports.
 - * Consider extending "D" unit garage roofs along first floor street façade for sun control and more articulation of façade.
 - * Delete awnings on windows. Consider other sun screen elements more consistent with architecture aesthetic.

- * Resolve location and screening of propane tanks.
- * Resolve round versus square columns.
- * Resolve lanai bar-b-que ventilation system

I look forward to your presentation of these revisions at our special Committee meeting to be held on May 20th at 1 p.m.

For the Committee,

Phil Johnson
Design and Covenants Manager



VIA EMAIL

February 19, 2004
VIA EMAIL

Marty Quill
3620 Baldwin Ave., Suite 107
Makawao, HI 96768

Re: MF-9 Development

Dear Marty,

Thank you for meeting with the Design Committee on December 18 and with representatives of two of the neighboring subdivisions on January 28. At the latter meeting, you presented tentative pad elevations for the buildings as well as a revised site plan and building configuration.

The Design Review Committee would like to invite you back to present this information in addition to your more accurate topographical information as soon as possible -- before a formal Preliminary Submittal. In this presentation, we would like to see east/west and north/south site sections, have you address elevation and view corridor concerns, and see the new site plan.

Also, you should be aware that the Committee has severe reservations about the size and mass of the eight-plexes and in all likelihood will not approve them. We believe it prudent to address these issues now. Proposed traffic flow and pedestrian access across Wailea Alanui also need to be discussed. It is doubtful that a pedestrian activated stoplight will be viable. Other traffic/pedestrian mitigation measures need to be investigated.

The WCA expense from this requested meeting with you will be considered part of the Preliminary Submittal process. Attached is a copy of the WCA Review Fee Schedule. As you can see, the fee is based on the number of units. The proposed 144 units = \$ \$50,000, with 2/3 due with the Preliminary Submittal and the balance upon Final Submittal. Also enclosed is the 2004 Committee Schedule.

WCA has not yet received the \$1000 pre-design consult fee from December 18 and would appreciate your remittance. Please call to calendar a date for our next meeting.

For the Committee,

Phil Johnson
Design and Covenants Manager

Attach.
c: Chris Hart
Barry Rand

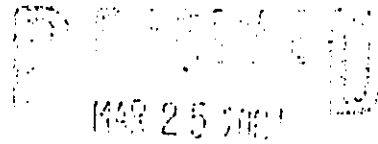
555 Kaukahi St., Suite 214 Wailea, HI 96753 phone 874-6866 fax 874-4027
www.wcamaui.com Email info@wcamaui.com



VIA EMAIL

March 25, 2004

Marty Quill
CMI Development
3620 Baldwin Ave., Suite 107
Makawao, HI 96768



Re: MF-9 Development

Dear Marty,

Thank you for meeting with the Design Committee on March 16, 2004 to update the Committee on your design evolution. There are several areas the Committee would like to see you improve or clarify. The following concerns impact the design, quality of product, and project viability and thus are important considerations.

Concepts and site concerns:

1. The Committee is not clear about the proposed market niche of this project. If the market is for owner occupied, for long term stays or as residences, then the relatively large size of the units may be justified. If, however the units are marketed as short term or "hotel" style rentals, then the large size and cost seems problematic. In general, the unit size is thought to be too large and would promote multiple occupancy or families in a unit, which could dramatically impact the parking and facility use.
2. The Committee supports the reverse floor plan and motor court concept that you have presented and would like you to consider using split grade building pads. This would allow for a single story entrance height at the motor court and a significantly different scale while creating a more varied look to the overall project.
3. The Committee believes that the plan in general is too regimented and that a combination of offsetting complexes, splitting pad elevations, and curving streets is necessary.
4. The Committee strongly recommends that you incorporate more "green" environmentally friendly elements into your project. There already exists the WCA requirement of solar water heating or heat pumps. Additionally, lighting design, insulation and zero-scape landscaping principles should be considered. Please refer to www.sacredpowercorp.com for a possible solar carport concept. We believe that incorporating these principles, while making good environmental sense, will also facilitate the SMA approval process. We are requesting the consideration of these "green" concepts for all Wailea developers.

Additional items of concern:

1. Articulate entry-street side of 8-plexes more.
2. Separate runs of carports with a maximum of 4 cars together.
3. Provide pedestrian walkways throughout the development especially to pools and office.

555 Kaukahi St., Suite 214 Wailea, HI 96753 phone 874-6866 fax 874-4027
www.wcamaul.com Email info@wcamaul.com

4. Provide resident manager's space.
5. Provide maintenance/ equipment storage location.
6. Provide secondary emergency egress to Alanui.
7. Mechanical:
 - Provide solar water heating or heat pumps to all units.
 - Meet or exceed new proposed County of Maui Energy Code for insulation and lighting.
 - Provide visual and sound screening for AC units.
 - Provide common lighting, full cut off fixtures with overall illumination not to exceed 1 foot candle per square foot (approximate full moon effect).
 - Provide 70 square feet of storage in each garage unit.

Committee's suggestions for consideration:

- Provide additional parking at pool/recreation/office center.
- Provide second common pool in open space area.
- Consider trash and recycling system in development.
- Decrease size of units of project if marketed as short-term rental.
- Increase street parking for guests over County minimum.
- Separate units with concrete/masonry walls.
- Consider golf internal use of golf carts and parking for same.
- Consider central propane tank.

Submittal Fees:

The Design review fee for your project is \$50,000. Two thirds of this amount, or \$33,000, is due upon Preliminary Submittal.

Submittal requirements:

Please provide all necessary information that is required for the County of Maui Step 1 SMA process:

- A complete site plan with setbacks, pad elevations, location and sections of retaining walls.
- Grading plan indicating location and amount of cut and fills and preliminary drainage plan.
- Site sections: mid site, high site north/south sections and 3 east/ west sections.
- Preliminary landscape plan with location, species and sizes of plant material.
- Preliminary architectural plans with floor plans, elevations, building sections and roof plans

We look forward to your formal preliminary submittal but are always open to meet to discuss or refine the design more before the formal submittal.

For the Committee.



Phil Johnson
Design and Covenants Manager

Attach.

Cx: Chris Hart
Barry Rand

555 Kaukahi St., Suite 214 Wailea, HI 96753 phone 874-6866 fax 874-4027
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555 Kaukahl Street, Suite 214
Wailea, Hawaii 96753-8333
(808) 874-6866 • FAX (808) 874-4027
info@wcamaui.com

May 24, 2004
VIA FAX 573-1631

Marty Quill, President
CMI Development
3620 Baldwin Ave., Suite 107
Makawao, HI 96768

Re: **MF-9 – Preliminary Plan Approval**

Dear Marty,

After almost six months of planning, discussion and reviews, I am pleased to inform you of the unanimous vote of the Wailea Community Association Design Review Committee to grant preliminary approval for your project.

Some of the many design elements considered and implemented in your plan include:

- A varied and open site plan with curving roads and varied building pad elevations.
- A significant down use of density as compared to allowable zoning.
- A 29-foot maximum ridge line that greatly improves site and view corridors from the surrounding communities.
- The lush landscaping and benched site design that will have a pleasant and positive impact from Alanui Drive as well as within the development.
- A combination of garages and covered and trellised carports.
- Commitment to conserve energy with heat pump, natural ventilation and recycling.
- Drainage and pedestrian access throughout the site.

The Design Review Committee believes that a gated entry to this project would be beneficial from a safety and security standpoint. Controlling access to an area that does not adjoin the beach or other community property allows for the smaller, internal roads and helps give a more human scale to the development.

We look forward to your final submittal.

For the Committee,

A handwritten signature in black ink that reads "Phil Johnson". The signature is written in a cursive, flowing style.

Phil Johnson
Design and Covenants Manager

APPENDIX C
Due Diligence Report

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DUE DILIGENCE REPORT

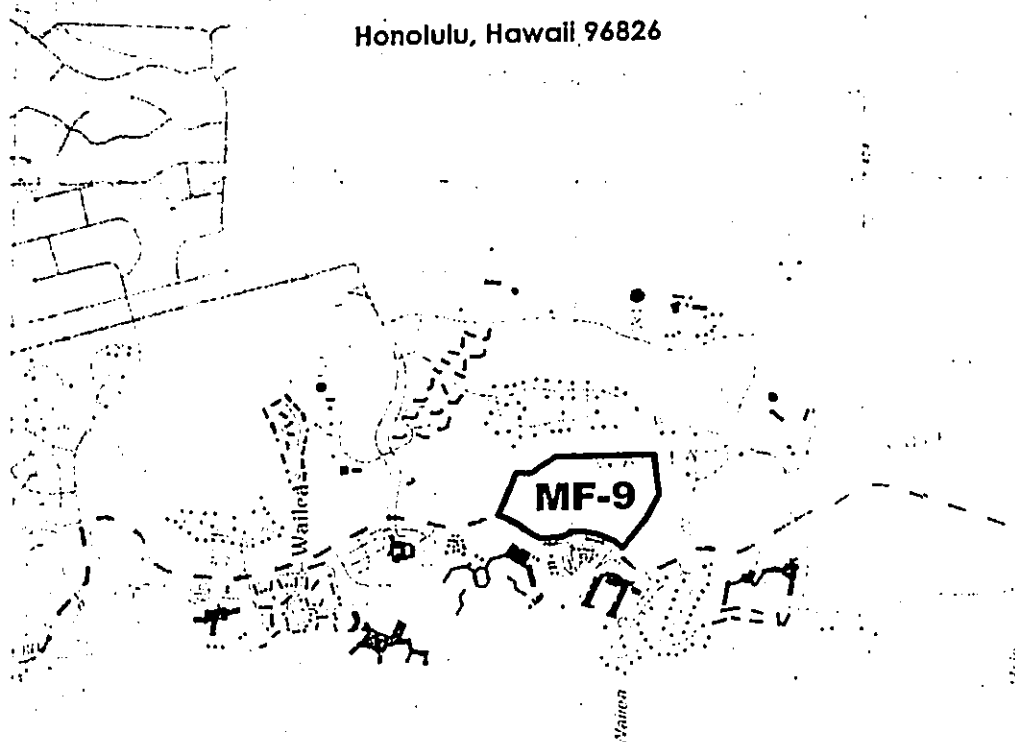
WAILEA MF-9

Wailea, Maui, Hawaii

Prepared For
CMI Development Inc.

RECEIVED
NOV 07 2003
CHRIS HART & PARTNERS
Landscape Architecture & Planning

Prepared By
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826



October 2003

Wailea MF-9
DUE DILIGENCE REPORT

Wailea, Maui, Hawaii
TMK 2-1-08:119

Prepared for:

CMI Development Inc.

Prepared by:

Wilson Okamoto Corporation
Engineers and Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC Job No. 7115-01

October 2003

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1.0 INTRODUCTION

1.1 Background

CMI Development Inc. intends to develop a parcel called Wailea MF-9 located along the west coast of Maui in the Wailea area. The Tax Map Key for the proposed project site is 2-1-08:119. The proposed project is anticipated to consist of about 130 units in 16 to 18 structures on a 30-acre site. Also planned are recreational features such as a pool and recreational center.

The proposed project site is bounded by Wailea Ala Nui on the West, and the Wailea Blue Golf Course and Wailea Golf Estates on the North, East and South. See Figure 1-1, Vicinity Map and Figure 1-2, Location Map.

1.2 Purpose

The purpose of the Due Diligence report is to briefly describe and evaluate the availability of civil engineering related infrastructure in the vicinity of the proposed project site. It also summarizes probable infrastructure improvements that may be needed to support the proposed project. Evaluation of the existing infrastructure and utility systems are based on meetings and discussions with various County of Maui agency personnel and readily available reports, studies, and drawings. Specific recommendations for infrastructure improvements are not included in this report.

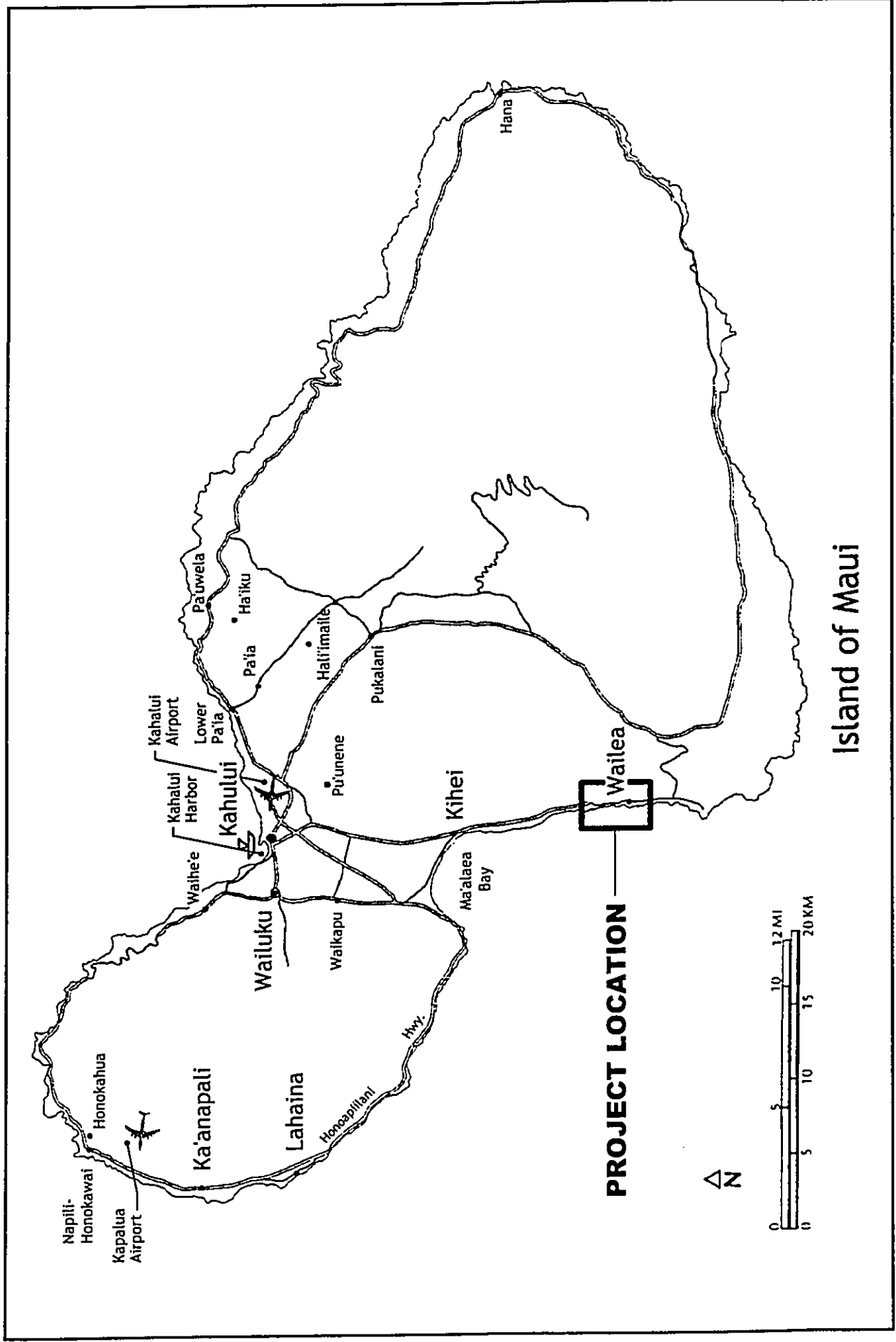


Figure No. _____ WAILEA MF-9 DUE DILIGENCE REPORT - WAILEA, MAUI, HAWAII

VICINITY MAP **1-1**

2.0 ROADWAYS SYSTEMS

2.1 Existing System

The proposed project area lies east of Wailea Ala Nui, a four-lane divided roadway owned and maintained by the County of Maui. Wailea Ala Nui and Wailea Ike Drive provide access to the proposed project area from the existing Piilani Highway owned by the State of Hawaii. Piilani Highway has recently been widened to four lanes. See Figure 2-1, Existing Roadway Plan.

2.2 Roadway Access System Evaluation

Based on information collected during our investigation the project area has a single means of access via Wailea Ala Nui.

Although a detailed traffic study would be needed to confirm the traffic needs for the project it is our opinion, based on our knowledge of the area and observation during our site visit, that no major traffic improvements are necessary at this time for the development of this project.

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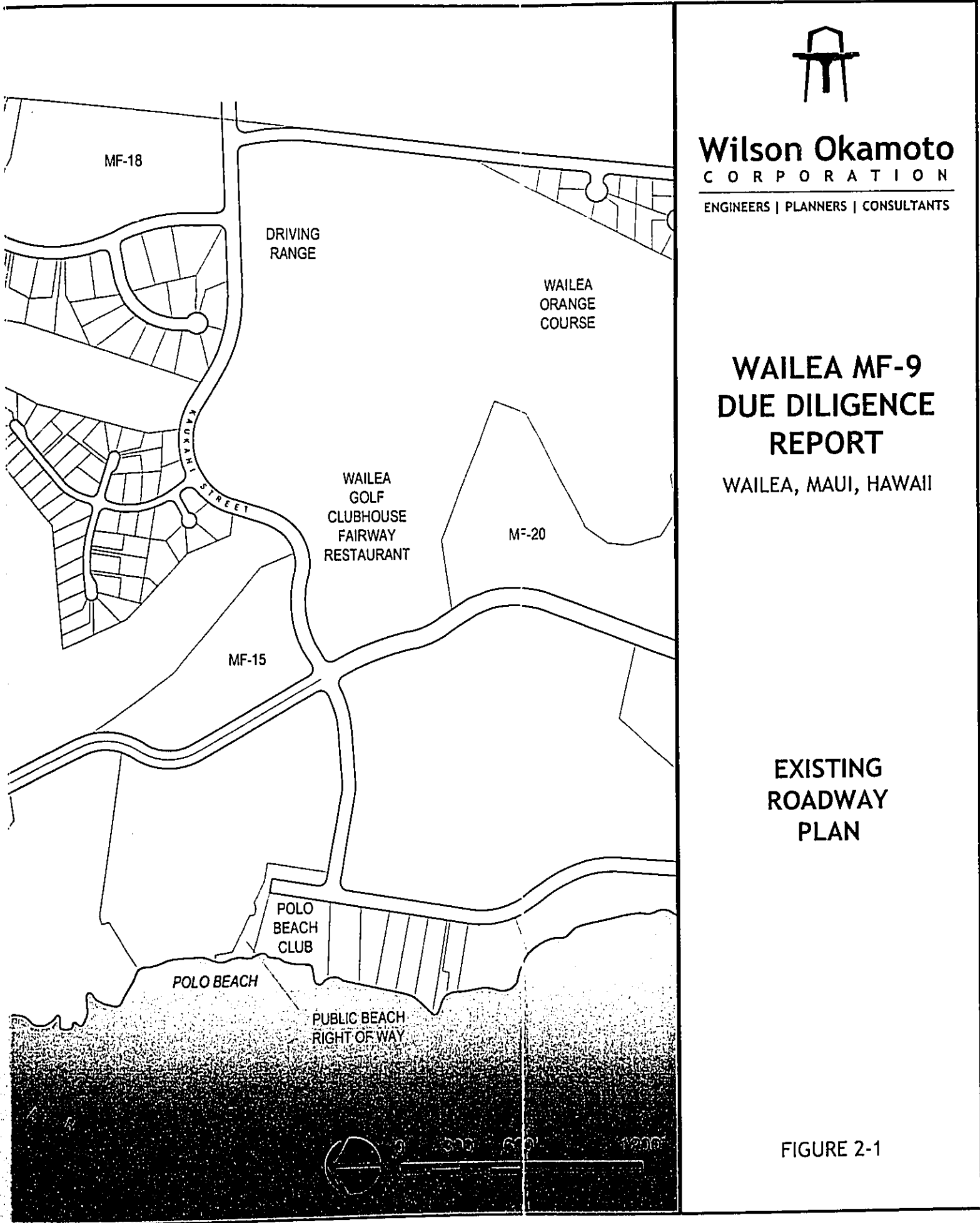


FIGURE 2-1

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3.0 WATER SYSTEM

3.1 Existing System

The existing water system in the area of the project site consists of a 16-inch distribution main and a 30-inch transmission main located in Wailea Ala Nui. Here are several water reservoirs in the vicinity of the project. These are located along Kilohana Street, Wailea Ike Place, along Kalai Waa Street and along Kaukahi Street.

The County's Wailea System's source of water is the Iao Aquifer. The State of Hawaii has recently declared the Iao Aquifer as a ground water control area. Consequently the County of Maui has discontinued accepting water meter reservations for developments in this area. Projects such as single-family subdivisions must have their infrastructure constructed and accepted before a water meter can be obtained from the County. However, unlike a subdivision it may be possible to install the lateral and meter prior to having complete building plans.

3.2 System Evaluation

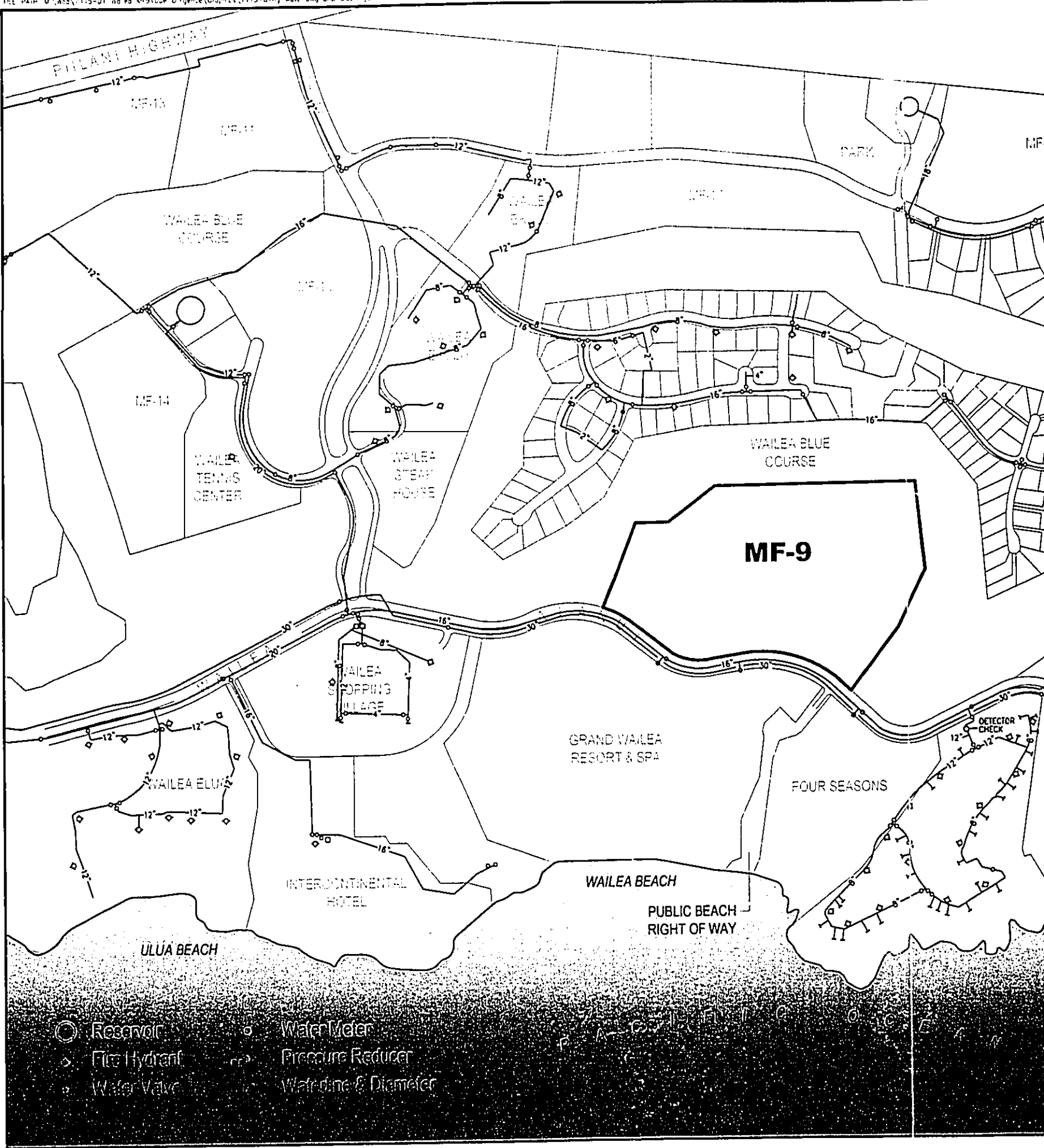
During our discussions with Department of Water Supply (DWS) personnel, we understand that the DWS's system in the area is sufficient with regard to both source and storage to support the proposed project at this time. It should be noted that the DWS cannot make any guarantees that water will be available for the project in the future.

The potable water supply for the project is anticipated to be via connection to the DWS's 16-inch water main located along Wailea Ala Nui. A new lateral will need to be constructed to the project site from Wailea Ala Nui. Other standard improvements will consist of water meter, water meter vault, reduced pressure backflow prevention device, and necessary distribution waterline piping to the various site structures.

Similarly, the fire protection waterline is also anticipated to be via the new water main.

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- Reservoir
- △ Fire Hydrant
- Water Meter
- Pressure Reducer
- ⊖ Water Valve
- Waterline & Diameter

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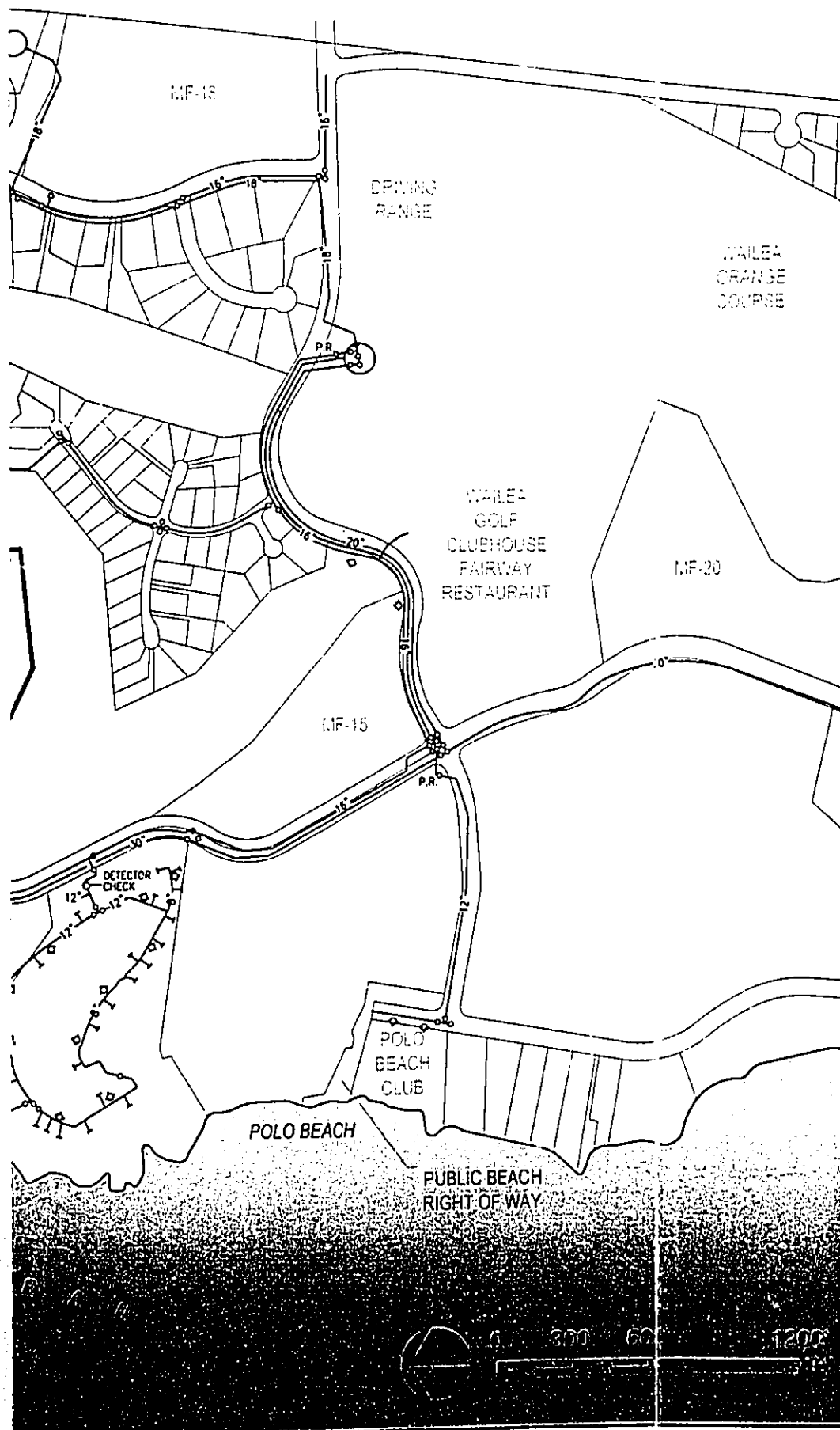


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**WAILEA MF-9
DUE DILIGENCE
REPORT**
WAILEA, MAUI, HAWAII

**EXISTING
WATER
SYSTEM**

FIGURE 3-1



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4.0 WASTEWATER SYSTEM

4.1 Existing System

Wastewater from the Wailea area is treated at the County of Maui's Kihei Wastewater Reclamation Facility (KWRF) located north of the project site on the east side of Piilani Highway. The KWRF's total treatment capacity is 8.0 million gallons per day (mgd), with 6.0 mgd. Presently, the facility treats about 6.5 mgd of wastewater.

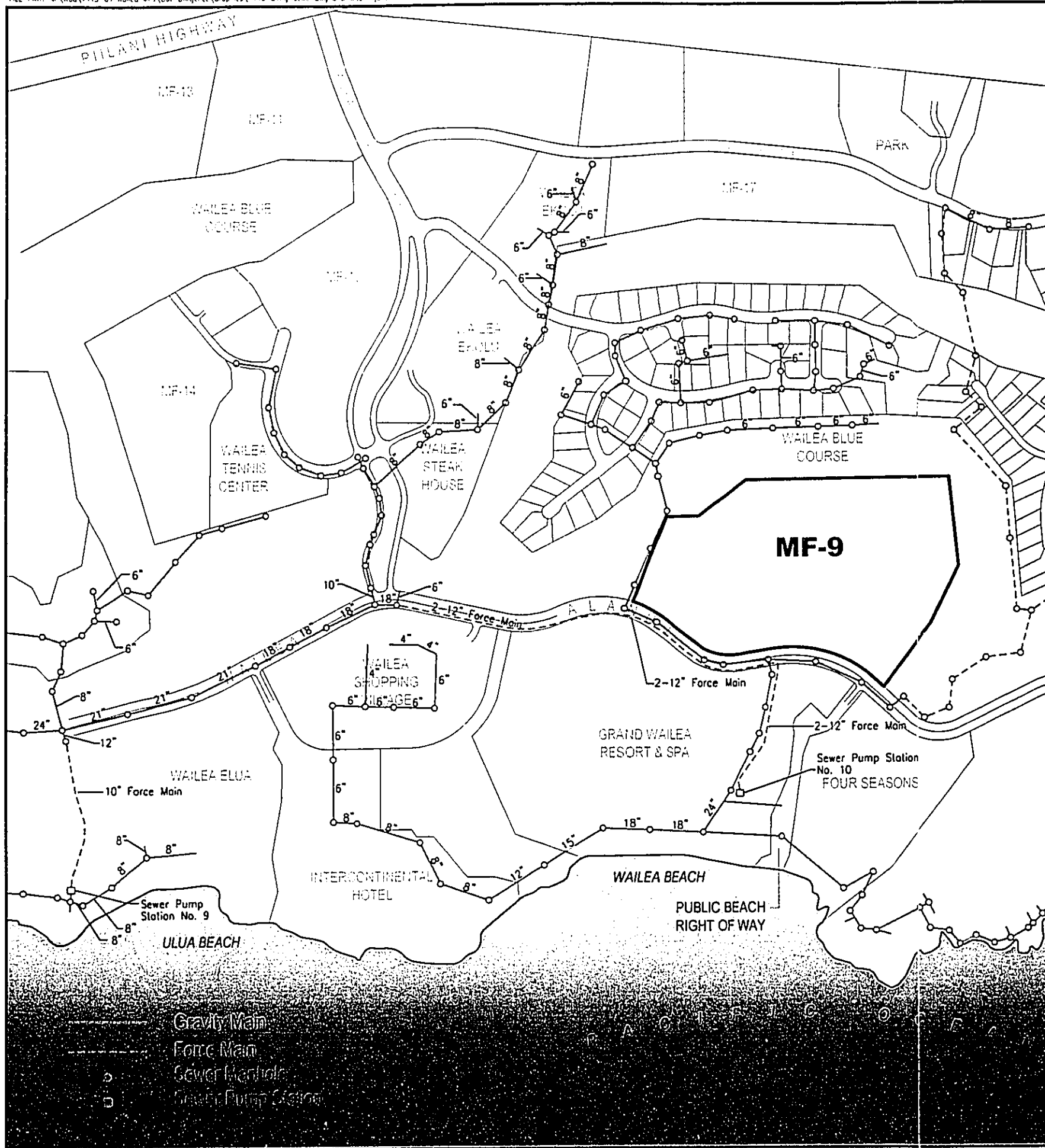
The existing sanitary sewer collection system in the vicinity of the project site consists of a 6-inch gravity line to the north of the project site and an 8-inch gravity line to the south of the project site which are privately owned. These lines converge on Wailea Ala Nui and runs to Sewer Pump Station No. 10 (SPS) which is County owned. From the SPS the sewage gets pumped via twin 12-inch force mains to the 18-inch gravity sewer at Wailea Ike Drive. See Figure 4-1, Existing Wastewater System.

4.2 System Evaluation

Based upon our discussions with Department of Public and Waste Management's Wastewater Reclamation Division (WRD) personnel, we understand that the WRD's system in the area is sufficient with regard to treatment plant. The County's collection system in general has sufficient capacity at this time to support the proposed project. However, since SPS No. 10 is at or near 80% of its capacity the County will require the development to evaluate SPS No. 10 to see if upgrading is necessary and if required provide appropriate upgrades. It should be noted that the WRD cannot make any guarantees that both treatment plant and collection system capacity will be available for the project in the future since connection is based on a "first come first served" basis. Connection to the WRD is secured during the building permit process.

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**WAILEA MF-9
DUE DILIGENCE
REPORT**

WAILEA, MAUI, HAWAII

**EXISTING
WASTEWATER
SYSTEM**

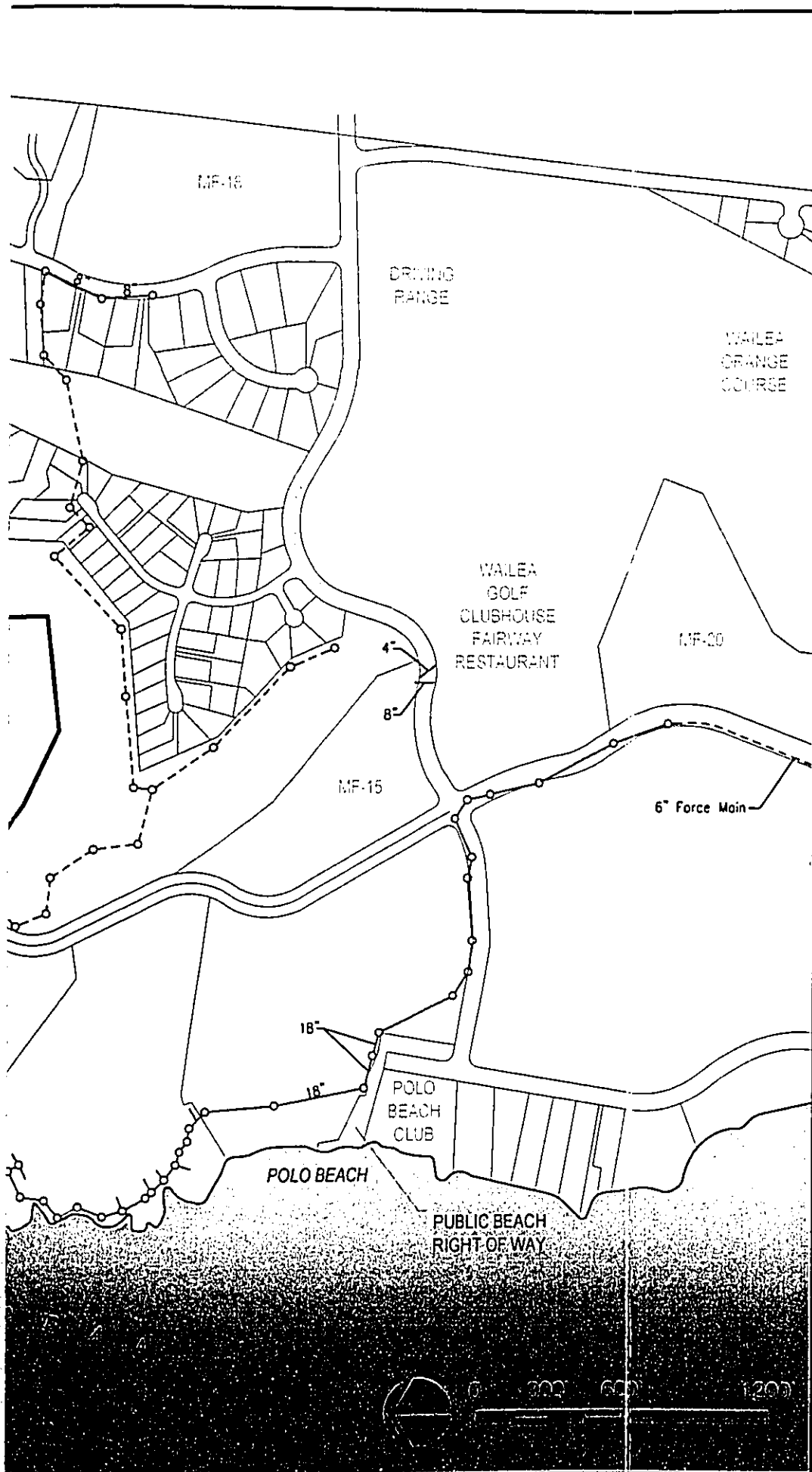


FIGURE 4-1

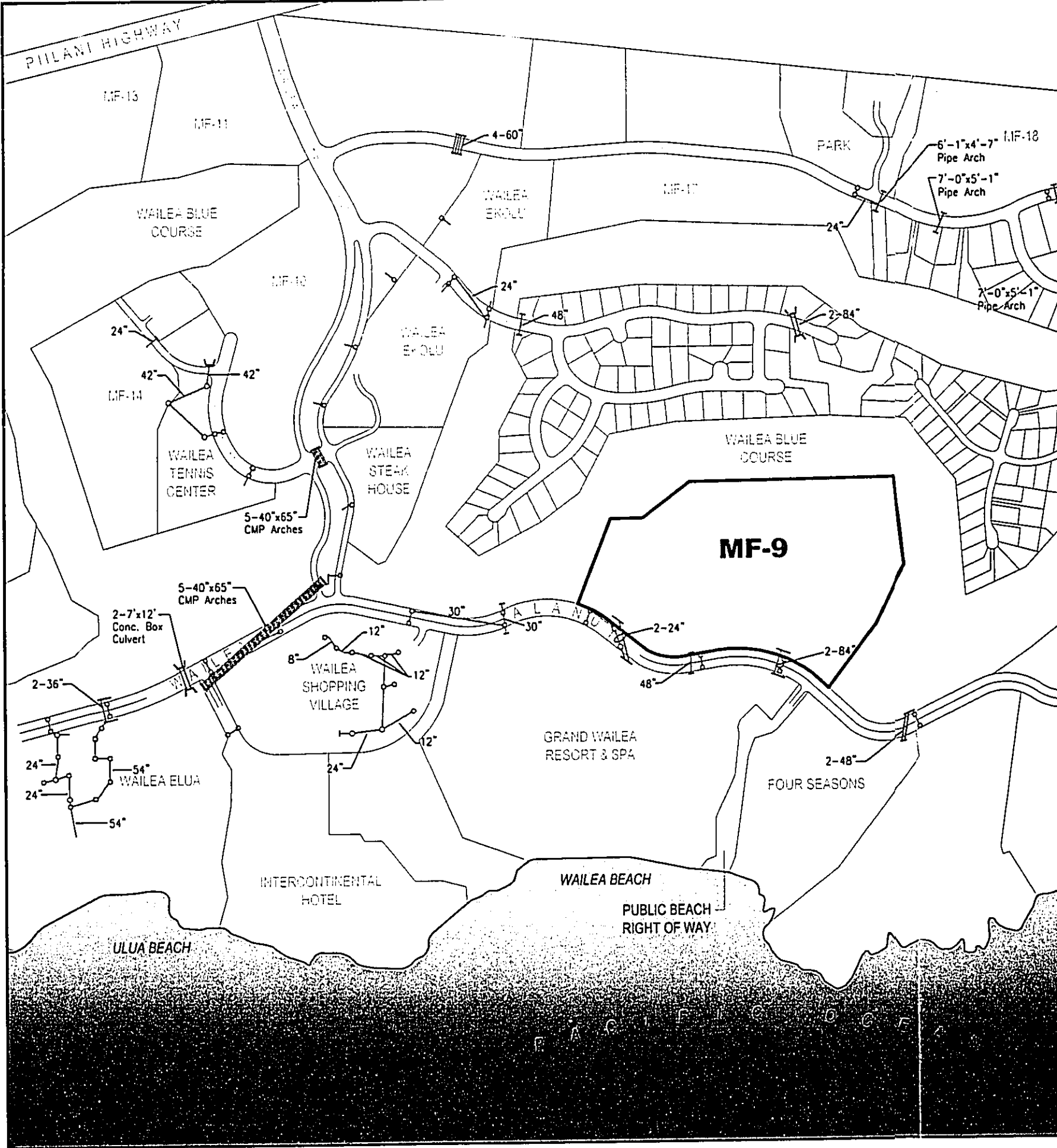
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Removal of wastewater from the project is anticipated to be via either a connection to the existing 8-inch gravity sewer main located in Wailea Ala Nui or if the existing 8-inch line does not have the capacity, a new sewer line to SPS No. 10. An easement through the Grand Wailea Resort property may be required if the existing easement does not have sufficient space. The proposed wastewater connection will likely consist of a new sewer manhole constructed over the 8-inch sewer main at the connection point.

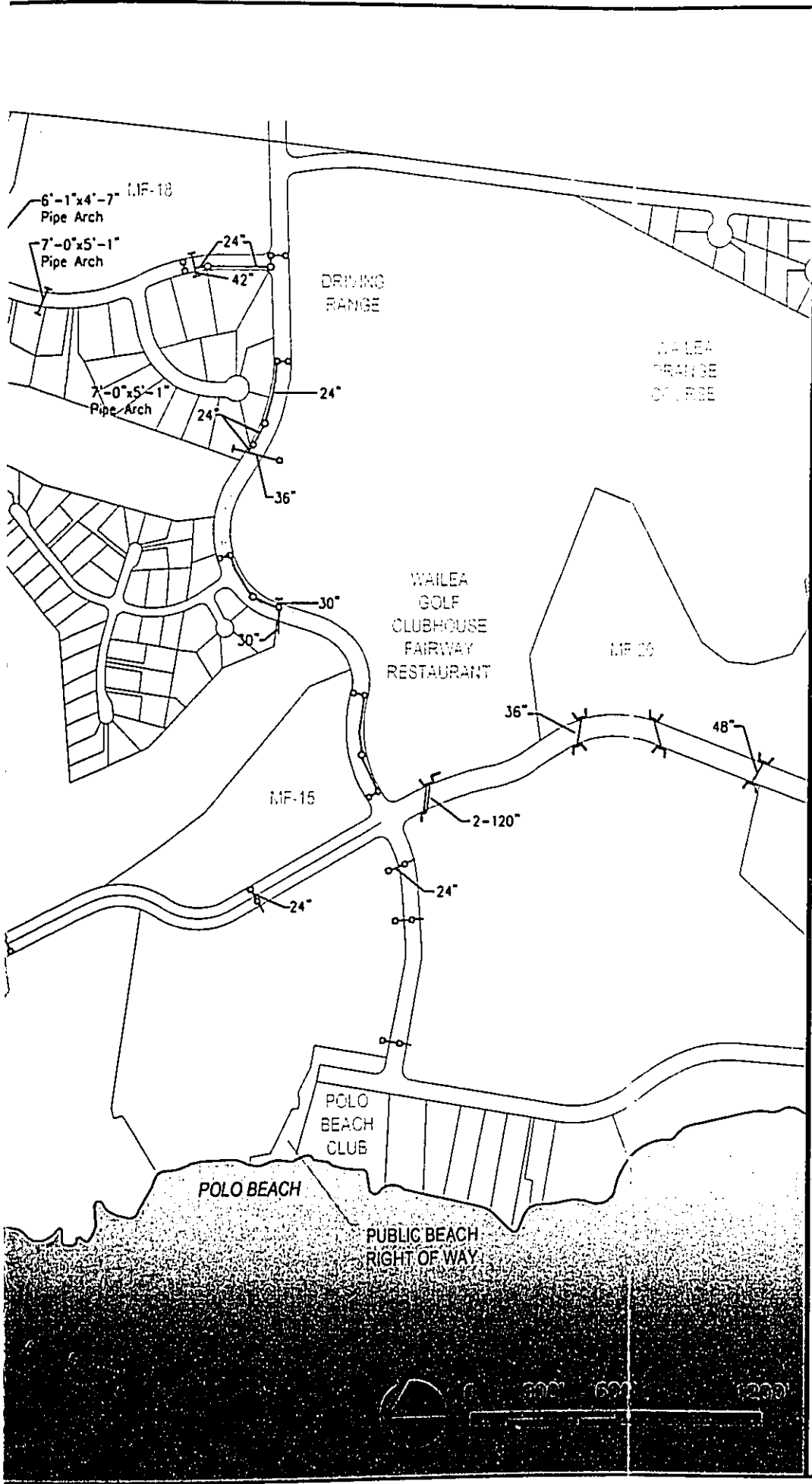
Based on discussions with WRD personnel, the County's reclaimed water system is currently not available to supply irrigation water to the project. Based on discussion with the Planning Department staff the proposed project will likely be required to use reclaimed water for irrigation and construction water when available. The WRD personnel indicated that there may be restriction regarding use of reclaimed water for irrigation.

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WAILEA MF-9 DUE DILIGENCE REPORT

WAILEA, MAUI, HAWAII

EXISTING DRAINAGE SYSTEM

FIGURE 5-1

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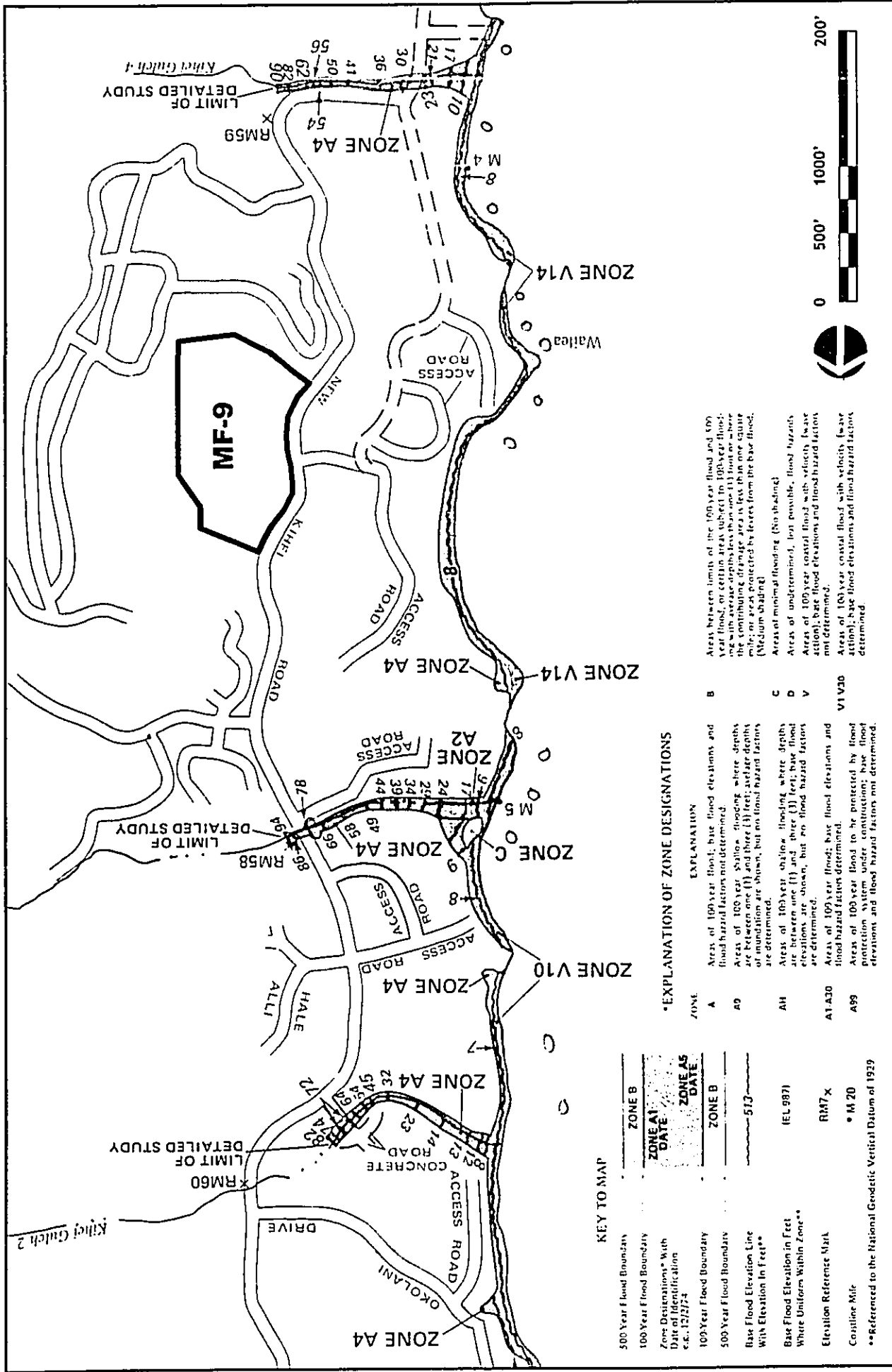


Figure No.

WAILAEA MF-9 DUE DILIGENCE REPORT - WAILAEA, MAUI, HAWAII

FLOOD ZONE MAP

5-2



Wilson Okamoto
CORPORATION
1000 Kalia Road, Honolulu, Hawaii

5.0 STORM DRAINAGE SYSTEM AND GRADING

5.1 Existing System

The proposed project area is located along the west coast of Maui in Wailea Resort area. Based on topographic information available, elevations within the proposed project site range from 50 feet mean sea level (msl) at the western boundary to 180 feet (msl) near the eastern boundary of the proposed project site. The majority of the proposed project site has slopes in the 5 to 20 percent range with steeper slopes at gullies, which run through the site. Average annual rainfall in the project area is approximately 15 inches.

Storm runoff from the project site and the areas mauka are conveyed through several gullies located on the site. These flows are then discharged across Wailea Ala Nui via culverts whose sizes are 2 – 24-inch diameter, 48-inch and 2 – 84-inch diameter culverts.

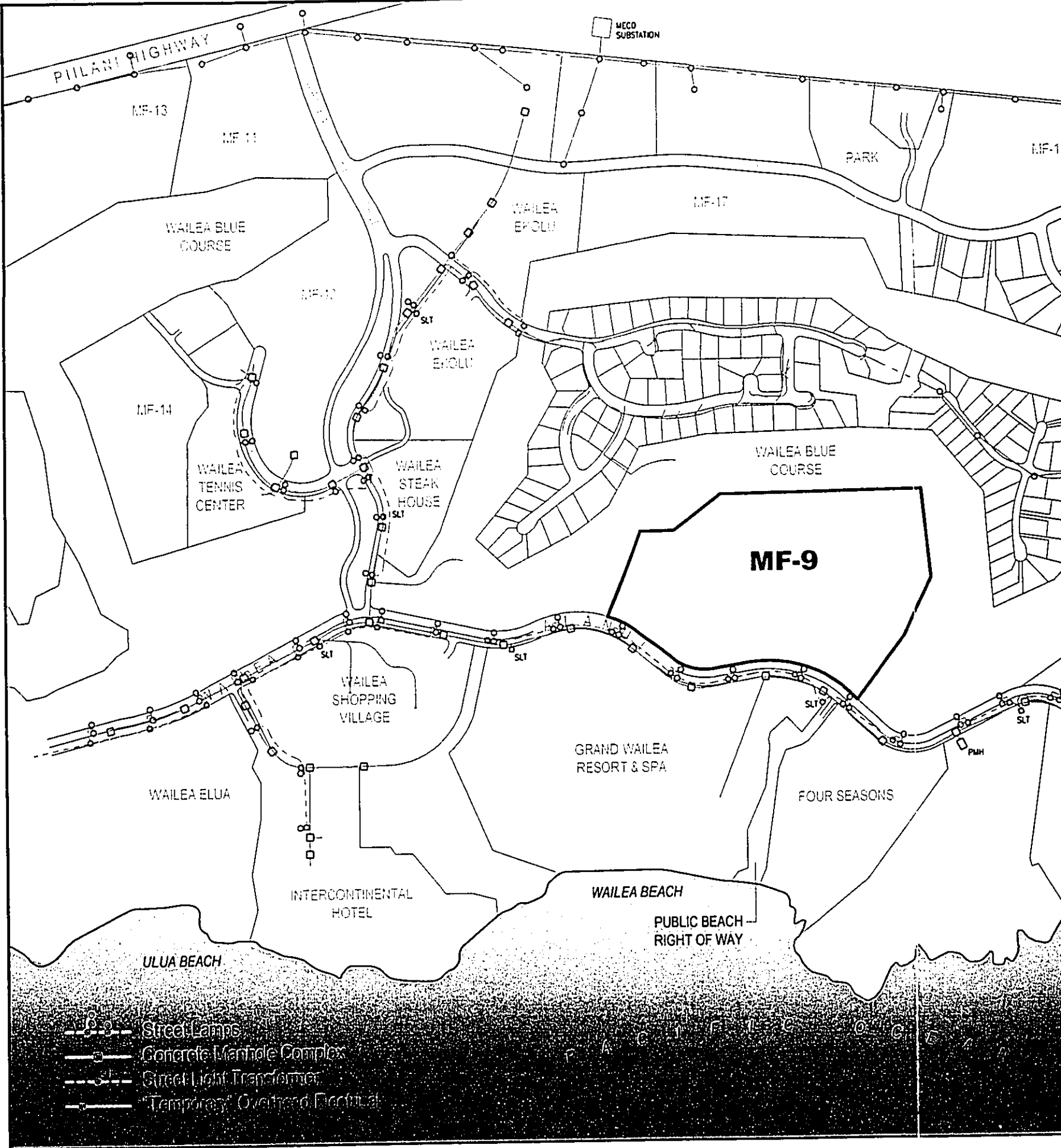
The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) shows that the project site is located within zone C. Zone C are areas of minimal flooding. See Figure 5-2, Flood Zone Map.

5.2 System Evaluation

The storm drainage system for the proposed project will need to comply with the County of Maui's drainage standards. Maui County requires that the current storm discharge rate be maintained therefore storm water detention on site should be anticipated.

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WAILEA MF-9 DUE DILIGENCE REPORT

WAILEA, MAUI, HAWAII

EXISTING ELECTRICAL SYSTEM

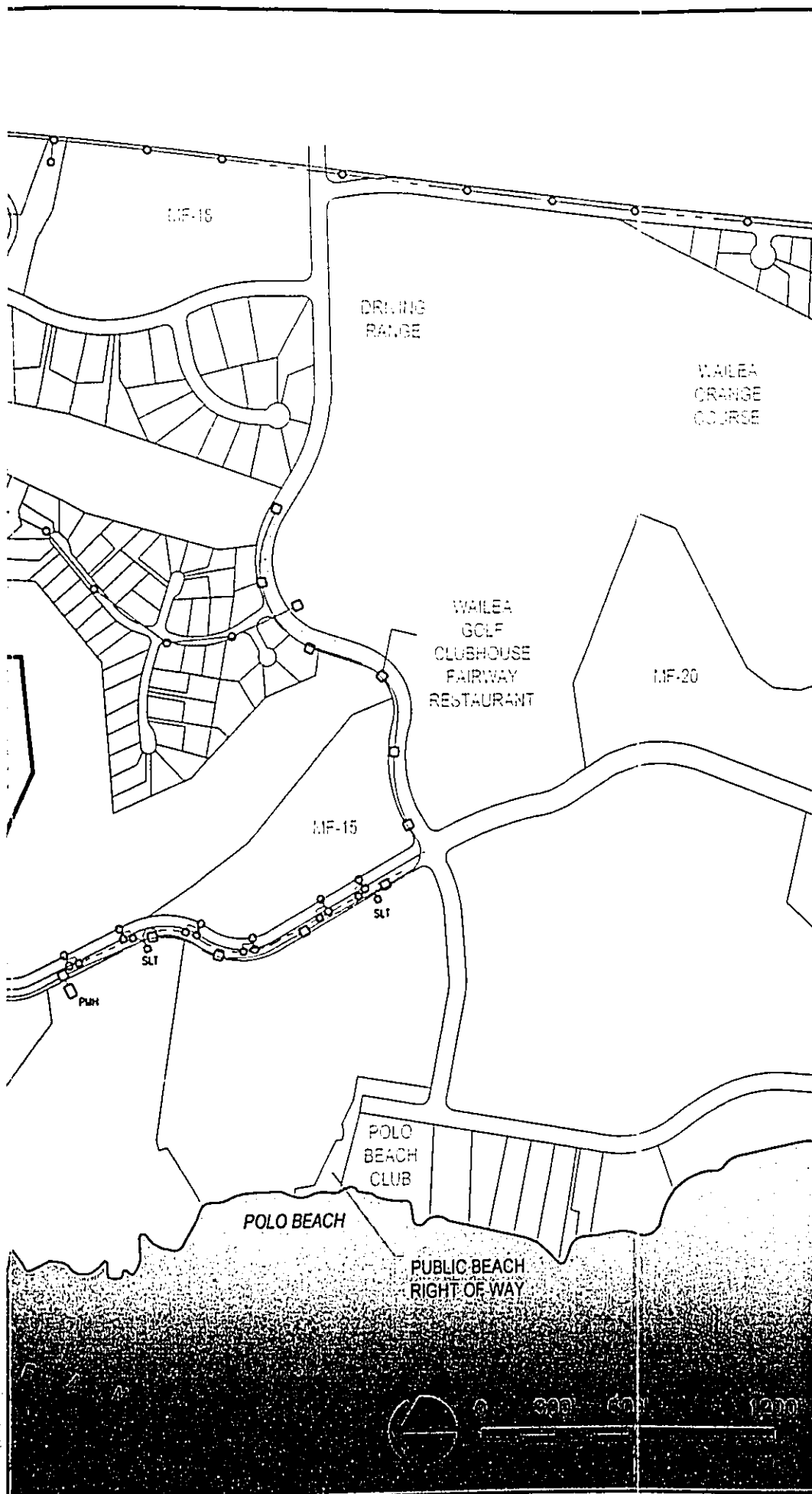


FIGURE 6-1

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6.0 ELECTRICAL SYSTEM

6.1 Existing System

The Wailea area is currently serviced by a 69 KVA, overhead transmission electrical lines, which runs from the MECO power plant to the existing Maui Electric Company (MECO) substation in Wailea near the end of the existing Piilani Highway. The overhead primary 12 KVA lines are placed underground within the existing subdivisions and resort areas. See Figure 6-1, Existing Electrical System.

6.2 System Evaluation

Based on discussions to date MECO acknowledges that electrical power will be made available to service the development. However, continued coordination will be required to ensure adequate power be available at the time the project comes on line.

APPENDIX D
Preliminary Drainage and Erosion Control Report

Wailea MF-9 Subdivision

Wailea Master Plan Parcel MF-9

Wailea, Maui, Hawai'i

TMK: (2) 2-1-08: 119

PRELIMINARY DRAINAGE & EROSION CONTROL REPORT

Prepared for:

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September 2004

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APPENDIX B	Drainage Design Calculation

SECTION 1
INTRODUCTION

1.1 PURPOSE

The objective of this Preliminary Drainage and Erosion Control Report (PDECR) is to provide a brief description and evaluation of the grading and drainage characteristics of the proposed Resort/Apartment/Condominium housing project. The project is also known as Wailea MF-9.

1.2 GENERAL INFORMATION

A. CMI Development, Inc. is proposing to construct 120 hotel-zoned condominium units in Wailea, Maui. The project is bounded by Wailea Blue Golf Course and Wailea Alanui Drive near the Grand Wailea Resort Hotel. The housing consists of approximately 20 two-story buildings with six attached Resort/Apartment/Condominium residential units situated within a gated condominium community. The units consist of 3Bd plus den/3-1/2Bath or 4Bd/3 Bath with enclosed garages and private lanais.

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B. Vicinity Map (See Figure 1)

SECTION 2

PHYSICAL ENVIRONMENT

2.1 LOCATION

The Wailea MF-9 project site is located directly across the street from the Grand Wailea Resort Hotel and Spa and the Four Seasons Resort Maui at Wailea. The existing Wailea Blue Golf Course surrounds the site on three sides. The site is vacant and unused at the present time. The project area is approximately 30.167 acres. The property is described as State of Hawai'i, Second Taxation Division, Tax Map Key (TMK) Parcels (2) 2-1-08: 119.

2.2 TOPOGRAPHY

The site is bounded by Wailea Blue Golf Course and Wailea Alanui Drive. The slope of the lot slightly varies toward Wailea Alanui Drive. The slope is moderately steep.

2.3 SOILS

According to the August 1972 publication *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* by the United States Department of Agriculture, Soil Conservation Service, the soil at the project site is Makena loam, stony complex, with slopes of 3 to 15 percent (soil classification MXC). This series consists of well-drained soils on alluvial fans on the island of Maui. These soils developed in alluvium derived from weathered basic igneous rock, and are gently to moderately sloping. Elevations range from sea level to 500 feet. The mean annual soil temperature is 75°F. Runoff is slow to medium and the erosion hazard is slight to moderate. This soil is used primarily for pasture and wildlife habitat.

2.4 DRAINAGE/FLOODING

According to the Flood Insurance Rate Map (FIRM, Ref B) of the project site, the area is classified as Zone C—an area determined to have minimal flooding. The FIRM for the project area is shown in Figure 2.

2.5 RAINFALL

According to the August 1972 publication *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* by the United States Department of Agriculture, Soil Conservation Service, the annual rainfall amounts to 10 to 20 inches.

SECTION 3

DRAINAGE

3.1 METHODOLOGY

Drainage characteristics for the project site are analyzed through the use of the Rational Method. Drainage guideline standards for the County of Maui—*Rules for the Design of Storm Drainage Facilities in the County of Maui* (11/12/95, Ref D)—states that the Rational Method shall be used for drainage areas of 100 acres or less, into which category the project site falls.

3.2 HYDROLOGIC CRITERIA

The hydrologic criteria used to obtain peak discharges are summarized as follows:

- Recurrence Interval: $T_m = 50$ years
- Intensity and Rainfall Duration: Intensity of 1-hr Rainfall
- Peak Discharges: Rational Method
- Runoff Coefficient C: Determined from Table 1 (Appendix A)

3.3 EXISTING DRAINAGE CONDITIONS

Drainage runoff at the site currently sheet flows westerly in the existing condition toward Wailea Alanui Drive. The entire site consists of three existing drainage areas, as shown in Figure 3. Each drainage area is served by culverts of varying sizes under Wailea Alanui Drive. The Drainage Master Plan for the Wailea Development Co. that sized the culverts was utilized to provide the offsite flows. The Master Plan design flow included areas within the MF-9 property and the contributing areas above.

The flows calculated within this report are based on, proposed onsite conditions and existing offsite flows through the property, to evaluate the increase in runoff due to the proposed development and accommodate existing runoff through the property. Infrastructure improvements such as grading, roadways or buildings, will not be done outside of the property therefore will not change existing drainage patterns for areas outside the property. Existing flow patterns along the property lines shall be maintained.

Peak discharges for the existing onsite drainage areas (EDA) are as follows:

EDA	Area (acres)	Flow (cfs)
A	2.55	4.46
B	11.64	18.62
C	12.21	16.79

Refer to Appendix B for calculation details.

Peak discharges for the existing offsite drainage areas are as follows: (Ref. G)

Offsite Drainage Area	Flows into EDA	Area (acres)	Flow (cfs)
I-1	A	49.24	103
I-2	B	58.51	150
I-3	C	126.72	252
35	C	469	878
36	C	27	<u>102</u>
Total for	C	622.72	1232

3.4 PROPOSED DRAINAGE SYSTEM

The proposed drainage system will be comprised of drywells, inlet structures and subsurface drainage to handle any increase in flows. Drain inlets with drywells shall be located along the roadways to alleviate the runoff from collecting at one central point within each drainage area. Any increase in flow at the bottom of each drainageway will be handled by a subsurface drainage system and released into the existing natural drainageway at a rate equal to the existing conditions.

Peak discharges for the proposed onsite drainage areas (FDA) are as follows:

FDA	Area (acres)	Flow (cfs)	Increase in Flow (cfs)
A	2.55	5.98	1.52
B	11.64	24.96	6.34
C	12.21	22.50	5.71

Existing offsite flow into drainage area A will be redirected along the north perimeter of the property and allowed to discharge into the existing 2-42" CMP culvert under Wailea Alanui Drive. Offsite flow into drainage area B along with the onsite surface flow within that area will be conveyed through an underground drainage system and discharge into the existing 48" CMP under Wailea Alanui Drive. For drainage area C, which is the largest of the three drainage areas, offsite and onsite flow will run through a series of terraced detention basins to slow down the water. Each basin will collect flow and overflow into the next basin so that the runoff will flow into the existing 2-84" CMP at a controlled rate. The basins will be grassed and designed with small pipes at the invert of the basins to eliminate any stagnation. Additional drywells and underground detention system will be used throughout the proposed subdivision to detain increase in runoff.

The proposed drainage system shall be proactive in developing a system that is environmentally friendly as possible. Methods to minimize any adverse affects to the downstream waters such as runoff being directed through a vegetated area, minimizing pavement, planting trees or shrubs across a slope and use of grass swales will be implemented.

3.5 SUMMARY

The amount of runoff discharged from the project site will not be increased and the existing drainage pattern will be maintained. The construction of the proposed project will not adversely affect the drainage conditions in the adjoining and downstream properties.

SECTION 4

EROSION CONTROL

4.1 EXISTING CONDITIONS

The project site has a rolling landscape with elevations varying from 50' MSL to 180' MSL. The area is well vegetated with brush and medium to large trees. The area is bound by the Wailea Blue Course on the North, South and West sides and Wailea Alanui Drive is located along the East side. The existing Wailea MF-9 Subdivision project site will be cleared, grubbed and graded to finish grades into terraces.

4.2 EROSION CONTROL PLAN

Best Management Practices (BMPs) and erosion control measures shall be utilized to meet State and County requirements. Best Management Practices include:

- a. Measures to control erosion and other pollutants shall be in place before any earth moving is initiated.
- b. Exposed earth should be watered periodically for dust control to avoid nuisance to adjacent properties.
- c. Any graded area that will be left idle for 30 days or more shall be mulched or grassed.
- d. Washing down construction equipment and vehicles, and concrete truck drums at site is prohibited. Wash water from washing downs shall not be discharged into drainage systems.
- e. Should the contractor choose to have an on-site maintenance/storage/stockpile area, the contractor shall install proper secondary containment structures, such as, gravel berms and silt fences, around the designated project area to prevent stormwater from transporting suspended debris, pollutants and contaminants from the site to the existing County drainage systems and nearby State waters. The rainwater accumulated within the designated area shall be naturally evaporated or infiltrated into ground during construction.

Temporary erosion control measures include:

- a. Crushed rock construction entrances for each ingress and egress.
- b. Silt fences for perimeter sediment control.
- c. Silt fence-filter combinations around all drain inlets.
- d. Water and mulching included in the completion of all grading work to prevent dust, erosion and sedimentation.

Permanent Erosion Control Measures include:

- a. Grass for all graded areas left exposed as soon as finished grades are established

All remaining, exposed earthen areas within the site will be landscaped with foliage, such as, trees, shrubs and bushes. An irrigation system will be installed for ground keeping.

4.3 UNIVERSAL SOIL LOSS EQUATION

Characteristics of soil loss at the site and measures of erosion control are determined at different stages of project construction work through the use of the Universal Soil Loss Equation (USLE), contained in the document, *Erosion and Sediment Control* (Ref A), which states:

$$A = R \times K \times LS \times C \times P,$$

where A = Soil loss per unit area (tons/[acre·year]);

R = Rainfall factor for erosion;

K = Soil erodibility factor;

LS = Slope length and gradient factor;

C = Cover and management factor; and

P = Erosion control practice factor.

The anticipated project construction schedule is as follows:

Projected Construction Schedule for the Wailea MF-9 Project		
Project Task	Projected Dates	
	Start	End
1. Contractor Reception of the Notice to Proceed (NTP) and Commencement of Work.	June 6, 2005	<i>not applicable</i>
2. Installment and Maintenance of Temporary Erosion Control Measures.	June 6, 2005	June 19, 2005
3. Site Clearing and Grubbing Operations.	June 20, 2005	July 17, 2005
4. Mass Grading Operations and Installment of Temporary Vegetation & Landscaping.	July 18, 2005	September 10, 2006
5. Dismantling and Removal of Temporary Erosion Control Measures.	September 11, 2006	November 19, 2006
6. Completion of Work.	November 30, 2006	<i>not applicable</i>

The project site is in Wailea, Maui, Hawai'i. Linear interpolation of the *Average Annual Values of Rainfall Factor, R* map for the Island of Maui yields an approximate R value of 153 for locations in the Wailea area. The duration of the *Mass Grading Operations and Installment of Temporary Vegetation & Landscaping* project task will be greater than one year; thus, the entire R value is used for soil loss calculations. On the other hand, the duration of the *Site Clearing and Grubbing Operations* project task will be less than a year; thus, the rainfall factor R is corrected to reflect an appropriate value that is applicable to this specific project task. The graph, *Expected Monthly Distribution of Erosive Rainfall, H15, Maui, Neck and west peninsula of island, Wailuku District*, is used to determine this corrected R value.

Site Clearing and Grubbing Operations

Cumulative fraction of the total R occurring up to July 17, 2005:	0.612
Cumulative fraction of the total R occurring up to June 20, 2005:	0.608
<hr/>	
Difference (cumulative fraction of the total R to be expected for the duration of this construction task):	0.004
Thus, the corrected R for this construction task is $0.004 \times 153 =$	0.612

Determination of K

Table 14 on page 57 of the *Erosion and Sediment Control* reference indicates that Makena loam, stony complex, with slopes of 3 to 15 percent of classification MXC has a K of 0.17.

Determination of LS

Existing & Cleared and Grubbed Conditions

Length of slope = 860', Slope = 16.40%

Linear interpolation of L and S values given in Table 16 on page 59 of the *Erosion and Sediment Control* reference yields a LS value of 8.67 for the Existing & Cleared and Grubbed Conditions.

Mass Graded and Landscaped & Future Conditions

Length of slope = 830', Slope = 13.49%

Linear interpolation of L and S values given in Table 16 on page 59 of the *Erosion and Sediment Control* reference yields a LS value of 6.25 for the Mass Graded and Landscaped & Future Conditions.

Determination of C

Existing Condition

Using values from Table 20, *C Values for Permanent Pasture and Idle Land*, on page 60 of the *Erosion and Sediment Control* reference as a basis, the C value for the Existing Condition (25-percent appreciable brush or bushes [2 m fall ht.] with 95-100-percent type G ground cover) is 0.003.

Cleared and Grubbed Condition

Using values from Table 22, *C Values for Ground Cover*, on page 61 of the *Erosion and Sediment Control* reference as a basis, the C value for the Cleared and Grubbed Condition (predominantly bare soil) is 1.00.

Mass Graded and Landscaped Condition

Using values from Table 22, *C Values for Ground Cover*, on page 61 of the *Erosion and Sediment Control* reference as a basis, the C value for the Mass Graded and Landscaped Condition (predominantly grass) is 0.01.

Future Condition

Using values from Table 22, *C Values for Ground Cover*, on page 61 of the *Erosion and Sediment Control* reference as a basis, the C value for the Future Condition (predominantly grass) is 0.01.

Determination of P

Table 24, *P Value for Erosion Control Measures (Nonagricultural)*, on page 55 of the *Rules Relating to Soil Erosion Standards and Guidelines* (Ref E) reference indicates that P = 1.0 for no erosion control measures. For silt fences, berms, turbidity barriers and crushed rock-stabilized construction entrances installed and maintained during construction as temporary erosion control measures, P = 0.8.

Determination of A

Existing Condition

$$A = R \cdot K \cdot (L \cdot S) \cdot C \cdot P$$

$$A = (153.00) \cdot (0.17) \cdot (8.67) \cdot (0.003) \cdot (1.0)$$

$$A \approx 0.68 \text{ tons/(acre-year)}$$

Cleared and Grubbed Condition

$$A = R \cdot K \cdot (L \cdot S) \cdot C \cdot P$$

$$A = (0.612) \cdot (0.17) \cdot (8.67) \cdot (1.00) \cdot (0.8)$$

$$A \approx 0.72 \text{ tons/(acre-year)}$$

Mass Graded and Landscaped Condition

$$A = R \cdot K \cdot (L \cdot S) \cdot C \cdot P$$

$$A = (153.00) \cdot (0.17) \cdot (6.25) \cdot (0.01) \cdot (0.8)$$

$$A \approx 1.30 \text{ tons/(acre-year)}$$

Future Condition

$$A = R \cdot K \cdot (L \cdot S) \cdot C \cdot P$$

$$A = (153.00) \cdot (0.17) \cdot (6.25) \cdot (0.01) \cdot (1.0)$$

$$A \approx 1.63 \text{ tons/(acre-year)}$$

4.4 SUMMARY

The computed soil loss rates of the Existing, Cleared and Grubbed, Mass Graded and Landscaped, and Future Conditions are summarized in the table below. The computed soil loss rates for the two construction conditions are both temporary and of relatively short duration.

Soil Loss Rates for Different Construction Conditions of the Wailea MF-9 Project	
Construction Condition	Soil Loss Rate (tons/acre/year)
Existing	0.68
Cleared and Grubbed	0.72
Mass Graded and Landscaped	1.30
Future	1.63

Assuming that the maximum allowable soil loss rate for project site and its surrounding areas is 5 tons/acre/year, the computed soil loss rates for both construction conditions and the Future Condition are lower than the maximum allowable soil loss rate. The proposed temporary erosion control measures and Best Management Practices are adequate both during and after construction. No additional erosion control measures or best management practices are necessary to maintain soil loss at an acceptable level during construction and after project completion.

