MAY 2 9 2007

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(808) 270-7230
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DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2 , Wailuku, Hawaii 96793

May 3, 2007

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

Dear Ms. Salmonson:

RE: Final Environmental Assessment for the South Maui Community Park project, located on property situated west of Piilani Highway, Kihei, Maui, Hawaii; TMK No: (2) 2-2-002:042.

The Department of Parks & Recreation, Planning & Development Division has reviewed the Final Environmental Assessment for the subject project, and has determined that a Finding of No Significant Impact (FONSI) is warranted. Please publish the notice of availability for this project in the May 23, 2007 OEQC Environmental Notice.

We have enclosed four (4) copies of the Final EA and will be transmitting a completed OEQC publication form and project summary via e-mail (e-mail will be transmitted by Chris Hart & Partners, Inc.). Should you have any questions, please call our Planning & Development Division at 270-7931, or Mr. Michael Summers of Chris Hart & Partners at 242-1955.

Sincerely,

TAMARA HORCAJO
For Director

TH:PM:do

Cc: Mr. Patrick Matsui, Parks - Planning & Development
Mr. Dan Shupack, Planning Department
Mr. Michael Summers, Chris Hart & Partners

2007-05-23-PEA-MA-SOUTH MAUI COMMUNITY PARK PART I

MAY 23 2007

HRS Chapter 343 Final
Environmental Assessment
prepared in support of

South Maui Community Park

TMK: (2) 2-2-002:042
Kihei • Maui • Hawai`i

May, 2007

CHRIS HART & PARTNERS

Prepared for:
County of Maui
Department of Parks & Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, HI 96793

Prepared by:
Chris Hart and Partners, Inc.
1955 Main St., Suite 200
Wailuku, HI 96793

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Appendix B	Archaeological Data Report
Appendix C	Archaeological Preservation Plan and SHPD Approval Letter; Archaeological Monitoring Plan; E-mail Correspondence with Dr. Melissa Kirkendall
Appendix D	Cultural Impact Assessment
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Appendix H	Agency Comments and Letters of Response

I. PROJECT INFORMATION

A. PURPOSE OF THE REQUEST

This environmental assessment has been prepared to assess short and long-term impacts associated with development of the South Maui Community Park. The proposed project is a community park facility incorporating a 1096-seat gymnasium; multi-use courts; soccer, baseball and softball fields; pavilion and amphitheater; 480 bleacher seats; five comfort stations; and an accessory building and storage area for park maintenance equipment, along with supporting on and off-site infrastructure, on property situated northwest of Piilani Highway, Kihei, Hawaii; TMK No: (2) 2-2-002:042.

B. PROJECT PROFILE

Proposed Project:	Sub-regional Park Complex including: 1096-seat gymnasium; three soccer fields; two softball fields; one baseball field; five multi-use courts; a pavilion and amphitheater; 480 bleacher seats; five comfort stations; stand-alone restroom buildings; and an accessory building and storage area for park maintenance equipment.
Existing Land Use:	Undeveloped
Project Area:	44.833-acres
Access:	Liloa Drive (North-South Collector Road); New Welakahao Street

C. REQUIRED LAND USE AND DEVELOPMENT PERMITS

C. REQUIRED LAND USE AND DEVELOPMENT PERMITS

The following land use, development permits and approvals are required for the project, and all, except building permits, are in the process of being obtained:

- Special Management Area (SMA) Permit
- Project District Phase II and Phase III Approval
- National Pollution Discharge Elimination System (NPDES) Permit
- Grading Permit
- Building Permits
- R1 Reclaimed Water Use Permit

Pursuant to Maui County Code, Chapter 19.45, "Project District Processing Regulations," a Project District Phase II and III approval are required prior to issuance of building permits. The Project District Phase II application requests park designation for the property and approval of the conceptual site plan.

D. ACCEPTING AUTHORITY

Agency:	County of Maui Department of Parks and Recreation
Address	700 Hali'a Nakoa Street, Unit 2 Wailuku, Hawaii 96793
Phone/Fax:	Phone: (808) 270-7230; Fax: (808) 270-7934
Contact:	Mr. Patrick Matsui, Parks Planning & Development

E. LAND OWNER

Owner	County of Maui
Address	200 South High Street Wailuku, Maui, Hawaii 96793

F. CONSULTANTS

Planning Consultant/Landscape Architect:	Chris Hart & Partners
Address:	1955 Main Street, Suite 200 Wailuku, Maui, Hawaii 96793
Phone/Fax:	Phone: (808) 242-1955; Fax: (808) 242-1956
Contact:	Mr. Michael Summers, Senior Planner
Civil Engineer:	Warren S. Unemori Engineering, Inc.
Address:	2145 Wells Street, Suite 403 Wailuku, Maui, Hawaii 96793
Phone/Fax:	Phone: (808) 242-4403; Fax: (808) 242-4856
Contact:	Mr. Clifford Mukai
Architect:	Hiyakumoto Higuchi Architects
Address:	1860 Main St Wailuku, Maui, Hawaii 96793
Phone/Fax:	Phone: (808) 242-9705; Fax: (808) 242-2898
Contact:	Mr. Calvin Higuchi
Electrical Engineer:	ECM, Inc.
Address:	130 N Market St Wailuku, HI 96793
Phone/Fax:	Phone: (808) 242-8070; Fax: (808) 244-9539
Contact:	Mr. Wally Chong, President
Traffic Engineer:	Philip Rowell and Associates
Address:	47-273 "D" Hui Iwa Street Kaneohe, HI 96744
Phone/Fax:	Phone: (808) 239-8206; Fax: (808) 239-4175
Contact:	Mr. Philip Rowell, P.E

G. PRE-CONSULTED AGENCIES AND COMMUNITY GROUPS

A. COUNTY OF MAUI (See: Appendix A, "List of Pre-consultation Activities with Agencies, Community Organizations, and Neighbors Prior to Public Hearing")

1. Department of Parks and Recreation
2. Department of Planning
3. Department of Public Works and Environmental Management

4. Department of Water Supply
5. Department of Fire & Public Safety
6. Police Department

B. STATE OF HAWAII

1. Department of Land and Natural Resources, Historic Preservation Division
2. Department of Transportation
3. Office of Hawaiian Affairs
4. Department of Health
5. Department of Accounting and General Services, Survey Division

C. FEDERAL / OTHER

1. Department of the Army
2. Natural Resources Conservation Service (NRCS)
3. Maui Electric Company (MECO)

D. PRIVATE INTERESTS

1. Kihei Community Association (KCA)
2. Neighboring property owners within 500 Feet

II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

The subject property is located on the makai side of Piilani Highway, adjacent and south of the Lokelani Intermediate School and between Hale Kuai Street and Welakahao Street, within the developed area of South Kihei, Maui, Hawaii; TMK Parcel Nos. (2) 2-2-002:042 (See: Figure Nos. 1, 2, and 3 "Regional Location", "Aerial Location", and "Tax Map Key").

B. EXISTING LAND USE

The majority of the project site is not being used for any particular purpose and is presently undeveloped and overgrown with Kiawe trees, shrubs, weeds, bushes, and grasses. The southwestern corner of the property, approximately 2-acres, is the future site of the Kihei Recycling and Redemption Center, which is already temporarily situated just mauka of the southwest corner.

C. LAND USE DESIGNATIONS

State Land Use Classification:	Urban
Kihei-Makena Community Plan:	Project District 5 (See: Figure No. 4, "Community Plan Map")
County Zoning:	Kihei-Makena Project District 5 (PD-K/5) (See: Figure No. 5, "Zoning Map")
Flood Zone Designation:	C (See: Figure No. 6, "Flood Zone Map")
Special Designations:	Special Management Area (SMA) (See: Figure No. 13, "SMA Map")

D. PROJECT BACKGROUND

Kihei-Makena is a fast growing community developed in a linear pattern between the shoreline and Piilani Highway. Development generally consists of single- and multi-family residences, resort condominiums, regional shopping centers, and commercial strip developments. The majority of the region's passive and active recreation facilities are located along the shoreline and have been classified as beach parks. These facilities are generally shared by residents and visitors alike and are usually inadequate to serve the resident population needs for active recreation facilities such as athletic fields, sport courts, and gymnasiums.

In 1992, the *Maui Public Facilities Assessment* recommended that more non-beach areas would be needed in order to provide a wider variety of active and passive recreation facilities to residents. Beach parks were seen as unsuitable for recreation facilities such as tennis courts, gymnasiums, etc. The study noted the following:

> "Despite having a relatively large park-area to people ratio, Kihei's parks are lacking in many facilities. This may be due to the fact that they are beach and tourist oriented, where surf and sand are more important than tot lots and ballfields."

To address the regional need for additional parkland and active recreational facilities, the County of Maui spent $2.4 million in 2001 to purchase 69-acres of undeveloped land comprising the balance of Project District 5 in the Kihei-Makena Community Plan. The subject property comprises 44 of the 69-acres purchased.

In October 2003, the County of Maui prepared the *South Maui Region Parks & Open Space Master Plan*, in order to assess the region's parkland and facility requirements and prepare conceptual plans for development of the South Maui Community Park. The study identified a deficiency in both recreation facilities and parkland. Specifically, the study identified a need for an additional 9 tennis courts, 3 tot lots, ten sport courts, and a gymnasium to accommodate demand to 2010. The study also identified an existing shortfall of 104.7 acres of sub-regional parkland in Kihei-Makena. The following table illustrates future demand for parkland by the following park categories:

	Present Acres	Recommended Acres		
	2000	2000	2010	2020
Park Type				
District Parks	90.1	92	109	126
Neighborhood Parks	34.4	92	109	126
Mini-Parks	0.8	46	54	63

The South Maui Community Park complex will alleviate the current shortage of park facilities and land in South Maui by providing multi-use courts, graded pads for playground equipment and a gymnasium, as well as passive recreational open space within close proximity to existing schools and residential communities. The proposed facility will also provide six additional athletic fields to accommodate regional and island-wide demand for these facilities.

E. SITE ANALYSIS

Figure No. 9, "Site Analysis" shows the major site elements that influenced design decisions. These elements included: (1) Wind, (2) Topography & Slopes, (3) Drainage, and (4) Views.

The site analysis revealed the areas most suitable for placement of the baseball and soccer fields and which areas would be well suited to passive recreation pursuits. The analysis revealed a relatively flat area in the center of the site, with a natural bowl-shape opening to the west. This will become the site of the pavilion and amphitheater. Wind is also a factor. The placement and orientation of the baseball and soccer fields minimize the impact of sun and wind on each respective game. The fields are also situated to run parallel to the grades so as to minimize grading and retaining walls. Viewpoints were noted during the site analysis and will be preserved and enhanced with seating and/or play areas.

F. PROJECT DESCRIPTION

The park design is a result of two main factors: (1) Existing Site Conditions and (2) Community Recreation Facility Needs. The park design responds to the various site conditions discussed above, while incorporating as many as possible of the recommended facilities by the County of Maui Department of Parks and Recreation. The park includes the following facilities:

- 1 Gymnasium (1,096 seats)
- 1 Baseball Field (lighted)
- 2 Softball Fields
- 3 Soccer Fields
- 5 Multi-use Courts
- 480 Bleacher Seats
- 3 graded pads for playground equipment
- 5 Comfort Stations
- Picnic Tables and Benches
- Pavilion and Outdoor Amphitheater
- Bicycle / Walking Paths (approx. 1.5 miles)
- Paved parking for 534 vehicles
- Accessory building/storage area for park maintenance equipment

The design process leading to the final configuration of the park components was arrived at through various planning stages. The site analysis was first completed and informed the placement of the large fields as well as revealing a flat area in the center of the site that could be ideal for a pavilion and amphitheater. The ridge running north-south through the site was used as an organizing element as it determined the alignment of the main bike / pedestrian trail and some of the picnic areas that occupy key view points. The following elaborates on the design and placement of each component use:

Gymnasium. The gymnasium is located on the northeastern corner of the property. The building location was chosen based on the need for proximity to the adjacent schools. The sharing of the gym's facilities with the school was an important consideration and getting it as close as possible to the school allowed for easy walking access for the neighboring students. Its final location, away from the Liloa Drive (North-South Collector Road), was chosen due to the desire to minimize grading, since this part of the site is less steep than the portion of the site that is closer to the North-South Collector Road.

The orientation of the gymnasium at a right angle to the main roadway allows for a passing vehicle to easily see along the length of both sides the gym. This orientation will minimize the area not visible from the roadway and enhances surveillance. The design of the gymnasium calls for a courtyard entry at one end of the building. From an aesthetic standpoint, it makes sense to face this part of the building towards the parking lots and main entry walkway, making the entry area highly visible at a distance and giving the building a 'presence' regarding the way people approach the building.

The rotation of the gymnasium also maximizes views to the ocean from the entry courtyard area of the building, the most likely area where people will gather between events. In addition, the rotation of the gymnasium is at such an angle as to maximize trade wind-flow over the greatest possible surface area of the building. This will, in theory, assist in cooling the building and lower energy costs associated with air-conditioning.

Athletic Field, Passive Recreation & Open Space. The fields were placed according to their size requirements and site conditions. Wind concerns dictate that baseball be placed on the lower half of the site as this area may be less wind-affected than the upper portions. Orientation of the baseball fields is in keeping with design guidelines, which recommend that the batter *not* face into the sun[1]. The lower two baseball fields are oriented to allow a sharing of one comfort station as well as temporary facilities during organized competitions that would occupy both fields simultaneously. Further, the orientation of the athletic fields allows for the creation of a large open space on all sides of the pavilion and amphitheater. This is important for allowing open space for un-programmed activities to take place such as picnics; 'pick-up' games of soccer, flag football, ultimate Frisbee, etc., and the placement of graded pads for playground equipment. This open space area is situated to maximize views to the ocean and takes advantage of the tradewinds to create a comfortable environment. Windbreak trees and canopy shade trees will be planted to provide relief from the wind and sun and to create a pleasing environment and landscape diversity.

Two pads for playground equipment are located on the upper portion of the site to provide an option for children to play while other family members are using the upper soccer fields. A third pad is located near the amphitheater.

Tennis Center. The location of the tennis center was considered to be appropriate as it is a facility that will not be impacted by being separated from the main area of the park. The gulch presents a barrier to access to the tennis center, however a bike / pedestrian trail could provide a connection. In the future, a bike / pedestrian bridge crossing may be one consideration for providing permanent access across the span of the gulch. Wind-break tree plantings are important to the success of this area for use for tennis.

Amphitheater. An amphitheater located in the center of the park provides outdoor entertainment for park visitors. It also lends itself to programmed events and supplements organized functions occurring at the pavilion and adjacent open space area (festivals, fund raisers, community fair, etc.). It is located in a naturally occurring bowl

[1] P.61, *Graphic Standards for Landscape Architects*, Austin, Dunbar, Hulvershorn and Todd, 1986

that could be further shaped to accommodate approximately 100-500 persons, depending on the type of seating (grass slope or stepped seating, etc.).

Parking. Parking is conveniently provided throughout the site and is oriented along the roadway. The proposed orientation minimizes the displacement of active and passive recreational opportunities. The following table provides a summary of the required parking.

Use	Standard	Seats/Area	Required	Proposed
Gymnasium (Phase 1)	1 stall/6 seats	1096 seats	183	183
Covered Entry Lobby	1 stall/500 SF	789 SF	2	2
Multi-Purpose Rooms	1 stall/100 SF	1,574 SF	16	16
Arts & Crafts Room & Pals Office	1 stall/100 SF	916 SF	9	9
Public Restroom (Gymnasium)	1 stall/500 SF	777 SF	2	2
Shower/Locker/Toilets & Exit	1 stall/500 SF	2,336 SF	5	5
Activity Rooms (North Side)	1 stall/100 SF	1,986 SF	50	50
Ballfields (Phase 1)	12/field	2 fields	24	24
Bleacher Seating (Phase 1)	1 stall/6 persons	160 seats	26	26
Public Restroom (Phase 2)	1 stall/500 SF	225 SF	1	1
Ballfields (Phase 2)	12/field	4 fields	48	55
Bleacher Seating (Phase 2)	1 stall/6 persons	320 seats	53	58
Pavilion (Phase 2)	1 stall/100 SF	2,400 SF	25	34
Amphitheater (Phase 2)	1 stall/6 persons	275	46	52
Tennis Center (Phase 3)	3 stalls/clay court	5 courts	15	16
Public Restroom (Phase 3)	1 stall/500 SF	225 SF	1	1
Future Overflow Grass Parking			1	39
TOTAL (paved parking stalls)			505	534

The facility will provide 534 paved parking stalls, whereas 505 are required by county ordinance. This represents a 6% increase over the required parking. In addition, Phase 2 is anticipated to provide 39 stalls of grassed overflow parking. The following table identifies the parking provided by project phase:

	Required	Provided
Phase 1	317	317
Phase 2	172	200
Phase 3	16	17
TOTAL	505	534

Access. The primary access to the project site will be from two driveways along the Future Liloa Drive (North South Collector Road). An additional access to the tennis center will be provided from Welakahao Street.