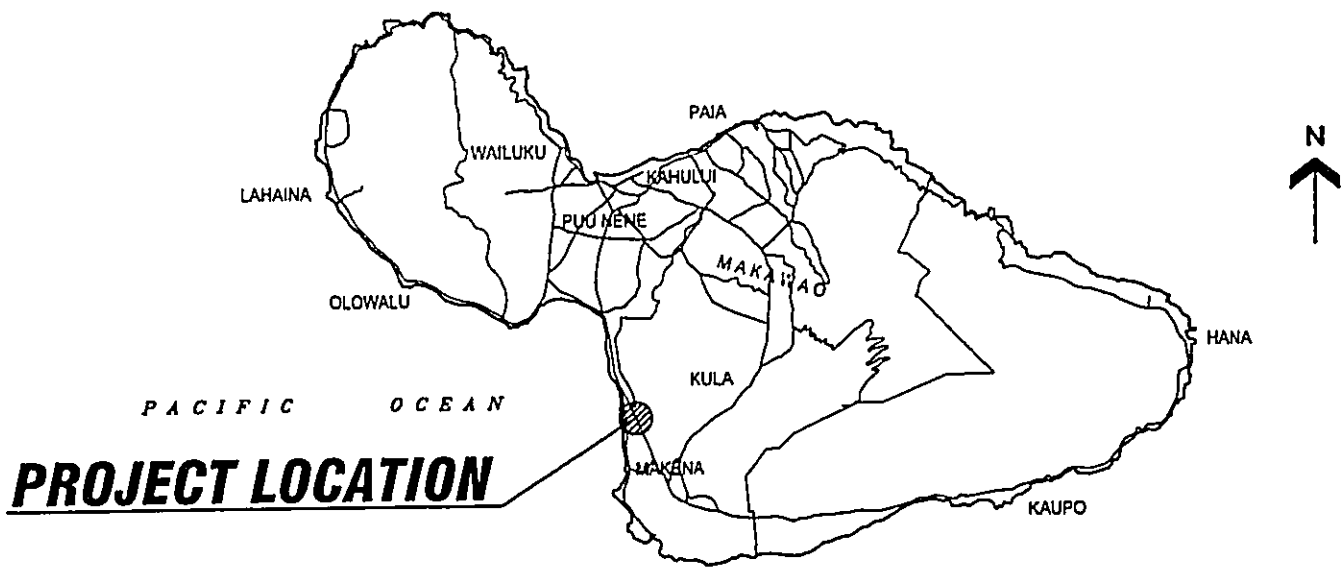
REFERENCES

- A. *Erosion and Sediment Control, Guide for Hawaii*, in cooperation with the Hawai'i Association of Soil and Water Conservation Districts and the Soil Conservation Society of American, Hawai'i Chapter, United States Department of Agriculture, Soil Conservation Service, Honolulu, Hawai'i, March 1981.
- B. *Flood Insurance Rate Map, Maui County, Hawaii*, Panel 190 of 400, Community-Panel Number 150003 0190 D, National Flood Insurance Program, Federal Emergency Management Agency, March 16, 1995.
- C. *Rainfall-Frequency Atlas of the Hawaiian Islands for Areas to 200 Square Miles, Durations to 24 Hours, and Return Periods from 1 to 100 Years*, Technical Paper No. 43, US Department of Commerce, Weather Bureau, 1962.
- D. *Rules for the Design of Storm Drainage Facilities in the County of Maui*, County of Maui, November 12, 1995.
- E. *Rules Relating to Soil Erosion Standards and Guidelines*, Department of Planning and Permitting, City and County of Honolulu, April 1999.
- F. *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, United States Department of Agriculture, Soil Conservation Service, August 1972.
- G. *Wailea Drainage Master Plan*, Wailea Development Company, R.T. Tanaka Engineers, 1979
- H. *West Maui Watershed Owners Manual and Island Stewardship*, West Maui Watershed Management Advisory Committee, November 1997

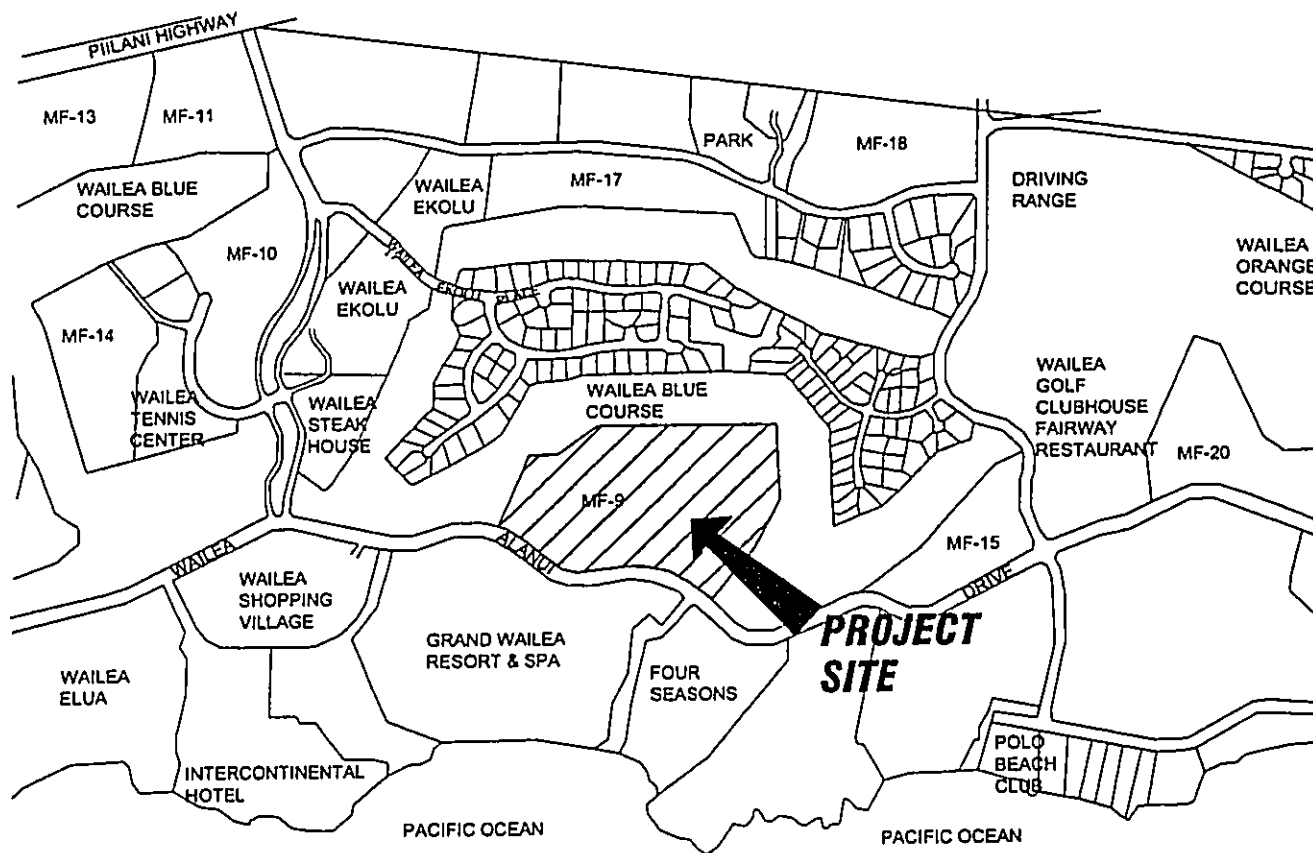
FIGURES

LOCATION & VICINITY MAPS
EXISTING DRAINAGE PLAN

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**ISLAND OF MAUI
VICINITY MAP
NOT TO SCALE**



**LOCATION MAP
NOT TO SCALE**

TMK: (2) 2-1-08: 119

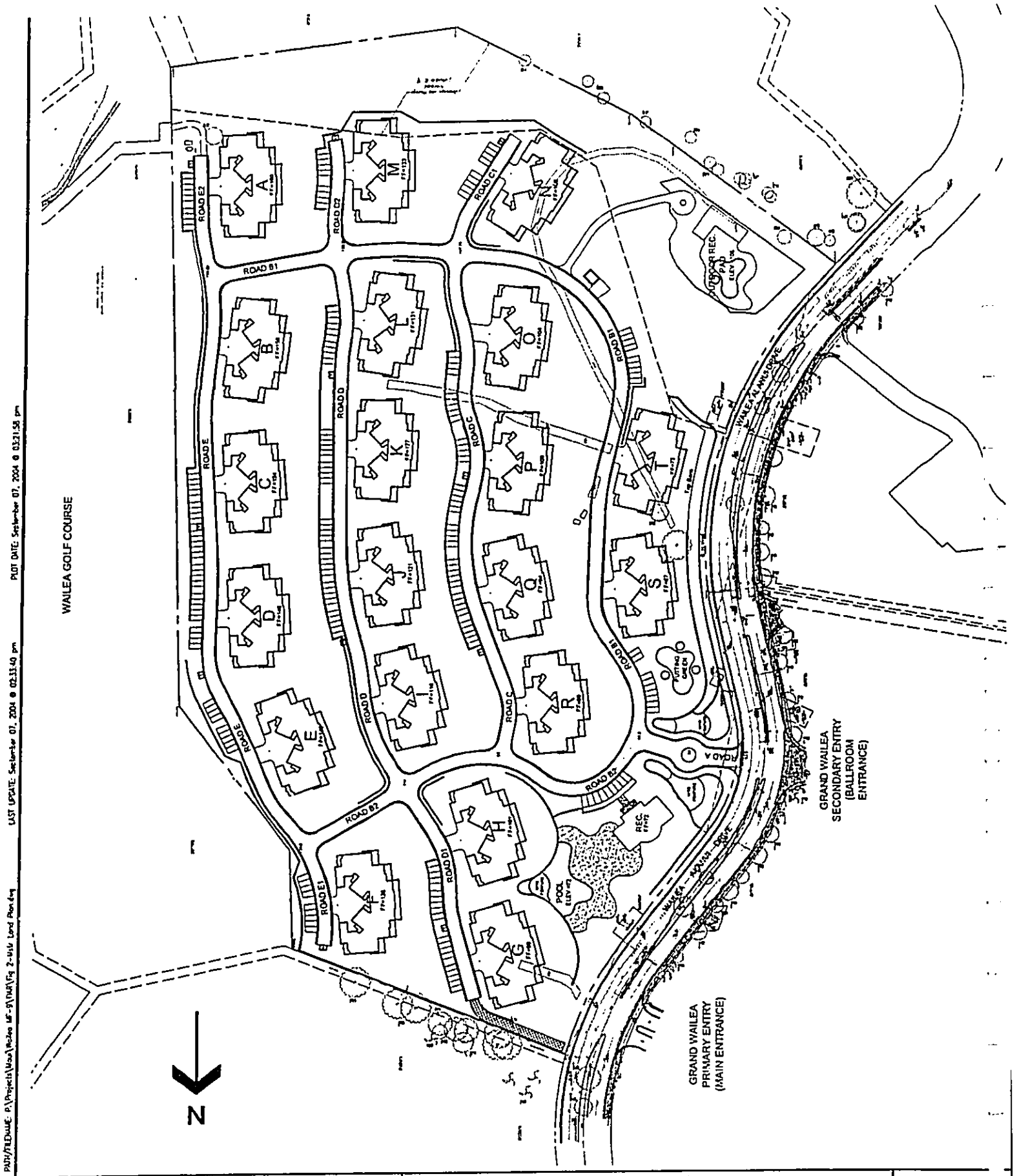
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WAILEA MF-9
 WAILEA, MAUI, HAWAII
LOCATION & VICINITY MAPS
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**FIGURE
1**

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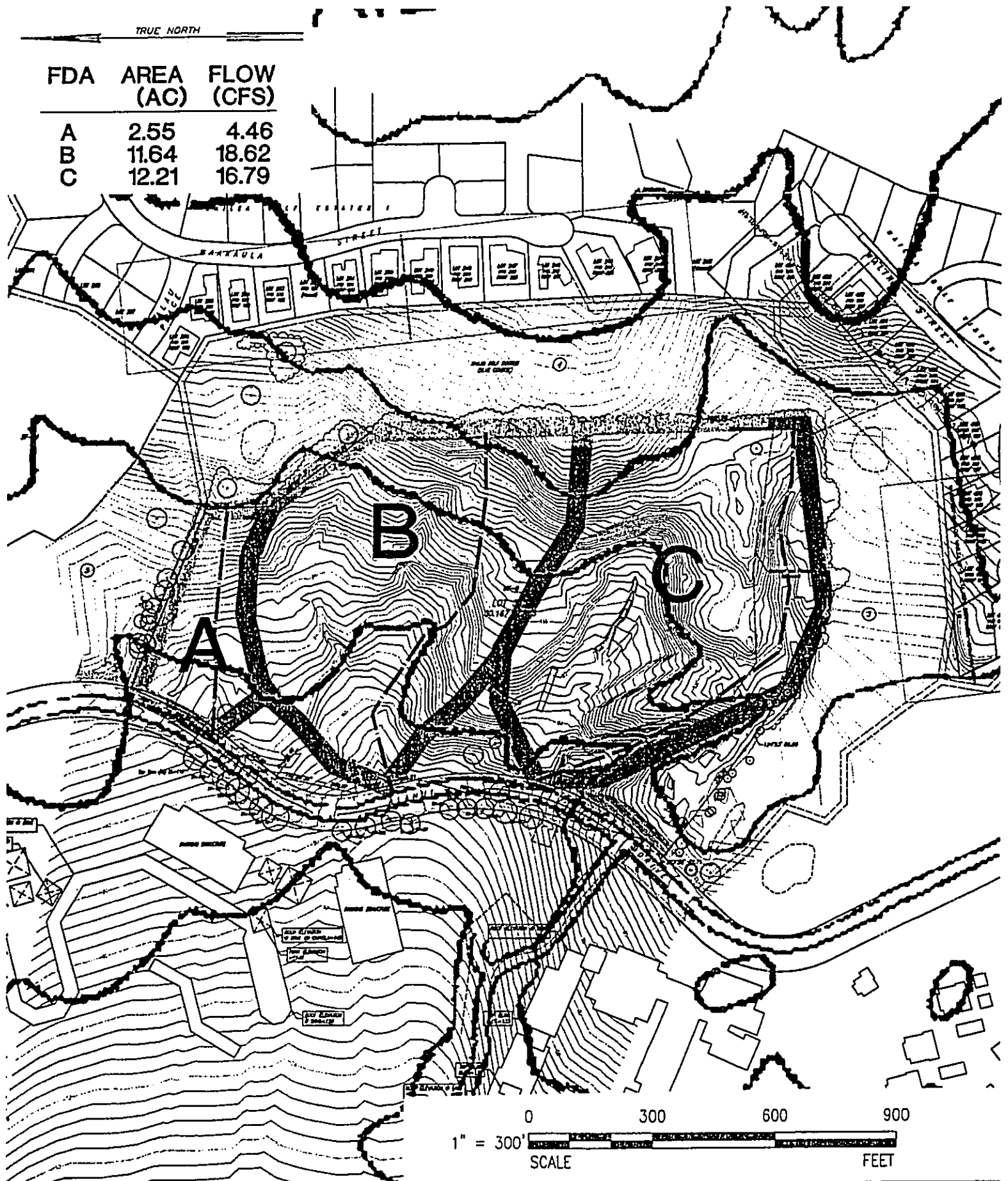
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PLOT DATE: September 07, 2004 @ 03:21:56 pm

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WAILEA MF-9
WAILEA, MAUI, HAWAII
MASTER LAND PLAN
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FIGURE
2

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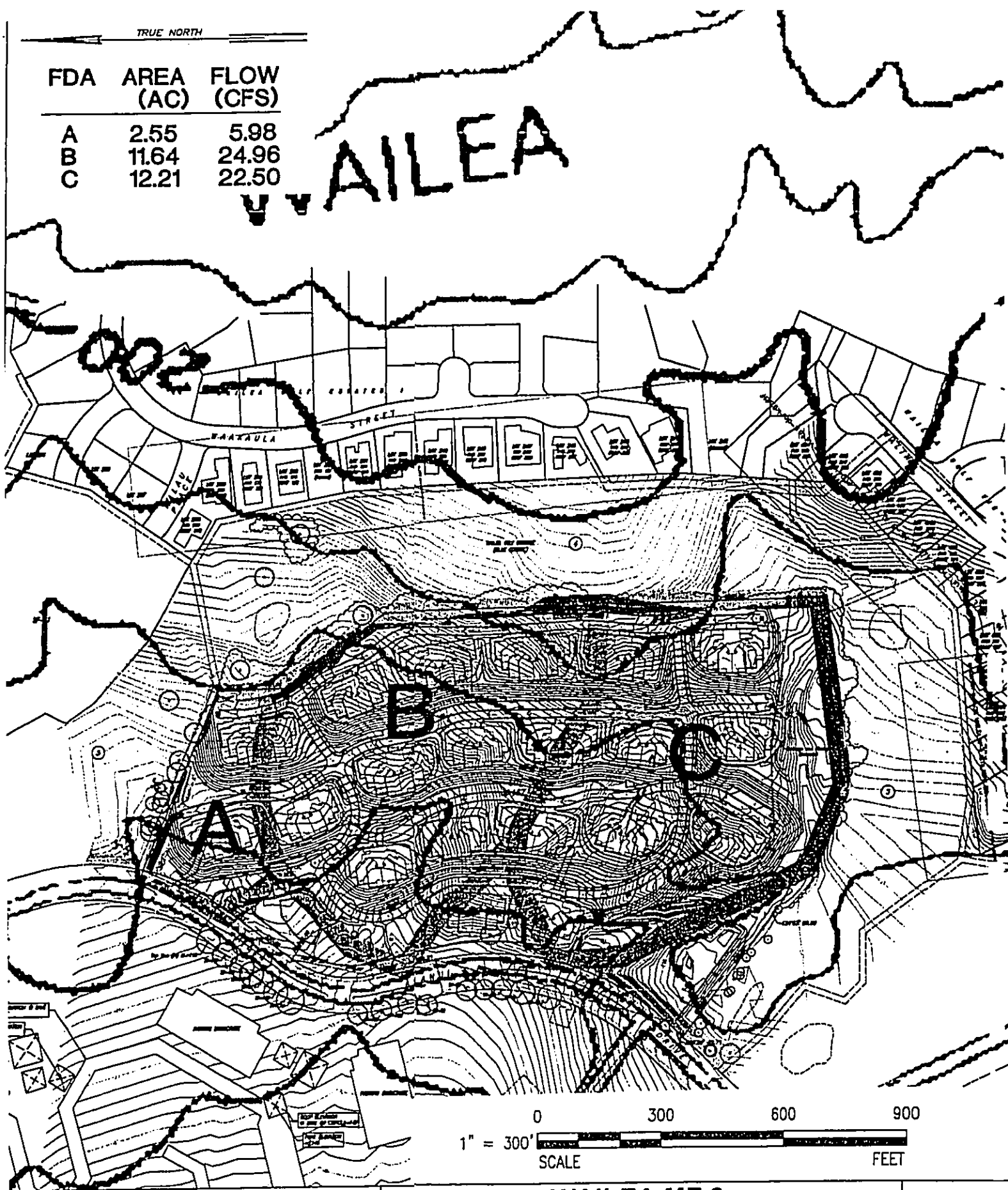
FDA	AREA (AC)	FLOW (CFS)
A	2.55	4.46
B	11.64	18.62
C	12.21	16.79

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WAILEA MF-9
WAILEA, MAUI, HAWAII
EXISTING DRAINAGE PLAN
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FIGURE
3

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FDA	AREA (AC)	FLOW (CFS)
A	2.55	5.98
B	11.64	24.96
C	12.21	22.50

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WAILEA MF-9
WAILEA, MAUI, HAWAII
PROPOSED DRAINAGE PLAN
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FIGURE
4

APPENDIX A

REFERENCE FROM
RULES FOR THE DESIGN OF
STORM DRAINAGE FACILITIES
IN THE COUNTY OF MAUI,
NOVEMBER 12, 1995

Table 1

GUIDE FOR THE DETERMINATION OF RUNOFF COEFFICIENTS FOR BUILT-UP AREAS*

WATERSHED CHARACTERISTICS	EXTREME	HIGH	MODERATE	LOW
INFILTRATION	NEGLIGIBLE 0.20	SLOW 0.14	MEDIUM 0.07	HIGH 0.0
RELIEF	STEEP (> 25%) 0.08	HILLY (15 - 25%) 0.06	ROLLING (5 - 15%) 0.03	FLAT (0 - 5%) 0.0
VEGETAL COVER	NONE 0.07	POOR (< 10%) 0.05	GOOD (10 - 50%) 0.03	HIGH (50 - 90%) 0.0
DEVELOPMENT TYPE	INDUSTRIAL & BUSINESS 0.55	HOTEL - APARTMENT 0.45	RESIDENTIAL 0.40	AGRICULTURAL 0.15

*NOTE: The design coefficient "c" must result from a total of the values for all four watershed characteristics of the site.

Table 2

RUNOFF COEFFICIENTS

Type of Drainage Area	Runoff Coefficient C
Business:	
Downtown areas	0.95
Neighborhood areas	0.70
Residential:	
Single-family areas	0.50
Multi-units, detached	0.60
Multi-units, attached	0.75
Suburban	0.40
Apartment dwelling areas	0.70
Industrial:	
Light areas	0.80
Heavy areas	0.90
Parks, cemeteries	0.25
Playgrounds	0.35
Railroad-yard areas	0.40
Unimproved areas	0.30
Streets:	
Asphaltic	0.95
Concrete	0.95
Brick	0.85
Drive and walks	0.85
Roofs	0.95
Lawns:	
Sandy, soil, flat, 2%	0.10
Sandy, soil, avg., 2-7%	0.15
Sandy, soil, steep, 7%	0.20
Heavy soil, flat, 2%	0.17
Heavy soil, avg., 2-7%	0.22
Heavy soil, steep, 7%	0.35

Table 3

MINIMUM RUNOFF COEFFICIENTS FOR BUILT-UP AREAS

RESIDENTIAL AREAS:	C = 0.55 to 0.70
HOTEL-APARTMENT AREAS:	C = 0.70 to 0.90
BUSINESS AREAS:	C = 0.80 to 0.90
INDUSTRIAL AREAS:	C = 0.80 to 0.90

The type of soil, the type of open space and ground cover, and the slope of the ground shall be considered in arriving at reasonable and acceptable runoff coefficients.

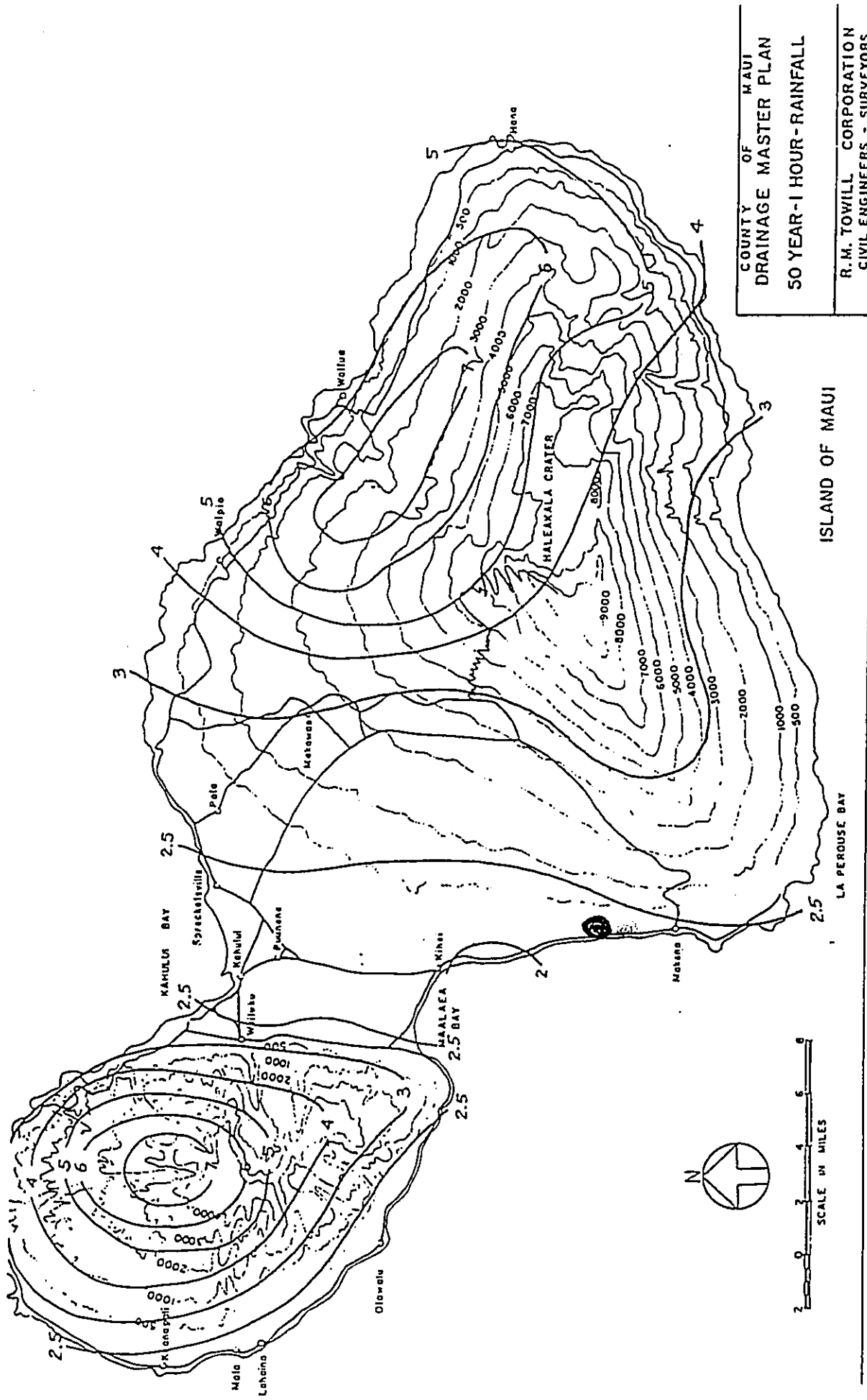
Table 4

APPROXIMATE AVERAGE VELOCITIES OF RUNOFF FOR CALCULATING TIME OF CONCENTRATION

TYPE OF FLOW	VELOCITY IN FPS FOR SLOPES (in percent) INDICATED			
	0-3%	4-7%	8-11%	12-15%
OVERLAND FLOW:				
Woodlands	1.0	2.0	3.0	3.5
Pastures	1.5	3.0	4.0	4.5
Cultivated	2.0	4.0	5.0	6.0
Pavements	5.0	12.0	15.0	18.0
OPEN CHANNEL FLOW:				
Improved Channels	Determine Velocity by Manning's Formula			
Natural Channel* (not well defined)	1.0	3.0	5.0	8.0

**These values vary with the channel size and other conditions so that the ones given are the averages of a wide range. Wherever possible, more accurate determinations should be made for particular conditions by Manning's formula.*

RECEIVED AS FOLLOWS



COUNTY OF MAUI
DRAINAGE MASTER PLAN
50 YEAR - 1 HOUR - RAINFALL
R. M. TOWILL CORPORATION
CIVIL ENGINEERS - SURVEYORS

ISLAND OF MAUI

SCALE IN MILES

PLATE 7

RECEIVED AS FOLLOWS

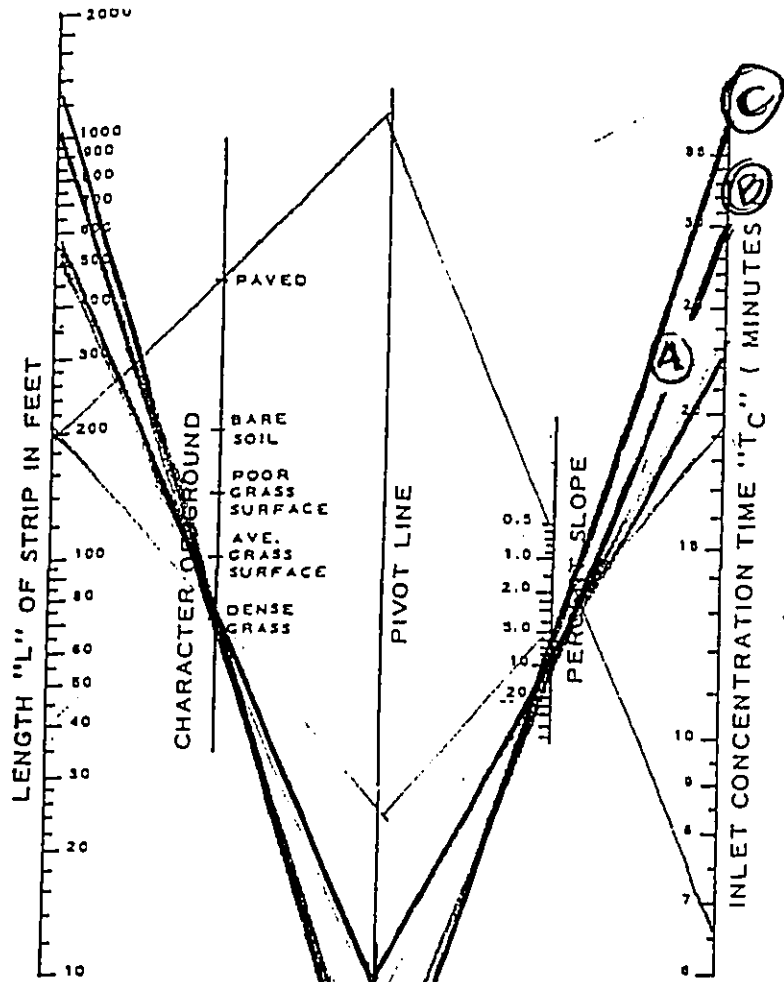


Plate 1
Overland
Flow
Chart

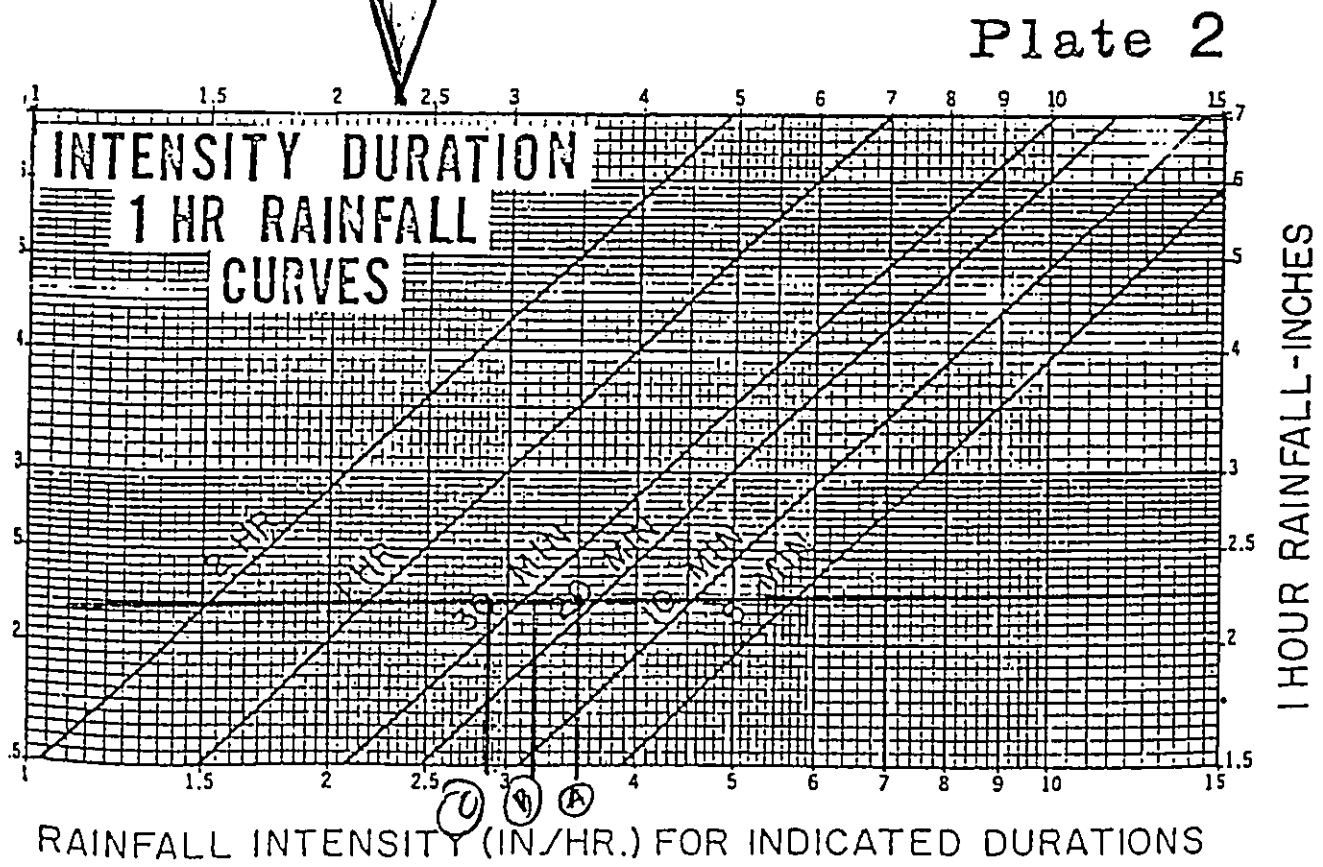


Plate 2

APPENDIX B

DESIGN DRAINAGE CALCULATIONS

Drainage Design Calculation

Project Title: WAILEA MF-9
Location: WAILEA, MAUI
Item: DRAINAGE FLOW CALCULATIONS

Prepared By: DK
Checked By:

Date: 7/6/2004
Date:

- I. **PURPOSE:** Determine the quantity of flow in cubic feet per second of each drainage area in the proposed Wailea MF-9 subdivision
The 50-year, 1-hour storm was used to estimate the design flow.
- II. **REFERENCES:** A. "Rules for the Design of Storm Drainage Facilities in the County of Maui",
"Department of Public Works and Waste Management in the County of Maui,
Title MC-15, Chapter 4, dated November 2, 1995.
- B. "Erosion and Sediment Control" Guide for Hawaii, Soil Conservation Service,
March 1981
- III. **CRITERIA:** A. Peak discharges shall be found using the Rational Method, $Q = CIA$, since all drainage areas of consideration are less than 100 acres.

IV. **CALCULATIONS:**

A. **Rational Method: $Q = CIA$**

Q = flow rate (cubic feet per second)
C = runoff coefficient (dimensionless)
I = rainfall intensity (inches per hour) for a duration equal to the time of concentration
A = drainage area (acres)

EXISTING ONSITE:

1. **Runoff Coefficient (table 1, reference A)**

Infiltration (Medium)	0.07
Relief (Rolling)	0.03
Vegetal Cover (High)	0
Dev. Type (Residential)	<u>0.4</u>
C =	0.5

2. **Time of Concentration (plate 1, reference A)**

AREA A
L=560 feet, Dense Grass, S=10.0%
Time of Concentration = 22 minutes

AREA B
L=1005 feet, Dense Grass, S=11.0%
Time of Concentration = 29 minutes

AREA C
L=1271 feet, Dense Grass, S=6.90%
Time of Concentration = 37 minutes

3. **Rainfall Intensity**

From plate 4 (reference A), $T_m = 50$ yr, Intensity of 1-hr Rainfall (Inches) = 2.25 inches/hour

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Drainage Design Calculations

Project Title: WAILEA MF-9
Location: WAILEA, MAUI
Item: DRAINAGE FLOW CALCULATIONS

Prepared By: DK
Checked By:

Date: 7/6/2004
Date:

AREA A

From plate 2 (reference A), Rainfall Intensity (In./Hr.) = 3.5 inches/hour

AREA B

From plate 2 (reference A), Rainfall Intensity (In./Hr.) = 3.2 inches/hour

AREA C

From plate 2 (reference A), Rainfall Intensity (In./Hr.) = 2.75 inches/hour

4. Area

Area A = 2.55 acres

Area B = 11.64 acres

Area C = 12.21 acres

5. Discharge

QA = (0.50)·(3.5 inches per hour)·(2.55 acres) = 4.46 cubic feet per second

QB = (0.50)·(3.2 inches per hour)·(11.64 acres) = 18.62 cubic feet per second

QC = (0.50)·(2.75 inches per hour)·(12.21 acres) = 16.79 cubic feet per second

PROPOSED ONSITE:

1. Runoff Coefficient (table 2, reference A)

Infiltration (Medium)	0.14
Relief (Rolling)	0.03
Vegetal Cover (Poor)	0.05
Dev. Type (Residential)	<u>0.45</u>
C =	0.67

2. Time of Concentration (plate 1 & table 4, reference A)

AREA A

L=510 feet, Dense Grass, S=11.0%

Time of Concentration = 23 minutes

AREA B

L=955 feet, Dense Grass, S=10.4%

Time of Concentration = 29 mininutes

AREA C

L=1271 feet, Dense Grass, S=6.90%

Time of Concentration = 37 minutes

3. Rainfall Intensity

From plate 4 (reference A), Tm = 50 yr, Intensity of 1-hr Rainfall (Inches) = 2.25 inches/hour

AREA A

From plate 2 (reference A), Rainfall Intensity (In./Hr.) = 5.5 inches/hour

9:45 PM
7/6/2004

RECEIVED AS FOLLOWS

Project Title: WAILEA MF-9
Location: WAILEA, MAUI
Item: DRAINAGE FLOW CALCULATIONS

Prepared By: DK
Checked By:

Date: 7/6/2004
Date:

AREA B
From plate 2 (reference A), Rainfall Intensity (In./Hr.) = 3.9 inches/hour

4. Area

Area A = 2.55 acres
Area B = 11.64 acres
Area C = 12.21 acres

5. Discharge

QA = (0.67)·(3.5 inches per hour)·(2.55 acres) = 5.98 cubic feet per second
QB = (0.67)·(3.2 inches per hour)·(11.64 acres) = 24.96 cubic feet per second
QC = (0.67)·(2.75 inches per hour)·(12.21 acres) = 22.50 cubic feet per second

SUMMARY

Increase in flow due to development

EXISTING

QA = 4.46 cubic feet per second
QB = 18.62 cubic feet per second
QC = 16.79 cubic feet per second

PROPOSED

QA = 5.98 cubic feet per second
QB = 24.96 cubic feet per second
QC = 22.50 cubic feet per second

INCREASE

QA = 1.52 cubic feet per second
QB = 6.34 cubic feet per second
QC = 5.71 cubic feet per second

DETENTION VOLUME CALCULATIONS

Calculated Volume for a 50 yr, 1-hr Storm

SCS Curve Number Method

$$Q = \frac{(P - I_a)^2}{(P - I_a) + S}$$

Q = runoff (inches)
P = rainfall (inches) = 2.25 (REF. A, PLATE 4)
S = potential in maximum retention after runoff begins
(1000/CN) - 10 = (1000/68) - 10 = 4.71

I_a = Initial Abstractions
0.2S = 0.2(4.71) = 0.94

9:45 PM
7/6/2004

RECEIVED AS FOLLOWS

Drainage Design Calculation

Project Title: WAILEA MF-9
Location: WAILEA, MAUI
Item: DRAINAGE FLOW CALCULATIONS

Prepared By: DK
Checked By:

Date: 7/6/2004
Date:

CN = curve number 68
Hydrologic Soil Group B, Soil Type MXC
(REF. B, TABLE 25)

$$Q = \frac{(2.25 - 0.94)^2}{(2.25 - 0.94) + 4.71}$$

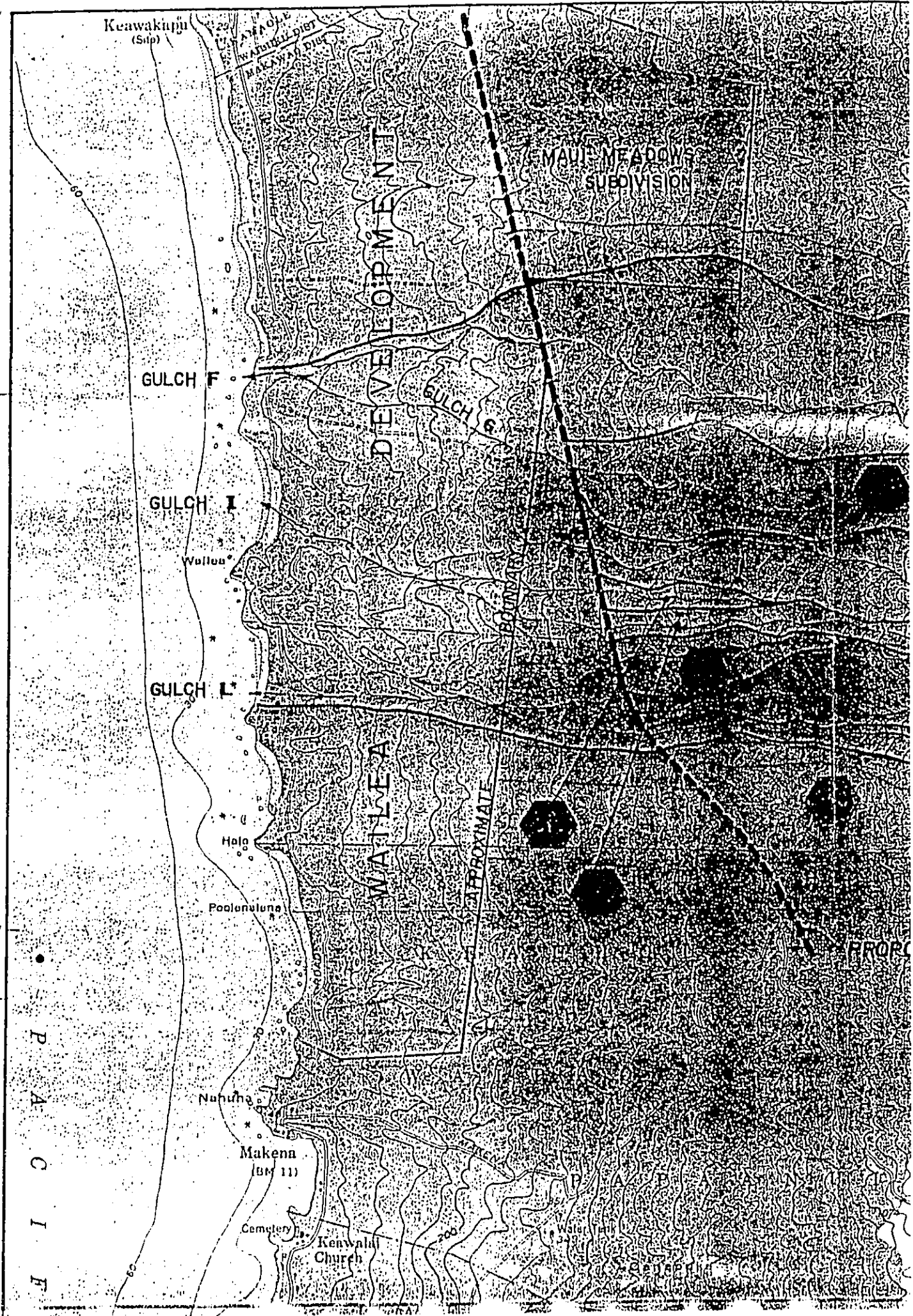
Q = 0.29 inches = 0.024 feet

VOLUME = Q x AREA

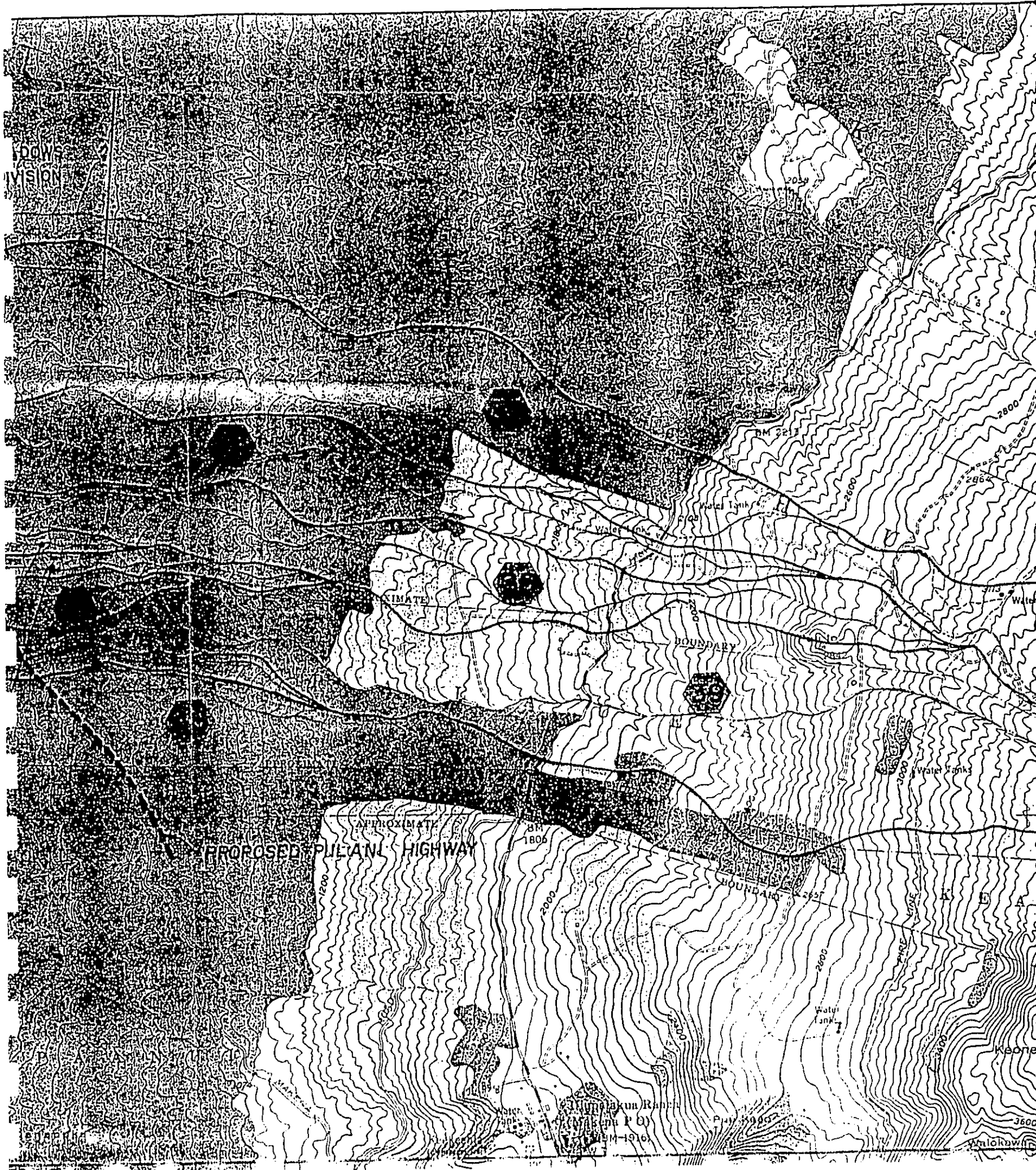
VA =	0.024 x 2.55 acres =	0.061 acre-feet
VB =	0.024 x 11.64 acres =	0.279 acre-feet
VC =	0.024 x 12.21 acres =	0.293 acre-feet

RECEIVED AS FOLLOWS

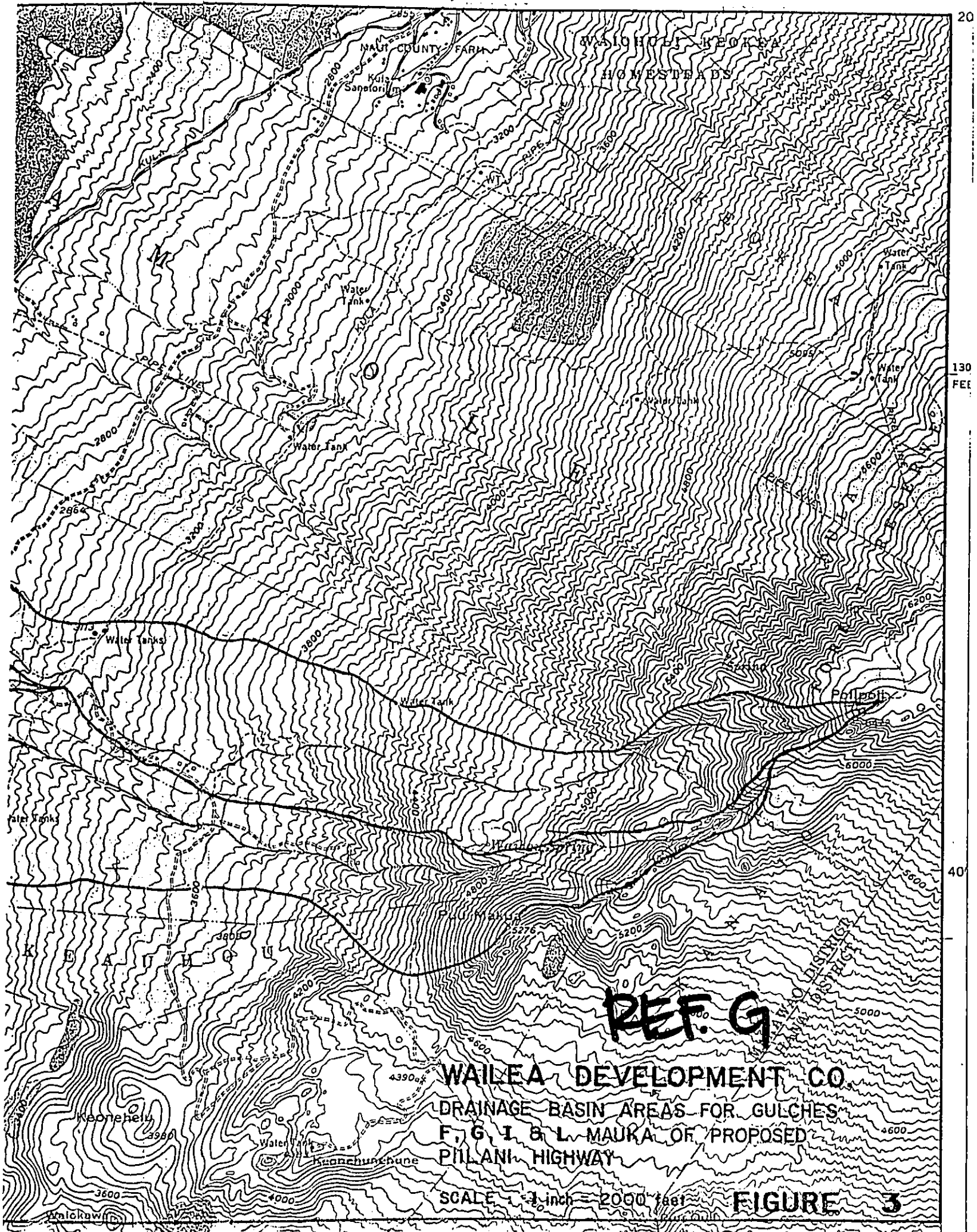
20°42'30"



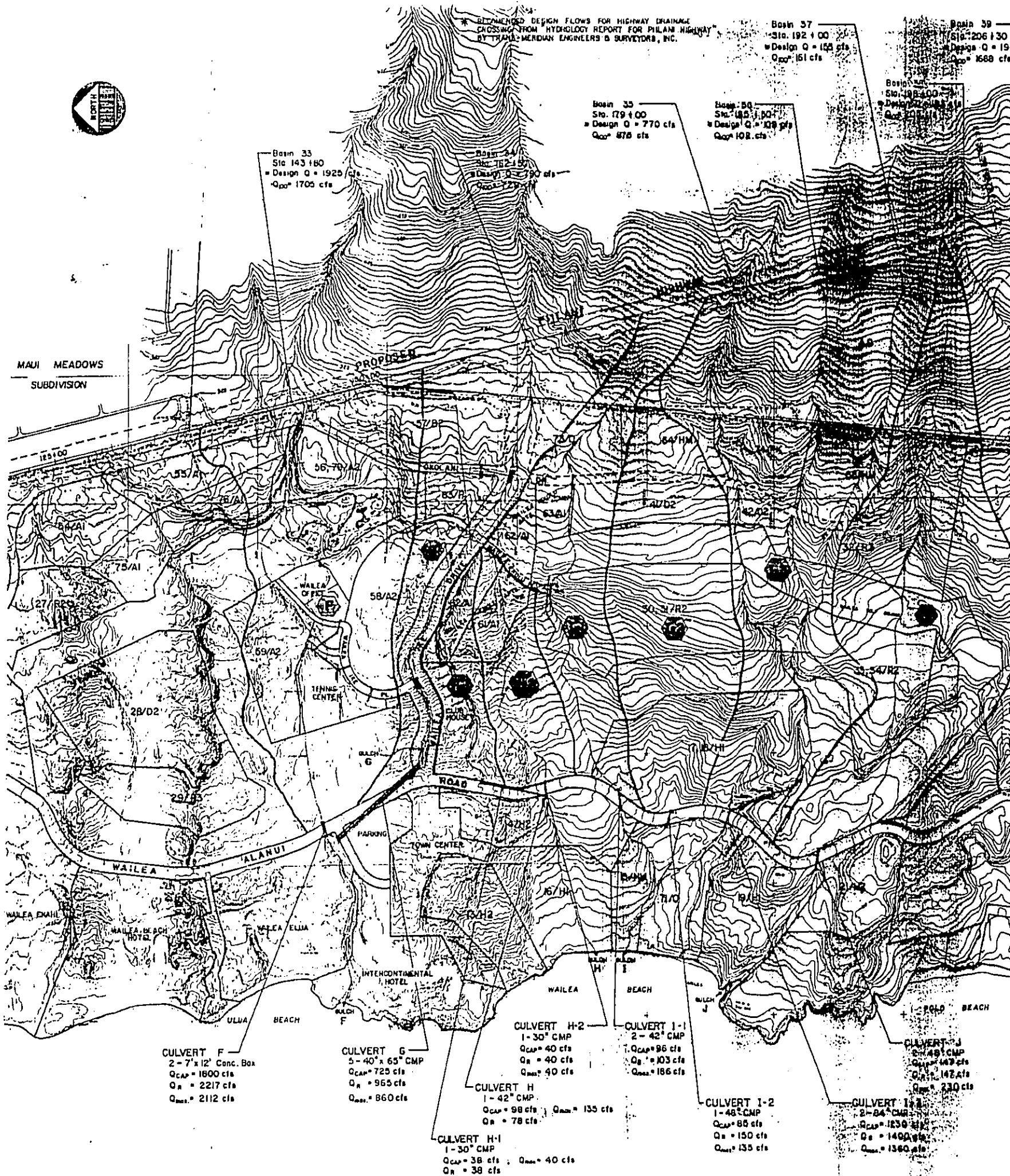
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RECEIVED AS FOLLOWS



RECEIVED AS FOLLOWS



APPENDIX E
Preliminary Engineering Report

Wailea MF-9 Subdivision

Wailea, Maui, Hawai'i

TMK: (2) 2-1-08: 119

PRELIMINARY ENGINEERING REPORT

Prepared for:

CMI Developments, Inc.
1885 Main Street, Suite 104
Wailuku, HI 96793

Prepared by:

M & E Pacific, Inc.
Davies Pacific Center
841 Bishop Street, Suite 1900
Honolulu, Hawai'i 96813

May 2004

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2.3 SOILS	2
2.4 DRAINAGE/FLOODING.....	2
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3.3 DRAINAGE CONDITIONS.....	5
3.4 ELECTRICITY AND TELEPHONE.....	5
3.5 ROADWAY	6
3.6 SOLID WASTE.....	6
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SECTION 1
INTRODUCTION

1.1 PURPOSE

The objective of this Preliminary Engineering Report (PER) is to provide a brief description and evaluation of the physical characteristics of the proposed Resort/Apartment/Condominium housing project. The project is also known as Wailea MF-9.

1.2 GENERAL INFORMATION

A. CMI Development, Inc. is proposing to construct 144 hotel-zoned condominium units in Wailea, Maui. The project is bounded by Wailea Blue Golf Course and Wailea Alanui near the Grand Wailea Resort Hotel. The housing consists of approximately 20 two-story buildings with either six or eight attached Resort/Apartment/Condominium residential units situated within a gated condominium community. The units consist of 3Bd/3Bath, 3Bd plus den/3Bath or 4Bd/3Bath units with enclosed garages and private lanais.

Owner CMI Development, Inc.
 1885 Main Street, Suite 104
 Wailuku, HI 96793

Contact: Steve Jiran, Vice President
Phone: (808) 242-8979
Fax: (808) 242-8793

Civil: M & E Pacific, Inc.
 Davies Pacific Center
 841 Bishop Street, Suite 1900
 Honolulu, Hawai'i 96813

Contact: Diane Y. Kodama, Project Engineer
Phone: (808) 521-3051
Fax: (808) 524-0246

B. Vicinity Map (See Figure 1)

SECTION 2

PHYSICAL ENVIRONMENT

2.1 LOCATION

The Wailea MF-9 project site is located directly across the street from the Grand Wailea Resort Hotel and Spa and the Four Seasons Resort Maui at Wailea. The existing Wailea Blue Golf Course surrounds the site on three sides. The site is vacant and unused at the present time. The project area is approximately 30.167 acres. The property is described as State of Hawai'i, Second Taxation Division, Tax Map Key (TMK) Parcels (2) 2-1-08: 119.

2.2 TOPOGRAPHY

The site is bounded by Wailea Blue Golf Course and Wailea Alanui. The slope of the lot varies. The site is divided into three drainage areas. The top of the property varies from 170 to 120 feet MSL and the portion along Wailea Alanui ranges from 80 to 50 feet MSL.

2.3 SOILS

According to the August 1972 publication *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* by the United States Department of Agriculture, Soil Conservation Service, the soil at the project site is Makena loam, stony complex, with slopes of 3 to 15 percent (soil classification MXC). This series consists of well-drained soils on alluvial fans on the island of Maui. These soils developed in alluvium derived from weathered basic igneous rock, and are gently to moderately sloping. Elevations range from sea level to 500 feet. The mean annual soil temperature is 75°F. Runoff is slow to medium and the erosion hazard is slight to moderate. This soil is used primarily for pasture and wildlife habitat.

2.4 DRAINAGE/FLOODING

According to the Flood Insurance Rate Map of the project site, the area is classified as Zone C— an area determined to have minimal flooding.

2.5 RAINFALL

According to the August 1972 publication *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* by the United States Department of Agriculture, Soil Conservation Service, the annual rainfall amounts to 10 to 20 inches.

SECTION 3

UTILITIES

3.1 WATER SYSTEM

Existing Conditions

The existing water system in the vicinity of the project site consists of a 16-inch distribution main and a 30-inch transmission main located in Wailea Alanui Drive.

Potential Impacts and Mitigation Measures

Potable water FUs for the proposed two-story, 144-unit housing complex (within 20 buildings) are summarized in the table below.

Type	Fixture Units	Demand (gpm)	Demand (gpd)
Building	4,952	650	80,640
Irrigation	N/A	120	50,000
TOTAL:		770	130,640

A 6" compound will be installed for the service lateral in accordance with DWS standards.

The First American Real Estate Solutions document, *Real Estate Handbook*, identifies the site to be entirely of H-1 Hotel District zoning and Urban Property land use with no Agricultural or Government Land subclasses.

The *Water System Standards* calls for a maximum fire hydrant spacing of 350' in areas with the land use identified for the project site. Other fire flow (FF) requirements for the site include 1,250 gallons per minute (gpm) and a 2-hour duration.

Waterlines will be sized to meet the following requirements:

- Maximum Daily Water Demand + FF with a residual pressure of 20 pounds per square inch (psi) at the critical fire hydrant.
- Peak Hour Water Demand with a minimum residual pressure of 40 psi.

- Carrying capacities of mains shall be determined through the use of the following values:
 - 4" & 6"—C = 100;
 - 8" & 12"—C = 110
 - 16" & 20"—C = 120; and
 - 24" & larger—C = 130.
- Maximum flow velocities:
 - Distribution mains—without FF—6 feet per second (fps);
 - Distribution mains—with FF @ maximum day domestic flow—10 fps;
 - Transmission mains—without water services or fire flow—20 fps; and
 - Fire lines—13 fps.
- Maximum static or pumping pressure, whichever is greater, shall not exceed 125 psi.

The new water lateral and meter will be installed off a main along Wailea Alanui Drive on the south side of the project site.

The Detector Check Assembly that is required for a fire line by the County of Maui was sized using ISO "Guide For Determination of Needed Fire Flow" Ed. 10-2001. A 10-inch assembly will be required for the fire line.

3.2 SEWER SYSTEM

Existing Conditions

The County of Maui, Department of Public Works & Environmental Management (DPWEM) has advised the following for the project site:

- A. Wastewater treatment for the subject project will be provided by the Kihei Wastewater Reclamation Facility (KWRF) located north of the project site on the east side of Piilani Highway.
- B. The existing sewer collection system in the vicinity of the project site consists of a 6-inch gravity line north of the project site and an 8-inch gravity line to the south. Both are privately owned and converge on Wailea Alanui and runs to Sewer Pump Station No. 10 (SPS) which is County owned. From this SPS the sewage gets pumped via twin 12-inch force mains to the 18-inch gravity line at Wailea Ike Drive.

C. The County of Maui wastewater system serving the area in which the proposed 144 6-plex or 8-plex units will be constructed appears to be adequate to serve the proposed project at this time; however, the capacity of the wastewater system is limited and can not be guaranteed until building permits are issued.

Potential Impacts and Mitigation Measures

According to the Design Standards of the Department of Wastewater Management (V.1, July 1993), under which category the proposed project development falls, have an estimated waste/sewage flow rate of 80 gallons per person (gpp), and the residential occupancy assumed to be 4 persons per home. Thus, for Wailea MF-9, the peak design flow would be 270,989 gallons per day.

An 8" wastewater lateral will be installed from the development to the 12-inch sewer in Wailea Alanui.

3.3 DRAINAGE CONDITIONS

Existing Conditions

Existing drainage conditions indicate that runoff from the site currently sheet flows along the ground surface to a culvert that runs under Wailea Alanui Drive. For more information regarding drainage patterns and properties, refer to the Preliminary Drainage and Erosion Control Report (PDECR) that accompanies this PER under a separate cover.

Potential Impacts and Mitigation Measures

For potential impacts to drainage conditions and mitigation measures, refer to the PDECR.

3.4 ELECTRICITY, CABLE AND TELEPHONE

Existing Conditions

Underground electrical, cable and telephone lines service the project site.

Potential Impacts and Mitigation Measures

No significant changes in existing electrical, cable and telephone service are anticipated. All on-site utilities will be underground.

3.5 ROADWAY

Existing Conditions

Wailea Alanui Drive is a County collector roadway in the Wailea Resort complex between Kilhana Drive in the north and Kaukahi Street to the south. It is the only roadway that provides continuous north-south access between the northern boundary at Kihei to the southern limits of the resort at Makena. It is a four-lane divided roadway between Okolani Drive and Kaukahi Street with median breaks where adjoining land uses have their driveways. The portion of Wailea Alanui fronting the project has a rolling profile and curving alignment with a posted speed limit of 30 miles per hour.

Potential Impacts and Mitigation Measures

A traffic impact analysis was conducted in April 2004 and the proposed project is not expected to have an adverse traffic impact on the roadway system.

The developer would like to add two raised table crosswalks on Wailea Alanui Drive. This crosswalk would increase pedestrian safety and also serve as a traffic calming device to slow traffic speeds on Wailea Alanui Drive. The County would have to reduce the speed limit to 25 miles per hour or less in the vicinity of the raised crosswalk.

3.6 SOLID WASTE

Existing Conditions

Solid waste is collected and disposed of by the County of Maui within this area.

Potential Impacts and Mitigation Measures

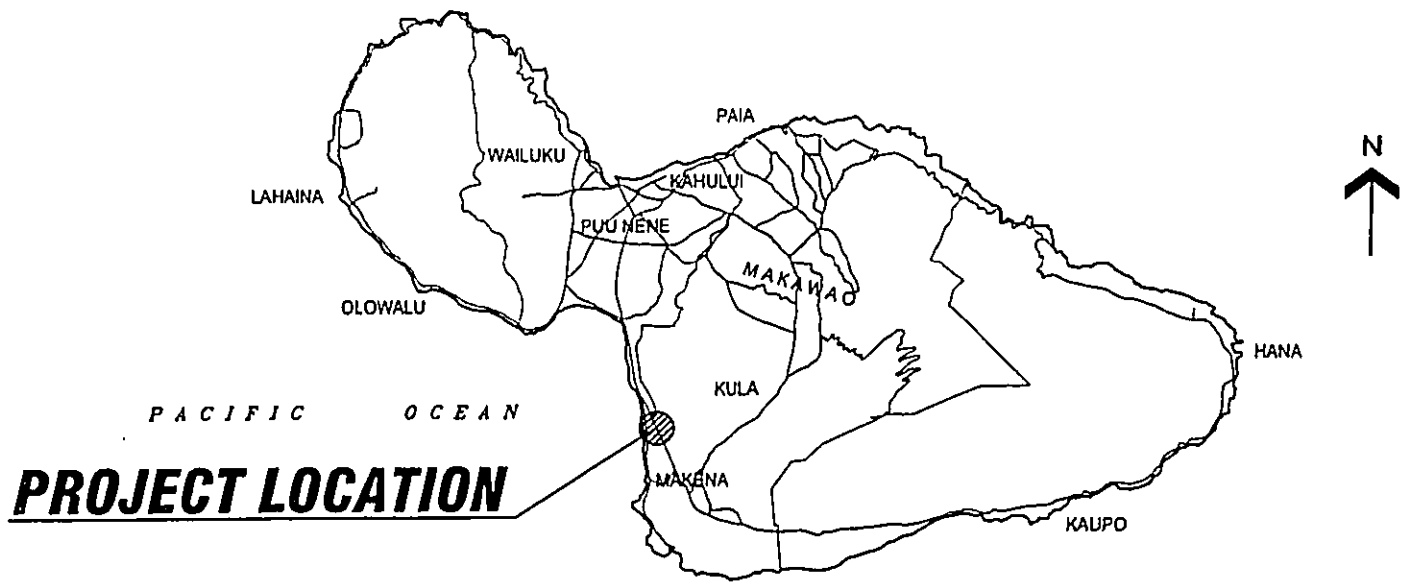
No significant changes to the waste stream collection and disposal system are anticipated.

REFERENCES

- A. *Flood Insurance Rate Map, Maui County, Hawaii*, Panel 190 of 400, Community-Panel Number 150003 0190 D, National Flood Insurance Program, Federal Emergency Management Agency, March 16, 1995.
- B. *Rainfall-Frequency Atlas of the Hawaiian Islands for Areas to 200 Square Miles, Durations to 24 Hours, and Return Periods from 1 to 100 Years*, Technical Paper No. 43, US Department of Commerce, Weather Bureau, 1962.
- C. *Real Estate Handbook, Zones 1 Thru 6, State of Hawaii, Second Tax Division, Counties of Maui & Kalawao*, First American Real Estate Solutions, Realty Directory, Property Data, 33rd Edition, 1999.
- D. *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, United States Department of Agriculture, Soil Conservation Service, August 1972.
- E. *Uniform Plumbing Code*, International Association of Plumbing and Mechanical Officials, 1997.
- F. *Water System Standards*, Department of Water Supply, County of Hawai'i, Board of Water Supply, City and County of Honolulu, Department of Water, County of Kaua'i, and Department of Water Supply, County of Maui, State of Hawai'i, 2002.

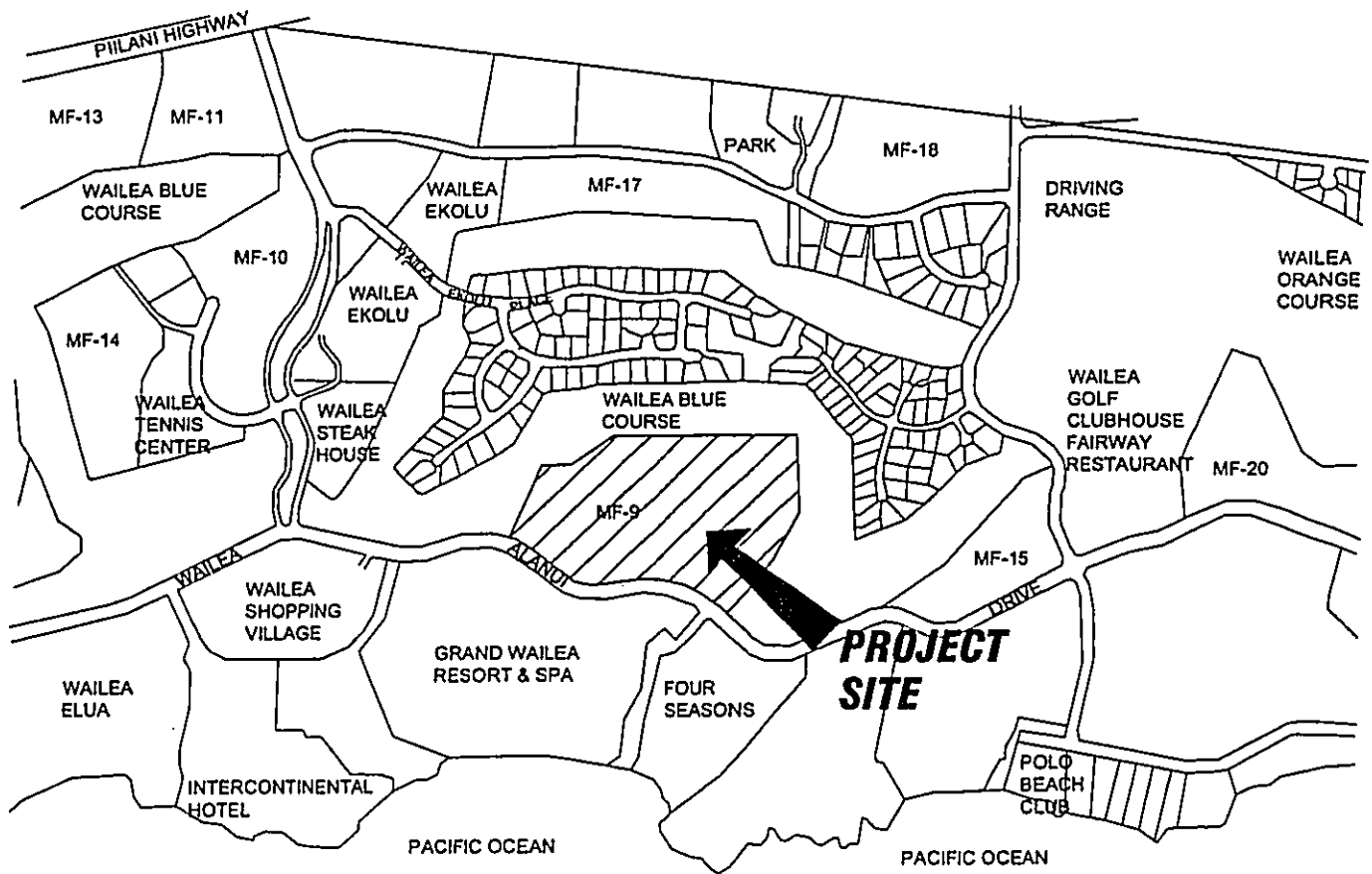
FIGURES

LOCATION & VICINITY MAPS



PROJECT LOCATION

**ISLAND OF MAUI
VICINITY MAP
NOT TO SCALE**



**LOCATION MAP
NOT TO SCALE**

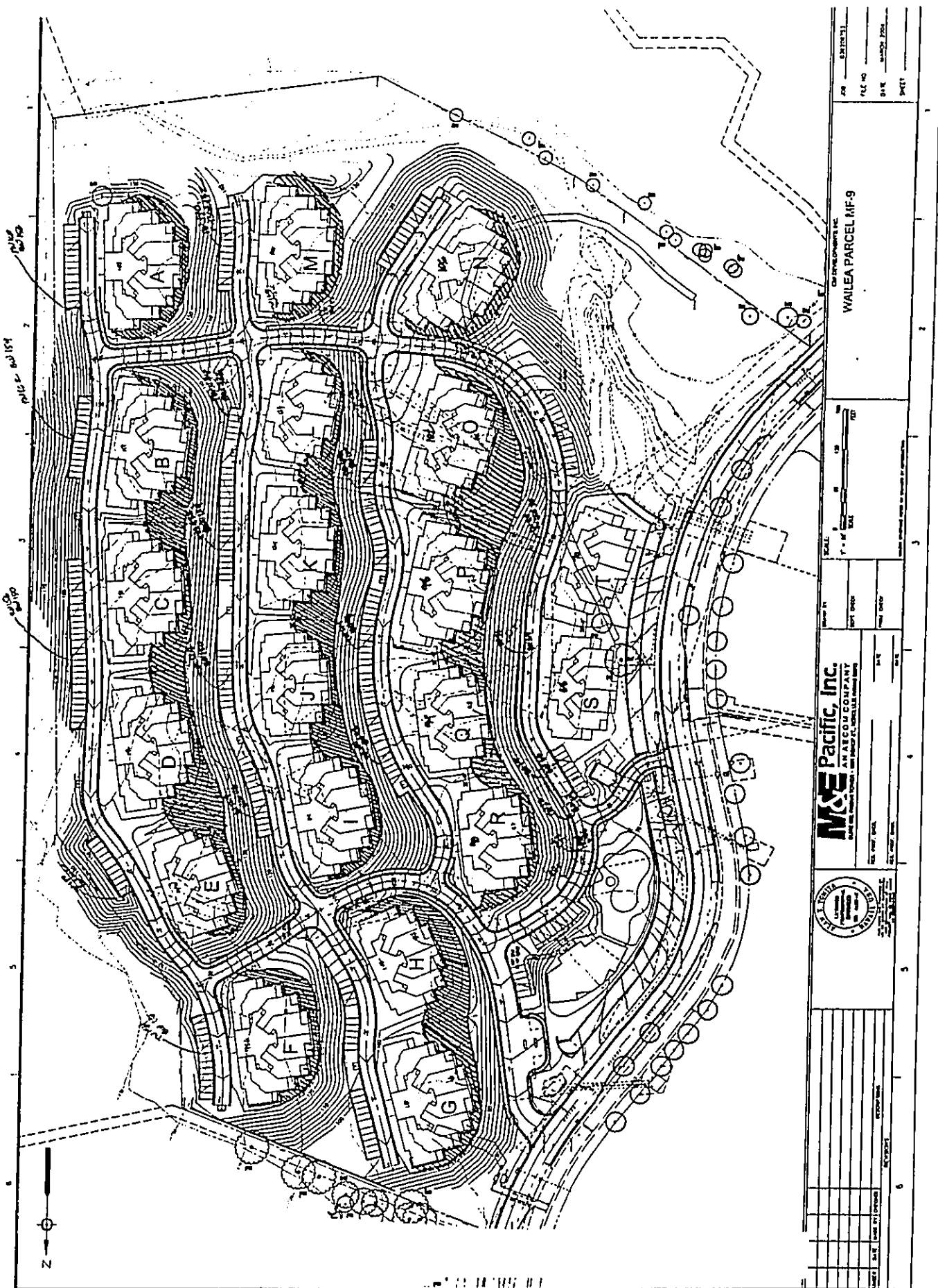
TMK: (2) 2-1-08: 119

M&E Pacific, Inc.
Davies Pacific Center
841 Bishop Street
Suite 1900
Honolulu, HI 96813

WAILEA MF-9
WAILEA, MAUI, HAWAII
LOCATION & VICINITY MAPS
TMK: (2) 2-1-08: 119

**FIGURE
1**

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 841 Bishop Street
 Suite 1900
 Honolulu, HI 96813

WAILEA MF-9
 WAILEA, MAUI, HAWAII
MASTER LAND PLAN
 TMK: (2) 2-1-08: 119

FIGURE
2

CALCULATIONS

SEWER
DOMESTIC WATER
FIRE

Sewer Flow Calculations

Project Title: Wailea MF-9	Prepared By: LDN/MSN	Date: 5/10/2004
Location: Wailea, Maui, Hawai'i	Checked By: DYK	Date: 5/11/2004
Item: SEWER FLOW CALCULATIONS		

- I. **PURPOSE:** The objective of these calculations is to determine the average and peak wastewater flows generated by a proposed subdivision in Wailea, Maui
- II. **REFERENCE:** A. "Design Standards, Volume 1, General Requirements for Wastewater Facilities, Design of Sewers and Pump Stations, Department of Wastewater Management, City & County of Honolulu, State of Hawai'i, July 1993.
- III. **CRITERIA:** A. Following the Design of Sewers in the "Design Standards, Volume 1, General Requirements for Wastewater Facilities, Design of Sewers and Pump Stations, Department of Wastewater Management," an average per capita flow of 80 gallons per day is used. The sewers will be installed above the normal groundwater table; therefore, in calculating the dry and wet weather infiltration/inflow, 5 gallons capita per day and 1,250 gallons per acre per day were applied, respectively.

IV. CALCULATIONS:

Homes	<u>144</u>	(density of 4 persons/home)
Standard Apartments	<u>0</u>	(density of 2.8 persons/unit)

Average Wastewater Flow (AWF) = [(Homes × 4 persons/home) + (Standard Apartments × 2.8 persons/unit)]
 AWF = 46,080 gpd = 0.0714 cfs

Maximum Wastewater Flow (MWF) = (AWF × Max Flow Factor). From Fig 22.2.4 (Ref A, page 30), Max Flow Factor: 5
 MWF = 230,400 gpd = 0.3571 cfs

Location of sewer with respect to the groundwater table (above or below): above
 Dry Weather Infiltration/Inflow (I/I) = [5 gallons per capita per day × (# of homes × density + # of apartments × density)]
 Dry Weather I/I = 2,880 gpd = 0.0045 cfs

Design Average Flow (DAF) = AWF + Dry Weather I/I
 DAF = 48,960 gpd = 0.0759 cfs

Design Max Flow (DMF) = MWF + Dry Weather I/I
 DMF = 233,280 gpd = 0.3616 cfs

Area of site in square feet: 1,314,075 sf = 30.17 acres
 Wet Weather I/I = [1,250 gallons per acre per day × area of site]
 Wet Weather I/I = 37,709 gpd

Design Peak Flow (DPF) = DMF + Wet Weather I/I
 DPF = 270,989 gpd = 0.420 cfs

Worksheet
Worksheet for Circular Channel

Project Description	
Worksheet	SEWER LATEI
Flow Element	Circular Chann
Method	Manning's For
Solve For	Channel Depth

Input Data	
Mannings Coeffic	0.015
Slope	004400 ft/ft
Diameter	8 in
Discharge	0.42 cfs

Results	
Depth	0.37 ft
Flow Area	0.2 ft ²
Wetted Perime	1.13 ft
Top Width	0.66 ft
Critical Depth	0.30 ft
Percent Full	56.0 %
Critical Slope	0.009032 ft/ft
Velocity	2.08 ft/s
Velocity Head	0.07 ft
Specific Energ	0.44 ft
Froude Numbe	0.67
Maximum Disc	0.75 cfs
Discharge Full	0.69 cfs
Slope Full	0.001601 ft/ft
Flow Type	Subcritical

Wailea MF-9

Wailea, Maui

Domestic Water & Fire Calculations

TMK 2-1-008: 119

April 2004

Prepared for:

CMI Group
1885 Main Street #104
Wailuku, Maui, Hawaii
96793

Prepared by:

M & E Pacific, Inc.
Pauahi Tower, Suite 500
1001 Bishop Street
Honolulu, Hawai'i 96813

M&E
Pacific, Inc.

Domestic Water

References:

1. Uniform Plumbing Code, 1994 Edition
2. Water System Standards State of Hawaii, 2002
3. Design loads for Plumbing Systems, National Plumbing Code Handbook, McGraw-Hill, 1957

Fixture Unit Calculation

Total Fixture Units:= 4952 FU
(See Attached for FU Count)

4952 FU = 650 gpm (Ref. 3)

AWWA C702-01, Table 1, 6" Compound Meter can operate up to 1000 gpm.

Average Daily Demand

Per Table 100-18, Ref 2, use Multi-Family Low Rise at 560 gals/unit for Maui:

Average Daily Demand:

$(560 \text{ gal/unit}) \times [(12 \text{ buildings}) \times (8 \text{ units/building}) + (8 \text{ buildings}) \times (6 \text{ units/building})]$
= 80,640 gallons per day

Irrigation Demand

Per Chris Hart & Partners, irrigation is to be done off-peak. The Average Irrigation Daily Demand will be approximately 50,000 gallons per day.

	FIXTURE UNITS (FU)	GALLONS PER MINUTE (GPM)	GALLONS PER DAY (GPD)
DOMESTIC	4952	650	80,640
IRRIGATION	N/A	120	50,000
TOTAL		770	130,640

Fire Flow Calculations

References:

ISO "Guide For Determination of Needed Fire Flow" Ed. 10-2001

Fire Flow Calculation

1. Determine Predominant Construction Type and Associated Factor (F)
Townhouse are wood framed construction; Class 1. therefore $F=1.5$
2. Determine Effective Floor Area (A)
 $A = 10,619 \text{ SF} + 0.5(10,619 \text{ SF}) = 15,929 \text{ SF}$ (1 Bldg)
Grd. Flr. 2nd Flr.
3. Calculate Construction Factor (C_i)
 $C_i = 18F(A)0.5 = 18(1.5)(15,929)0.5 = 3,408 \text{ gpm}$
4. Round C_i to Nearest 250 gpm
 $C_i = 3,500 \text{ gpm}$
5. Determine Predominant Occupancy Type and the Associated Factor (O_i)
For "Apartment", occupancy combustibility class is "C-2 (Limited Combustible)" with $O_i = 0.85$
6. Determine If There Is an Exposure Charge
Buildings are rated habitational; $X_i = 0$
7. Determine if there is communication Charge.
Buildings are rated habitational; $P_i = 0$
8. $NFF_i = (C_i)(O_i)(1+(X+P)_i) = 3,500(0.85)(1+0) = 2,975 \text{ gpm}$ needed fire flow
For 10-inch PVC Fire Line, $Q = 2,975 \text{ gpm} = 6.61 \text{ cfs}$

$$A = \frac{\pi(0.833)^2}{4} = 0.545 \text{ SF}$$

$$V = \frac{Q}{A} = 12.13 \text{ fps} < 13 \text{ fps} \quad \text{OK}$$

APPENDIX F
Traffic Impact Analysis Report

**TRAFFIC IMPACT ANALYSIS REPORT
WAILEA MF-9 CONDOMINIUM COMPLEX**

**FINAL REPORT
(Second Revision)**

By:

**M&E Pacific, Inc.
841 Bishop Street, Suite 1900
Honolulu, Hawaii 96813**

August 2004

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**TRAFFIC IMPACT ANALYSIS REPORT
WAILEA MF-9 CONDOMINIUM COMPLEX**

FINAL REPORT

A resort condominium project is being proposed in Wailea, Maui, Hawaii. This report documents a study that was conducted to identify the traffic impacts of the proposed project and to recommend any mitigating measures. This second revision report addresses the impact of relocating the proposed project access from the original location described in the report dated May 2004 and comments made at the Planning Commission hearing on August 10, 2004.

PROJECT DESCRIPTION

Wailea MF-9 Associates LLC, proposes to develop a 120 unit hotel-zoned condominium project in Wailea, Maui, Hawaii. The project site is located on a 30.167 acre site identified as Tax Map Key (2) 2-1-08:119, on Wailea Alanui Drive in the Wailea Resort. The site is identified on the Wailea Resort master plan as MF-9, and is directly mauka of the Grand Wailea Resort Hotel and Spa and the Four Seasons Resort Maui at Wailea. The existing Wailea Blue Golf Course surrounds the project site on three sides. The location of the project site in relationship to the local road system is shown on Figure 1.

Development plans include the new construction of approximately 20 two-story buildings with six attached single family residential units situated within a gated community. Access to the project site would be a roadway directly across from the Grand Wailea Resort Hotel and Spa ballroom entrance. A second emergency access is planned further north along Wailea Alanui Drive across from the hotel's main entrance. This second entrance would normally be closed. The developer proposes to add a traffic signal on Wailea Alanui Drive at his main driveway to facilitate vehicular access and pedestrian crossings to the makai side of the road. The proposed site plan is shown on Figure 2. The proposed project is scheduled for to be ready for occupancy about 2008.

Based on the location and schedule of the proposed project, this study analyzed the traffic impacts for a four year forecast period at three intersections along Wailea Alanui Drive:

- o Wailea Ike Drive,
- o the south entry driveway into the Shops at Wailea, and
- o the Grand Wailea Resort Hotel and Spa ballroom entrance, which would also become the main access to the proposed project site.

These three intersections are identified on Figure 1.

EXISTING CONDITIONS

A survey of the existing roadway and traffic conditions was made.

Existing Roadways

Wailea Alanui Drive is a County collector roadway in the Wailea Resort complex between Kilohana Drive in the north and Kaukahi Street to the south. It is the only roadway that provides continuous north-south access between the northern boundary at Kihei to the southern limits of the resort at Makena. It is a four-lane divided roadway between Okolani Drive and Kaukahi Street with median breaks where adjoining land uses have their driveways. It has a rolling profile and curving alignment between Wailea Ike Drive and Kaukahi Street, with a posted speed limit of 30 miles per hour (mph). The roadway changes its name to Makena Alanui Road south of Kaukahi Street and becomes a two-lane roadway.

Several roadways provide mauka-makai access between Wailea Alanui Drive and Piilani Highway, including Kilohana Drive, Okolani Drive and Wailea Ike Drive. The latter roadway is the southernmost of these roadways and is the closest to the project site. It is a four-lane divided roadway with a relatively steep vertical alignment of 9 percent and a posted speed limit of 30 mph.

The intersection of Wailea Ike Drive with Wailea Alanui Drive is a signalized T intersection. The two (2) makai bound lanes of Wailea Ike Drive diverge to form one (1) left turn lane controlled by a traffic signal and a right turn lane controlled by a Yield sign. The southbound approach of Wailea Alanui Drive has two through lanes and a left turn lane with a protected left turn phase. The northbound approach of Wailea Alanui Drive has one through lane and a right turn lane controlled by a Yield sign.

The other two (2) study intersections are actually driveways to adjoining land uses. The Shops at Wailea is a large retail center makai of the Wailea Alanui Drive/Wailea Ike Drive intersection. The center has one (1) driveway entry each to the north and to the south of the intersection. The south driveway was analyzed in this study. The Grand Wailea Resort Hotel and Spa has three (3) entry driveways along Wailea Alanui Avenue: the main entry, a ballroom entry, and a service entry. The proposed project's access driveway would be located directly across from the ballroom entry.

Wailea Resort Company, Ltd., recently completed the extension of Kalai Waa Street to Kaukahi Street. Kalai Waa Street is a two-lane, north-south roadway connecting Wailea Ike Drive with Kaukahi Street. Kaukahi Street is a two-lane, mauka-makai collector roadway that connects with Wailea Alanui Drive. This project has created a new route for travelers between Piilani Highway and Makena that has diverted many trips from Wailea Alanui Drive. Wailea Resort Company, Ltd., intends to dedicate both of these roadways to the County of Maui.

Traffic Volumes

Traffic turning movement counts were taken at the Wailea Ike Drive and Shops at Wailea driveway with Wailea Alanui Drive on Tuesday and Thursday, March 9 and 11, 2004, respectively. These counts were taken during the "busy" visitor season that lasts from late December to late March. During this period, hotel and resort housing

occupancies are at their highest annual levels. Traffic counts were taken at the Grand Wailea Resort Hotel and Spa ballroom entrance intersection on Tuesday, July 13, 2004. The last counts were taken subsequent to a decision to change the location of the main project access location, hence; the later date.

Traffic counts were taken during the morning (7:00 to 9:30 a.m.), mid-day (10:30 a.m. to 1:00 p.m.), and afternoon (2:30 to 5:00 p.m.) peak periods at the Wailea Ike Drive and Wailea Grand Resort Hotel and Spa intersections. Traffic counts were taken at the Shops at Wailea driveway from 9:00 a.m. to 1:00 p.m. and from 2:00 to 5:00 p.m., since the retail center is not open during the morning rush hours and does not generate much traffic. Since traffic volumes were not counted at the Shops at Wailea driveway during the morning peak hour, traffic forecasts were not made at this driveway for the morning time period.

Traffic turning movement counts require traffic surveyors to station themselves by each study intersection and record each vehicle movement as through or turning movements by 15 minute intervals. The worksheets for the traffic counts are included in the Appendix.

The summer northbound and southbound traffic volumes on Wailea Alanui Drive at the Grand Wailea Resort Hotel and Spa ballroom entrance were 10 to 20 percent lower for two time periods, relative to the winter/spring volumes counted at the Shoppes and Grand Wailea Resort Hotel and Spa main entrance intersections. Therefore, these three (3) movements were increased by 15% as shown below:

<u>Time Period & Movement</u>	<u>Counted Volumes</u>	<u>15% Increased Volumes</u>
AM southbound through	481	553
AM southbound right turns	79	91
Midday southbound through	484	557
Midday southbound right turns	46	53
Midday northbound through	480	552
Midday northbound left turns	15	17

The resultant peak hour movements are summarized on Figure 3 for the three (3) study periods. Traffic volumes over five vehicles per hour (vph) are rounded to the nearest five.

These traffic counts show two (2) trends. First, the dominant traffic flow is south bound in the morning and north bound in the afternoon due to employee traffic arriving in the morning and leaving in the afternoon. Second, the traffic volumes are typical of resort areas in that they are lowest in the morning, and gradually increase through the mid-day to their highest level in the afternoon peak.

The winter 2004 counts for the Wailea Alanui Drive/Wailea Ike Drive intersection were compared to the summer 1997 traffic volumes included in the Traffic Impact Analysis Report Wailea Resort Revised Master Plan, prepared by Austin, Tsutsumi & Associates, Inc., (1997). Traffic volumes increased on all approaches during the morning and afternoon peak hours but at different rates, as shown below:

<u>Approach</u>	<u>Year</u>	<u>AM PEAK</u>		<u>PM PEAK</u>	
		<u>Volumes</u>	<u>% Increase</u>	<u>Volumes</u>	<u>% Increase</u>
Wailea Alanui Drive South Bound	2004	380	75%	410	50%
	1997	217		273	
Wailea Alanui Drive North Bound	2004	380	73%	965	36%
	1997	219		709	
Wailea Ike Drive Makai Bound	2004	660	37%	565	79%
	1997	481		316	

In addition to traffic counts at the study intersections, a traffic count was also taken at the Wailea Ike Drive/Wailea Ekolu Place intersection to obtain trip generation and distribution information on resort housing units. This count was taken at the same time periods of day as the Wailea Ike Drive and Wailea Grand Resort Hotel and Spa counts so that trip generation rates could be developed for the proposed project for the three (3) time periods used in the forecast. The worksheet for this traffic count is included in the Appendix.

The project developers believe that the trip characteristics of the units on Wailea Ekolu Place would be similar to that of their proposed project. There are about 192 residential units on Wailea Ekolu Place, and with a seasonal high average occupancy rate of 85 percent, there were an estimated 163 occupied units during the counts. This figure was used in conjunction with the traffic volumes entering and leaving the Wailea Ekolu Place approach to obtain trip generation rates for each forecast period:

<u>PEAK PERIOD</u>	<u>Direction of Travel</u>	<u>Number of Trips</u>	<u>Trip Rate</u>	<u>TG Handbook Rate</u>
AM	Inbound	50	0.307	0.75
	Outbound	38	0.233	
	Total		0.540	
MID	Inbound	112	0.687	none
	Outbound	61	0.374	
	Total		1.061	
PM	Inbound	260	1.595	1.01
	Outbound	194	1.190	
	Total		2.785	

These calculated rates show several non-typical characteristics. Like the traffic counts, they show the lowest rate in the morning, a higher rate at mid-day, and the highest rate in the afternoon. The morning and afternoon rates are compared to the rates for single family homes from the Institute of Transportation Engineers Trip Generation Handbook (Seventh Edition, 2003), which represent "national averages." The morning rate is lower than the handbook while those for the afternoon are more than two-and-a-half times. This would indicate that visitors do much of their traveling in the afternoons. Also, during the morning peak the inbound trips outnumber the outbound trips. This could be due to on-site employees arriving for work outnumbering the visitors/residents who were leaving. Likewise, the high number of outbound trips in the afternoon peak could be attributed to on-site workers going home for the day.

TRAFFIC FORECAST

The proposed project is scheduled to be ready for occupancy in 2008. Therefore, traffic forecasts were prepared for a four-year forecast period. During this period, ambient traffic can be expected to increase due to regional growth and new projects in the area. The traffic that would be generated from the proposed project was then added to the ambient traffic forecast to obtain the total with project traffic forecast. These forecasts would be representative of traffic conditions during the peak winter season months.

Ambient Traffic Forecast

The Wailea Resort is at the end of the roadway system is southeast Maui. Therefore, any increases in traffic volumes on its roadways would be attributable to land use changes in the Wailea Resort and the Makena Resort to the south. Information on land use changes in these two (2) resorts were provided. The following land use changes in Wailea and Makena are expected to come on line by 2008 and are identified in the Appendix:

- o Property makai of the Shops at Wailea - 98 multi-family units
- o MF-4 - 24 single family units
- o MF-5 – 50 single family units
- o MF-8 – 15 duplex units
- o MF-15 – 72 multi-family units
- o Makena – 104 various units

The traditional procedure of trip generation, distribution, and assignment was used to forecast the number of trips that would be generated by the above proposed projects, the distribution of these trips, and the specific intersection turning movements that would be utilized.

The trip generation step forecasts the volume of vehicle trips that would be generated by the above proposed projects during the three analysis periods. It was assumed

that the previously calculated resort residential trip generation rates rather than the ITE handbook rates were applicable to these new projects. Table 1 summarizes the trip rates for each peak period and the number of trips which would be generated. The trip distribution step divides the generated trips by directions of travel from each of the new projects. Table 1 summarizes the percentage of trips from each new project that are expected to pass the proposed project site. It was assumed that half the trips going to Makena would be using the Kalai Waa Street/Kaaukahi Street route and would not pass the project site. This assumption was based on the perceived travel times by either route being about equal. The trip assignment step assigns the distributed trips as turning movements to the three study intersections. The results of the trip assignment procedure for the proposed project are graphically shown on Figure 4. The traffic volumes are not rounded.

The traffic assignments for new projects from Figure 4 were added to the existing traffic volumes from Figure 3 to obtain the 2008 ambient traffic forecast shown on Figure 5. Traffic volumes over five vph are rounded to the nearest five.

Project Generated Traffic

The traditional procedure of trip generation, distribution, and assignment was also used to forecast the number of trips that would be generated by the proposed project, the distribution of these trips, and the specific intersection turning movements that would be utilized. Although the project's unit count has been reduced to 120 units, the analysis was based on the original 144 units and therefore offers a more conservative analysis.

The trip generation step forecasts the volume of vehicle trips that would be generated by the proposed project during the three analysis periods. Table 2 summarizes the trip generation forecasts using the rates calculated for the Wailea Resort market. The numbers of trips were factored by 85 percent to account for the estimated occupied units during the peak season. The highest volumes of trips are generated in the

afternoon peak hour.

The trip distribution step divides the generated trips by directions of travel to/from the project site. The three primary directions of travel are north via Wailea Alanui Drive, south via Makena Alanui Road, and north via Piilani Highway. The proportion of trips in each direction of travel was based on the average percentages of turning movements from the traffic counts at the Wailea Ike Drive intersections with Wailea Ekolu Place and Wailea Alanui Drive and are summarized on Table 2, along with the resultant volumes of trips for each direction of travel.

The trip assignment step assigns the distributed trips as turning movements to the three study intersections. The results of the trip assignment procedure for the proposed project are graphically shown on Figure 6. The traffic volumes are not rounded.

Total Forecast Volumes

The project generated volumes from Figure 6 were added to the ambient traffic forecasts from Figure 5 to obtain the total with project traffic forecasts shown on Figure 7. Traffic volumes over five vph are rounded to the nearest five for the five study intersections.

LEVEL OF SERVICE ANALYSIS

The concept of level of service is used to quantify the quality of traffic flow on roadway facilities. The Transportation Research Board has developed procedures to calculate level of service value(s) by measuring traffic volumes against the capacities of different types of roadway facilities. Their Highway Capacity Manual 2000 (HCM2000) describes the various procedures developed for freeways, highways, signalized and unsignalized intersections, etc. A comparison of levels of service for the different forecast scenarios can give an indication of the traffic impacts of ambient traffic growth and the proposed project.

The methodology for analyzing signalized intersections calculates the levels of service for individual approaches and the intersection as a whole based on the average stopped delay per vehicle. The results range from level of service A (best with average delays less than five seconds) to F (worst with average delays longer than 80 seconds), described as follows:

<u>Level of Service</u>	<u>Control Delay per Vehicle (Seconds/Vehicle)</u>
A	<10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

Many jurisdictions consider levels of service A to D as acceptable for areas like Wailea, with levels of service E and F indicating the need for mitigating measures. The HCM 2000 changed the relationships between level of service and delay from the previous 1994 version. The threshold for level of service D to E was raised from 40.0 to 55.0 seconds, and the threshold for level of service E to F was raised from 60.0 to 80.0 seconds. This change would make some previously unacceptable movements minimally desirable.

The results of the level of service analysis for the signalized intersection at Wailea Alanui Drive/Wailea Ike Drive are summarized on Table 3. The existing, ambient forecast and total with project forecast levels of service and delays are placed side-by-side for each analysis period so that changes in levels of service can be identified.

The intersection is currently operating at level of service C during all three (3) analyses periods and is forecast to remain the same under the ambient and total with project forecasts. The above analysis indicates that the proposed project would not have an adverse traffic impact at this intersection. The Wailea Alanui Drive southbound approach is operating at level of service D all day, indicating that a lengthening of the

signal phase's maximum extension time should be considered. The Wailea Ike makai bound left turn movement is operating at level of service C in the morning peak. As with the southbound approach, lengthening the phase's maximum extension time should be considered during the morning peak period. An additional left turn lane is not required. Lastly, the Wailea Alanui northbound movement is forecast to change from level of service C to D in the afternoon peak with increases in ambient traffic. Lengthening of the phase's maximum extension time should be considered during the afternoon peak period.

The project developer proposes to install a traffic signal and a separate left turn lane on the southbound approach of Wailea Alanui Drive at the main project entrance. The traffic signal would be warranted based on the peak hour traffic volume warrants described in the Manual On Uniform Traffic Control Devices and the forecast PM peak hour volumes. With this traffic signal installed, the intersection is forecast to operate at level of service A for all three (3) analyses periods, as shown on Table 3. The traffic signals would significantly reduce delay on the Grand Wailea ballroom driveway approach in the PM peak hour relative to the unsignalized situation. The approach delay would improve from level of service F (87.7 seconds) to level of service A (10 seconds) with traffic signals. Although some of the through traffic on Wailea Alanui Drive would now be required to stop, the average delays would remain at level of service A (under 10 seconds), indicating very good traffic operations. This analysis indicates that the proposed project would not have an adverse traffic impact at this intersection.

The proposed traffic signal would create some other benefits in the form of better traffic operations and traffic safety. The traffic signal would make it safer for pedestrians to cross Wailea Alanui Drive and bring down the average speeds on the roadway, which reportedly has a speeding problem. The traffic signal should also make it easier for traffic from the adjoining Grand Wailea Resort driveways to enter Wailea Alanui Drive with the gaps created in traffic stream.

The procedure used for analyzing unsignalized intersections calculates vehicle delays and levels of service based on the distribution of gaps in traffic on the major street and driver judgment in selecting gaps through which to execute turns. For two-way stop intersections where only the minor street approaches are controlled by a stop sign, levels of service are calculated for the critical turning movements including outbound movements from the stop-controlled approach, and left turns from the main road to the minor road. The procedure does not calculate an overall intersection level of service. For all way stops where each incoming approach is controlled by a stop sign, levels of service are calculated for each approach and the intersection as a whole.

The Highway Capacity Manual defines the relationship between level of service and delay (in seconds/vehicle) for unsignalized intersections as shown below:

<u>Level of Service</u>	<u>Delay (Seconds/Vehicle)</u>
A	<10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	>50.1

Levels of service A to E are considered acceptable for unsignalized intersections. Level of service F (with average delays longer than 50 seconds) is considered undesirable and would indicate the probable need for mitigation. However, level of service F conditions may be tolerated for certain conditions when delays are not excessive and there are no real feasible mitigating measures. The HCM 2000 changed the relationships between level of service and delay from the previous 1994 version. The threshold for level of service E to F was lowered from 60 to 50 seconds, which would make some previously minimally acceptable movements undesirable.

Table 4 shows the levels of service and average delays (in seconds) on the critical turning movements of the two (2) unsignalized intersections at the Shops at Wailea driveway and the Grand Wailea Resort Hotel and Spa ballroom driveway. The critical

turning movements for both intersections include the mauka (east) bound movements from the driveways, and the north bound left turn movement from Wailea Alanui Drive. The proposed project would add the makai bound project driveway movements to the hotel ballroom intersection. In addition to levels of service and delay, the average queue lengths (labeled QUE on Table 4, in vehicles) are shown for movements with levels of service E or F.

The Shops at Wailea driveway is operating satisfactorily during the mid-day period but the outbound left turn movement is already experiencing level of service F in the afternoon peak. A queue length of three (3) vehicles was calculated, which is in line with what was observed. Afternoon delay on the movement is forecast to increase to 98 seconds with ambient conditions and to 146 seconds with the project. This means that the queue length is forecast to increase to from three (3) to four (4) vehicles with these forecast conditions, which is not a major noticeable increase. Although the level of service for the outbound left turn movement would be considered undesirable it would still be tolerable. There are also no feasible mitigating measures for this situation. There are not enough outbound volumes to warrant an all way stop or a traffic signal. The Shops at Wailea has restricted employee parking to the north parking lot and has reported reducing of delays for outbound vehicles.

The hotel ballroom driveway intersection is currently operating satisfactorily during all three periods with levels of service D or better. The intersection is forecast to operate satisfactorily for the ambient forecast conditions with levels of service D or better for the three (3) analysis periods. Although this intersection would be signalized with the proposed project, the levels of service for the with project forecasts are also shown on Table 4. With the proposed project and no traffic signal, the outbound left turn movements from the hotel driveway is forecast to operate at level of service F with average delays of 103 seconds, and average queue lengths of four vehicles. This condition would be mitigated by the proposed traffic signal. The traffic signal could also help special event traffic exit the hotel easier at the end of events.

CONCLUSIONS

The proposed resort condominium project is not expected to have an adverse traffic impact on the roadway system. Mitigating measures beyond proposed improvements would not be required as a result of the proposed project. The developer proposes to add a traffic signal and a separate left turn lane on the southbound approach of Wailea Alanui Drive at the project intersection.

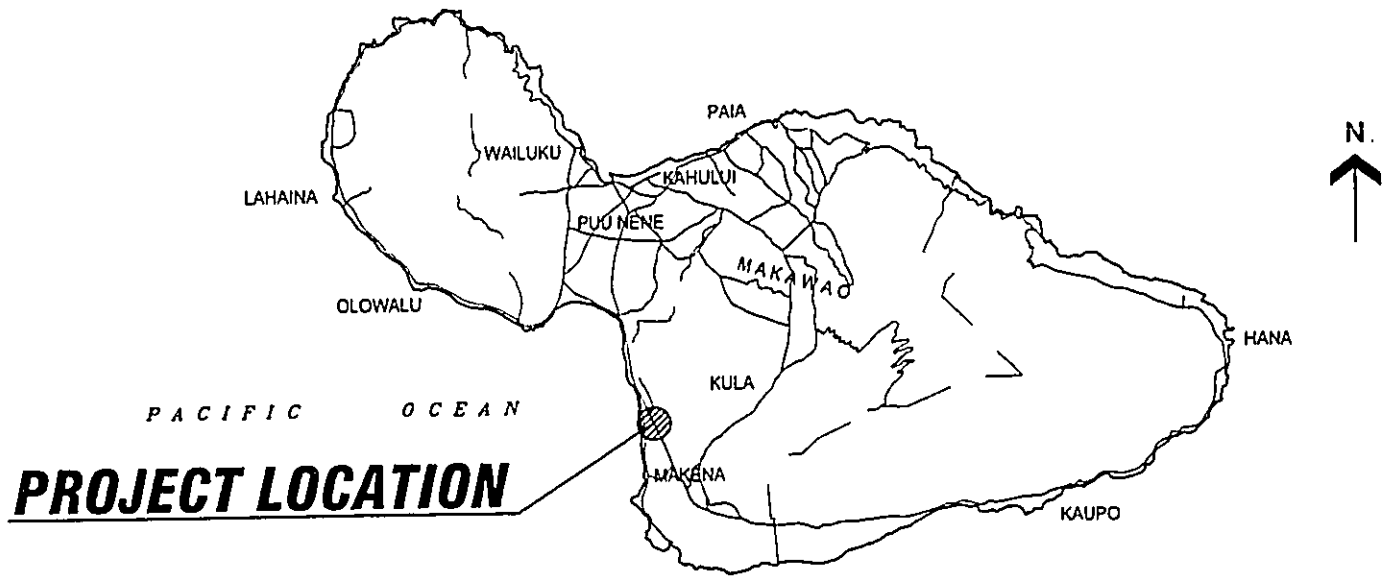
The signalized Wailea Ike Drive/Wailea Alanui Drive intersection is expected to continue operating at satisfactory levels of service with the additional traffic from other projects in Wailea and Makena, and the proposed project.

Traffic from the proposed project is forecast not to have an adverse impact on the Shops at Wailea driveway intersection. The outbound left turn movement is already at level of service F and delays would increase with more ambient and project generated traffic. However, the magnitude of the delays and queues in the afternoon peak would be undesirable but still tolerable.

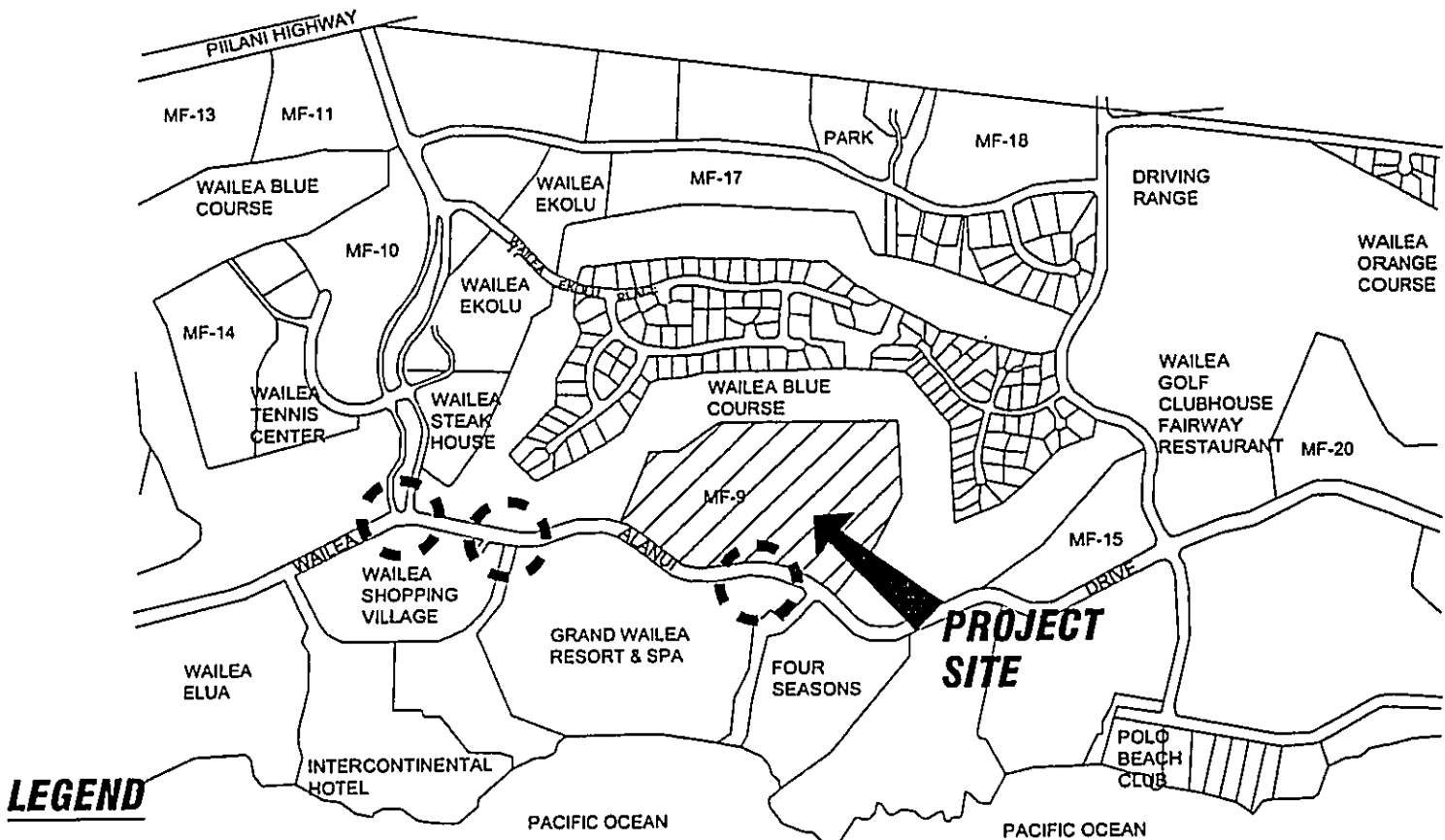
The proposed traffic signal at the Grand Wailea Resort Hotel and Spa ballroom driveway/project driveway would improve its traffic operations considerably and there would not be any traffic impact.

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FIGURES



**ISLAND OF MAUI
VICINITY MAP
NOT TO SCALE**



LEGEND

TIAR STUDY INTERSECTIONS

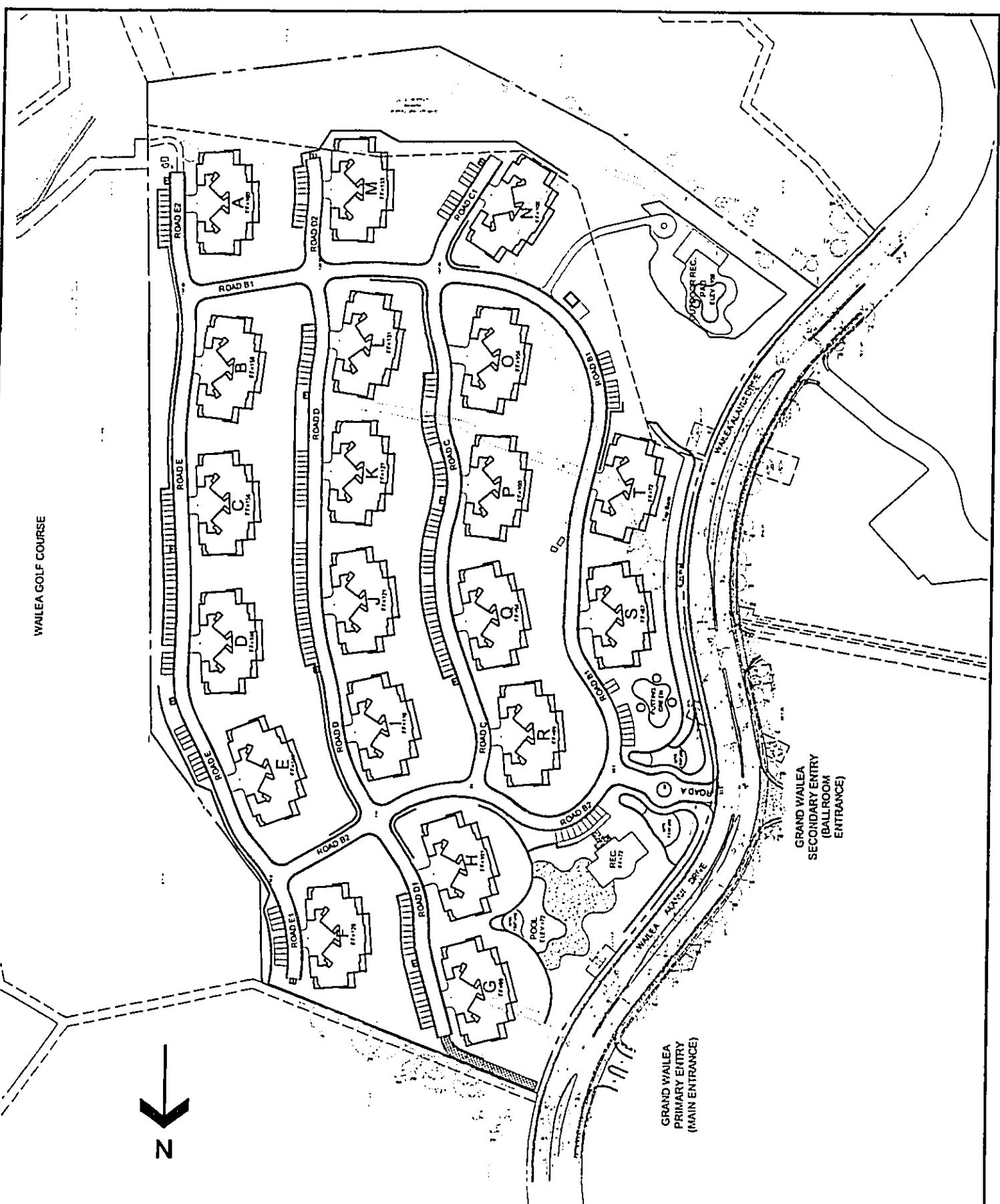
**LOCATION MAP TMK: (2) 2-1-08: 119
NOT TO SCALE**

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WAILEA MF-9
WAILEA, MAUI, HAWAII
LOCATION & VICINITY MAPS
TMK: (2) 2-1-08: 119

**FIGURE
1**

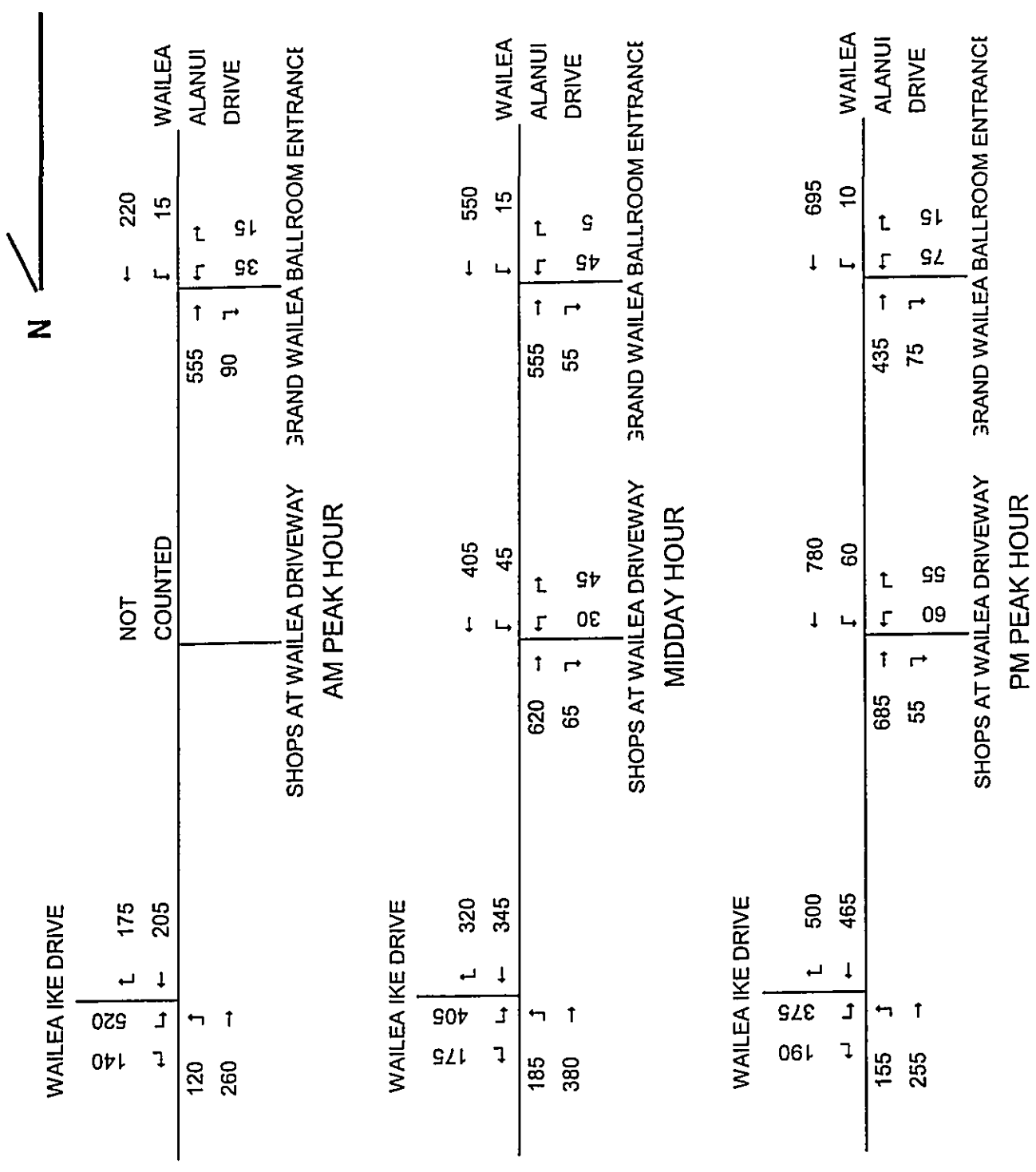
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 LAST UPDATE: September 07, 2004 @ 02:33:40 pm
 PLOT DATE: September 07, 2004 @ 03:21:56 pm



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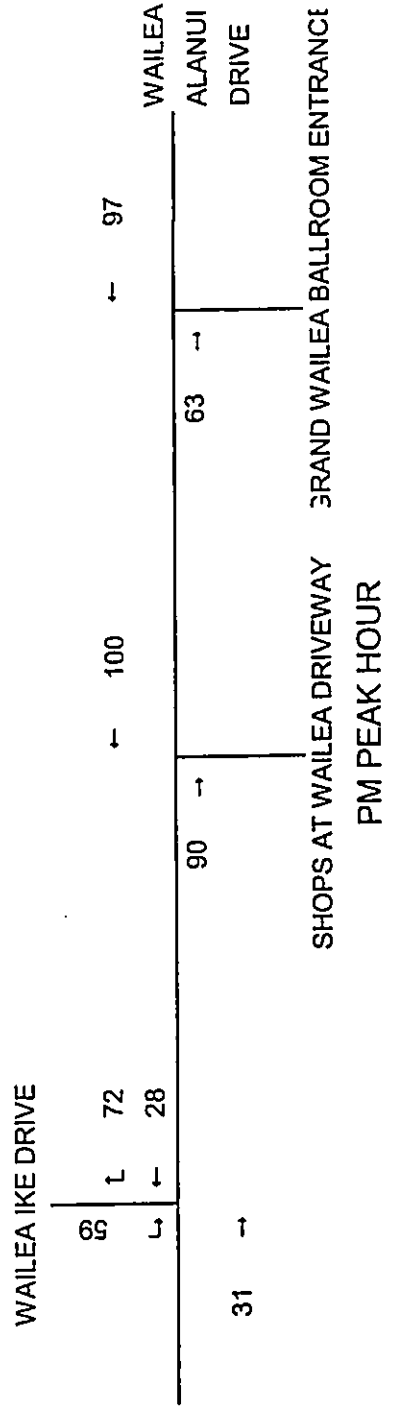
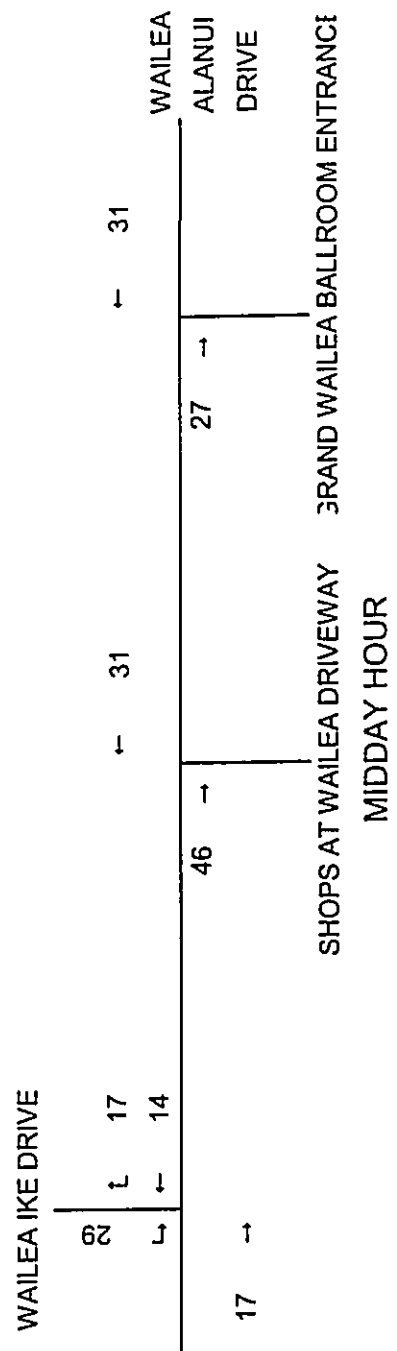
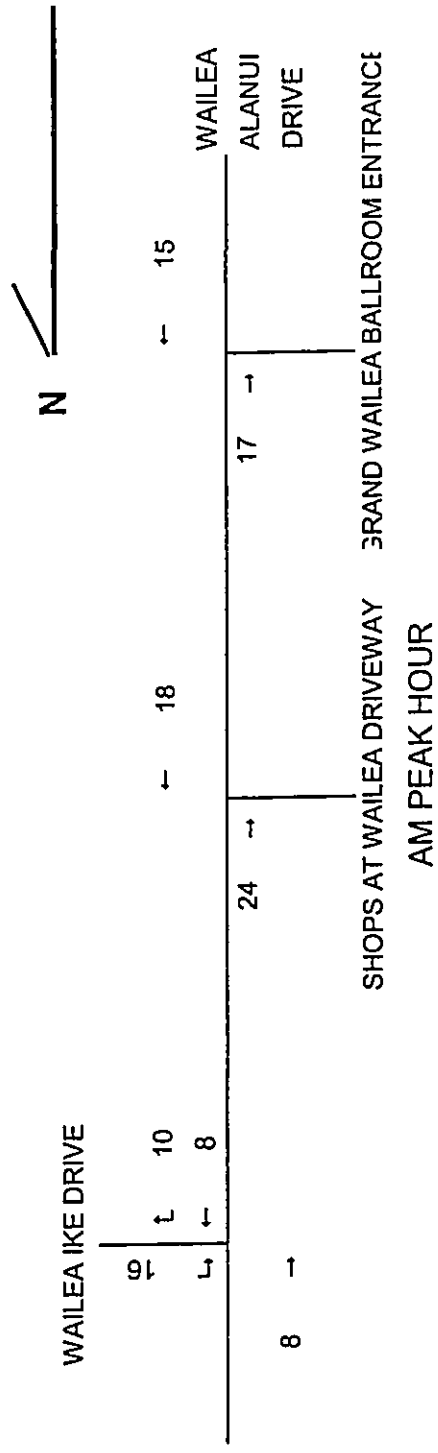
WAILEA MF-9
 WAILEA, MAUI, HAWAII
MASTER LAND PLAN
 TMK: (2) 2-1-08: 119

FIGURE
2



Not to scale

**EXISTING TRAFFIC VOLUMES
FIGURE 3**



Not to scale

AMBIENT TRAFFIC ADDITIONS FROM 2004 TO 2008
FIGURE 4



WAILEA IKE DRIVE		NOT COUNTED		COUNTED		WAILEA ALANUI DRIVE	
140	185	535	215	570	90	235	15
120							
265							

SHOPS AT WAILEA DRIVEWAY 3Rd WAILEA BALLROOM ENTRANCE

AM PEAK HOUR

WAILEA IKE DRIVE		NOT COUNTED		COUNTED		WAILEA ALANUI DRIVE	
175	335	435	45	585	55	585	15
185							
395							

SHOPS AT WAILEA DRIVEWAY 3Rd WAILEA BALLROOM ENTRANCE

MIDDAY HOUR

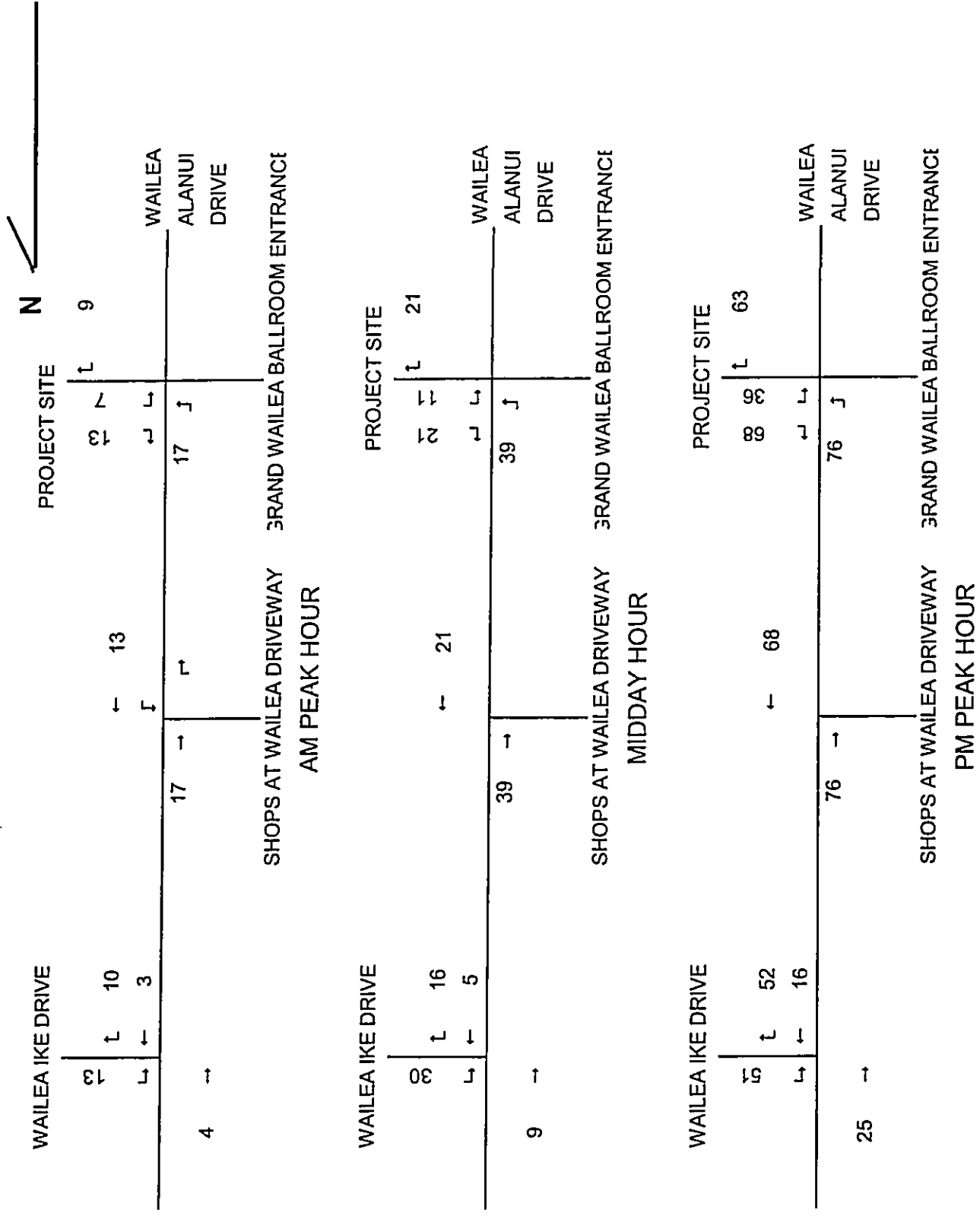
WAILEA IKE DRIVE		NOT COUNTED		COUNTED		WAILEA ALANUI DRIVE	
190	570	435	880	775	55	795	10
155							
285							

SHOPS AT WAILEA DRIVEWAY 3Rd WAILEA BALLROOM ENTRANCE

PM PEAK HOUR

Not to scale

2008 AMBIENT TRAFFIC FORECASTS
FIGURE 5



Not to scale

**PROJECT GENERATED TRAFFIC FORECASTS
FIGURE 6**



WAILEA IKE DRIVE		PROJECT SITE	
140	195	10	235
50	215	15	15
120		15	
270		570	
		90	

SHOPS AT WAILEA DRIVEWAY 3RAND WAILEA BALLROOM ENTRANCE

AM PEAK HOUR

WAILEA IKE DRIVE		PROJECT SITE	
175	350	20	585
45	365	15	15
185		40	
405		585	
		55	

SHOPS AT WAILEA DRIVEWAY 3RAND WAILEA BALLROOM ENTRANCE

MIDDAY HOUR

WAILEA IKE DRIVE		PROJECT SITE	
190	620	65	795
485	510	10	10
155		75	
310		500	
		75	

SHOPS AT WAILEA DRIVEWAY 3RAND WAILEA BALLROOM ENTRANCE

PM PEAK HOUR

Not to scale

2008 TOTAL WITH PROJECT TRAFFIC FORECAST
FIGURE 7

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TABLES

TABLE 1
TRIP GENERATION/DISTRIBUTION ANALYSIS FOR AMBIENT TRAFFIC GROWTH

PRO- JECT	# of Units	Type of Travel	Direct.	AM PEAK HOUR			MIDDAY HOUR			PM PEAK HOUR					
				# of Trips		% of trips travelling	# of Trips		% of trips travelling	# of Trips		% of trips travelling			
				Gen.*	Site	past proj.	Site	past proj.	Site	past proj.	Site	past proj.	Site		
Shops	98 mf condo		Inbound	0.218	18	35%	6	0.489	8	35%	3	1.135	7	45%	3
				0.166	14	35%	5	0.266	4	35%	1	0.847	5	35%	2
MF-4	24 sfdu		Inbound	0.218	4	35%	2	0.489	2	35%	1	1.135	2	45%	1
				0.166	3	35%	1	0.266	1	35%	0	0.847	1	35%	0
MF-5	50 sfdu		Inbound	0.218	9	15%	1	0.489	4	15%	1	1.135	4	20%	1
				0.166	7	15%	1	0.266	2	15%	0	0.847	3	15%	0
MF-8	15 duplex		Inbound	0.218	3	25%	1	0.489	1	25%	0	1.135	0	20%	0
				0.166	2	25%	1	0.266	1	25%	0	0.847	0	50%	0
MF-15	72 mfdu		Inbound	0.218	13	40%	5	0.489	6	40%	2	1.135	5	25%	1
				0.166	10	40%	4	0.266	3	40%	1	0.847	4	30%	1
Makené	104 varied		Inbound	0.218	19	20%	4	0.489	8	10%	1	1.135	8	10%	1
				0.166	15	10%	1	0.266	4	10%	0	0.847	6	20%	1

*Times 85% average unit occupancy

TABLE 2
TRIP GENERATION AND TRIP DISTRIBUTION ANALYSIS

PEAK PERIOD	TRIP GENERATION ANALYSIS					TRIP DISTRIBUTION ANALYSIS					
	# OF UNITS	DIRECTION OF TRAVEL	TG RATE	# OF TRIPS	85% OCC FACTOR	T/F PIILANI HWY %	#	T/F NORTH %	#	T/F SOUTH %	#
AM	144	Inbound	0.218	31	27	50%	13	15%	4	35%	9
		Outbound	0.166	24	20	50%	10	15%	3	35%	7
MD	144	Inbound	0.489	70	60	50%	30	15%	9	35%	21
		Outbound	0.266	38	33	50%	16	15%	5	35%	11
PM	144	Inbound	1.135	163	139	37%	51	18%	25	45%	63
		Outbound	0.847	122	104	50%	52	15%	16	35%	36

**TABLE 3
SIGNALIZED INTERSECTION LEVEL OF SERVICE ANALYSIS**

MOVEMENT AND APPROACH	2004 EXISTING		2008 AMBIENT		2008 W/PROJECT							
	Movement	Approach	Movement	Approach	Movement	Approach						
	LOS DEL	LOS DEL	LOS DEL	LOS DEL	LOS DEL	LOS DEL						
WAILEA IKE/WAILEA ALANUI INTERSECTION												
AM PEAK HOUR												
Wailea Ike WB L	D	36.6	D	40.0	D	43.4						
Wailea Ike WB R	B	10.2	C	31.7	B	10.2	D	37.5				
Wailea Alaanui NB T	B	18.7	B	18.8	B	18.9						
Wailea Alaanui NB R	A	2.0	B	11.5	A	2.0	B	11.3				
Wailea Alanui SB L	D	51.9	D	51.9	D	51.9						
Wailea Alanui SB T	B	10.6	C	23.5	B	10.6	C	23.2				
Overall Intersection		C	24.1		C	25.3		C	26.5			
MIDDAY HOUR												
Wailea Ike WB L	C	28.2	C	30.6	C	34.1						
Wailea Ike WB R	B	10.1	C	23.2	B	10.1	C	28.1				
Wailea Alaanui NB T	C	24.1	C	24.7	C	24.9						
Wailea Alaanui NB R	A	3.2	B	14.4	A	3.3	B	14.6				
Wailea Alanui SB L	D	55.0	D	55.0	D	55.0						
Wailea Alanui SB T	B	10.5	C	25.2	B	10.6	C	24.6				
Overall Intersection		C	20.6		C	21.2		C	22.1			
PM PEAK HOUR												
Wailea Ike WB L	C	28.6	C	33.8	D	42.6						
Wailea Ike WB R	A	9.9	C	22.7	A	9.9	C	34.0				
Wailea Alaanui NB T	C	34.3	D	38.3	D	41.4						
Wailea Alaanui NB R	A	5.0	B	19.4	A	6.2	C	22.3				
Wailea Alanui SB L	D	36.6	D	36.6	D	36.6						
Wailea Alanui SB T	A	9.7	B	20.0	A	9.8	B	19.4	A	9.9	B	18.9
Overall Intersection		C	20.5		C	22.4		C	25.1			

TABLE 3 (CONTINUED)
SIGNALIZED INTERSECTION LEVEL OF SERVICE ANALYSIS

MOVEMENT AND APPROACH	2004 EXISTING		2008 AMBIENT		2008 W/PROJECT	
	Movement	Approach	Movement	Approach	Movement	Approach
	LOS DEL	LOS DEL	LOS DEL	LOS DEL	LOS DEL	LOS DEL
WAILEA ALANUI/BALLROOM ENTRANCE/WAILEA MF-9 INTERSECTION						
AM PEAK HOUR						
WG Ballroom EB DW					A	9.8
Project WB DW					A	9.6
Wailea Alanui NB					A	7.0
Wailea Alanui SB					A	8.2
Overall Intersection					A	8.0
MIDDAY HOUR						
WG Ballroom EB DW					A	9.9
Project WB DW					A	9.6
Wailea Alanui NB					A	7.9
Wailea Alanui SB					A	8.1
Overall Intersection					A	8.1
PM PEAK HOUR						
WG Ballroom EB DW					A	10.0
Project WB DW					A	9.9
Wailea Alanui NB					A	8.9
Wailea Alanui SB					A	7.9
Overall Intersection					A	8.6

LEGEND

LOS=level of service

DEL=delay(sec)

NB=northbound approach

SB=southbound approach

EB=eastbound approach

WB=westbound approach

WB=westbound approach

T=through movement

L=left turn movement

R=right turn movement

DW=driveway access

**TABLE 4
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE ANALYSIS**

WALEA ALANUI/SHOPS DRIVEWAY INTERSECTION

MOVEMENT AND APPROACH	2004 EXISTING		2008 AMBIENT		2008 W/PROJECT	
	Movement	Approach	Movement	Approach	Movement	Approach
	LOS DEL QUE	LOS DEL	LOS DEL QUE	LOS DEL	LOS DEL QUE	LOS DEL
MIDDAY HOUR						
Shop Driveway R	B 11.4		B 11.7		B 11.8	
Shop Driveway L	D 25.5	C 17.0	D 28.3	C 18.3	D 30.9	C 19.5
Wailea Alaanui NB L	A 9.5		A 9.8		A 9.9	
PM PEAK HOUR						
Shop Driveway R	B 11.8		B 12.4		B 13.0	
Shop Driveway L	F 62.2 3	E 38.8	F 98.0 4	F 58.2	F 146 4	F 84.3
Wailea Alanui NB L	A 9.9		B 10.4		B 10.9	

WALEA ALANUI/GRAND WALEA BALLROOM DRIVEWAY INTERSECTION

MOVEMENT AND APPROACH	2004 EXISTING		2008 AMBIENT		2008 W/PROJECT	
	Movement	Approach	Movement	Approach	Movement	Approach
	LOS DEL QUE	LOS DEL	LOS DEL QUE	LOS DEL	LOS DEL QUE	LOS DEL
AM PEAK HOUR						
GW Ballroom DWY R	B 10.8		B 10.9		B 10.9	
GW Ballroom DWY L	C 18.6	C 16.2	C 19.2	C 16.7	C 23.9	C 19.9
Project Driveway R					A 9.2	
Project Driveway L					C 15.9	B 10.7
Wailea Alanui SB L					A 7.8	
Wailea Alanui NB L	A 9.2		A 9.3		A 9.3	
MIDDAY HOUR						
GW Ballroom DWY R	B 10.6		B 10.7		B 10.7	
GW Ballroom DWY L	C 24.7	C 23.3	D 26.8	D 25.3	E 42.5 1	E 39.1
Project Driveway R					B 10.7	
Project Driveway L					D 29.3	B 14.1
Wailea Alanui SB L					A 9.2	
Wailea Alanui NB L	A 9.1		A 9.2		A 9.2	
PM PEAK HOUR						
GW Ballroom DWY R	B 10.2		B 10.5		B 10.5	
GW Ballroom DWY L	D 25.2	C 22.7	D 30.5	D 26.8	F 103.1 4	F 87.7
Project Driveway R					B 12.9	
Project Driveway L					E 47.7 1	B 15.0
Wailea Alanui SB L					B 10.8	
Wailea Alanui NB L	A 8.7		A 8.9		A 8.9	

LEGEND

LOS=level of service
DEL=delay(sec)
QUE=queue

DW=driveway
L=left turn movement
R=right turn movement

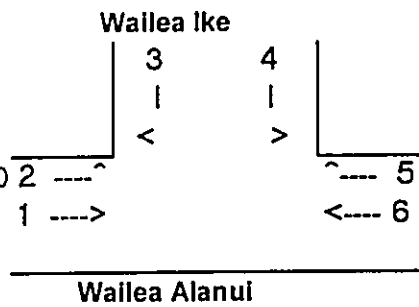
NB=northbound approach
SB=southbound approach
EB=eastbound approach

APPENDIX A

TRAFFIC TURNING MOVEMENT COUNTS

TRAFFIC TURNING MOVEMENT COUNT
Wailea Resort MF9 Traffic Study

LOCATION: Wailea Ike/Wailea Alanui
 DATE: 9 MAR 04
 TIME: 7:00a-9:30a/10:30-1:00/2:30p-5:00
 WEATHER: sunny
 RECORDER: Quentin K.R.

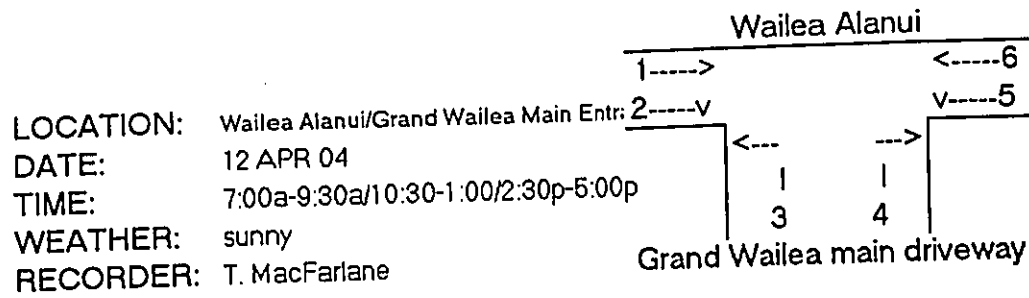


TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
7:00-7:15	66	8	16	131	35	25	281
7:15-7:30	74	16	26	152	45	23	336
7:30-7:45	55	9	21	123	17	19	244
7:45-8:00	54	19	29	109	37	10	258
8:00-8:15	53	37	22	126	39	40	317
8:15-8:30	59	17	25	102	38	27	268
8:30-8:45	56	20	34	124	42	49	325
8:45-9:00	58	24	30	115	39	40	306
9:00-9:15	62	31	35	130	47	52	357
9:15-9:30	83	43	39	150	49	65	429
7:00-9:30	620	224	277	1262	388	350	3121
8:30-9:30	259	118	138	519	177	206	1417
PHF	0.75		0.87		0.84		

TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
10:30-10:45	97	34	42	90	67	64	394
10:45-11:00	93	29	35	95	69	56	377
11:00-11:15	90	23	21	60	54	70	318
11:15-11:30	71	30	34	62	66	85	348
11:30-11:45	75	32	34	91	58	84	374
11:45-12:00	80	30	35	86	62	89	382
12:00-12:15	94	40	38	95	71	95	433
12:15-12:30	97	43	46	112	87	91	476
12:30-12:45	98	55	50	107	80	85	475
12:45-1:00	90	48	42	92	81	75	428
10:30-1:00	885	364	377	890	695	794	4005
12:00-1:00	379	186	176	406	319	346	1812
PHF	0.92		0.93		0.93		

TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
2:30-2:45	63	24	32	118	97	117	451
2:45-3:00	72	37	39	123	98	107	476
3:00-3:15	75	30	33	88	145	110	481
3:15-3:30	62	34	38	93	96	90	413
3:30-3:45	65	42	47	106	112	97	469
3:45-4:00	68	46	49	112	112	96	483
4:00-4:15	72	50	50	98	113	94	477
4:15-4:30	55	27	46	96	114	116	454
4:30-4:45	62	38	45	88	144	130	507
4:45-5:00	64	42	50	93	127	124	500
2:30-5:00	658	370	429	1015	1158	1081	4711
4:00-5:00	253	157	191	375	498	464	1938
PHF	0.84		0.96		0.88		

Wailea Resort MF9 Traffic Study



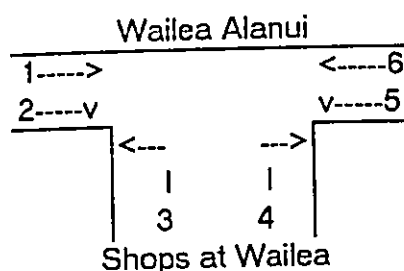
TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
7:00-7:15	131	5	4	2	2	54	198
7:15-7:30	190	5	6	6	3	31	241
7:30-7:45	143	8	4	3	1	65	224
7:45-8:00	154	11	8	5	2	45	225
8:00-8:15	161	3	4	3	2	47	220
8:15-8:30	97	5	4	3	5	45	159
8:30-8:45	127	9	5	9	6	58	214
8:45-9:00	106	9	11	7	5	57	195
9:00-9:15	174	10	17	3	0	67	271
9:15-9:30	120	6	9	4	2	73	214
7:00-9:30	1082	61	62	37	23	457	1722
7:15-8:15	648	27	22	17	8	188	910
PHF	0.87		0.75		0.74		

TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
10:30-10:45	125	9	20	5	5	113	277
10:45-11:00	126	7	14	4	5	110	266
11:00-11:15	114	13	11	5	4	139	286
11:15-11:30	107	12	13	7	5	114	258
11:30-11:45	130	12	14	8	6	150	320
11:45-12:00	138	12	15	9	8	160	342
12:00-12:15	99	15	13	8	9	126	270
12:15-12:30	135	12	12	4	10	150	323
12:30-12:45	174	11	15	4	9	179	392
12:45-1:00	155	14	11	5	7	157	349
10:30-1:00	1303	117	138	59	68	1398	3083
12:00-1:00	563	52	51	21	35	612	1334
PHF	0.83		0.86		0.86		

PERIOD	1	2	3	4	5	6	TOTAL
2:45-3:00	108	28	14	10	4	144	308
3:00-3:15	106	39	16	7	6	199	373
3:15-3:30	102	18	8	3	4	158	293
3:30-3:45	110	14	17	8	9	164	322
3:45-4:00	125	16	16	10	10	133	310
4:00-4:15	98	9	15	5	6	221	354
4:15-4:30	110	13	8	2	3	167	303
4:30-4:45	117	20	23	6	9	205	380
4:45-5:00	106	8	16	3	4	124	261
2:30-5:00	874	137	119	44	51	1371	2596
3:45-4:45	450	58	62	23	28	726	1347
PHF	0.93		0.73		0.83		

TRAFFIC TURNING MOVEMENT COUNT
Wailea Resort MF9 Traffic Study

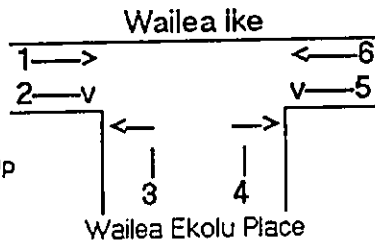
LOCATION: Wailea Alanui/Shops at Wailea DW
DATE: 11 MAR 04
TIME: 9:00a-1:00p/2:00p-5:00p
WEATHER: sunny
RECORDER: L. Nicolas



TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
9:00-9:15	120	16	7	7	10	52	212
9:15-9:30	137	15	9	13	8	76	258
9:30-9:45	138	19	6	8	10	69	250
9:45-10:00	140	9	4	7	16	14	190
10:00-10:15	152	25	6	12	13	105	313
10:15-10:30	155	19	8	12	11	103	308
10:30-10:45	158	13	9	12	9	100	301
10:45-11:00	153	10	8	10	11	97	289
11:00-11:15	145	12	9	9	11	83	269
11:15-11:30	136	13	10	7	11	68	245
11:30-11:45	120	14	13	12	12	100	271
11:45-12:00	112	13	14	10	19	113	281
12:00-12:15	105	17	19	14	16	107	278
12:15-12:30	110	15	18	9	13	123	288
12:30-12:45	121	19	16	13	21	118	308
12:45-1:00	130	14	21	11	17	110	303
9:00-1:00	1875	212	161	146	190	1310	3894
10:00-11:00	618	67	31	46	44	405	1211
PHF	0.98		0.96		0.95		
2:00-2:15	136	18	15	9	12	143	333
2:15-2:30	114	19	24	8	18	153	336
2:30-2:45	159	14	15	12	18	184	402
2:45-3:00	146	16	19	14	19	179	393
3:00-3:15	142	18	17	14	18	182	391
3:15-3:30	138	19	16	15	17	185	390
3:30-3:45	157	13	21	16	15	190	412
3:45-4:00	163	15	13	10	17	196	414
4:00-4:15	171	17	18	16	18	189	429
4:15-4:30	174	14	16	15	14	194	427
4:30-4:45	177	10	15	13	10	199	424
4:45-5:00	181	13	16	13	7	172	402
3:00-5:00	1303	119	132	112	116	1507	3289
3:45-4:45	685	56	62	54	59	778	1694
PHF	0.99		0.85		1.00		

Wailea Resort MF9 Traffic Study

LOCATION: Wailea Ike/Wailea Ekolu Place
 DATE: 11 MAR 04
 TIME: 7:00a-9:30a/10:30-1:00/2:30p-5:00p
 WEATHER: Sunny
 RECORDER: Quentin K.R.

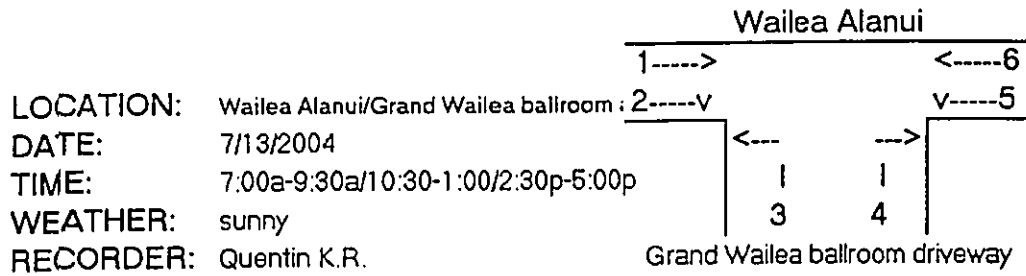


TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
7:00-7:15	46	4	1	1	2	105	159
7:15-7:30	39	5	2	3	10	115	174
7:30-7:45	44	9	4	2	8	123	190
7:45-8:00	37	5	4	0	6	129	181
8:00-8:15	39	7	2	2	6	140	196
8:15-8:30	38	7	7	5	7	110	174
8:30-8:45	57	6	2	5	3	107	180
8:45-9:00	61	5	5	4	6	105	186
9:00-9:15	54	8	3	5	8	108	186
9:15-9:30	60	7	8	6	7	112	200
7:00-9:30	390	54	35	29	51	934	1493
8:30-9:30	232	26	18	20	24	432	752
PHF	0.98		0.68		0.98		

TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
10:30-10:45	79	3	2	3	7	112	206
10:45-11:00	86	6	4	7	5	127	235
11:00-11:15	83	5	4	5	9	123	229
11:15-11:30	84	8	3	6	12	117	230
11:30-11:45	92	12	8	8	14	125	259
11:45-12:00	95	14	7	9	15	125	265
12:00-12:15	98	15	5	10	16	124	268
12:15-12:30	105	17	6	6	14	122	270
12:30-12:45	101	13	10	9	17	127	277
12:45-1:00	111	7	8	7	13	131	277
10:30-1:00	934	100	57	70	122	1233	2516
12:00-1:00	415	52	29	32	60	504	1092
PHF	0.99		0.80		0.98		

2:30-2:45	130	26	5	8	14	127	310
2:45-3:00	151	30	9	5	10	109	314
3:00-3:15	144	23	7	1	12	116	303
3:15-3:30	150	29	13	6	15	132	345
3:30-3:45	140	23	8	8	10	124	313
3:45-4:00	133	31	11	4	10	112	301
4:00-4:15	142	33	15	10	13	125	338
4:15-4:30	155	40	23	26	29	139	412
4:30-4:45	151	48	30	28	30	150	437
4:45-5:00	157	42	28	24	25	145	421
2:30-5:00	1172	269	135	107	144	1043	2870
4:00-5:00	605	163	96	88	97	559	1608
PHF	0.96		0.79		0.91		

Wailea Resort MF9 Traffic Study



TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
7:00-7:15	50	5	2	0	3	20	80
7:15-7:30	62	8	0	0	0	24	94
7:30-7:45	58	6	3	1	0	28	96
7:45-8:00	63	9	1	0	2	28	103
8:00-8:15	70	10	4	0	0	31	115
8:15-8:30	114	12	5	2	1	43	177
8:30-8:45	120	17	10	2	2	50	201
8:45-9:00	123	20	4	4	5	55	211
9:00-9:15	117	23	7	4	3	53	207
9:15-9:30	121	19	13	6	7	62	228
7:00-9:30	786	116	47	19	20	350	1338
7:45-8:45	367	48	20	4	5	152	596
8:30-9:30	481	79	34	16	17	220	847
PHF	0.98		0.66		0.86		

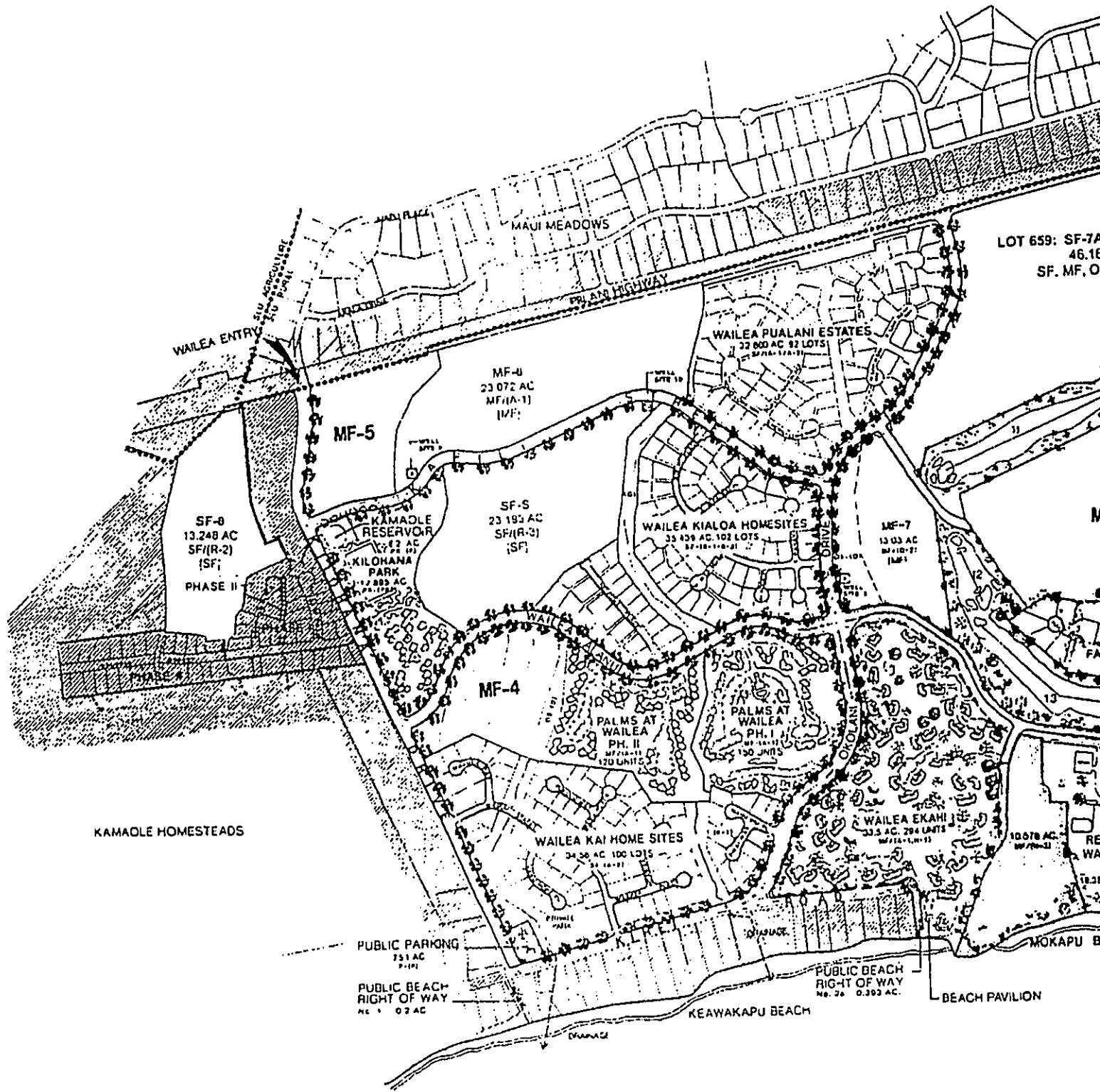
TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
10:30-10:45	124	6	7	0	0	107	244
10:45-11:00	137	10	13	1	2	115	278
11:00-11:15	114	12	9	0	0	121	256
11:15-11:30	119	9	15	0	4	110	257
11:30-11:45	111	7	11	0	3	116	248
11:45-12:00	115	10	8	3	4	120	260
12:00-12:15	119	12	7	2	3	117	260
12:15-12:30	124	12	12	1	6	124	279
12:30-12:45	126	12	17	0	2	119	276
12:45-1:00	123	9	14	1	5	127	279
10:30-1:00	1212	99	113	8	29	1176	2637
11:45-12:45	484	46	44	6	15	480	1075
PHF	0.97		0.74		0.94		

PERIOD	1	2	3	4	5	6	TOTAL
3:00-3:15	120	18	16	3	3	163	323
3:15-3:30	113	12	10	3	4	172	314
3:30-3:45	115	17	13	2	0	168	315
3:45-4:00	110	24	18	6	2	160	320
4:00-4:15	103	15	16	4	1	175	314
4:15-4:30	108	18	18	5	3	183	335
4:30-4:45	115	16	21	0	3	178	333
4:45-5:00	104	12	20	3	0	179	318
3:00-5:00	888	132	132	26	16	1378	2572
3:45-4:45	436	73	73	15	9	696	1302
PHF	0.97		0.96		0.95		

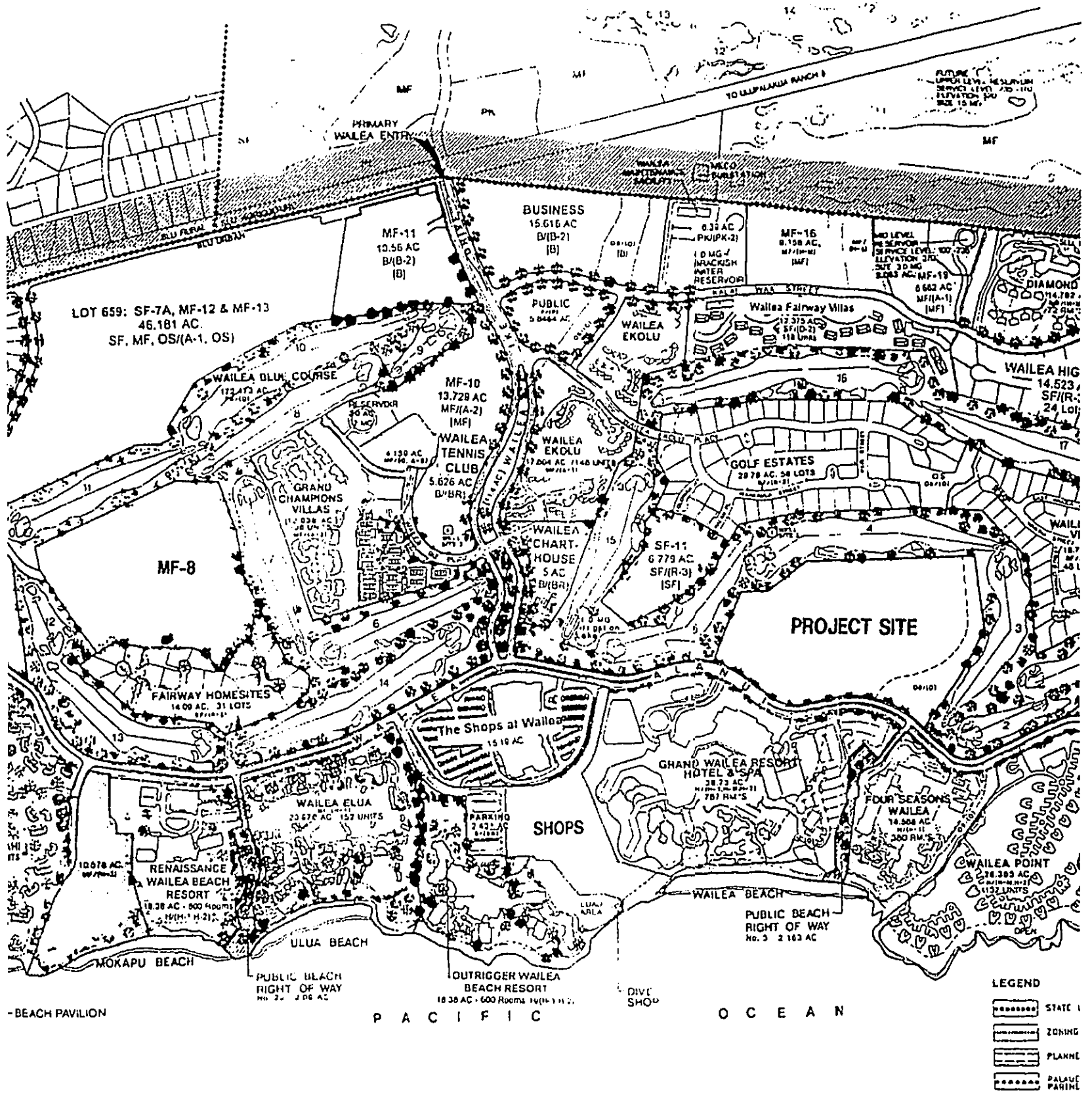
APPENDIX B

**LOCATION OF NEW PROJECTS PROPOSED
IN WAILEA AND MAKENA BY 2008**

RECEIVED AS FOLLOWS

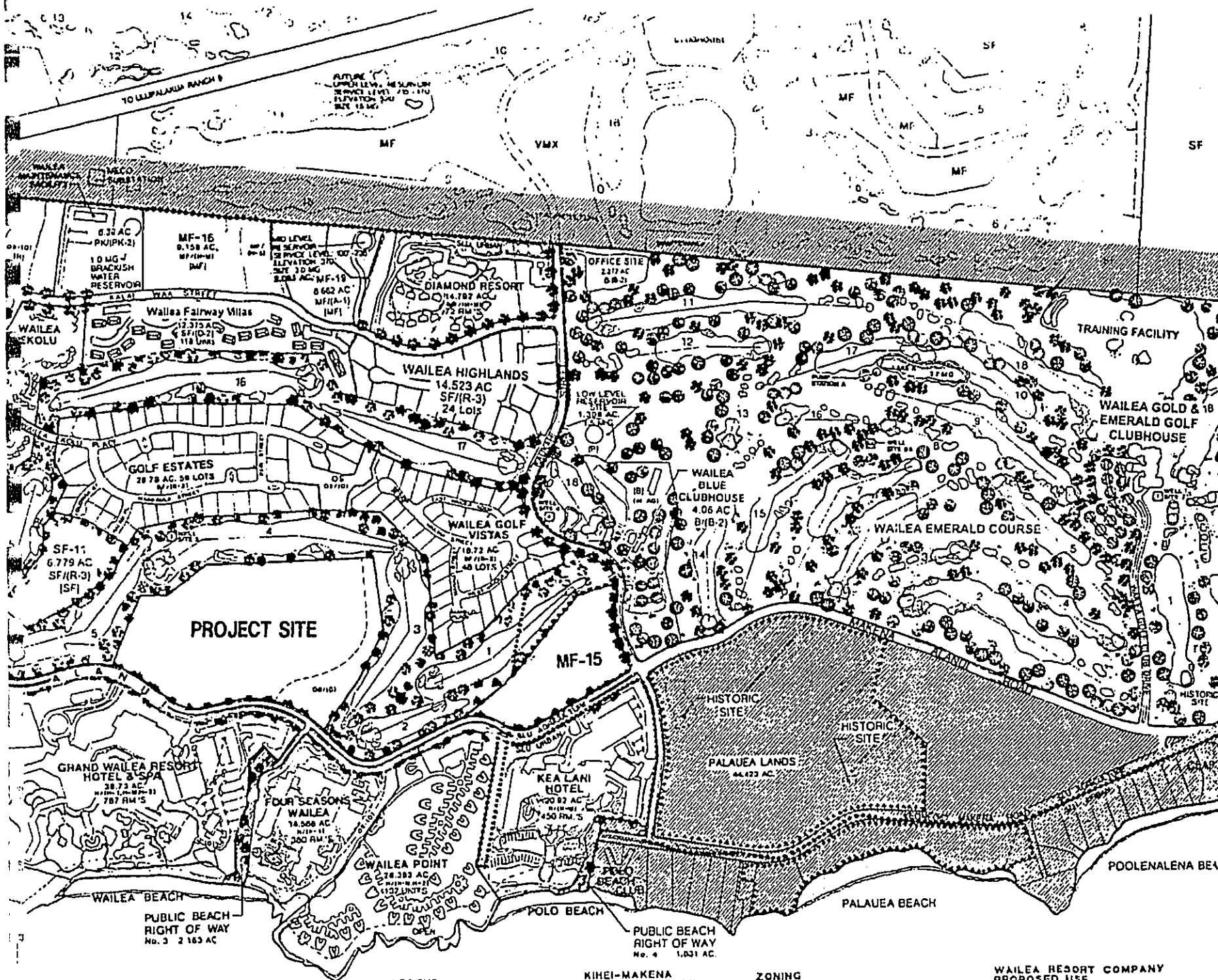


RECEIVED AS FOLLOWS



APPENDIX B LOCATION OF PROJECTS PROPOSE IN WALEA AND MAKENA BY 2008

RECEIVED AS FOLLOWS



OCEAN

LEGEND

	STATE LAND USE BOUNDARY
	ZONING BOUNDARY
	PLANNED ROADWAY
	PALAUEA BEACH PARTNERS PROPERTY

KIHEI-MAKENA COMMUNITY PLAN

	SINGLE FAMILY
	MULTI FAMILY
	HOTEL
	BUSINESS
	PUBLIC
	OPEN SPACE
	PARK

ZONING

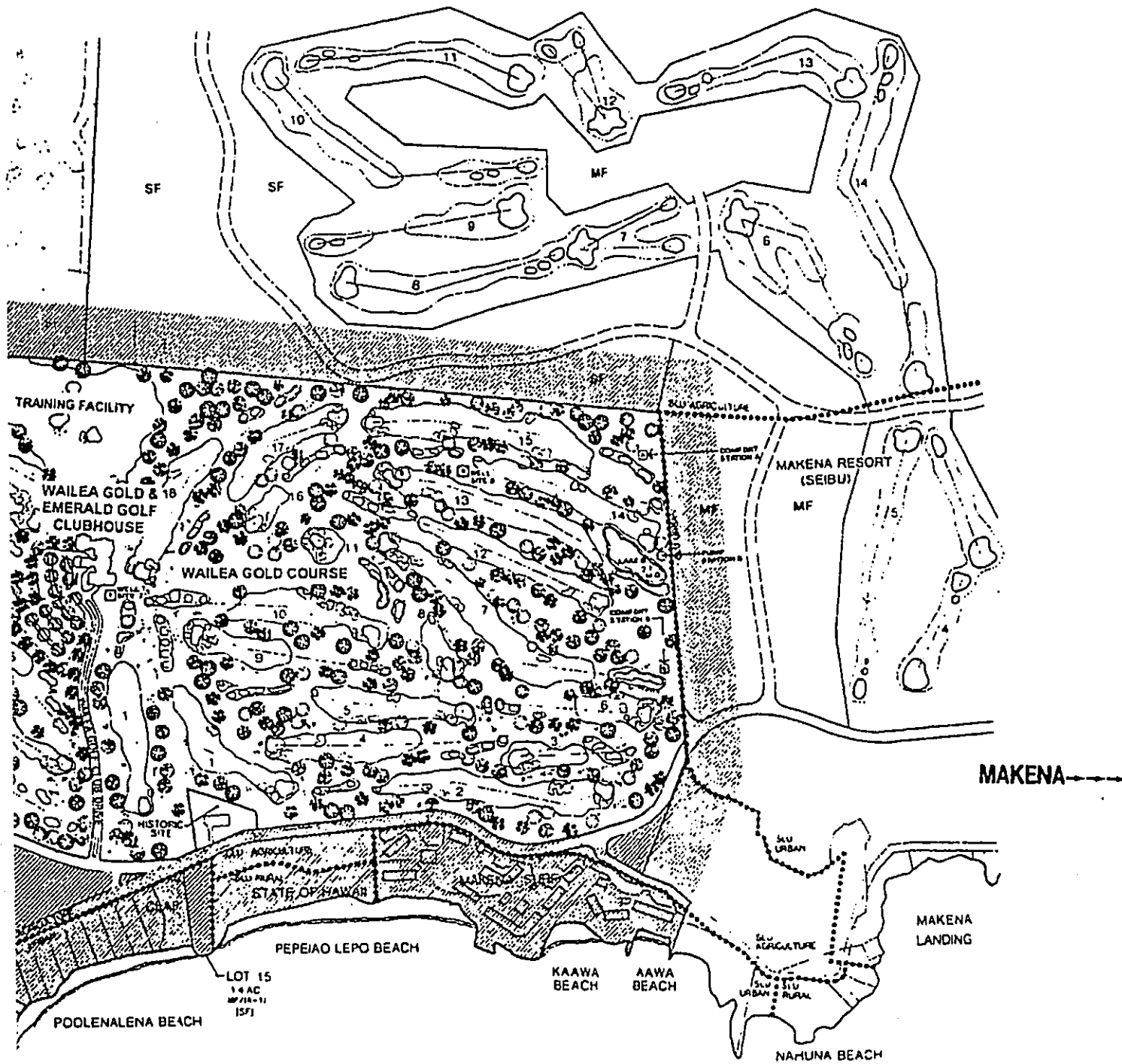
	RESIDENTIAL
	APARTMENT
	DUPLEX
	HOTEL
	BUSINESS
	PUBLIC
	OPEN SPACE
	PARK
	STATE LAND USE-AGRICULTURE