On-Site Improvements. Site improvements will consist of, but are not limited to, an asphalt paved internal roadway, concrete sidewalks, concrete curb and gutters, and landscape planting. Musco Lighting's energy efficient Light Structure Green© lighting system will be used for parking lot and athletic field lighting, at pole heights up to 80 feet (See: Figures No. 17a-c, Lighting). Underground utility improvements will consist of underground drainage, sewer, and water delivery and fire protection systems, along with underground electrical, telephone, and cable distribution systems. Improvements to the Liloa Drive (North-South Collector Road) fronting the project site will be implemented by the Department of Public Works and Environmental Management and closely coordinated with the subject project. The Department estimates that the proposed Liloa Drive extension project will be initiated in two to three years. As such, a temporary driveway may be required from the existing terminus of Liloa Drive at Hale Kuai Street to service the first phase of the project due to any lag in timing of the improvements. Road widening requirements for the portion of New Welakahao Street adjoining the park, including, but not limited to, pavement widening, construction of curb, gutter and sidewalk, street lights and relocation of utilities underground, will be met as part of the construction of Phase III of the project.

Project Phasing. The project will be built in three (3) phases. Phase I will be constructed once all of the required land use and development permits have been obtained. Phases II and III will be built when funding is available. The following table identifies the proposed improvements:

Phase I	*Phase II*	*Phase III*
Gymnasium	Softball Field	Tennis Center
Soccer Field	Baseball Field	Public Restroom
Softball Field	2 Soccer Fields	17 Parking Stalls
317 Parking Stalls	Public Restroom	
Accessory building / storage area for park maintenance equipment	Pavilion	
	Amphitheater	
	200 Parking Stalls	

Construction. Construction is anticipated to begin once all of the required State and County Permits have been issued. It is anticipated that completion of the first phase of

the project will require approximately 12 months. Buildout of Phases II and III are dependent upon financing. There will be short-term construction related impacts to the surrounding environment. Standard mitigation measures to control these impacts are described in Section III of this report.

Sustainable Building Design Techniques. A number of sustainable building design techniques have or will be implemented, including but not limited to the following:

- Assessment of site characteristics such as vegetation, topography, geology, climate, natural access, solar orientation patterns, water and drainage, and existing utility and transportation infrastructure to determine the appropriate land use design.
- Selection of a site with short connections to existing municipal infrastructure systems.
- Placement of gymnasium to take advantage of natural features and to maximize their beneficial effects. Building placement maximizes and preserves positive site characteristics, enhances human comfort, safety and health, and achieves operational efficiencies.
- Provision of erosion and dust control measures during the construction phase.
- Utilization of stormwater filtration systems to prevent cement products, oil, fuel and other toxic substances from leaching into groundwater and nearshore waters.
- Tree planting to shade the gymnasium, roadways, and paved parking areas.
- Maximizing efficiencies for lighting, heating, ventilation, air conditioning systems and other equipment within the Gymnasium.
- Installing water conserving, low flow fixtures within the public restrooms.
- Incorporating water efficient landscaping (xeriscaping) into the landscape design.
- Utilizing properly planned and efficient irrigation systems, including using drip irrigation instead of above-ground spray heads where appropriate, and using rain sensor technology that shuts off the automatic irrigation system during rain events, preventing over-watering.
- Utilizing reclaimed water for landscape irrigation.
- Selecting non-invasive, climate-appropriate plants for the Kihei area, thereby minimizing need for irrigation.

G. ALTERNATIVES

1. No action

Analysis. The No Action alternative would leave the property in its existing condition. This alternative would delay and/or foreclose the opportunity to provide a sub-regional park facility on the subject parcel. The subject property is zoned for single- and multi-family residential and park uses. The No Action alternative would preserve the opportunity to utilize the land for these purposes.
By leaving the property in its existing undeveloped condition, the No Action alternative would generate neither short- nor long-term environmental impacts. Short-term impacts are generally associated with the construction phase of a development and include dust, noise, and runoff. Longer-term impacts are related to traffic generated by the development, an increase in runoff caused by the introduction of impervious surfaces, and any associated impact to public infrastructure and service systems.

The No Action alternative would foreclose any public benefit derived from the project. The purpose of the project is to provide a park facility within close proximity to South Maui residents. The South Maui Community Park complex will alleviate the current shortage of park facilities and land in South Maui by providing multi-use courts, pads for playground equipment, a gymnasium, as well as passive recreational open space within close proximity to existing schools and residential communities. The proposed facility will also provide additional athletic fields to accommodate an island-wide demand for these facilities.

2. Alternative Design & Facility Mix

Analysis. Various alternative configurations were considered during the design phase of the project. A summary of these alternatives is presented below:

1. No Gymnasium.

   The initial conceptual park master plan prepared in October 2003 did not include a gymnasium (See: Figure No. 18, "Alternative Site Plan"). The incorporation of a gymnasium into the project plans was made to accommodate a community need for such a facility. The gymnasium will also serve the Kihei Elementary School and Lokelani Intermediate School, which are located adjacent to the park's northeastern boundary and do not have a gymnasium on-site.

The proposed gymnasium was situated on the northeastern corner of the property in order to be proximate to the adjacent schools. The principal impacts associated with the gymnasium will be short-term impacts during the construction phase; i.e. runoff, noise, and dust. Longer-term impacts associated with the operation phase include an increase in traffic due to vehicle trips generated by the facility and runoff created by an increase in impervious surfaces. The proposed gymnasium will also generate a significant increase in the required parking for the project, which will consume open space and increase the amount of impervious surfaces on the site. The increase in impervious surfaces will require a greater investment into on-site drainage facilities. The gymnasium will also require approximately $8.0 million of public funds to construct. This money could be utilized for alternative park related purposes in the region. The proposed facility will provide a venue for indoor basketball games, volleyball games, various spectator sports, performances, community gatherings, and special events. Should the gymnasium not be constructed, the community and adjacent schools would not have the facility available for these types of activities.

2. Less active recreation space and more passive recreation space

The proposed facility will primarily accommodate active rather than passive recreational uses. Active recreation facilities include athletic fields, multi-use courts, and other similar facilities used by organized groups for specific purposes. Passive recreation space is for unorganized activities such as biking and walking, picnics, pickup games, and jogging. This type of space is typically left open or in a more natural condition. Landscape planting and grassed open areas are typical of passive recreation areas.

Active recreation facilities require more parking and generate more traffic than passive recreation facilities. As such, more impervious surfaces are required of active recreation facilities than of passive facilities. Impervious surfaces produce more stormwater runoff and therefore require greater investment into on-site drainage infrastructure.

The proposed park plan emphasizes active over passive recreation in order to accommodate a regional demand for these facilities. The plan also accommodates passive recreation in the form of areas set aside for picnics, integration of walking and jogging paths throughout the project site, and landscaped open areas that will be accessible to the public.

3. Alternative Location

The proposed community park facility could be developed mauka of Piilani Highway on TMK Parcel No. (2) 2-2-002:001. This 150-acre parcel was acquired by the County through a land exchange with Haleakala Ranch with the intent to develop it as a regional park facility. After accessing the site's development feasibility, it was determined that for the following reasons the site would be significantly more expensive to develop:

- Unfavorable topography would require excessive grading to accommodate athletic fields, roadways, and parking;
- Poor soil conditions;
- Intersection improvements would be required to provide access to the site from Piilani Highway; and
- Lack of available on-site infrastructure to support the development, i.e. roads, sewer, water, and wastewater systems.

In addition, TMK No. (2) 2-2-002:001 is further removed from the community and is largely inaccessible to daily public school use due to its location mauka of Piilani Highway. Locating the park at this location would require park users to be solely dependent upon automobiles and busing to provide transportation to the site.

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

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. The subject property is located within South Kihei, on the leeward facing shore of Maui. A patchwork of existing multi- and single-family residences, commercial, and resort developments characterize South Kihei. Development in the region generally occurs in a linear pattern between the shoreline and Piilani Highway, a four-lane principal arterial road from Mokulele Highway to Mapu Place/Kilohana Street. South Kihei Road is a two-lane major urban collector road that provides service along the shoreline to residential, commercial, and condominium resort areas. The North-South Collector Road abuts the western boundary of the project and will be a major two-lane collector road and bikeway/greenway system linking residences, schools, and neighboring commercial uses. Zoning and Community Plan Designations throughout South Kihei are predominantly in support of commercial, hotel, multi-family, and single-family residential uses.

The subject property is located on the makai side of Piilani Highway, adjacent to and south of the Kihei Elementary and Lokelani Intermediate Schools and between Hale Kuai Street and Welakahao Street. Piilani Highway abuts the property to the east and the North South Collector Road to the west. Approximately 62-acres of undeveloped property community planned and zoned for residential use is situated to the west of the subject property. Existing single-family residential neighborhoods are to the southwest. The proposed park is within walking distance of the neighboring schools and nearby residential neighborhoods. Within the context of the developed urban landscape that currently exists, the proposed development can be characterized as an infill project. Development of the site is in character with the established regional land use pattern in the area.

The Community Plan map presents an illustration of the range of potential future land uses planned within the immediate area (See: Figure No. 4 "Community Plan Map"). The following is a description of zoning, community plan designations, and existing land uses adjacent to the subject property:

North:

Zoning: Public/Quasi-public
Community Plan: Project District; Public/Quasi-Public
State Land Use: Urban

Existing uses. Kihei Elementary and Lokelani Intermediate Schools

South:

Zoning: PD-K/5
Community Plan: Project District
State Land Use: Urban

Existing uses. Hope Chapel; Single-Family Residential

East:

Zoning: PD-K/4 Golf Course Park District
Community Plan: Park
State Land Use: Urban

Existing uses. Silversword Golf Course

West:

Zoning: B-2 Community Business District; R-2 Residential; R-3 Residential
Community Plan: Commercial; Single-Family Residential
State Land Use: Urban

Existing uses. Commercial; Undeveloped land community planned and zoned for single-family residential

Potential Impacts and Mitigation Measures. The proposed community park facility is located within a developed urban area adjacent to existing residential communities and public schools.

In the context of the Kihei-Makena Community Plan, which was adopted in order to guide future development in the area, there will be no conflict with existing or future land use patterns. The sharing of the park's facilities with the adjacent schools was an important consideration in locating the park at the proposed site, which will allow for easy walking access for the neighboring students. The proposed facility will also be

within walking distance of adjacent neighborhoods providing convenient access to open space and active and passive recreation facilities.

2. Topography and Soils

Existing Conditions. The project site is currently undeveloped and is covered with buffelgrass (the density of which varies seasonally and with rainfall) and a scattering of kiawe trees. The parcel slopes down in a southeasterly to northwesterly direction ranging in elevation from approximately 90 feet to 30 feet above mean sea level, with an average slope of approximately 6.5%.

According to the "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, the predominant soil type at the project is Puuone sand (PZUE) and Waiakoa (WID2). Puuone sand is characterized as excessively drained, light grayish-brown, non-plastic calcareous sand, underlain by light grayish-brown, non-plastic cemented sands. Permeability is rapid above the cemented layer, runoff slow and the hazard of wind erosion is moderate to severe. The Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded, is similar to Waiakoa very stony silty clay loam, 3 to 7 percent slopes, except that it is eroded and stones cover 3 to 15 percent of the surface. In most areas about 50 percent of the surface layer has been removed by erosion. Runoff is medium and the erosion hazard is severe. This soil is used for pasture and wildlife habitat.

Potential Impacts and Mitigation Measures. The topographic and soil analysis suggests that the proposed land uses are suitable for the site, including onsite infrastructure, athletic fields, gymnasium and parking.

3. Terrestrial Biota (Flora and Fauna)

Existing Conditions. In July 1982 Environmental Impact Study Corporation (Marvin T. Miura, Ph.D., Principal) performed a biological reconnaissance of the subject property. The area covered in the study spanned from Kulanihakoi Street (north) to Old Welakahao Road (south). This study was used as part of an earlier SMA permit and Project District Phase II Application completed in November 1989 and revised March 1990 for the Piilani Project District. The following are excerpts taken from the report:

CORRECTION

THE PRECEDING DOCUMENTS(S)

HAS BEEN REPHOTOGRAPHED

TO ASSURE LEGIBILITY

SEE FRAME(S)

IMMEDIATELY FOLLOWING

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1. Flora

The vegetation of the project site can be characterized as an area containing grassland with scattered Kiawe trees, kiawe forest within the gulch areas and kiawe thickets.

The flora of the project area include native and introduced species of plants common to arid, lowland coastal areas. The majority of the plants observed are classified as exotics, plants introduced to Hawaii. The endemic plant (native to Hawaii) observed within the project area was a wiliwili tree found growing in Keokea Gulch. Wiliwili trees are also found throughout the Makena area and in some of the other gulches within the Kihei area.

None of the plants observed on the project site are rare or endangered species of plants. The site has been previously disturbed and exotic species are the dominant plant forms.

2. Fauna

The birds observed on the project site include barred dove, northern cardinal, myna, house sparrow, Japanese white-eye and spotted munia. The project site primarily affords habitat for urban and lowland birds.

The lack of a permanent standing body of water precludes the site as a unique wildlife area. The vegetation cover and type of vegetation limits the area as a lowland wildlife habitat and therefore is not unique. None of the animals seen or observed during the reconnaissance are considered rare or endangered species.

3. Conclusion

None of the biota observed or believed to be normally present in the project area is considered rare or endangered. The flora and fauna species found on the project site are primarily exotic species and commonly found throughout the island and state. No significant adverse impacts to the flora and fauna are expected from the proposed development."

On August 2, 2005, Chris Hart & Partners staff performed a site reconnaissance survey of the subject property. Based upon this survey, it appears that existing vegetation primarily consists of Ilima (Sida cordifolia), Haole Koa (Leucaena levcocephala), Kiawe

(Prosopis pallida), and Wiregrass (Elevsine indica). No wetland indicator plants were found on the property.

Avifauna typically found in the area includes common myna, several species of dove, cardinal, house finch, and house sparrow. Mammals common to this area include cats, dogs, rats, mice, and mongoose. No known rare, endangered, or threatened species of flora or fauna were discovered on the subject property.

Potential Impacts and Mitigation Measures. There are no known significant habitats of rare, endangered or threatened species of flora and fauna located on the subject property. As such, the proposed use of the site is not expected to have a significant negative impact on botanical resources and there are no botanical reasons to impose any restrictions, conditions, or impediments to the proposed development.

4. Flood and Tsunami Hazard

Existing Conditions. According to Panel Number 150003 0265 C of the Flood Insurance Rate Map, September 6, 1989, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone C. Flood Zone C represents areas of minimal flooding (See: Figure No. 6, "Flood Zone Map").

Potential Impacts and Mitigation Measures. The subject development is located within an area of minimal flooding and will therefore not be impacted by flood and tsunami related hazards.

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 background and emissions from many pollution sources. The impact of land development activities on air quality in a proposed development's locale differs by project phase (site preparation, construction, occupancy) and project type. In general, air quality in South Kihei is considered relatively good. Non-point source emissions (automobile) are not significant to generate a high concentration of pollutants. The relatively high quality of air can also be attributed to the region's exposure to wind, which quickly disperses concentrations of emissions. The South Kihei 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 the short-term construction related

activities. Site work such as grading and building construction, for example, will 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. Some of these measures will include:

- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing material transfer points and on-site vehicular routes, and locating potentially dusty equipment in areas of least impact.

- Providing an adequate water source on site prior to start-up of construction activities so that the project site can be regularly sprinkled to keep dust down. It is proposed that reclaimed water from the Kihei Wastewater Treatment Facility be utilized via an 8" line located along the North-South Collector Road.