WAILEA RESORT COMPANY PROPOSED USE

	SINGLE FAMILY
	MULTI FAMILY
	HOTEL
	BUSINESS
	INDUSTRIAL
	PUBLIC
	OPEN SPACE
	PARK

**APPENDIX B
OF PROJECTS PROPOSED
AND MAKENA BY 2008**

RECEIVED AS FOLLOWS

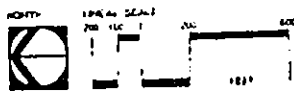


ERT COMPANY
IE

WAILEA MASTER PLAN

REVISED: JUNE 10, 1987
MARCH 29, 1989
MARCH, 1994 (FOR WAILEA RESORT CO., LTD. BY PDR HAWAII)

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APPENDIX C

**SIGNALIZED AND UNSIGNALIZED INTERSECTION
LEVEL OF SERVICE (LOS) CALCULATIONS**

**SIGNALIZED INTERSECTION
LEVEL OF SERVICE (LOS) CALCULATIONS**

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information		Site Information	
Agency	WY	Jurisdiction/Date	3/22/04
Agency or Company	WAILEA IKE	EB/WB Street	WAILEA IKE
Analysis Period/Year	2004 EX. AM	NS/SB Street	WAILEA ALA
Comment	2004 EXISTING AM		

Intersection Data	
Area type	Other
Analysis period	25 h
Signal type	Actuated-Field
% Back of Queue	70

	EB		WB		NB		SB	
	LT	TH	RT	LT	TH	RT	LT	TH
Volume (veh/h)		519	138	206	177	118	259	0
R/D/R volume (veh/h)			20		20			0
Peak-hour factor		.92	.92	.92	.92	.92	.92	
Heavy vehicles (%)		2	2	2	2	2	2	2
Start-up lost time, t_L (s)		2	2	2	2	2	2	2
Extension of effective green, e (s)		2	2	2	2	2	2	2
Arrival type, AI		3	3	3	3	3	3	3
Approach pedestrian volume (pb/h)		20		20		20		0
Approach bicycle volume (bc/h)		0		0		0		0
Left-turn parking (Y or N)		N		N		N		N

Signal Phasing Plan									
L	LT	T	TH	R	RT	P	Phase	P. Phs	
EB				R			Phase 1	Phase 2	Phase 3
WB				TRP			Phase 4	Phase 5	Phase 6
NB							Phase 7	Phase 8	
SB				LT					
Green (s)	8	30	30	5	5				
Yellow + All red (s)	4	5	5	5	5				
Cycle (s)	82		10		10		Critical v/c Ratio		.605

Intersection Performance									
Lane group configuration	EB		WB		NB		SB		Total
	L	R	L	R	L	R	L	R	
No. of lanes	1	1	1	1	1	1	1	2	
Flow rate (veh/h)	564	128	224	871	128	282	128	290	
Capacity (veh/h)	647	732	681	1255	173	1817	173	3547	
Adjusted saturation flow (veh/h)	1770	1396	1396	1863	1583	1770	1770	3547	
v/c ratio	.871	.175	.379	.136	.743	.155	.175	.16	
g/C ratio	.366	.524	.366	.793	.698	.512	.366	.512	
Average back of queue (feet)	14.7	1.6	3.9	1	3.4	1.9	3.4	1.9	
Uniform delay (s)	24.2	10.2	18.7	2	36	10.6	2	10.6	
Incremental delay (s)	12.4	0	0	0	15.9	0	0	0	
Initial queue delay (s)	0	0	0	0	0	0	0	0	
Delay (s)	36.6	10.2	18.7	2	51.9	10.6	2	10.6	
LOS	D	B	B	B	A	D	B	B	
Approach delay (s)/LOS	/		/		/		/		
Intersection delay (s)/LOS	24.1		/		/		/		

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information		Site Information	
Agency	WY	Jurisdiction/Date	3/22/04
Agency or Company	WAILEA IKE	EB/WB Street	WAILEA IKE
Analysis Period/Year	2008 AM	NS/SB Street	WAILEA ALA
Comment	2008 AMBIENT AM		

Intersection Data	
Area type	Other
Analysis period	25 h
Signal type	Actuated-Field
% Back of Queue	70

	EB		WB		NB		SB	
	LT	TH	RT	LT	TH	RT	LT	TH
Volume (veh/h)		535	138	214	187	118	267	0
R/D/R volume (veh/h)			20		20			0
Peak-hour factor		.92	.92	.92	.92	.92	.92	
Heavy vehicles (%)		2	2	2	2	2	2	2
Start-up lost time, t_L (s)		2	2	2	2	2	2	2
Extension of effective green, e (s)		2	2	2	2	2	2	2
Arrival type, AI		3	3	3	3	3	3	3
Approach pedestrian volume (pb/h)		20		20		20		0
Approach bicycle volume (bc/h)		0		0		0		0
Left-turn parking (Y or N)		N		N		N		N

Signal Phasing Plan									
L	LT	T	TH	R	RT	P	Phase	P. Phs	
EB				R			Phase 1	Phase 2	Phase 3
WB				TRP			Phase 4	Phase 5	Phase 6
NB							Phase 7	Phase 8	
SB				LT					
Green (s)	8	30	30	5	5				
Yellow + All red (s)	4	5	5	5	5				
Cycle (s)	82		10		10		Critical v/c Ratio		.621

Intersection Performance									
Lane group configuration	EB		WB		NB		SB		Total
	L	R	L	R	L	R	L	R	
No. of lanes	1	1	1	1	1	1	1	2	
Flow rate (veh/h)	582	128	732	681	1255	173	1817	173	
Capacity (veh/h)	647	732	681	1255	173	1817	173	3547	
Adjusted saturation flow (veh/h)	1770	1396	1396	1863	1583	1770	1770	3547	
v/c ratio	.898	.175	.341	.145	.743	.16	.175	.16	
g/C ratio	.366	.524	.366	.793	.698	.512	.366	.512	
Average back of queue (feet)	15.7	1.6	4.1	1.1	3.4	2	4.1	2	
Uniform delay (s)	24.6	10.2	18.8	2	36	10.6	2	10.6	
Incremental delay (s)	15.4	0	0	0	15.9	0	0	0	
Initial queue delay (s)	0	0	0	0	0	0	0	0	
Delay (s)	40	10.2	18.8	2	51.9	10.6	2	10.6	
LOS	D	B	B	B	A	D	B	B	
Approach delay (s)/LOS	/		/		/		/		
Intersection delay (s)/LOS	25.3		/		/		/		

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information
 WY: 3/22/04
 Agency or Company: WAILEA IKE
 Analysis Period/Year: 2003 TO AM
 Comment: 2003 AM W/PROJECT FORECAST
 Site Information
 Jurisdiction/Date: WAILEA IKE
 EB/WB Street: WAILEA ALA
 NB/SB Street: WAILEA ALA

Intersection Data

Area type	Object	Analysis period	h	Signal type	Actuated	Field	% Back of queue	70							
Volume (veh/h)				EB	LI	TH	RT	LI	TH	RT	LI	TH	RT	SB	
RTOR volume (veh/h)	548							138			217			118	271
Peak hour factor	.92							.92			.92			.92	.92
Heavy vehicles (%)	2							2			2			2	2
Start-up lost time, t ₁ (s)	2							2			2			2	2
Extension of effective green, e (s)	2							2			2			2	2
Arrival type, AT	3							3			3			3	3
Approach pedestrian volume (p/h)	20							20			20			20	20
Approach bicycle volume (bc/h)	0							0			0			0	0
Left-turn parking (Y or N)															

Signal Phasing Plan

U	L	T	TH	R	RT	P	Phases
							Phase 1
							Phase 2
							Phase 3
							Phase 4
							Phase 5
							Phase 6
							Phase 7
							Phase 8

Intersection Performance

Intersection Performance	EB	WB	NB	SB
Lane group configuration	L	R	T	T
No. of lanes	1	1	1	2
Flow rate (veh/h)	596	128	236	192
Capacity (veh/h)	647	732	681	1255
Adjusted saturation flow (veh/h)	1770	1396	1863	1583
v/c ratio	.92	.175	.346	.153
g/C ratio	.366	.524	.366	.793
Average back of queue (feet)	16.7	1.6	4.2	1.2
Uniform delay (s)	24.9	10.2	18.9	2
Incremental delay (s)	18.5	0	0	0
Initial queue delay (s)	0	0	0	0
Delay (s)	43.4	10.2	18.9	2
LOS	D	B	B	A
Approach delay (s)/LOS				
Intersection delay (s)/LOS	26.5		11.3	23.2

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information
 WY: 3/22/04
 Agency or Company: WAILEA IKE
 Analysis Period/Year: 2004 EX MD
 Comment: 2004 EXISTING MD
 Site Information
 Jurisdiction/Date: WAILEA IKE
 EB/WB Street: WAILEA ALA
 NB/SB Street: WAILEA ALA

Intersection Data

Area type	Object	Analysis period	h	Signal type	Actuated	Field	% Back of queue	70						
Volume (veh/h)				EB	LI	TH	RT	LI	TH	RT	LI	TH	RT	SB
RTOR volume (veh/h)	406							176			346			319
Peak hour factor	.92							.92			.92			.92
Heavy vehicles (%)	2							2			2			2
Start-up lost time, t ₁ (s)	2							2			2			2
Extension of effective green, e (s)	2							2			2			2
Arrival type, AT	3							3			3			3
Approach pedestrian volume (p/h)	20							20			20			20
Approach bicycle volume (bc/h)	0							0			0			0
Left-turn parking (Y or N)														

Signal Phasing Plan

U	L	T	TH	R	RT	P	Phases
							Phase 1
							Phase 2
							Phase 3
							Phase 4
							Phase 5
							Phase 6
							Phase 7
							Phase 8

Intersection Performance

Intersection Performance	EB	WB	NB	SB
Lane group configuration	L	R	T	T
No. of lanes	1	1	1	2
Flow rate (veh/h)	441	170	376	325
Capacity (veh/h)	617	762	650	1197
Adjusted saturation flow (veh/h)	1770	1394	1863	1583
v/c ratio	.715	.223	.579	.272
g/C ratio	.349	.547	.349	.756
Average back of queue (feet)	10.3	2.3	8	2.7
Uniform delay (s)	24.3	10.1	22.8	3.2
Incremental delay (s)	3.9	0	1.3	0
Initial queue delay (s)	0	0	0	0
Delay (s)	28.2	10.1	24.1	3.2
LOS	C	B	C	A
Approach delay (s)/LOS				
Intersection delay (s)/LOS	20.6		14.4	25.2

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information		Site Information	
Agency	WY	Jurisdiction/Date	3/22/04
Agency or Company	EA/MS Street	EA/MS Street	WAILEA IKE
Analysis Period/Year	2008 AM MD	MS/MS Street	WAILEA ALA
Comment	2008 AMBIENT MD		

Intersection Data

Area type	Other	Analysis period	25	h	Signal type	Actuated-Field	% Back of queue	70	
Volume (veh/h)		LT	TH	RT	WB	LT	TH	RT	SB
RTOR volume (veh/h)		435	176	360	336	186	396	0	
Peak hour factor		0.92	0.92	0.92	0.92	0.92	0.92	0	
Heavy vehicles (%)		2	2	2	2	2	2	2	
Start-up lost time, l (s)		2	2	2	2	2	2	2	
Extension of effective green, e (s)		2	2	2	2	2	2	2	
Arrival type, AT		3	3	3	3	3	3	3	
Approach pedestrian volume (p/h)		20	0	0	0	0	0	0	
Approach bicycle volume (bc/h)		0	0	0	0	0	0	0	
Left/right parking (Y or N)		/	/	/	/	/	/	/	

Signal Phasing Plan

L	LT	T	TH	R	RT	P	Peds
Phase 1							
Phase 2							
Phase 3							
Phase 4							
Phase 5							
Phase 6							
Phase 7							
Phase 8							

Intersection Performance

Lane group configuration	EB	WB	SB
No. of lanes	1	1	1
Flow rate (veh/h)	473	170	391
Capacity (veh/h)	617	762	650
Adjusted saturation flow (veh/h)	1770	1394	1863
wt ratio	.766	.223	.602
g/C ratio	.349	.547	.349
Average back of queue (veh)	11.6	2.3	8.5
Uniform delay (s)	24.9	10.1	23.1
Incremental delay (s)	5.7	0	1.6
Initial queue delay (s)	0	0	0
Delay (s)	30.6	10.1	24.7
LOS	C	B	C
Approach delay (s)/LOS	/	25.2 / C	14.7 / B
Intersection delay (s)/LOS		21.2	24.8 / C
Intersection delay (s)/LOS		22.1	24.6 / C

1 of 1

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information		Site Information	
Agency	WY	Jurisdiction/Date	3/22/04
Agency or Company	EA/MS Street	EA/MS Street	WAILEA IKE
Analysis Period/Year	2008 TO MD	MS/MS Street	WAILEA ALA
Comment	2008 MD W/PROJECT FORECAST		

Intersection Data

Area type	Other	Analysis period	25	h	Signal type	Actuated-Field	% Back of queue	70	
Volume (veh/h)		LT	TH	RT	WB	LT	TH	RT	SB
RTOR volume (veh/h)		465	176	365	352	186	405	0	
Peak hour factor		0.92	0.92	0.92	0.92	0.92	0.92	0	
Heavy vehicles (%)		2	2	2	2	2	2	2	
Start-up lost time, l (s)		2	2	2	2	2	2	2	
Extension of effective green, e (s)		2	2	2	2	2	2	2	
Arrival type, AT		3	3	3	3	3	3	3	
Approach pedestrian volume (p/h)		20	0	0	0	0	0	0	
Approach bicycle volume (bc/h)		0	0	0	0	0	0	0	
Left/right parking (Y or N)		/	/	/	/	/	/	/	

Signal Phasing Plan

L	LT	T	TH	R	RT	P	Peds
Phase 1							
Phase 2							
Phase 3							
Phase 4							
Phase 5							
Phase 6							
Phase 7							
Phase 8							

Intersection Performance

Lane group configuration	EB	WB	SB
No. of lanes	1	1	1
Flow rate (veh/h)	505	170	397
Capacity (veh/h)	617	762	650
Adjusted saturation flow (veh/h)	1770	1394	1863
wt ratio	.819	.223	.611
g/C ratio	.349	.547	.349
Average back of queue (veh)	13	2.3	8.6
Uniform delay (s)	25.5	10.1	23.2
Incremental delay (s)	8.6	0	1.7
Initial queue delay (s)	0	0	0
Delay (s)	34.1	10.1	24.9
LOS	C	B	C
Approach delay (s)/LOS	/	28.1 / C	14.6 / B
Intersection delay (s)/LOS		22.1	24.6 / C
Intersection delay (s)/LOS		22.1	24.6 / C

1 of 1

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information
 Agency: WY
 Analysis Period/Year: 2004 EX PM
 Comment: 2004 EXISTING PM
 Site Information
 Agency/Company: WAILEA IKE
 Analysis Period/Year: 2004 AM PM
 Comment: 2008 AMBIENT PM

Intersection Data

Area type	Other	Analysis period	25	h	Signal type	Actuated-Field	% Back of queue	70		
Volume (veh/h)		LI	TH	RT	LI	TH	RT	LI	TH	RT
RTOR volume (veh/h)					434			191		
Peak-hour factor					.92			.92		
Heavy vehicles (%)					2			2		
Start-up lost time, t_L (s)					2			2		
Extension of effective green, e (s)					2			2		
Arrival type, AI					3			3		
Approach pedestrian volume (p/h)					20			20		
Approach bicycle volume (bc/h)					0			0		
Left-turn parking (Y or N)					N			N		

Signal Phasing Plan

L	LI	T	TH	R	RT	P	Pebs
Phase 1							
Phase 2							
Phase 3							
Phase 4							
Phase 5							
Phase 6							
Phase 7							
Phase 8							

Intersection Performance

Lane group configuration	EB	WB	SB
No. of lanes	1	1	2
Flow rate (veh/h)	408	186	504
Capacity (veh/h)	596	783	1156
Adjusted saturation flow (veh/h)	1770	1393	1863
sat ratio	.683	.238	.803
g/C ratio	.337	.562	.337
Average back of queue (feet)	9.7	2.5	13.2
Uniform delay (s)	25.4	9.9	26.8
Incremental delay (s)	3.2	0	7.5
Initial queue delay (s)	0	0	0
Delay (s)	28.6	9.9	34.3
LOS	C	A	C
Approach delay (s)/LOS	22.7 / C	19.4 / B	20 / B
Intersection delay (s)/LOS	20.5 / C		

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information
 Agency: WY
 Analysis Period/Year: 2008 AM PM
 Comment: 2008 AMBIENT PM
 Site Information
 Agency/Company: WAILEA IKE
 Analysis Period/Year: 2008 AM PM
 Comment: 2008 AMBIENT PM

Intersection Data

Area type	Other	Analysis period	25	h	Signal type	Actuated-Field	% Back of queue	70		
Volume (veh/h)		LI	TH	RT	LI	TH	RT	LI	TH	RT
RTOR volume (veh/h)					434			191		
Peak-hour factor					.92			.92		
Heavy vehicles (%)					2			2		
Start-up lost time, t_L (s)					2			2		
Extension of effective green, e (s)					2			2		
Arrival type, AI					3			3		
Approach pedestrian volume (p/h)					20			20		
Approach bicycle volume (bc/h)					0			0		
Left-turn parking (Y or N)					N			N		

Signal Phasing Plan

L	LI	T	TH	R	RT	P	Pebs
Phase 1							
Phase 2							
Phase 3							
Phase 4							
Phase 5							
Phase 6							
Phase 7							
Phase 8							

Intersection Performance

Lane group configuration	EB	WB	SB
No. of lanes	1	1	2
Flow rate (veh/h)	472	186	535
Capacity (veh/h)	596	783	1156
Adjusted saturation flow (veh/h)	1770	1393	1863
sat ratio	.791	.238	.852
g/C ratio	.337	.562	.337
Average back of queue (feet)	12.3	2.5	14.8
Uniform delay (s)	26.7	9.9	27.4
Incremental delay (s)	7.1	0	10.9
Initial queue delay (s)	0	0	0
Delay (s)	33.8	9.9	38.3
LOS	C	A	D
Approach delay (s)/LOS	27 / C	21.1 / C	19.4 / B
Intersection delay (s)/LOS	22.4 / C		

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information		Site Information	
Agency	WV	Jurisdiction/Date	3/22/04
Agency or Company	EMWB Street	WAILEA IRE	
Analysis Period/Year	2008 TO PM	WAILEA ALA	
Comment	2008 PM W/PROJECT FORECAST		
Intersection Data			
Area Type	Other	Analysis period	25 h
Signal type	Actuated	Field	% Back of queue 70
Volume (veh/h)	LI	TH	RT
RTOR volume (veh/h)	485	191	508
Peak-hour factor	.92	.92	.92
Heavy vehicles (%)	2	2	2
Start-up lost time, t ₁ (s)	2	2	2
Extension of effective green, e (s)	2	2	2
Arrival type, AT	3	3	3
Approach pedestrian volume (p/h)	20	20	20
Approach bicycle volume (bc/h)	0	0	0
Left/right parking (V or N)	N	N	N
Signal Phasing/Plan			
L	LI	TH	RT
Phase 1	R	LRP	
Phase 2	TRP	R	
Phase 3	LT	T	
Green (s)	15	30	
Yellow + All red (s)	4	5	
Cycle (s)	89	10	82
Intersection Performance			
Line group configuration	EB	WB	NB
No. of lanes	L	R	T
Flow rate (veh/h)	527	186	552
Capacity (veh/h)	596	783	628
Adjusted saturation flow (veh/h)	1770	1393	1863
w/c ratio	.884	.238	.879
g/C ratio	.337	.562	.337
Average back of queue (veh)	15.2	2.5	15.8
Uniform delay (s)	27.9	9.9	27.8
Incremental delay (s)	14.7	0	13.6
Initial queue delay (s)	0	0	0
Delay (s)	42.6	9.9	41.4
LOS	D	A	D
Approach delay (s)/LOS	34	A	22.3
Intersection delay (s)/LOS	25.1	I	18.9

CHAPTER 18 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information	Site Information
Analysis	Analysis Date
Agency or Company	Agency or Company
Analysis Period/Year	Analysis Period/Year
Comment	Comment

Area Type	Oblique	Analysis Period	2.5	h	Signal Type	Actuated-Field	% Back of Queue	70		
Volume (veh/h)	75	LT	TH	RT	LT	TH	RT	LT	TH	RT
RTOR volume (veh/h)	15	35	70	10	795	10	75	500	75	75
Peak-hour factor	5	5	5	5	5	5	5	5	5	5
Heavy vehicles (%)	92	92	92	95	95	95	95	95	95	95
Start-up lost time, t ₁ (s)	2	2	2	2	2	2	2	2	2	2
Extension of effective green, e (s)	2	2	2	2	2	2	2	2	2	2
Arrival type, A1	3	3	3	3	3	3	3	3	3	3
Approach pedestrian volume (p/h)	50	50	50	50	50	50	50	50	50	50
Approach bicycle volume (bc/h)	0	0	0	0	0	0	0	0	0	0
Left/right parking (N or H)	N	I	N	N	I	N	N	I	N	N

Signal Phasing Plan															
L	LT	I	TH	R	RT	P	Ph	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
EB								LRP	LRP						
WB															
NB															
SB															
Green (s)	20	15													
Yellow + All red (s)	5	4													
Cycle (s)	44							9							366
															Critical v/c Ratio

Intersection Performance																
Lane group configuration	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R
No. of lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Flow rate (veh/h)	82	11	38	71	11	842	79	589	244	1586	537	3490	537	3490	537	3490
Capacity (veh/h)	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516
Adjusted saturation flow (veh/h)	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514	1514
v/c ratio	.158	.021	.074	.137	.029	.523	.323	.372	.455	.455	.455	.455	.455	.455	.455	.455
g/C ratio	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341	.341
Average back of queue (veh)	.8	.1	.3	.6	.1	4.3	.7	2.2	.7	2.2	.7	2.2	.7	2.2	.7	2.2
Uniform delay (s)	10.1	9.6	9.8	10	6.6	8.6	7.7	7.9	7.7	7.9	7.7	7.9	7.7	7.9	7.7	7.9
Incremental delay (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial queue delay (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay (s)	10.1	9.6	9.8	10	6.6	8.9	7.7	7.9	7.7	7.9	7.7	7.9	7.7	7.9	7.7	7.9
LUS	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Approach delay (s)/LOS	10	I	A	9.9	I	A	8.9	I	A	8.9	I	A	7.9	I	A	A
Intersection delay (s)/LOS	8.6 A															

CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information: WY, Jurisdiction/Date, Agency or Company, Analysis Period/Year, Comment

Intersection Data: Area type, Object, Analysis period, Signal type, Actuated-Field, % Back of queue, Volume, RTOR volume, Peak-hour factor, Heavy vehicles, Start-up lost time, Extension of effective green, Arrival type, Approach pedestrian volume, Approach bicycle volume, Left/right parking

Signal Phasing Plan: L, U, T, TH, R, RT, P, Phos, Phase 1-8

Intersection Performance: Lane group configuration, No. of lanes, Flow rate, Capacity, Adjusted saturation flow, v/c ratio, g/C ratio, Average back of queue, Uniform delay, Incremental delay, Initial queue delay, Delay, LOS, Approach delay, Intersection delay

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CHAPTER 16 - OPERATIONAL ANALYSIS - SUMMARY WORKSHEET

General Information: WY, Jurisdiction/Date, Agency or Company, Analysis Period/Year, Comment

Intersection Data: Area type, Object, Analysis period, Signal type, Actuated-Field, % Back of queue, Volume, RTOR volume, Peak-hour factor, Heavy vehicles, Start-up lost time, Extension of effective green, Arrival type, Approach pedestrian volume, Approach bicycle volume, Left/right parking

Signal Phasing Plan: L, U, T, TH, R, RT, P, Phos, Phase 1-8

Intersection Performance: Lane group configuration, No. of lanes, Flow rate, Capacity, Adjusted saturation flow, v/c ratio, g/C ratio, Average back of queue, Uniform delay, Incremental delay, Initial queue delay, Delay, LOS, Approach delay, Intersection delay

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**UNIGNALIZED INTERSECTION
LEVEL OF SERVICE (LOS) CALCULATIONS**

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information
 WY: 2004 EX MD
 Agency or Company: 2004 EX MD
 Analysis Period/Year: 2004 EXISTING MIDDAY
 Comment: 2004 EXISTING MIDDAY

Site Information
 Jurisdiction/Date: WAILEA ALANUI
 Major Street: SHOPS DRIVEWAY
 Minor Street: SHOPS DRIVEWAY

Input Data

Lane Configuration	SB	NB	EB	WB
Lane 1 (curb)	TR	T	R	WB
Lane 2	T	T	L	
Lane 3	L	L	L	

Movement

	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)	618	67	44	405	31	46						
PHF	.9	.9	.9	.9	.9	.9						
Proportion of heavy vehicles, HV	3	3	3	3	3	3						
Flow rate	687	74	49	450	34	51						
Flare storage (# of vehs)						0						
Median storage (# of vehs)						0						

Signal upstream of Movement 2: R Movement 5: R
 Length of study period (h): .25

Output Data

Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LDS	Approach Delay and LOS
EB 1 R	51	615	.083	<1	11.4	B	17
EB 2 L	34	209	.163	1	25.5	D	C
WB 1							
WB 2							
WB 3							
①	49	840	.058	<1	9.5	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information
 WY: 2008 AM MID
 Agency or Company: 2008 AM MID
 Analysis Period/Year: 2008 AMBIENT MIDDAY
 Comment: 2008 AMBIENT MIDDAY

Site Information
 Jurisdiction/Date: WAILEA ALANUI
 Major Street: SHOPS DRIVEWAY
 Minor Street: SHOPS DRIVEWAY

Input Data

Lane Configuration	SD	NB	EB	WB
Lane 1 (curb)	TR	T	R	WB
Lane 2	T	T	L	
Lane 3	L	L	L	

Movement

	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)	664	67	44	436	31	46						
PHF	.9	.9	.9	.9	.9	.9						
Proportion of heavy vehicles, HV	3	3	3	3	3	3						
Flow rate	738	74	49	484	34	51						
Flare storage (# of vehs)						0						
Median storage (# of vehs)						0						

Signal upstream of Movement 2: R Movement 5: R
 Length of study period (h): .25

Output Data

Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LDS	Approach Delay and LOS
EB 1 R	51	591	.086	<1	11.7	B	18.3
EB 2 L	34	188	.181	1	28.3	D	C
WB 1							
WB 2							
WB 3							
①	49	804	.061	<1	9.8	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary							
General Information							
WY	3/22/04						
Agency or Company	WAILEA ALANUI						
Analysis Period/Year	2008 TO MD						
Comment	2008 W/PROJECT MIDDAY FORECAST						
Site Information							
Major Street	WAILEA ALANUI						
Minor Street	SHOPS DRIVEWAY						
Input Data							
Lane Configuration	SB NB EB WB						
Lane 1 (south)	TR T R						
Lane 2	T T L						
Lane 3	L L						
Movement	1 (LT) 2 (TH) 3 (RT) 4 (LT) 5 (TH) 6 (RT) 7 (LT) 8 (TH) 9 (RT) 10 (LT) 11 (TH) 12 (RT)						
Volume (veh/h)	703 67 44 457 31 46						
PHF	.9 .9 .9 .9 .9 .9						
Proportion of heavy vehicles, HV	3 3 3 3 3 3						
Flow rate	781 74 49 508 34 51						
Flare storage (# of vehs)							
Median storage (# of vehs)	0						
Signal upstream of Movement 2	_____ R _____ Movement 5 _____ R						
Length of study period (h)	25						
Output Data							
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	51	572	.089	<1	11.9	B	19.5
2 L	34	173	.197	.1	30.9	D	C
3							
WB 1							
WB 2							
WB 3							
①							
④	49	774	.063	<1	10	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary							
General Information							
WY	3/22/04						
Agency or Company	WAILEA ALANUI						
Analysis Period/Year	2004 EX PM						
Comment	2004 EXISTING PM						
Site Information							
Major Street	WAILEA ALANUI						
Minor Street	SHOPS DRIVEWAY						
Input Data							
Lane Configuration	SB NB EB WB						
Lane 1 (south)	TR T R						
Lane 2	T T L						
Lane 3	L L						
Movement	1 (LT) 2 (TH) 3 (RT) 4 (LT) 5 (TH) 6 (RT) 7 (LT) 8 (TH) 9 (RT) 10 (LT) 11 (TH) 12 (RT)						
Volume (veh/h)	685 56 59 778 62 54						
PHF	.9 .9 .9 .9 .9 .9						
Proportion of heavy vehicles, HV	3 3 3 3 3 3						
Flow rate	761 62 66 864 69 60						
Flare storage (# of vehs)							
Median storage (# of vehs)	0						
Signal upstream of Movement 2	_____ R _____ Movement 5 _____ R						
Length of study period (h)	25						
Output Data							
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	60	587	.102	<1	11.8	B	38.8
2 L	69	128	.54	3	62.2	F	E
3							
WB 1							
WB 2							
WB 3							
①							
④	66	796	.082	<1	9.9	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary							
General Information							
WY	3/22/04						
Agency or Company	WAILEA ALANUI						
Analysis Period/Year	2008 AM-PM						
Comment	2008 AMBIENT PM						
Site Information							
Jurisdiction/Date	WAILEA ALANUI						
Major Street	SHOPS DRIVEWAY						
Minor Street							
Input Data							
Lane Configuration	SB NB EB WB						
Lane 1 (usb)	TR T R						
Lane 2	T T L						
Lane 3	L						
Movement	1 (LT) 2 (TH) 3 (TH) 4 (LT) 5 (TH) 6 (TH) 7 (LT) 8 (TH) 9 (TH) 10 (LT) 11 (TH) 12 (RT) WB						
Volume (veh/h)	775 56 59 878 62 54						
PIF	.9 .9 .9 .9 .9 .9						
Proportion of heavy vehicles, HV	3 3 3 3 3 3						
Flow rate	861 62 66 976 69 60						
Flare storage (# of veh)							
Median storage (# of veh)	0						
Signal upstream of Movement 2	4 Movement 5						
Length of study period (h)	.25						
Output Data							
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	w/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	60	544	.11	<1	12.4	B	58.2
EB 2 L	69	100	.69	4	98	F	F
3							
1							
WB 2							
3							
①	66	729	.09	<1	10.4	B	
④							

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary							
General Information							
WY	3/22/04						
Agency or Company	WAILEA ALANUI						
Analysis Period/Year	2008 TO PM						
Comment	2008 W/PROJECT PM FORECAST						
Site Information							
Jurisdiction/Date	WAILEA ALANUI						
Major Street	SHOPS DRIVEWAY						
Minor Street							
Input Data							
Lane Configuration	SB NB EB WB						
Lane 1 (usb)	TR T R						
Lane 2	T T L						
Lane 3	L						
Movement	1 (LT) 2 (TH) 3 (TH) 4 (LT) 5 (TH) 6 (TH) 7 (LT) 8 (TH) 9 (TH) 10 (LT) 11 (TH) 12 (RT) WB						
Volume (veh/h)	851 56 59 946 62 54						
PIF	.9 .9 .9 .9 .9 .9						
Proportion of heavy vehicles, HV	3 3 3 3 3 3						
Flow rate	946 62 66 1051 69 60						
Flare storage (# of veh)							
Median storage (# of veh)	0						
Signal upstream of Movement 2	R Movement 5						
Length of study period (h)	.25						
Output Data							
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	w/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	60	511	.118	<1	13	B	84.3
EB 2 L	69	82	.839	4	146.2	F	F
3							
1							
WB 2							
3							
①	66	677	.097	<1	10.9	B	
④							

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary		Site Information					
General Information		Site Information					
Analyst	WY	Jurisdiction/Date	7/17/04				
Agency or Company	WAILEA ALANUI	Major Street	WAILEA ALANUI				
Analysis Period/Year	2004 EX AM	Minor Street	WG BALLROOM				
Comment	2004 EXISTING AM						
Input Data							
Lane Configuration	SB	NB	EB				
Lane 1 (feet)	TR	T	R				
Lane 2	T	T	L				
Lane 3	L	L	L				
Movement	1 (LT) 2 (TH) 3 (RT)	4 (LT) 5 (TH) 6 (RT)	7 (LT) 8 (TH) 9 (RT) 10 (LT) 11 (TH) 12 (RT)				
Volume (veh/h)	555 90 15 220	35	15				
PHF	.9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9						
Proportion of heavy vehicles, P_H	3 3 3 3 3 3 3 3 3 3 3 3						
Flow rate	617 100 17 244	39	17				
Flare storage (# of vehs)			0				
Median storage (# of vehs)			1				
Signal upstream of Movement 2 _____ R _____ Movement 5 _____ R							
Length of study period (h) _____ 25 _____							
Output Data							
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	17	635	.027	<1	10.8	B	16.2
2 L	39	304	.128	<1	18.6	C	C
3							
1							
2							
3							
①	17	873	.019	<1	9.2	A	
④							

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary		Site Information					
General Information		Site Information					
Analyst	WY	Jurisdiction/Date	7/17/04				
Agency or Company	WAILEA ALANUI	Major Street	WAILEA ALANUI				
Analysis Period/Year	2004 EX MD	Minor Street	WG BALLROOM				
Comment	2004 EXISTING MIDDAY						
Input Data							
Lane Configuration	SB	NB	EB				
Lane 1 (feet)	TR	T	R				
Lane 2	T	T	L				
Lane 3	L	L	L				
Movement	1 (LT) 2 (TH) 3 (RT)	4 (LT) 5 (TH) 6 (RT)	7 (LT) 8 (TH) 9 (RT) 10 (LT) 11 (TH) 12 (RT)				
Volume (veh/h)	555 55 15 550	45	5				
PHF	.9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9						
Proportion of heavy vehicles, P_H	3 3 3 3 3 3 3 3 3 3 3 3						
Flow rate	617 61 17 611	50	6				
Flare storage (# of vehs)			0				
Median storage (# of vehs)			1				
Signal upstream of Movement 2 _____ R _____ Movement 5 _____ R							
Length of study period (h) _____ 25 _____							
Output Data							
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	6	654	.009	<1	10.6	B	23.3
2 L	56	239	.235	1	24.7	C	C
3							
1							
2							
3							
①	17	903	.018	<1	9.1	A	
④							

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary		Site Information					
General Information		Site Information					
Analyst	WY	Jurisdiction/Date	7/17/04				
Agency or Company	WAILEA ALANUI	Major Street	WAILEA ALANUI				
Analysis Period/Year	2004 EX PM	Minor Street	WG BALLROOM				
Comment	2004 EXISTING PM						
Input Data							
Line Configuration	SB	NB	EB				
Line 1 (ft/s)	TR	T	R				
Line 2	T	T	L				
Line 3	L	L	L				
Movement	1 (LT) 2 (TH) 3 (RT)	4 (LT) 5 (TH) 6 (RT)	7 (LT) 8 (TH) 9 (RT) 10 (LT) 11 (TH) 12 (RT)				
Volume (veh/h)	435	75 10 695	75 15				
PHF	.9	.9 .9 .9	.9 .9				
Proportion of heavy vehicles, HV	.3	.3 .3 .3	.3 .3				
Flow rate	483	83 11 772	83 17				
Flare storage (# of vehs)			0				
Median storage (# of vehs)			0				
Signal upstream of Movement 2 _____ Movement 5 _____							
Length of study period (h) .25							
Output Data							
Line Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LDS	Approach Delay and LOS
1 R	17	711	.024	<1	10.2	B	22.7
2 L	83	260	.319	1	25.2	D	C
3							
1							
2							
3							
①	11	995	.011	<1	8.7	A	
④							

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary		Site Information					
General Information		Site Information					
Analyst	WY	Jurisdiction/Date	7/17/04				
Agency or Company	WAILEA ALANUI	Major Street	WAILEA ALANUI				
Analysis Period/Year	2008 AM AM	Minor Street	WG BALLROOM				
Comment	2008 AMBIENT AM						
Input Data							
Line Configuration	SB	NB	EB				
Line 1 (ft/s)	TR	T	R				
Line 2	T	T	L				
Line 3	L	L	L				
Movement	1 (LT) 2 (TH) 3 (RT)	4 (LT) 5 (TH) 6 (RT)	7 (LT) 8 (TH) 9 (RT) 10 (LT) 11 (TH) 12 (RT)				
Volume (veh/h)	570	90 15 235	35 15				
PHF	.9	.9 .9 .9	.9 .9				
Proportion of heavy vehicles, HV	.3	.3 .3 .3	.3 .3				
Flow rate	633	100 17 261	39 17				
Flare storage (# of vehs)			0				
Median storage (# of vehs)			0				
Signal upstream of Movement 2 _____ Movement 5 _____							
Length of study period (h) .25							
Output Data							
Line Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LDS	Approach Delay and LOS
1 R	17	627	.027	<1	10.9	B	16.7
2 L	39	293	.133	<1	19.2	C	C
3							
1							
2							
3							
①	17	861	.019	<1	9.3	A	
④							

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information WY: 7/17/04
 Analyst: WAILEA ALANUI
 Agency or Company: WG BALLROOM
 Analysis Period/Year: 2008 AM MID
 Comment: 2008 AMBIENT MIDDAY

Site Information
 Jurisdiction: WAILEA ALANUI
 Major Street: WG BALLROOM
 Minor Street: WG BALLROOM

Input Data

Line Configuration	SB	NB	EB	WB
Line 1 (curb)	TR	T	R	
Line 2	T	T	L	
Line 3		L		

Movement	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)		585	55	15	585	45						
PHF		.9	.9	.9	.9	.9						
Proportion of heavy vehicles, HV		3	3	3	3	3						
Flow rate		650	61	17	650	50						
Flare storage (# of vehs)												
Median storage (# of vehs)												

Signal approach of Movement 2: R Movement 5: R
 Length of study period (h): .25

Output Data

Line Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	6	638	.009	<1	10.7	B	25.3
2 L	56	220	.254	1	26.8	D	D
3							
WB 2							
3							
	17	878	.019	<1	9.2	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information WY: 7/17/04
 Analyst: WAILEA ALANUI
 Agency or Company: WG BALLROOM
 Analysis Period/Year: 2008 AM PM
 Comment: 2008 AMBIENT PM

Site Information
 Jurisdiction: WAILEA ALANUI
 Major Street: WG BALLROOM
 Minor Street: WG BALLROOM

Input Data

Line Configuration	SB	NB	EB	WB
Line 1 (curb)	TR	T	R	
Line 2	T	T	L	
Line 3		L		

Movement	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)		500	75	10	795	75						
PHF		.9	.9	.9	.9	.9						
Proportion of heavy vehicles, HV		3	3	3	3	3						
Flow rate		556	83	11	883	83						
Flare storage (# of vehs)												
Median storage (# of vehs)												

Signal approach of Movement 2: R Movement 5: R
 Length of study period (h): .25

Output Data

Line Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
1 R	17	673	.025	<1	10.5	B	26.8
2 L	75	215	.349	1	30.5	D	D
3							
WB 2							
3							
	11	934	.012	<1	8.9	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information WY: 7/17/04
 Agency of Company: WAILEA ALANUI
 Analysis Period/Year: 2008 TO AM
 Comment: 2008 WITH PROJECT AM

Site Information
 Major Street: WAILEA ALANUI
 Minor Street: WG BALLROOM

Input Data

Lane Configuration	SB	NB	EB	WB
Lane 1 (curb)	TR	TR	R	R
Lane 2	T	T	L	L
Lane 3	L	L	L	L

Movement	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)	15	570	90	15	235	10	35	15	5	15	5	15
PHF	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9
Proportion of heavy vehicles, HV	3	3	3	3	3	3	3	3	3	3	3	3
Flow rate	17	633	100	17	261	11	39	17	6	17	6	17
Flare storage (# of vehs)												
Median storage (# of vehs)												

Signal upstream of Movement 2: R Movement 5: R
 Length of study period (h): 25

Output Data

Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
EB 1 R	17	627	.027	<1	10.9	B	19.9
EB 2 L	39	229	.17	1	23.9	C	C
WB 1 R	17	884	.019	<1	9.2	A	10.7
WB 2 L	5	334	.015	<1	15.9	C	B
3							
1	17	1281	.013	<1	7.8	A	
4	17	861	.019	<1	9.3	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information WY: 7/17/04
 Agency of Company: WAILEA ALANUI
 Analysis Period/Year: 2008 TO MD
 Comment: 2008 WITH PROJECT MIDDAY

Site Information
 Major Street: WAILEA ALANUI
 Minor Street: WG BALLROOM

Input Data

Lane Configuration	SB	NB	EB	WB
Lane 1 (curb)	TR	TR	R	R
Lane 2	T	T	L	L
Lane 3	L	L	L	L

Movement	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)	40	585	55	15	585	20	45	5	10	20	5	20
PHF	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9
Proportion of heavy vehicles, HV	3	3	3	3	3	3	3	3	3	3	3	3
Flow rate	44	650	61	17	650	22	50	6	11	22	6	22
Flare storage (# of vehs)												
Median storage (# of vehs)												

Signal upstream of Movement 2: R Movement 5: R
 Length of study period (h): 25

Output Data

Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LOS	Approach Delay and LOS
EB 1 R	6	638	.009	<1	10.7	B	39.1
EB 2 L	50	145	.346	1	42.5	E	E
WB 1 R	22	657	.033	<1	10.7	B	14.1
WB 2 L	5	153	.033	<1	29.3	D	B
3							
1	44	908	.049	<1	9.2	A	
4	17	878	.019	<1	9.2	A	

CHAPTER 17 - TWSC - UNSIGNALIZED INTERSECTIONS WORKSHEET

Analysis Summary

General Information		Site Information	
Analyst	WY	Jurisdiction	7/1/2004
Agency or Company		Major Street	WAILEA ALAHUI
Analysis Period/Year	2008 TO PM	Minor Street	WG BALLROOM
Comment	2008 WITH PROJECT PM		

Input Data												
Lane Configuration	SB	NB	EB	WB								
Lane 1 (left)	TR	TR	R	R								
Lane 2	T	T	L	L								
Lane 3	L	L										
	SB	NB	EB	WB								
Movement	1 (LT)	2 (TH)	3 (RT)	4 (LT)	5 (TH)	6 (RT)	7 (LT)	8 (TH)	9 (RT)	10 (LT)	11 (TH)	12 (RT)
Volume (veh/h)	75	500	75	10	795	65	75	15	35	70		
PHF	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9		
Proportion of heavy vehicles, HV	3	3	3	3	3	3	3	3	3	3		
Flow rate	83	556	83	11	883	72	83	17	39	78		
Flare storage (# of vels)												
Median storage (# of vels)												
Signal upstream of Movement 2		R										
Length of study period (h)	25											

Output Data											
Lane Movement	Flow Rate (veh/h)	Capacity (veh/h)	v/c	Queue Length (veh)	Control Delay (s)	LDS	Approach Delay and LDS				
EB 1 R	15	673	.022	<1	10.5	B	87.7				
EB 2 L	75	102	.732	4	103.1	F	F				
EB 3											
WB 1 R	78	531	.147	1	12.9	B	15				
WB 2 L	5	89	.056	<1	47.7	E	B				
WB 3											
	83	709	.118	<1	10.8	B					
	11	934	.012	<1	8.9	A					

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APPENDIX F.1
Level Of Service Analysis For The Shops At Wailea

LEVEL OF SERVICE ANALYSIS FOR THE SHOPS AT WAILEA
REVISED SEPTEMBER 2004

This analysis was conducted in response to comments made by the Maui Planning Commission at their hearing on August 10, 2004. Specifically, the commission asked that the morning traffic into the Shops at Wailea south driveway be analyzed. The analysis was extended to all three study periods: morning, midday and afternoon.

Manual turning movement traffic counts were taken at the Shops at Wailea south driveway with Wailea Alanui Drive on September 15, 2004, during the morning (7:00 to 9:30 a.m.), midday (10:30 a.m. to 1:00 p.m.) and afternoon (3:00 to 5:00 p.m.). For the original study, traffic counts were taken only during the midday and afternoon periods and not the morning. The results of the count are shown on Figure 1 with the counts for the adjacent Wailea Ike Drive intersection and Grand Wailea main entrance driveway also shown for the latter two periods.

The Shops at Wailea count also include the midday and afternoon peak hour traffic volumes counted on March 11, 2004, during the peak visitor season. The through volumes on Wailea Alanui Drive for September are lower than the peak March volumes. The morning volumes leaving the Shops driveway are lower than the midday and afternoon volumes while the September midday and afternoon volumes are comparable to their respective March volumes. Although the Shops at Wailea management has restricted employee parking to their north lot, the restriction does not appear to have impacted the volumes at the south driveway.

For this reason, this analysis used the higher March through volumes with the September volumes entering and leaving the driveway, as shown on Figure 2. The traffic volumes shown on Figure 2 were used in the subsequent unsignalized level of service analysis for the Shops at Wailea south driveway. The results of this analysis are shown on Table 1.

During the morning peak hour, the left turn outbound movement from driveway is currently at level of D and is expected to remain the same for the ambient and total with project forecasts. The overall approach level of service is currently at C and is forecast to remain the same for the forecast conditions.

The midday and afternoon level of service results do not change from the original analysis. The midday level of service for the outbound left turn movement from driveway is currently at level of service D and is expected to remain the same for the ambient and total with project forecasts. The overall approach level of service is currently at C and is forecast to remain the same for the forecast conditions.

The afternoon level of service for the outbound left turn movement from driveway is already at level of service F, and delay would increase from the current 62 seconds to 98 seconds for the ambient forecast, and to 146 seconds for the with project forecast. This increase in delay would cause queue lengths on the approach to increase from three (3) to four (4) vehicles. The overall approach level of service is currently E and would change to F for the ambient and total with project forecasts.

This analysis indicates that the proposed project would not have an adverse traffic impact during the morning peak hour and midday period since levels of service are not expected to get worse. The traffic from the proposed project would increase delays for the outbound left turn movement during the afternoon peak hour, but the increase in traffic queue length from three to four vehicles would not be noticeable. The level of service would be undesirable but still be tolerable, since there are no feasible mitigating measures for this situation. There are not enough outbound volumes to warrant an all way stop or a traffic signal.



WAILEA IKE DRIVE		Shops driveway not counted in AM during March count		WAILEA ALANUI DRIVE	
140	←	←	←	←	←
520	→	←	←	←	←
175	←	←	←	←	←
205	→	←	←	←	←
120	←	←	←	←	←
260	→	←	←	←	←

SHOPS AT WAILEA DRIVEWAY GRAND WAILEA MAIN ENTRANCE
AM PEAK HOUR

WAILEA IKE DRIVE		Shops driveway not counted in AM during March count		WAILEA ALANUI DRIVE	
175	←	←	←	←	←
405	→	←	←	←	←
320	←	←	←	←	←
345	→	←	←	←	←
185	←	←	←	←	←
380	→	←	←	←	←

SHOPS AT WAILEA DRIVEWAY GRAND WAILEA MAIN ENTRANCE
MIDDAY HOUR

WAILEA IKE DRIVE		Shops driveway not counted in AM during March count		WAILEA ALANUI DRIVE	
190	←	←	←	←	←
375	→	←	←	←	←
500	←	←	←	←	←
465	→	←	←	←	←
155	←	←	←	←	←
255	→	←	←	←	←

SHOPS AT WAILEA DRIVEWAY GRAND WAILEA MAIN ENTRANCE
PM PEAK HOUR

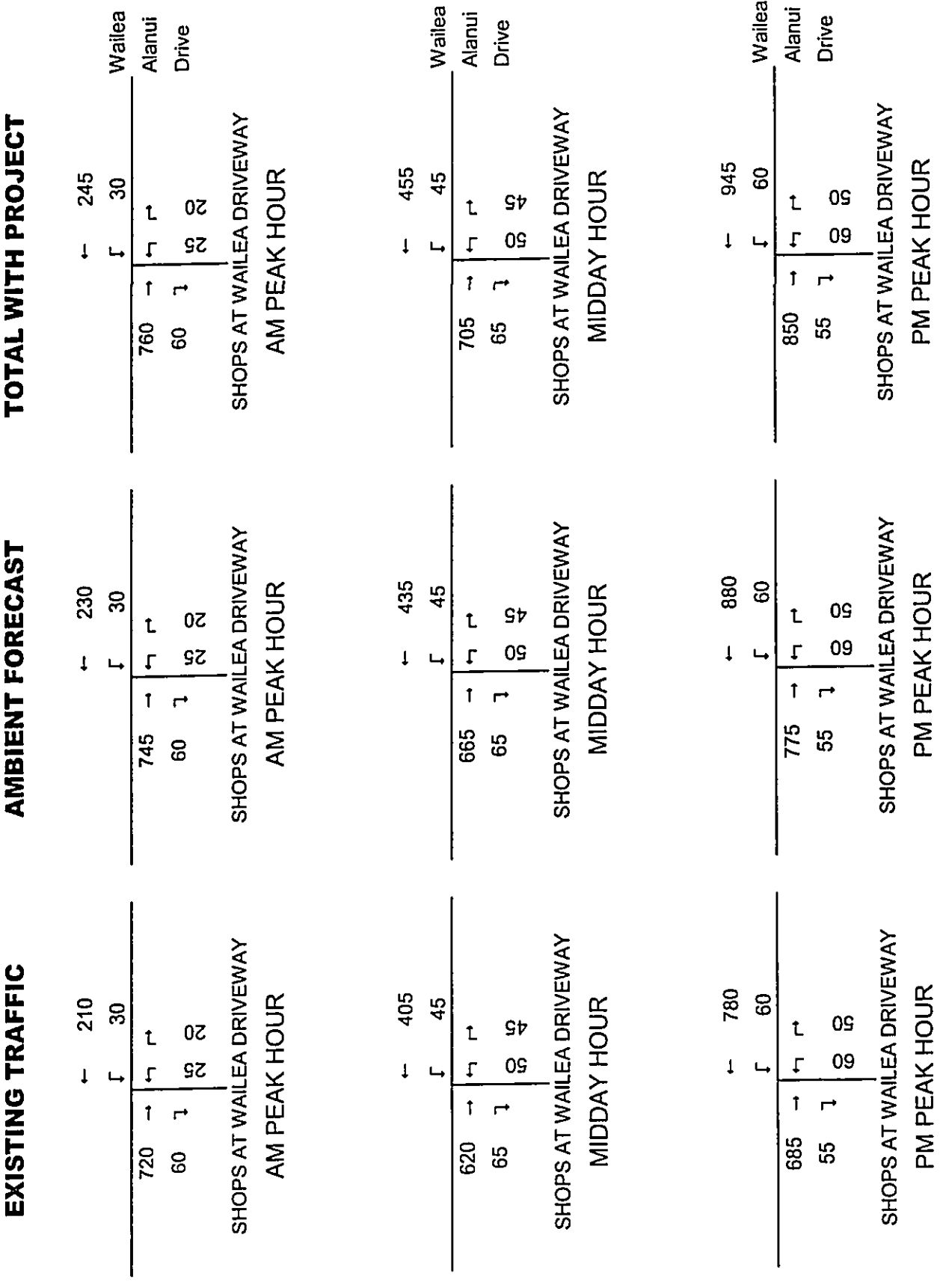
March 9, 2004

March 11, 2004/September 15, 2004

April 12, 2004

Not to scale

EXISTING TRAFFIC VOLUMES
FIGURE 1



REVISED TRAFFIC VOLUMES USED IN LEVEL OF SERVICE ANALYSIS
FIGURE 2

TABLE 1
UNIGNALIZED INTERSECTION LEVEL OF SERVICE ANALYSIS
REVISED SEPTEMBER 2004

WALEA ALANUI/SHOPS DRIVEWAY INTERSECTION

MOVEMENT AND APPROACH	2004 EXISTING		2008 AMBIENT		2008 W/PROJECT	
	Movement	Approach	Movement	Approach	Movement	Approach
	LOS DEL QUE	LOS DEL	LOS DEL QUE	LOS DEL	LOS DEL QUE	LOS DEL
AM PEAK HOUR						
Shop Driveway R	B	11.6	B	11.0	B	11.8
Shop Driveway L	D	26.3	C	22.1	D	29.3
Wailea Alanui NB L	A	9.9	A	10.0	B	10.1
MIDDAY HOUR						
Shop Driveway R	B	11.4	B	11.6	B	11.9
Shop Driveway L	D	28.1	C	20.1	D	30.9
Wailea Alanui NB L	A	9.5	A	9.8	A	10.0
PM PEAK HOUR						
Shop Driveway R	B	11.8	B	12.3	B	12.9
Shop Driveway L	F	62.2	E	40.0	F	146
Wailea Alanui NB L	A	9.9	B	10.4	B	10.9

LEGEND

LOS=level of service
 DEL=delay(sec)

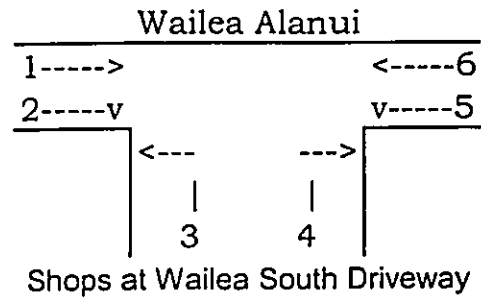
DW=driveway
 L=left turn movement
 R=right turn movement

NB=northbound approach
 SB=southbound approach
 EB=eastbound approach

QUE=queue, shown for movements with LOS F

Wailea Resort MF9 Traffic Study

LOCATION: Wailea Alanui/Shops south driveway
 DATE: 14 MAR 04
 TIME: 7:00a-9:30a/10:30-1:00/3:00p-5:00p
 WEATHER: sunny
 RECORDER: Q. Kaiwi-Rosidoux



TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
7:00-7:15	50	3	0	2	1	34	90
7:15-7:30	65	5	1	4	3	47	125
7:30-7:45	49	6	4	1	6	43	109
7:45-8:00	60	12	2	0	8	57	139
8:00-8:15	68	9	8	5	13	55	158
8:15-8:30	75	15	6	9	7	46	158
8:30-8:45	67	6	4	5	7	34	123
8:45-9:00	103	17	7	8	8	49	192
9:00-9:15	60	14	3	2	6	47	132
9:15-9:30	106	22	9	7	10	78	232
7:00-9:30	703	109	44	43	69	490	1458
8:30-9:30	336	59	23	22	31	208	679
PHF	0.77				0.68		

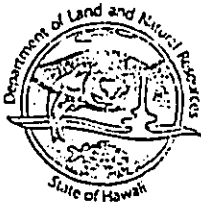
TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
10:30-10:45	75	22	9	10	12	91	219
10:45-11:00	83	19	8	13	13	84	220
11:00-11:15	77	20	8	10	11	86	212
11:15-11:30	84	18	10	8	15	78	213
11:30-11:45	72	12	20	8	17	83	212
11:45-12:00	95	14	13	12	11	98	243
12:00-12:15	83	13	16	9	18	84	223
12:15-12:30	91	16	11	9	14	81	222
12:30-12:45	94	21	9	15	14	94	247
12:45-1:00	89	21	13	11	8	99	241
10:30-1:00	843	176	117	105	133	878	2252
11:15-12:15	363	64	49	45	57	357	935
PHF	0.93				0.96		

TIME PERIOD	MOVEMENT NUMBER						TOTAL
	1	2	3	4	5	6	
3:00-3:15	103	25	15	14	10	121	288
3:15-3:30	111	19	12	15	9	124	290
3:30-3:45	97	28	16	8	6	116	271
3:45-4:00	108	21	14	11	11	138	303
4:00-4:15	56	12	13	14	16	129	240
4:15-4:30	87	17	18	11	12	156	301
4:30-4:45	94	22	16	13	13	143	301
4:45-5:00	79	16	16	10	12	141	274
3:00-5:00	735	160	120	96	89	1068	2268
3:45-4:45	345	72	61	49	52	566	1145
PHF	0.90				0.92		

APPENDIX G
Archaeological Inventory Survey Report

RECEIVED AS FOLLOWS

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
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COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 30, 2004

Robert Rechtman, Ph.D.
Rechtman Consulting
HC 1 Box 4149
Kea'au, Hawaii 96749

LOG NO: 2004.1345
DOC NO: 0404MK13

Dear Dr. Rechtman,

SUBJECT: Chapter 6E-42 Historic Preservation Review - Archaeological Inventory Survey
30-Acre Parcel (MF-9) Within the Wailea Development Area
Paeahu Ahupua'a, Makawao District, Maui
TMK (2) 2-1-08: por 42

Thank you for the opportunity to review this report which our staff received on February 27, 2004 (Clark et al. 2004, *An Archaeological Inventory Survey of a 30 Acre Parcel [MF-9] within the Wailea Development Area [TMK:2-2-1-08: por. 42]*. Rechtman Consulting, LLC). We have previously commented on this action. The parcel is approximately 30 acres in size, surrounded by development. Our review is late, and we apologize for any inconvenience this may have caused you or your client.

The background section acceptably establishes the ahupua'a settlement pattern and predicts the likely site pattern in the project area. The historical information provided summarizes the history of the post-contact period land uses. The summary of previous archaeological work in the area provides a baseline for the current work. The area has been subjected to surveys in a piecemeal fashion over the past two decades. We note, though, that Paeahu ahupua'a is misspelled *Pueahu* on pages iii, 3, 10 and elsewhere.

The survey has adequately covered the project area documenting two newly identified historic properties in the project area. SIHP 50-50-14-5516 consists of ten C-shape features interpreted as World War II era military training features. Feature I, a refuse pit, was tested and yielded military rubbish including C-rations. We concur with the interpretation, given absence of surface materials, the construction method, and the orientation of the C-shapes facing each other across the drainage.

SIHP 50-50-14-5517 consisted of a precontact overhang shelter with associated petroglyphs. This site was not tested. The authors were told (personal communication) by another archaeologist who conducted a previous field inspection to the parcel, that some of the petroglyphs may be modern, as they had no recollection of petroglyphs adjacent to the overhang. The site

RECEIVED AS FOLLOWS

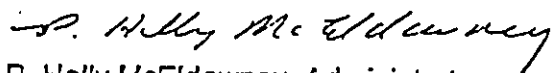
Robert Rechtman, Ph.D.
Page 2

descriptions for both sites are acceptable. Subsurface testing (four backhoe trenches) was conducted in the northwestern portion of the study portion area, closest to the Grand Hyatt Wailea located across the roadway. The trenches were negative for evidence of cultural deposits.

Site 50-50-14-5516 is most likely significant under only Criterion "D". We also concur that Site 50-50-14-5517 is significant under multiple Criteria "D" and "E". This site has not been tested, and may yield additional information. It is proposed for preservation, a mitigation with which we concur.

The report is acceptable and we will await a preservation plan. As always, if you disagree with our comments or have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169) as soon as possible to resolve these concerns.

Aloha,



P. Holly McEldowney, Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Lance Nakamura, County of Maui, Land Use and Codes, FAX 270-7972
Maui Cultural Resources Commission, Dept of Ping, 250 S. High Street, Wailuku, HI 96793

RECEIVED AS FOLLOWS

RC-0210

An Archaeological Inventory Survey of a 30-acre
Parcel (MF-9) within the Wailea Development Area
(TMK:2-2-1-08:por. 42)

Paeahu Ahupua'a
Makawao District
Island of Maui



PREPARED BY:

Matthew R. Clark, B.A.,
Mark J. Winburn, B.A.,
and
Robert B. Rechtman, Ph.D.

PREPARED FOR:

Stephen A. Jiran
CMI Development, Inc.
3620 Baldwin Ave. Suite 107
Makawao, HI 96768

February 2004

RECHTMAN CONSULTING, LLC

HC 1 Box 4149 Ken'au, Hawaii 96749
phone: (808) 966-7636 toll-free fax: (800) 406-2665
e-mail: bob@rechtmanconsulting.com
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

An Archaeological Inventory Survey of a 30-acre parcel
(MF-9) within the Wailea Development Area
(TMK:2-2-1-08:por. 42)

Pueahu Ahupua'a
Makawao District
Island of Maui

 RECHTMAN CONSULTING

EXECUTIVE SUMMARY

At the request of Mr. Steven Jiran of CMI Development, Inc., Rechtman Consulting, LLC conducted an archaeological inventory survey of a roughly 30-acre parcel referred to as MF-9, in the Wailea development area, Pueahu Ahupua'a, Makawao District, Island of Maui (TMK:2-2-1-08:por. 42). Fieldwork for the current project was undertaken between November 18-21, 2003. As a result of the survey two archaeological sites were recorded; a complex of ten World War II era training features (SIHP Site 5516) and a Precontact rock shelter with associated petroglyphs (SIHP site 5517). It is possible that the petroglyphs at Site 5517 were created in modern times. Four backhoe trenches were also excavated in the northwestern portion of the project area, all with negative results. Site 5516 is considered significant under Criterion D, but no further work is recommended for the site. Site 5517 is considered significant under Criterion D and E, and is recommended for preservation. No further archaeological study is recommended within the current project area.

This report contains background information outlining the project area's physical and cultural contexts, a presentation of previous archaeological work in the immediate vicinity of the parcel, and current survey expectations based on that previous work. Also presented is an explanation of the project's methods, detailed description of the archaeological resources encountered, interpretation and evaluation of those resources, and treatment recommendations for all of the documented sites.

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INTRODUCTION

At the request of Mr. Steven Jiran of CMI Development, Inc., Rechtman Consulting, LLC conducted an archaeological inventory survey of a roughly 30-acre parcel referred to as MF-9, in the Wailea Development Area, Pueahu Ahupua'a, Makawao District, Island of Maui (TMK:2-2-1-08:por. 42) (Figure 1). The objective of the survey was to record the locations of all archaeological sites and features present on the study parcel and to provide preliminary significance evaluations for any recorded sites. Fieldwork for the current project was undertaken between November 18-21, 2003. As a result of the survey two archaeological sites were recorded; a complex of ten World War II era training features (SIHP Site 5516) and a Precontact rock shelter with associated petroglyphs (SIHP Site 5517). The current project was undertaken in compliance with both the historic preservation review process requirements (HAR 13§13-275-5) of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) and the County of Maui Planning Department.

This report contains background information outlining the project area's physical and cultural contexts, a presentation of previous archaeological work in the immediate vicinity of the parcel, and current survey expectations based on that previous work. Also presented is an explanation of the project's methods, detailed description of the archaeological resources encountered, interpretation and evaluation of those resources, and treatment recommendations for all of the documented sites.

Project Area Description

The current project area consists of roughly 30 acres located along Wailea Alanui roadway across from (*mauka* of) the Grand Hyatt and Four Seasons resorts, within the Wailea Development Area, Pueahu Ahupua'a, Makawao District, Island of Maui (TMK:2-2-1-08:por. 42) (Figure 2). The study parcel is bounded on the three sides not adjacent to the road (the north, east and south sides) by a golf course (the Wailea Orange Course). It is located approximately 0.35 kilometers inland from the coast at elevations ranging from 50 to 160 feet (15.25-48.75 meters) above sea level (see Figure 1). The subject parcel is characterized by irregular rocky terrain that slopes gently towards the coast (to the west) (Figures 3 and 4). Several small drainages with more steeply sloped sides are also present on the parcel. Rainfall in this part of southwestern Maui averages 10 to 20 inches (25.4 to 50.8 centimeters) per year (Armstrong 1973). During recent heavy rains at the project area (January 2004) water was observed flowing through at least one of the drainages in great enough quantities to wash out part of the Wailea Alanui roadway. Soil in the general project area is classified as Makena Loam, a stony complex of the Makena Series (Foote et al. 1972). Vegetation consists of a ground cover of dense thick grasses and sparse to dense stands of *kiawe* (*Prosopis pallida*) and *koa-haole* (*Leucaena glauca*). Several areas within the project area have been previously impacted by mechanical ground disturbing activities, including grubbing, road grading (Figure 5), paving (Figure 6), and bulldozed clearings.

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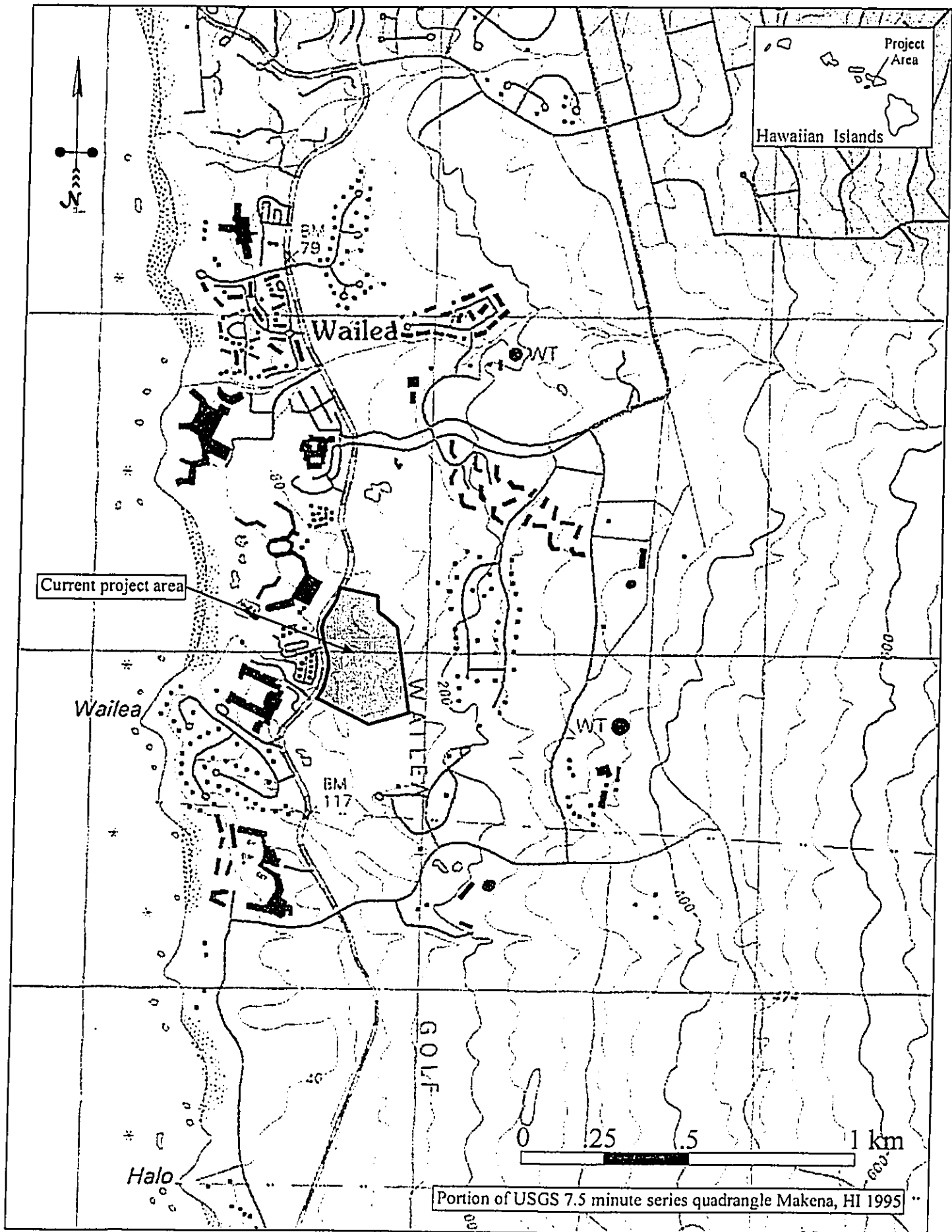


Figure 1. Project area location.

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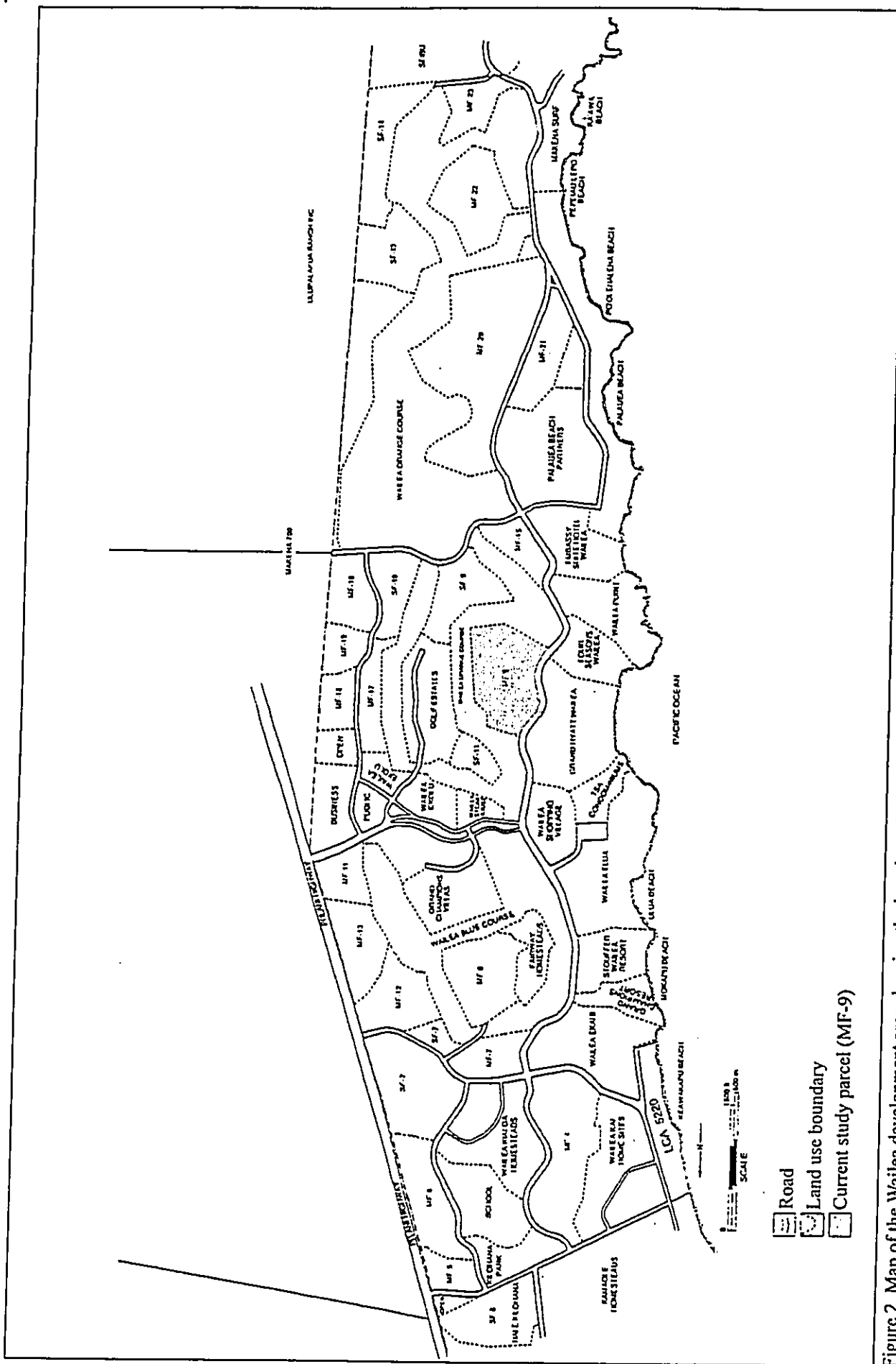


Figure 2. Map of the Wailea development area showing the location of the current study parcel (MF-9).

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Figure 3. Project area, view to southeast.



Figure 4. Project area, view to southwest

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Figure 5. Graded road on study parcel, view to southeast.

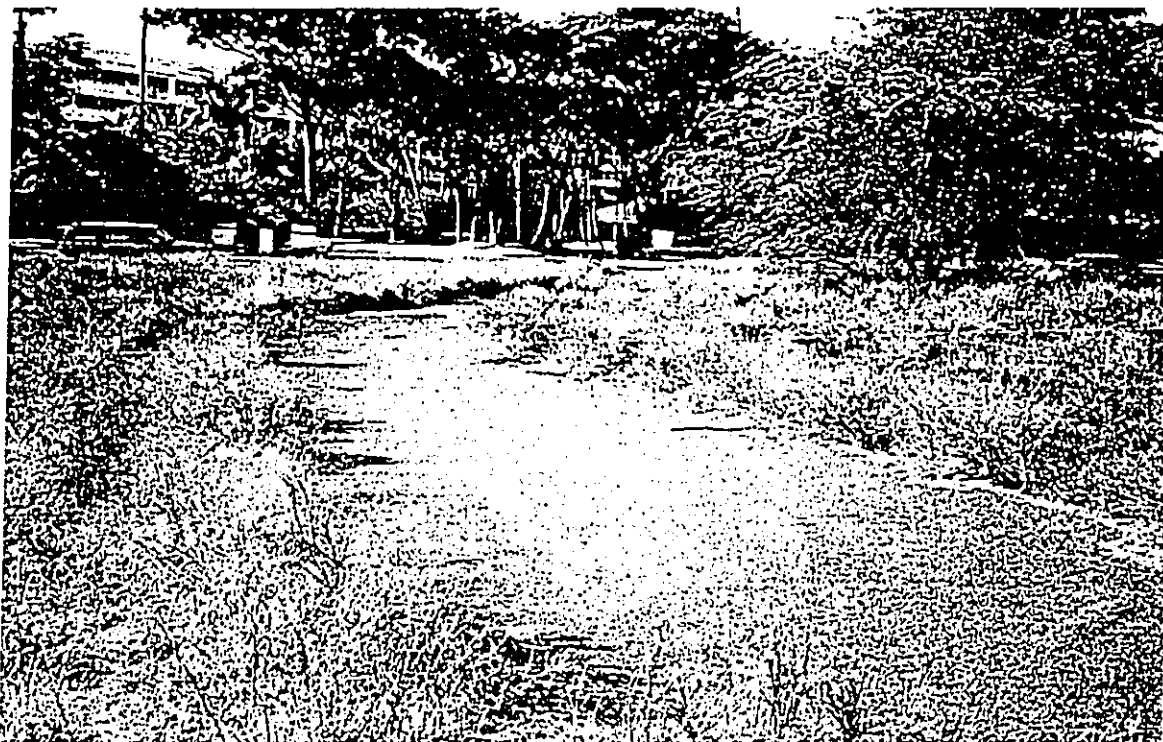


Figure 6. Paved area in the northwest portion of study parcel, view to northwest.

BACKGROUND

To generate set of expectations regarding the nature of archaeological resources that might be encountered on the study parcel, and to establish an environment within which to assess the significance of any such resources, previous archaeological studies relative to the project area and a general historical context for the region are presented.

Previous Archaeological Research

The current study parcel (Parcel MF-9) was previously the subject of an archaeological reconnaissance survey conducted by the B.P. Bishop Museum in 1989 (Appendix A). Sinoto (1989) identified six archaeological sites (T1-6) on the study parcel including two C-shapes, a stacked rock structure, an L-shaped structure, a terraced platform, two wall segments, and two overhang shelters. Sinoto did not mention the presence of any petroglyphs near the overhang shelter. The reconnaissance sites were plotted on a map of the project area, but no further descriptions of their characteristics were offered. Sinoto does note that "the central portion of MF-9 is currently being bulldozed", and that "due to dense vegetation cover, some remains may have been missed" (1989:1).

According to Gosser et al. (1993), the current study parcel was also the subject of an inventory survey conducted by the B.P. Bishop Museum (in the Gosser et al. 1993 study, the report was listed as Rotunno and Gosser "IN PREP" with no reference). One of the listed authors of the report (Lisa Hazuka-Rutunno) was contacted by Rechtman Consulting, LLC (personal communication February 19, 2004). She stated that a field reconnaissance was performed for the project—she remembered seeing some C-shapes and an overhang shelter on the property—but that the project had been put on hold and the report was never written. Interestingly, when asked about the petroglyphs discovered near the overhang shelter during the current study, she stated that she did not remember seeing them herself. However, she did relate that during a recent study she had conducted on a parcel to the north of the current study area (the report is currently in production), she had discovered petroglyphs within a gulch similar to the ones at Site 5517. It was determined that at least some of those petroglyphs, if not all of them, were recently created by a homeless man reportedly living in the area.

Archaeologists have previously studied much of the Wailea Development Area, surrounding the current study area. This work has been conducted on a patchwork, parcel-by-parcel basis. Several of the parcels within the development area (in part or in whole) have been the subject of more than one archaeological study, and often the parcels have undergone several phases of research. For this reason, the following discussion of previous archaeological research is broken down by study parcel, with the most complete work for a given parcel receiving the majority of the attention. The location of the parcels, at which the discussed previous archaeological studies were conducted, are shown on Figure 7.

1. Development Parcels A/B and C

Development Parcels A/B and C, located directly across Wailea Alanui roadway from (*makai* of) the current project area (where the Four Seasons and Grand Hyatt Resorts now stand), was first subject to archaeological survey in 1979 by the B.P. Bishop Museum (Rogers-Jourdane 1979). During that reconnaissance survey one site was recorded on the parcel, B12-9. This site was described as a circular enclosure near Wailea Alanui roadway. In a subsequent survey and testing project, also conducted by the B.P. Bishop Museum in 1979, the site was recorded in greater detail and test excavated (Schilt and Dobyns 1980). A second circular structure was noted, but no subsurface material was encountered.

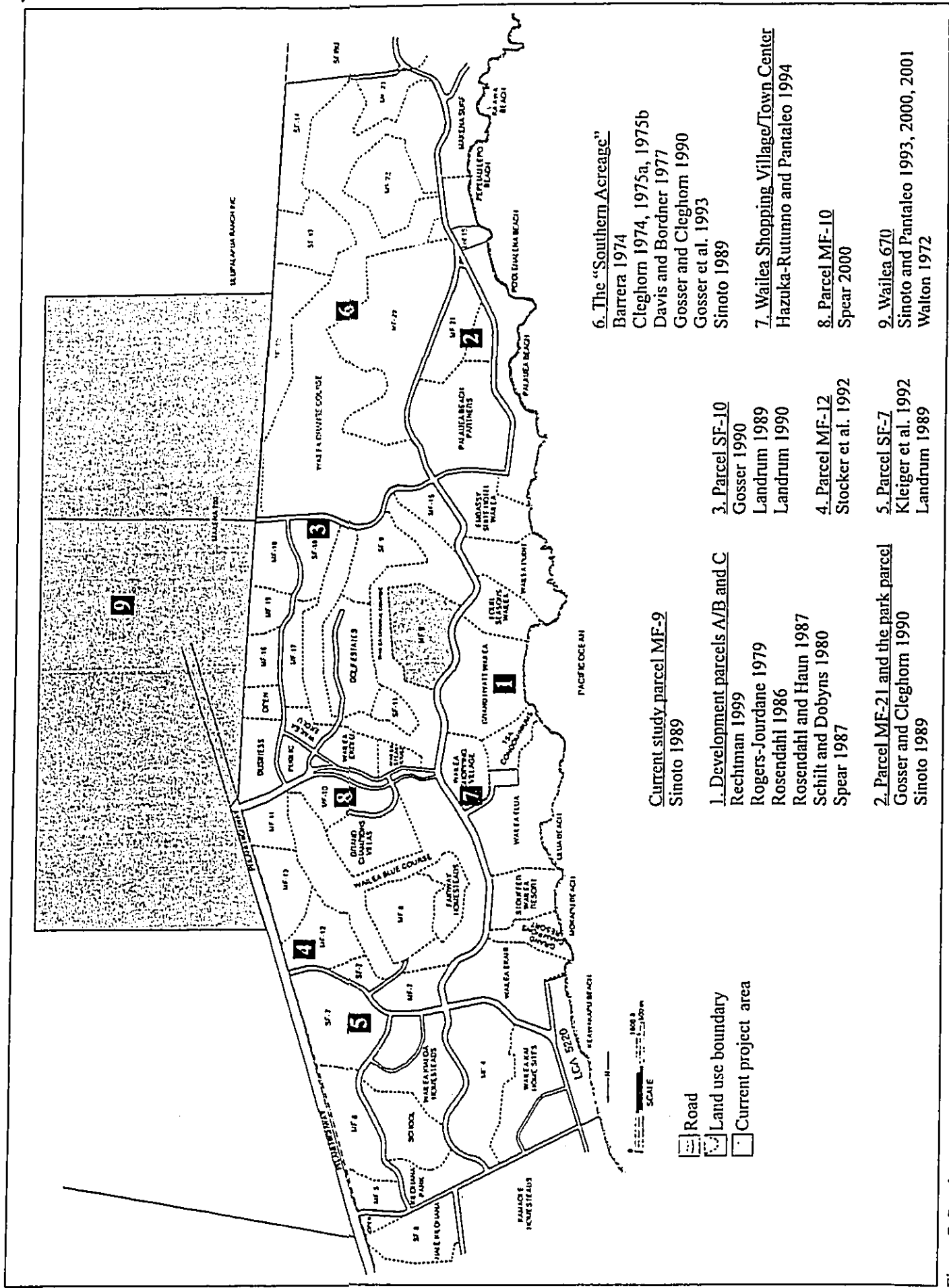


Figure 7. Previous archaeological studies conducted in the vicinity of the current project area.

In 1986, PHRI conducted an archaeological field inspection (Rosendahl 1986) as well as an intensive survey and testing program on Development Parcels A/B (Spear 1987). In addition to re-recording site B12-9, four other sites were discovered, SIHP Sites 2011, 2012, 2013, 2014. These five sites were recorded in detail and assessed for significance through subsurface excavations. Sites B12-9 and 2014 were determined to be of modern origin, perhaps associated with military training activities. Site 2011 was a surface midden with no structural features, and was extensively disturbed by prior grubbing activities. These three sites were considered to have received sufficient data collection to mitigate any future impacts that would be caused by development. Sites 2012 and 2013 were determined to be multi-component pre-Contact through Historic Period habitation and burial sites. Further investigation was recommended for both of these resources. This further investigation was undertaken in 1987 when PHRI carried out data recovery excavations at the two sites (Rosendahl and Haun 1987). As a result of the data recovery project three occupation/use periods were defined at each site, several surface and subsurface features were recorded, over one thousand artifacts were collected, and two burials were excavated. Rosendahl and Haun (1987) concluded that sufficient data had been collected from the two sites such that no further investigation was warranted; they did however, recommend that an archaeological monitor be present on Development Parcel A/B during grubbing, grading, and other ground-disturbing construction activities.

Once earth-disturbing and earth-moving work associated with the development of the Grand Hyatt Resort began, human remains were encountered in January 1988, and continued to be discovered until July 1991 (Rechtman 1999). Three new SIHP site numbers were assigned: 2802, 2803, and 2804. All of these sites contained human remains as well as other archaeological features and midden deposits. The human remains were recovered in four distinct contexts, Primary Burials, Indigenously Disturbed Interments, Previously Re-interred Remains, and Scattered Remains.

Seventy-nine sets of human remains were recovered from Site 2802. The majority of these are considered primary burials (n=69), while ten are categorized as indigenously disturbed interments. One surface feature was also recorded at the site, a stacked stone alignment constructed of angular and water-worn basalt boulders. Twenty-eight primary burials and thirteen clusters of previously re-interred remains were recovered from Site 2803. Four subsurface features were also recorded at the site; all were considered hearths/earth ovens and were found in the sand or mixed sand/silt layers of the site. Twelve sets of human remains, all categorized as primary interments, were recovered from the sand deposit at Site 2804. A rock alignment consisting of linear and curvilinear water-worn rock alignments interspersed with coral, shell, and stone pebbles visible on the surface of the site was also recorded. Radiocarbon data suggested that the use of the sites for burial post-dated the use of the sites as residential, and that burial occurred at the three sites during roughly the same 100-year period (late AD 1600s to late AD 1700s) (Rechtman 1999). The burials were all re-interred at the same designated location within Development Parcel A/B.

2. Parcel MF-21 and the Park Parcel

Sinoto (1989) conducted an archaeological reconnaissance survey Parcel MF-21 and the adjoining park parcel near Palaua and Po'olenalena Beaches within the Wailea Development Area (see Appendix A). Ten archaeological sites were identified on these parcels. The sites included several long walls, two rectangular enclosures, and a lava tube. These parcels were further studied as part of a larger inventory survey that included most of the "Southern Acreage" (Gosser and Cleghorn 1990; see below).

3. Parcel SF-10

Gosser (1990) conducted Phase I archaeological test excavations at two features (Site SF10-1) located on Parcel SF-10 within the Wailea Development Area. These features were originally recorded by Landrum (1989) as two mounds located ten meters apart on a southwest sloping exposure in the north-central portion of the project area (these were the only archaeological features present on the parcel). Landrum noted that both structures were similar to features "determined to contain burials or function as burial monuments" (1989:28). For this reason, a 1 x 1 meter test unit was excavated in each of the features. Gosser notes, "sparse amounts of fragmentary, unidentifiable marine shell was recovered from each unit," but "there was no evidence of prehistoric or historic human interment" (1990:1). No further study was recommended for the site, but an archaeological monitor was recommended for ground disturbing phases of the construction.

4. Parcel MF-12

Stocker et al. (1992) conducted an archaeological inventory survey on a portion of Parcel MF-12, within the Wailea Development Area, slated for development as a rock crusher site. As a result of that survey, a single archaeological site (Site 3114), consisting of four rock structures (one stacked wall segment and three low-lying enclosures), was recorded. Three 1 x 1 meter test units were excavated, one at each of the enclosures, all with negative results. Based on the high density of rocks at the three tested features, it was determined that they were not used for some direct agricultural function (e.g., planting). Instead, Stocker et al. (1992) suggest the possibility that plants in pots were placed inside the rough enclosures, and that the rocks served as windbreaks. They conclude that the features "might have functioned as windbreaks for marijuana plants" (1992:41). The wall segment was recommended for data recovery. Four backhoe trenches were also excavated within the study area, but none of them revealed any subsurface cultural deposits.

5. Parcel SF-7

Klieger et al. (1992) conducted archaeological data recovery excavations at Parcel SF-7 within the Wailea Development Area. Landrum (1989) conducted the inventory survey for this parcel. Two sites were investigated during the data recovery investigations, including three C-shapes and two modified outcrops. The only artifacts recovered from the units were volcanic glass flakes and polishing stones from the modified outcrops. The C-shapes were determined to be WWII era features, while the modified outcrops were interpreted as traditional Hawaiian features. No further work was recommended for either of the sites.

6. The "Southern Acreage" (Parcels MF-20, 22, 23, and SF-12, 13, 14) and Lot 15

Gosser et al. (1993) conducted an archaeological inventory survey and test excavations on a roughly 187-acre parcel (the "Southern Acreage"/Lot 15) within the Wailea Development Area, located to the south of the current project area within Papa'anui, Keauhou, and Palauea Ahupua'a. Various portions of the survey area had been previously studied by Barrera (1974), Cleghorn (1974, 1975a, 1975b), Davis and Bordner (1977), Sinoto (1989), and Gosser and Cleghorn (1990). The Gosser et al. (1993) report summarizes these previous studies and adds to them by offering a more complete view of the archaeological landscape within the large project area.

On the 187-acre parcel, a total of 40 archaeological sites were identified (13 had been previously recorded) containing a total of 297 features. The formal feature types consisted of ten rock shelters, nineteen C-shapes, nineteen platforms, thirty-two enclosures, one cairn, thirteen pits/depressions, eighteen walls (unspecified), ten retaining walls, sixteen alignments, sixty-two terraces, seventy-one mounds, five trails, four modified outcrops, five pavements, nine terraced platforms, and eight features listed as "other". Seventy-four test units were excavated at the forty sites and twenty-two radiocarbon samples were assayed for age determination. The calibrated ages for the samples ranged from AD 1280 to AD 1950, with most of the samples dating to between AD 1650 and AD 1800 (Gosser et al. 1993:253). Based on the surface architecture of the features and the results of subsurface testing, the sites were assigned to several functional categories including temporary and permanent habitation, religious, burial, and agriculture.

Based on the findings of the study, Gosser et al. (1993) suggest that the Precontact population of the area primarily exploited the near-shore marine environment for subsistence, that agriculture played only a marginal (secondary) role, that settlement of the region may have started with a small group of fishermen and religious leaders, and that "the incipient social hierarchy that developed along the Wailea coast relied on economic, political, and ideological power through the control of resources, economic activity (in the form of fishing and fishing gear manufacture), religious activity, and land tenureship to influence subordinates" (1993:39).

7. Wailea Shopping Village/Town Center (TMK:2-2-1-08:por. 74, 75)

Hazuka-Rotunno and Pantaleo (1994) conducted an archaeological inventory survey of a 15.2 acre parcel (TMK:2-2-1-08:por. 74, 75) for the proposed expansion of the Wailea Shopping Village/Town Center complex. The actual survey area encompassed only approximately eight acres however, due to existing improvements on the parcel such as paved parking lots, landscaping and large lawns. Owing to these previous improvements, and the long history of ground disturbing activity on the study parcel, no surface archaeological resources were encountered. Since no surface cultural remains were identified, no subsurface testing was undertaken. It was recommended that an archaeological monitor be present during the development of the parcel only for excavations.

8. Parcel MF-10

Spear (2000) conducted an archaeological inventory survey of Parcel MF-10 (TMK:2-2-1-08:103, 126), encompassing 17.89 acres within the Wailea Development Area. As a result of that project, Spear concludes, "an estimated 95+% of the parcel has been altered by a field office and parking area, and machine activities associated with road building, clearing, surface leveling, stockpiling, and other activities. Piles of recent debris, brush push piles, and a water filled pit were encountered during the survey. A dirt and gravel road was also present within the project area. No archaeological sites were identified in the project area during the Inventory Survey. Since no sites were present in the project area, no additional archaeological work is required" (2000:10).

9. Wailea 670 (TMK:2-2-1-08:56, 71)

Sinoto and Pantaleo (2001) conducted an amendment survey of a 670-acre parcel located directly *mauka* of the Wailea development area within portions of Paeahu, Palauea, and Keauhou Ahupua'a. The objective of the survey was to address concerns of the State Historic Preservation Division (SHPD) and the land owner concerning the adequacy of survey coverage in densely vegetated portions of the southern project area and the adequacy of previous surveys in the northern project area. The 480-acre northern portion of the project area consisted of gently sloping grassland, with secondary growth of *kiawe*, that was dissected by several steeply sloped gulches. This area had been previously studied in part by Walton (1972), and in whole by two other surveys that were never completed. All three of those studies resulted in negative findings, due to extensive previous disturbances within the northern study area (Sinoto and Pantaleo 2001). The 190-acre southern portion of the project area consisted of rough 'a'a, interspersed with bare 'a'a flows and dense thickets of *kiawe*, and undulating terrain. This area had been previously studied, in part or in whole, by Walton (1972) and Sinoto and Pantaleo (1993, 2000).

Sinoto and Pantaleo (2000) had identified twenty-four archaeological sites comprising over forty distinct features within the southern portion of the project area. The identified formal feature types included trails, C-shapes, enclosures, walls, platforms, lava blisters, overhangs, modified outcrops, and mounds. Four previously unrecorded sites were identified during the addendum survey of the project area. These sites included an overhang shelter (Site 5109) located in a gulch within the northern portion of the project area, and a small lava blister shelter (Site 5110) a modified outcrop/terraced platforms located in the southern portion of the project area. All four of these sites were assigned a function of temporary habitation and "interpreted to be associated with traditional Hawaiian activities that took place in the region with late prehistoric to early historic period origins" (Sinoto and Pantaleo 2001:ii).

Cultural-Historical Context

A generalized Cultural-Historical model for Paeahu Ahupua'a, Makawao District, Island of Maui is presented in order to help assess the significance of the current survey findings within a regional context.

A Generalized Model of Hawaiian Prehistory

The generalized cultural sequence that follows is based on Kirch's (1985) model. The Settlement or Colonization Period is believed to have occurred in Hawai'i between AD 300–600 from the southern Marquesas Islands. This was a period of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order. Order was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought from their homeland certain universal Polynesian customs: the major gods *Kane*, *Ku*, and *Lono*; the *kapu* system of law and order; cities of refuge; the 'aumakua concept; various superstitions; and the concept of *mana*.

The Development Period (A.D. 600–1100) brought about a uniquely Hawaiian culture. The portable artifacts found in archaeological sites of this period reflect not only an evolution of the traditional tools, but some distinctly Hawaiian inventions. The adze (*ko'i*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are 'ulu maika stones and *lei niho palaoa*. The later was a status item worn by those of high rank, indicating a trend toward greater status differentiation (Kirch 1985).

The Expansion Period (A.D. 1100–1650) is characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification. Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. Subsistence patterns intensified as crop farming evolved into large irrigated field systems and expanded into the marginal dryland areas. The *loko* or fishpond aquaculture flourished during this period (Bellwood 1978; Kirch 1985). It was during the Expansion Period that a second major migration settled in Hawai'i, this time from Tahiti in the Society Islands (Kamakau 1976).

The concept of the *ahupua'a* was established during the A.D. 1400s (Kirch 1985), adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupua'a* were ruled by *ali'i 'ai ahupua'a* or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a *konohiki*. *Ahupua'a* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986).

The *ali'i* and the *maka'ainana* (commoners) were not confined to the boundaries of the *ahupua'a*; when there was a perceived need, they also shared with their neighbor *ahupua'a ohana* (Hono-ko-hou 1974). The *ahupua'a* was further divided into smaller sections such as the 'ili, *mo'o'aina*, *pauku'aina*, *kihapai*, *koele*, *hakuone*, and *kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units gave their allegiance to a territorial chief or *mo'i* (king). *Heiau* building flourished during this period as religion became more complex and embedded in a sociopolitical climate of territorial competition. Monumental architecture, such as *heiau*, "played a key role as visual markers of chiefly dominance" (Kirch 1990:206).

The Proto-Historic Period (A.D. 1650–1795) is marked by both intensification and stress. Wars occurred between intra-island and inter-island polities. This period was one of continual conquest by the reigning *ali'i* of all islands. On Hawai'i Island, Ke'eaumoku, son of Keawepoepoe, set up a fort at Pololu and Honokane; he was attacked there by Kalaniopu'u, so he moved to Maui. About A.D. 1759 Kalani'opu'u conquered East Maui, defeating his wife's brother, the Maui king Kamehamehanui, by using Hana's prominent Pu'u Kau'iki as his fortress. He appointed one of his Hawai'i chiefs, Puna, as governor of Hana and Kipahulu. Kahekili became king of Maui in A.D. 1766 when Kamehamehanui died following an illness. Ke'eaumoku took his widow, Namahana, a cousin of Kamehameha I, as his wife. Their daughter, Ka'ahumanu, the future favorite wife of Kamehameha I, was born in a cave at the base of Pu'u Kau'iki, Hana, Maui in A.D. 1768 (Kamakau 1992). In A.D. 1775 Kalani'opu'u and his Hana forces raided and destroyed the neighboring Kaupo district, then launched several more raids on Molokai, Lanai,

Kaho'olawe, and parts of West Maui. It was at the battle of Kalaeoka'ilio that Kamehameha, a favorite of Kalaniopu'u, was first recognized as a great warrior and given the name of Pai'ea (hard-shelled crab) by the Maui chiefs and warriors (Kamakau 1992). During the battles between Kalaniopu'u and Kahekili (1777-1779), Ka'ahumanu and her parents left Maui to live on the island of Hawai'i (Kamakau 1992).

History After Contact

Captain James Cook landed in the Hawaiian Islands on January 18, 1778. Ten months later, on a return trip to Hawaiian waters, Kalaniopu'u, who was at war with Kahekili, visited Cook on board the *Resolution* off the East coast of Maui. Kamehameha observed this meeting, but chose not to participate. The following January [1779], Cook and Kalaniopu'u met again in Kealakekua Bay and exchanged gifts. In February, Cook set sail; however, a severe storm off the Kohala coast damaged a mast and they had to return to Kealakekua. Cook's return occurred at an inopportune time, and this misfortune cost him his life (Kuykendall and Day 1976).

Around A.D. 1780 Kalaniopu'u proclaimed that his son Kiwalao would be his successor, and he gave the guardianship of the war god Ku'ka'ilimoku to Kamehameha. Kamehameha and a few other chiefs were concerned about their land claims, which Kiwalao did not seem to honor, so after usurping Kiwalao's authority with a sacrificial ritual, Kamehameha retreated to his district of Kohala. While in Kohala, Kamehameha farmed the land, growing taro and sweet potatoes (Handy and Handy 1972). After Kalani'opu'u died in A.D. 1782 civil war broke out: Kiwalao was killed. The wars between Maui and Hawaii continued until A.D. 1795 (Kuykendall and Day 1976; Handy and Handy 1972).

In 1786 J. F. de la Pérouse, a French explorer, anchored off of the south western coast of East Maui in the bay of Keone'ō'io (now La Pérouse Bay), in the vicinity (south) of the current study area (Stocker et al. 1992). During his night long stay he reported that:

The Indians of the villages of this part of the island hastened alongside in their canoes, bringing, as articles of commerce, hogs, potatoes, bananas, roots of arum, which the Indians call *taro*, with cloth and some other curiosities making part of their dress...

...this part of the coast as altogether destitute of running water, the slope of the mountains having directed the fall of all the rains towards the weather side...

The inhabitants have no other drink but a brackish water, obtained from shallow wells, which afford scarcely more than half a barrel a day. During our excursion we observe four small villages of about ten or twenty houses each, built and covered with straw in the same manner as those of our poorest peasants. (La Pérouse in Barrère 1975:17-19)

In A.D. 1790 two American vessels, the *Eleanora* and *Fair American*, were in Hawaiian waters. Following an altercation between his crew and natives, the Captain of the *Eleanora* massacred more than 100 natives at Olowalu [Maui], then sailed away leaving one of its crew, John Young, on land. The other vessel, the *Fair American*, was captured and its crew killed except for one member, Issac Davis. Kamehameha also observed this but did not participate, although he did prevent Young and Davis from leaving. He also kept the vessel as part of his fleet. Young eventually became governor of the island of Hawai'i. By 1796 Kamehameha had conquered all the island kingdoms except Kauai. It wasn't until 1810, when Kaumuali'i of Kauai gave his allegiance to Kamehameha, that the Hawaiian Islands were unified under one ruler (Kuykendall and Day 1976).

Demographic trends during this period indicate population reduction in some areas, due to war and disease, yet increases in others, with relatively little change in material culture. However, there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, upland residential sites, and the enhancement of traditional oral history. The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners had introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, the women of Hawai'i had learned the profitable concept of prostitution (Kent 1983). This marked the end of the Proto-Historic Period and the end of an era of uniquely Hawaiian culture.

Hawai'i's culture and economy continued to change drastically as capitalism and industry established a firm foothold. The sandalwood (*Santalum ellipticum*) trade, established by Euro-Americans in 1790 and turned into a viable commercial enterprise by 1805 (Oliver 1961), was flourishing by 1810. This added to the breakdown of the traditional subsistence system, as farmers and fishermen were ordered to spend most of their time logging, resulting in food shortages and famine that led to a population decline. Kamehameha did manage to maintain some control over the trade (Kuykendall and Day 1976; Kent 1983).

Kamehameha I died on May 8, 1819 in Kailua-Kona, and once again the culture of Hawai'i was to change radically. Six months after his death, his son and successor, Liholiho (Kamehameha II), met with *kuhina nui*, Ka'ahumanu, and a council of chiefs and chiefesses at Kawaihae. His advisors, which included the *kahuna* Hewahewa, convinced him to abolish the *kapu* system. He signified his agreement by sitting down and eating with his mother Keopulani, breaking the '*ai kapu* (Oliver 1961; Kuykendall and Day 1976; Kamakau 1992).

Liholiho's cousin, Kekuaokalani, caretaker of the war god *Ku-Kailimoku*, disagreed and revolted. By December of 1819 the revolution was quelled. Kamehameha II sent edicts throughout the kingdom renouncing the ancient state religion, ordering the destruction of the *heiau* images, and ordering that the *heiau* structures be destroyed or abandoned and left to deteriorate. He did, however, allow the personal family religion, the '*aumakua* worship, to continue (Oliver 1961; Kamakau 1992).

The religious, socioeconomic, and demographic changes that gradually took place in the period between 1790 and the 1840s throughout the Hawaiian Kingdom, promoted the establishment of a Euro-American style of land ownership, and the Great *Māhele* was the vehicle for determining ownership of the native land. During this period (1848-1899), the *Māhele* defined the land interests of the King (Kamehameha III), the high-ranking chiefs, and the low-ranking chiefs, the *konohiki*. The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission and speeded the transfers (Chinen 1961:13).

During this process all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. All three types of land were subject to the rights of the native tenants. Commoners could make claims for land, and if substantiated, they would receive awards referred to as *kuleana*, from the Land Commission. During this period, other land grants were also made to individuals directly from the Kingdom. In 1862, the Commission of Boundaries (Boundary Commission) was established in the Kingdom of Hawai'i to legally set the boundaries of all the *ahupua'a* that had been awarded as a part of the *Māhele*. Subsequently, in 1874, the Commissioners of Boundaries was authorized to certify the boundaries for lands brought before them. The primary informants for the boundary descriptions were old native residents of the lands, many of which had also been claimants for *kuleana* during the *Māhele*. The information was collected primarily between 1873 and 1885. The testimonies were generally given in Hawaiian and simultaneously transcribed in English.

Pueahu Ahupua'a

Pueahu Ahupua'a is located within the ancient district of Honua'ula ("Red land"), which is now incorporated into the district of Makawao. After conquering Maui, Kamehameha I gave much of the island's lands to his family and chiefly supporters (a traditional practice of conquering chiefs). This process was later confirmed by the *Māhele* proceedings of the 1840s (Stocker et al. 1992).

The lands of Pueahu (along with others in Honua'ula) were conferred through Kīna'u (daughter of Kamehameha I by Kaheihē Malie, wife of Mataio Kekūanaō'a a former governor of O'ahu, and mother of Kamehameha IV and V), after her death in 1839, to her eldest son Moses Kekuaiwa. However, many of the Honua'ula lands were reclaimed by the government in 1842 in lieu of cash tax payments (Barrère 1975;

Stocker et al. 1992; Cordy and Athens 1988). As such, Moses Kekuaiwa's Honua'ula lands (including Paeahu Ahupua'a) were not listed in the Native Register claim (NR:443) filed by his father (Governor Mataio Kekūanaō'a) in January of 1848 (Moses died that year in a measles epidemic), but were retained as government lands (Kamakau 1992; Stocker et al. 1992).

Some turmoil arose surrounding the Paeahu lands during the *Māhele*. The Native Testimony (NT: 2:75) registers a claim by Pikanele, that states he was made *konohiki* of Paeahu by Hoapili, a former governor of Maui. Apparently, since the *ahupua'a* was not awarded to Pikanele, the land commissioners felt that he was only a manager (*luna*) of the land and that Hoapili, who had since died, was *konohiki*. Ironically, Pikanele — assuming that he was *konohiki* — had appointed Aimua *luna* of Paeahu, who in turn had granted lands to commoners in the region that were later awarded as *kuleana* lots (Stocker et al. 1992). In all, nine Land Commission Awards (LCAw.) were granted for *kuleana* lots within Paeahu Ahupua'a (Table 1). Most of these *kuleana* lots were located *mauka* of the old Kula Road (now Highway 37; Stocker et al. 1992), and none were located in the immediate vicinity of the current project area. The LCAw. claims record that the *kuleana* lots were used variously for the cultivation of taro, sweet potato, or as house lots. Barrère (1975:32) notes that Irish potato cultivation in the uplands was also common at this time, as it was valuable product for provisioning ships.

Table 1. Land Commission Awards within Paeahu Ahupua'a (after Stocker et al. 1992).

LCAw.	Awardee	Acreage	Land use/'ili name
5369	Ainua	1.0	Not described
5370	Anehe	5.10	Banana patch
		0.22	Dry land taro patch
		1.22	Sweet potato
2435	Kakole	3.0	In 'ili of Keahuaao
		0.25	House lot
5265B	Kaneholani	5.0	Not described
		2.5	In 'ili of Kuhulu
5281	Kuhilani	1.7	In 'ili of Kuhulu
		8.1	In 'ili of Pauaua
5220B	Koukaina	0.5	House lot in Kumukahi
		1.04	Two parcels at seashore
5329	Pahu	3.8	In 'ili of Punakea
		4.1	Not described
7975	Pepeiaonui	1.5	In 'ili of Haleolono
10665	Pipio	11.68	In 'ili of Piliwale and Hauola

In 1851, Most of Paeahu Ahupua'a (4,887 acres) was sold to then Governor of Maui James Young Kānehoa (Grant 548) and subsequently resold to Warren Goodale of the Thurston family that same year (Barrère 1975). Many of the *kuleana* claimants then gave up their claims to buy plots from Goodale, apparently thinking it would be less expensive than continuing to argue their claims with the Land Commission (Stocker et al. 1992). Some of these claimants were then unable to pay and their plots reverted back to Goodale. Stocker et al. sum this up thusly; "a general pattern appears for the Paeahu land during the *Māhele*: a *konohiki* claimant is rebuked; Native-Hawaiian claimants are dispossessed from much of the then productive land" (1992:15).

Between 1851 and 1854 Goodale sold 300 acre (divided into several parcels) in upcountry portions of Paeahu. The remainder of the *ahupua'a* was sold to James Austin in 1862, who sold it two years later to James Makee of 'Ulupalakua Ranch (Gosser et al. 1993). Makee established the Rose Ranch (primarily to the south of Paeahu Ahupua'a and *mauka* of the current project area), which included a sugar plantation, a cattle ranch, a boat landing at Mākena, and a road to the upcountry ranch house (Stocker et al. 1992).

During World War II a large portion of Wailea (including Paeahu Ahupua'a), beginning 2000 yards seaward of the coast and stretching inland, was utilized for training by several branches of the military. Frederickson et al. (1994:5) writes, "oral histories tell of U.S. Marine maneuvers in Wailea, which prepared troops for the Iwo Jima landing. Much official information on military activity still remains classified, however."

Eventually the lands of Paeahu passed on to Alexander and Baldwin, Ltd. (Barrère 1975). The coastal portions of the *ahupua'a* (including the current project area) were later transferred to the Matson Navigation Company and then to the Wailea Development Corporation (Stocker et al. 1992). Most of the land surrounding the current project area has since been developed with resorts, condominiums, golf courses, and single-family houses.

AHUPUA'A SETTLEMENT PATTERNS AND PROJECT EXPECTATIONS

A review of historical documents and previous archaeological research suggest that during Precontact times the land area in the vicinity of the current project area was used only intermittently. Precontact individuals likely passed through the area when traveling between coastal and upland resource and habitation areas. This area, between a quarter mile from the shore and five to seven miles inland, has been termed the "barren zone" (Cordy 1977). Use of the area likely began to increase during late Precontact and early Historic times as increased population density in the upland agricultural areas led to more people traveling through the barren zone to exploit the marine resources found at the coast (Frederickson et al. 1994). This trend continued into Historic times and eventually, after the establishment of a Euro-American style of land ownership in Hawai'i, much of the barren zone came to be used for ranching purposes. Later, military use of the lands during World War II and modern residential/commercial development began to rapidly transform the landscape as Wailea grew into one of the centers for resort/condominium development on Maui.

Given the expected settlement patterns and the nature of known archaeological resources in the vicinity of the current project area, it is expected Precontact sites would be rare and limited primarily to trails and temporary habitations such as C-shapes or overhang shelters in the gulches. The possibility does exist for encountering buried cultural deposits or perhaps human remains in areas that have not undergone extensive mechanical land altering. This is especially true in the northwestern portion of the study parcel closest to the Grand Hyatt Wailea Resort where numerous sets of human remains were encountered during subsurface excavations (Rechtman 1999). Furthermore, Historic use of the land, in the mid- to late 1800s, would be marked by ranching and agricultural features; including stone walls, corrals, rock mounds, and terraces. World War II era training features and debris could also be present on the study parcel.

FIELDWORK

Fieldwork for the current project was conducted between November 18-21, 2003 by Matthew R. Clark, B.A., Mark J. Winburn, B.A., Christopher S. Hand, B.A., and John A. Fogerty under the direction of Robert B. Rechtman, Ph.D.

Methods

Survey methods included a visual inspection of the entire study parcel by fieldworks utilizing north/south pedestrian transects spaced at 10-meter intervals. In addition to this, the point locations of features identified by Sinoto (1989) during the reconnaissance survey of the property (see Appendix A), were surveyed by fieldworks walking meandering transects within a tight area. Ground visibility within the project area, although obscured by dense grasses in some locations, was more than adequate for locating all archaeological resources. When probable archaeological features (or land alterations; i.e. bulldozing, roads,

etc.) were encountered, they were plotted on a map of the study parcel using Garmin 76s handheld GPS technology (with sub five-meter accuracy), and then (when appropriate) cleared of vegetation, mapped in detail, photographed, and described using standardized site record forms. Sites were also assessed at that time for the need to conduct subsurface testing.

Excavation of the test units (TUs) proceeded following natural stratigraphic layers. Where applicable, the layers were excavated in arbitrary 10-centimeter levels. All recovered soil matrix was passed through ¼ inch mesh screen, and all recovered cultural material was remanded to the laboratory for detailed analysis. Level record forms, filled out for each level of each layer in each unit, were used to record soil descriptions, Munsell color notations, cultural constituents collected, and a general description of the level. Upon completion of a unit, photographs were taken and a profile drawing was prepared.

Four trenches were also excavated at separate locations in the northwestern portion of the study parcel closest to the Grand Hyatt Wailea Resort where numerous sets of human remains were encountered during sub-surface excavations (Rechtman 1999; see Previous Archaeology section above). A backhoe was used to excavate the roughly eight-meter long trenches, one bucket-width wide, at the four selected locations. The width of the backhoe bucket used was 60 centimeters. The soil removed during backhoe excavation was visually examined for cultural material and the stratigraphy visible in the walls of the trenches was recorded and described. The locations of the backhoe trenches (BTs) were plotted on a plan view of the project area.

Findings

As a result of the current archaeological inventory survey, two archaeological sites were recorded; A World War II era training site consisting of ten features (Site 5516) and an overhang shelter located in a steep drainage with associated petroglyphs (Site 5517). All but one of the features recorded by Sinoto (1989) during the reconnaissance of the parcel were relocated. Feature T-5, supposedly located in the southeast corner of the property (see Appendix A), could not be relocated. A bulldozer push pile, obscured by dense grasses — that could have perhaps been mistaken for a “terraced platform” — was all that was noted in the southeastern corner of the parcel. Descriptions of the two identified archaeological sites and the four excavated backhoe trenches follow below. Their locations are shown on Figure 8.

SIHP Site 5516

Site 5516 consists of ten features (Features A-J) situated along the periphery of a shallow drainage near the north end of the study parcel (see Figure 8). The terrain in the vicinity of the site slopes gently west towards the ocean, and from both sides into the drainage. Based on subsurface findings from TU-1 excavated at Feature I (see below) and the known Historic use of the area for military training (see Cultural-Historical Context section of this report), Site 5516 is interpreted as a collection World War II era military training features.

Features A, B, C and J are fighting positions located on the north side of a ravine (Figure 9). They are oriented for protection from and views of the drainage to the south and the west. Feature J has been severely impacted by a bulldozing activity in the area. Features D, E, F, G, and H are fighting positions located on the south side of a ravine. These features are oriented for protection from and views of the drainage to the north and the west. Feature I is a military refuse pit that contains discarded food cans; a 1 x 1 meter test unit (TU-1) was excavated in Feature I. The features of Site 5516 could also have been utilized, and possibly modified, by modern hunters in more recent times. A large number of deer were spotted resting and grazing in the drainage on a daily basis during fieldwork for the current study. The speculation that hunters may have used the site is based on the fact that the fighting positions would also make excellent hunting blinds; no empirical evidence of this phenomenon was observed.

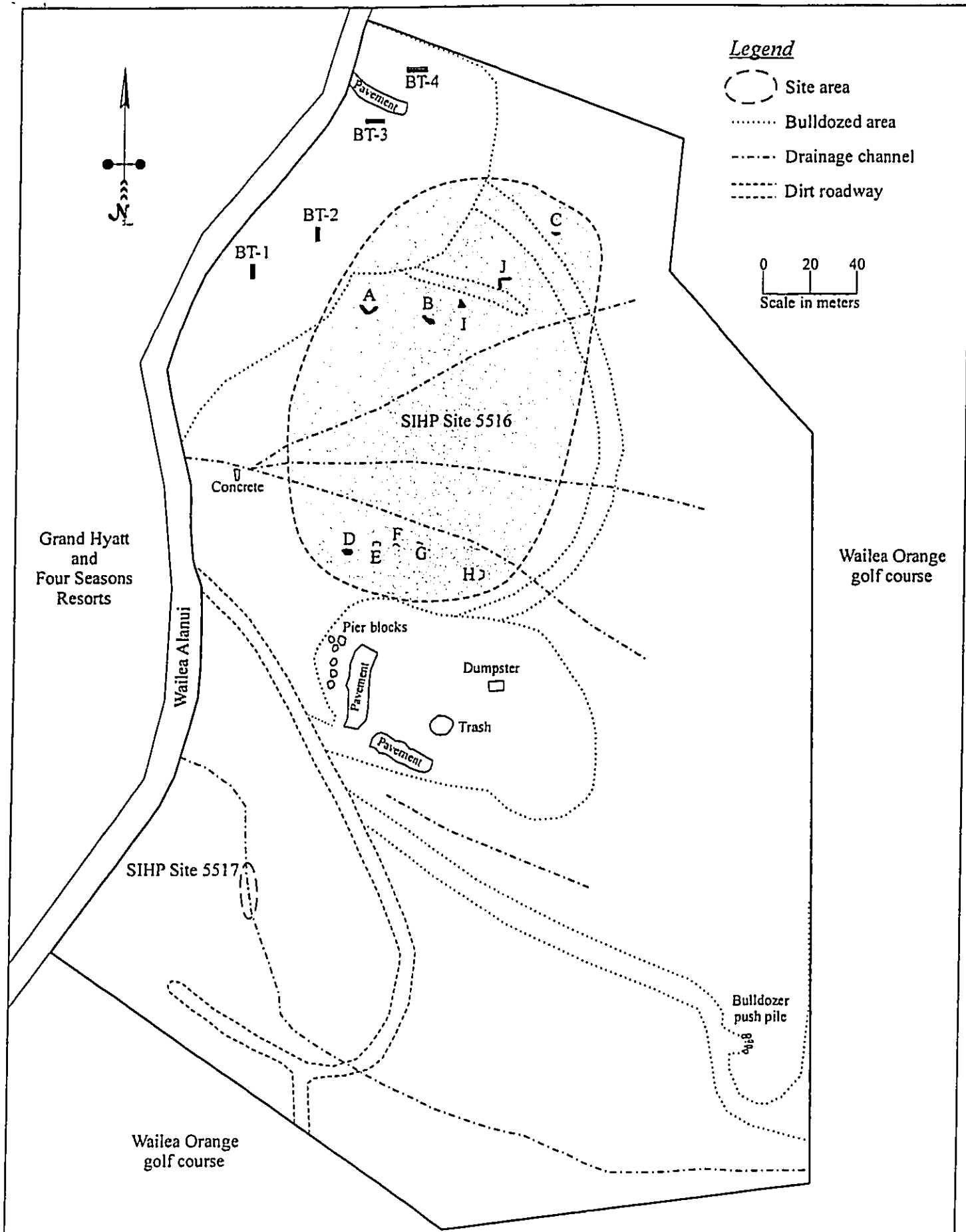
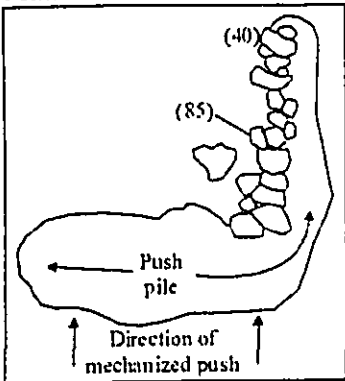


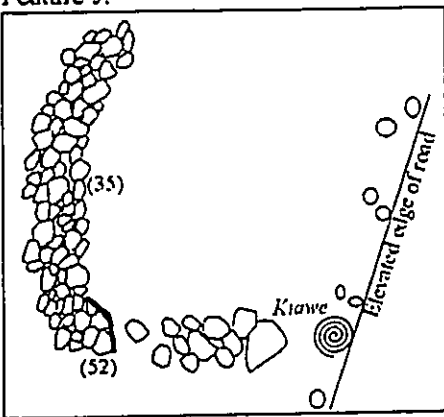
Figure 8. Project area plan view.

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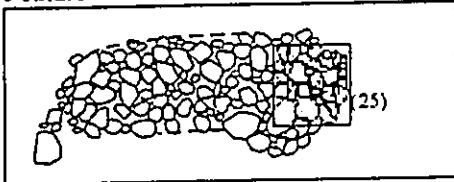
Feature C



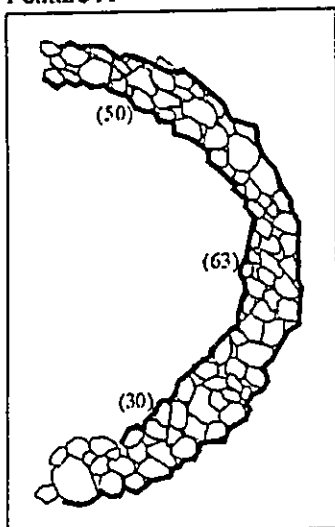
Feature J.



Feature I



Feature A



Feature B

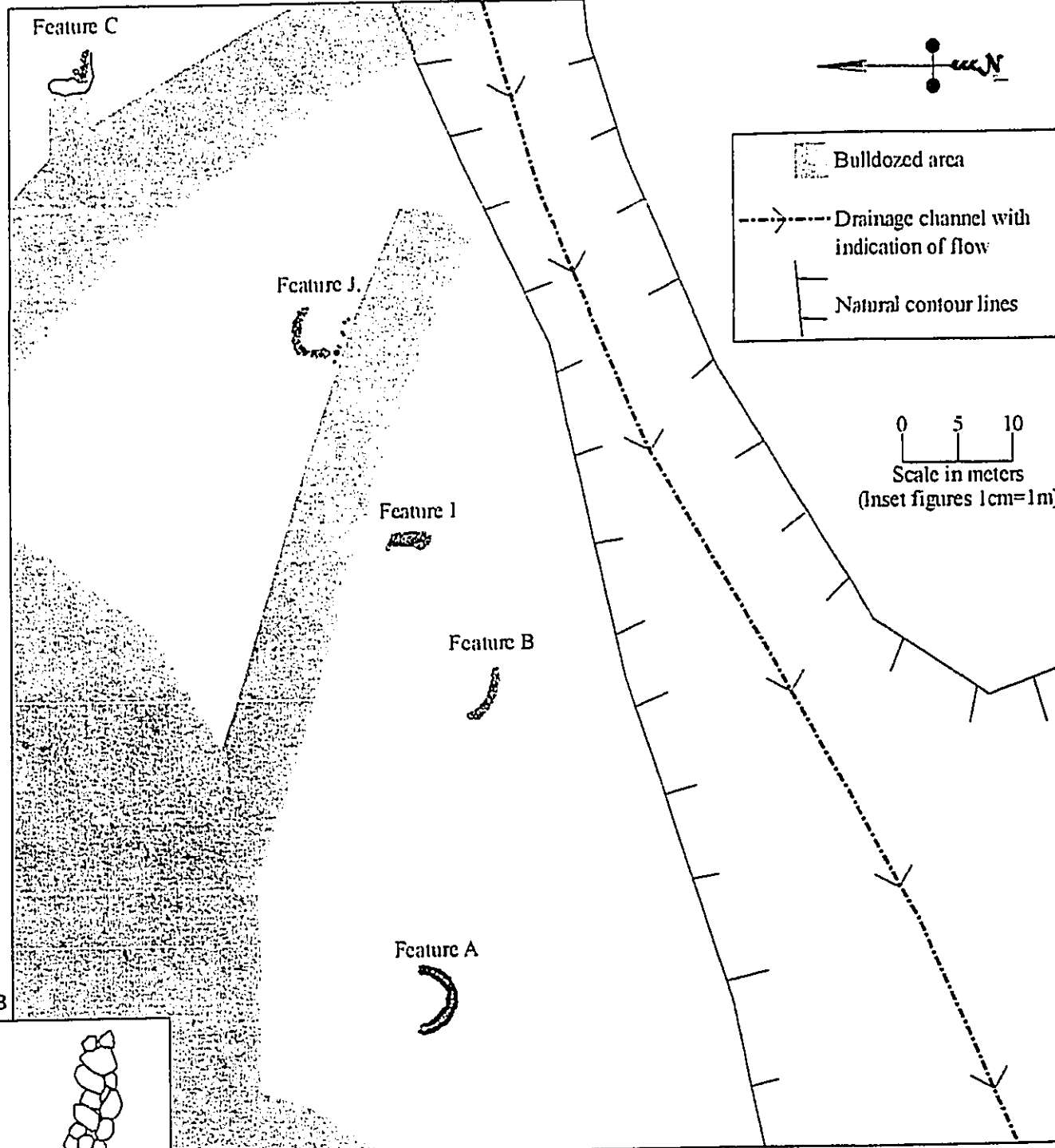
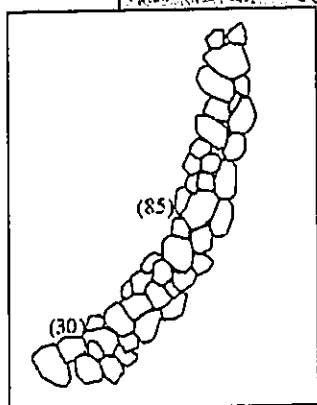
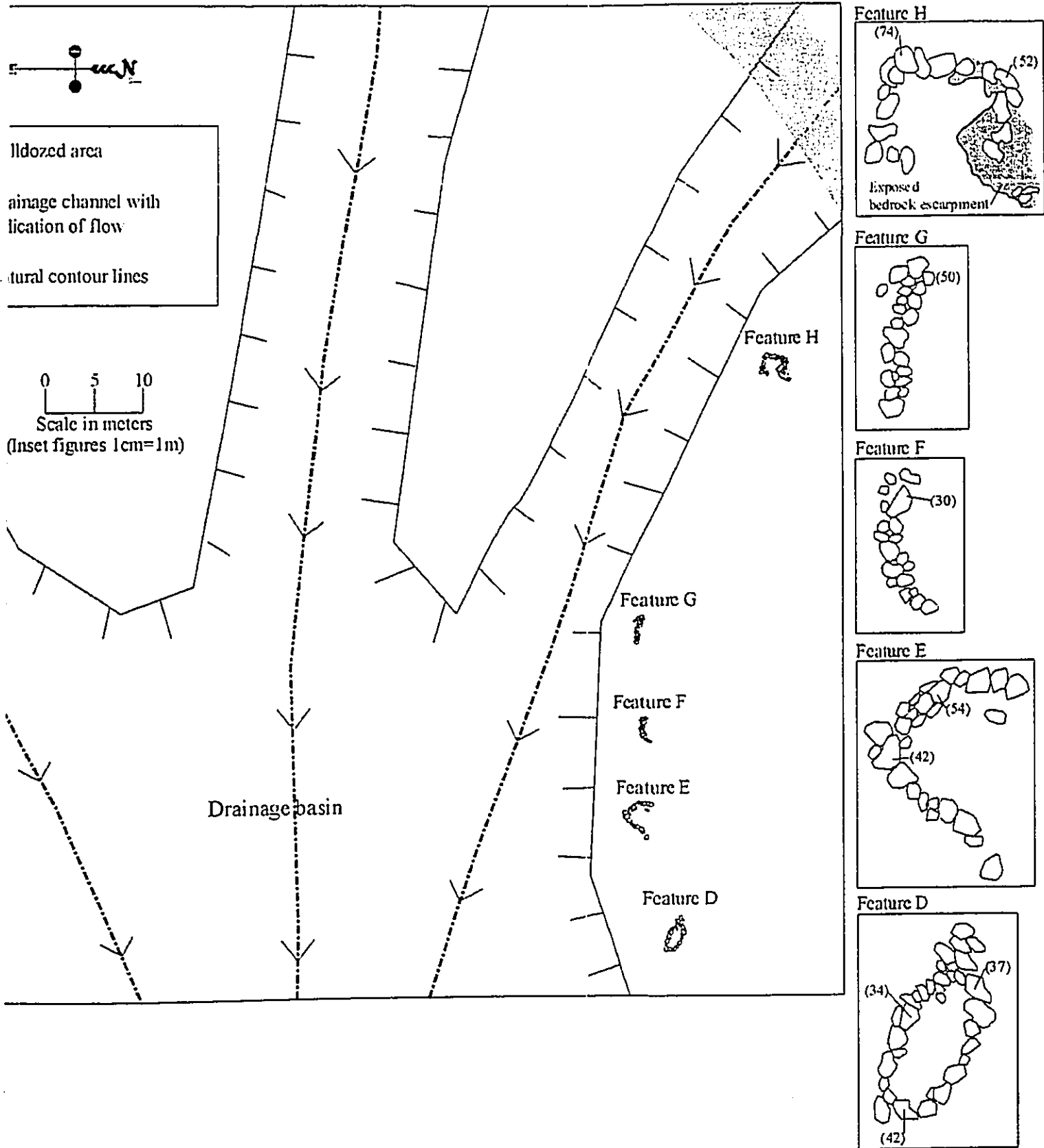


Figure 9. SHP Site 5516 planview and individual feature planviews.

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Feature A is a semi-circular enclosure constructed of loosely stacked *pāhoehoe* cobbles located along the northern edge of the drainage (see Figure 9). The stacked portion of the feature measures 10.5 meters long, 60 centimeters wide, and stands up to 50 centimeters high (Figure 10). Feature A has a good view of the drainage to the south and the west. A pair of weathered plastic safety glasses were found on ground surface 2 meters west of feature. Feature A is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

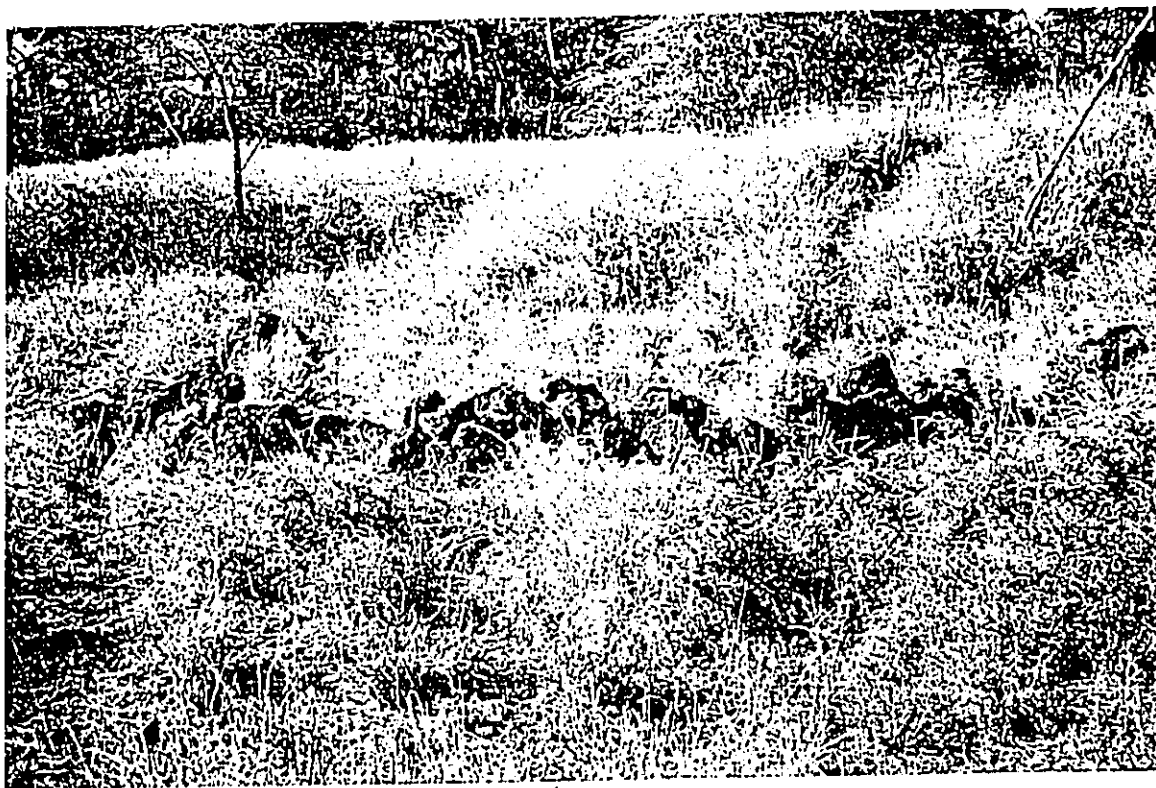


Figure 10. SIHP Site 5516 Feature A, view to northwest.

Feature B is a curvilinear wall constructed of stacked *pāhoehoe* cobbles located along the northern edge of the drainage (see Figure 9). The feature measures 6 meters long, 70 centimeters wide, and stands 60-70 centimeters high (Figure 11). The western end is collapsed and stands 30cm high. Feature B has a good view of the drainage to the south and the west. Feature B is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

Feature C is a roughly L-shaped enclosure remnant consisting of a loosely stacked wall segment running perpendicular to a bulldozer push pile. The intact portion of the feature measures 2.4 meters long, averages 40 centimeters wide, and stands 40-85centimeters high (Figure 12). It is constructed of medium-sized *pāhoehoe* cobbles and boulders. It is unclear if the feature was constructed prior to or after the bulldozer push. Feature C, located along the northern edge of the drainage (see Figure 9), has a good view to the south the west. Feature C is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

Feature D is an oval shaped enclosure constructed of piled *pāhoehoe* cobbles with some boulders present at the base. The enclosure measures 2.5 meters by 1.5 meters, with walls that average 40 centimeters wide and stand up to 50 centimeters high (Figure 13). Ground surface within the enclosure appears to have been excavated slightly to make it deeper. The location of Feature D, at the west end of the southern bank of the drainage (see Figure 9), gives it an excellent view to the west, north, and east. Feature D is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

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Figure 11. SIHP Site 5516 Feature B, view to northwest.

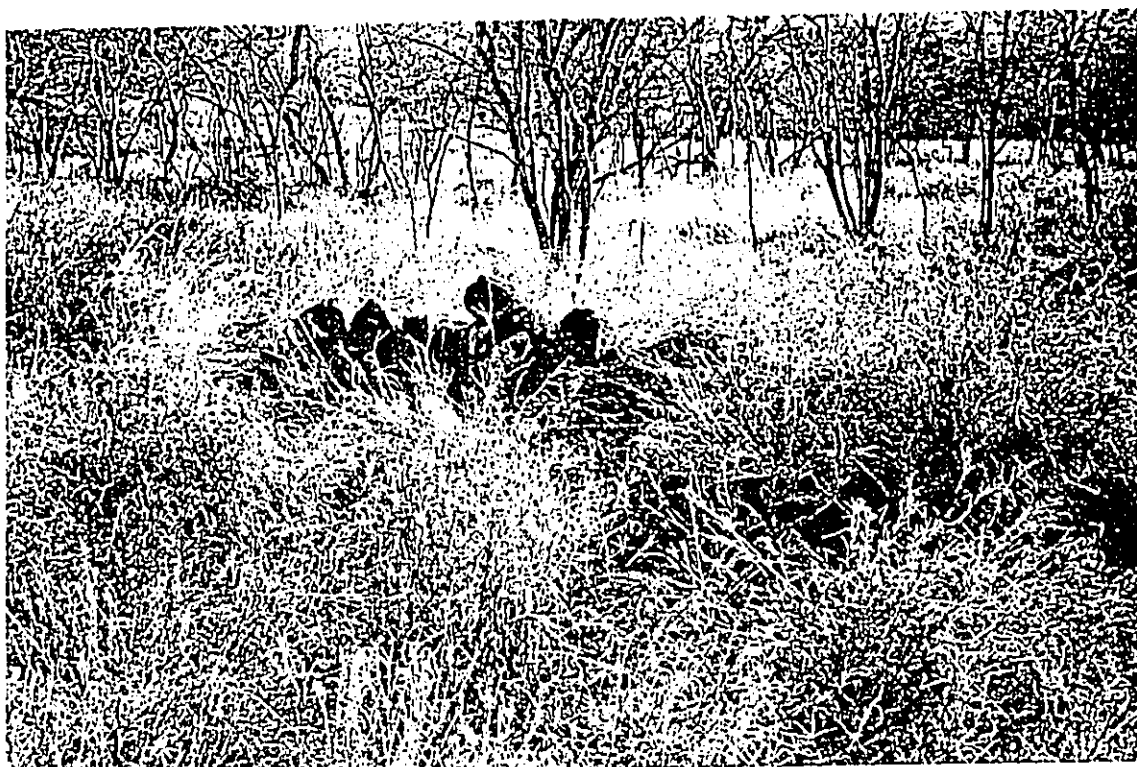


Figure 12. SIHP Site 5516 Feature C, view to south.

Feature E is a semi-circular enclosure constructed of loosely stacked and piled *pāhoehoe* cobbles and boulders with some bedrock present near the north wall. The stacked portion of the enclosure measures 4.5 meters long, averages 50 centimeters wide, and stands 40-70 centimeters high (Figure 14). The exterior edge of the feature is higher than the interior edge because it is terraced into the slope. The interior of the

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enclosure measures 2.5 meters in diameter. Feature E is located approximately mid-slope on the southern slope of the drainage (see Figure 9), giving it expansive views to the north, east, and west (Figure 15). Feature E is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.



Figure 13. SIHP Site 5516 Feature D, view to southwest.



Figure 14. SIHP Site 5516 Feature E, view to northeast.

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Figure 15. SIHP Site 5516, view of drainage to north from Feature E.

Feature F is a curvilinear wall segment constructed of loosely stacked *pāhoehoe* cobbles. The wall measures 2.5 meters long, 40 centimeters wide, and stands up to 40 centimeters high (Figure 16). At one time, Feature F may have resembled an oval shaped enclosure, but a deer trail running along its south edge has scattered several cobbles. This feature is located along the southern edge of the drainage (see Figure 9) and has a good view to the north, east, and west. Feature F is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

Feature G is a curvilinear wall segment constructed of piled *pāhoehoe* cobbles. The wall measures 2.6 meters long, 60 centimeters wide, and stands up to 50 centimeters high (Figure 17). Feature G may have been oval shaped at one time, but a deer trail running through it has scattered several cobbles (the same deer trail passes Feature F). This feature is located along the southern edge of the drainage (see Figure 9) and has a good view to the north, east, and west. Feature G is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

Feature H is a nearly square enclosure remnant constructed of piled and stacked *pāhoehoe* boulders and cobbles. The north wall, which is mostly collapsed except in the northeast corner of the enclosure, measures 2 meters long, averages 50 centimeters wide, and stands up to 70 centimeters high (Figure 18). The east wall also measures 2 meters long, 50 centimeters wide, and stands up to 70 centimeters high, but is intact. The south wall is made up of a bedrock outcrop with one course of cobbles on top. It has an interior height of 70 centimeters and an exterior height of 30 centimeters. The west wall, which stands 30 centimeters high, is collapsed except for the bottom course of cobbles. There is a small opening, 40 centimeters wide, in the west wall. This feature is located along the southern edge of the drainage (see Figure 9) with good views to the north and east. Feature H is interpreted as a fortified fighting position used by the U.S. military during WWII training exercises.

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Figure 16. SHIP Site 5516 Feature F, view to northeast.



Figure 17. SHIP Site 5516 Feature G, view to southwest.

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Figure 18. SIHP Site 5516 Feature H, view to southeast.

Feature I is a filled in World War II era refuse pit. Surface indicators of the feature consist of a roughly rectangular pile of *pāhoehoe* cobbles that measures 3.2 meters long by 1.5 meters wide, and up to 40 centimeters high (Figure 19). Both the north and south ends of the feature are rounded. A 1 x 1 meter test unit (TU-1) was excavated at the southern end of the feature. Excavation of TU-1 revealed two distinct stratigraphic layers (Layers I and II; Figure 20).

Layer I can be further broken into two sub-layers with slightly different physical characteristics (Layers Ia and Ib). Layer Ia, the surface architecture of Feature I, consisted of loosely piled *pāhoehoe* cobbles standing 20-40 centimeters above ground surface, with grass and decaying organic matter located within the cracks between the cobbles. Two metal cans fragments, the remains of discarded food cans, were found within in this layer. As Layer Ia continues beneath ground surface, it transitions to Layer Ib. This layer is essentially the same as Layer Ia, except that it is mixed with soil.

Layer Ib consisted of approximately 50% cobbles and approximately 50% dark reddish brown (SYR 3/4) loosely compacted fine silt. Layer Ib was only present in an excavated pit measuring 80 centimeters wide (east/west) that began 35 centimeters from the south wall of TU-1 and extended out of the unit to the north. The pit, which had concave sides, continued to a depth of 30 centimeters below ground surface and terminated at Layer II in all directions (horizontally as well as vertically). At the base of Layer Ib, covered by the cobbles and mixed with soil, were the discarded remnants of several metal food cans (Figure 21). In all, 139 can fragments (including lids, bodies, one can key, and several small fragments), weighing 206.8 grams, were recovered from Layer Ib. These remains constitute the only cultural debris recovered from TU-1.

Layer II, which surrounded Layer Ib, consisted of dark reddish brown (SYR 3/4) hard packed silt. This undisturbed soil, the natural soil within the project area, was distinct from Layer Ib because it was extremely hard packed. Layer II did not contain any cultural material. Excavation of TU-1 terminated 32 centimeters below ground surface at the Layer Ib/Layer II interface.

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Figure 19. SIHP Site 5516 Feature I, view to north.

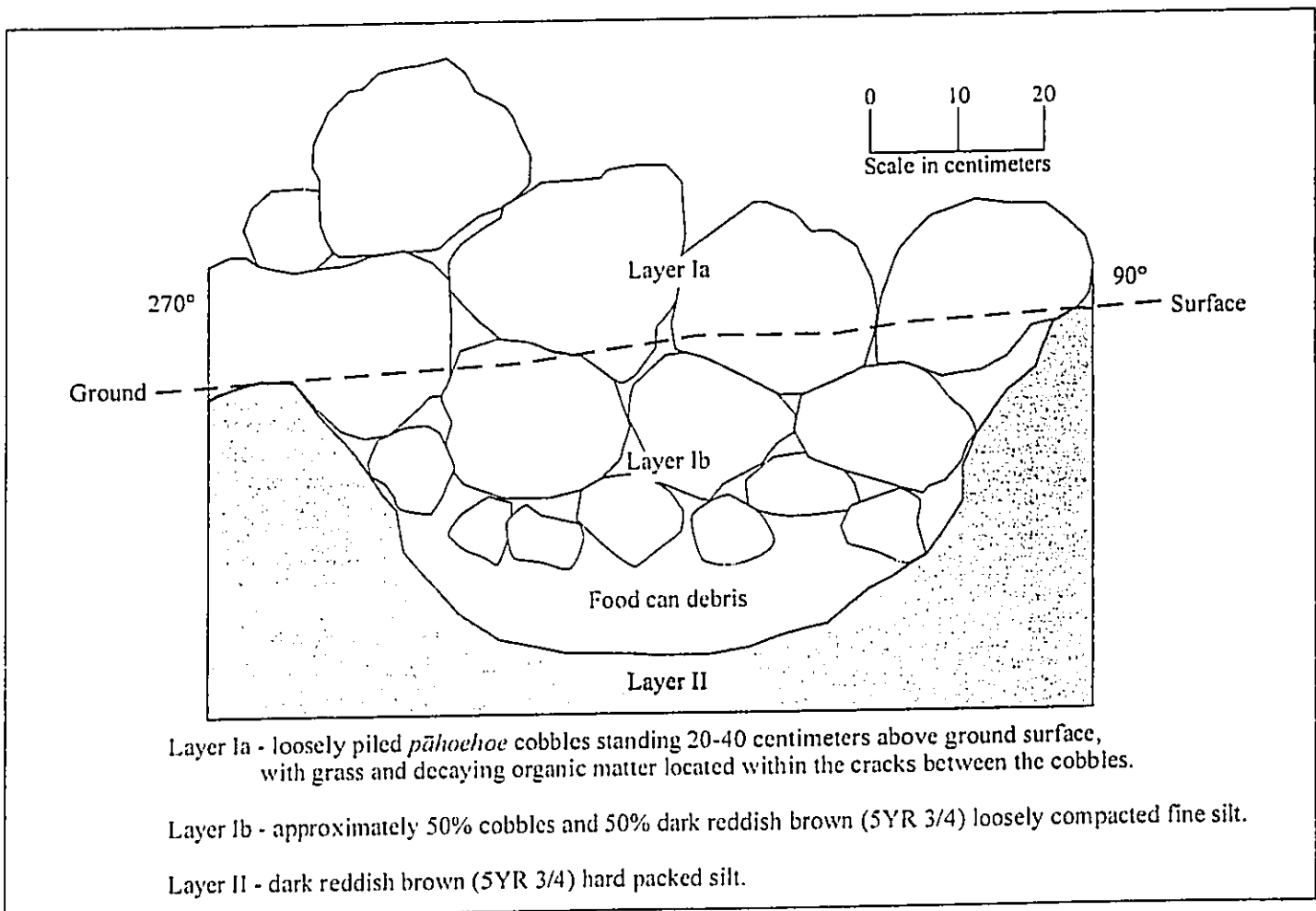


Figure 20. SIHP Site 5516 Feature I, TU-1 north wall profile.

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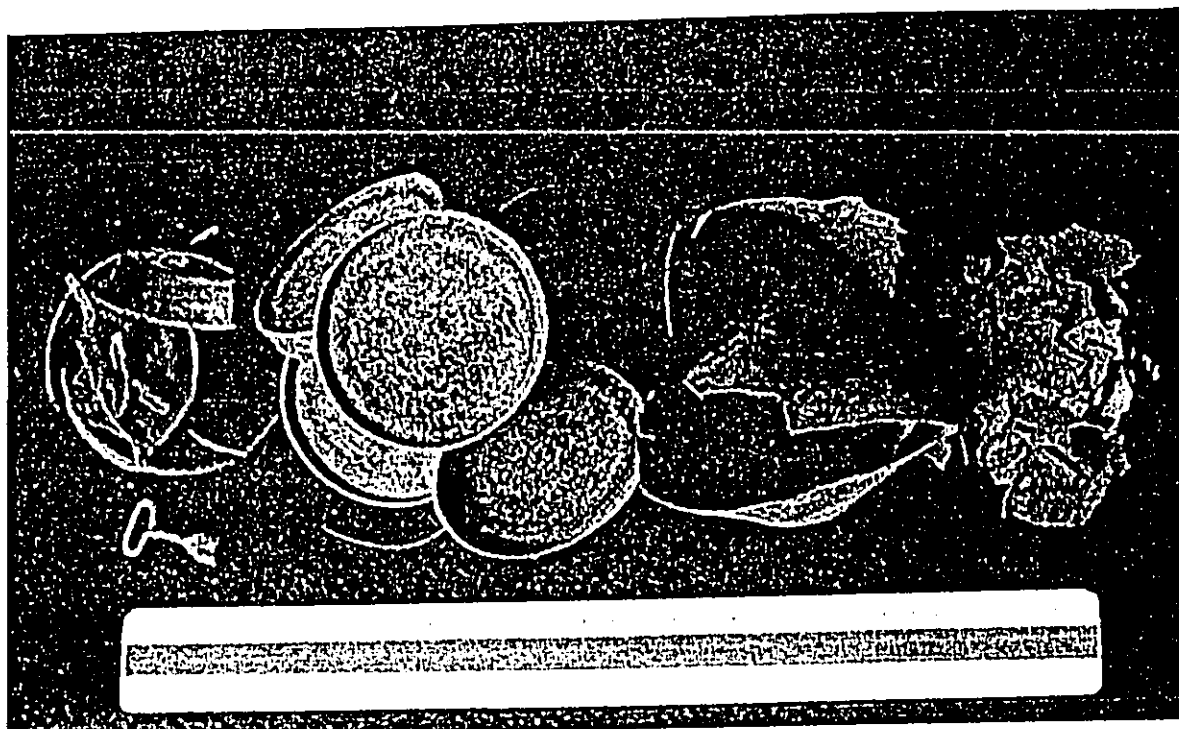


Figure 21. SIHP Site 5516 Feature I, Food cans (C-Rats) recovered from TU-1.

Based on the findings at TU-1, the creation of Feature I can be reconstructed. First, a pit was excavated with a shovel in the vicinity of other features from Site 5516. This pit could have been excavated as a fighting position, as a latrine, or simply as a trash pit. The pit measured at least 80 centimeters wide by 30 centimeters deep, and could have stretched the entire length of the surface extension of the Feature I (3.2 meters). After the pit was excavated, the cans were tossed in and the soil removed from it was shoveled back on top of the discarded trash. The excavated cobbles, or perhaps nearby surface cobbles, were then thrown on top of the soil, thus filling the pit up to and above the original ground surface. The two cans found within Layer Ia could have been left by the individuals who actually did the backfilling of Feature I.

Feature J is a two-sided enclosure remnant located along the north edge of the drainage (see Figure 9). A bulldozer cut runs along the south edge of this feature and may have removed one of the walls. The north wall, which is curvilinear and constructed of stacked medium to large-sized cobbles, measures 4.0 meters long by 60 centimeters wide, and stands up to 60 centimeters high (Figure 22). The west wall runs south from the western end of the north wall for 3.3 meters to the edge of the bulldozer cut. The west wall is also constructed of stacked cobbles. It stands up to 50 centimeters wide and 30 centimeters high. Feature J is in poor condition, but it has good views in all directions, and may have functioned as a fortified fighting position used by the U.S. military during WWII training exercises.

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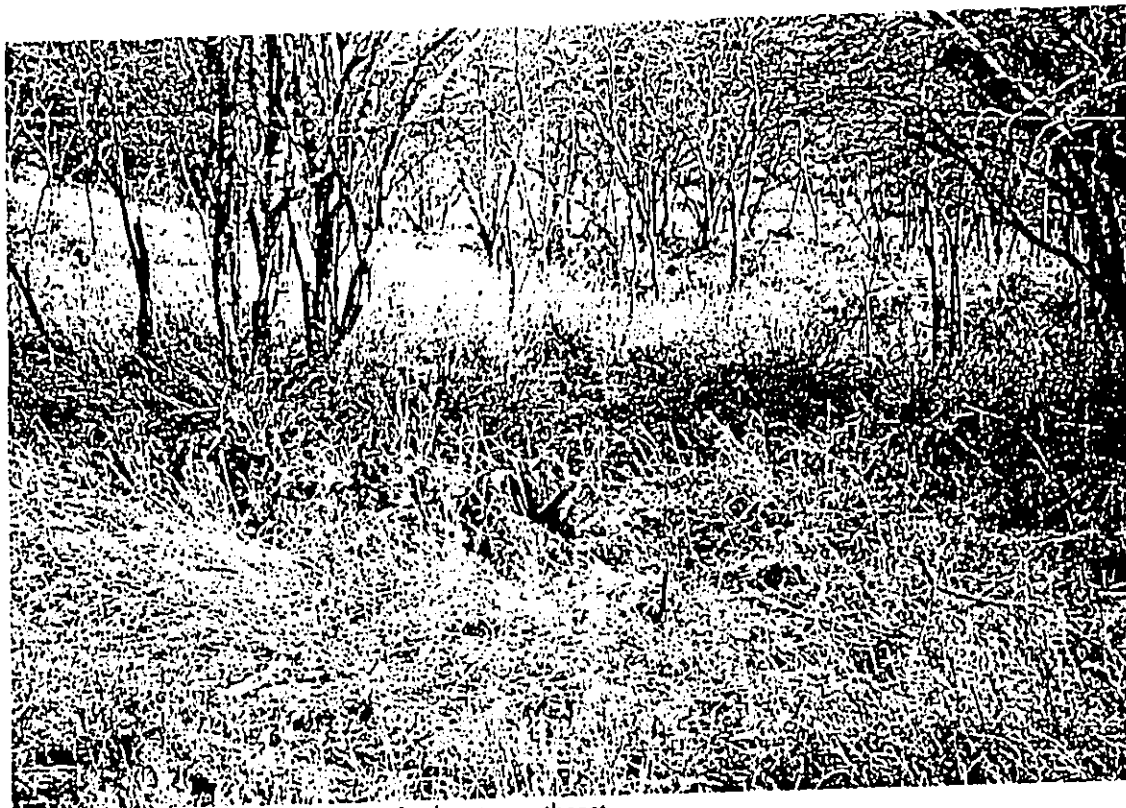


Figure 22. SIHP Site 5516 Feature J, view to southeast.

SIHP Site 5517

Site 5517 is a Precontact overhang shelter that consists of a primary living area with associated petroglyphs (Feature A), a secondary living area (Feature B), and a nearby collection of petroglyph panels that are located on a vertical rock face (Feature C). The site is located along the southern/western edge of a steeply sloped drainage in the southwestern portion of the project area approximately 50 meters *maka* of the Wailea Alanui roadway (see Figure 8). The overhang that shelters the site measures approximately 50 meters long by up to 10 meters high, and 5 meters deep (Figures 24 and 25). Marine shell and urchin remains were scattered throughout the site area, but large concentrations occur primarily in the living areas. Site 5516 was likely accessed by a rough path leading from north to south along the south edge of the drainage or up the center of the drainage itself. During recent heavy rains at the project area (January 2004) water was observed flowing through this drainage in great enough quantities to wash out part of the Wailea Alanui roadway. Precontact individuals likely resided at the site on a temporary basis, and most likely exploited the nearby marine resources.

In regards to the petroglyphs located at Features A and C, a personal communication with Lisa Hazuka-Rotunno (February 19, 2004), who had previously conducted a reconnaissance of the study parcel (see Previous Archaeological Studies section of this report), indicated that they could perhaps be modern. She did not remember seeing the petroglyphs at Site 5517 during her field visit, but she did relate that during a recent study she had conducted on a parcel to the north of the current study area (the report is currently in production), she had discovered petroglyphs within a gulch similar to the ones at Site 5517. It was determined that at least some of those petroglyphs, if not all of them, were recently created by a homeless man reportedly living in the area. Some of the petroglyphs at Site 5517 certainly seem to be of modern origin — they are lightly scratched with what appears to have been a fine tipped metal tool and many of them are unfinished or just barely started. Possibly all of the petroglyphs could be of modern origins, as Sinoto (1989), even though he located the overhang shelter, did not mention the images during his reconnaissance survey of the study parcel (see Appendix A). In the following text attention is called to the more dubious images at Site 5517 as being perhaps created by vandals.

Feature A is the main living area of Site 5517. It measures 8.0 meters long by 4.0 meters wide (see Figures 24 and 25). It is located approximately halfway between the base of the slope and the top of the drainage (Figure 26). The north and eastern edges of Feature A consist of a stacked wall (1.9 meters high), constructed of cobbles on top of boulders, that is terraced into the drainage slope. On top of the stacked terrace wall (to the south and west), the floor of the feature has been leveled with small pebbles and soil. A stepped entryway is located in the northwest corner of the level area. The level area of Feature A is well sheltered with a good view towards the ocean. In the southwest corner of Feature A is a recessed area that stands 1.75 meters from floor to ceiling and may have been excavated (at least partially) out of the drainage slope (Figure 27).

Six petroglyph panels are present on large boulders along the southern vertical face of the feature. Four of the panels face the level floor of Feature A (Figures 28 and 29). They consist of two stick-figure anthropomorphs and a possible third image (Panel A-1; Figure 30), a very faint possible stick-figure anthropomorph (Panel A-2), a large partial stick-figure anthropomorph and some possible recent pecking/scratching perhaps done by vandals (Panel A-3; Figure 31), and several scratch marks that are too faint to interpret, which may also have been done by vandals (Panel A-4). Two panels are located within a small crevice area on the backside of the large boulders that contain the other four panels. These panels consist of a stick-figure anthropomorph (Panel A-5) and a partial triangular torso anthropomorph (Panel A-6; Figure 32).

Feature B is a small secondary living area located to the northwest of and below Feature A (see Figures 24 and 25). Feature B could have been utilized as a sleeping area. It measures approximately 3 meters wide by 2 meters deep, but is not as well constructed, nor as sheltered as Feature A (Figure 33). A large *kiawe* tree is growing out of the center of the living area. The front (north/east) edge of Feature B consists of natural boulders. The floor has been leveled with small cobbles and soil. The north edge stands 1.2 meters high including the outcrop. A possible third living area is located 3.5 meters northwest of Feature B. This area is extremely small (1.5 meters by 2.5 meters), but is level and could have been utilized for sleeping as well.

Feature C is a series of thirteen petroglyphs panels (Table 2) scratched into a vertical bedrock face located to the southeast of Feature A (Figure 34), on the other side of a collapsed protrusion of large boulders that contains Panels A-1 to A-5. All but one of the panels contain anthropomorphic figures with triangular torsos. As noted earlier some of the scratching on the bedrock face appears to be modern, and perhaps all of the petroglyphs could be modern additions to Site 5517. The location of each petroglyph panel is shown on Figure 35 and the images themselves are shown in Figure 36.

Table 2. Petroglyph panels at SIHP Site 5517 Feature A.

<i>Panel #</i>	<i>Description</i>
C-1	Possibly modern scratching of a triangle form and circle.
C-2	Anthropomorph, triangular torso, muscular arms, pin head.
C-3	Two anthropomorphs with triangular torsos, the rest is unclear.
C-4	Three anthropomorphs: a large one with muscular limbs, a triangular torso, and helmet. Two smaller triangular torsos below.
C-5	Anthropomorph with a triangular torso.
C-6	Anthropomorph, triangular body, no head or arms.
C-7	Triangular scratching (possibly modern) with pecking in center.
C-8	Triangular body scratching (possibly modern).
C-9	Anthropomorph with a triangular torso.
C-10	Anthropomorph with a triangular torso.
C-11	Possible start of triangular body? Scratching above.
C-12	Anthropomorph with a triangular torso, very faint.
C-13	Possible legs of a former anthropomorph? Pecking near by.

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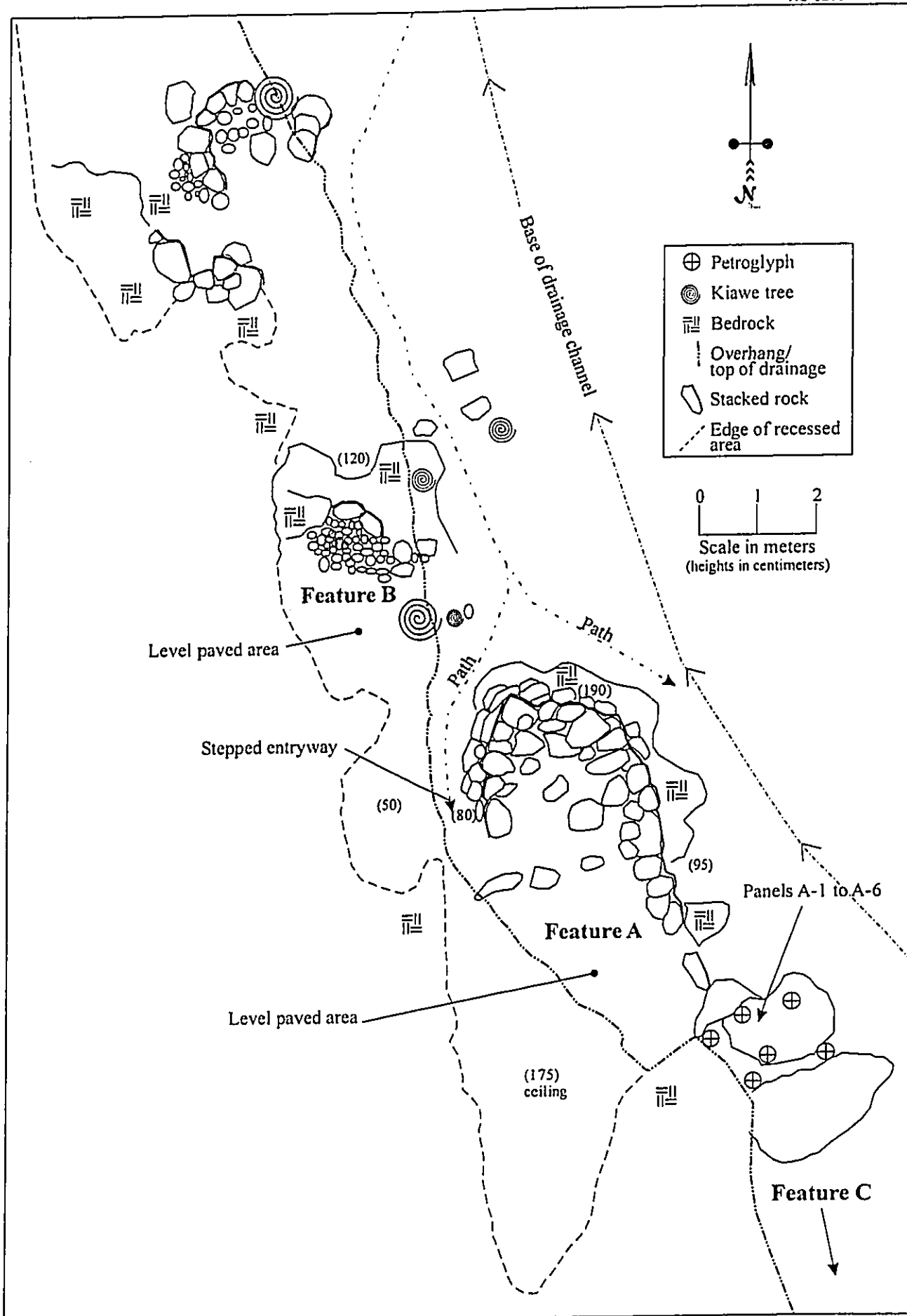


Figure 24. SIHP Site 5517 plan view.

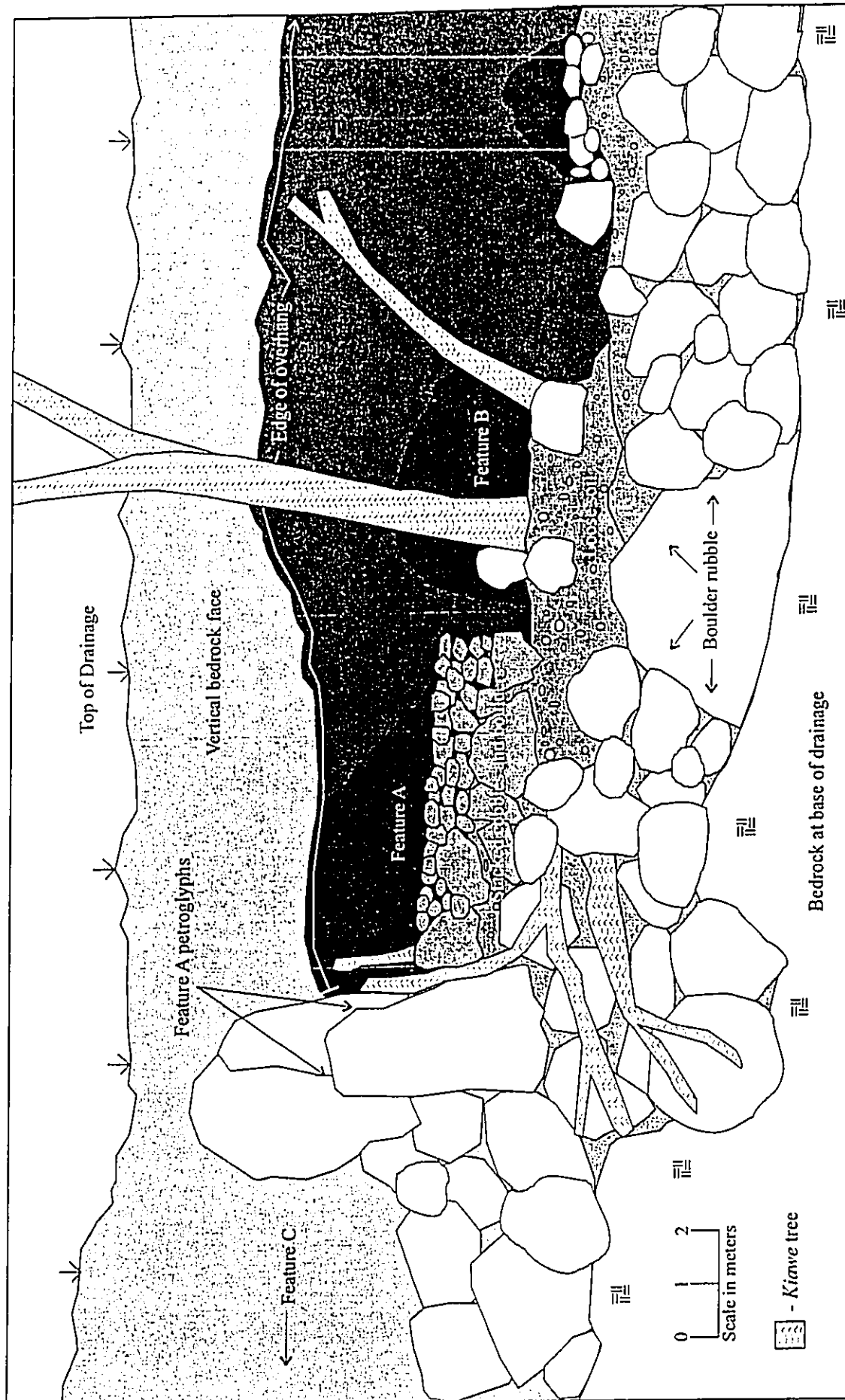


Figure 25. SIHP Site 5517, scaled profile drawing.