- Onsite dirt piles or other stockpiled particulate matter will be covered, and/or wind breaks installed, and water and/or soil stabilizers employed to reduce wind blown dust emissions.

- Traffic speeds will be limited to 15 miles per hour or less on all unpaved surfaces and access will be restricted to reduce unnecessary vehicle traffic.

- Landscaping and rapid covering of bare areas, including slopes, beginning with the initial grading phase.

- Installation of temporary silt screens and an 8- to 12-feet high geo-textile dust fence around the perimeter of the project site.

- Controlling of dust from shoulders, project entrances, and access roads.

- Providing adequate dust control during weekends, after hours, and prior to daily start-up of construction activities. Controlling of dust from debris hauled away from project site.

6. Noise Characteristics

Existing Conditions. The noise level 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. Ramifications of

various sound levels and types may impact health conditions and an area's aesthetic appeal. Noise levels in the vicinity of the project area are generally low. Traffic noise from South Kihei Road is the predominant source of background noise in the vicinity of the subject property.

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 bulldozers, front-end loaders, and material-carrying trucks and trailers, would be the dominant source of noise during the construction period. To minimize construction related impacts to the surrounding neighbors; the developer will limit construction activities to normal daylight hours, and activities associated with the construction phase of the project, will comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control". In the longer-term, the proposed project should not significantly impact existing noise conditions in the area due to the relatively small increase in traffic generated by the project.

7. Archaeological/Historical Resources

Existing Conditions. In April 1990, Paul H. Rosenthal Inc. (PHRI) conducted an archaeological inventory survey on the property that identified 15 sites which comprised 30 features within the project area. The identified features included nine terraces, six low walled enclosures, four "C" shapes, four rock piles, two platforms, two midden scatters, an alignment, a high walled enclosure, and a modified outcrop. Most of these features were considered to be agricultural in function, but seven were thought to indicate at least temporary habitation. This would indicate use of the Kula zone, at least on its margins, for agricultural purposes, extending subsistence catchments further inland than previously thought, in addition to indicating an intensity of use not expected. The 1990 Inventory Survey identified six sites (1710, 2514-2516, 2519, and 2522) within the project area as having significant information value at the regional and local level. It was recommended that additional data recovery be conducted at these sites including vegetation clearing, mapping, and/or excavation. In July 1990 PHRI prepared a Data Recovery Plan for sites 1710, 2512, 2514, 2516, 2519, and 2522.

Pursuant to recommendations by the Hawaii State Historic Preservation Division, provided in response to pre-consultation regarding this project, Scientific Consultant Services (SCS) was contracted in June 2005 to prepare an Archaeological Data Recovery Report in order to further document the sites identified by PHRI. Fieldwork for the Data Recovery was performed during a five-week period in March and April of 2005 by Field Director Kirk Johnson, B.S. and Field Assistant Eric Pope, B.S. Project Principal

Investigator was Michael Dega, Ph.D. Data Recovery investigations began by locating the designated sites identified during the PHRI studies (1989, 1990b). Of these, all but Site 2519 were found, with this site believed to be impacted beyond recognition by post-1999 fire suppression activities. Five sites comprised of ten features were studied and excavated. The only feature investigated that may represent permanent habitation was the platform at Site 2514.

The radiometric dates from two of the sites (Sites 2512 and 2516) and the historic artifacts from Site 1710 demonstrate that most of the sites in the project area were utilized in the late pre-Contact to early post-Contact periods.

Following Data Recovery, putting this project into the overall context of the area's history and prehistory was challenging. The lack of temporally diagnostic artifacts was a hindrance not only for this Data Recovery work, but for Hawaiian Archaeology as a whole. The retrieval of charcoal samples during the present study, two of which came from restricted areas in subsurface features, however, somewhat alleviates this situation, with Sites 2512 and 2516 dating to late pre-Contact to early post-Contact times. On the other hand, the clear pre-Contact occupation of Site 2514 indicates utilization of the project area perhaps as early as the mid-15th century.

The Data Recovery report recommends that no further work be conducted within the project area excepting Site 2512, which is considered a ceremonial location. The report recommends that a Preservation Plan be prepared to preserve Site 2512.

In October 2005 SCS prepared a Preservation Plan for Site 2512 under the direction of Michael Dega, Ph.D. Site 2512 is a complex of associated constructions located on the top of a small knoll, immediately north of a deeply incised, intermittent stream gully. Site 2513 is comprised of five (5) component features described as follows:

- Feature A: Platform
  Function: Habitation or Shrine

- Feature B: Low enclosure
  Function: Possible agriculture
- Feature C: Terrace
  Function: Agriculture/landscaping

- Feature D: Terraced slope
  Function: Agriculture/landscaping; possible shrine

- Feature E: Rock mound
  Function: Intermediate/possible clearing pile

Potential Impacts and Mitigation Measures. The following mitigation measures are proposed in the preservation report:

Site Preservation

Site 2512 was selected for preservation due to its important prehistoric function (possible ceremonial structure). All the sites had been subject to Inventory Survey and focused data recovery. Other documented sites in the project area were primarily related to habitation and were poorly preserved. OHA concurred that Site 2512 would remain protected and the others would not be preserved (See: Appendix H, "Agency Comments and Letters of Response").

Preservation of Site 2512 will take the form of avoidance and protection, also referred to as conservation. The following measures will be carried out to provide the maximum preservation and conservation of Site 2512 within the context of the proposed development:

- The preservation area for the site is irregular, with three sides (north, east, west) being artificial and one side (south) being natural (cliff face). An interim 5 m (16 feet) buffer zone and 3 meter (10) feet permanent buffer will be established around the north, east, and west flanks from the respective exterior wall directions of the site. The southern flank buffer zone consists of the southern portion of Feature F as it is naturally protected along a steep cliff face rising 24 feet (7.31 m) above the intermittent drainage below. A vegetative boundary (i.e. naupaka hedge or similar vegetative barrier) will be placed around the north, east, and west flanks of the site. The southern flank of the site will not require an immediate buffer zone or vegetative boundary because it borders a very steep drainage. The preservation area will protect some 2,259 sq. ft of land encompassing the site.

- No construction will be conducted within the established preservation area. During construction activity on the parcel, the interim buffer zone (5 m or 16 feet) around Site 2512 will be demarcated on the north, east, and west flanks by orange construction fencing around the entire perimeter of the buffer zone. Once construction has been completed, the fencing may be removed and a permanent buffer zone will be established around the site (3 m or 10 feet) that may be demarcated by landscaping and/or boulders placed at the corners of the buffer

zone. The permanent buffer zone shall be kept free of all structures. Only landscaping with native plants may occur within the permanent buffer zone. However, no landscaping shall be allowed within the site itself.

- Demarcation of the interim and permanent buffer zone will be duly recorded by the client's surveyors and must be reviewed and accepted as appropriate by the Department of Land and Natural Resources – Historic Preservation Division (DLNR-SHPD) prior to construction on the parcel. The interim and permanent buffer zone shall be surveyed and plotted on all construction plans.

- No heavy equipment or other construction-related machines or materials will be allowed to be moved or stored in the preservation area. The preservation buffer zone surrounding the site shall not be used as staging and/or storage areas.

- All understory brush in the preservation zone may be removed using hand-clearing techniques.

- All existing stones, whether stacked or not, will be left in place.

- Should storm, earthquake, or other natural or cultural damage occur to the site and its environs, and should this necessitate repairs to ensure the safety of descendants and others wishing to visit the site, the landowner (County) will notify the SHPD of the situation and reach an agreement with the SHPD on how to proceed prior to implementing any alterations to the ground surface, site, or vegetation within the preservation area.

- Modern debris generated by users of the site or that may have been blown into the site may be removed by hand from within the preservation area whenever is deemed necessary by the County, descendants, or other groups visiting the site.

- These provisions are made for on-going preservation of Site 2512. The portion of the property containing the site and its permanent preservation zone will be preserved, with preservation provisions being binding on any successive owners and/or lessees of the TMK parcel 2-2-2:042.

- Information and protection signs for the site may be created for the County. The signs would be recognized as official County signs to the public. The following provides an example of one possible sign. The upper portion of the sign would include the following text:

Historic Site 2512
Possible Ceremonial Site
Keokea Ahupua`a, Makawao Moku
This area is preserved as part of Hawaiian heritage.
Damage to this Historic Site is punishable under Chapter 6E-11 Hawai`i Revised Statutes.
Please help protect this important historic site.

- The lower portion of the site could be interpretive and would summarize the results of archaeological research at the site in the area, discussing settlement patterns and chronology. SCS will work with the SHPD on sign language, size, and placement.

- This Preservation Plan shall be made part of the binding lease agreement for TMK 2-2-2:042.

Acceptance of the Preservation Plan by the Hawaii State Historic Preservation Division is documented in Appendix C, "Archaeological Preservation Plan and SHPD Letter of Approval."

Archaeological Monitoring

A field inspection of the site was conducted on April 16, 2007 by Dr. Melissa Kirkendall of State Historic Preservation Division (SHPD). Due to sand deposits in the area, Dr. Kirkendall recommended archaeological monitoring in areas where sand deposits are present, in order to mitigate against possible impacts to historic properties. Pursuant to SHPD's recommendation, Scientific Consultant Services, Inc. has prepared an Archaeological Monitoring Plan in accordance with SHPD rules governing standards for Archaeological Monitoring (See: Appendix C, "Archaeological Monitoring Plan"). The Archaeological Monitoring Plan is currently being reviewed by SHPD.

8. Visual Resources

Existing Conditions. The subject property is situated along the makai side of Piilani Highway within the urbanized area of South Kihei. South Kihei offers intermittent sweeping views of the Pacific Ocean and Haleakala from Piilani Highway. In the area of the project site, Pacific Ocean views are currently available from Piilani Highway. Once built, expansive Pacific Ocean views will also exist from the park.

Numerous scenic resources have been identified in South Kihei, which are documented and discussed in the Maui Scenic Coastal Resources Study, August 1990 (See Figure No. 14, "Scenic Resources"). Figure 14 in this report identifies significant makai and open space views occurring across the subject property. Significant views of Haleakala are also identified mauka of the subject property.

Potential Impacts and Mitigation Measures. The proposed project will have an impact on makai views from Piilani Highway. This impact will be caused by landscape planting of Norfolk pines along the eastern boundary of the project site; the installation of a 6-foot chain link fence, and construction of the gymnasium. Planting of Norfolk pines is necessary to buffer the ballfields from tradewinds that currently travel from north to south across the subject property. In order to mitigate these impacts, view corridors have been established between the plantings to protect views toward the ocean. Figure No. 15, "Visual Impact Assessment" documents the impact on makai views from Piilani Highway. Figure 7, "Conceptual Site and Landscape Master Plan" identifies the landscape planning along the mauka property line. The proposed project will also create public views of the ocean from the mauka side of the project site (See: Figure No. 12, Site Photographs).

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

Existing Conditions. Maui County experienced strong population growth during the past decade with the 2000 resident population expanding to 128,241, an 80.6% increase over the 1980 population of 70,991 (United States Department of the Census, 2000). Population growth is projected to continue with the year 2020's resident population projected to reach 175,136 (SMS Research and Marketing Services, Inc., June 2002). Similarly, visitor growth has increased significantly in the County over the last decade with the average daily visitor count increasing from 15,363 in 1980 to 43,854 in 2000, a 285% increase in visitors per day. Thus, the County's defacto population, defined as all persons physically present in an area, grew to 168,544 in 2000, an 88% increase over 1990 levels (SMS Research and Marketing Services, Inc., June 2002).

Likewise, Kihei-Makena experienced high growth rates as the population grew to 22,870 in 2000, up from 15,365 in 1990, and 7,263 in 1980 (SMS Research and Marketing Services, Inc., 2002). The anticipated 2020 population of the Kihei-Makena region is projected to reach 31,576. The average daily visitor population of the region in 1990 was

16,079 and is anticipated to reach 19,161 in 2020, a 19% increase over 1990 levels (SMS Research and Marketing Services, Inc., June 2000).

Potential Impacts and Mitigation Measures. The proposed project will generate short-term construction related impacts that are generally short-term affects. During periods of low unemployment, in-migration might occur in order to accommodate the local demand for labor. However, local contractors will be utilized to the maximum extent practicable during the construction phase of the project. Local labor constitutes the significant majority of the work force employed by the Maui construction industry.

2. Housing

Existing Conditions. According to the Hawaii Housing Policy Survey 2003, there was a resident housing unit deficit of 5,053 units in Maui County in 2002. In order to eliminate pent-up demand over 20 years, 17,586 units will need to be produced. Of these units, 2025 units are needed between 2003 and 2007 for persons earning more than 80% of the median household income as determined by the Department of Housing and Urban Development. The following table provides a breakdown of demand for units by affordability.

Purchase Price (in Thousands)													
Year	Median Income (HUD)	Demand	80%-120% of Med Income Count	Price	100%-120% of Med Income County	Price	120%-140% of Med Income County	Price	140%-180% of Med Income Count	Price	>180% of Med Income County	Price
2003	$61,368	440	110	$20 -$251	130	$251-$302	60	$302-$352	60	$352-$537	80	>$537
2004	$62,043	360	90	$193-$241	110	$241-$289	50	$289-$338	50	$338-$515	60	>$515
2005	$62,725	400	100	$185-232	120	$232-$278	50	$278-$324	60	$324-495	70	>$495
2006	$63,478	460	110	$178-$223	140	$223-$268	60	$268-$312	70	$312-$477	80	>477
2007	$64,240	390	90	$172-$215	120	$215-$258	50	$258-$301	60	$301-$460	70	>$460

Source: Hawaii Housing Policy Survey, 2003

Potential Impacts and Mitigation Measures. The proposed project will service existing and future South Maui residents. The project itself will not significantly impact demand for housing in the region.

3. Economy

Existing Conditions. The Kihei-Makena economy is based primarily upon the visitor industry. Visitor accommodations are located along the shoreline along with various support facilities, multi-family, and single-family residential developments. Kihei and Wailea have developed into important visitor destination anchors. Makena is significantly less developed. Much of the region's economic activity is derived directly

or indirectly from tourism. In addition to tourism, high technology promises to be an increasingly important component of the Kihei-Makena economy. Most existing and projected employment in high technology will occur at the Maui Research and Technology (R&T) Park located in North Kihei, which is likely to become a major employment center. The establishment of a K-12 high school adjacent to the R&T Park will create additional employment within Kihei. In 2003, the following industries were the major sources of employment:

- Leisure and Hospitality (32%);
- Trade, transportation, and utilities (21%); and
- Government (13%).

Combined, these industries accounted for approximately two-thirds of Maui County's employment. Construction accounted for 5% of Maui's employment in 2003.

Countywide, unemployment has decreased from 6.5% in 1998 to a rate of 3.4% in July of 2004 (State of Hawaii, Department of Labor and Industrial Relations). Full employment in an economy generally occurs at a rate of approximately 5%. The island's strong economic performance is primarily being driven by robust construction and tourism industries.

Potential Impacts and Mitigation Measures. The project will generate construction-phase economic impacts that are generally short-term effects. They include employment, income, and expenditure impacts that are created by on-site and off-site construction employment, on-site and off-site trade/transportation/service employment, and manufacturing employment in support of construction. The proposed project will produce a limited number of full and part-time jobs during the construction phase of the development.

Short-term construction related impacts. Using the State of Hawaii, Department of Business Economic Development and Tourism's Input-Output Model (1998), the direct, indirect, and induced employment impact generated during the construction phase of the development is approximately 387 jobs. The direct employment impact is estimated to be approximately 156 jobs during the construction phase.

Long--term construction related impacts. The project will generate a limited number of full-time building and landscape maintenance positions.

4. Cultural Resources

Existing Conditions. A Revised Cultural Impact Assessment Report was prepared by Scientific Consultant Services, Inc. (SCS) which assesses the potential impact of the project on Native Hawaiian cultural practices (See: Appendix D, "Cultural Impact Assessment"). The Cultural Impact Assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the "Cultural Impact Assessment Methodology", the OEQC states:

> ...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories... (1997).

Summary and Cultural Assessment

As suggested in the "Guidelines for Assessing Cultural Impacts" (OEQC 1997), CIA's incorporating personal interviews should include ethnographic and oral history interview procedures, circumstances attending the interviews, as well as the results of this consultation. It is also permissible to include organizations with individuals familiar with cultural practices and features associated with the project area.
The "level of effort undertaken" (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a "good faith effort". However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort would undoubtedly mean an entirely different level of research activity.