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Figure 26. SIHP Site 5517 Feature A, view to southwest from the opposite side of the drainage.

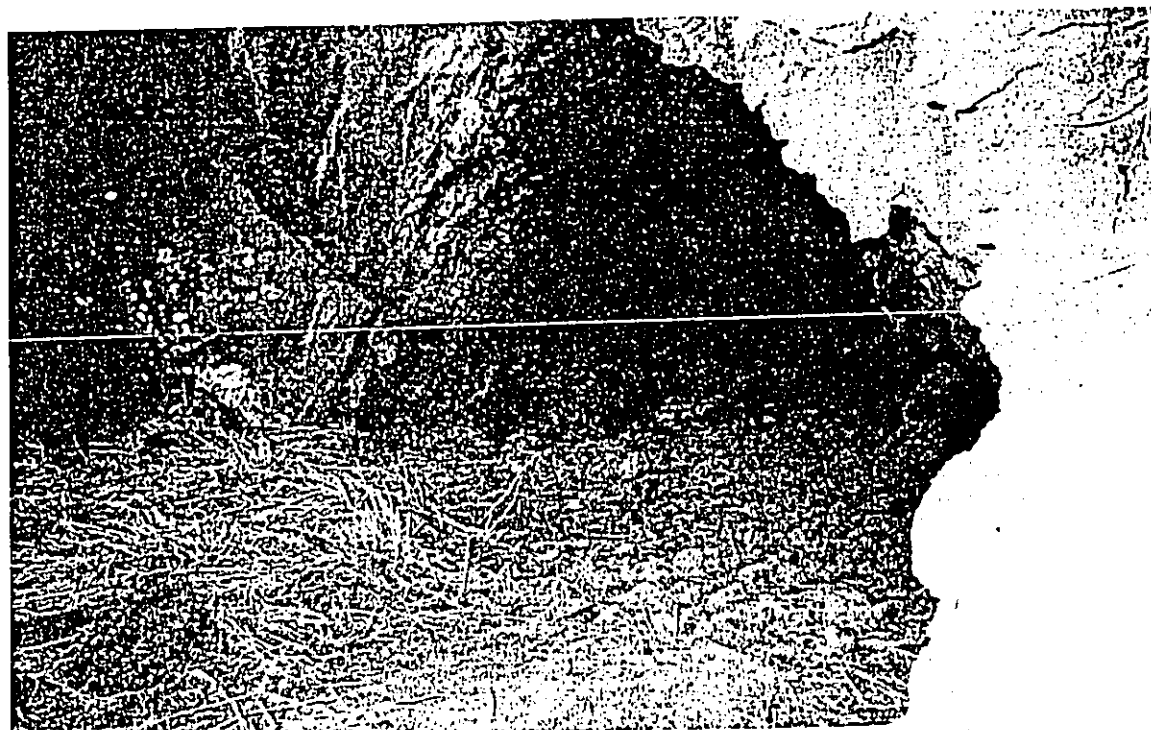


Figure 27. SIHP Site 5517 recessed area in southwest corner of Feature A, view to south.

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Figure 28. SIHP Site 5517 Feature A, Panels A-1 to A-4, view to southeast.

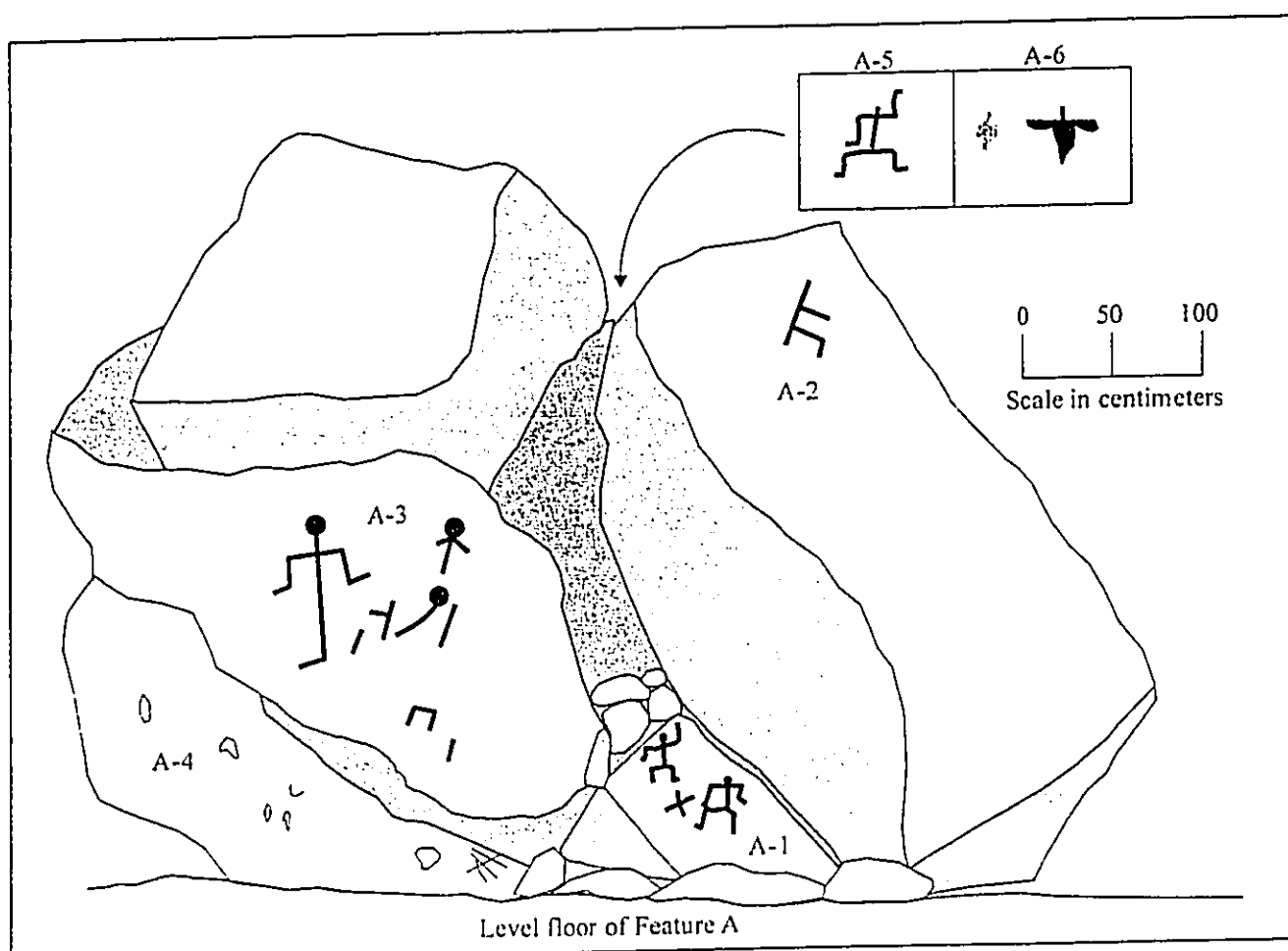


Figure 29. SIHP Site 5517, scaled drawing of Feature A petroglyphs panels.

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Figure 30. SIHP Site 5517 petroglyph Panel A-1.



Figure 31. SIHP Site 5517 Feature A petroglyph Panel A-3.

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Figure 31. SIHP Site 5517 petroglyph Panel A-5.



Figure 32. SIHP Site 5517 Feature B, view to south with Feature A in background.

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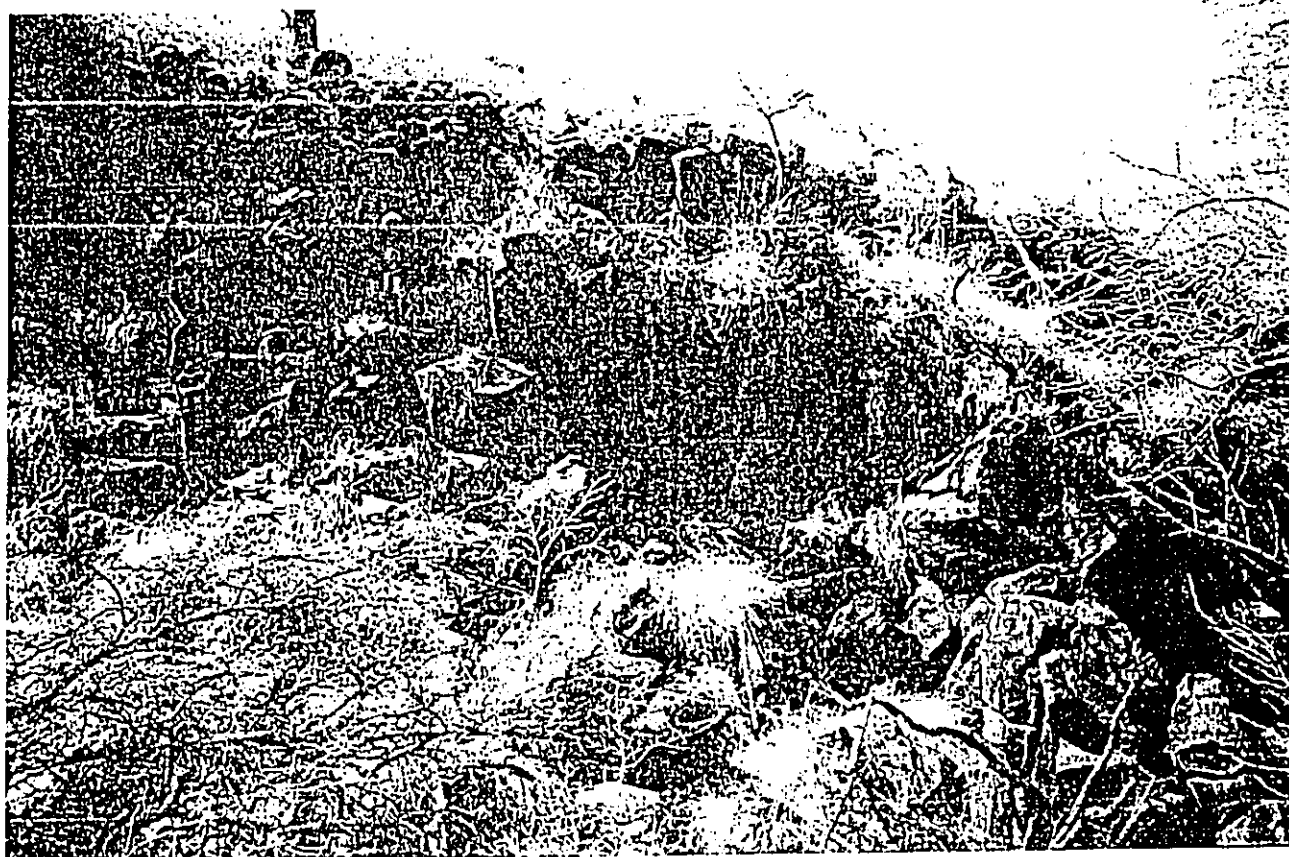


Figure 33. SIHP Site 5516 Feature C, vertical bedrock face, view to west.

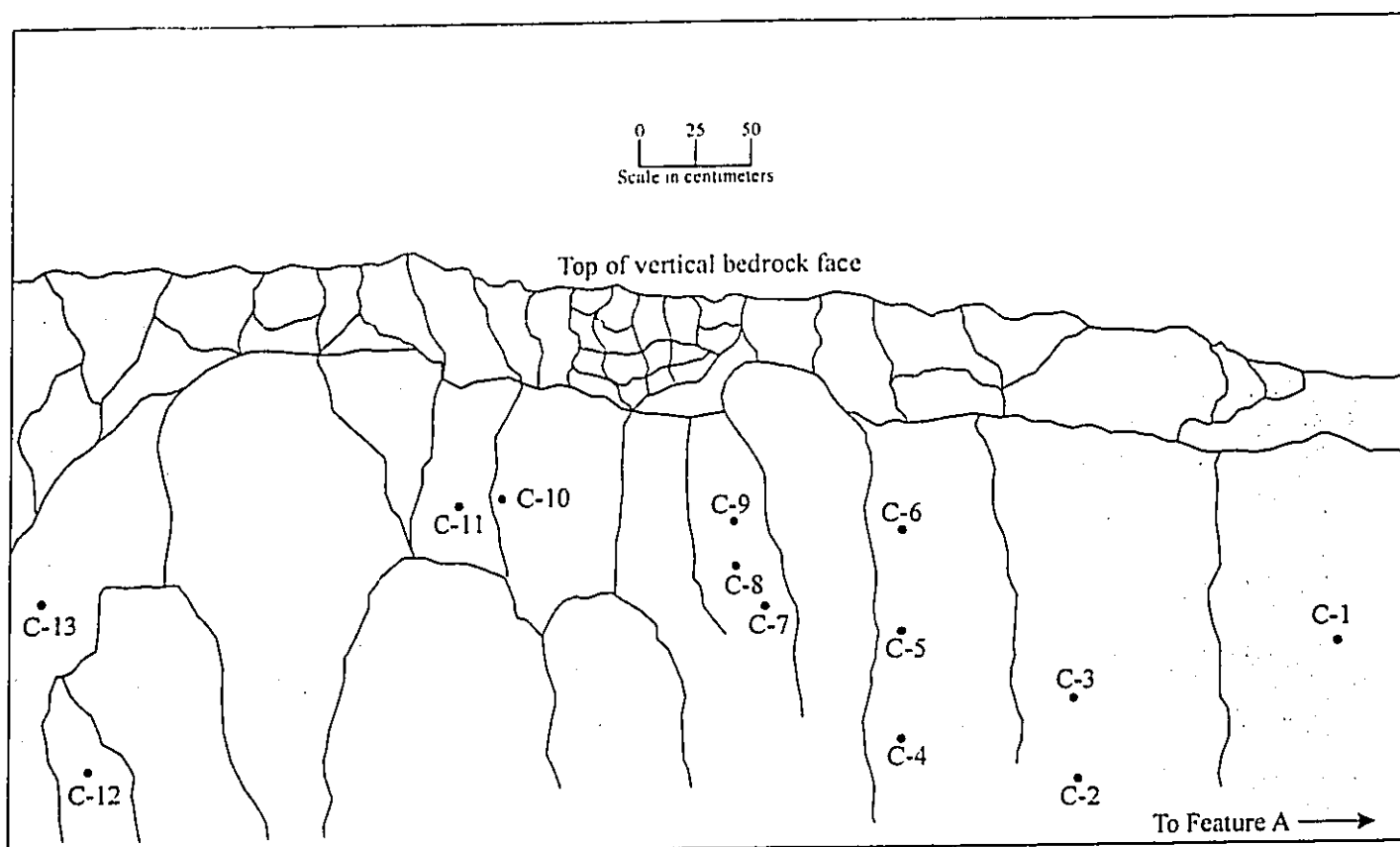


Figure 34. SIHP Site 5516 Feature C, location of petroglyph panels.

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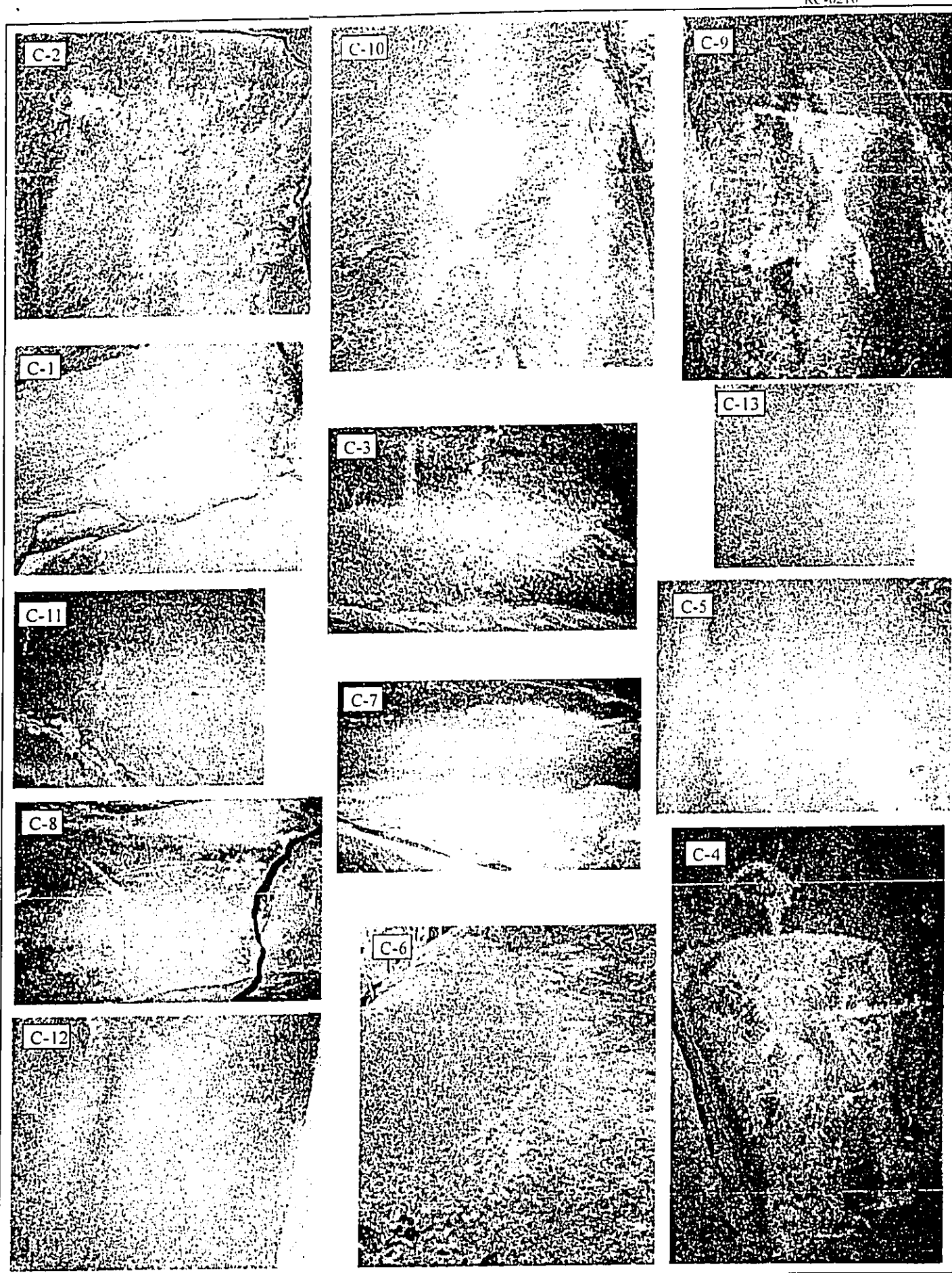


Figure 35. SHIP Site 5517 Feature C, petroglyph panels (various views).

Results of Backhoe Testing

Four backhoe trenches (BT-1, 2, 3, and 4) were excavated at varied locations in the northwestern portion of the study parcel (see Figure 8). This area is the nearest point on the current study parcel to the Grand Hyatt Wailea Resort where numerous sets of human remains were encountered during subsurface excavations (Rechtman 1999; see Previous Archaeology section above). Although this portion of the study parcel had been previously bulldozed — as evidenced by a berm surrounding the area to the south and east and the deflated ground surface — it was felt that testing was necessary to positively eliminate the possibility of encountering subsurface cultural deposits. A backhoe was used to excavate the roughly eight-meter long trenches, one bucket-width wide, at the four selected locations. The width of the backhoe bucket used was 60 centimeters. The soil removed during backhoe excavation was visually examined for cultural material and the stratigraphy visible in the walls of the trenches was recorded and described.

No cultural material was recovered from any of the backhoe trenches. In fact, in three of the four trenches (BT-1, 2, and 4) bedrock was encountered almost immediately, and thus no profiles were drawn (Table 3). In these trenches, the soil encountered consisted of three to five centimeters of dark brown (7.5YR 3/3) fine sandy silt with approximately 40-50% gravel content resting on bedrock. In the fourth trench (BT-3), the excavation went seventy centimeters deep and revealed a two-layer stratigraphic profile resting on bedrock (Figure 36 and 37). Within BT-3, Layer I consisted of a 40-centimeter thick strata of dark brown (7.5YR 3/3) fine sandy silt with approximately 40-50% gravel content. Layer I gradually transitioned to Layer II, a 30-centimeter thick strata of dark brown (7.5YR 3/4) sandy silt containing approximately 50% gravel content and mixed with decomposing bedrock. Excavation of BT-3 terminated at bedrock 70 centimeters below ground surface.

Table 3. Backhoe trenches (BTs) excavated as part of the current study.

<i>BT #</i>	<i>Orientation</i>	<i>Length</i>	<i>Width</i>	<i>Depth</i>
1	North/south	7 meters	60 centimeters	3-5 centimeters
2	North/south	8 meters	60 centimeters	3 centimeters
3	East/west	8 meters	60 centimeters	70 centimeters
4	East/west	9 meters	60 centimeters	3-5 centimeters

Summary and Conclusions

As a result of the current archaeological inventory survey of a roughly 30-acre project area, two archaeological sites were recorded; a WWII-era training site (Site 5516) consisting of ten features, and a Precontact Period temporary habitation shelter (Site 5517) located in a steep drainage with possible associated petroglyphs.

At Site 5516, the form, orientation, and arrangement of the features fits the pattern that has been previously recorded within suspected and documented WWII training areas on Maui (e.g. Rosendahl and Haun 1987; Klieger et al. 1992) and on the Big Island (Haun and Henry 2000; Rosendahl and Kaschko 1983; Schilz 1994). The discovery of military food ration cans in a refuse pit associated with the features supports the interpretation. As noted, however, it is possible that some of the features at this site may have been used as hunting blinds subsequent to their initial construction.

At Site 5517, Precontact individuals likely resided on a temporary basis, and most likely exploited the nearby marine resources. This generally supports the model proposed by Cordy (1977) that the lands in the vicinity of the current project area, between a quarter mile from the shore and five to seven miles inland, were used only intermittently. Precontact individuals likely passed through this area when traveling between coastal and upland resource and habitation areas. The association of the petroglyphs with Site 5517 may or may not be important, as it is imminently possible that they were created in modern times.

No subsurface cultural deposits were found within the four backhoe trenches excavated in the northwestern portion of the project area, which indicates that the substantial burial area on Development Parcel A/B (Rechtman 1999) does not extend to the *mauka* side of the current Wailea Alanui Road.

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Figure 36. Backhoe Trench # 3 (BT-3), view to south.

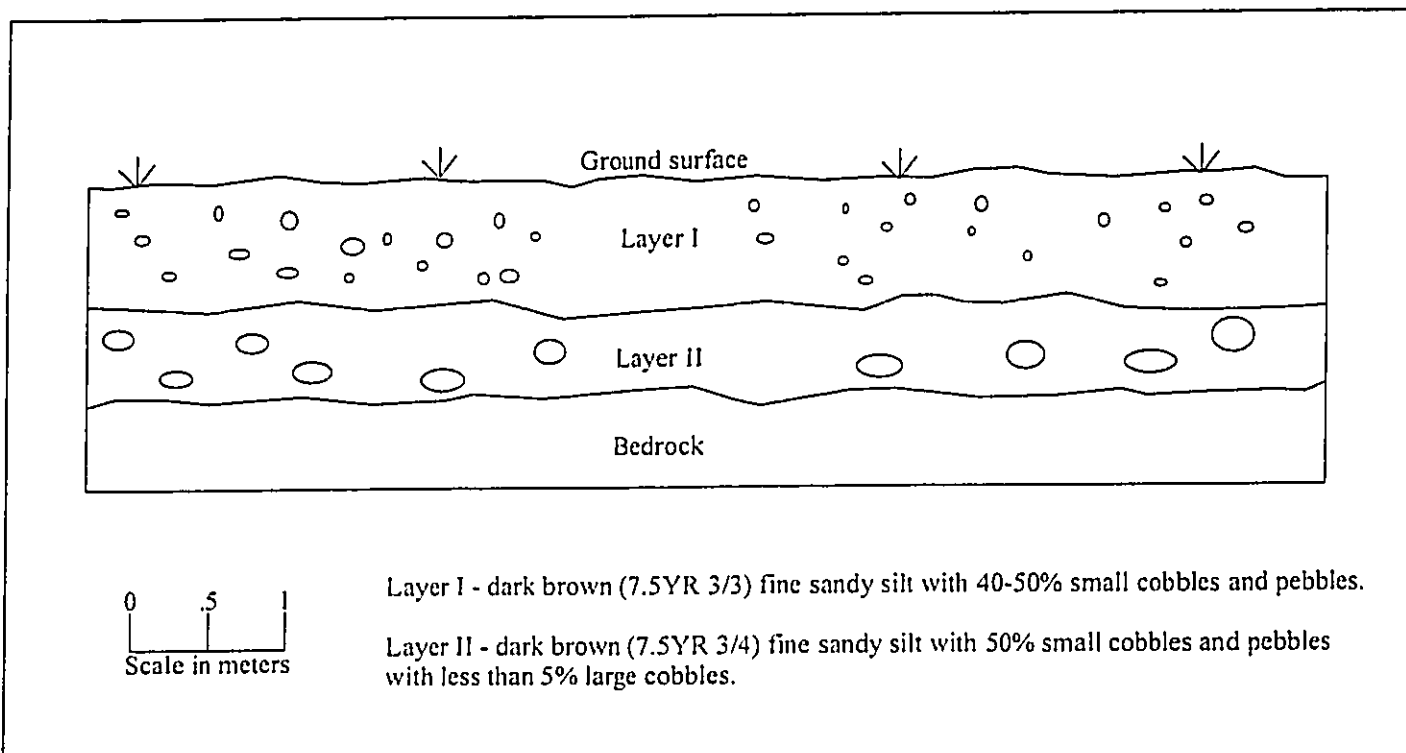


Figure 37. Backhoe Trench # 3 (BT-3) south wall profile.

REFERENCES CITED

- Barrera, W., Jr.
1974 An Archaeological Phase I Survey of Wailea, Kihei, Maui. (090474) Manuscript. Department of Anthropology, B.P. Bishop Museum, Honolulu.
- Barrère, D.
1975 Waile'a: Waters of Pleasure for the Children of Kama. Manuscript. 090474 Department of Anthropology, B.P. Bishop Museum, Honolulu.
- Bellwood, P.
1978 *The Polynesians: Prehistory of an Island People*. Thames and Hudson, Ltd., London.
- Cleghorn, P.L.
1974 Survey and Salvage Excavations in Specified Areas of Wailea Lands, Maui. Manuscript 100274. Department of Anthropology, B.P. Bishop Museum, Honolulu. (revised 1976)
- 1975a A Summary of Phase II, Part 2. Archaeological Salvage Operations at Site 50-Ma-B10-1, Wailea. Manuscript 061075. Department of Anthropology, B.P. Bishop Museum, Honolulu.
- 1975b Phase II, Part 2. Archaeological Salvage Operations at Site 50-Ma-B10-1, Wailea. Manuscript 061075. Department of Anthropology, B.P. Bishop Museum, Honolulu.
- Chinen, J.
1961 *Original Land Titles in Hawaii*. Privately published.
- Cordy, R.
1977 Kihei Flood Control Project, Archaeological Reconnaissance and Literature Search, Maui Island.
- Davis, B., and R. Bordner
1977 Archaeological Reconnaissance of the Proposed Realignment of the Makena Coast Road - Mauka Alternate, Honua'ula, Island of Maui. Archaeological Research Center Hawaii, Inc. (ARCH) Project 14-821A. Prepared for Environmental Impact Study Corporation.
- Fornander, A.
1969 *An Account of the Polynesian Race: Its Origin and Migrations*. Tokyo: Charles E. Tuttle Co., Inc.
- Fredericksen, D., E. Fredericksen, and W. Fredericksen
1994 An Archaeological Inventory Survey of a 24-acre Parcel, Kamaole Ahupua'a, Wailuku District, Island of Maui (TMK: 3-09-18:1).
- Gosser, D.
1990 Phase I Archaeological Test Excavations at Parcel SF-10, Wailea, Makawao District, Island of Maui. Prepared for Wailea Resort Co., Ltd.
- Gosser, D. and P. Cleghorn
1990 Results of Phase I Archaeological Survey of the "Southern Acreage" in Wailea, Makawao, Maui Island. MS on file Dept. of Anthropology. Bishop Museum.

- Gosser, D., S. Clark, and B. Dixon
1993 Na Lawai'a o 'Ao'ao Kona O ka Moku: Excavations at the Southern Acreage and Lot 15, Wailea, Maui. Dept. of Anthropology, Bishop Museum. Honolulu.
- Handy, E.S.C., and E.G. Handy
1972 *Native Planters in Old Hawaii: Their Life, Lore and Environment*. B.P. Bishop Museum Bulletin 223. Bishop Museum Press, Honolulu. (with M.K. Pukui)
- Haun, A., and D. Henry
2000 Archaeological Inventory Survey TMK: 3-6-2-02:18, Land of Ouli, South Kohala District, Island of Hawaii. Haun and Associates Report 011-050800. Prepared for Kohala-Woodvale Associates, LLC.
- Hazuka-Rotunno, L. and J. Pantaleo
1994 An Archaeological Inventory Survey of the Proposed Wailea Shopping Village/Town Center Expansion Project, Paeahu Ahupua'a, Makawao District, Maui Island. Aki Sinoto Consulting (ASC94-7). Prepared for Wailea Resort Co., Ltd.
- Hommon, R.
1986 Social Evolution in Ancient Hawai'i. IN Kirch, P.V. (ed.), *Island Societies: Archaeological Approaches to Evolution and Transformation: 55-88*. Cambridge: University Press.
- Hono-ko-hau Study Advisory Commission
1974 The Spirit of Ka-Loko Hono-Ko-Hau. National Park Service, U.S. Department of the Interior.
- Kamakau, S.
1976 The Works of the People of Old, Na hana a ka Po'e Kahiko. *B.P. Bishop Museum Special Publication 61*. Bishop Museum Press, Honolulu.
1992 *Ruling Chiefs of Hawaii*. The Kamehameha Schools Press, Honolulu (revised edition).
- Kent, N.
1983 *Hawaii: Islands Under the Influence*. University of Hawai'i Press, Honolulu.
- Kirch, P.
1984 *The Evolution of the Polynesian Chiefdoms*. Cambridge University Press, New York.
1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.
1990 Monumental Architecture and Power in Polynesian Chiefdoms: A Comparison of Tonga and Hawaii. *World Archaeology 22(2)*.
- Klieger, P., T. Stocker, M. Newman, and C. McConnell
1992 Archaeological Data Recovery Report for Parcel SF-7, Wailea, Paeahu Ahupua'a, Makawao District, Island of Maui. Prepared for Wailea Resort Co., Ltd. Applied Research Group, Bishop Museum. Honolulu.
- Kuykendall, R., and A. Day
1976 *Hawaii: A History From Polynesian Kingdom to American Statehood*. Prentice-Hall, Inc., Englewood Cliffs.

- Landrum, J.
1989 An Archaeological Reconnaissance Survey of Parcel SF-10, Palauea Ahupua'a, and Portions of SF-7, Paeahu Ahupua'a, Wailea, Makawao District, Maui, Hawai'i.
- Oliver, D.
1961 *The Pacific Islands*. University of Hawaii Press, Honolulu.
- Pogue, J.
1978 *Mooleo Hawaii*. Hale Paipalapala Aupuni, Honolulu (Revised Edition).
- Rechtman, R.
1999 Archaeological Monitoring at Development Parcel A/B Wailea Resort Property, Land of Paeahu, Makawao District, Island of Maui. PHRI Report 1302-041599.
- Rogers-Jourdane, E.
1979 Archaeological Reconnaissance on a Wailea Property in the Ahupua'a of Paeahu, Makawao, Maui Island. Dept. of Anthropology, Bishop Museum. Honolulu.
- Rosendahl, M., and A. Haun
1987 Archaeological Data Recovery Excavations, Development Parcels A, B and C. Wailea Resort, Land of Paeahu, Makawao District, Island of Maui. PHRI Report 299-181787. Prepared for TSA International, Ltd.
- Rosendahl, P.
1986 Archaeological Field Inspection, Development Parcels A/B and C. Wailea Resort, Land of Paeahu, Makawao District, Island of Maui (TMK 2-1-08:40,59). PHRI.
- Rosendahl, P., and M. Kaschko
1983 Archaeological Investigations of Ouli Coastal Lands, Land of Ouli, South Kohala, Island of Hawaii. Intensive Survey and Test Excavations on Mauna Kea Beach Resort Lands between Hapuna Bay and Kaunaoa Bay. PHRI Report 38-030183. Prepared for Mauna Kea Properties.
- Schilt, R., and S. Dobyns
1980 Archaeological Reconnaissance and Testing on Wailea Properties in the Ahupuaa of Paeahu, Makawao District, Maui Island, Hawaii. Manuscript 030480. B.P. Bishop Museum, Honolulu.
- Schilz, A.
1994 Archaeological Survey and Evaluation, Land of Ouli, South Kohala District, Island of Hawaii. Report prepared for Nansay Hawaii, Inc.
- Sinoto, A.
1989 Post-field Summary of the Archaeological Survey of Parcels MF-9, MF-21, Park, and TMK 2-1-12:15. Letter report (see Appendix A).
- Sinoto, A., and J. Pantaleo
2000 Archaeological Inventory Survey of the 190-acre Southernmost Portion of Lands Known as Wailea 670, Palauea, Keauhou, Makawao, Maui (TMK 2-1-08: Por. 56 and 71). Prepared for WCPT/GW Land Associates, LLC. Aki Sinoto Consulting. Honolulu.
- 2001 Addendum Survey Report: Supplemental Inventory Survey Procedures in the Northern and Southern Portions of Lands Known as Wailea 670, Paeahu, Palauea, & Keauhou, Makawao, Maui, TMK 2-1-08: 56 and 71. Prepared for WCPT/GW Land Associates, LLC. Aki Sinoto Consulting. Honolulu.

- Spear, R.
1987 Intensive Archaeological Survey and Testing, Development Parcels A/B and C, Wailea Resort, Land of Paeahu, Makawao District, Island of Maui. PHRI Report 247-092286. Prepared for TSA International, Ltd.
- 2000 An Inventory Survey of 17.89-acres in Paeahu Ahupua'a, Makawao District, Wailea, Maui Hawai'i (TMK 2-1-08: 103 & 121). Prepared for SCD International, LLC. Scientific Consulting Services. Honolulu.
- Stocker, T., P. Klieger, and S. Clark
1992 Archaeological Inventory Survey of a Portion of Parcel MF-12 (TMK 2-1-08:42), Wailea, Maui Island, State of Hawaii. Prepared for Wailea Resort Co. Ltd. Applied Research Group, Bishop Museum. Honolulu.
- Walton, B.
1972 Archaeological Survey, Palauea and Keauhou Section, Piilani Highway, Island of Maui. Walton Enterprises Historic Preservation Report 72-2. Prepared for the Department of Transportation, Division of Highways, State of Hawaii, Honolulu.

APPENDIX A



B I S H O P M U S E U M
 1525 BERNICE STREET • P.O. BOX 15000-A • HONOLULU, HAWAII • 96817 0916 • (808) 847-3511 • FAX (808) 841-8968

VIA FACSIMILE

May 15, 1989

Mr. Clyde Murashige
 Manager, Project Planning
 Wailea Resort Company, Ltd.
 161 Wailea Ike Place
 Wailea, Maui, Hawai'i 96753-9599

Dear Mr. Murashige:

Subject: Post-field Summary of the Archaeological Survey of
 Parcels MF-9, MF-21, Park, and TMK 2-1-12:15

The field survey phase for archaeological reconnaissance of the above-referenced four parcels has been completed. Fieldwork, involving inventory and flagging was conducted between 8-10 May 1989 by Lisa Rotunno, Dennis Gosser, Jeff Pantaleo, and Stephen Clark, all members of the Public Archaeology Section, Applied Research Group, Bishop Museum.

The walk-through survey of a total of 54.5 acres resulted in the discovery of a total of nineteen archaeological sites. These sites were marked with orange flagging tape, assigned temporary field numbers, photographed, and recorded on topographic maps.

Parcel MF-9 (TMK 2-1-08:42) contained 6 sites (T1-6) including two C-shaped, stacked rock structures, one L-shaped structure, a terraced platform, two wall segments, and two overhang shelters.

Parcel MF-21 and the adjoining Park Parcel yielded ten archaeological sites (T10-19) including several long walls, two rectangular enclosures, and a lava tube.

Lot 15 (TMK 2-1-12:15) contained three archaeological sites (T-7-9) including a possible ko'a, a platform, and a complex of terraces.

Approximate locations are plotted on the attached map. Portions of the project parcels were found to be previously impacted by ground-disturbing activities including grubbing, road-grading, and bulldozed clearings. The central portion of MF-9 is currently being bulldozed.

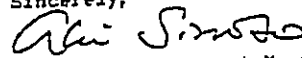
Due to dense vegetation cover, some remains may have been missed. Recommendations for further work as well as more detailed descriptions will be included in the final report. Below are some initial recommendations.

All of the sites described above is considered significant based upon Criterion D of the National Register Significance Evaluation Criteria which states that the sites have yielded or have the potential to yield data significant to the history or prehistory of the region.

Thus, further archaeological work consisting of intensive survey and subsurface testing will be recommended for appropriate sites to determine extent, function, and chronology of subsurface and surface archaeological resources. Contingent on the results of the intensive survey phase, recommendations will be presented for further work at sites warranting in situ preservation, intensive data recovery (salvage), and monitoring during construction activities.

If you have any comments or questions, please contact me or Paul Cloghorn at 848-4126/-4189.

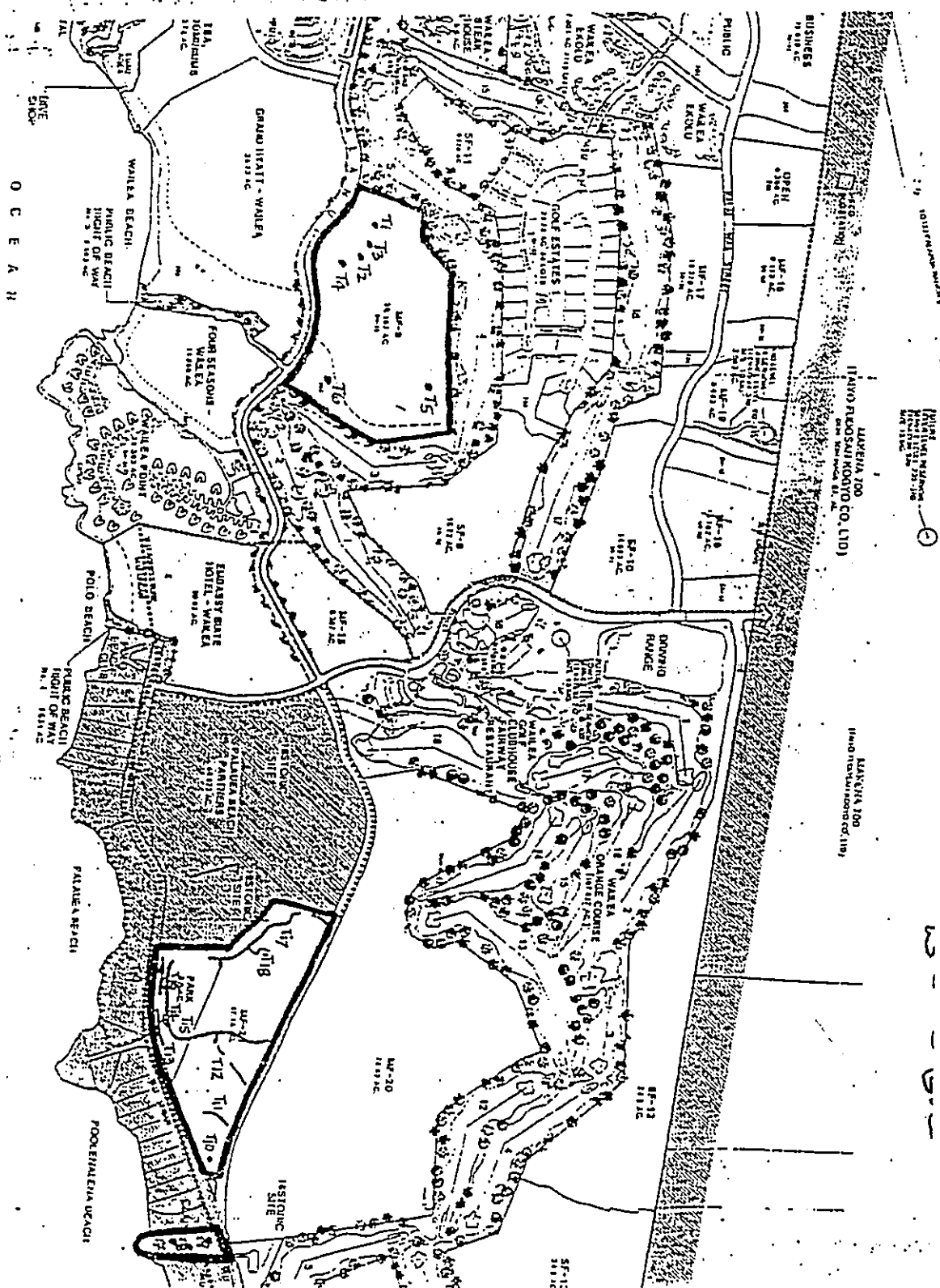
Sincerely,


Aki Sinoto, Contract Manager
Public Archaeology Section
Applied Research Group

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APPENDIX H
Cultural Impact Assessment Report

SCS Project 462-CIA-1


**A CULTURAL IMPACT ASSESSMENT OF
THE PROPOSED DEVELOPMENT OF 30 ACRES IN
THE WAILEA RESORT,
PAEAHU AHUPUA'A, MAUI ISLAND,
HAWAII
[TMK 2-01-08:119]**

Prepared by:
Leann McGerty, B.A.
And
Robert L. Spear, Ph.D.
May 2004

Prepared for:
Chris Hart and Partners
1955 Main Street
Wailuku, HI 96793

Draft Report Pending Informant Responses

SCIENTIFIC CONSULTANT SERVICES Inc.

A stylized map of the Hawaiian Islands, showing the main islands of Hawaii, Maui, and Oahu, rendered in a dotted or stippled pattern.
711 Kapiolani Blvd. Suite 975 Honolulu, Hawaii 96813

ABSTRACT

Scientific Consultant Services, Inc. (SCS) has been contracted by Chris Hart and Partners, Inc. to conduct a Cultural Impact Assessment on the proposed development of 30 acres in the Wailea Resort, Maui (TMK: 2-01-08:119). Plans for this parcel includes proposed development of 144 apartment condominiums. Individuals and/or groups having knowledge of traditional practices and beliefs associated with a project area or knowing of historical properties within a project area were sought for consultation. Initial contact was made with the Office of Hawaiian Affairs on O'ahu, the OHA Community Resource Coordinator on Maui, Central Maui Hawaiian Civic Club, a Cultural Resource Planner in the Maui Planning Department, the Wailea Community Association, and the Kīhei Community Association. Based on community response, archival research, and alterations to the land occurring from historic activities, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by renovations on Parcel 119. Because there were no activities identified, there are no adverse effects.

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INTRODUCTION

Scientific Consultant Services, Inc. (SCS) has been contracted by Chris Hart and Partners, Inc. to conduct a Cultural Impact Assessment on the proposed development of 30 acres in the Wailea Resort, Paeahu Ahupua`a, Maui [TMK: 2-01-08:119](Figure 1). Plans for this parcel include proposed development of 144 apartment condominiums.

A Cultural Impact Assessment involves evaluating the probability of negative impact on cultural values and rights within the project area and its vicinity. According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC, 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs.

Act 50, enacted by the Legislature of the State of Hawaii (2000) with House Bill 2895, relating to Environmental Impact Statements, proposes that:

...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights...[H.B. NO. 2895].

The purpose of Act 50 is to require that Environmental Impact Statements include an assessment of any impact on the cultural practices of the community and state. It also amends the definition of 'significant effect' to include adverse effects on cultural practices. Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Impact Statement and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or ahupua`a" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice. The discussion resulted in the following workable definition for cultural practices:

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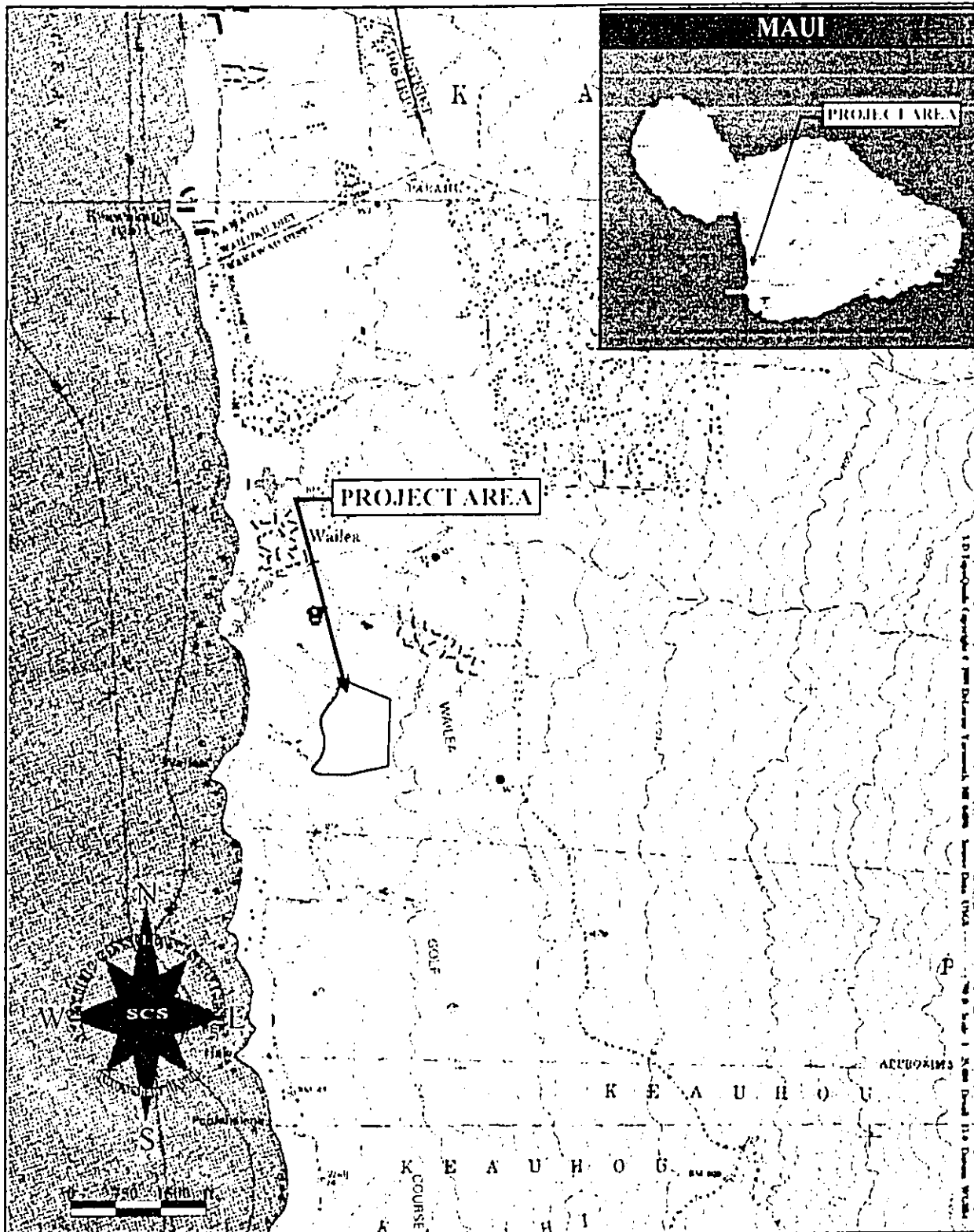


Figure 1: USGS Makena Quad Showing Project Area Location.

1.) A traditional cultural practice that is being conducted [at present]

2.) Traditional, beliefs, practices, life ways, societal, history of a community and its traditions, arts, crafts, music, and related social institutions [Act 50, Cultural Impact Assessment 2001].

METHODOLOGY

This Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the *Guidelines for Assessing Cultural Impacts* (OEQC 1997). This report contains archival and documentary research, as well as consultation with individuals or organizations with knowledge of the project area, its cultural resources, and its practices and beliefs. Based on this research, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

CONSULTATION

Individuals and/or groups having knowledge of traditional practices and beliefs associated with a project area or knowing of historical properties within a project area were sought for consultation. Individuals who had particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area were invited to share their relevant information. Initial contact was made with the Office of Hawaiian Affairs on O'ahu, the OHA Community Resource Coordinator on Maui, Central Maui Hawaiian Civic Club, a Cultural Resource Planner in the Maui Planning Department, the Wailea Community Association, and the Kīhei Community Association.

PROJECT AREA AND VICINITY

The project area consists of a parcel of land totaling approximately 30 acres situated within the Wailea Resort on the southern end of the Kīhei-Mākena region of Maui (Figure 2). Specifically, the site is located on the *mauka* side of Wailea Alanui Drive in the vicinity of the Grand Wailea Hotel and Spa and the Four Seasons Hotel at the Wailea Resort. The parcel is presently vacant containing *kiawe* trees and shrub vegetation. A limited network of paved and

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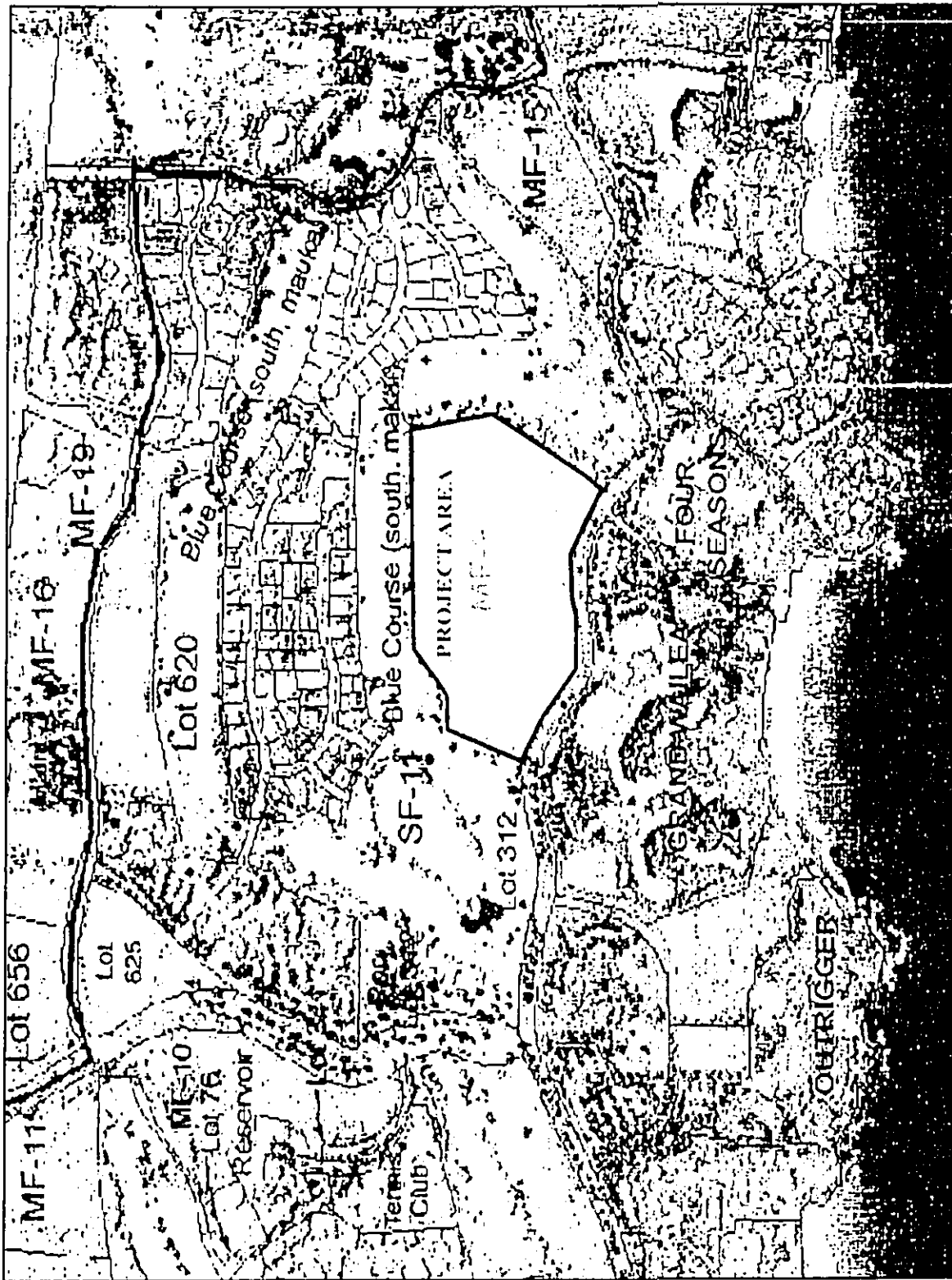


Figure 2: Planview Map of Project Area (from Chris Hart and Partners: 2004).

unpaved roads have been established on the property, as the site was temporarily used as a construction staging area during the hotel development activities that occurred to the west. Such activities have seriously altered the integrity of the area as a place of traditional Hawaiian significance.

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha`ōhia, during the time of the *ali`i* Kaka`alaneo (Beckwith 1940:383; Fornander places Kaka`alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919-20, Vol. 6:248]). Land was considered the property of the king or *ali`i`ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i`ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*) which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili`āina* or *`ili* were smaller land divisions next in importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (*ibid*:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa`āina* residing in a *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located within the old district of Honou`ula (presently known as the Makawao District) in the *ahupua`a* of Paeahu, which literally translated means "row [of] heaps", and was traditionally part of the "Waile`a lands", consisting of the *ahupua`a* of Paeahu, Palauea, Keauhou, Kalihi, Waipao, and Papanui (Pukui *et al.*:173; Barrère 1975:30).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled

in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *u`ala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (A.D. 1200–1400, Kirch 1985). According to Handy, in the 1940s in Mākena just south of the project area, there was “a small community of native fishermen who from time to time cultivate small patches of potatoes when rain favors them.” He writes:

For fishing, this coast is the most favorable on Maui...I think it is reasonable to suppose that the large fishing population which presumably inhabited this leeward coast ate more sweet potatoes than taro with their fish... Formerly, before deforestation of the uplands, it is said that there was ample rain in favorable seasons for planting the sweet potato, which was the staple here. A large population must have lived at Makena in ancient times for it is an excellent fishing locality, flanked by an extensive area along shore and inland that was formerly very good for sweet potato planting and even now is fairly good, despite frequent droughts... [1940:159].

North of the project area in vicinity of Kīhei, some of the most important royal fishponds had been constructed. Their origin is lost in antiquity, but rebuilding and repairing occurred as early as the reign of Pi`ilani in the 1500s and continued to the reign of Kekaulike (AD 1700s; Cordy 2000). These ponds provided fish for Kamehameha I and were still functioning in historic times. Wilcox noted that prisoners were sent from Kaho`olawe to repair its walls in the 1800s (1921).

WESTERN CONTACT

Early records, such as journals kept by explorers, travelers and missionaries, Hawaiian traditions that survived long enough to be written down, and archaeological investigations have assisted in the understanding of past cultural activities. Unfortunately, early descriptions of this portion of the Maui coast are brief and infrequent. Captain King, Second Lieutenant on the *Revolution* during Cook's third voyage briefly described what he saw from a vantage point of “eight or ten leagues” (approximately 24 miles) out to sea as his ship departed the islands in 1779 (Beaglehole 1967). He mentions Pu`u Ōla`i

and enumerates the observed animals, thriving groves of breadfruit, the excellence of the taro, and almost prophetically, says the sugar cane is of an unusual height. Seen from this distance and the mention of breadfruit suggest the uplands of Kīpahulu-Kaupo and 'Ulupalakua were his focus.

In the ensuing years, LaPérouse (1786), Nathaniel Portlock and George Dixon, (also in 1786), sailed along the western coast. LaPérouse was the first recorded European to set foot on Maui south of the project area at Keoni'ō'io. His impressions of the leeward coast left no doubt as to its inhospitable environment:

The Indians of the villages of this part of the island hastened alongside in their canoes, bringing, as articles of commerce, hogs, potatoes, bananas, roots of arum, which the Indians call *taro*, with cloth and some other curiosities making part of their dress...I had no idea of a people so mild and so attentive...It was so late before our sails were handed, that I was obliged to postpone going on shore at this place till the next day...but we had already observed, that this part of the coast was altogether destitute of running water, the slope of the mountains having directed the fall of all the rains towards the weather side...

The soil of this island is entirely formed of decomposed lava, and other volcanic substances. The inhabitants have no other drink but a brackish water, obtained from shallow wells, which afford scarcely more than half a barrel a day. During our excursion we observe four small villages of about ten or twenty houses each, built and covered with straw in the same manner as those of our poorest peasants. [Barrère 1786:13-18]

Archibald Menzies, a naturalist accompanying Vancouver stated, "...we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited" (Menzies 1920:102). According to Kahekili, then chief of Maui, the extreme poverty in the area was the result of the continuous wars between Maui and Hawai'i Island causing the land to be neglected and human resources wasted (Vancouver 1794:856).

THE MĀHELE

In the 1840s a drastic change in the traditional land tenure resulted in a division of island lands and a system of private ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian society to that of a market economy (Daws 1968:111; Kuykendall Vol. I, 1938:145 footnote 47, 152, 165-6, 170; Kame'eleihiwa 1992:169-70, 176).

Among other things, the foreigners demanded private ownership of land to insure their investments (Kuykendall Vol. I, 1938:138, 145, 178, 184, 202, 206, 271; Kame`eleihiwa 1992:178; Kelly 1998:4). Once lands were made available and private ownership was instituted, native Hawaiians including the *maka`ānana* (commoners) were able to claim the plots they were cultivating and living on, if they had been made aware of the foreign procedures (*kuleana* lands, LCAs). This land division, or Māhele, occurred in 1848. The awarded parcels were called Land Commission Awards (LCA). If occupation could be established through the testimony of witnesses, the petitioners were issued a Royal Patent number and could then take possession of the property (Chinen 1961:16). Fifteen LCAs were claimed in the *ahupua`a* of Paeahu (twelve were awarded), however, none of these were located on or near the present project area (Waihona `Aina Data Base 2000).

ʻPaeahu Ahupua`a was originally given to Moses Kekuaiwa who returned it to the King, Kauikeaouli (Kamehameha III), who assigned it to the government. As government land, it could be sold, but was still subject to the rights of the native tenants. Land use in Paeahu based on the Māhele records is discussed in length in Barrère 1975. Briefly, in 1836, the *konohiki* (land agent) for Paeahu was Pikanele. He managed the lands for his chief, Hoapilikane. In turn, Pikanele appointed Ainua, who resided on the Paeahu lands, to be his agent (*luna*), and, who in turn, allowed others to receive lands, through the grace of Pikanele. All these lands were primarily *mauka*, above the old road to Kula and were used to grow Irish potatoes. In 1850, the governor of Maui, James Young Kānehoa, (the son of John Young, adviser to Kamehameha I), stopped the further planting on unoccupied lands. Governor James Young Kānehoa purchased 4,879 acres of Paeahu in 1851. The same year, Kānehoa sold the land to Warren Goodale, resulting the loss of many *kuleana* plots. Goodale retained title until 1862 when he sold 4,445 acres to James Austin. In 1864, Austin sold the land to James Makee of `Ulupalakua Ranch. Makee used his land for cattle and sugar can cultivation for many years. In 1883 the last sugar crop was milled at the `Ulupalakua mill and the fields used for cattle pasturage. Wailea remained within the ranch until a shift in economic strategy began in the 1970s, when its coastal region underwent rapid and prolonged development for residential and commercial projects, as well as a large complex of hotels, recreational facilities, shops, and restaurants. An important part of the Wailea development was the assurance that they would allow and provide public access to the beaches along the coast for visitors and Maui residents (Clark 1980).

CULTURAL ASSESSMENT

Individuals and organizations, including the Office of Hawaiian Affairs on O'ahu, the OHA Community Resource Coordinator on Maui, Central Maui Hawaiian Civic Club, a Cultural Resource Planner in the Maui Planning Department, the Wailea Community Association, and the Kīhei Community Association Department were contacted by SCS in order to obtain information concerning cultural activities occurring at or in the vicinity of Parcel 119. None of the individuals and/or groups who responded had any cultural information pertaining to the project area.

Based on community response, archival research, and alterations to the land occurring from historic activities, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by renovations on Parcel 119. Because there were no activities identified, there are no adverse effects.

REFERENCES

- Barrère, Dorothy
1975 *Waile`a: Waters of Pleasure for the Children of Kama*. Bernice P Bishop Museum. Ms. Report 090474. Honolulu.
- Beaglehole, J.C. (Ed.)
1967 *The Journals of Captain Cook on his Voyages of Discovery*. Vol. 3. *The Voyage of the Resolution and Discovery*. Cambridge University Press for Haklyut Society.
- Chinen, Jon
1961 *Original Land Titles in Hawaii*. Copyright 1961 Jon Jitsuzo Chinen. Library of Congress Catalogue Card No. 61-17314.
- Clark, John
1980 *The Beaches of Maui County*. A Kolowalu Book, University Press of Hawaii: Honolulu.
- Cordy, Ross
2000 *Exalted Sits the Chief*. Mutual Publishing: Honolulu.
- Daws, G.
1968 *Shoal of Time: History of the Hawaiian Islands*. University of Hawai'i Press. Honolulu.
- Fornander, Abraham
1969 *An Account of the Polynesian Race, Its Origins and Migrations*. Vol. 1 to 3. Charles E. Tuttle Co. Inc.: Jutland.
1919 *Hawaiian Antiquities and Folklore*. Bishop Museum Press: Honolulu.
- Handy, E.S. Craighill
1940 *The Hawaiian Planter*. Bishop Museum Press. Honolulu.
- Kamakau, Samuel
1964 *Ka Po`e Kahiko*. *Bishop Museum Special Publication 51*. Honolulu.
- Kame`eleihiwa, Lilikalā
1992 *Native Land and Foreign Desires: Pehea La E Pono Ai?* Bishop Museum Press. Honolulu.
- Kelly, Marion
1983 *Nā Māla o Kona: Gardens of Kona*. Dept. of Anthropology Report Series 83-2. Bishop Museum. Honolulu.

- 1998 "Gunboat Diplomacy, Sandalwood Lust and National Debt" In *Ka Wai Ola o OHA*, Vol. 15, No. 4, April 1998.
- Kirch, Patrick
 1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. University of Hawaii Press, Honolulu.
- Kirch, Patrick V. and Marshall Sahlins
 1992 *Anahulu*. Vol. 1 and 2. University of Chicago Press. Chicago.
- Kuykendall, R.S.
 1938 *The Hawaiian Kingdom*. Vol. 1. University of Hawai'i Press. Honolulu.
- Lucas, Paul F. Nahoia
 1995 *A Dictionary of Hawaiian Legal Land-terms*. Native Hawaiian Legal Corporation. University of Hawai'i Committee for the Preservation and Study of Hawaiian Language, Art and Culture.. University of Hawai'i Press.
- Lyons, C.J.
 1875 "Land Matters in Hawaii". *The Islander*, Vol. I. Honolulu.
- Menzies, Archibald
 1920 *Hawaii New, 128 Years ago*. W.F. Wilson, ed. New Freedom Publishers: Honolulu.
- OEQC (Hawaii State Office of Environmental Quality Control)
 1997 "Guidelines for Assessing Cultural Impacts." Adopted by the Environmental Council, November 1997
- Pukui, Mary Kawena, Samuel Elbert, Esther Mookini
 1974 *Place Names of Hawaii*. University of Hawai'i Press: Honolulu.
- Vancouver, George
 1984 *A Voyage of Discovery to the North Pacific Ocea and Round the World 1791-1795*. Kaye Lamb, ed. The Hakluyt Society. Cambridge University Press: London.

APPENDIX H.1
Preservation Plan For Site 5517

Aug-25-04 03:04pm

From-DEPT OF PLANNING COUNTY OF MAUI

808-242818

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LINDA LINDLE
GOVERNOR OF HAWAII



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COUNTY OF MAUI
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. OZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 19, 2004

Robert Rechtman, Ph.D.
Rechtman Consulting
HC 1 Box 4149
Kaa'au, Hawaii 96749

LOG NO: 2004.2548
DOC NO: 0408MK12

Dear Dr. Rechtman,

**SUBJECT: Chapter 6E-42 Historic Preservation Review - Site Preservation Plan
30 Acre Parcel (MF-9) Within the Wailea Development Area
Paaahu Ahupua'a, Makawao District, Maui
TMK (2) 2-1-08: por 42**

Thank you for the opportunity to review this preservation plan which was received at our office on July 2, 2004 (Rechtman and Kasberg 2004, *Archaeological Preservation Plan for SIHP Site 5517 [TMK 2-2-1-08: por.42] Paaahu Ahupua'a, Makawao District, Island of Maui*. Rechtman Consulting, LLC). We have previously reviewed and accepted an archaeological inventory survey report (Log2004.1345/Doc 0404MK13).

During the inventory survey two historic properties were identified. SIHP 50-50-14-5516 consists of ten C-shape features that were interpreted as World War II era military training features. We concurred with the interpretation, given the absence of surface materials, the construction method, and the orientation of the C-shapes facing each other across the drainage. The second site, SIHP 50-50-14-5517 consisted of a precontact overhang shelter with associated petroglyphs. We concurred that this site is significant under Criteria "D" and "E", and agreed with the mitigation commitment for preservation. This preservation plan addresses the preservation of this site.

Short term interim protection measures detailed in the plan indicate that a protective barrier will be placed across the *makai* end of the drainage in which Site 5517 is located. Additionally, construction crew will be informed as to the significance of the area.

Please revise interim protection measures to the following:

- 1) Indicate that orange construction fencing will be placed along the top of the drainage, in the vicinity of the proposed permanent buffer zone, during all construction activities.
- 2) This placement must be verified in writing (and photos) to SHPD Maui.
- 3) That the site will be accurately plotted on all construction drawings.

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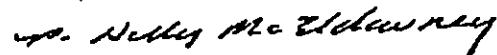
Robert Rechtman, Ph.D.
Page 2

Long term preservation measures will include the following:

- 1) A buffer "preservation easement", demarcated by the top of the drainage on both sides, and extending within the drainage for 20 feet on both ends of the site boundary.
- 2) No development will occur within the drainage, thus we concur that no impacts will occur to the site (which is an active floodway).
- 3) Removal of invasive vegetation will be conducted by hand, as will maintenance activities. Please revise page 14, paragraph 1 to indicate these activities will be done by hand, no heavy equipment will be allowed.
- 4) The proposed signage is acceptable. We note that the site is being preserved in a passive "as is" manner and no formal interpretation is necessary.
- 5) Litter removal is the responsibility of the property owner, and the preservation sites and buffers will be recorded on the property deed. Please revise the plan accordingly.

Once we receive the requested revisions, we can deem the plan adequate, and accept it as final; the above-mentioned revisions may be submitted to our O'ahu and Maui office in perforated replacement pages. If you have any questions, please contact Dr. Melissa Kirkendall at 243-5169.

Aloha,



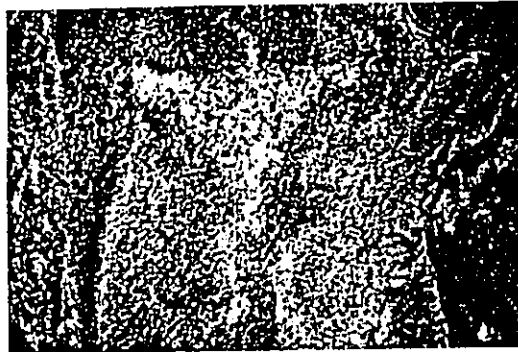
P. Holly McEldowney, Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Maui Cultural Resources Comm, Dept of Ping, 250 S. High Street, Wailuku, HI 96793

RC-0257

Archaeological Preservation Plan for SIHP Site 5517
(TMK:2-2-1-08:por. 42)



Paeahu Ahupua'a
Makawao District
Island of Maui

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ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

Archaeological Preservation Plan
for SIHP Site 5517

Paeahu Ahupua'a
Makawao District
Island of Maui



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INTRODUCTION

Rechtman Consulting, LLC completed an archaeological inventory survey (Clark et al. 2004) of a roughly 30-acre parcel referred to as MF-9, in the Wailea Development Area, Paeahu Ahupua'a, Makawao District, Island of Maui (TMK:2-2-1-08:por. 42) (Figure 1 and 2). As a result of the survey two archaeological sites were recorded; a complex of ten World War II era training features (SIHP Site 5516) and a Precontact rock shelter with associated petroglyphs (SIHP Site 5517). The significant research potential of SIHP Site 5516 had been exhausted and no further work was recommended. As a Precontact habitation area, SIHP Site 5517 is considered significant under Criterion D for the information it contains relative to indigenous settlement patterns and resource exploitation strategies. If any of the petroglyphs at the site are authentic, this site would be considered significant under Criterion E as well, because of the religious associations generally ascribed to such relics of the past. SIHP Site 5517 was recommended for preservation.

The development plans for the MF-9 parcel call for a multi-building condominium complex. When construction is completed management of the condominium complex will be turned over to homeowners association. This current document details the plans for preservation of SIHP Site 5517. The site is described below, followed by a presentation of the preservation approach. The location of SIHP Site 5517 is shown on Figure 3.

PRESERVATION PLAN

Summary of SIHP Site 5517

Site 5517 is a Precontact overhang shelter that consists of a primary living area with associated petroglyphs (Feature A), a secondary living area (Feature B), and a nearby collection of petroglyph panels that are located on a vertical rock face (Feature C). The site is located along the southern/western edge of a steeply sloped drainage in the southwestern portion of the project area approximately 50 meters *mauka* of the Wailea Alanui roadway (see Figure 3). The overhang that shelters the site measures approximately 50 meters long by up to 10 meters high, and 5 meters deep (Figures 4 and 5). Marine shell and urchin remains were scattered throughout the site area, but large concentrations occurred primarily in the living areas. Site 5517 was likely accessed by a rough path leading from north to south along the south edge of the drainage or up the center of the drainage itself. Precontact individuals likely resided at the site on a temporary basis, and most likely exploited the nearby marine resources.

In regards to the petroglyphs located at Features A and C, a personal communication with Lisa Hazuka-Rotunno (February 19, 2004), who had previously conducted a reconnaissance of the study parcel (Hazuka-Rotunno and Pantaleo 1994), indicated that they could perhaps be modern. She did not remember seeing the petroglyphs at Site 5517 during her field visit, but she did relate that during a recent study she had conducted on a parcel to the north of the current study area (the report is currently in production), she had discovered petroglyphs within a gulch similar to the ones at Site 5517. It was determined that at least some of those petroglyphs, if not all of them, were recently created by a homeless man reportedly living in the area. Some of the petroglyphs at Site 5517 certainly seem to be of modern origin because they were lightly scratched with what appears to have been a fine tipped metal tool and many of them are unfinished or just barely started. Possibly all of the petroglyphs could be of modern origins. Sinoto (1989), even though he located the overhang shelter, did not mention the images during his reconnaissance survey of the study parcel.

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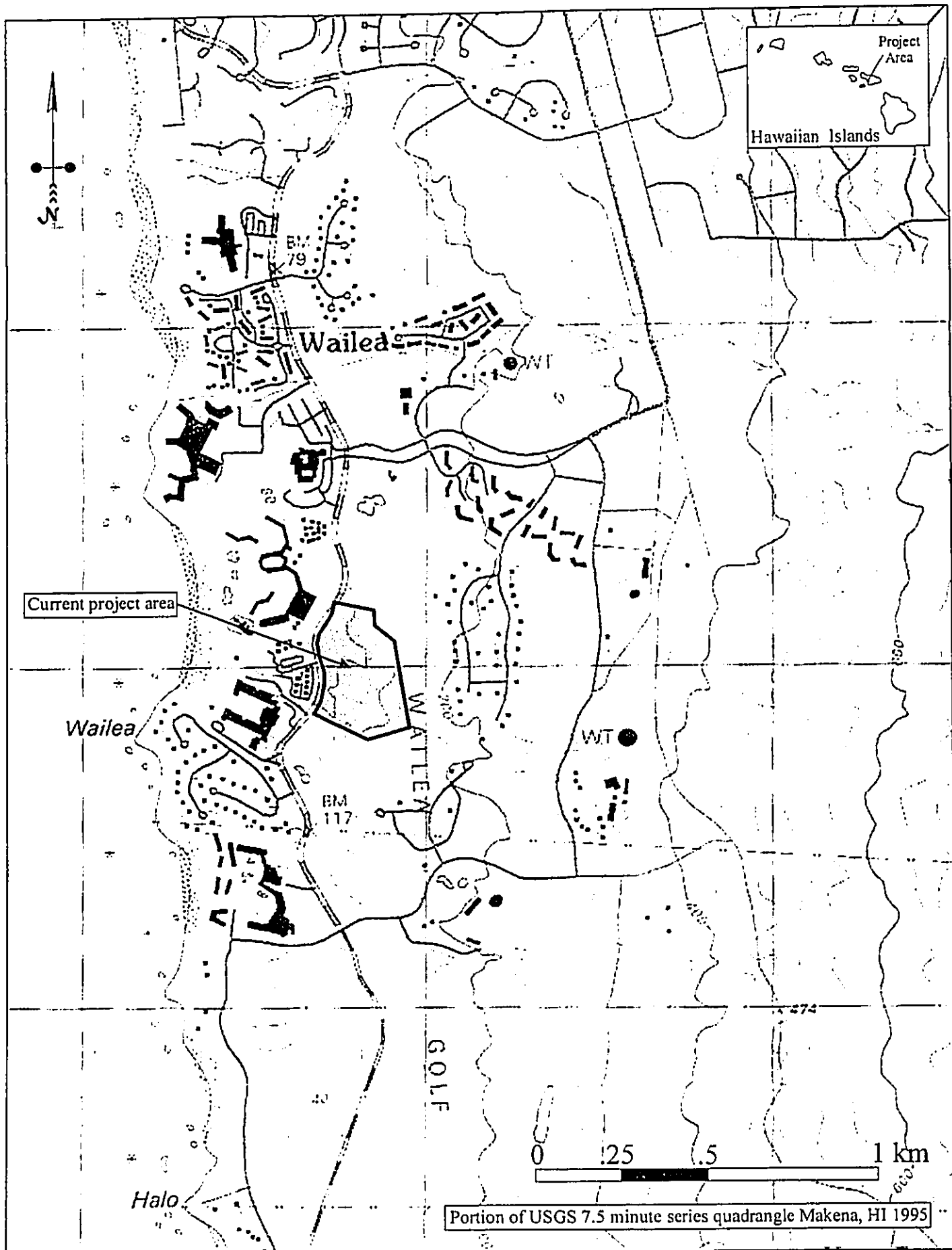


Figure 1. Project area location.

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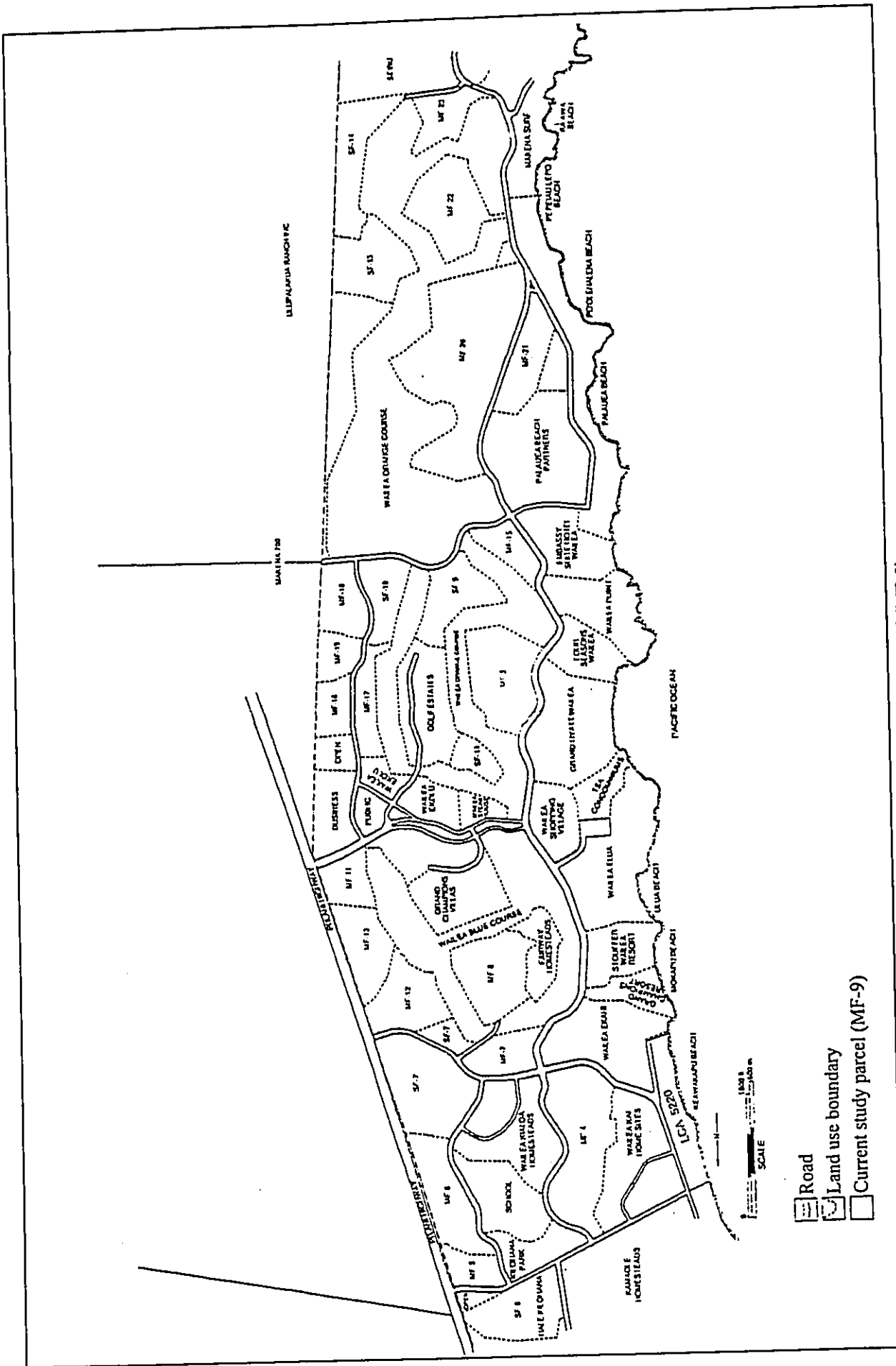


Figure 2. Map of the Wailea development area showing the location of the current study parcel (MF-9).