In the case of the present parcel, letters of inquiry were sent to organizations whose expertise would include the project area. Consultation was sought from Lance Foster, the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O`ahu; Thelma Shimaoka, Coordinator of the Maui branch of the Office of Hawaiian Affairs; the Central Maui Hawaiian Civic Club; Kihei Community Association; and the Maui Planning Department. The response obtained plus archival and historic research provides a good faith and in-depth level of effort.

None of the native Hawaiian organizations, the Community Association, or the Maui Planning Department, that is mandated "to preserve and protect customary and traditional practices of Native Hawaiians" (94 Haw. 31, 45 2000) responded with information concerning the potential for cultural resources to occur in the project area (TMK 2-2-002:042), or with additional suggestions for further contacts. Therefore, no interviews were conducted for this property, as there were no interviewees identified.

Potential Impacts and Mitigation Measures. The project area has not been used for traditional cultural purposes within recent times. Based on historical research and the above listed contacts, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities within the project area will not be affected and there will be no direct adverse effect upon cultural practices or beliefs as long as coastal access is insured. The visual impact of the project from surrounding vantage points, e.g. the highway, mountains, and the ocean is minimal as open space will be created by the proposed Kihei Community Park that can be accessed by everyone.

Based on organizational response, and archival research 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 development activities on a portion of plot 42. However, it is recommended that Cultural Advisors be consulted during the planning process. In this way, appropriate mitigation measures, if needed, can be put in place before development occurs. Because there were no activities identified within the project area, no adverse effects are anticipated.

C. PUBLIC SERVICES

1. Recreational Facilities

Existing Conditions. Kihei-Makena has a wide reputation as a recreational destination, particularly for ocean related activities. Ocean sports and recreation available in the region include golfing, swimming, fishing, surfing, scuba diving, snorkeling, sailing, and kayaking. As of October 2003 there were 27 State and County parks in South Maui providing approximately 189 acres of developed and undeveloped parkland. Currently, Kihei-Makena has 16 regional parks (64 acres), 16 of which are beach parks, and 11 Sub-Regional Parks (125 acres).

State and County beach parks within close proximity to the project area include the Kamaole Beach Parks I, II, and III, the Kihei Aquatic Center, and several other beach parks along the Kihei coastline.

In October 2003, the County of Maui prepared the South Maui Region Parks & Open Space Master Plan in order to assess the region's parkland and facility requirements and prepare conceptual plans for development of the South Maui Community Park. The study identified a deficiency in both recreation facilities and parkland. Specifically, the study identified a need for an additional 9 multi-use courts, 3 tot lots, ten (10) sport courts, and one (1) gymnasium to accommodate demand to 2010. The study also identified an existing shortfall of 104.7 acres of sub-regional parkland in Kihei-Makena. The following table illustrates future demand for parkland by the following park categories:

	Present Acres	Recommended Acres		
	2000	2000	210	2020
Park Type				
District Parks	90.1	92	109	126
Neighborhood Parks	34.4	92	109	126
Mini-Parks	0.8	46	54	63

According to the South Maui Region Parks & Open Space Master Plan, Kihei-Makena has 211 acres of developable parkland including the 44.8 acres that comprise the subject parcel. However, 150 acres are within the Kihei Regional Park parcel, which is considered a Regional park and implies a different set of facility standards (based on a County-wide demand as opposed to Kihei-Makena demand). Excluding this land, there is only 61 acres of developable sub-regional parkland. Undeveloped beach parcels (Maui Peace Park, Kihei Boat Ramp, the Kaho'olawe Island Reserve Commission parcel) are not recommended for future recreation facilities because they will function as beach parks (regional and special-use parks) and as such are not recommended for recreational facilities such as multi-use courts, gymnasiums, etc.

Potential Impacts and Mitigation Measures. The South Maui Community Park complex will alleviate the current shortage of park facilities and land in South Maui by providing multi-use courts, graded pads for playground equipment, and a gymnasium, as well as passive recreational open space, within close proximity to existing schools and residences. The proposed facility will also provide six additional athletic fields to accommodate an island-wide demand for these facilities. Despite development of the site, however, there will still be a shortfall of facilities including a need for 1 community

center, 6 sports courts, and approximately 60 acres of developed parkland, with the greatest shortfall being in the mini- and neighborhood park categories.

2. Police and Fire Protection

Existing Conditions. There are two fire stations serving this community. The first fire station is located at 11 Wamahaihai Street at Kalama Park, which is about one mile southwest of the subject site. The Kihei Fire Station is equipped with a 1,500-gallon pumper, and is staffed by one captain and five firefighters per twenty-four hour shift. The second fire station is located in Wailea on Kilohana Street. This station provides coverage in the northern portion of the Kihei-Wailea-Makena area.

Patrol officers on assignment provide police services for the Kihei-Makena sub district from a new police sub-station at Kihei Town Center. According to the County's Public Facilities Assessment Update, July 15, 2002, in 2001 there were 31 budgeted uniformed patrol officers and an estimated 10 investigative officers working from the Kihei sub-station. Based on population, the facilities assessment identifies a need for approximately 75 officers, which is 34 more officers than are currently available in the District. At present, the Kihei Substation facilities are inadequate to accommodate a staff this size. A large portion of policing responsibilities must continue to be met by officers dispatched from the Central Station, resulting in excessive response times to calls for service from outlying areas.

Potential Impacts and Mitigation Measures. New development can create an opportunity for an increase in crime and as a result places an increased burden on police protection services. To discourage criminal activity and alleviate the potential impact on police services, the applicant will incorporate Crime Prevention Through Environmental Design (CPTED) principles into the project. Strategies to facilitate natural surveillance, natural access control, and territorial reinforcement have already been incorporated into the project, including parking lot lighting, limiting the number of access ways into the site, providing visibility to the project site from adjacent roadways and incorporating public areas into the project design to facilitate observation of common areas. In addition, information on CPTED principles has been distributed to the architectural design consultants so that further measures may be incorporated into the project as necessary.

In addition, alcohol consumption has been a contributing factor to police calls for service in South Maui's existing beach parks. Due to the proposed park's close proximity to schools and churches, and its primary orientation towards promoting athletic activities for South Maui's youth, it does not constitute an appropriate location for the

consumption of alcohol. In order to provide a clean and healthy environment for children and to minimize the project's impact on police services in South Maui, the consumption of alcohol will be prohibited at the South Maui Community Park.

3. Schools

Existing Conditions. There are two public elementary schools and one public intermediate school in the area. Kihei and Kamalii Elementary and Lokelani Intermediate Schools serve Kihei. In addition, Montessori Hale O'Keiki provides private education for grades PreK-4. Until recently, Kihei students attended H.P. Baldwin High School in Wailuku, but are now required to attend Maui High School in Kahului. The Kihei Elementary and Lokelani Intermediate schools are located adjacent to the northern boundary of the park site. According to the County's Public Facilities Assessment Update, July 15, 2002, the enrollment, capacity, and future status of Kihei schools is as follows:

	Rated Capacity	2001 Enrollment	Ratio of Enrollments
Kihei Elementary School	1054	774	73%
Kamalii Elementary School	1051	841	80%
Lokelani Intermediate	555	718	129%
Maui High	1,379	1,673	121%

The assessment indicates that capacity is sufficient to accommodate existing enrollments of elementary students. However, existing enrollments justify the need for an additional intermediate school and high school beginning in 2005.

Potential Impacts and Mitigation Measures. Pursuant to longstanding State Department of Education and County of Maui policy the proposed park will be a joint use facility shared by the Kihei and Lokelani Intermediate Schools and the public. Each school, as well as other area schools, will have access to the gymnasium, ball fields, multi-use courts, and amphitheater on an as needed basis for recreation purposes.

4. Medical Facilities

Existing Conditions. The Wailuku-based Maui Memorial Medical Center (MMMC) provides centralized medical services for the Island. Medical and dental offices are located in Kihei and Wailea to serve the Makena region's residents.

According to the County's Public Facilities Assessment Update, July 15, 2002, the status of hospital facilities on Maui in 2000 is as follows:

- **Obstetric and Pediatric Beds** are significantly underutilized throughout the County of Maui, with a maximum actual occupancy rate of 31% compared to the desirable rate of 85%.
- **Critical Care Beds**, available only at Maui Memorial Medical Center, stayed occupied at a fairly favorable 64% rate in 2000, compared to the desirable rate of 75%.
- **Acute Care Beds** appeared to be undersupplied at MMMC. This could be because non-acute patients were occupying acute care beds while they waited for long-term care beds at Hale Makua and Kula Hospital.
- **Long-term Care Beds** at Hale Makua and Kula Hospital appeared to be inadequate to handle demand in 2000, with occupancy rates consistently exceeding the desired rate of 95%.
- **Specialty Care Beds** were generally underutilized in hospitals of the County of Maui in 2000.

As for the existing capacity of Emergency Medical Services, the County's Public Facilities Assessment Update, July 15, 2002, notes that the Kihei-Makena area is currently served by one ambulance. However, there is a present need for two ambulances.

Potential Impacts and Mitigation Measures. The proposed project will not produce an overall increase in the area's population and will therefore not produce an increase in demand for medical facilities.

5. Solid Waste

Existing Conditions. Only two public landfills are currently operating on Maui, the Central Maui Landfill in Puunene and the Hana landfill. The privately owned Decoite Construction and Demolition landfill in Maalaea accepts commercial and construction related wastes. Residential solid waste collection is provided by the County and taken to the Central Maui Landfill, which also accepts waste from private refuse collection companies.

According to the County's Public Facilities Assessment Update, July 15, 2002, existing capacity and planned expansion of the Central Maui Landfill will accommodate the Kihei-Makena Community Plan Region's waste disposal needs beyond the year 2020.

Potential Impacts and Mitigation Measures. On a short-term basis, construction activities will require the disposal of construction-related solid waste. The applicant will work with the contractor to minimize the amount of solid waste generated during the construction phase of the project. During construction the applicant will incorporate a job site-recycling plan in order to reduce the amount of construction related waste generated by the project. Green waste from on-going maintenance of the site will be either mulched on site or deposited at the Central Maui landfill's green waste recycling facility. It is envisioned that some of the green waste may also be used as mulch for other projects in South Maui. During on-going operations, waste receptacles will be placed throughout the site. A private waste collection company will be responsible for collecting and depositing this waste at the Central Maui landfill.

D. INFRASTRUCTURE

A Preliminary Engineering Report was prepared by Warren S. Unemori Engineering, Inc., which analyzes existing infrastructure systems accessible to the subject property and probable improvements to accommodate the proposed development. The report addresses water, sewer, drainage, roadway, and electrical and telephone systems (See: Appendix E, Preliminary Engineering and Drainage Report).

1. Water

Existing Conditions. There is an existing 18" potable water distribution waterline and a 12" reclaimed water transmission line along the extension of Liloa drive (N-S Collector).

Based on projections provided by the mechanical consultant, anticipated potable water consumption for phases I and II of the completed project are:

- Phase I: 68,400 gpd
- Phase II: 82, 400 gpd

Peak domestic demand is expected to be approximately 140 gpm.
Phase III is anticipated to consume approximately 6,800 gpd. Peak demand is expected to be approximately 52 gpm.

The water demand analysis was based on sewage and water flow data from Lahaina Civic Center, Eddie Tam Memorial Gym, Keopuolani Park and War Memorial Complex. These facilities were used as a basis of comparison because each of them has a gymnasium and park facility similar to the proposed South Maui Community Park. It is

possible that the use of reclaimed water for irrigation and other water efficiency measures during the project's operational phase may produce an actual potable water demand that is lower than the estimated demand.

Anticipated reclaimed water (irrigation) demand: Based on projections provided by the landscape architect, Phases I and II of the completed project are anticipated to consume approximately 160,000 gpd of R1 reclaimed water for landscape irrigation. Peak demand is expected to be approximately 350 gpm (based on an 8-hour water window). Phase III is anticipated to consume approximately 2,500 gpd. Peak demand is expected to be approximately 100 gpm.

Potential Impacts and Mitigation Measures. Potable waterlines (8" or larger in diameter, based on ultimate fire flow requirements for the project) will be installed along the primary access driveway loop and tied in to the County's existing 18" potable water distribution waterline along the extension of Liloa Drive at both proposed driveway connections. Potable water and fire protection will be provided from this proposed water system. Irrigation lines will also be installed and tied into the County's existing 12" reclaimed water transmission line along the extension of Liloa Drive. R1 reclaimed water will be used to provide landscape irrigation and secondary fire protection to the playfields and parking areas (where allowed by County agencies).

A new waterline is expected to be installed along East Welakahao Street, from the County's existing 18" potable water distribution line to the project site, when required for Phase III of the South Maui Community Park. Potable water and fire protection will be provided from this proposed water system.

A 4" diameter R1 reclaimed water service lateral has already been extended from the County's 12" R1 reclaimed water transmission main along Liloa Drive (N-S Collector) to the Kihei Recycling and Redemption Center site to furnish R1 reclaimed water for landscape irrigation. R1 reclaimed water will be used to provide landscape irrigation and secondary fire protection to the playfields and parking areas (where allowed by County agencies).

2. Sewer

Existing Conditions. There are existing, recently installed, underground 8" diameter sewer lines that service the project site. These lines are located along the following streets:

- Halekuai Street (installed as part of the Kihei Franks Subdivision project), west (makai) of Phases I and II of the proposed project site; and

- East Welakahao Street (extended up to Liloa Drive by the recent Hope Chapel project).

Potential Impacts and Mitigation Measures. Based on projections provided by the mechanical consultant, anticipated wastewater generation for Phases I and II of the completed project are:

- Phase I: 68,400 gpd; and
- Phase II: 82,400 gpd

Phase III is anticipated to generate approximately 6,800 gpd.

Projected daily potable water consumption and wastewater flow are assumed to be equivalent because landscape irrigation at the park will utilize reclaimed water from the Kihei wastewater treatment facility.

Proposed Phases I and II: The easterly (mauka) terminus of an existing underground sewerline along Halekuai Street (in the Kihei Franks subdivision) will be extended to and along the proposed extension of Liloa Drive to service the project site. Improvements are expected to be installed in conjunction with the extension of Liloa Drive (N-S Collector) by the Engineering Division, Department of Public Works and Environmental management to minimize disruption to traffic.

Proposed Phase III: The existing 8" sewerline that was recently extended up East Welakahao Street to the extension of Liloa Drive by the Hope Chapel project will be extended further east (Mauka) when required for Phase III of the South Maui Community Park.

3. Drainage

Existing Conditions. A total of approximately 47.5 cfs (50-year, 1-hour storm) of onsite surface runoff is currently generated by the portion of the undeveloped project site north of Keokea Gulch (Drainage areas D11 and D12), and continues downstream. Approximately 241 cfs (110-year, 24-hour storm) of onsite surface runoff currently discharges into the site from the existing 60" diameter culvert across Piilani Highway, and flows downstream into an existing drainageway. The Engineering Division, Department of Public Works and Environmental Management, is currently planning and designing the extension of Liloa Drive (N-S Collector) which expects to install large-diameter culverts to intercept and convey the aforementioned runoff across and under the proposed roadway improvements.

A total of approximately 3.4 cfs (50-year, 1-hour storm) of onsite surface runoff is currently generated by the portion of the undeveloped project site south of Keokea Gulch.

Onsite surface runoff generally sheet flows in a southeasterly to northwesterly direction, into the existing Keokea Gulch natural drainageway, which abuts the northern edge of the project site.

Potential Impacts and Mitigation Measures. A total of 72.5 cfs (50-year, 1-hour runoff) of onsite surface runoff for subareas D11 and D12 will be generated by the developed project site. In the absence of any onsite subsurface detention, the total onsite surface runoff generated after developing the project site (50-year, 1-hour runoff) would have been expected to be approximately:

- Drainage Basin D11: 59.2 cfs (up from 38.2 cfs)
- Drainage Basin D12: 13.3 cfs (up from 9.3 cfs)

Drainage Area	Pre.-Dev. Q (cfs)	Post-Dev. Q (cfs)	Increase (cfs)
D11	38.2	59.2	+21.0
D12	9.3	13.3	+4.0

However, an onsite subsurface detention system (capacity based on 50-year, 1-hour runoff) is being proposed to limit the peak onsite runoff being discharged to pre-development levels, even after the Kihei Recycling and Redemption Center at South Maui Community Park is developed (by others). The onsite subsurface detention system will consist of a 72" perforated pipe surrounded by crushed rock with a total length of 805 l.f (680 l.f. for Phase I and 125 l.f. for Phase II). This can be used for storm runoff provided the Contractor takes precautions to prevent sediment going into the subsurface system or to clean sediment out when the construction is completed (See: Figure 16, "Conceptual Site Utility Plan"). Accordingly, there will be no net increase in onsite peak surface runoff, based on a 50-year recurrence interval. The majority of the onsite surface runoff from the paved surfaces will be intercepted by drain inlets and be conveyed directly underground to the proposed subsurface detention system, which will have an overflow to the proposed Liloa Drive Extension culvert crossings. The balance of onsite surface runoff will sheetflow, as it currently does, to the adjoining proposed Liloa Drive extension or adjoining existing Keokea Gulch natural drainageway.