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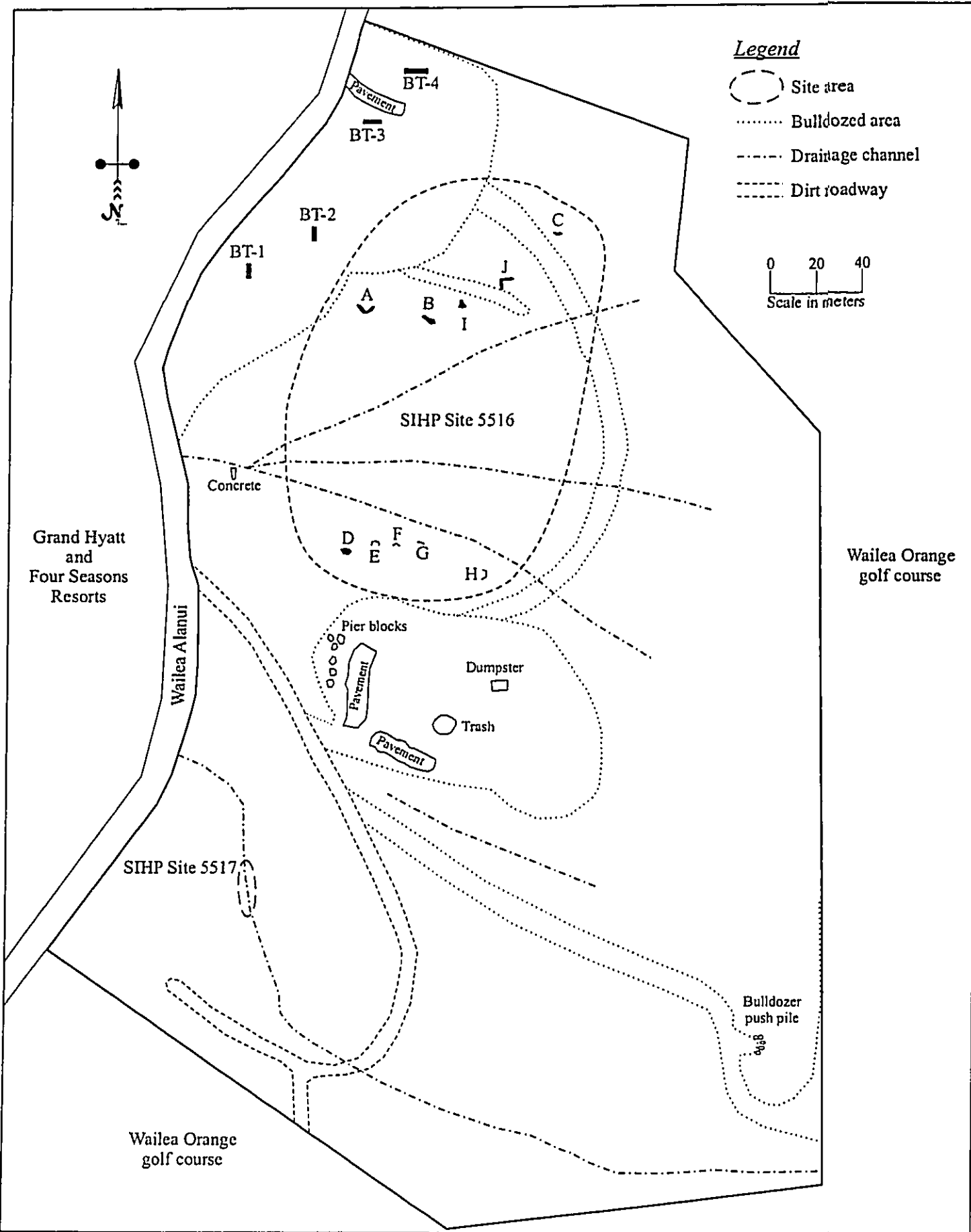


Figure 3. Project area plan view.

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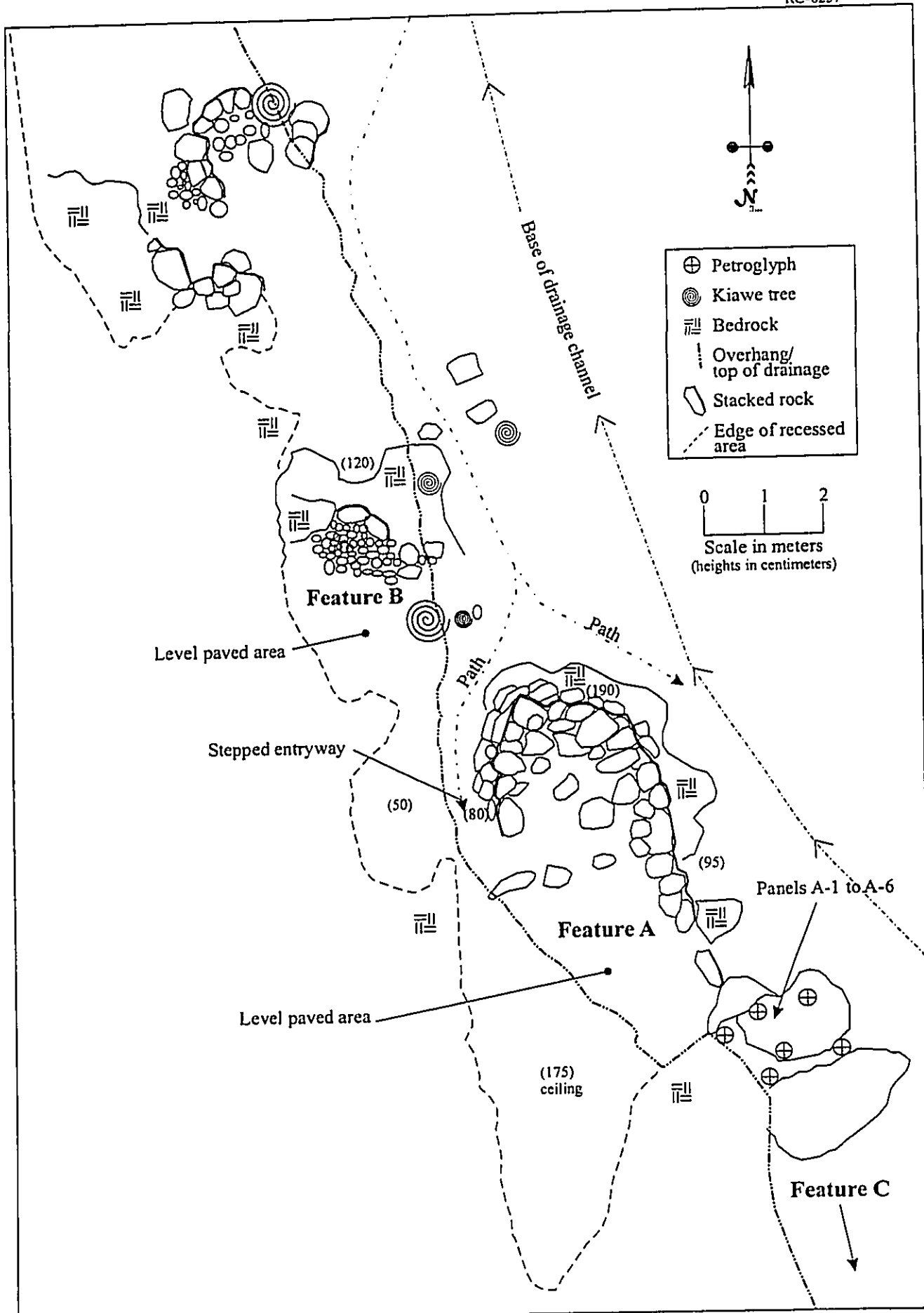


Figure 4. SIHP Site 5517 plan view.

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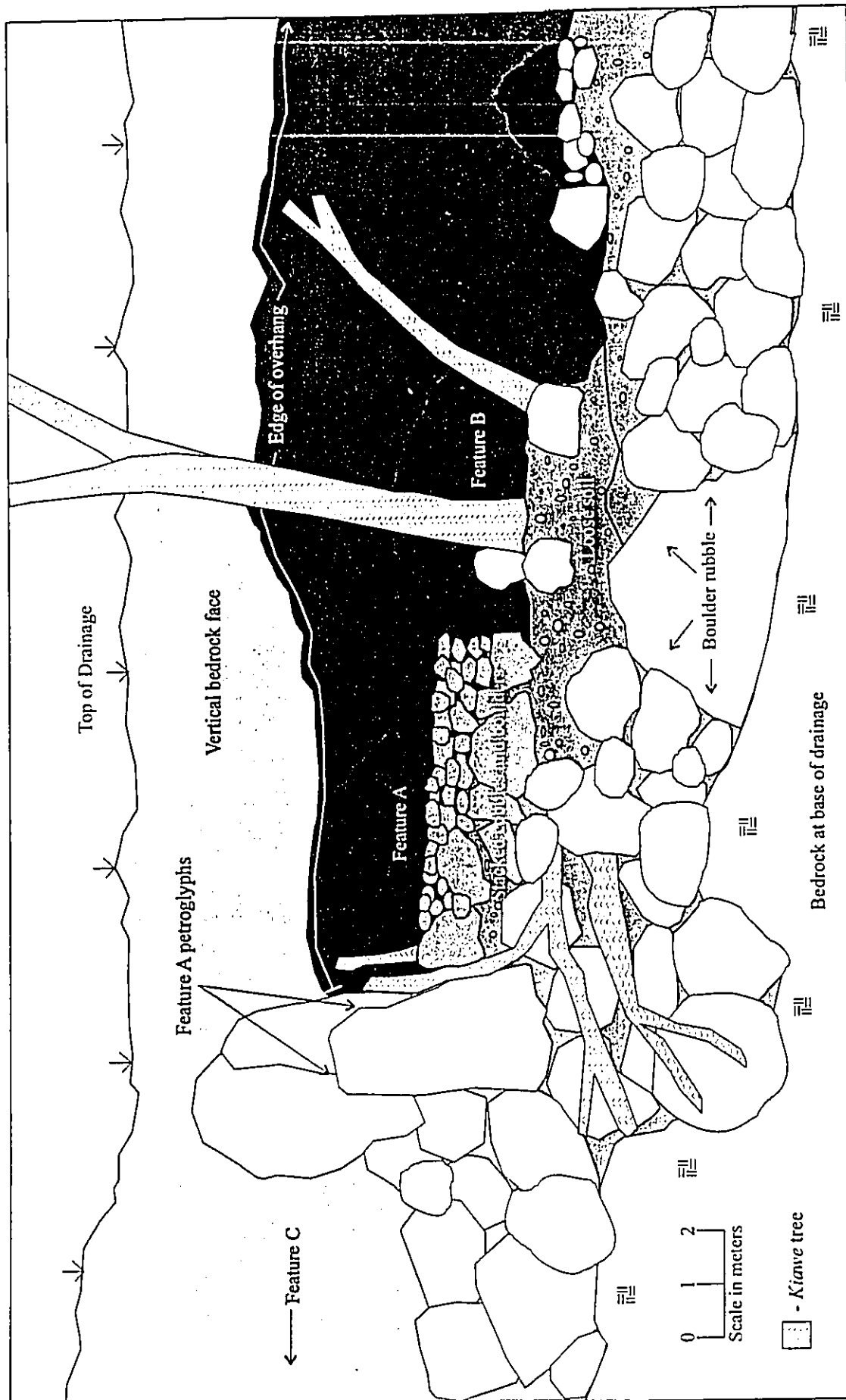


Figure 5. SIHP Site 5517, scaled profile drawing.

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Feature A is the main living area of Site 5517. It measures 8.0 meters long by 4.0 meters wide (see Figures 4 and 5). It is located approximately halfway between the base of the slope and the top of the drainage (Figure 6). The north and eastern edges of Feature A consist of a stacked wall (1.9 meters high), constructed of cobbles on top of boulders, and is terraced into the drainage slope. The top of the stacked terrace wall (to the south and west) has been leveled with small pebbles and soil. A stepped entryway is located in the northwest corner of the level area. In the southwest corner of Feature A is a recessed area that stands 1.75 meters from floor to ceiling and may have been excavated (at least partially) out of the drainage slope (Figure 7).

Six petroglyph panels are present on large boulders along the southern vertical face of Feature A. Four of the panels face the level floor of Feature A (Figures 8 and 9). They consist of two stick-figure anthropomorphs and a possible third image (Panel A-1; Figure 10), a very faint possible stick-figure anthropomorph (Panel A-2), a large partial stick-figure anthropomorph and some possible recent pecking/scratching perhaps done by vandals (Panel A-3; Figure 11), and several scratch marks that are too faint to interpret, which may also have been done by vandals (Panel A-4). Two panels are located within a small crevice area on the backside of the large boulders that contain the other four panels. These panels consist of a stick-figure anthropomorph (Panel A-5) and a partial triangular torso anthropomorph (Panel A-6; Figure 12).

Feature B is a small secondary living area located to the northwest of and below Feature A (see Figures 4 and 5). It measures approximately 3 meters wide by 2 meters deep, but is not as well constructed, nor as sheltered as Feature A (Figure 13). A large *kiawe* tree is growing out of the center of the living area. The front (north/east) edge of Feature B consists of natural boulders. The floor has been leveled with small cobbles and soil. The north edge stands 1.2 meters high including the outcrop. A possible third living area is located 3.5 meters northwest of Feature B. This area is extremely small (1.5 meters by 2.5 meters) and level.

Feature C is a series of thirteen petroglyphs panels (Table 1) scratched into a vertical bedrock face located to the southeast of Feature A (Figure 14), on the other side of a collapsed protrusion of large boulders that contains Panels A-1 to A-5. All but one of the panels contains anthropomorphic figures with triangular torsos. As noted earlier some of the scratching on the bedrock face appears to be modern, and perhaps all of the petroglyphs could be modern additions to Site 5517. The location of each petroglyph panel is shown on Figure 15 and the images themselves are shown in Figure 16.

Table 1 Petroglyph panels at SIHP Site 5517 Feature A.

Panel #	Description
C-1	Possibly modern scratching of a triangle form and circle.
C-2	Anthropomorph, triangular torso, muscular arms, pin head.
C-3	Two anthropomorphs with triangular torsos, the rest is unclear.
C-4	Three anthropomorphs: a large one with muscular limbs, a triangular torso, and helmet. Two smaller triangular torsos below.
C-5	Anthropomorph with a triangular torso.
C-6	Anthropomorph, triangular body, no head or arms.
C-7	Triangular scratching (possibly modern) with pecking in center.
C-8	Triangular body scratching (possibly modern).
C-9	Anthropomorph with a triangular torso.
C-10	Anthropomorph with a triangular torso.
C-11	Possible start of triangular body? Scratching above.
C-12	Anthropomorph with a triangular torso, very faint.
C-13	Possible legs of a former anthropomorph? Pecking near by.

RECEIVED AS FOLLOWS

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Figure 6. SIHP Site 5517 Feature A, view to southwest from the opposite side of the drainage.

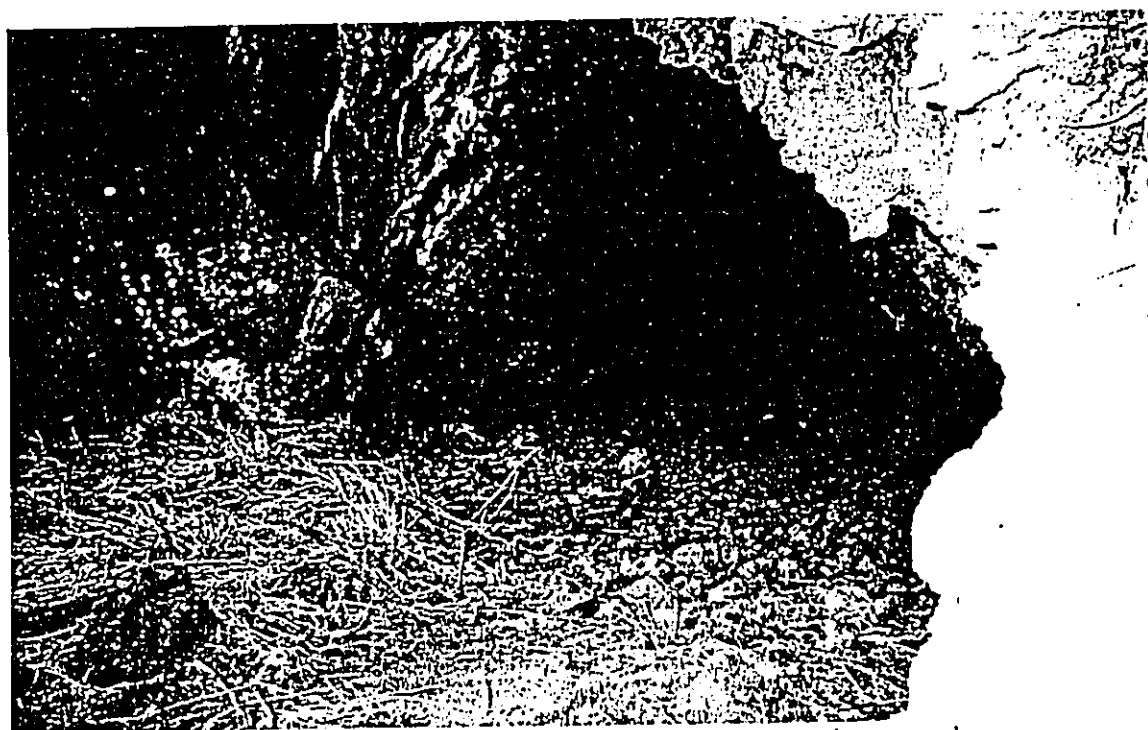


Figure 7. SIHP Site 5517 recessed area in southwest corner of Feature A, view to south.

RECEIVED AS FOLLOWS

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Figure 8. SIHP Site 5517 Feature A, Panels A-1 to A-4, view to southeast.

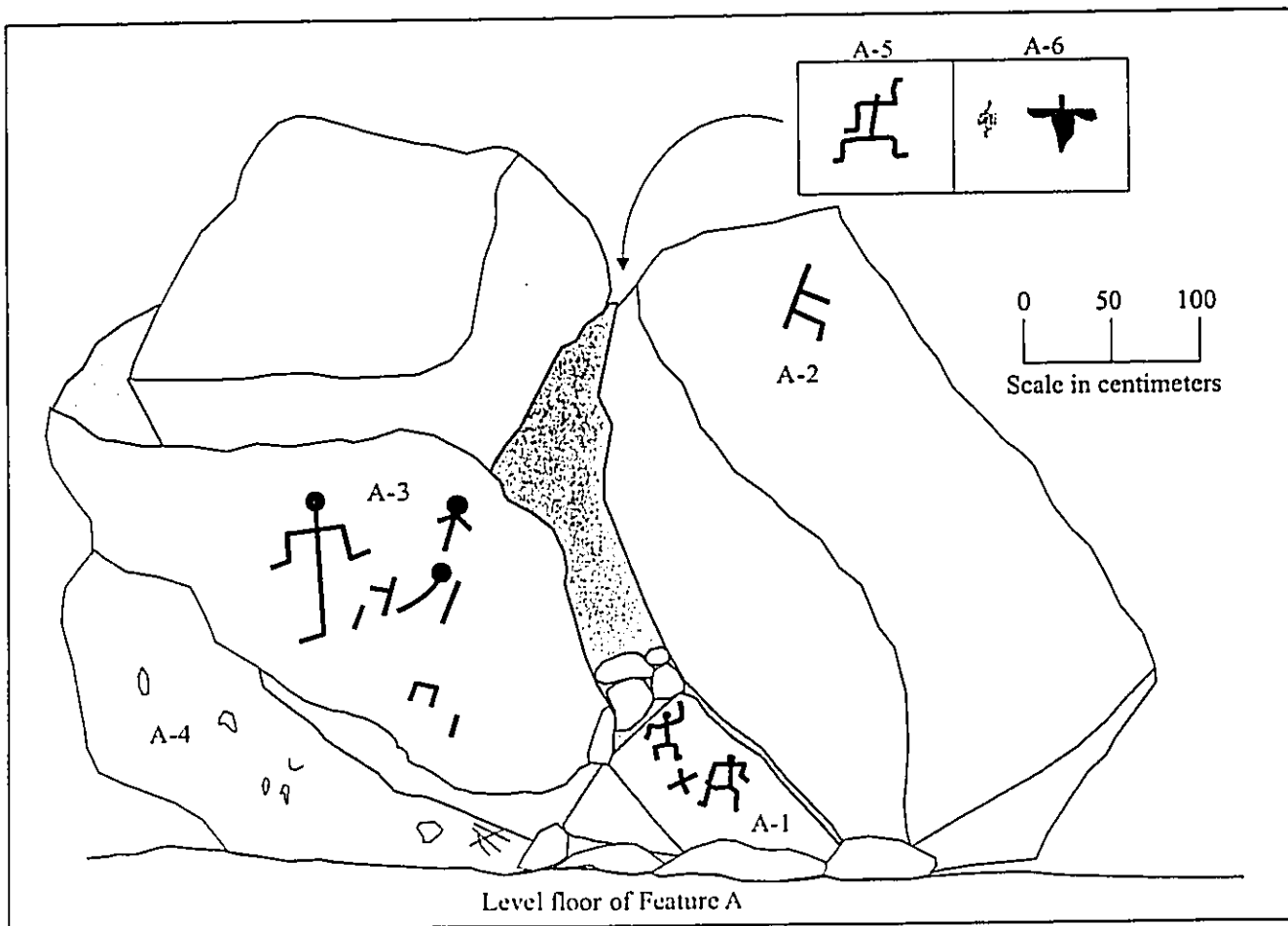


Figure 9. SIHP Site 5517, scaled drawing of Feature A petroglyphs panels.

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Figure 10. SIHP Site 5517 petroglyph Panel A-1.



Figure 11. SIHP Site 5517 Feature A petroglyph Panel A-3.

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Figure 12. SIHP Site 5517 petroglyph Panel A-5.



Figure 13. SIHP Site 5517 Feature B, view to south with Feature A in background.

RECEIVED AS FOLLOWS

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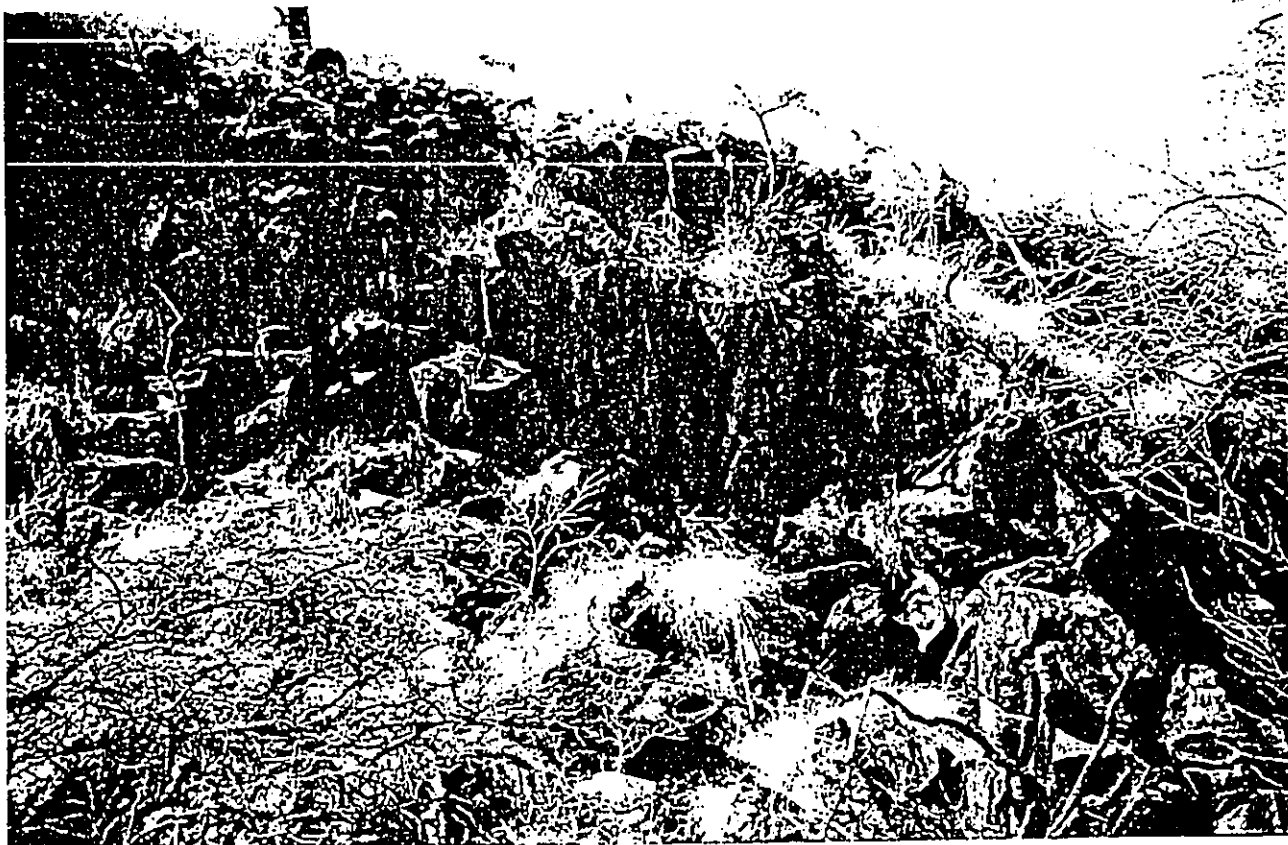


Figure 14. SIHP Site 5517 Feature C, vertical bedrock face, view to west.

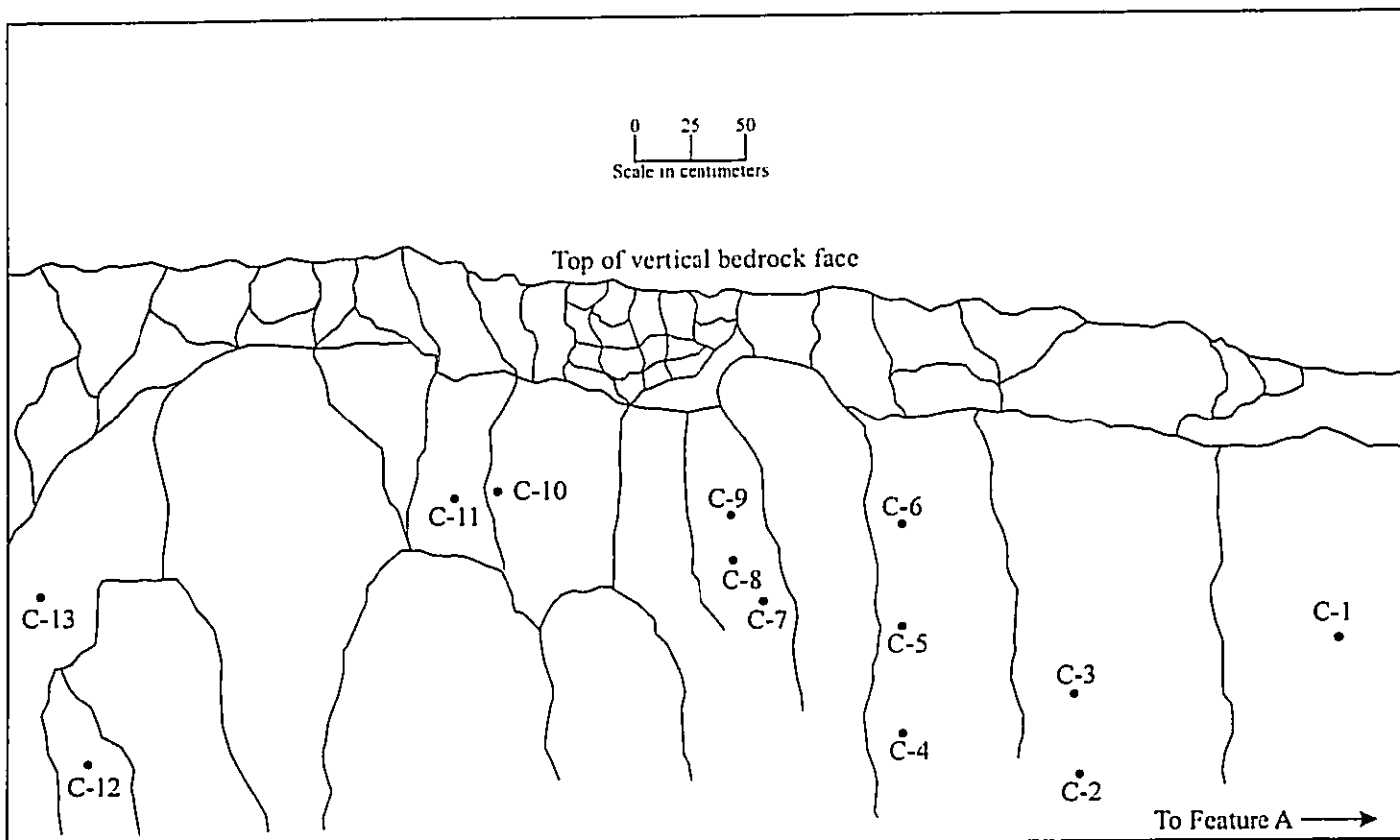


Figure 15. SIHP Site 5517 Feature C, location of petroglyph panels.

RECEIVED AS FOLLOWS

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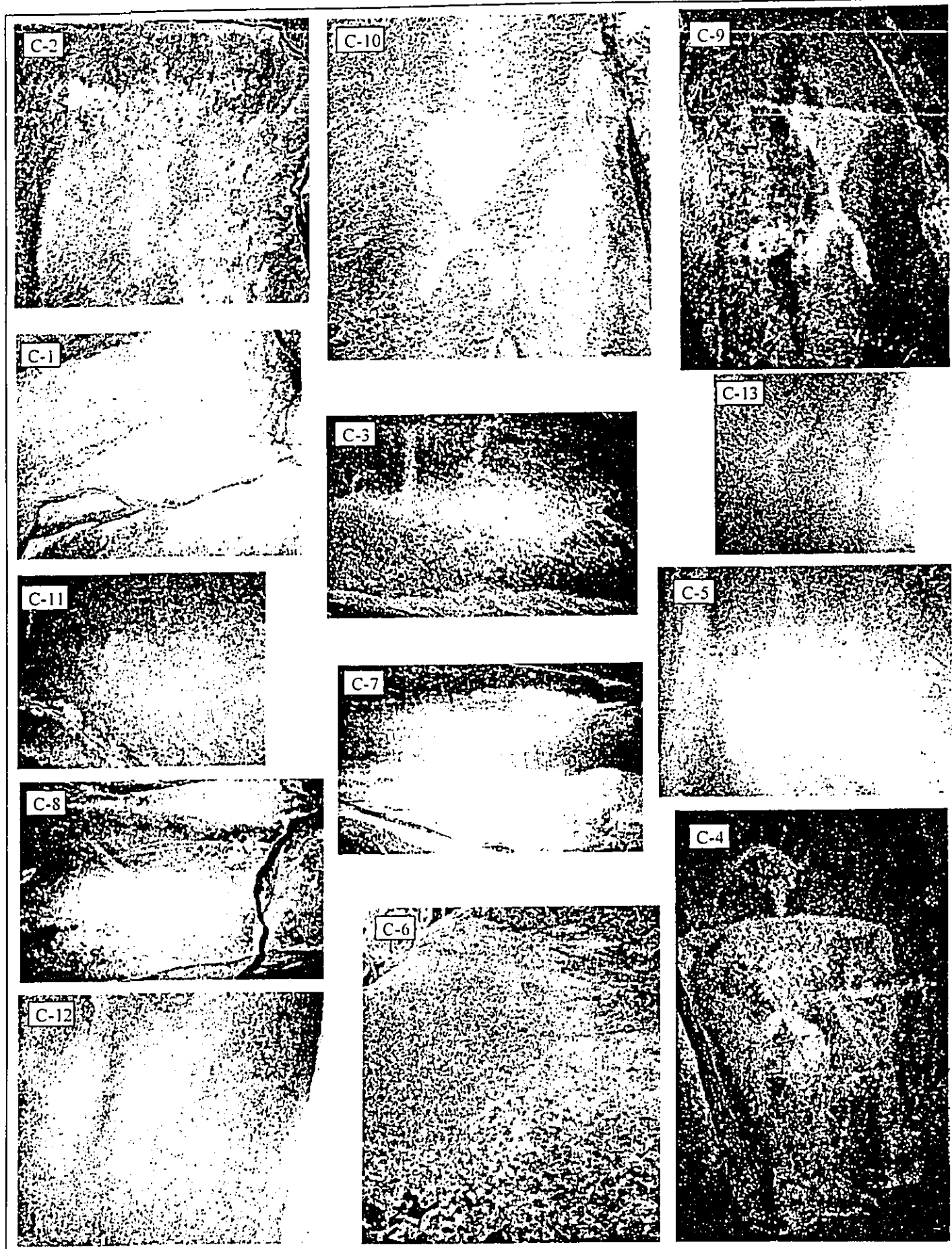
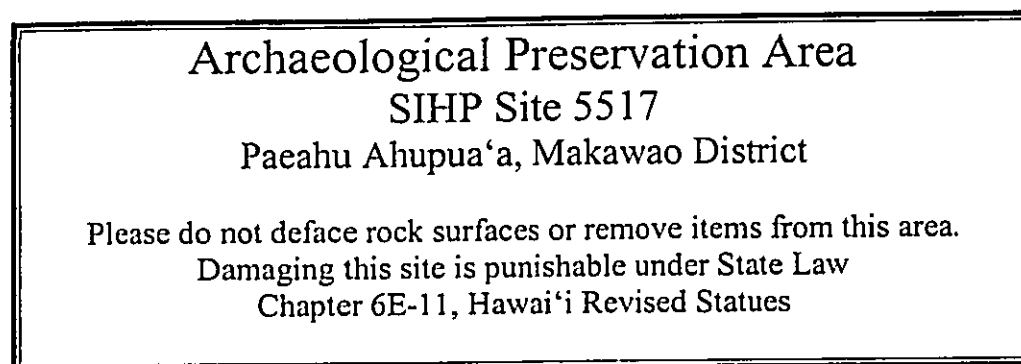


Figure 16. SIHP Site 5517 Feature C, petroglyph panels (various views).

Proposed Long Term Treatment of SIHP Site 5517

The preservation strategy for Site 5517 will be "avoidance and protection" (conservation). The recorded preservation easement will run along the top of either side the drainage that contains the site and extend within the drainage a distance of 20 feet beyond the site limits (Figure 17). However, the effective area of no development will be the entire drainage, extending well beyond the official preservation easement, as it is an active floodway. Except for the removal of invasive vegetation and periodic vegetation maintenance activities, the preservation area will not be subject to improvement. This site will not be interpreted for the public; however, a cautionary sign will be placed at the mouth of the drainage. The language on the sign will read as follows:



Interim Protection Measures

Prior to development activities on the property, a protective barrier will be placed across the *makai* end of the drainage that contains Site 5517. Additionally, avoidance instruction will be issued to all contractors working on the development and each contractor will be provided with a map showing the location of the preservation easement.

IMPLEMENTATION OF THE PRESERVATION PLAN

The current landowner/developer (Wailea MF-9 Associates, LLC) will legally establish the preservation easement and record this easement with the Bureau of Conveyances. Wailea MF-9 Associates, LLC will also erect the interim protective barrier across the *makai* end of the drainage. Once the development has been completed, the preservation responsibility will become that of the newly established homeowners association.

REFERENCES CITED

- Clark, M., Winburn, M., and Rechtman, R.
 2004 An Archaeological Inventory Survey of a 30-acre Parcel (MF-9) within the Wailea Development Area (TMK:2-2-1-08:por. 42), Paeahu Ahupua'a, Makawao District, Island of Maui. Rechtman Consulting Report RC-210. Prepared for Stephen A. Jiran, CMI Development, Inc., Makawao Hawai'i.
- Hazuka-Rotunno, L. and J. Pantaleo
 1994 An Archaeological Inventory Survey of the Proposed Wailea Shopping Village/Town Center Expansion Project, Paeahu Ahupua'a, Makawao District, Maui Island. Aki Sinoto Consulting (ASC94-7). Prepared for Wailea Resort Company, Ltd.
- Sinoto, A.
 1989 Post-field Summary of the Archaeological Survey of Parcels MF-9, MF-21, Park, and TMK 2-1-12:15. Bishop Museum Letter Report prepared for Mr. Clyde Murishige, Wailea Resort Company, Ltd.

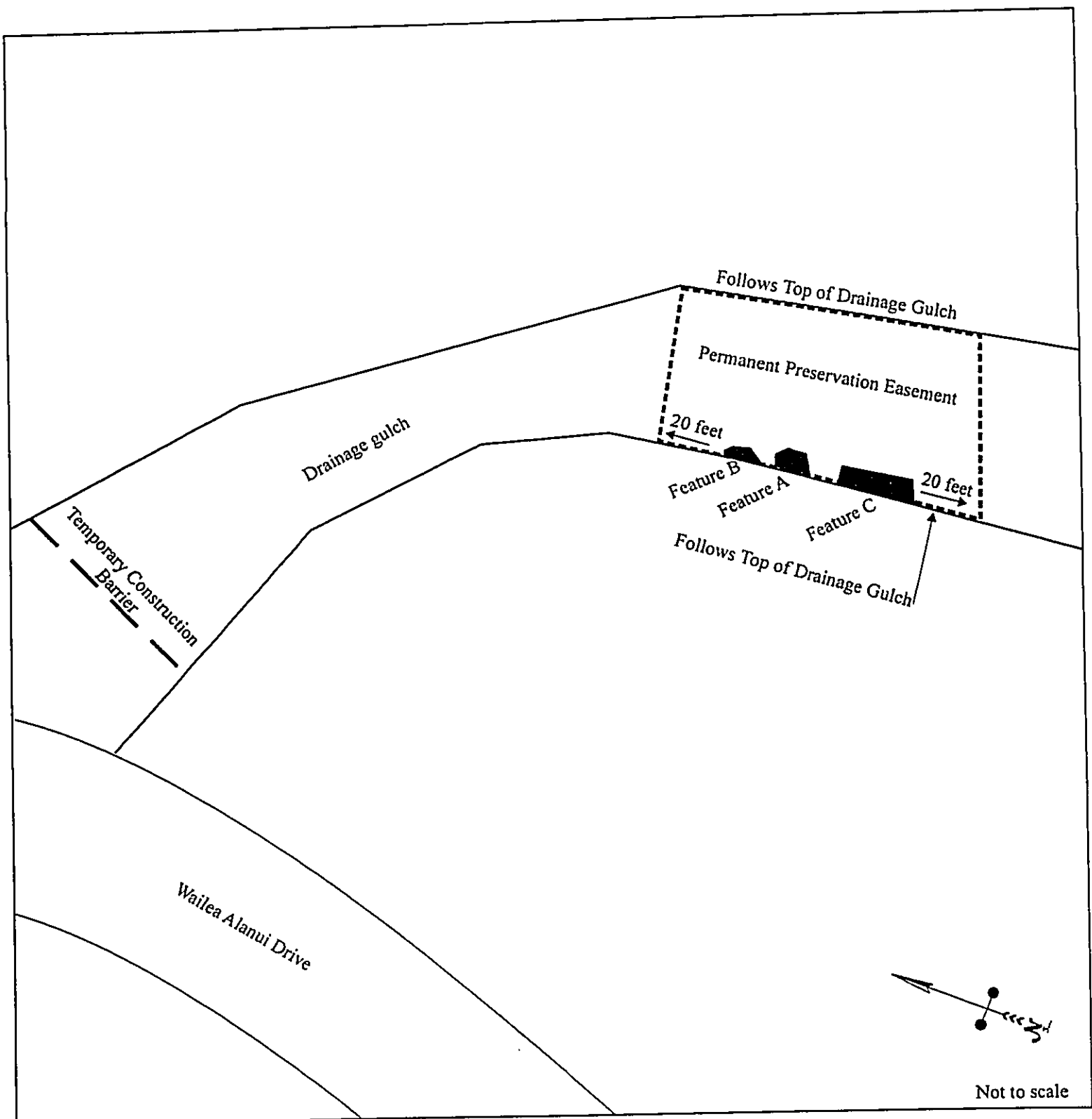


Figure 17. SIHP Site 5517 preservation easement.

APPENDIX I
Biological Resources Survey Report

BIOLOGICAL RESOURCES SURVEY

for the

WAILEA MF-9 PROJECT

WAILEA, MAUI, HAWAII

by

**ROBERT W. HOBODY
ENVIRONMENTAL CONSULTANT
Kokomo, Maui
March, 2004**

Prepared for: C M I DEVELOPMENT, INC.

**BIOLOGICAL RESOURCES SURVEY
WAILEA MF-9 PROJECT
WAILEA, MAUI HAWAII**

INTRODUCTION

The Wailea MF9 Project lies on an approximately 30 acre parcel of undeveloped land in central Wailea, South Maui. It's roughly 1500 foot lower boundary fronts the upper edge of Wailea Ala Nui Road and it is bounded on the top and sides by golf fairways of the Wailea Blue Course. It lies within the larger urban development complex as a component of the Wailea Master Plan.

SITE DESCRIPTION

The terrain within the project area is gently to moderately sloping and is dissected by four small gulches with elevations above sea level ranging from 184 feet at the top to 50 feet at the lowest point at the road. The area could be characterized as a semi-desert savannah. Rainfall averages only 10-20 inches per year with long hot summers (Armstrong, 1983). Soils are of the Makena Loam Stony Complex, slightly alkaline and about 40 inches deep with many surface and subsurface stones (Foote, et al. 1972).

BIOLOGICAL HISTORY

In pre-contact times this area would have supported a diverse dry forest/grassland with many species of native trees, shrubs, vines and grasses and a few seasonal herbs and ferns, as well as a complement of native birds and insects. We can still observe some of this diversity in relictual pockets of native vegetation in a few places between Kihei and Makena. This diversity of native species was drastically reduced by over a century of browsing and grazing by feral and domesticated herbivores, as well as by fire. Charred stumps within the project area indicate that at least a portion of the area has burned during the last few decades. Today the site is dominated by non-native plant and animal species.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Wailea MF-9 Project which was conducted in March, 2004.

The objectives of the survey were to:

1. Document what plant, bird and mammal species occur on the property or may likely occur in the existing habitat.
2. Document the status and abundance of each species.

3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.
4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.
5. Note which aspects of the proposed development pose significant concerns for plants or for wildlife and recommend measures that would mitigate or avoid these problems.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used following a route to ensure maximum coverage of the area. Areas most likely to harbor native or rare plants such as gulches or rocky outcroppings were more intensively examined. Notes were made on plant species, distribution and abundance as well as terrain and substrate.

DESCRIPTION OF THE VEGETATION

The vegetation across the entire project area is fairly uniform. It consists of an almost continuous cover of buffelgrass (*Cenchrus ciliaris*) with scattered kiawe trees (*Prosopis pallida*). The buffelgrass, following a wet winter season, was extremely dense and two to three feet deep, crowding out most other species. The kiawe trees are scattered throughout the whole area but sometimes form a closed canopy along gully bottoms. Some ridgetop areas where the buffelgrass is less dense support a variety of other herbaceous species many of which are ephemeral annuals in this dry locality. Some of the deeper gully bottoms have rock faces and ledges that support other species, but even in these habitats the buffelgrass is the most common species. Besides the dominant buffelgrass and kiawe only twelve other species were found to be common within the project area. Ten of these were herbaceous annual weeds while the other two were native short-lived perennials 'ilima (*Sida fallax*) and 'uhaloa (*Waltheria indica*).

DISCUSSION AND RECOMMENDATIONS

The vegetation throughout the project area is totally dominated by just two species, buffelgrass and kiawe that together comprise at least 95% of the biomass. Most of the rest of the fifty nine plant species are ephemeral annuals that all but disappear during the hot, dry summer and fall seasons.

A total of eight native plant species were found within the project area. All of these are common lowland species in Maui County. No officially listed threatened or endangered plants (U.S. Fish and Wildlife Service 2001) are found on the site, nor do any plants proposed as candidate for such status occur on the property.

No wetlands occur on the site. Nothing remotely approaching the three essential criteria that define a Federally recognized wetland, namely 1) hydrophytic vegetation 2) hydric soils and 3) wetland hydrology occur within this dry project area.

Because the vegetation on the site is dominated primarily by non-native plants and because there are no rare or protected native species within the project area, there is little of botanical concern and the proposed project is not expected to have a significant negative impact on the botanical resources.

It is recommended, however, that the deep rocky gully in the southwest corner of the parcel might be left in a natural state or even enriched with a few native species representative of this area to lend an interesting accent to the development project.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within each of three groups: Ferns, Monocots and Dicots. Taxonomy and nomenclature of the Ferns follow Palmer (2003); the flowering plants (Monocots and Dicots) are in accordance with Wagner et al. (1990).

For each species, the following information is provided:

1. Scientific name with author citation
2. Common English and/or Hawaiian name, when known.
3. Bio-geographic status. The following symbols are used:
 - endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.
 - indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
 - non-native = all those plants brought to the islands intentionally or accidentally after Western contact.
4. Abundance of each species within the project area:
 - abundant = forming a major part of the vegetation within the project area.
 - common = widely scattered throughout the area or locally abundant within a portion of it.
 - uncommon = scattered sparsely throughout the area or occurring in a few small patches.
 - rare = only a few isolated individuals within the project area.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status</u>	<u>Abundance</u>
FERNS			
NEPHROLEPIDACEAE (Sword Fern Family)			
<i>Nephrolepis exaltata</i> (L.) Schott <i>subsp. hawaiiensis</i> W.H. Wagner	'okupukupu	endemic	rare
PTERIDACEAE (Pteris Family)			
<i>Adiantum 'Edwinii'</i>	maidenhair fern cultivar	non-native	rare
<i>Doryopteris decipiens</i> (Hook.) J.Sm	kumuniu	endemic	rare
MONOCOTS			
POACEAE (Grass Family)			
<i>Cenchrus ciliaris</i> L.	buffelgrass	non-native	abundant
<i>Cynodon dactylon</i> (L.) Pers.	manienie	non-native	rare
<i>Dactyloctenium aegyptium</i> (L.) Willd.	beach wiregrass	non-native	rare
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	non-native	rare
<i>Eragrostis pectinacea</i> (Michx.) Nees	carolina lovegrass	non-native	common
<i>Panicum maximum</i> Jacq.	guinea grass	non-native	uncommon
<i>Setaria verticillata</i> (L.) P. Beauv.	bristly foxtail	non-native	rare
<i>Tragus berteronianus</i> Schult.	bertero goatgrass	non-native	uncommon
DICOTS			
AMARANTHACEAE (Amaranth Family)			
<i>Alternanthera pungens</i> Kunth	khaki weed	non-native	rare
<i>Amaranthus spinosus</i> L.	spiny amaranth	non-native	rare
<i>Amaranthus viridis</i> L.	slender amaranth	non-native	rare
APOCYNACEAE (Dogbane Family)			
<i>Cascabela thevetia</i> (L.) Lippold	be-still tree	non-native	rare
ASTERACEAE (Sunflower Family)			
<i>Ageratum conyzoides</i> L.	maile hohono	non-native	common
<i>Bidens pilosa</i> L.	spanish needle	non-native	rare
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	non-native	rare

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status</u>	<u>Abundance</u>
<i>Emilia fosbergii</i> Nicolson	red pualele	non-native	rare
<i>Galinsoga parviflora</i> Cav.	-----	non-native	rare
<i>Gnaphalium pupureum</i> L.	purple cudweed	non-native	rare
<i>Parthenium hysterophorus</i> L.	false ragweed	non-native	rare
<i>Sonchus oleraceus</i> L.	pualele	non-native	rare
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	non-native	rare
<i>Verbesina encelioides</i> (Can) Benth. & Hook.	golden crown beard	non-native	common
CACTACEAE (Cactus Family)			
<i>Opuntia ficus-indica</i> (L.) Mill	panini	non-native	rare
CHENOPODIACEAE (Goosefoot Family)			
<i>Chenopodium carinatum</i> R.Br.	-----	non-native	common
<i>Chenopodium murale</i> L.	aheahea	non-native	rare
CLUSIACEAE (Mangosteen Family)			
<i>Clusia rosea</i> Jacq.	autograph tree	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
<i>Ipomoea triloba</i> L.	little bell	non-native	rare
<i>Merremia aegyptia</i> (L.) Urb.	hairy merremia	non-native	common
CUCURBITACEAE (Gourd Family)			
<i>Cucumis dipsaceus</i> Ehrenb. Ex Spach	hedgehog gourd	non-native	common
<i>Momordica charantia</i> L.	balsam pear	non-native	uncommon
<i>Sicyos pachycarpus</i> Hook. & Arnott	kupala	endemic	rare
EUPHORBIACEAE (Spurge Family)			
<i>Chamaecyce hirta</i> (L.) Millsp.	hairy spurge	non-native	common
<i>Ricinus communis</i> L.	castor bean	non-native	rare
FABACEAE (Pea Family)			
<i>Acacia farnesiana</i> (L.) Willd.	flu	non-native	rare
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	non-native	rare
<i>Delonix regia</i> (Bojer ex Hook) Raf.	royal poinciana	non-native	rare
<i>Desmanthus virgatus</i> (L.) Willd.	slender mimosa	non-native	rare
<i>Erythrina sandwicensis</i> Degener	wilitwili	endemic	rare

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status</u>	<u>Abundance</u>
<i>Leucaena leucocephala</i> (Lam.) deWit	<i>koa haole</i>	non-native	rare
— <i>Macroptilium lathyroides</i> (L.) Urb.	wild bean	non-native	common
<i>Prosopis pallida</i> (Humb.&Bonpl. Ex Willd.) Kunth	<i>kiawe</i>	non-native	abundant
— <i>Samanea saman</i> (Jacq.) Merr	monkeypod	non-native	rare
— <i>Senna surattensis</i> (N.L.Burm) H. Irwin & Barneby	<i>kolomona</i>	non-native	rare
MALVACEAE (Mallow Family)			
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	non-native	rare
<i>Abutilon incanum</i> (Link) Sweet	hoary abutilon	non-native	rare
<i>Malva parviflora</i> L.	cheeseweed	non-native	common
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	non-native	rare
<i>Sida fallax</i> walp.	<i>'ilima</i>	indigenous	common
MORACEAE (Mulberry Family)			
<i>Ficus microcarpa</i> L. fil.	chinese banyan	non-native	rare
NYCTAGINACEAE (Four - O'clock Family)			
<i>Boerhavia coccinea</i> Mill.	-----	non-native	rare
<i>Boerhavia repens</i> L.	<i>alena</i>	indigenous	rare
PORTULACACEAE (Purslane Family)			
<i>Portulaca oleracea</i> L.	pigweed	non-native	rare
SOLANACEAE (Nightshade Family)			
<i>Lycopersicon esculentum</i> Mill.	tomato	non-native	uncommon
<i>Nicandra physalodes</i> (L.) Gaertn.	apple of Peru	non-native	common
<i>Nicotiana glauca</i> R.C. Graham	tree tobacco	non-native	rare
— <i>Solanum americanum</i> Mill.	<i>popolo</i>	indigenous	rare
STERCULIACEAE (Cacao Family)			
<i>Waltheria indica</i> L.	<i>'uhafoa</i>	indigenous	common
ZYGOPHYLLACEAE (Creosote Bush Family)			
<i>Tribulus terrestris</i> L.	puncture vine	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species abundance, activities and location as well as observations of trails, tracks scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

Two species of feral mammals were observed in the project area during two site visits. Taxonomy and nomenclature follow Tomich (1986).

Axis deer (*Axis axis*) - A herd of 15-20 deer was flushed from deep grass from a gully in the upper part of the area. They had bedded down for the day in this undeveloped area. These animals are nocturnally active, mobilizing around dusk to feed within this area and likely within surrounding fairways and lush landscaped areas under cover of darkness. Numerous trails, tracks and scat were evident throughout the area as well as significant sign of feeding, all attesting to the frequent use of the area.

Mongoose (*Herpestes auropunctatus*) - One mongoose was seen in the area. Deep, dense grass cover prevented good visibility of ground dwelling animals such as this, but a significant population would be expected. Mongoose feed on mice and rats as well as ground nesting birds. Mice and rats were not seen but their presence is virtually guaranteed by the abundant food supply in the form of grass seed and herbaceous vegetation. Domestic cats from numerous nearby residences would also be expected to occasionally enter the area to pursue rodents and birds.

A special effort was made to look for the native Hawaiian hoary bat (*Lasiurus cinereus semotus*) by making an evening survey of the area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent and plenty of flying insects were seen.

BIRDS

Bird activity was remarkable in this normally dry area. An abundant supply of grass and herbaceous plant seeds were peaking, following an ample winter wet season. Adult insects and caterpillars were also abundant especially on the kiawe trees. Fourteen species of non-native birds were seen, most taking advantage of this seasonal food supply. Taxonomy and nomenclature follow American Ornithologist's Union (1988), Berger (1981), Pratt et al.(1987) and Hawaii Audubon Society (1989).

Common mynah (*Acridotheres tristis*) – Mynahs were abundant throughout the area, feeding in the kiawe trees or transiting the area high above the trees. They are confident and assertive birds.

House sparrow (*Passer domesticus*) – Small flocks were seen throughout the area feeding in the kiawe trees. Their persistent chirping and twittering are distinctive.

Gray francolin (*Francolinus pondicerianus*) – A few gray francolins were seen in ground openings and in kiawe trees, but their loud and distinctive calls were heard frequently throughout the area indicating a larger population than seen.

Spotted dove (*Streptopelia chinensis*) – This large dove was seen frequently throughout the area and transiting overhead. Their smooth flight and evenly modulated cooing are distinctive. They were heard frequently.

American cardinal (*cardinalis cardinalis*) – Both sexes of this species were seen individually or in pairs throughout the area. Their bright color and distinctive calls are unmistakable.

Cattle egret (*Bubulcus ibis*) – These large white birds were frequently seen transiting the area in the morning and evening. The project area is not preferred habitat for these birds and none were seen landing.

Spotted munia (*Lonchura punctulata*) – A few small flocks of this species were seen in the grass or resting on trees. Their small size, brown heads and backs and multiple high pitched calls as they take flight are distinctive.

Barred dove (*Geopelia striata*) – A few barred doves were seen in kiawe trees. Their smaller size, striated body and white flashing tails feathers when taking flight distinguish this species from the spotted dove.

Warbling silverbill (*Lonchura malabarica*) – One flock of these small pale-brown birds was seen resting on a dead tree.

Java sparrow (*Padda oryzivora*) – A single flock of these distinctively marked birds was seen transiting the area in the evening.

House finch (*Carpodacus mexicanus*) – A few of these moderately-sized, light brown finches were seen singly or in pairs in the kiawe trees.

Japanese white-eye (*Zosterops japonica*) – A single bird was seen feeding on caterpillars in a kiawe tree at sunset.

Red crested cardinal (*Paroaria coronata*) – A single red crested cardinal was seen flitting about in a kiawe tree near a golf fairway on the south side of the property.

Mockingbird (*Mimus polyglottos*) – A single mockingbird was seen displaying on a dead tree. This large grayish bird with its long tail with white outer feathers is easy to identify.

Other bird species I could possibly expect to see in this area but which were not present include the black francolin (*Francoelinus francolinus*) and the barn owl (*Tyto alba*). No native bird species were seen.

INSECTS

While insects in general were not tallied, they were abundant throughout the area and fueled the elevated bird activity observed. One native Sphingid moth, Blackburn's sphinx moth (*Manduca blackburni*) has been put on the Federal Endangered species list and this designation requires special focus (USFWS 2002). Blackburn's sphinx moth occurs on Maui although it has not been found in this area. Its native host plants are species of 'Aiea (*Nothocestrum*) and a non-native alternative host plant is tree tobacco (*Nicotiana glauca*). There are no 'aiea on or near the project area and only one small tree tobacco was seen in the southwest corner of the area. No feeding activity was observed on this plant and no larvae or adult moths were seen.

CONCLUSIONS

Fauna surveys are seldom comprehensive due to the short window of observation, the seasonal nature of animal activities and the unpredictable nature of their daily movements. This survey, however, should be considered fairly representative due to the abundance of food resources present throughout the area and the resulting level

of animal use. While ideal for many types of non-native animals the habitat is not suitable in its present state for most native animals, and is far removed from remnant populations. No endangered mammal, bird or insect species were observed in the project area during the course of the survey. No unique or special habitats were found on the property. The proposed changes in land use should have no significant impact on the fauna in this sector of Maui.

RECOMMENDATIONS

Some seabirds such as the Endangered dark rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the commoner wedge-tailed shearwater (*Puffinus pacificus chlororhynchus*), nesting on the summit of Haleakala and coastal sites (Wailea Point, Molokini) respectively, leave their burrows before dawn and return after sunset. These birds can become attracted to and confused by bright lights, crash and be killed by vehicles or cats and dogs that find them. Young birds are especially vulnerable when they fledge in late fall and take their first tentative flights. It is recommended all significant outdoor lighting be hooded to direct the light downward.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within two groups: Mammals and Birds. For each species the following information is provided:

1. Common name
2. Scientific name
3. Bio-geographical status. The following symbols are used:
 - endemic = native only to Hawaii; not naturally occurring anywhere else in the world.
 - indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
 - non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.
4. Abundance of each species within the project area:
 - abundant = many flocks or individuals seen throughout the area at all times of day.
 - common = a few flocks or well scattered individuals throughout the area.
 - uncommon = only one flock or several individuals seen within the project area.
 - rare = only one or two seen within the project area.

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
<u>MAMMALS</u>			
Axis deer	<i>Axis axis</i>	non-native	common
Mongoose	<i>Herpestes auropunctatus</i>	non-native	rare
<u>BIRDS</u>			
Common mynah	<i>Acridotheres tristis</i>	non-native	abundant
House sparrow	<i>Passer domesticus</i>	non-native	abundant
Gray francolin	<i>Francolinus pondicerianus</i>	non-native	common
Spotted dove	<i>Streptopelia chinensis</i>	non-native	common
American cardinal	<i>Cardinalis cardinalis</i>	non-native	common
Cattle egret	<i>Bubulcus ibis</i>	non-native	common
Spotted munia	<i>Lonchura punctulata</i>	non-native	uncommon
Barred dove	<i>Geopelia striata</i>	non-native	uncommon
Warbling silverbill	<i>Lonchura malabarica</i>	non-native	uncommon
Java sparrow	<i>Padda oryzivora</i>	non-native	uncommon
House finch	<i>Carpodacus mexicanus</i>	non-native	uncommon
Japanese white-eye	<i>Zosterops japonica</i>	non-native	rare
Red-crested cardinal	<i>Paroaria coronata</i>	non-native	rare
Mockingbird	<i>Mimus polyglottos</i>	non-native	rare

Literature Cited

- American Ornithologist's Union 1983. Check-list of North American Birds. 6th edition. American Ornithologist's Union. Washington D.C.
- Armstrong, R. W. (ed.) 1983. Atlas of Hawaii. (2nd. ed.) University of Hawaii Press.
- Berger, A.J. 1981. Hawaiian Birdlife. (2nd ed.) University Press. Hon. Ha.
- Foote, D.E. , E.L. Hill, S. Nakamura, and F. Stephens. 1972. Soil survey of the islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. U.S. Dept. of Agriculture, Soil Conservation Service. Washington, D.C.
- Hawaii Audubon Society. 1989. Hawaii's Birds. (4th ed.) Hawaii Audubon Society, Honolulu.
- Palmer, D.D. 2003 Hawai'i's Ferns and Fern Allies. University of Hawaii Press, Honolulu.
- Pratt, H.D., P.L. Brunner and D.G. Berrett. 1987. A Field Guide to the Birds of Hawaii and the Tropical Pacific, Princeton University Press.
- Tomich, P.Q. 1986. Mammals in Hawaii. Bishop Museum Press, Honolulu.
- U.S. Fish and Wildlife Service. 2001. Endangered and threatened wildlife and Plants. 50 CFR 17.11 & 17.12
- U.S. Fish and Wildlife Service. 2000. Endangered and threatened wildlife and plants: determination of endangered status for Blackburn's sphinx moth from Hawaii. Federal Register 65(21): 4770-4779.
- Wagner, W. L., D.R. Herbst, and S. H. Sohmer. 1990. Manual of the flowering plants of Hawai'i. Univ. of Hawai'i Press and Bishop Museum Press. Honolulu.

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APPENDIX J
Comment Letters and Responses

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**

200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

September 21, 2004

Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
04 SEP 22 P 2:59

MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR

FROM: *for* GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT *Milton Arakawa*

SUBJECT: APPLICATIONS FOR SPECIAL MANAGEMENT AREA USE PERMIT,
STEP 2 PLANNED DEVELOPMENT APPROVAL, AND HRS CHAPTER
343 ENVIRONMENTAL ASSESSMENT
WAILEA PARCEL MF-9
TMK: (2) 2-1-008:119
EA 20040008, PD2 20040007, SM1 20040022

We reviewed the subject application and have the following comments:

1. Submit plan for disposal/composting of cleared and grubbed material and disposal/recycling of construction waste.
2. A detailed and final drainage report and a Best Management Practices Plan (BMP) shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.

Memo to Michael W. Foley, Planning Director
September 21, 2004
Page 2

3. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc., shall be shown on the project plat plan.
4. A site plan and a sight distance report to determine required sight distance and available sight distance at existing and proposed street intersections shall be provided for our review and approval.
5. Suggest expansion of the study area to distant intersections including: Wailea Alanui at Kaukahi Street and Wailea Alanui at Okolani Drive. Please check with the Maui Planning Commission with additional suggestions for study area expansion.
6. Counts should be done at Wailea Ike Drive/Kalai Waa Street intersection to aid in justifying assumption that "half the trips going to Makena would be using the Kalai Waa Street/Kaukahi Street route and would not pass the project site."
7. Provide a traffic signal warrant analysis for the proposed signal at the entrance to the project. Report states that outbound volumes at studied "Shops at Wailea" driveway are not enough to warrant all-way stop control or traffic signal, yet are larger than the projected outbound volumes for the project driveway.
8. Provide discussion on phasing for the proposed traffic signal. Projected volumes at the site/Grand Wailea Ballroom driveway comprise a small percentage of the total intersection volume. This could result in undesirable/unnecessary queuing along Wailea Alanui. Other effects may include re-routing of northbound traffic onto Kaukahi Street (private roadway).
9. Should a traffic signal not be installed, is sight distance adequate at the driveway's currently location?
10. Although wastewater system capacity is currently available as of August 12, 2004, the developer should be informed that wastewater system capacity cannot be ensured until the issuance of the building permit.
11. Wastewater contribution calculations are required before building permit is issued.

Memo to Michael W. Foley, Planning Director
September 21, 2004
Page 3

12. Developer shall pay assessment fees for treatment plant expansion costs in accordance with ordinance setting forth such fees.
13. Developer is required to fund any necessary off-site improvements to collection system and wastewater pump stations.
14. Plans should show the installation of a single service lateral and advance riser for each lot.
15. Indicate on the plans the ownership of each easement (in favor of which party). Note: County will not accept sewer easements that traverse private property.
16. Non-contact cooling water, condensate, etc. should not drain to the wastewater system.
17. Sewer within subdivision shall be privately owned and maintained. A manhole shall be constructed at the connection to the County maintained sewer.
18. Interior roadways to be kept under private ownership and maintenance.
19. Provide a concrete sidewalk along the frontage of Wailea Alanui.
20. Adequate street lighting should be available along Wailea Alanui to illuminate the speed table crosswalks.
21. Provide access control at grasscrete egress such that the egress is only utilized for emergency situations. Management should notify the County whenever the access is utilized.
22. The plans submitted for this project do not adequately show sufficient detail to determine whether the project is compliant with the building and housing codes. We will review the project for building and housing code requirements during the building permit application process.
23. All grading/grubbing work for the subject project shall comply with Chapter 20.08 (Soil Erosion and Sedimentation Control) of the Maui County Code. Best Management Practices shall be implemented to the maximum extent practicable to prevent

Memo to Michael W. Foley, Planning Director
September 21, 2004
Page 4

pollutants including dust and sediment from discharging off the project site.

24. The drainage system designed by a licensed professional civil engineer shall comply with the "Rules For The Design Of Storm Drainage Facilities In The County Of Maui".
25. The subject project shall comply with Section 16.26.3304 (Improvements to Public Streets) of the Maui County Code.
26. The subject project shall comply with Section 18.04.470 (Subdivision) of the Maui County Code which states in part:

". . . the construction of four or more dwelling units on a lot, parcel, or site shall be subject to the provisions of this title."

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

GSCA:MA:sn
S:\LUCAICZMI\Wailea Parcel MF-9_21008119_ga_pd2_sm1_da.wpd



September 22, 2004

Mr. Gilbert S. Coloma-Agaran, Director
Department of Public Works and Environmental Management
County of Maui
200 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Coloma-Agaran:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your comment letter dated September 21, 2004. We offer the following responses to your comments:

1. A plan for disposal/composting of cleared and grubbed material and disposal/recycling of construction waste will be submitted prior to grading permit issuance.
2. A detailed and final drainage report and a Best Management Plan will be submitted with the grading plans for review and approval prior to issuance of grading permits.
3. All existing features will be shown on the project plat plan submitted for construction drawing approval.
4. A site plan and a sight distance report to determine required sight distance will be submitted to your department during the construction plan review process, if necessary. We note that in a letter dated September 13, 2004, from Cary Yamashita, Acting Engineering Division Chief, it is stated that the proposed installation of a traffic signal at the project entrance "should mitigate the sight distance concerns." (See enclosed letter.) The letter from Mr. Yamashita concluded that "The revised location of the driveway is acceptable."
5. Our traffic consultant notes that "We do not believe that an expansion of the study area is justified. Figure 6 of the TIAR shows the volume of trips that would be generated by the proposed project. The volumes of trips on Wailea Alanui Drive forecast to travel north of Wailea Ike Drive and south of the project are relatively small compared to the current traffic volumes. And some of these trips would be 'lost' before they reach either Okalani Drive or Kaukahi Street. Therefore, they would have a small impact on these proposed study intersections."

Mr. Gilbert Coloma-Agaran
Re: Wailea Parcel MF-9
September 22, 2004
Page 2

We will discuss this matter with the Maui Planning Commission.

6. Our traffic consultant notes "We do not believe that this additional count is justified since we do not expect the volumes on Kalai Waa Street to be equal to that on Wailea Alanui Drive. There are much more destinations along Wailea Alanui Drive such that much higher volumes should be expected. Our professional opinion is that the additional trips that would be attracted to Makena in the future would have a choice of alternate routes. Given that the perceived travel times by both routes to be about equal, we expect about an equal split for the traffic going to Makena."

7. Our traffic consultant notes "The attached graph from the Manual of Uniform Traffic Control Devices (2003) shows the peak hour traffic signal warrant analysis for communities under 10,000. For two way major street traffic volumes over 1300 vehicles per hour (vph), traffic signals would be warranted for exiting volumes of 75 vph. This threshold is met for both Wailea Grand ballroom exit (90 vph) and the proposed project (105 vph) in the PM peak hour (figure 7).

The Shops at Wailea shows 115 vph exiting in the PM peak, but only the 60 vph left turns should be counted since the driveway is marked for separate left and right turns. The 60 vph is below the 75 vph threshold. Another reason for not signaling the Shops driveway is its proximity to the Wailea Ike Drive signal."

8. Our traffic consultant notes "A preliminary signal timing plan is shown in the Appendix of the TIAR. We propose that the traffic signal run 'free' and be traffic-actuated. Only two phases are recommended, one for Wailea Alanui drive and the other for the side street. With short minimum green times, short cycle lengths could be achieved that would minimize delays. The longest green times for the side street would be called on only when the pedestrian crossing signal is actuated. Even when the pedestrian crossing signal is actuated, we do not expect long traffic queues to form on Wailea Alanui Drive."

9. See response No. 4 above.

10. The applicant is aware that wastewater system capacity cannot be ensured until the issuance of the building permit.

11. Wastewater contribution calculations will be submitted prior to building permit issuance.

12. The applicant will pay assessment fees for treatment plant expansion costs in accordance with the applicable ordinance.

13. The applicant is aware of the potential requirement to fund any necessary off-site improvements to collection system and wastewater pump stations.

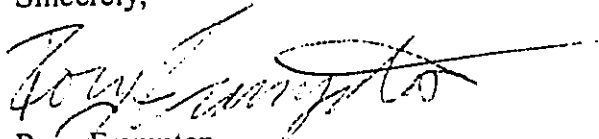
14. Construction plans will show the required service laterals.

15. All easements and appropriate ownership documentation will be shown on the construction plans.

Mr. Gilbert Coloma-Agaran
Re: Wailea Parcel MF-9
September 22, 2004
Page 3

16. Non-contact cooling water, condensate, etc. will not drain into the wastewater system.
17. The sewer system within the project will be privately owned and maintained.
18. Interior roadways will be kept under private ownership and maintenance.
19. The applicant is opposed to providing a concrete sidewalk along the frontage of Wailea Alanui. An existing crosswalk is located along the makai side of Wailea Alanui. This sidewalk is continuous throughout the Wailea Resort. A sidewalk along the mauka portion of Wailea Alanui would terminate at the on-site gulch to the south and at the golf course to the north (Wailea Resort does not allow sidewalks fronting golf courses.) Thus, a mauka sidewalk would provide no useful service for pedestrians. With the installation of the traffic light at the project entrance, pedestrian traffic will have a safe place to cross Wailea Alanui, where the existing sidewalk can be utilized.
20. With the installation of the traffic signal, speed table crosswalks are no longer necessary. The crosswalks at the intersection will be adequately lighted.
21. Access control at the grasscrete egress will be provided such that the egress is only utilized for emergency situations. Management will notify the County whenever the access is utilized.
22. The applicant is aware that the construction plans will be reviewed for building and housing code requirements during the building permit application process.
23. All grading /grubbing work for the project will comply with Chapter 20.08, MCC. Best Management Practices will be implemented to the maximum extent practicable to prevent pollutants, including dust and sediment, from discharging off the project site. A preliminary list of these measures is contained in the Final EA document.
24. The drainage system will be designed by a licensed engineer and will comply with Maui County Rules.
25. The project will comply with Section 16.26.3304, MCC, as appropriate.
26. The project will comply with Title 18, MCC.

Sincerely,


Rory Frampton
Senior Planner

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Ms. Diane Kodama, M&E Pacific



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

EA 04/UG

REPLY TO
ATTENTION OF: CEPOH-EG-T

04 AUG 17 12:39

August 16, 2004

DEPT OF PLANNING
COUNTY OF MAUI
Civil Works Technical Branch
RECEIVED

Mr. Kivette A. Caigoy, Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Caigoy:

Thank you for the opportunity to review and comment on the Special Management Area (SMA) Application and Environmental Assessment (EA) for the Wailea Parcel MF9, Maui (TMK 2-1-8: 119). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit may be required for the project. Additional information is required to make a final determination. Please call Ms. Connie Ramsey of our Regulatory Branch for guidance at (808) 438-9258 and refer to file number 200400443.

b. The flood hazard information provided on pages 12 and 13 of the EA is correct.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

James Pennaz, P.E.
Chief, Civil Works
Technical Branch



September 15, 2004

Mr. James Pennaz, P.E., Chief
Civil Works Technical Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Building 223
Fort Shafter, Hawaii 96858-5440

Dear Mr. Pennaz:

Re: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

I am responding to your letter dated August 16, 2004 related to the subject applications and comment that a Department of the Army (DA) permit may be required for the proposed project.

In our view, the subject property does not meet the definition of waters of the United States pursuant to 33 CFR Part 328. The following findings support this conclusion:

- The gulch on the southern end of the subject property is dry except during a major storm occurrence.
- According to the Biological Resources Survey in the Draft Environmental Assessment, no wetlands occur on the subject property. Also, nothing remotely approaching the three essential criteria that define a Federally-recognized wetland occurs within the subject property, namely, hydrophytic vegetation, hydric soils, and wetland hydrology. (Draft EA, Appendix I, p. 4)
- The gulch on the subject property connects to culverts crossing under Wailea Alanui Drive. Storm water run off is then conveyed into underground culverts that outlet at the shoreline near the southern end of the Grand Wailea Resort and Spa. (See: Enclosed site photographs and aerial photograph)

Mr. James Pennaz
RE: Wailea MF-9
September 15, 2004
Page 2

- The gulch on the subject property and lands seaward or *makai* are not designated as a stream or body of water in the United States Geological Survey Quad maps. (See: Enclosed map of a portion of the Makena quadrangle, USGS map.)
- The subject property, including the gulch, is designated as Zone "C", an area of minimal flood hazard potential, in the Federal Flood Insurance Rate Maps.

Based on the information provided, we request your determination that a DA permit is not required for the proposed project.

Your comments are appreciated. Please contact me, should further clarification be necessary.

Sincerely,


Rory Erampton
Senior Planner

Encl.

Cc: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

RECEIVED AS FOLLOWS

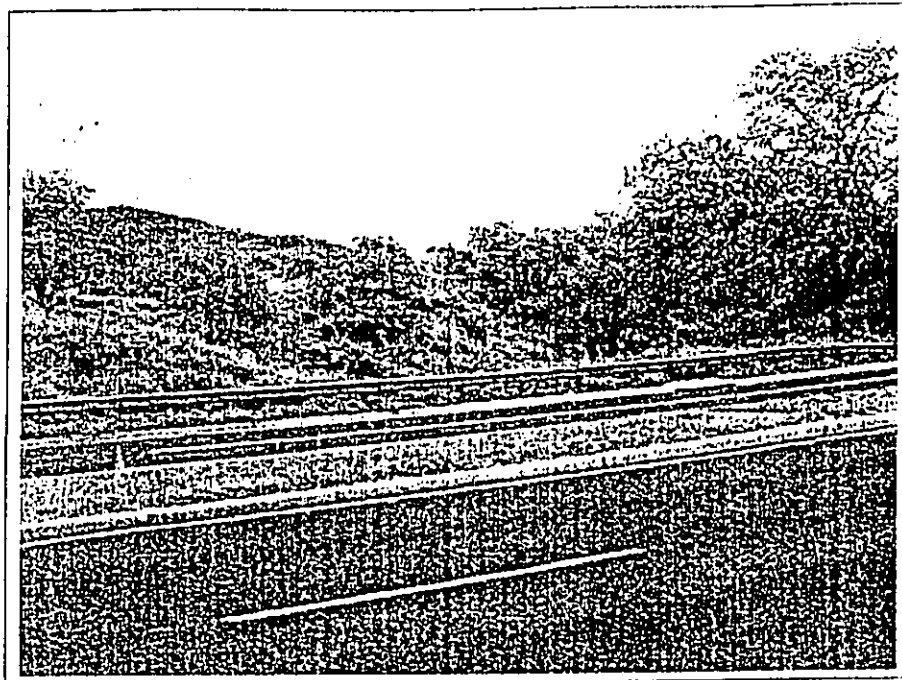


Photo 1. MF-9 Gulch at Wailea Alanui Drive.

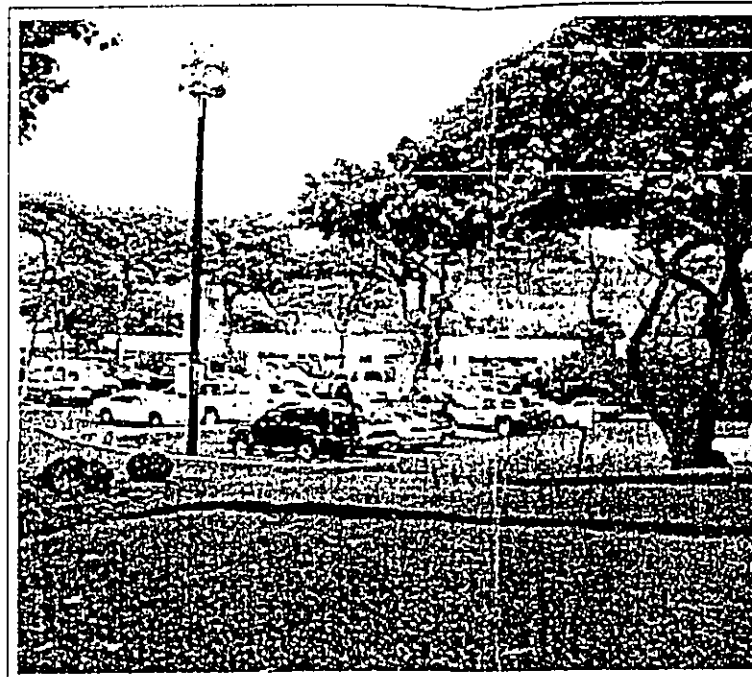


Photo 2. Grand Wailea parking lot below MF-9 site a

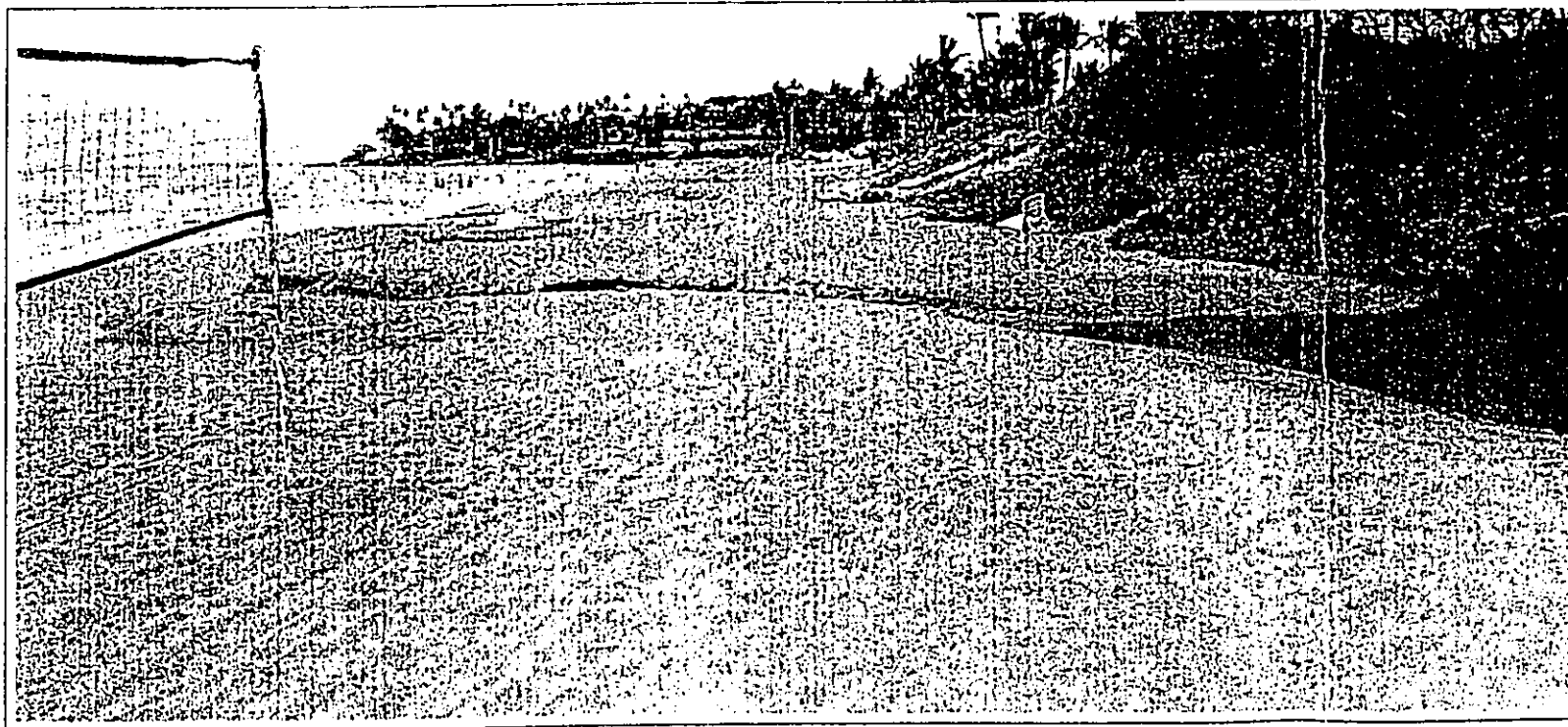


Photo 4. Drainage outlet at Wailea Beach

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t below MF-9 site and gulch.

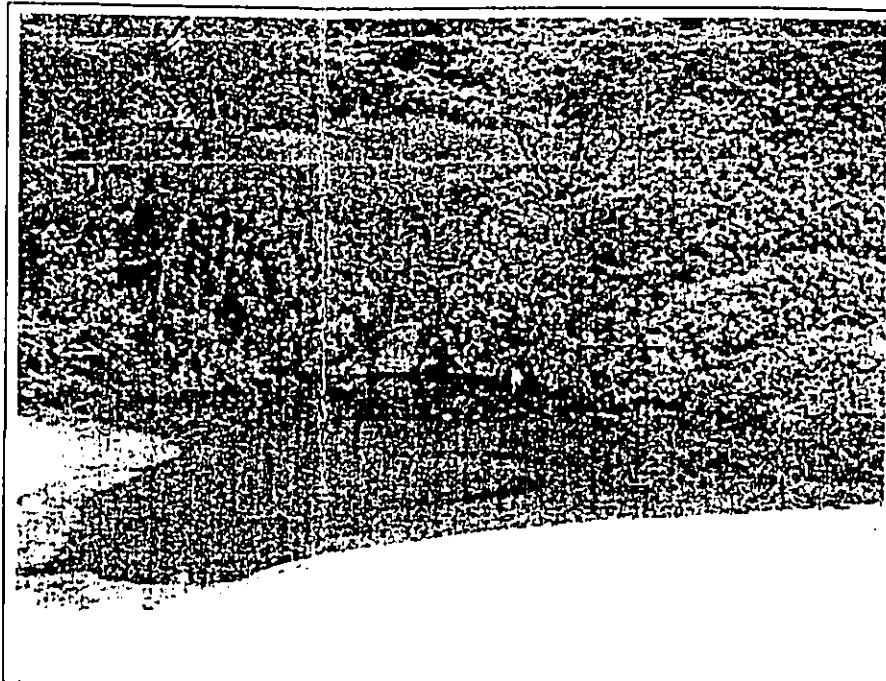


Photo 3. Drainage outlet at Wailea Beach.