A National Pollution Discharge Elimination System (NPDES) permit will be required for the project. The NPDES permit, which is essentially an erosion control plan for construction activities, will incorporate Best Management Practices (BMP's) designed specifically to reduce the potential for non-point sources of pollution from impacting nearshore water quality. Project plans call for long-term, as well as short-term measures, which will minimize the potential impacts from runoff from the property. These measures include the following:

Long-term

Additional onsite runoff generated by the project will be directed into a sub-surface drainage system. This system will not only keep the post-development peak flow volumes at predevelopment rates, but will also serve as sedimentation traps and filters to prevent sediments, pollutants, pesticides or fertilizers from migrating into coastal waters.

Flo-Gard™ +Plus multipurpose catch basin inserts, designed to capture sediment, debris, trash and oils/grease from low (first flush) flows, are expected to be implemented for grated inlets within the paved parking lots (See: Appendix G "Operating and Maintenance Manual for Storm Drainage System"). This is consistent with the representations made during SMA/PD for the Recycling and Redemption Center.

Application of fertilizers and pesticides to support the proposed turf grass is anticipated to be sufficiently minimal as to have no significant impact on nearshore water quality. The proposed subsurface drainage system and other mitigation measures for onsite runoff are anticipated to prevent the migration of fertilizers and pesticides from the property.

Short-term

Erosion and sediment control measures will be in place and functional before earth moving operations begin, and will be maintained throughout the construction period. Best management practices will be employed in controlling erosion and sediment (See: Figure No. 10, Preliminary Grading and Erosion Control Plan).
Stormwater control structures will be constructed prior to initiation of major site improvements. This will include installation of the permanent subsurface drainage system on the site.

Temporary berms to divert storm runoff to the drainage system will be constructed.

Temporary silt screens will be installed fronting the project and within drainage swales along the project limits. Temporary silt screens will also be installed around or within new catch basins and drain inlets. Topsoil stockpiles will be covered or stabilized.

Sediment and debris from construction activities will be properly disposed of. Bare areas will be replanted or covered as soon as grading or construction is completed. Cement products, oil, fuel, and other toxic substances will be prevented from falling or leaching into the water.

4. Roadways and Traffic

Existing Conditions. A Traffic Impact Analysis Report was prepared by Phillip Rowell and Associates which describes the traffic characteristics of the proposed project and likely impacts to the adjacent roadway network. The report is written to address the impacts associated with each phase of the development. Phase I includes 2010 background conditions without and with Phase I of the project, Phase II includes 2015 background traffic projections without and with Phase II of the project, Phase III includes 2020 background traffic projections without and with Phase III of the project (See: Appendix F, "Traffic Impact Assessment Report").

Study Area

The study area is bounded by Piikea Avenue along the north, Piilani Highway along the east, Welakahao Road along the south and South Kihei Road along the west. The existing and future intersections studied are listed in the following table:

No	Intersection	Right-of-Way Control	Jurisdiction
1	Lipoa Street at South Kihei Road	Signalized	County
2	Lipoa Street at Liloa Street	Signalized	County
3	Lipoa Street at Piilani Highway	Signalized	State
4	Piikea Avenue at Piilani Highway	Signalized	County
5	Piikea Avenue at Piilani Highway	Signalized	State
6	Welakahao Road at South Kihei Road	Signalized	County
7	Piikea Avenue at Liloa Street	4-way Stop	County
8	Halekuai Street at Liloa Street	2-way Stop	County
9	Halekuai Street at Liloa Street	2-way Stop	County
10	Welakahao Road at Liloa Street	2-way Stop	County
11	Welakahao Road at Piilani Highway	2-way Stop	State

The following is a summary of the major roadways in the study area:

Piilani Highway

Piilani Highway is a major State highway connecting Kihei and Wailea. In the vicinity of the proposed project, the highway is a four-lane, two-way facility with separate left turn lanes. The posted speed limit is 40 miles per hour (mph). The intersection of Piilani Highway at Lipoa Street and Piikea Avenue are signalized. The intersection with Welakahao Road is unsignalized.

South Kihei Road

In the vicinity of the project, South Kihei Road is a two-lane, two-way, north-south major roadway. At the intersections of South Kihei Road at Welakahao Road and South Kihei Road at Lipoa Street and South Kihei Road at Piikea Avenue, there are separate left turn storage lanes for traffic along South Kihei Road. These intersections are *signalized.*

Welakahao Road

Welakahao Road is a two-lane roadway between Piilani Highway and South Kihei Road with an east-west orientation.

Lipoa Street

Lipoa Street is a two-lane, two-way roadway between Piilani Highway and South Kihei Road. The intersections with South Kihei Road, Liloa Street and Piilani Highway are signalized. Lipoa Street continues east of Piilani Highway to the Silversword Golf Course and the Maui Technology Park.

Liloa Street

Liloa Street is the North-South Collector between Halekuai Street and Piilani Village Phase 2, which is located north of the Piilani Village Shopping Center. Liloa Street presently terminates at Halekuai Street. In the future, it will be extended to Auhana Road.

Piikea Avenue

Piikea Avenue is an east-west street between South Kihei Road and Piilani Highway. Between South Kihei Road and the eastern boundary of Long's Shopping Center Piikea

Avenue is four lanes wide, then two lanes wide to Liloa Street and four lanes from Liloa Street to Piilani Highway. The posted speed limit is 20 miles per hour.

The intersection of Piilani Highway at Liloa Street is currently a four-way STOP sign controlled intersection. The Kihei Master Traffic Study recommended that the intersection be modified to a roundabout. We are not aware of a timetable for the implementation of this recommendation.

Existing Levels-of-Service

The level-of-service of signalized intersections was determined using the operations method described in the Highway Capacity Manual. The results of this analysis for the signalized intersections in the study area are summarized in Table 5 of Appendix F, "Traffic Impact Analysis Report". Shown are the volume-to-capacity ratios, the average vehicle delay and the Level-of-Service at each intersection and each lane group.

The results of the level-of-service analysis indicate that all traffic movements currently operate at Level-of-Service D or better except at the intersections of Lipoa Street at Piilani Highway and Piikea Avenue at South Kihei Road. This is consistent with observed peak hour traffic conditions with the following exceptions:

- At the intersection of Piikea Avenue at Piilani Highway, the queue for the eastbound to northbound left turn extends beyond the available storage length and into the intersection with the entrance to Piilani Village Shopping Center. This constrains traffic flow through the intersection of Piikea Avenue at Piilani Village Shopping Center.
- Northbound traffic flow along South Kihei Road south of Piikea Avenue is congested during the afternoon peak hours. This congestion was observed as early as 3:30 PM and as late as 6:00 PM. Therefore, the north-south traffic flows are constrained.

The results of the Level-of-Service analysis of the unsignalized intersections are summarized in Table 6, of the Traffic Impact Analysis Report, Appendix F. Shown are the control delays and Level-of-Service of each movement. Volume-to-capacity ratios are not calculated for unsignalized intersections.

The conclusion of the level-of-service analysis of existing conditions is that all movements currently operate at Level-of-Service D or better except the westbound Halekuai Street to southbound South Kihei Road, which operates at Level-of-Service E during the morning peak hour and Level-of-Service F during the afternoon peak hour.

Field Observations

The following is a summary traffic conditions observed during the traffic surveys and reconnaissance.

- Northbound traffic along South Kihei Road between Piikea Avenue and Welakahao Road is constrained.
- Eastbound traffic along Piikea Avenue at Piilani Highway backs up through the intersection of Piilani Shopping entrance.

Project-Related Traffic Conditions

The process of identifying the traffic-related impacts of the proposed project generally involves the determination of weekday peak-hour trips that would be generated by the proposed project, distribution and assignment of these trips on the approach and departure routes, and determination of the levels-of-service at affected intersections and driveways subsequent to implementation of the project. Future traffic volumes generated by a project are typically estimated using the procedure described in *Trip Generation* published by the Institute of Transportation Engineers. This method uses trip generation rates to estimate the number of trips that a proposed project will generate during the morning and afternoon peak hours. The trip generation rates for various categories of parks are summarized in Table 8 of the Traffic Impact Analysis Report, Appendix F. The number of peak hour trips that the project will generate was estimated by performing a trip generation analysis for the various components of each phase. The table below summarizes the trips generated by each phase of the development.

The project generated traffic was distributed along the logical approach and departure routes, considering the adjacent land uses and adjacent roadway network. The distribution plan was then used to assign project generated traffic to the appropriate traffic movements at the study intersections.

As shown, the project (phases 1, 2, and 3) will generate 41 trips during the morning peak hour, 24 inbound and 17 outbound. During the afternoon peak hour, the project will generate 76 inbound and 162 outbound trips for a total of 238 trips.

Table: Trip Generation Summary

	AM Peak Hour			PM Peak Hour			Basis of Design		
	Total	In	Out	Total	In	Out	Total	In	Out
Phase I									
Gym & Assembly Rooms	0	0	0	0	0	0	425	360	65
1 Soccer Field	3	2	1	22	7	15	22	7	15
1 Baseball Field	7	4	3	50	16	34	50	16	34
Phase I Totals	10	6	4	72	23	49	497	383	114
Phase 2									
Pavillion	0	0	0	0	0	0	0	0	0
2 Soccer Fields	6	4	2	44	14	30	44	14	30
2 Baseball Fields	14	8	6	100	32	68	100	32	68
Phase 2 Totals	20	12	8	144	46	98	144	46	98
Phase 3									
Multi-Use Courts	11	6	5	22	7	15	96	48	48
PROJECT TOTALS	41	24	17	238	76	162	737	477	260

Potential Impacts and Mitigation Measures. The impacts of the project were analyzed for Phase 1, 2, and 3. The following summarizes the impacts associated with each phase of the project:

Phase 1

Background plus Phase 1 project traffic conditions are defined as 2010 background conditions plus project related traffic. The incremental difference between background and background plus project is the traffic impact of the project under study. 2010 background traffic projections were calculated by expanding existing traffic volumes by the appropriate growth rate (1.0826) and then superimposing traffic generated by related projects. Background plus project traffic conditions are defined as 2010 background traffic conditions plus project related traffic. 2010 background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2010 background peak hour traffic volumes presented previously.

The impact of Phase 1 was assessed by analyzing the changes in traffic volumes and levels-of-service at the study intersections. An analysis of the changes in traffic volumes at the study intersections is summarized in Table 10, of the Traffic Impact Analysis Report, Appendix F. All the changes as a result of the project generated traffic are less

than 5%. The conclusion of this analysis is that more than 95% of the increase in traffic volumes between 2005 and 2010 are the result of background growth and related projects.

The level-of-service analysis concluded that all the signalized intersections will operate at level-of-service D, or better, during peak hour conditions except the intersection of Lipoa Street at Piilani Highway during the afternoon peak hour period. The afternoon volume-to-capacity ratio of the overall intersections is 0.93 without and with the project. The proposed project adds traffic to the eastbound to northbound left turn and the southbound to westbound right turn and therefore only impact these two movements.

The volume-to-capacity ratio of the eastbound to northbound left turn increases from 1.00 to 1.02 and the delay increases from 89.8 seconds per vehicle to 94.8 seconds per vehicle. This represents an increase in delay of 5.0 seconds, 5% per vehicle. Mitigation for this movement should be considered.
The volume-to-capacity of the southbound to westbound right turn will be 0.47 without and with the project. This volume-to-capacity ratio implies a higher level-of-service than the average vehicle delay, which is used to define level-of-service of the intersection and lane group. The average vehicle delay increases from 37.1 to 37.3 seconds per vehicle. This represents an increase in delay of 0.2 seconds per vehicle, or 0.5%. As there is no change in the volume-to-capacity ratio and the volume-to-capacity ratio implies level-of-service B, the conclusion is that the delay, and therefore the level-of-service, is the result of the traffic signal cycle length and phasing and not the result of insufficient capacity.

The results of the level-of-service analysis does not indicate a problem at the intersection of Piikea Avenue at Piilani Highway noted during the traffic survey. Based on observations, the queue for the eastbound to northbound left turn consistently backs up into the intersection of Piikea Avenue at the Piilani Shopping Center entrance. Even though this problem is not the result of project generated traffic, mitigation should be identified.

It should also be noted that the level-of-service for 2010 conditions indicates improved conditions at the intersections along South Kihei Road. This is because the North-South Collector Road will attract approximately 250 trips from South Kihei Road during the morning peak hour and 200 trips during the afternoon peak hour. Level-of-Service conditions for signalized intersections are summarized in Table 11, of the Traffic Impact Analysis Report, Appendix F.

Level-of-Service conditions for unsignalized intersections are summarized in Table 12, Traffic Impact Analysis Report, Appendix F. The following summarizes operating conditions at each unsignalized intersection:

Piikea Aveune at Liloa Street

The intersection of Piikea Avenue at Liloa Street is presently an all-way STOP sign controlled intersection. During the morning peak hour, all movements operate at Level-of-Service C or better, without and with the project. During the afternoon peak hour, the northbound approach will operate at Level-of-Service E without and with the project and the southbound approach will operate at Level-of-Service F without and with the project.

Halekuai Street at South Kihei Road

At the intersection of Halekuai Street at South Kihei Road, all movements will operate at Level-of-Service D or better.

Traffic along South Kihei Road will operate at Level-of-Service A or B during both peak periods without and with the project. Traffic turning right from Halekuai Street to northbound South Kihei Road will operate at Level-of-Service C during both peak periods without and with the project.

Halekuai Street at Liloa Street

All traffic movements will operate at Level-of-Service C or better during both peak periods at the intersection of Halekuai Street at Liloa Street.

Welakahao Road at Liloa Street

All traffic movements will operate at Level-of-Service D or better during both peak periods except the southbound left turn which will operate at Level-of-Service E during the afternoon peak hour. Mitigation is required.

Welakahao Road at Piilani Highway

The eastbound to northbound left turn will operate at Level-of-Service D during the morning peak hour and Level-of-Service E during the afternoon peak hour, without and with the project. Mitigation should be assessed.

Project Driveway C along North-South Collector Road

All movements will operate at Level-of-Service B or better, indicating good conditions.

Phase 2

2015 background traffic projections were calculated by expanding existing traffic volumes by the appropriate growth rate (1.1720) and then superimposing traffic generated by related projects. The projections shown also include trips generated by Phase 1 of the South Maui Park project. Background plus project traffic conditions are defined as 2015 background traffic conditions plus project related traffic. 2015 background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2015 background peak hour traffic volumes presented previously.

The impact of Phase 2 was assessed by analyzing the changes in traffic volumes and levels-of-service at the study intersections. An analysis of the changes in traffic volumes at the study intersections is summarized in Table 18, of the Traffic Impact Analysis Report, Appendix F. During the afternoon peak hour, the traffic volume at the intersections of Piikea Avenue at Liloa Street increases 5.7%, the traffic at Halekuai Street at Liloa Street increases 7.1% and the traffic at Welahahao Road at Liloa Street increases 6.7%. All remaining increases are less than 5%. The conclusion of this analysis is that more than 95% of the increase in traffic volumes between 2005 and 2015 are the result of background growth and related projects.

The Level-of-Service analysis concluded that all the signalized intersections will operate at level-of-service D, or better, during peak hour conditions except the intersection of Lipoa Street at Piilani Highway during the afternoon peak hour period. The afternoon volume-to-capacity ratio of the overall intersections is 1.00 without and 1.01 with the project. The proposed project adds traffic to the eastbound to northbound left turn and the southbound to westbound right turn and therefore only impact these two movements.

The volume-to-capacity ratio of the eastbound to northbound left turn increases from 1.06 to 1.09 and the delay increases from 106.4 seconds per vehicle to 118.5 seconds per vehicle. This represents an increase in delay of 12.1 seconds, 11% per vehicle. Mitigation for this movement should be considered.

The volume-to-capacity of the southbound to westbound right turn will be 0.50 without and 0.52 with the project. This volume-to-capacity ratio implies a higher level-of-service that the average vehicle delay, which is used to define level-of-service of the intersection

and lane group. The average vehicle delay increases from 38.1 to 38.5 seconds per vehicle. This represents an increase in delay of 0.4 seconds per vehicle, or 0.19%. As the change in the volume-to-capacity ratio is small and the volume-to-capacity ratio implies Level-of-Service B, the conclusion is that the delay, and therefore the level-of-service, is the result of the traffic signal cycle length and phasing and not the result of insufficient capacity.

The results of the level-of-service analysis does not indicate a problem at the intersection of Piikea Avenue at Piilani Highway noted during the traffic survey. Based on observations, the queue for the eastbound to northbound left turn consistently backs up into the intersection of Piikea Avenue at the Piilani Shopping Center entrance. Even though this problem is not the result of project generated traffic, mitigation should be identified. Level-of-Service conditions for signalized intersections are summarized in Table 19, of the Traffic Impact Analysis Report, Appendix F.
Level-of-Service conditions for unsignalized intersections are summarized in Table 20, Traffic Impact Analysis Report, Appendix F. The following summarizes operating conditions at each unsignalized intersection:

Piikea Aveune at Liloa Street

The intersection of Piikea Avenue at Liloa Street is presently an all-way STOP sign controlled intersection. During the morning peak hour, all movements operate at Level-of-Service C or better, without and with the project. During the afternoon peak hour, the northbound approach will operate at Level-of-Service F without and with the project and the southbound approach will operate at Level-of-Service F without and with the project.

Halekuai Street at South Kihei Road

At the intersection of Halekuai Street at South Kihei Road, all movements will operate at Level-of-Service D or better.
Traffic along South Kihei Road will operate at Level-of-Service A or B during both peak periods without and with the project. Traffic turning right from Halekuai Street to northbound South Kihei Road will operate at Level-of-Service C during both peak periods without and with the project.

Halekuai Street at Liloa Street

All traffic movements will operate at Level-of-Service C or better during both peak periods at the intersection of Halekuai Street at Liloa Street.

Welakahao Road at Liloa Street

All traffic movements will operate at Level-of-Service C or better during the morning peak hour. During the afternoon peak hour, the southbound left turn will operate at Level-of-Service E without the project and level-of-service F with the project. Mitigation is required.

Welakahao Road at Piilani Highway

At the intersection of Welakahao Road at Piilani Highway, the northbound left and the eastbound right will operate at Level-of-Service B during the morning peak hour and Level-of-Service C during the afternoon peak hour, without and with the project. The eastbound to northbound left turn will operate at Level-of-Service E during the morning peak hour and Level-of-Service F during the afternoon peak hour, without and with the project. Mitigation is required.

Project Driveways A and C along North-South Collector Road

All movements will operate at Level-of-Service C or better, indicating good conditions.

Phase 3

2020 background traffic projections were calculated by expanding existing traffic volumes by the appropriate growth rate (1.2688) and then superimposing traffic generated by related projects. The projections shown also include trips generated by Phase 1 and Phase 2 of the South Maui Park project. Background plus project traffic conditions are defined as 2020 background traffic conditions plus project related traffic. 2020 background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2020 background peak hour traffic volumes presented previously.

The impact of Phase 2 was assessed by analyzing the changes in traffic volumes and levels-of-service at the study intersections. An analysis of the changes in traffic volumes at the study intersections is summarized in Table 22, of the Traffic Impact Analysis Report, Appendix F. All the changes as a result of project generated traffic are less than 2%. The conclusion of this analysis is that more than 98% of the increase in traffic volumes between 2005 and 2020 are the result of background growth and related projects.

The Level-of-Service analysis concluded that all the signalized intersections will operate at level-of-service D, or better, during peak hour conditions except the intersection of

Lipoa Street at Piilani Highway during the afternoon peak hour period. The afternoon volume-to-capacity ratio of the overall intersections is 1.09 without and with the project. The proposed project adds traffic to the northbound to southbound through movements only.

There is no change in the volume-to-capacity ratio of the northbound through movement as a result of project generated traffic. The volume-to-capacity ratio of the northbound through movement will be 0.92 without and with the project's traffic. The delay increases by only 0.2 seconds per vehicle from 44.0 to 44.2 seconds per vehicle.

The volume-to-capacity of the southbound to westbound right turn will be 1.12 without and 1.13 with the project. The average vehicle delay increases from 112.7 to 113.2 seconds per vehicle. This represents an increase in delay of 0.5 seconds per vehicle, or 0.5%. *As the change in the volume-to-capacity ratio is small and the volume-to-capacity* ratio is minimal, no mitigation is recommended.

The results of the level-of-service analysis does not indicate a problem at the intersection of Piikea Avenue at Piilani Highway. Based on observations, the queue for the eastbound to northbound left turn consistently backs up into the intersection of Piikea Avenue at the Piilani Shopping Center entrance. Even though this problem is not the result of project generated traffic, mitigation should be identified. Level-of-Service conditions for signalized intersections are summarized in Table 23, of the Traffic Impact Analysis Report, Appendix F.

Level-of-Service conditions for unsignalized intersections are summarized in Table 24, Traffic Impact Analysis Report, Appendix F. The following summarizes operating conditions at each unsignalized intersection:

Piikea Aveune at Liloa Street

The intersection of Piikea Avenue at Liloa Street is presently an all-way STOP sign controlled intersection. During the morning peak hour, all movements operate at Level-of-Service C or better, without and with the project. During the afternoon peak hour, the northbound approach will operate at Level-of-Service F without and with the project and the southbound approach will operate at Level-of-Service F without and with the project.

Halekuai Street at South Kihei Road

At the intersection of Halekuai Street at South Kihei Road, all movements will operate at Level-of-Service D or better.

Traffic along South Kihei Road will operate at Level-of-Service A or B during both peak periods without and with the project. Traffic turning right from Halekuai Street to northbound South Kihei Road will operate at Level-of-Service C during both peak periods without and with the project.

Halekuai Street at Liloa Street

All traffic movements will operate at Level-of-Service D or better during both peak periods.

Welakahao Road at Liloa Street

The northbound approach will operate at Level-of-Service E during the afternoon peak hour and the southbound approach will operate at Level-of-Service F during the afternoon peak hour. All movements will operate at Level-of-Service C, or better, during the morning peak hour.

Welakahao Road at Piilani Highway

At the intersection of Welakahao Road at Piilani Highway, the eastbound to northbound left turn will operate at Level-of-Service F during both peak hours, without and with the project generated traffic.

Project Driveways A, B, and C along North-South Collector Road.

All movements will operate at Level-of-Service C or better, indicating good conditions.

Mitigation and Recommendations

Based on the findings of the level-of-service analysis, field observations during the traffic surveys and input during the review process, mitigation measures are required at the following locations:

- Welakahao Road at Liloa Street

- Welakahao Road at Piilani Highway
- Piikea Avenue at Piilani Highway

The purpose of the mitigation measures is to improve the level-of-service up to an acceptable level-of-service. Level-of-Service D is considered the lowest acceptable level-of-service. Therefore, mitigation measures are identified for those locations where project generated traffic results in reduction of the level-of-service below Level-of-Service F.

Welakahao Road at Liloa Street

Without mitigation, the northbound and southbound movements at this intersection will operate at levels-of-service E and F, respectively. Potential mitigation measures include (1) conversion from a two-way STOP to a four-way STOP, (2) convert from a two-way STOP to a roundabout and (3) installation of traffic signals.
Conversion to a four-way STOP will improve the levels-of-service such that all movements will operate at Level-of-Service B, or better, during the morning peak hour and Level-of-Service D, or better, during the afternoon peak hour.

A traffic signal warrant analysis concluded that the peak hour warrant for a traffic signal is not satisfied. It was also concluded that a traffic signal would be difficult to coordinate with existing traffic signals at South Kihei Road and Piilani Highway. Given this operational constraint and the expense, it was concluded that a traffic signal is not a viable mitigation measure.

Based on input from the project's Civil Engineer, a roundabout is not a viable alternative because of existing development in the southwest and northwest quadrants, planned development in the southeast quadrant and an existing gully in the northeast quadrant that would require a major (and expensive) drainage structure. The cost of a roundabout is comparable to that of a traffic signal.

In conclusion, conversion to a four-way STOP sign controlled intersection is the most cost effective and will result in Level-of-Service D, or better, which an acceptable level-of-service.

Welakahao Road at Piilani Highway

Without mitigation, left turns from eastbound Welakahao Road to northbound Piilani Highway will operate at Level-of-Service F during the morning and afternoon peak

hours. The warrants for a traffic signal were assessed for the intersection of Welakahao Road at Piilani Highway. The conclusions of warrant analysis are:

- The peak hour warrant for a traffic signal is not satisfied for existing conditions.
- The peak hour warrant for 2010 background conditions without the project is satisfied.
- As the peak hour warrant for 2010 background conditions without the project also satisfied, 2010 conditions with the project, 2015 conditions without and with the project and 2020 conditions without and with the project are also satisfied.

Piikea Avenue at Piilani Highway

The conclusion of the level-of-service analysis is that all movements at this intersection will operate at Level-of-Service D during the afternoon peak hour for 2020 conditions. Level-of-Service D is considered an acceptable level-of-service. However, during the traffic surveys and field reconnaissance, it was observed that the queue for the eastbound to northbound left turn backs up through the adjacent intersection at the Piilani Shopping Center entrance. To mitigate this problem, it is recommended that the median island along Piikea Avenue be modified to provide a second eastbound to northbound left turn lane.

Traffic Impacts During Construction

A construction traffic management plan will be implemented prior to initiation of construction to mitigate the impact of construction traffic on level of service in the immediate project area, as well to mitigate dust, noise and erosion impacts caused by construction vehicle access to and within the project site.

5. Electrical and Telephone

Existing Conditions. Maui Electric Company, Ltd.'s main 69kV overhead transmission line is located along the westerly (makai) edge of Piilani Village, with a substation located at the corner of East Welakahao St. and the Liloa Drive (north-south collector) roadway corridor.

The Verizon telephone and Oceanic Time Warner Cable television distribution systems are also generally located along this utility corridor as well as along the existing east-west (mauka-makai) roadway connections leading to South Kihei Road (e.g. , Lipoa St., Halekuai St., East Welakahao St.)

Potential Impacts and Mitigation Measures. All new electrical, telephone, and cable television distribution systems within the project are expected to be placed underground. The proposed project will not have any adverse impact upon the existing electrical or telephone systems that will serve the subject property.

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE LAW

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes four major land use districts into which all lands in the State are placed. These districts are designated Urban, Rural, Agricultural, and Conservation. The subject property is within the Urban District. The proposed improvements are permitted within the Urban District.

B. MAUI COUNTY ZONING

The subject property is situated within the Kihei-Makena Project District 5 (PD-K/5). Within the PD-K/5 District, the following land use categories are permitted:

Maximum Acreage:

- Single-Family Residential, 109.1 acres;
- Multifamily residential, 36 acres;
- Commercial, 15 acres;

Minimum Acreage:

- Community Park, 17.0 acres; and
- Open space landscape buffer, 10.7 acres.

The proposed park use meets the minimum acreage requirements established in the ordinance. Within the PD-K/5 Park District, principal park uses and accessory uses and structures are permitted. The proposed development, including the construction of ballfields, graded pads for playground equipment, amphitheater, and gymnasium meet the various requirements of the PD-K/5 District ordinance. Pursuant to Maui County Code, Chapter 19.45, "Project District Processing Regulations", a Project District Phase II and III approval are required prior to issuance of building permits. The Project District Phase II application requests park designation for the property and approval of the conceptual site plan.

C. 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. The following General Plan Themes, Objectives and Policies are applicable to the proposed project:

I.B. **Land Use**

Objective No. 2.: **To use the land within the County for the social and economic benefit of all the County's residents.**

Policies:

(b). *Encourage land use methods that foster a pedestrian oriented environment to include such amenities as bike paths, linear parks, landscaped buffer areas, and mini-parks.*

V. **SOCIAL INFRASTRUCTURE**

B. **RECREATION AND OPEN SPACE**

Objective No. 1: To provide high-quality recreational facilities to meet the present and future needs of our residents of all ages and physical ability.

Policies

(d). *Develop facilities that will meet the different recreational needs of the various communities*

(e). *Develop multi-purpose recreational facilities*

Objective No. 2: To provide a wide range of recreational, cultural and traditional opportunities for all our people.

Policies

(a) *Encourage the use of public facilities for both cultural and recreational activities.*

(h) *Support Federal, State, and County and community initiatives to preserve open space, expand recreational facilities and provide after school programs for youth.*

(i) *Encourage the use of public lands to expand and enhance outdoor recreational and cultural opportunities.*

D. KIHEI-MAKENA COMMUNITY PLAN

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

The subject property is located within the Kihei-Makena Community Plan region. The Community Plan was recently adopted by ordinance No. 2641 on March 6, 1998.

The Kihei-Makena Community Plan identifies major problems and opportunities facing the region. Two of the four major problems identified in the plan relate to the need for additional recreational facilities to service the region. The following statements are applicable to the project:

B. Identification of Major Problems and Opportunities of the Region

2. **<u>YOUTH PROGRAMS, COMMUNITY FACILITIES AND PLAYING FIELDS.</u>**

"The second most pressing problem is the lack of youth programs, community facilities, and playing fields to service the entire Kihei-Makena region. Active recreation facilities such as a community swimming pool, and soccer, baseball, softball and football fields are significant community needs.

A community center is also needed to provide Kihei-Makena not only with a physical facility to house community forums and events, but to increase the sense of neighborhood. Kihei-Makena is the third largest residential community on the island of Maui. Many other communities its size have facilities where community events can be held."

3. **<u>SCHOOL ENVIRONMENT</u>**

"It is necessary to dramatically improve the learning environment at Kihei Elementary, Kamalii Elementary, and Lokelani Intermediate Schools. Existing problems include an overall shortage of facilities (especially recreational areas), an excess of portable structures, and close proximity to Pi`ilani Highway. These circumstances result in

crowed, uncomfortable, and generally poor classroom learning environments. In the long term, there is a need for a third elementary school, and a high school, which would serve the Kihei-Makena region."

Analysis. The South Maui Community Park complex will alleviate the current shortage of park facilities and land in South Maui by providing multi-use courts, graded pads for playground equipment, a gymnasium, as well as passive recreational open space within close proximity to existing schools and residences. The proposed facility will also provide six additional athletic fields to accommodate a regional and island-wide demand for these facilities. Despite development of the site, however, there will still be a shortfall of facilities including a need for 1 community center, 6 sports courts, and approximately 60 acres of developed parkland, with the greatest shortfall being in the mini and neighborhood park categories.

In addition, pursuant to longstanding State Department of Education and County of Maui policy the proposed park will be a joint use facility shared by the Kihei and Lokelani Intermediate Schools and the public. Each school, as well as other area schools, will have access to the gymnasium, ball fields, multi-use courts, and amphitheater on an as-needed basis for recreation purposes.

Kihei-Makena Community Plan Goals, Objectives, and Policies

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

Goal: **Land Use. A well-planned community with land use and development patterns designed to achieve the efficient and timely provision of infrastructure and community needs while preserving and enhancing the unique character of Ma`alaea, Kihei, Wailea and Makena as well as the region's natural environment, marine resources and traditional shoreline uses.**

Objectives and Policies:

e. *Establish a system of parks, utility easements, shoreline areas, drainageways and wetlands as an open space framework for the urban areas of the region, i.e. where structures exist or are planned to exist, and provide an integrated system of pedestrian and bicycle paths.*

Analysis. The proposed sub-regional park facility is a key implementing action identified in the South Maui Region Parks & Open Space Master Plan, which outlines a parks and open space vision for South Maui. The facility largely conforms to conceptual site and landscape plans presented in this report.