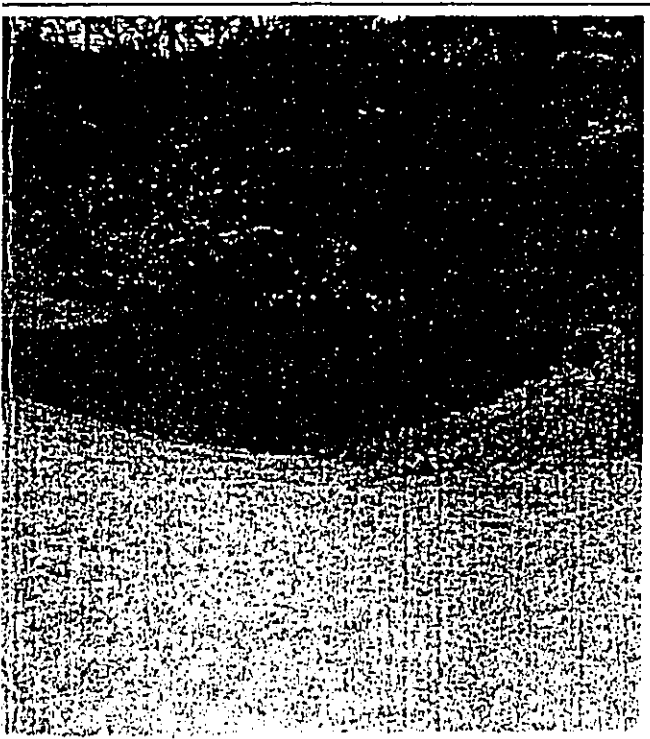


Figure 1

SITE PHOTOGRAPHS

Taken September 9, 2004

WAILEA MF-9

09/2004



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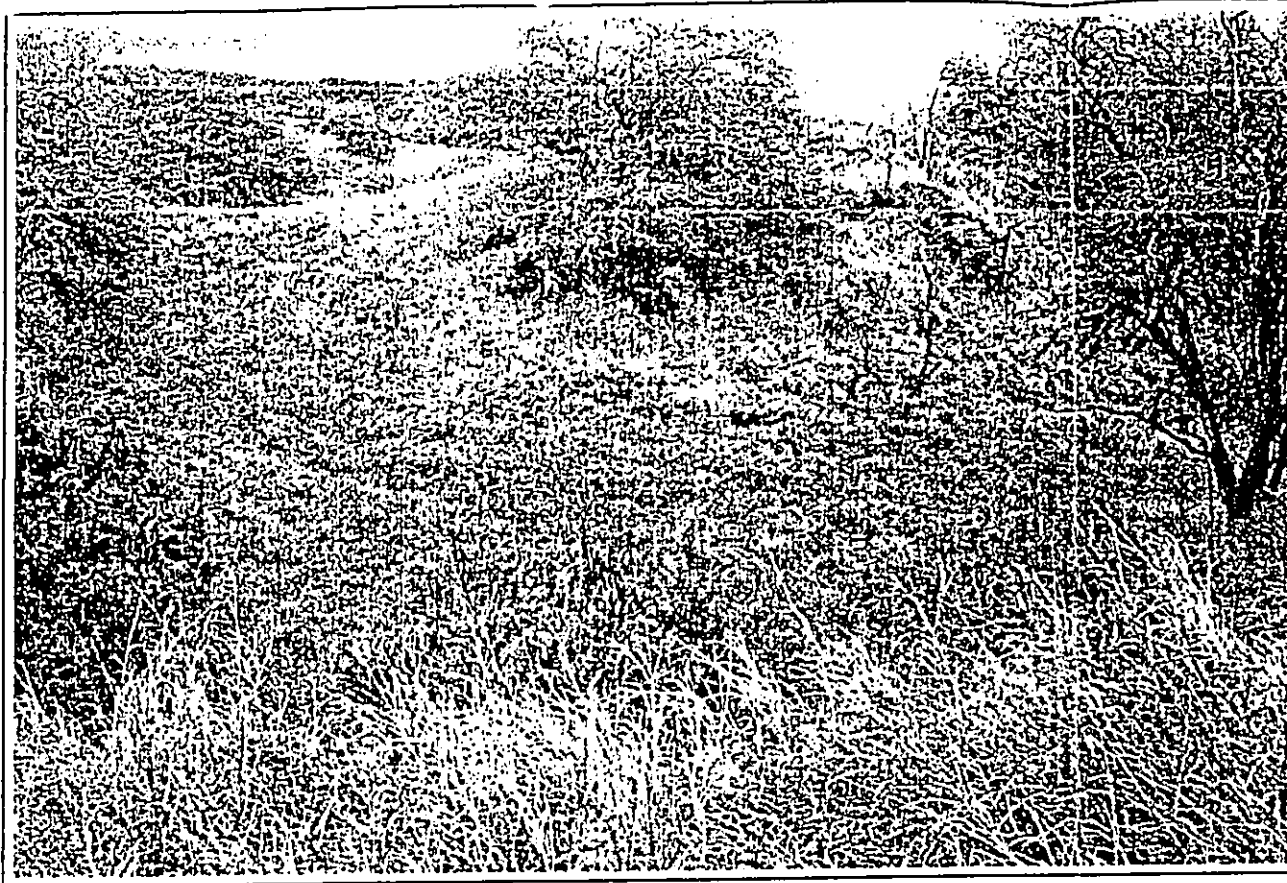


Photo 5: Closeup of Wailea MF-9 gulch from Wailea Alanui Drive.

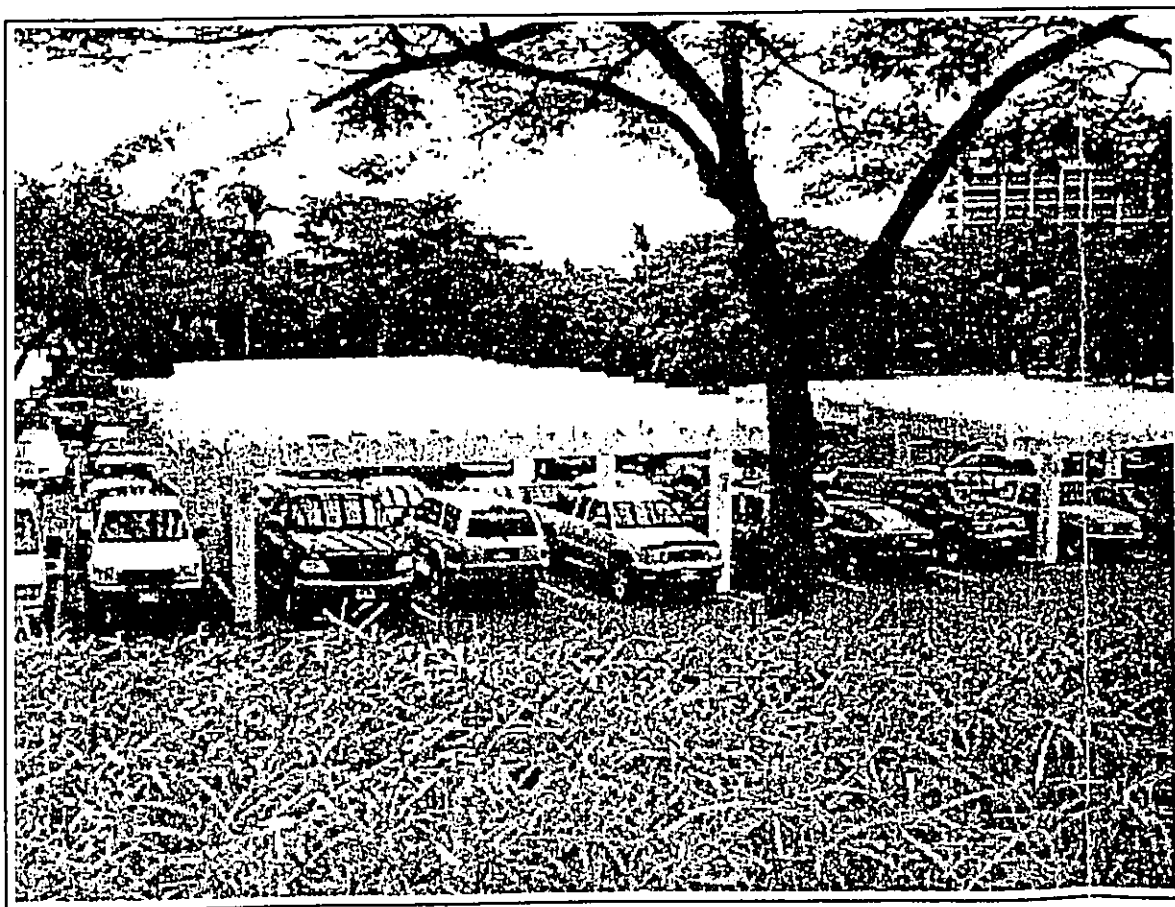
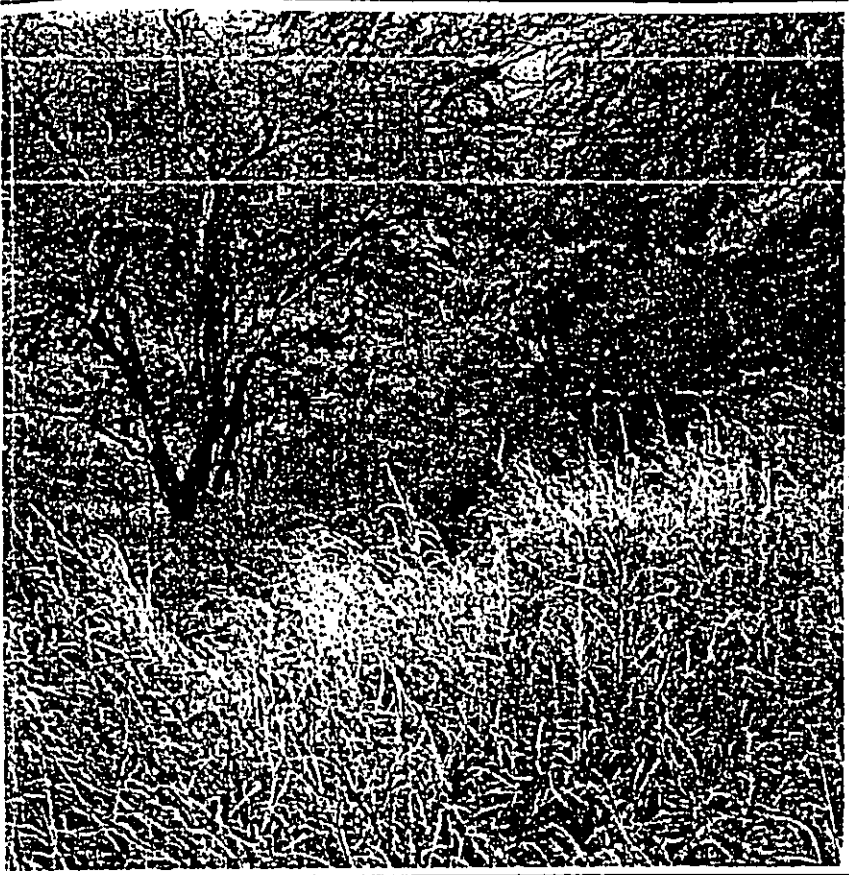


Photo 6: Grand Wailea parking lot immediately below Wailea Alanui Drive and MF-9 gulch

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and MF-9 gulch.

Figure 2

SITE PHOTOGRAPHS

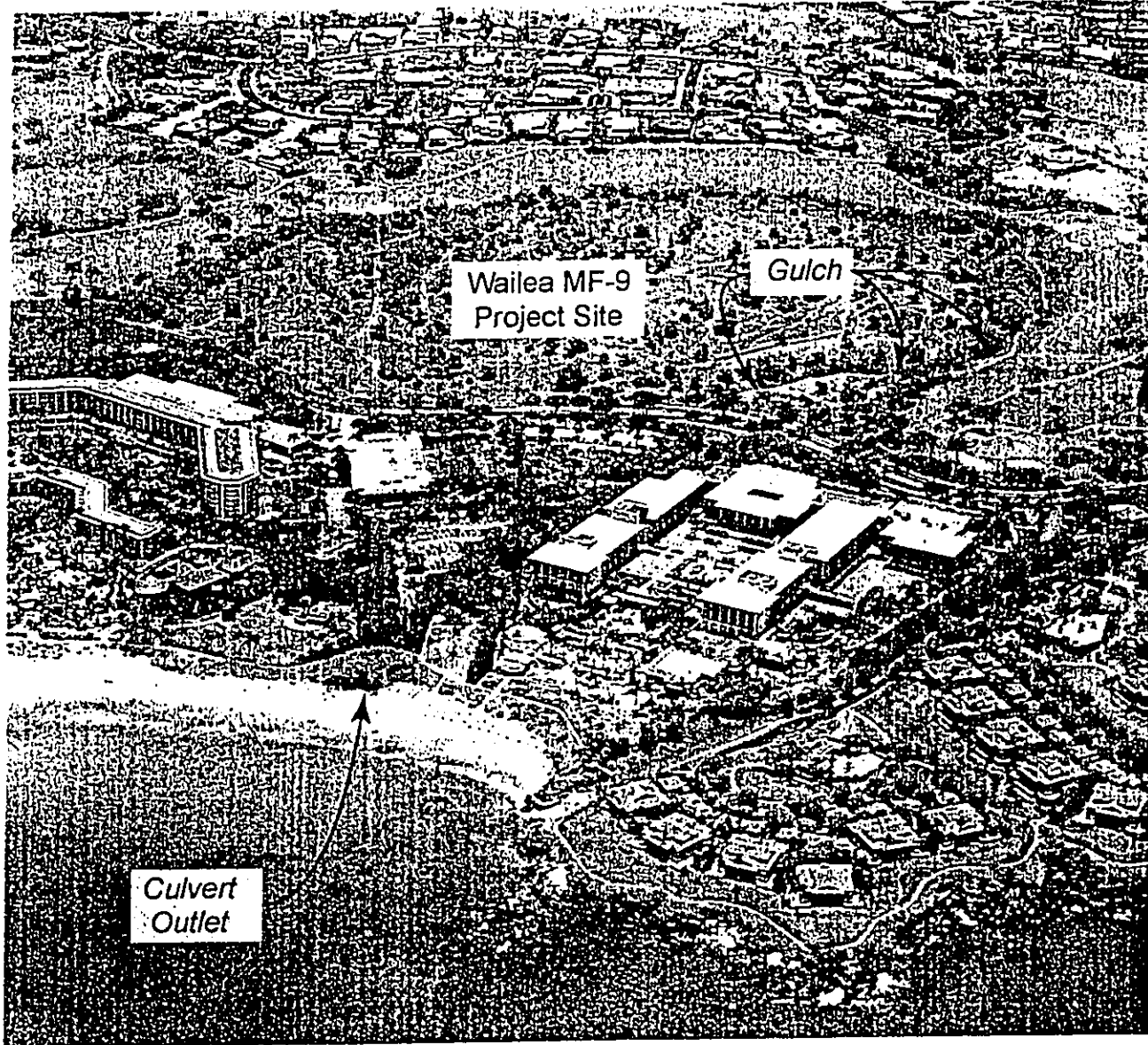
Taken September 9, 2004

WAILEA MF-9

09/2004



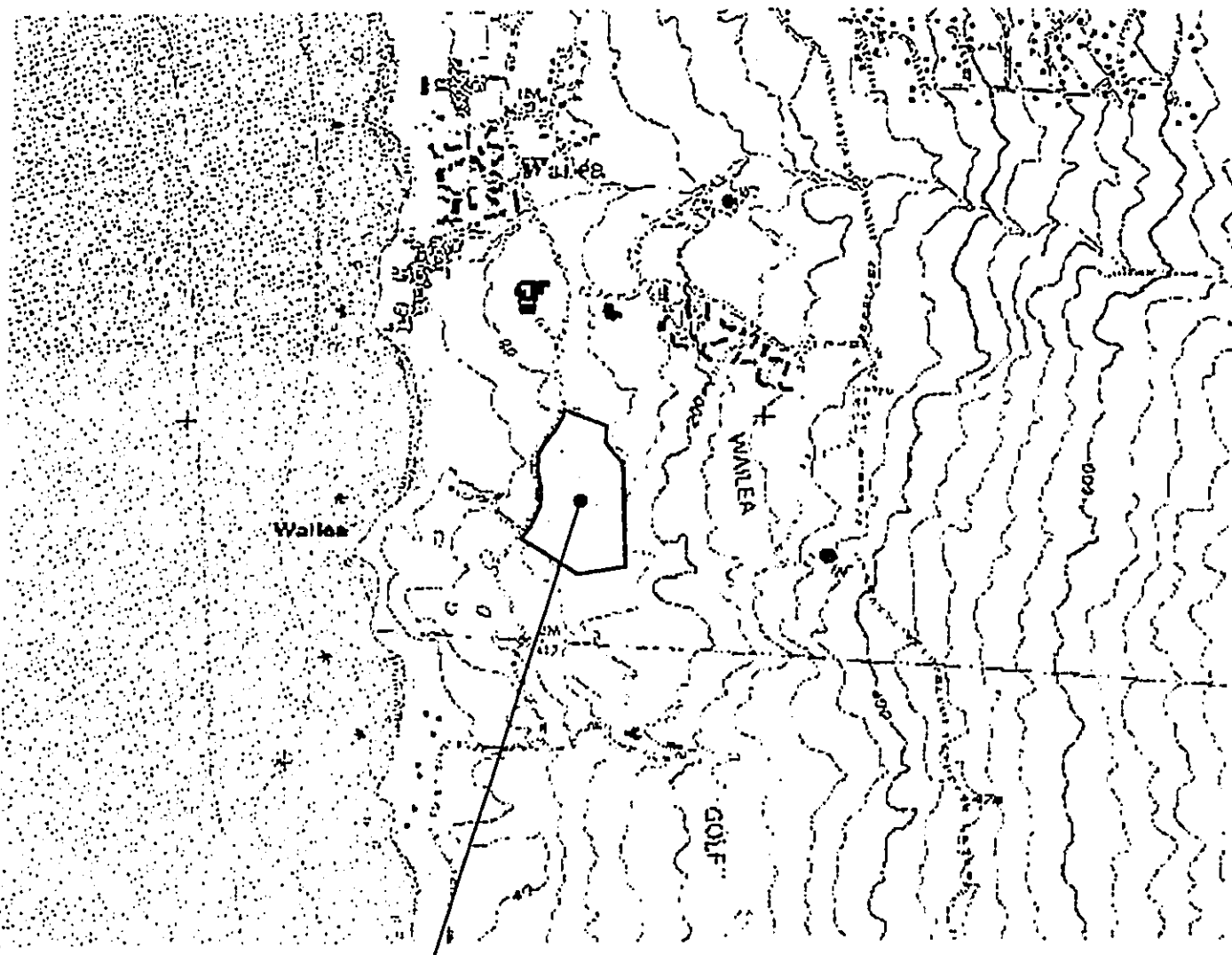
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CHRIS
HART
& PARTNERS

SEPTEMBER 2004

RECEIVED AS FOLLOWS



USGS MAKENA QUADRANGLE, 1983

PROJECT SITE



SEPTEMBER 2004

LINDA LINGLE
GOVERNOR OF HAWAII



'04 AUG 19 P2:05

DEPT OF PLANNING COUNTY DEPARTMENT OF LAND AND NATURAL RESOURCES RECEIVED



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809
August 17, 2004

RECEIVED
AUG 19 2004

CHRIS HART DEPARTMENT OF LAND AND NATURAL RESOURCES

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
DAN DAVIDSON
DEPUTY DIRECTOR - LAND
YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD-NAV

PD2 2004 0007.RCM
Wailea Parcel MF-9 Condominium

Honorable Michael W. Foley
Planning Director
County of Maui
Planning Department
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: I.D. Nos.: PD2 2004 007/EA 2004 0008/SM1 2004 0022
Applicant: Wailea MF-9 Associates, LLC
Project: Wailea Parcel MF-9 Condominium
Authority: County of Maui Department of Planning
TMK: (2) 2-1-008: 119

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division made available or distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Engineering Division and Commission on Water Resource Management comment.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer on the subject matter.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

CC: Raymond John

Aug-18-04 03:35pm From-DEPT OF PLANNING COUNTY OF MAUI

000-947018

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED
LAND DIVISION



2004 AUG 11 A 10:47

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCE
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS
LD/NAV

July 30, 2004
PD2 2004-0007.CMT
Wailea Condominium

Suspense Date: 8/8/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA Application
I. D. No.: PD2 2005/0007
Applicant: Wailea MF-9 Associates, LLC
Project: Wailea Parcel MF-9 Condominium
TMK: 2nd/ 2-1-008: 119
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments.

Comments attached.

Division: _____

Signed: *Paul J. Conry*

Date: AUG 8 2004

Print Name: **PAUL J. CONRY, ADMINISTRATOR**
DIVISION OF FORESTRY AND WILDLIFE

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 AUG -5 P 4:05



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

TYONNE Y. IZU
DEPUTY DIRECTOR - WATER

ADULTIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAOIOLAIWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS
LD/NAV

July 30, 2004
PD2 2004-0007.CMT
Wailea Condominium

Suspense Date: 8/8/04

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA Application
I. D. No.: PD2 2005/0007
Applicant: Wailea MF-9 Associates, LLC
Project: Wailea Parcel MF-9 Condominium
TMK: 2nd/ 2-1-008: 119
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Division: Engineering

Signed: Eric T. Hirano

Date: 8/5/04

Print Name: ERIC T. HIRANO, CHIEF ENGINEER

2004 AUG 10 10:00 AM

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

L/NAV

Ref.: PD2 2004-0007.CMT
Wailea Condominium

COMMENTS

- (X) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone C, an area determined to have minimal flooding. The National Flood Insurance Program does not have any regulations for development within this area.
- () Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

() Additional Comments: _____

() Other: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: Eric T. Hirano
ERIC T. HIRANO, CHIEF ENGINEER

Date: 8/5/04

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER



JUL 30 P4:49

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENGINEERING
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS
LD/NAV

Suspense Date: 8/8/04

July 30, 2004
PD2 2004-0007.CMT
Wailea Condominium

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dièdre S. Mamiya, Administrator
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA Application
I. D. No.: PD2 2005/0007
Applicant: Wailea MF-9 Associates, LLC
Project: Wailea Parcel MF-9 Condominium
TMK: 2nd/ 2-1-008: 119
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

(✓) Comments attached.

Division: _____

Signed: W. Jayford

Date: 8/9/04

Print Name: Roy Hardy

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION



2004 AUG 10 A 9:49

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 021
HONOLULU, HAWAII 96809

PETER T. YOUNG
GOVERNOR

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHYOME L. FUKINO, M.D.
LAWRENCE H. MIKE, M.D., J.D.
STEPHANIE A. WHALEN

YVONNE Y. IZU
DEPUTY DIRECTOR

August 9, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Yvonne Y. Izu, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Wailea Parcel MF-9 Condominiums

FILE NO.: PD2 2005/0007

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflows, which may require an Instream flow standard amendment.
- We are concerned about the potential for degradation of Instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the Instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- OTHER:

In addition to the Iao aquifer system area cited as a source for the central Maui water system, the Waihee aquifer system area and treated surface water also supply the central Maui service area. Therefore, it is not clear if this new use would be increasing withdrawals from the newly designated water management area of Iao. If so, it would be classified as a new use that would be addressed only after existing uses as of July 21, 2003 are permitted.

Using the county water system standards at 560 gallons per day per unit for low-rise multi-family units, this would correspond to the 80,640 gpd average demand cited in the report for domestic needs (though later in the report another figure of 130 units is cited on page 1 appendix C). Irrigation needs based on the 50,000 gpd estimate cited in the report would correspond to 10 acres of irrigated based on the low-rise multi-family unit area based on acreage. The actual irrigated acreage should be specified.

If there are any questions, please contact Roy Hardy at 587-0274.

000-749010

From-DEPT OF PLANNING COUNTY OF MAUI

Aug-19-04 03:37pm

Aug-08-2004 08:55am From-DDFAW

8088848111

7-803 P.002/003 F-257

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
LAWYER, U.S. SUPREME COURT, HONOLULU, HAWAII
DAN DAVIDSON
DEPUTY DIRECTOR - LAND
TYONGSI Y. KELI
DEPUTY DIRECTOR - WATER



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONSERVATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
DEPARTMENT OF FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAOIOLANI ISLAND RESERVE COMMISSION
LAND
STATE TREASURY
LD/NAV

Suspense Date: 8/8/04

July 30, 2004
PD2 2004-0007.CMT
Wailea Condominium

MEMORANDUM:

TO: XXX Division of Forestry & Wildlife
XXX Engineering Division
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office

FROM: Dierdre S. Mamiya, Administrator *Dierdre Mamiya*
Land Division

SUBJECT: SPECIAL MANAGEMENT AREA Application
I. D. No.: PD2 2005/0007
Applicant: Wailea MF-9 Associates, LLC
Project: Wailea Parcel MF-9 Condominium
TMK: 2nd/ 2-1-008: 119
Authority: County of Maui Department of Planning

Please review the attached document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at 587-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

We have no comments. Comments attached.

Division: MDLO

Signed: *Jason K. Koga*

Date: 8-6-04

Print Name: Jason K. Koga



September 21, 2004

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your letter dated August 17, 2004 in response to the Draft Environmental Assessment, Special Management Area Use Permit application, and Planned Development Approval for the subject project.

We acknowledge that you have confirmed that the project site is located in FIRM Zone C, an area determined to have minimal flooding. We have responded to the Commission on Water Resource Management (CWRM) comments under separate cover (see attached).

Thank you again for your comments. If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Senior Planner

attachment

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.



September 17, 2004

Ms. Yvonne Y. Izu, Deputy Director
Commission on Water Resources Management (CWRM)
State Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Izu:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MÇC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

We are responding to the following comments in your memo dated August 9, 2004:

- The CWRM recommends coordination with the county government to incorporate this project into the county's Water Use and Development Plan. This applicant will cooperate with the county on this matter.
- The proposed water supply source for the project is located in a designated water management area and a Water Use Permit from the Commission would be required prior to the use of this source. In a letter dated July, 16, 2004 commenting on the proposed project, Mr. George Tengan, Director, Maui County Department of Water Supply states in relevant part, "The project area is served by the Central Maui System. The main sources of water for this system are the designated Iao aquifer, the Waihee aquifer, the Iao tunnel and the Iao-Waikapu Ditch. The Department will not issue reservations for future meters until new sources are brought on-line. There is currently no moratorium on issuance of meters in Central Maui. Meter application by the applicant is under review by the Engineering Division. No guarantee of water for this project is implied by these comments." A copy of Mr. Tengan's letter is attached for your reference.
- It is not clear if the proposed use would be increasing withdrawals from newly designated water management area of Iao. If so, it would be classified as a new use that would be addressed only after existing uses as of July 21, 2003 are

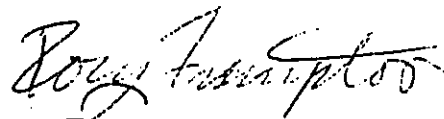
Ms. Yvonne Y. Izu, Deputy Director
RE: Wailea MF-9
September 17, 2004
Page 2

permitted. The statements in the referenced July 16, 2004 letter from the County Department of Water Supply indicate that the proposed use will not increase withdrawals from the designated Iao aquifer.

- Specify the actual irrigated acreage. The project will include natural open space gulch land (approximately 6 acres) and landscaped areas (approximately 12.3 acres).

Thank you for your constructive comments. Please contact me, if additional clarification or information is needed.

Sincerely,



Rory Frampton
Senior Planner

Enclosure

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

LINDA LINGLE
GOVERNOR



RUSS K. SAITO
Comptroller
KATHERINE H. THOMPSON
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

'04 AUG -3 AM 1:57
DEPT. OF PLANNING
COUNTY OF MAUI
RECEIVED

August 2, 2004

MEMORANDUM

TO: Michael W. Foley, Planning Director
Maui County Planning Department

ATTN: Kivette A. Caigoy, Staff Planner

FROM: Melvin M. Masuda, Acting State Land Surveyor
DAGS, Survey Division *mm*

SUBJECT: I.D.: EA 2004/0008, PD2 2004/0007 and SM1 2004/0022
TMK: 2-1-008:119
Project Name: Wailea Parcel MF-9 Condominium Project
Applicant: Wailea MF-9 Associates, LLC

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.



September 21, 2004

Mr. Melvin M. Masuda
Survey Division
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810-0119

Dear Mr. Masuda:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your August 2, 2004 "no objections" letter in response to the Draft Environmental Assessment and Special Management Area Use Permit application for the subject project.

We acknowledge that you have confirmed that no government survey triangulation stations or benchmarks are affected by the proposed project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Rory Frampton
Senior Planner

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

Mayor
ALICE L. LEE
Director
HERMAN F. ANDAYA
Deputy Director

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE: (808) 270-7805 • FAX: (808) 270-7165

July 30, 2004
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

TO: KIVETTE A. CAIGOY, Staff Planner
Department of Planning

FROM: ALICE L. LEE, Director
Department of Housing and Human Concerns

SUBJECT: I.D.: EA 2004/0008, PD2 2004/0007
and SMI 2004/0022
TMK: (2) 2-1-008:119
Project Name: Wailea Parcel MF-9 Condominium
Project
Applicant: Wailea MF-9 Associates, LLC

We have reviewed the subject applications and EA and would like to offer the following comments:

1. We concur with the statements in Mr. Chris Hart's January 26, 2004 memo to his project file; which is included in Appendix B of the subject applications and EA.
2. The applicant's commitment to provide \$900,000 (36 x \$25,000) for the development of the South Maui Homeless Shelter will satisfy the requirements of Chapter 2.94, Maui County Code.
3. We have no objection to the applications and EA being approved.

Thank you for the opportunity to comment.

ETO:bp

c: Housing Administrator



September 21, 2004

Ms. Alice Lee
Department of Housing and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

Dear Ms. Lee:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii

Thank you for your July 30, 2004 "no objection" letter in response to the Draft Environmental Assessment and Special Management Area Use Permit application for the subject project and your acknowledgement that the applicant's commitment to provide \$25,000 per required affordable unit for the development of the South Maui Homeless Shelter will satisfy the requirements of Chapter 2.94, Maui County Code. For your information, the project's unit count has been reduced to 120 units. Thus, the anticipated payment would be \$750,000 (30 x \$25,000).

If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Senior Planner

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

'04 AUG 18 12:39

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED August 18, 2004

OFFICE OF BUSINESS SERVICES

Mr. Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Ms. Kivette A. Caigoy, Staff Planner

Dear Mr. Foley:

Subject: Application for Special Management Area Permit and Request to
Approve Step 2 Planned Development Approval, Wailea, Maui, Hawaii
TMK: 2-1-8: 119, (EA 2004/0008) (PD2 2004/0007) (SM1 2004/0022)

The Department of Education (DOE) has reviewed the application for a Special Management Area (SMA) permit and a Step 2 Planned Development Approval for a 144-unit condominium in Wailea.

The DOE does not request a school fair-share contribution condition on applications for SMA permits only. However, the request to approve the Step 2 Planned Development Approval is considered a request for a discretionary decision by the Maui County Planning Commission (Commission) and conditions can be applied to that decision. On that basis the DOE would like to request a fair-share contribution condition. The proposed wording of the condition is:


The Applicant shall contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution shall be agreed upon in writing by the Applicant and the Department of Education prior to obtaining building permits for any area of the development.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Mr. Michael W. Foley
Page 2
August 18, 2004

The DOE has no further comment on the application but appreciates the opportunity to review the plans. If you have any questions, please call me at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

Sincerely,


Rae M. Loui
Assistant Superintendent

RML:mp

c: Ken Nomura, CAS, Baldwin/Kekaulike/Maui Complex Area



September 21, 2004

Ms. Rae M. Loui, Assistant Superintendent
State Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Ms. Loui:

Re: Applications for a HRS Chapter 343 Environmental Assessment (EA),
Special Management Area (SMA) Use Permit, MCC Chapter 19.32
Planned Development Approval—Proposed 120-unit residential
condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea,
Maui, Hawaii.

Thank you for your August 18, 2004 letter commenting on the above project. Since the circulation of the Draft EA, please note that the applicant has downsized the project from 144 units to 120 units. The subject property was recently purchased from A&B Wailea Resort Company Ltd. and was originally planned and zoned for over 250 condominium or 500 to 600 Hotel units.

I would like to offer a response to comments in your letter. It was stated that the DOE does not request a fair-share contribution condition on applications for SMA permits only. However, a Step 2 Planned Development Approval is also being applied for and this approval by the Maui Planning Commission is considered to be a discretionary decision. Accordingly, the DOE is requesting a fair-share contribution for school facilities as a condition of the Step 2 Planned Development Approval.

Comments:

The intent of the County's Planned Development ordinance is "to encourage desirable design and land use pattern, protect natural environment, minimize traffic congestion, and enhance living and working conditions." (Section 19.32.010, Maui County Code.) The focus of this ordinance is on design considerations, unlike the SMA provisions of HRS Chapter 205A which establish broad policies and guidelines relating to Coastal Zone Resources. The ordinance is treated as an "overlay" tool, and does not alter the existing zoning designations for the property. Accordingly, the scope of

Ms. Rae M. Loui
Re: Wailea MF-9 Project
September 21, 2004
Page 2

conditions that may be imposed is far more limited under the Planned Development procedures than under the SMA permit procedures.

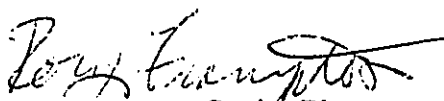
The proposed residential condominium project is located on Hotel-zoned property in the Wailea Resort in the vicinity of the Grand Wailea Resort and Spa hotel and the Four Seasons Hotel. Future owners will be able to maintain units as vacation rentals similar to other residential condominiums at Wailea. Since this is a likely scenario, the applicant has declared the project to be a "hotel-related development" and is complying with the County's requirement for affordable housing pursuant to MCC Chapter 2.94, Affordable Housing Policies for Hotel-Related Developments. The applicant maintains that the project will be used primarily as a second residence and/or vacation rental unit and that demands on school facilities will be minimal.

Concluding Remarks:

- The MCC 19.32 Planned Development procedure is a design-related approval. The imposition of a school fair-share contribution condition is beyond the scope of this approval.
- The applicant has determined that the project is a hotel-related development and has submitted a draft agreement to the County to comply with the affordable housing requirement for hotel-related developments.
- The project will most likely be maintained as a second residence or vacation rental unit given the location and zoning of the subject property within the Wailea Resort.

Based on the above, we respectfully request reconsideration of the recommendation in your letter. Please contact me, if further clarification or information is necessary.

Sincerely,


Rory Frampton, Senior Planner

c: Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII '04 AUG 25 AM 8:39
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
August 23, 2004

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawai'i 96793

Attention: Kivette A. Caigoy

Dear Mr. Foley:

Subject: Wailea Parcel MF-9 Condominium Project
TMK: (2) 2-1-008: 119
EA 2004/0008, PD2 2004/0007 and SM1 2004/0022

Thank you for the opportunity to comment on the land use applications for the Wailea Parcel MF-9 Condominium Project. The following comments are offered:

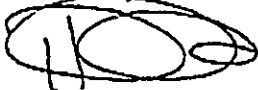
1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.
2. HAR, Chapter 11-46 sets maximum allowable sound levels from stationary equipment such as compressors and HVAC equipment. The attenuation of noise from these sources may depend on the location and placement of these types of equipment. This should be taken into consideration during the planning, design, and construction of the building and installation of these types of equipment.
3. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.

Mr. Michael W. Foley
August 23, 2004
Page 2

4. Due to the nature and location of the project, there is a significant potential for fugitive dust emissions during site work preparations. It is recommended that a dust control management plan be developed. Implementation of adequate dust control measures during all phases of the project is warranted. Construction activities must comply with the provisions of HAR, Chapter 11-60.
5. The property may be harboring rodents that will be dispersed to the surrounding areas when any buildings are demolished or the site is cleared. The applicant is required by HAR, Chapter 11-26, "Vector Control" to eradicate any rodents prior to demolition or site clearing activities and to notify the Department of Health by submitting Form VC-12 to the Maui Vector Control program when such action is taken. Rodent traps and/or rodenticides should be set out on the project site for at least a week or until the rodent activity ceases. The Maui Vector Control program phone number is 873-3560.

Should you have any questions, please call me at 984-8230.

Sincerely,



Herbert S. Matsubayashi
District Environmental Health Program Chief



September 15, 2004

Mr. Herbert S. Matsubayashi, District Environmental Health Program Chief
Maui District Health Office
State Department of Health
54 High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Matsubayashi:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

We are responding to comments in your letter dated August 23, 2004 and enumerated as follows:

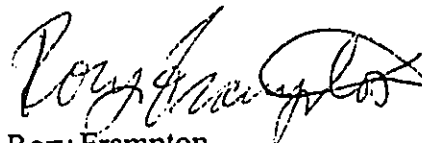
1. The project contractor will be responsible to comply with the provisions of HAR Chapter 11-46, Community Noise Control, and if required, obtain a noise permit before commencement of construction.
2. The project contractor will be responsible to attenuate sound levels from stationary equipment (e.g. compressors; HVAC equipment) in compliance with the provisions of HAR 11-46 and implement such measures during all phases of building construction.
3. The applicant will comply with the requirement for a National Pollutant Discharge Elimination System (NPDES) Permit.
4. An erosion control plan will be filed with the Department of Public Works and Waste Management as part of the grading permit application. Dust control measures will be incorporated in this plan. The project contractor will be responsible to implement adequate dust control measures during all phases of construction in compliance with the provisions of HAR Chapter 11-60.

Mr. Herbert S. Matsubayashi
RE: Wailea MF-9
September 15, 2004
Page 2

5. The project site does not contain any existing structures that may harbor rodents. Existing vegetation consists of shrub grass. The project contractor will be responsible to take necessary measures to eradicate any rodents in compliance with the provisions of HAR Chapter 11-26, Vector Control.

Thank you for your constructive comments. Please contact me, if additional clarification or information is needed.

Sincerely,



Rory Frampton
Senior Planner

Cc: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
868 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1343

August 31, 2004

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
04 SEP -3 PM 2:27

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

RECEIVED
SEP - 3 2004
COUNTY OF MAUI
DEPARTMENT OF PLANNING

Dear Mr. Foley:

Subject: Wailea Parcel MF-9 Condominium Project
Environmental Assessment (EA 2004/0008),
Step 2 Planned Development Approval (PD2 2004/0007) and
Special Management Area Use Permit (SM1 2004/0022)
TMK: (2) 2-1-008: 119

Thank you for your transmittal requesting our review of the subject applications. We have the following comments on the proposed project:

1. The project will contribute to traffic from the Wailea Resort area onto our highway, particularly at the Wailea Ike Drive/Piilani Highway intersection.
2. The traffic impact analysis report (TIAR) did not address or study the connection from Piilani Highway onto Wailea Ike Drive. We request a supplemental report stating conditions of this area be noted and any recommended mitigative measures.
3. We recommend that the applicant further discuss any operational or safety concerns at the connection from Piilani Highway to Wailea Ike Drive with our Highways Division, Maui District Office.
4. The applicant should be required to participate in and provide its fair share of local and regional roadway improvements as determined by our department and the county.

Mr. Michael W. Foley
Page 2
August 31, 2004

STP 8.1343

We appreciate the opportunity to provide our comments. Should you have any questions, please contact Jadine Urasaki, Planning Program Administrator, Statewide Transportation Planning Office at 587-1845.

Very truly yours,


RODNEY K. HARAGA
Director of Transportation



September 24, 2004

Mr. Rodney K. Haraga, Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Haraga:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your comment letter dated August 31, 2004. In consultation with our traffic consultant we offer the following responses.

1. It is acknowledged that the proposed project would add traffic to the subject intersection. This intersection was not included in the Traffic Impact Analysis Report (TIAR) due to its relatively long distance from the project site and the small volume of traffic that would be generated.
2. The following analysis has been provided by our traffic consultant and is intended to serve as the requested supplemental report:

"The TIAR did include how many two-way hourly trips would be added to the subject intersection from the ambient forecast (Figure 4) and the proposed project (Figure 6). When added to the number of current two way hourly trips at the subject intersection, they give the total number of two way hourly trips that can be expected with the project as follows:

<u>Time Period</u>	<u>Number of trips added</u>			<u>Total Volume</u>
	<u>2001 Trips</u>	<u>Ambient Forecast</u>	<u>Proposed Project</u>	
AM peak	745	26	23	794
PM peak	1095	131	103	1329

The 2001 trip volumes for the subject intersection are from the Kihei Traffic Master Plan (2003) by Parsons Brinckerhoff Quade and Douglas and are the latest information available. A level of service analysis was conducted using the Highway Capacity Manual procedure for two lane highways comparing the existing and total with project forecast volumes. The results are summarized below:

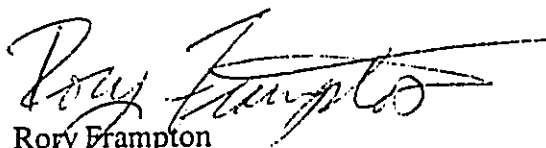
Mr. Rodney K. Haraga
Re: Wailea Parcel MF-9
September 24, 2004
Page 2

<u>Time Period</u>	<u>Level of Service</u> <u>2001 Trips</u>	<u>Total Volume</u>
AM peak	C	C
PM peak	D	D

The additional volumes from ambient traffic growth and the proposed project are not expected to change the highway levels of service in both peak analysis hours. Hence, the proposed project is not expected to have an adverse traffic impact on Piilani Highway."

3. Our traffic consultant will discuss these results with Ms. Charlene Shibuya of the Maui District Office. A copy of this analysis will be provided to the Maui District Office.
4. In order to assist State DOT in determining an appropriate fair share cost for regional improvements, the applicant, in conjunction with other developers in the Wailea Resort area, will be funding an update to the overall traffic master plan for the Wailea Resort area. The update study will determine appropriate regional improvements for the area as well pro-rata cost sharing for the various upcoming developments. The applicant, through their consultant, will coordinate these efforts with State DOT personnel.

Sincerely,


Rory Frampton
Senior Planner

- c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Charlene Shibuya, SDOT Maui District Office

ALAN M. ARAKAWA
Mayor



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 South High Street
WAILUKU, MAUI, HAWAII 96793-2155
Telephone (808) 270-7816 • Fax (808) 270-7833
www.mauewater.org

GEORGE Y. TENGAN
Director

JEFFREY T. PEARSON, P.E.
Deputy Director

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

04 AUG 25 10:34

July 16, 2004

Ms. Kivette Caigoy
Department of Planning
County of Maui
250 South High Street
Wailuku HI 96793

Re: I.D.: EA 2004/008, PD2 2004/0007 and
TMK: 2-1-08:119
Project Name: Wailea Parcel MF-9 Condominium Project

Dear Ms. Caigoy:

Thank you for the opportunity to comment on this application. We provide the following information:

Source Availability and Consumption

The project area is served by the Central Maui System. The main sources of water for this system are the designated Iao aquifer, the Waihee aquifer, the Iao tunnel and the Iao-Waikapu Ditch. The Department will not issue reservations for future meters until new sources are brought on-line. There is currently no moratorium on issuance of meters in Central Maui. Meter application by the applicant is under review by the engineering division. No guarantee of water for this project is implied by these comments.

The applicant's water use estimate of 130,640 gallons per day (gpd) is comparable to empirical use for 6-inch size meters serving multi-family development in Wailea. Based on system per-acre standards, water use would be about 150,835 gpd. Domestic and irrigation calculations will be required in the building permit process.

System Infrastructure

As stated by the applicant, a 16-inch distribution main and a 30-inch transmission line are fronting the subject property. The applicant will be required to provide for water service and fire protection in accordance with system standards. Fire flow calculations, prepared, signed and stamped by a certified engineer or architect, will be required in the building permit process. The approved fire flow calculation methods for use include Guidance for Determination of Fire Flow- Insurance Service Office, 1974 and Fire Flow- Hawaii Insurance Bureau, 1991. The applicant should contact our engineering division with regards to system improvements at: 270-7835.

Conservation

We recommend that the following water conservation measures be considered in project design and implementation:

Use Non-potable Water: With limited potable water resources for Central Maui, we strongly recommend that the applicant pursue using brackish irrigation well water from the Wailea area for all landscaping purposes. Reclaimed water, readily available at the Kihel Sewage Treatment Plant, should be used for dust control during construction.

Eliminate Single-Pass Cooling: Single-pass, water-cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some

models of air conditioners, freezers, and commercial refrigerators.

Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout, "The Costly Drip".

Use Climate-adapted Plants: We recommend that the applicant consider substituting more of the none-native plants in the conceptual landscaping plan for drought tolerant and native plants species to have an impact on irrigation demand. The project is located in the "Maui County Planting Plan" - Plant Zone 3. The brochure "Saving Water In The Yard - What and How to Plant In Your Area" is attached for your reference.

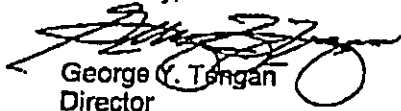
Pollution Prevention

The project overlies the Kamaole aquifer. In order to protect ground and surface water sources in the area, we encourage the applicant to utilize Best Management Practices (BMPs) designed to minimize infiltration and runoff from construction. We have attached sample BMPs for reference. Additional mitigation measures are enumerated below and should be implemented during construction.

- Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the water
- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work
- Retain ground cover until the last possible date
- Stabilize denuded areas by sodding or planting as soon as possible. Replanting should include soil amendments, fertilizers and temporary irrigation. Use high seeding rates to ensure rapid stand establishment
- Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
- Keep run-off on site
- Construct drainage control features, such as berms
- Maintain drainage structures, detention, silt and debris basins
- Control dust by proper stockpiling and use non-potable water for dust control
- Cover open vehicles carrying soils, gravel or other particulate matter.

Should you have any questions, please contact our Water Resources and Planning Division at 270-7199.

Sincerely,


George V. Tengan
Director
emb

c: engineering division
applicant, with attachments:

Ordinance No. 2108 - A Bill for an Ordinance Amending Chapter 18.20 of the Maui County Code, Pertaining to the Plumbing Code
Saving Water in the Yard-What and How to Plant in your Area
A Checklist of Water Conservation Ideas for Condominiums
Selected BMP's from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

C:\WPdocs\Permcomm\Wailea Parcel MF-9 Condo EA PD SM1.wpd

By Water All Things Find Life



September 15, 2004

Mr. George Y. Tengan, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Dear Mr. Tengan:

Re: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

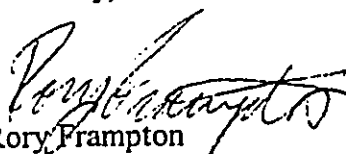
I offer the following comments to your letter dated July 16, 2004 related to the subject application:

- **Source Availability and Consumption:** The applicant will submit domestic and irrigation calculations during application for building permit(s).
- **System Infrastructure:** As requested, the applicant will provide fire flow calculations from a certified engineer or architect during review of the building permit application and utilize fire flow calculation methods recommended by your department.
- **Conservation:** The applicant will implement the conservation measures, including but not limited to no single-pass cooling; use of low-flow fixtures and devices; proper maintenance of fixtures; proper maintenance of the automated irrigation system to prevent over watering; and use of climate-adapted plants, including native species.
- **Pollution Prevention:** The applicant will specify Best Management Practices (BMPs) to minimize infiltration and runoff during construction in project construction documents, including applicable BMPs suggested in your letter.

Mr. George Y. Tengan
RE: Wailea MF-9
September 15, 2004
Page 2

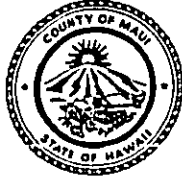
Your constructive comments are appreciated. Please contact me, should further clarification be necessary.

Sincerely,


Rory Frampton
Senior Planner

Cc: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

ALAN M. ARAKAWA
MAYOR



CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919

'04 AUG 19 P2:14

DEPT OF FLANNINI
COUNTY OF MAUI
RECEIVED

August 17, 2004

Kivette A. Caigoy, Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku, HI 96793

RECEIVED
AUG 24 2004
DEPT. OF PLANNING
COUNTY OF MAUI

Subject: EA 2004/0008 and PD2 2004/0007, Wailea MF-9 Condominium Project

Dear Kivette A. Caigoy,

I would like to thank you for the opportunity to comment on the above subject. At this time, we have no specific requests. We do anticipate working with the developer on the infrastructure when plans are submitted during the permit process.

Please feel free to contact Lt. Scott English at 270-7122 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Drechsel".

Jeff Drechsel
Fire Prevention Bureau

cc. John, Raymond, S. Jra



September 21, 2004

Mr. Jeff Drechsel
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaii 96732

Dear Mr. Drechsel:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your August 17, 2004 letter in response to the Draft Environmental Assessment and Special Management Area application for the subject project.

The project designers will consult with your department during the building permit process to address infrastructure requirements.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Rory Frampton".

Rory Frampton
Senior Planner

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.



04 AUG 10 AM 58

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

August 6, 2004

Ms. Kivette A. Caigoy
Staff Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, HI 96793

Dear Ms. Caigoy:

Subject: Wailea Parcel MF-9 Condominium Project
TMK: (2) 2-1-008:119
I.D.: EA 2004/0008, PD2 2004/0007 and SM1 2004/0022

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. We encourage the developer's electrical consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Neal Shinyama
Manager, Engineering

NS/dt:ikh



September 21, 2004

Mr. Neal Shinyama, Manager
Engineering
Maui Electric Company
210 West Kamehameha Avenue
Kahului, Hawaii 96732

Dear Mr. Shinyama:

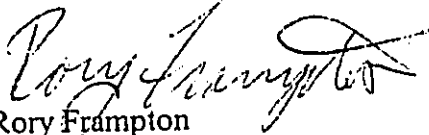
RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your August 6, 2004 "no objection" letter in response to the Draft Environmental Assessment and Special Management Area application for the subject project.

The developer's electrical consultant will meet with you as soon as plans are finalized for the subject project.

If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Senior Planner

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

RECEIVED
AUG 18 2004

CHRIS HART & PARTNERS
Landscape Architecture & Planning

HRD04/1498

August 12, 2004

Kivette A. Caigoy
Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

RE: Request for review and comment on the Draft Environmental Assessment and Special Management Area Permit application for the proposed development of Wailea Parcel MF-9, Wailea, Maui, TMK: 2-1-008:119

Dear Kivette Caigoy,

The Office of Hawaiian Affairs (OHA) is in receipt of your July 27, 2004, request for comments on the above project, which would include a resort residential condominium development of a 144-unit residential condominium project within 20 two-story buildings, a private recreational facility, manager's office, driveway accesses and extensive landscaping. OHA offers the following comments.

Cultural and Archaeological Sites

OHA has concerns about the existence of, and the potential for further, cultural and archaeological finds. OHA requests assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance or excavation, work will cease, and the appropriate agencies will be contacted pursuant to applicable law. Also, because cultural remains in the form of Pre-contact Period temporary habitation shelters (Site 5517) and possible associated petroglyphs have been discovered on the property, OHA also requests archaeological monitoring during ground disturbing activities.

While research seems to conclude that the petroglyphs are of modern/vandal origin, OHA requests that the applicant contact our Community Affairs Coordinator for Maui, Thelma Shimaoka, for further consultation and suggestions. Her contact information can be found at the end of this letter.

Ocean and Coastal Access and Resources

Although the above-reference document continually notes that the subject parcel is on the mauka side of Wailea Alanui Road, that does not mean that the development will not have a direct impact on ocean and coastal ecosystems, and shoreline recreational and subsistence access opportunities. Because the majority of these units will be used by vacationers who will wish to visit the beaches closest to their units, the impact of the increased use of those beaches and coastal resources should be examined. Already, parking and access to beaches in the area are clogged, and the population of 144 new units will only add to the problem. OHA suggests that mitigation of these factors should be examined, as an increased population of the area cannot help but impact on public access and gathering rights.

Water Issues

OHA notes that in the Maui Department of Water Supply's letter of March 18, 2004, it stated that it could not commit to provide water until all requirements for water installation had been completed. Because this project will rely on water from the already overdrawn Iao Aquifer, which has been declared a Groundwater Management Area, OHA recommends that Maui County condition the project on requirements to implement water conservation measures wherever possible, including the use of brackish and/or reclaimed water for irrigation and non-potable water uses; native plantings; low-flow fixtures and devices; a maintenance plan for fixtures to prevent leaks; limited irrigated turf; and creative water conservation methods.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,



Clyde W. Nāmu'o
Administrator

CC: Martin W. Quill
Wailea MF-9 Associates LLC
1885 Main Street, Suite 104
Wailuku, HI 96793

✓ Chris Hart & Partners, Inc.
Landscape Architecture and Planning
1955 Main Street, Suite 200
Wailuku, HI 96793

Office of Environmental Quality Control
235 South Beretania St., Suite 702
Honolulu, HI 96813

Thelma Shimaoka
Community Affairs Coordinator
OHA – Maui Office
140 Hoohana Street, Suite 206
Kahului, HI 96732



September 21, 2004

Mr. Clyde W. Namu'o
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813
Attention: Heidi Guth

Dear Mr. Namu'o:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

Thank you for your August 12, 2004 letter in response to the Draft Environmental Assessment (EA) and Special Management Area application for the subject project. We offer the following responses to your comments:

As noted in the Draft EA, Site 5517 is considered significant and a preservation plan is being prepared for review by the State Historic Preservation Division. The State Historic Preservation Division recommends that no additional archaeological work be required for the project site. However, if *iwi* or Native Hawaiian cultural or traditional deposits are identified during ground excavation or disturbance, work will cease in the area and the State Historic Preservation Department will be notified immediately.

Please also be advised that, based on your request, the applicant's consultant has contacted Ms. Thelma Shimaoka, OHA Community Affairs Coordinator/Maui regarding the Preservation Plan for Site 5517. Ms. Shimaoka requested that a copy of the Preservation Plan be transmitted to OHA for their records. Ms. Shimaoka has not requested any additional meeting with the applicant.

While there may be indirect impacts to on ocean and coastal ecosystems, the proposed mitigation measures listed in the Draft EA will minimize any significant impacts caused by point and non-point sources of pollution. Proposed drainage improvements will prevent increase in the amount of runoff discharged from the project site to downstream properties. There are ample shoreline recreational and subsistence access opportunities along the Wailea coastline. Wailea Beach Park shoreline access is located directly across Wailea Alanui Drive from the project site. Lateral public shoreline access is provided to Polo Beach to the south and to Mokapu/Ulua Beach to the north. The development of Wailea was planned with assurances of public access to

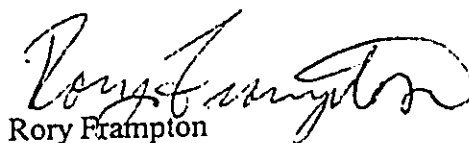
Mr. Clyde W. Namu'o
Office of Hawaiian Affairs
Re: Wailea MF-9
September 21, 2004
Page 2

shoreline areas and the proposed development itself does not diminish public access to shoreline resources.

The applicant will take into consideration suggestions from the Department of Water Supply regarding water conservation measures. These measures include, but are not limited to use of low-flow fixtures and devices; proper maintenance of fixtures; proper maintenance of the automated irrigation system to prevent over watering; and use of climate-adapted plants, including native species.

If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Senior Planner

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.

United States Department of Agriculture



 Natural Resources
Conservation Service

Our People...Our Islands...In Harmony

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

August 2, 2004

Ms Kivette A. Caigoy, Staff Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793

Subject: I.D.: EA 2004/0008, PD2 2004/0007 and SM1 2004/0022
TMK: (2) 2-1-008:119
Project Name: Wailea Parcel MF-9 Condominium Project
Applicant: Wailea MF-9 Associates

04 AUG -3 12:03
DEPT OF PLANNING,
COUNTY OF MAUI
RECEIVED

Dear Ms Caigoy,

We recommend that an erosion control plan and final BMPs be noted in the construction plan.
Native plants are highly recommended for this area to reduce water usage.

Thank you for the opportunity to comment.

Sincerely,

Ranae Ganske - Cerizo
Acting District Conservationist



September 21, 2004

Ms. Ranae Ganske-Cerizo
Natural Resources Conservation Service
US Department of Agriculture
210 Imi Kala Street, Suite #209
Wailuku, Hawaii 96793-2100

Dear Ms. Ganske-Cerizo:

RE: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii..

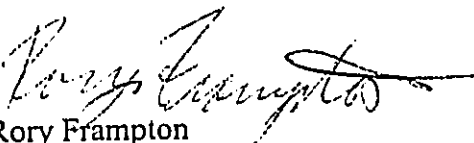
Thank you for your August 2, 2004 letter in response to the Draft Environmental Assessment and Special Management Area application for the subject project.

When construction plans are finalized, an erosion control plan and final Best Management Practices (BMPs) will be included.

Zone specific native plants, such as coconut palms, Hawaiian kou, naupaka, lauae fern, ilima and akia are included in the proposed landscape plan to reduce water usage.

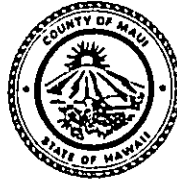
If you have any further questions, please do not hesitate to contact me.

Sincerely,


Rory Frampton
Senior Planner

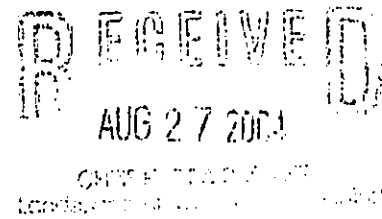
c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Ms. Diane Kodama, M&E Pacific
Mr. Bill Mitchell, Landscape Architect

ALAN M. ARAKAWA
Mayor
MICHAEL W. FOLEY
Director
WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

August 24, 2004



Mr. Rory Frampton
Chris Hart & Partners
1955 Main Street, Suite 200
Wailuku, Hawaii 96793

Dear Mr. Frampton:

RE: Draft Environmental Assessment Prepared in Support of the Proposed Wailea Parcel MF-9 Project located at TMK 2-1-008: 119, Wailea, Island of Maui, Hawaii (EA 2004/0008) (SM1 2004/0022) (PD1 2004/0004) (PD2 2004/0007)

At its regular meeting on August 10, 2004, the Maui Planning Commission (Commission) reviewed the above-referenced document and provides the following comments:

1. Provide a revised project description which includes the reduction to 120 units, elimination of the 8-plex buildings, and the new driveway location. Provide revised site plans.
2. Based on the revised site plans, include an updated Traffic Impact Analysis Report (TIAR) which includes a discussion of the following:
 - a. A site plan delineating the study area.
 - b. A list of projects that were included within the TIAR analysis. Identify whether the projects are constructed or proposed. Provide a site plan identifying the projects.
 - c. Discuss the occupancy rates used for the analysis. Include a rationale for using these rates.

Mr. Rory Frampton
August 24, 2004
Page 2

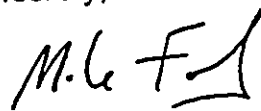
- d. The Shops at Wailea have mixed uses resulting in a variety of operational hours for the shopping center. How does this impact trips both in and out of the shops throughout the day? Provide an explanation as to why the traffic counts did not begin earlier than 9:00 a.m. in order to account for employee traffic.
 - e. As indicated in the meeting, the applicant proposes a traffic signal at the proposed project driveway. Discuss the effect this will have on traffic and the level of service for the area.
 - f. On page 22 of the Draft EA, the analysis indicates that the Wailea Alanui and Grand Wailea Main Entrance Driveway intersection will operate at LOS F with the proposed project, and that "the magnitude of the delays and queues for the left turn movements are undesirable but still considered tolerable." Please clarify how LOS F is considered tolerable.
3. Include a follow-up letter from the Wailea Community Association (WCA) regarding their preconsultation comments and the proposed revisions as discussed in Item #1 above.
 4. Provide a parking analysis and site plan. Discuss how the proposed project complies with Chapter 19.36, Off-Street Parking and Loading, Maui County Code (MCC).
 5. Provide further discussion in detail as to how the proposed project will not contribute to further degradation of nearshore coastal waters.
 6. Discuss the potential of utilizing reclaimed water for irrigation purposes.
 7. Drainage Analysis
 - a. Provide an updated final drainage analysis and plan for the proposed project, as revised. The analysis should include the regional area in addition to subject property.
 - b. In reference to the 84-inch drainage culvert located along Wailea Alanui Road fronting the property, DPWEM has indicated the culvert is of limited capacity. Provide a discussion of the impacts the limited sized culvert has on the

Mr. Rory Frampton
August 24, 2004
Page 3

area. Discuss how the limited capacity culvert will impact the drainage control plan of the proposed project. If further consultation occurs with DPWEM regarding this issue, please include copies of the correspondence in the Final EA.

Please incorporate the foregoing comments and additional information in the Final EA. Thank you for your cooperation. If additional clarification is required, please contact Ms. Kivette A. Caigoy, Environmental Planner, of this office at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar

c: Wayne Boteilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
EA Project File (K. Caigoy)
SM1 & PD2 Project File (C. Suyama)
General File
(K:\WP_DOCS\PLANNING\EA\2004\8_Wait@aMF9\MPCDEAComments.wpd)



September 23, 2004

Mr. Michael W. Foley, Director
Department of Planning
County of Maui
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Re: Draft HRS Chapter 343 Environmental Assessment (EA) prepared in Support of the proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

I am responding to your letter dated August 24, 2004 with comments from the Maui Planning Commission, as follows:

1. Provide a revised project description which includes the reduction to 120 units, elimination of the 8-plex buildings, and the new driveway location. Provide revised site plans.

A revised project description and revised plans, as noted, will be incorporated in the Final EA report.

2. Based on the revised site plans, include an updated Traffic Impact Analysis Report (TIAR). An updated TIAR is included in the Final EA and addressing the following comments enumerated in your letter:

2a. See Figure 1 in the TIAR, which is located in Appendix F of the Final EA.

2b. The list of projects included in the ambient traffic forecast is provided on page 7 of the TIAR. A location map for these projects is included in Appendix B of the TIAR. All projects are currently proposed, with the exception of Wailea Beach Villas (98 multi-family units *makai* of the Shops at Wailea) which is currently under construction.

2c. According to the traffic consultant, the majority of the traffic counts

Mr. Michael W. Foley
Re: Wailea MF-9
September 23, 2004
Page 2

were taken in the winter when hotel and resort condo occupancy rates are the highest. As provided by Wailea Associates, these rates are approximately 85%. The TIAR assumed these occupancy rates to determine the project's trip generation characteristics. Relatedly, in the revised analysis, the summer traffic volumes were increased by 15% to adjust for lower seasonal occupancies.

2d. Typically, a TIAR will analyze the peak hour traffic levels in order to provide a conservative estimate of potential impacts. Traffic counts were not taken prior to 9:00 AM at the Shops at Wailea due to the low traffic activity during this period, especially as it relates to the afternoon peak hour when all of the Shops and Restaurants are opened. Nevertheless, traffic counts were taken at this intersection and the results have been included as Appendix F.1.

2e. The level of service analysis for the proposed traffic signal has been reported in the TIAR dated August 2004. No additional traffic problems are expected as a result of the traffic signals. The newly signalized intersection will go from a LOS "F" (87.7 second delay) to a LOS "A" (10 second delay). The surrounding driveways will encounter larger gaps on either the north or south bound lanes and the condition on the opposing lane will be approximately the same. This is further discussed in the TIAR.

2f. While a level of service "F" has been considered undesirable, traffic engineers have not always been able to mitigate this condition since traffic volumes may not warrant measures such as all way stops or traffic signals to be made or mandated by any governing agencies.

3. Follow-up letter from the Wailea Community Association regarding the proposed revised plans. See Appendix B of the Final EA report.
4. Parking Analysis and Site Plan. Section IV.D. of the Final EA report addresses compliance with MCC Chapter 19.36, Offstreet Parking and Loading Ordinance.
5. Discussion as to how the proposed project will not contribute to further degradation of near shore coastal waters. A discussion of this topic is in Appendix D, Preliminary Drainage and Erosion Control Report.
6. Potential of using reclaimed water for irrigation. At this time, there is no reclaimed water line from the County's Kihei Wastewater Reclamation Facility running south to the Wailea Resort. The cost of installing this line for the proposed project would be cost prohibitive.

Mr. Michael W. Foley
Re: Wailea MF-9
September 23, 2004
Page 3


7. Drainage Analysis.

7.a. An updated Preliminary Drainage and Erosion Control Report is included in Appendix D of the Final EA report.

7.b. The proposed terraced detention basins will be designed to allow runoff to flow to the culverts at a controlled rate. The capacity of the culvert will be analyzed in its current condition when designing the detention ponds. The project's civil engineer will work with DPWEM on this issue.

Your comments are appreciated. Please contact me, should further clarification be necessary.

Sincerely,



Rory Frampton
Senior Planner

Cc: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File

09/13/2004

LINDA LINGLE
GOVERNOR OF HAWAII



'04 AUG 25 P12:02

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. ZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCE
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 19, 2004

Robert Rechtman, Ph.D.
Rechtman Consulting
HC 1 Box 4149
Kea'au, Hawai'i 96749

LOG NO: 2004.2548
DOC NO: 0408MK12

Dear Dr. Rechtman,

**SUBJECT: Chapter 6E-42 Historic Preservation Review - Site Preservation Plan
30 Acre Parcel (MF-9) Within the Wailea Development Area
Paʻāhu Ahupuaʻa, Makawao District, Maui
TMK (2) 2-1-08: por 42**

Thank you for the opportunity to review this preservation plan which was received at our office on July 2, 2004 (Rechtman and Kasberg 2004, *Archaeological Preservation Plan for SIHP Site 5517 [TMK 2-2-1-08: por.42] Paʻāhu Ahupuaʻa, Makawao District, Island of Maui*. Rechtman Consulting, LLC). We have previously reviewed and accepted an archaeological inventory survey report (Log2004.1345/Doc 0404MK13).

During the inventory survey two historic properties were identified. SIHP 50-50-14-5516 consists of ten C-shape features that were interpreted as World War II era military training features. We concurred with the interpretation, given the absence of surface materials, the construction method, and the orientation of the C-shapes facing each other across the drainage. The second site, SIHP 50-50-14-5517 consisted of a precontact overhang shelter with associated petroglyphs. We concurred that this site is significant under Criteria "D" and "E", and agreed with the mitigation commitment for preservation. This preservation plan addresses the preservation of this site.

Short term interim protection measures detailed in the plan indicate that a protective barrier will be placed across the *makai* end of the drainage in which Site 5517 is located. Additionally, construction crew will be informed as to the significance of the area.

Please revise interim protection measures to the following:

- 1) Indicate that orange construction fencing will be placed along the top of the drainage, in the vicinity of the proposed permanent buffer zone, during all construction activities.
- 2) This placement must be verified in writing (and photos) to SHPD Maui.
- 3) That the site will be accurately plotted on all construction drawings.

RECEIVED

AUG 25 2004

cc: John Min & CHA

Robert Rechtman, Ph.D.
Page 2

Long term preservation measures will include the following:

- 1) A buffer "preservation easement", demarcated by the top of the drainage on both sides, and extending within the drainage for 20 feet on both ends of the site boundary.
- 2) No development will occur within the drainage, thus we concur that no impacts will occur to the site (which is an active floodway).
- 3) Removal of invasive vegetation will be conducted by hand, as will maintenance activities. Please revise page 14, paragraph 1 to indicate these activities will be done by hand, no heavy equipment will be allowed.
- 4) The proposed signage is acceptable. We note that the site is being preserved in a passive "as is" manner and no formal interpretation is necessary.
- 5) Litter removal is the responsibility of the property owner, and the preservation sites and buffers will be recorded on the property deed. Please revise the plan accordingly.

Once we receive the requested revisions, we can deem the plan adequate, and accept it as final; the above-mentioned revisions may be submitted to our O'ahu and Maui office in perforated replacement pages. If you have any questions, please contact Dr. Melissa Kirkendall at 243-5169.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

MK:jen

c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratto, County of Maui, Land Use and Codes, FAX 270-7972
Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
Maui Cultural Resources Comm, Dept of Plng, 250 S. High Street, Wailuku, HI 96793

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

04 AUG 27 P3:41

DEPARTMENT OF PLANNING
COUNTY OF MAUI
RECEIVED

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 25, 2004

Mr. Michael Foley, Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Log No: 2004.2604
Doc No: 0408CD40

Dear Mr. Foley,

SUBJECT: Chapter 6E-42 Historic Preservation Review – Applications for Special Management Area Use Permit, Step 2 Planned Development Approval, & HRS Chapter 343 Environmental Assessment for the Proposed Wailea Parcel MF-9 (SUBJECT I.D.: EA 2004/0008, PD2 2004/0007, and SM1 2004/0022)
[County/Planning]
Paeahu Ahupua'a, Makawao District, Island of Maui
TMK: (2) 2-1-008:119 (previously 2-1-008:042)

Thank you for the opportunity to review and comment on the Applications for Special Management Area Use Permit, Step 2 Planned Development Approval, & HRS Chapter 343 Environmental Assessment for the proposed Wailea Parcel MF-9, which we received July 29, 2004. Based on the submitted document, we understand the proposed undertaking consists of a 144 unit residential condominium project contained within 20 2-story buildings. The proposed project will include a private recreational facility and a manager's office, extensive landscape planting, 391 parking spaces, and driveway accesses along Wailea Alanui Drive. The subject property is comprised of 30.167 acres and is currently vacant.

In 2004, Rechtman Consulting conducted an archaeological inventory survey of the subject property. During the survey two historic sites were identified: SIHP 50-50-14-5516 (ten C-shapes associated with WWII), and SIHP 50-50-14-5517 (pre-Contact overhang rockshelter and associated petroglyphs). We have reviewed and accepted the report documenting the findings of the survey (*An Archaeological Inventory Survey of a 30 Acre Parcel [MF-9] within the Wailea Development Area [TMK: 2-2-1-08:por. 42]. Clark et al. 2004*). Since SIHP -5517 has been deemed significant under Criteria 'D' and 'E' and has the potential to yield additional information (this site did not undergo archaeological testing), we concur with the recommendation made in the report that passive preservation is an appropriate form of mitigation (SHPD DOC NO.: 0404MK13/LOG NO.: 2004.1345). To date we have not received a preservation plan for SIHP -5517).

Mr. Michael Foley, Planning Director
Page 2

Given the above information, we recommend the following condition be attached to the subject permit application, should it be approved.

- 1) An acceptable preservation plan shall be submitted to the State Historic Preservation Division for review, and approved in writing, prior to the commencement of any ground altering activities.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney
P. Holly McEldowney, Administrator
Historic Preservation Division

CD: sky

C: Maui Cultural Resources Commission, Dept of Planning, 250 S. High Street, Wailuku, HI 96793

Sep-24-04 03:54pm

FROM: DEPT OF PLANNING COUNTY OF MAUI

000 242010

LINDA LINGLE
GOVERNOR OF HAWAII



04 SEP 24 P12:12

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COUNTY OF MAUI
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 565
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

September 20, 2004

Diane Y. Kodama
M & E Pacific
841 Bishop Street, Suite 1900
Honolulu, Hawaii 98813

LOG NO: 2004.2808
DOC NO: 0409CD28

Dear Ms. Kodama,

**SUBJECT: [Revised] Chapter 6E-42 Historic Preservation Review – Request for Determination for the Proposed Wailea MF – 9 Water Lateral Installation Paeahu Ahupua'a, Makawao District, Island of Maui
TMK: (2) 2-1-008:119 (previously 2-1-008:042)**

These are our revised comments pertaining to the Request for Determination for the proposed Wailea MF – 9 Water Lateral Installation. On September 10, 2004 we received new information indicating the design has been changed. The initial design connected to the Department of Water Supply's lower level system. The Department of Water Supply has since requested the water lateral system connect to their mid-level system.

In 2004, Rechtman Consulting conducted an archaeological inventory survey of the subject property. During the survey two historic sites were identified (SIHP 50-50-14-5516, ten C-shapes associated with WWI, and SIHP 50-50-14-5517, pre-Contact overhang rockshelter and associated petroglyphs). We have reviewed and accepted the report (*An Archaeological Inventory Survey of a 30 Acre Parcel [MF-9] within the Wailea Development Area [TMK: 2-2-1-08:por. 42]. Clark et al. 2004*) documenting the findings of the survey. As SIHP -5517 is significant under multiple Criteria "D" and "E" and has the potential to yield additional information (this site did not undergo archaeological testing), we concur with the recommendation made in the report that passive preservation is an appropriate form of mitigation (SHPD DOC NO.: 0404MK13/LOG NO.: 2004.1345). To date we have not received a preservation plan for SIHP -5517.

Given the above information, we recommend the following condition be attached to the subject permit application, should it be approved.

- 1) An acceptable preservation plan shall be submitted to the State Historic Preservation Division for review and approval prior to the commencement of any ground altering activities.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha

P. HOLLY MCELLOWNEY, Administrator
State Historic Preservation Division

CD:jen

c: Michael Foley, Director, Dept of Planning, 250 S. High Street, Wailuku, HI 96793
Maui Cultural Resources Commission, Dept of Planning, 250 S. High Street, Wailuku, HI 96793



September 15, 2004

Ms. P. Holly McEldowney, Administrator
Historic Preservation Division
State Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Ms. McEldowney:

Re: Applications for a HRS Chapter 343 Environmental Assessment, Special Management Area Use Permit, MCC Chapter 19.32 Planned Development Approval—Proposed 120-unit residential condominium project at TMK 2-1-08: 119 (a.k.a. "Wailea MF-9), Wailea, Maui, Hawaii.

I am responding to your letter dated August 25, 2004 related to the subject applications.

Please find enclosed your letter dated August 19, 2004 commenting on the preservation plan for SIHP-5517. Under separate cover, Dr. Robert Rechtman, project archaeologist, will submit a revised report to include the interim protection and long term preservation measures recommended by SHPD.

Your comments are appreciated. Please contact me, should further clarification be necessary.

Sincerely,

Rory Frampton
Senior Planner

Encl.

c: Ms. Colleen Suyama, Senior Planner
Ms. Kivette Caigoy, Planner
Mr. Marty Quill, CMI Development, Inc.
Mr. Steve Jiran, CMI Development, Inc.
Project File



555 Kaukahi Street, Suite 214
Wailea, Hawaii 96753-8333
(808) 874-6866 • FAX (808) 874-4027
info@wcamaui.com

September 20, 2004
VIA FAX 242-8973

Marty Quill, President
CMI Development
1885 Main Street, Suite 104
Wailuku, HI 96793

Re: MF-9 – Revised Preliminary Plans – Approval Granted

Dear Marty,

Thank you and your team for meeting with the WCA Design Review Committee on this date to present the revisions to your project. In general, the Committee is favorably impressed with your decision to build six-plex structures and reduce your total unit count to 120. We are also pleased you have relocated the main entrance on Alanui to across from the Grand Wailea Ballroom entrance and recognize the need for a traffic signal at this location.

Some of the many design elements considered and implemented in your plan include:

- A varied and open site plan with curving roads and varied building pad elevations.
- A significant down use of density as compared to allowable zoning.
- A 29-foot maximum ridge line that greatly improves site and view corridors from the surrounding communities.
- The lush landscaping and benched site design that will have a pleasant and positive impact from Alanui Drive as well as within the development.
- A combination of garages and covered and trellised carports.
- Commitment to conserve energy with heat pumps, natural ventilation and recycling.
- Drainage and pedestrian access throughout the site.

The Design Review Committee believes that a gated entry to this project would be beneficial from a safety and security standpoint. Controlling access to an area that does not adjoin the beach or other community property allows for the smaller, internal roads and helps give a more human scale to the development.

For the Committee,

A handwritten signature in cursive script that reads "Phil Johnson".

Phil Johnson
Design and Covenants Manager

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APPENDIX K
Community Meetings

Memorandum



September 21, 2004

To: Project File

By: Rory Frampton, Senior Planner, Chris Hart & Partners

Re: Wailea Parcel MF-9; Community Meetings

On September 15 and 16, 2004, meetings were held in Wailea with property owners in the Golf Vistas and Golf Estates projects, respectively. The purpose of the meetings was to further update nearby landowners of the revisions to the project as well as the status of the current review process with the County. All current property owners were invited to attend via a letter from Mr. Martin Quill of Wailea MF-9 Associates LLC. Sign-up sheets for the attendees are attached hereto.

Mr. Quill opened both meetings by presenting the revised project plans and explaining the revisions. Major revisions included the reduction of units from 144 to 120, the elimination of 8-plex building type, the change of driveway access location and plans to install a traffic signal at the project entry on Wailea Alanui Drive.

The relationship of the proposed roof heights to the floor pad elevations of the neighboring properties was presented. Discussions were held relative to the potential for impact on ocean views. It was explained that there will be significant excavation on the mauka portion of the project site in order to establish the desired floor pads for the project. This will minimize the potential for visual impacts from neighboring properties.

Landscaping was discussed. It was explained that a perimeter fence and hedge will be planted along the project boundary with the golf course. It was also noted that landscape objectives of the project are to screen the project from view without impacting neighbors views. Trees were selected so that they would not project over the roof heights.

Concern was expressed related to construction noise impacts due to anticipated site work and possible blasting. It was explained that the site contractor (anticipated to be Goodfellow Brothers), will be responsible for notifying neighbors if any blasting is to occur as well as for insuring that the activities take place in a manner that minimizes impacts to neighbors.

Other discussion items included roof colors, building materials, and pedestrian circulation on Wailea Alanui. No major objections were voiced on any of the issues discussed.

The review process through the County was explained and it was noted that all property owners within 500 feet of the property will be notified of the Planning Commission Public Hearing. Any future comments or concerns could be directed to the Planning Department, Chris Hart & Partners or Wailea MF-9 Associates LLC.

Ho'olei/Wailea MF-9 Associates LLC
Informational Meeting Sign-In Sheet
September 15, 2004 4:00 PM

<u>Name</u>	<u>Mailing Address</u>
Joyo Spencer	4372 W. Waiola St
David McKinley	4291 Waiaina Pl. / Golf Vistas
Don McEntire For: Ben & Estler Throne	120 Manalo St. / Golf Vistas
Mark Hyde	4320 E. Waiola Lp, Golf Vistas

Ho'olei/Wailea MF-9 Associates LLC
 Informational Meeting Sign-In Sheet
 September 16, 2004 4:00 PM

<u>Name</u>	<u>Mailing Address</u>
ARLENE DICK SMALL	3954 WAAKAULA PL, WAILEA, MAUI HI 96753
Stephen Zack	3929 WaaKaula St.
JOHN F. NORCOM	3825 L. HONAPIICANI RD B306 CAHAHA, HI 96761
MARIANNA LITTLE	283 E. IKAHAI PLACE WAILEA, HI 96753
Paul MacLaughlin	CB4
Nan Menzies	840 Alua St. #103 Wailuku, HI 96793
Don & Kris WITSON	PO BOX 4197 PARK CITY UT 84060
Tae Murphy / Diane Paul	283 Akaula Way Kihei HI 96753
Jo-Ann Aki	For: 3940 WaaKaula
Carole Brazil	3913 WaaKaula St.
P.H. Strenzel	3901 WaaKaula St.

RESIDENCE
191 LOLOWAA

Ho'olei/Wailea MF-9 Associates LLC
 Informational Meeting Sign-In Sheet
 September 16, 2004 4:00 PM

<u>Name</u>	<u>Mailing Address</u>	
ALLEN EDICK SMALL	3954 WAAKAULA PL, WAILEA, MAUI HI 96753	
Stephen Zack	3929 Waa Kaula St.	
JOHN F. NORCOM	3875 L. HAWAIIAN RD B306 CAHAHA, HI 96761	
MARIANNA LITTLE	233 E. IKA KAI PLACE WAILEA, HI 96753	
Paul MacLaughlin	CBU	
Nan Menzies	840 ALOA ST. #103 WAILUKU, HI 96793	
Don & Kris Wilson	PO BOX 4197 PARK CITY UT 84060	RESIDENCE 191 LOLOWAA
Tae Murphy / Diane Paul	283 Akaula Way Kihei HI 96753	
Jo-Ann Aki	For: 3940 Waa Kaula	
Carole Torzari	3913 Waa Kaula St.	