Goal: **Physical and Social Infrastructure.** ***Goal: Provision of facility systems, public services and capital improvement projects in an efficient, reliable, cost effective, and environmentally sensitive manner which accommodates the needs of the Kihei-Makena community, and fully support present and planned land uses, especially in the case of project district implementation. Allow no development for which infrastructure may not be available concurrent with the development's impacts.***

Recreation

Objectives and Policies:

a. *Provide high-quality recreational facilities to meet the present and future needs of residents of all ages and physical ability.*

b. *Provide for a range of park sizes and types at neighborhood, community and regional scales. New residential developments shall provide recreational facilities on-site to meet the immediate needs of project residents.*

c. *Plan, design and construct a regional park on approximately 100-150 acres within the District. Facilities should include, but may not be limited to: a community center, swimming pool, ball fields, and basketball and tennis courts. Consideration should be given to locating the park in fairly close proximity to the Kihei Wastewater Reclamation Facility so that treated effluent may be used for park irrigation purposes.*

d. *Encourage the construction of public parks adjacent to schools to provide for joint utilization of facilities by school and community.*

e. *Improve recreation facilities and services through the integration of public parking, vehicular drop-offs and turnarounds, and sanitation facilities with facility planning and design.*

g. *Establish several youth centers throughout the region, one of which could be located at the park site adjacent to Lokelani Intermediate School.*

h. Provide for adequate parking at all park facilities. Many existing parks lack sufficient parking and require substantial increases in parking spaces.

Analysis. As noted, the proposed facility is a recommended park facility improvement identified in the recently completed South Maui Region Parks & Open Space Master Plan, October 2003. Development of the facility is in accordance with the above-referenced objectives and policies of the Kihei-Makena Community Plan in that it will provide additional multi-use courts, ball fields, a gymnasium, an amphitheater, and passive recreation space within close proximity to existing schools and residences. In addition, the facility will meet the following community objectives:

- It will utilize wastewater from the Kihei Wastewater Reclamation Facility for irrigation;
- It will serve as a joint use facility with access provided to the Kihei Elementary School and Lokelani Intermediate School for recreation purposes;
- The park incorporates public parking, vehicular drop-offs and turnarounds, and sanitation facilities into the project design;
- The proposed gymnasium incorporates a youth center into the facility; and
- The proposed project provides significantly more parking spaces than what is required.

Education

Implementing Actions

b. Require the construction of a playground and physical education facilities east of Lokelani Intermediate School. Consider the joint use of property on the south side of Lokelani Intermediate School for playground use in order to provide additional recreation space and flexibility for both Lokelani and Kihei Elementary Schools.

Analysis. As noted, the proposed facility will serve as a joint use facility with access provided to the Kihei Elementary School and Lokelani Intermediate School for recreation purposes.

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

The subject project is located within the Special Management Area (SMA). As such, the proposed improvements will require an SMA Use Permit. Pursuant to Chapter 205A, Hawaii Revised Statutes, and the Rules and Regulations of the Planning Commission of the County of Maui, projects located 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 Chapter 205A and the Rules and Regulations of the 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 proposed 44-acre park will expand the region's inland park facilities and will therefore serve to relieve crowding at shoreline parks throughout the region.

In order to protect the recreational value of nearshore resources, Best Management Practices will be employed during the construction phase to minimize the potential of erosion and silt movement into coastal waters.

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.A.7 of this report, the finding of the Archeological Inventory Survey failed to produce any cultural materials or artifacts. However, the presence of natural sand strata suggests the possibility that human burials may occur. Although the potential is low, archaeological monitoring is recommended during future ground-breaking activities and an archaeological monitoring plan has been prepared for the project (See: Appendix C, "Archaeological Preservation Plan," "SHPD Letter of Approval," and "Archaeological Monitoring Plan").

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
(c) Encourage those developments that are not coastal dependent to locate in inland areas.

Analysis. As discussed in Section III.A.8 of this report, the project will create impacts to views along Piilani Highway. This impact will be caused by the planting of Norfolk pines along the eastern boundary of the project site to buffer the athletic fields from wind. In order to mitigate these impacts, view corridors have been established between the plantings to protect views toward the ocean. The project will also provide makai views to the public by developing the site as a public park. The visual impact caused by the project is identified in Figure No. 15, "Visual Impact Assessment." The public views created at the park are identified in Figure No. 12, "Site Photographs."

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.D.3 of this report, the project will not have a significant direct impact on the region's coastal ecosystem, and with the incorporation of appropriate measures during construction, there should be no significant adverse impacts to nearshore waters from point and non-point sources of pollution.

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 facility will service the growing South Maui community in an area that is planned and zoned for urban development.

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 the 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. As discussed in Section III.A.4 of this report, according to Panel Number 150003 0265 C of the Flood Insurance Rate Map, September 6, 1989, prepared by the United States Federal Emergency Management Agency, the project site is situated in

Flood Zone C. Flood Zone C represents areas of minimal flooding and as such should not be significantly impacted by flood and tsunami related hazards.

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 and review process.

Analysis. The proposed project complies with the existing community plan and zoning. The community plan and zoning are consistent with one another, as required in the Special Management Area (SMA). The SMA also requires the completion of an environmental assessment (EA) and a SMA report. These reports require documentation of potential long- and short-term impacts and require pre-consultation with the affected community and agencies. Prior to the public hearing, pre-consultation will be conducted with adjacent property owners, the Kihei Community Association, and governmental agencies (See: Appendix A, "Pre-consultation").

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. Prior to the public hearing, pre-consultation will have been conducted with adjacent property owners, the Kihei Community Association, and governmental agencies (See: Appendix A, "Pre-consultation"). These activities may include personnel meetings, mailouts, and informational meetings in order to describe the proposed project and solicit issues that need to be addressed through the environmental assessment process. 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 will not involve construction of any structures within the shoreline area and the subject property will not have a direct physical impact upon any public beaches, due to its separation from the coastline. Further, by providing additional park and recreation space away from the shoreline, the proposed project will reduce demands on shoreline park areas.

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 relative to 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. The project will produce no direct impact on the region's coastal or marine resources, and with the incorporation of erosion and drainage control measures during construction and after construction as identified in this report, there should not be significant adverse impacts to nearshore waters from point and non-point sources of pollution. Application of fertilizers and pesticides during the operating phase of the project will be sufficiently minimal as to have no significant impact on nearshore water quality. Therefore, the subject project will not produce any significant impacts on any coastal or marine resources.

E. ENVIRONMENTAL ASSESSMENT SIGNIFICANCE CRITERIA

In accordance with Title 11, Department of Health, Chapter 200 and Subchapter 6, Section 11-200-12, Environmental Impact Statement Rules, and based on the detailed analysis contained within this document, the following conclusions are supported.

1. **The proposed action will *not* result in an irrevocable commitment to loss or destruction of natural or cultural resources.**

   Analysis. As documented in this report, the proposed project will not involve the loss or destruction of any natural or cultural resource (See Section III.A.B).

2. **The proposed action will *not* curtail the range of beneficial uses of the environment.**

   Analysis. The subject property is within the State's Urban District and is zoned and community planned to allow for park-related uses and facilities. There are no unique or

important environmental or natural resources on the property the use of which would be impacted by the project. Thus, the proposed action will not curtail the range of beneficial uses of the environment.

3. **The proposed action will *not* conflict with State or County long-term environmental policies and goals as expressed in Chapter 344, HRS, and those which are more specifically outlined in the Conservation District Rules.**

   Analysis. 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 impact to the environment, including near and off-shore coastal waters. The project will not have any impact on flora and fauna, archeological or cultural resources.

4. **The proposed action will *not* substantially affect the economic or social welfare and activities of the community, county or state.**

   Analysis. Short-term economic impacts will result from the increase in activity associated with the construction of the project. A small number of full and part-time maintenance and landscaping jobs will be created during the operation phase of the project.

5. **The proposed action will *not* substantially affect public health.**

   Analysis. There are no special or unique aspects of the project that will have a direct impact on public health.

6. **The proposed action will *not* result in substantial secondary impacts.**

   Analysis. The proposed project will not produce an increase in the population of the immediate area. Increased activity at the site may result in a marginal increase in traffic and associated noise and air pollution at affected intersections. However, as analyzed in Section III of this report, the increase in the level of these impacts is minimal and with the incorporation of mitigation measures will not substantially impact the environment.

7. **The proposed action will *not* involve substantial degradation of environmental quality.**

   Analysis. Mitigation measures will be implemented during the construction phase in order to minimize negative impacts on the environment, especially with regards to

construction runoff. Also, the design of the project has incorporated mitigation measures to minimize impacts to nearshore water quality that could arise from an increase in runoff generated on the site as a result of the project (See Section III.D.3 for a discussion of drainage). Application of fertilizers and pesticides during the operating phase of the project will be sufficiently minimal as to have no significant impact on nearshore water quality. Other environmental resources such as endangered species of flora and fauna, air and water quality, and archeological resources will not be significantly impacted by the subject project.

8. **The proposed project will not produce cumulative impacts and does *not* have considerable effect upon the environment or involve a commitment for larger actions.**

   Analysis. The proposed project does not involve a commitment for larger action on behalf of the applicant or any public agency. The subject property is State and County zoned and community planned for urban development, and as such, is part of the planned future growth of the region. As described in this report, the project will not significantly impact public infrastructure and services including roadways, drainage facilities, water systems, sewers and educational facilities. In addition, the project is not anticipated to induce an overall significant increase in population growth and will therefore not produce considerable effect on the environment nor require a commitment for larger actions by governmental agencies.

9. **The proposed project will *not* affect a rare, threatened, or endangered species, or its habitat.**

   Analysis. As described in Section III.A.3 of this report, there are no rare, threatened, or endangered species of flora and fauna at the project site.

10. **The proposed action will *not* substantially or adversely affect air and water quality or ambient noise levels.**

    Analysis. As described in Section III.A.5 and 6 and III.D.3 of this report, there is a potential for negative impacts to air or water quality and ambient noise levels related to short-term construction activities. Air, noise and dust impacts will be mitigated through implementation of standard mitigation measures as identified previously in this report. It is not anticipated that there will be significant long-term impacts to air or water quality and ambient noise levels due to the operation phase of the development.

11. **The proposed action will *not* substantially affect or be subject to damage by being located in an environmentally sensitive area, such as flood plain, shoreline, tsunami zone, erosion-prone areas, estuary, fresh waters, geologically hazardous land or coastal waters.**

Analysis. According to Panel Number 150003 0265 C of the Flood Insurance Rate Map, September 6, 1989, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone C. Flood Zone C represents areas of minimal flooding.

12. **The proposed action will *not* substantially affect scenic vistas or view planes identified in county or state plans or studies.**

Analysis. As discussed in Section III.A.8 of this report, the proposed project will require landscape planting along the Piilani Highway, which may impact ocean horizon views. In response, gaps will be placed between the trees to protect intermittent view corridors. In addition, the proposed project will create public views of the ocean through development of the site as a public park.

13. **The proposed action will not require substantial energy consumption**

Analysis. Upon build-out of the project, energy consumption will increase marginally as a result of lighting demands at the ballfields and gymnasium, and for security. However, given existing levels of usage in the area, the increase is considered insignificant. The majority of automobile usage is envisioned to occur between the project and neighboring residential communities. Thus, it is not anticipated that the resultant increase in energy consumption will be significant in the context of existing levels of vehicular energy usage in the region, and on Maui.

V. FINDINGS AND CONCLUSIONS

This environmental assessment has examined the environmental and socio-economic impacts associated with the Department of Parks and Recreation's proposal to develop a sub-regional community park facility on property situated northwest of Piilani Highway, Kihei, Maui, Hawaii; TMK No. (2) 2-2-002:042.

The analysis concludes that the project should not result in significant environmental impacts to surrounding properties, nearshore waters, natural resources, or archaeological and historic resources on the site or in the immediate area. With the incorporation of the mitigation measures identified in this document, public infrastructure and services including roadways, sewer and water systems, and schools will not be significantly impacted by the project. The proposed project will have an impact on public view corridors along Piilani Highway due to the planting of Norfolk Pines, which will serve as a windbreak for the proposed athletic fields. In order to mitigate this impact, gaps will be created within the trees to provide intermittent ocean views through the trees. In addition, public views will be created through the development of the property as a public park.

The subject property is situated within the State's Urban District and is County zoned PD/K-5, which allows for park uses and facilities. The proposed uses are permitted within these districts. Based upon the findings of this report, 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 light of the foregoing, the proposed project will not result in significant impacts to the environment and a Finding of No Significant Impact (FONSI) is warranted.

VI. REFERENCES

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FIGURES

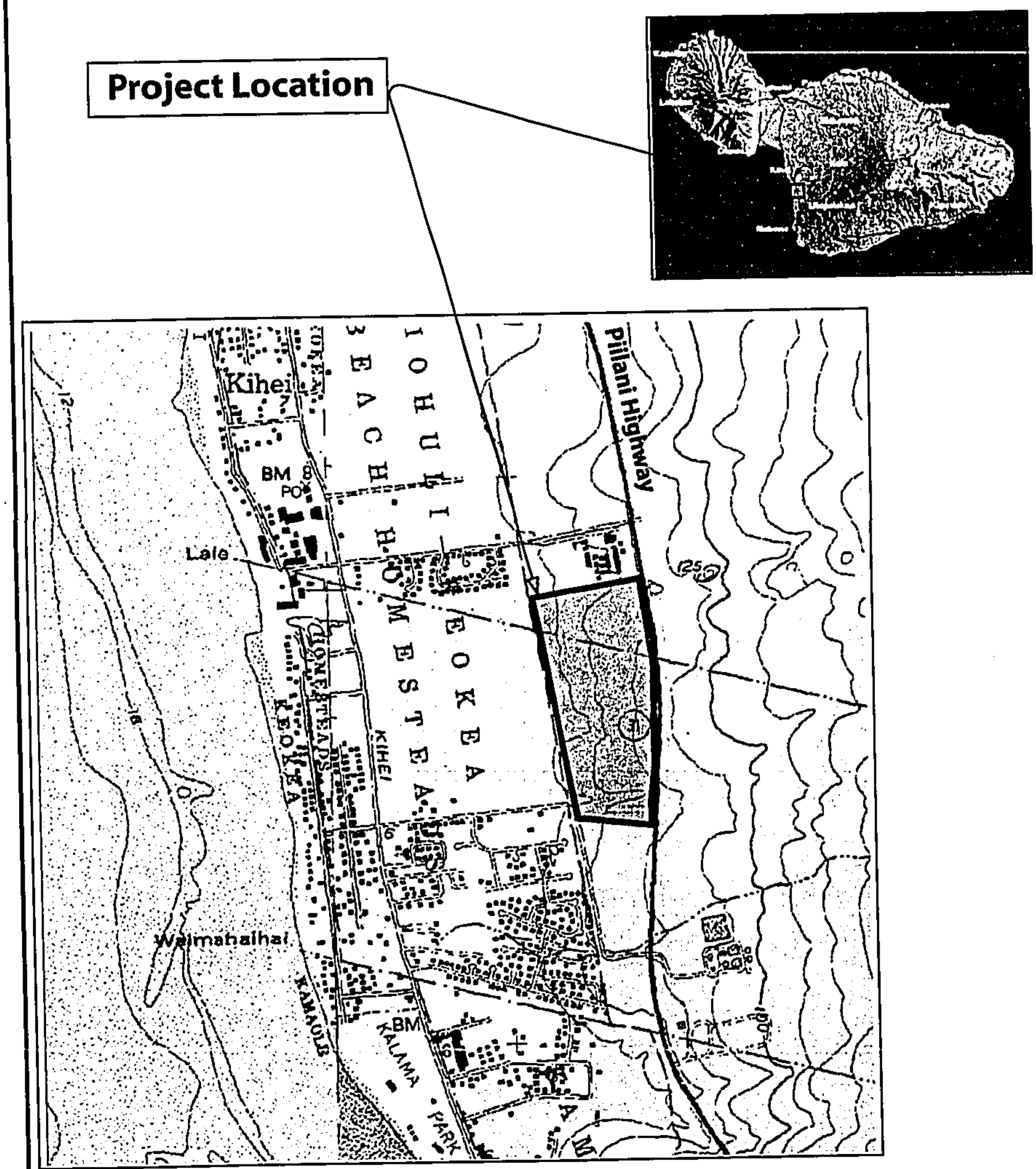


FIGURE 1

OCTOBER
2006

REGIONAL LOCATION
South Maui Community Park

CHRIS HART & PARTNERS, INC.

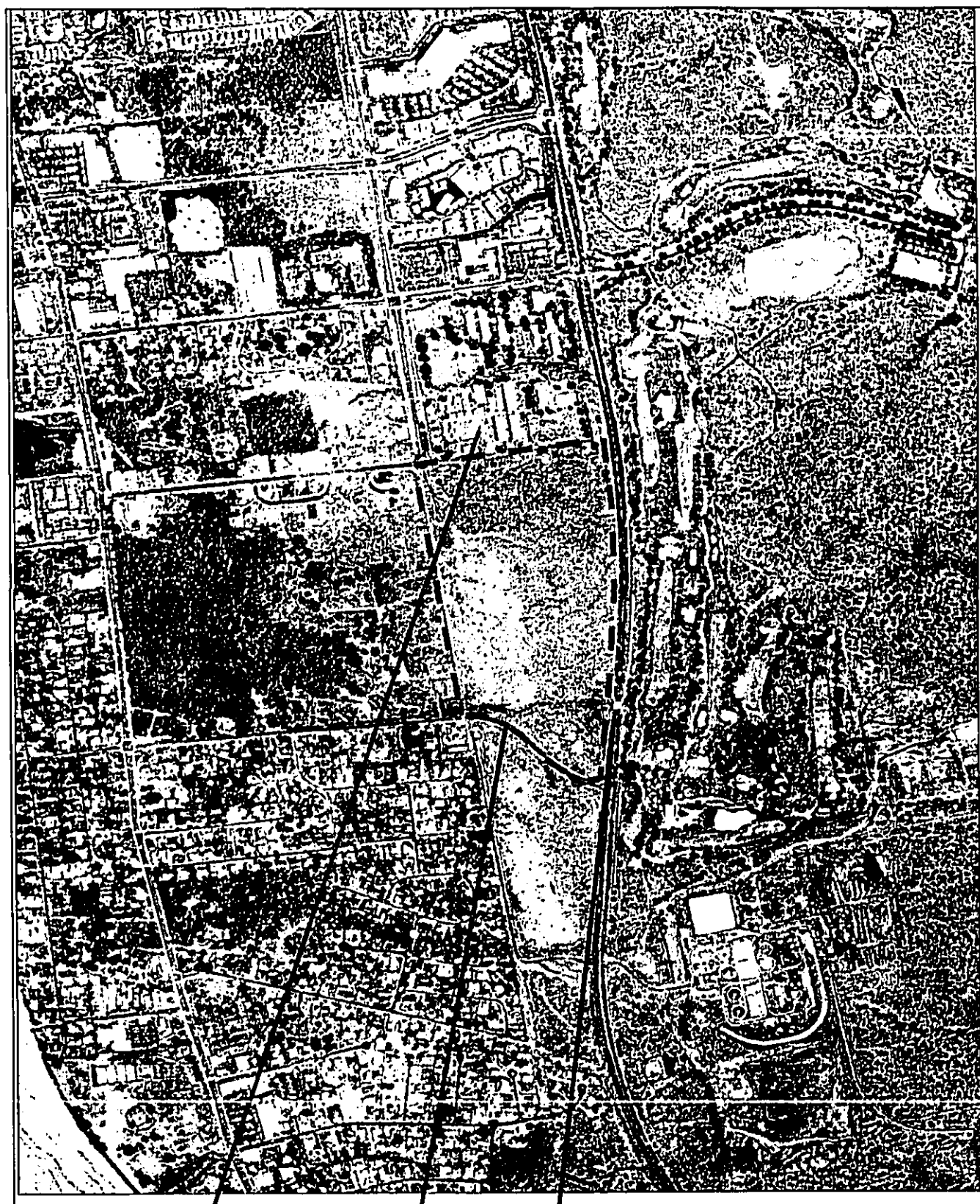


FIGURE 2

OCTOBER
2006

AERIAL LOCATION
South Maui Community Park

CHRIS HART & PARTNERS, INC.

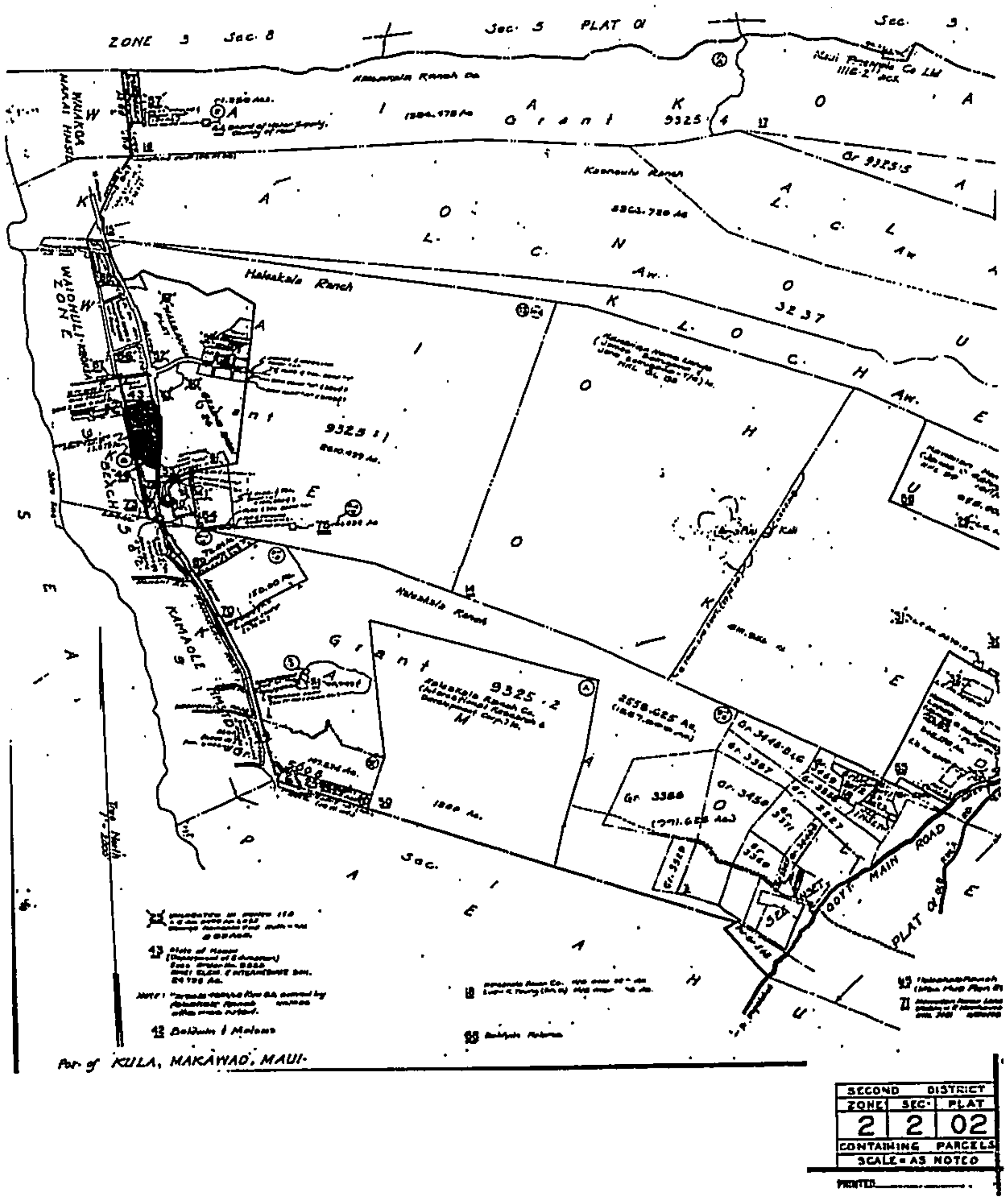
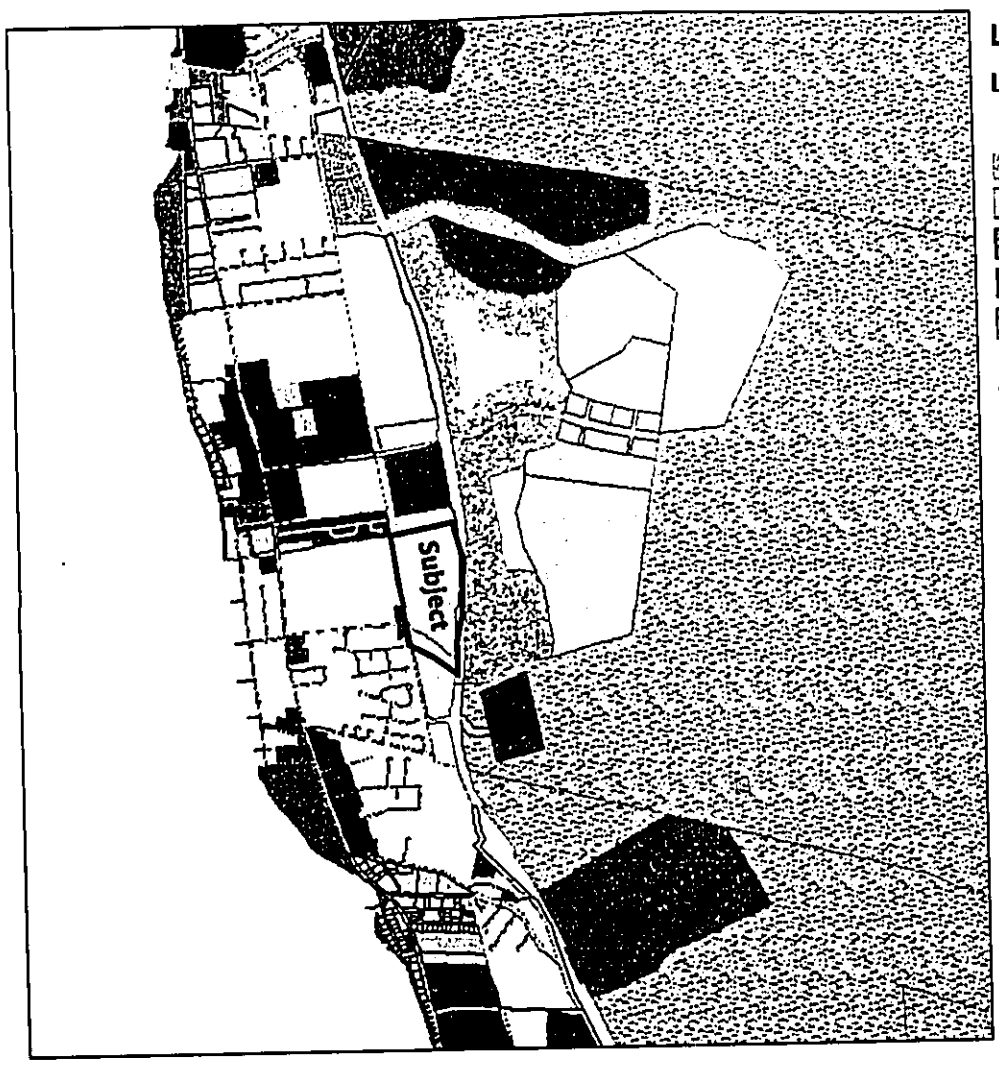


FIGURE 3

TMK No. (2) 2-2-002:042	OCTOBER 2006
TMK MAP South Maui Community Park	

CHRIS HART & PARTNERS, INC.



Legend

LandUseDataset

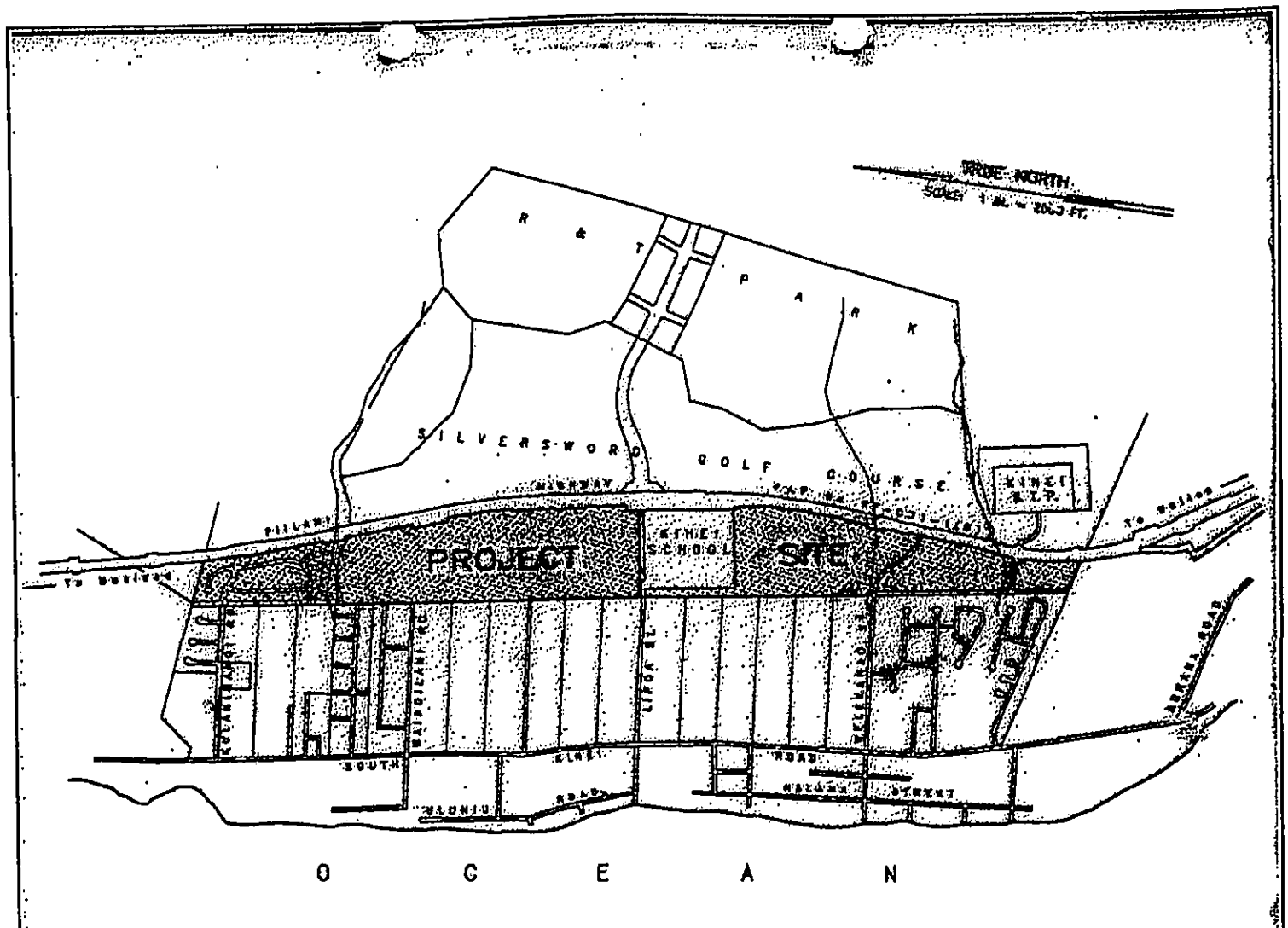
- Agriculture
- Agriculture (Act 15)
- Airport
- Business/Commercial
- Business/Industrial
- Business/Multi-family
- Conservation
- Heavy Industrial
- Hotel
- Light Industrial
- Multi-Family Residential
- Open Space
- Open Space – Coastal
- Park
- Park (Golf Course)
- Project District
- Public/Quasi-Public
- Roads
- Rural
- Rural/Light Industrial
- Service Business Residential
- Single Family Residential

FIGURE 4

OCTOBER
2006

COMMUNITY PLAN MAP
South Maui Community Park

CHRIS HART & PARTNERS, INC.



LOCATION MAP

SCALE: 1 IN. = 2000 FT.

LAND:	AREA:
TMK: 2-2-02 : Por of 42	73.403 Ac.
TMK: 2-2-02 : 66	76.853 Ac.
TMK: 2-2-02 : 67	9.594 Ac.
TMK: 2-2-02 : 68	26.066 Ac.
Total:	187.8 Acres *

* Pursuant to Survey Map of Tax Map Key: 2-2-02: 66 and 67 (Dated: Dec. 27, 1993); Survey Map of Tax Map Key: 2-2-02: Portion of 42 (Dated: Sept. 28, 1993); Pilani Development Subdivision – Phase I, File Plan No. 2050 (Dated: Sept. 28, 1993).

LAND ZONING MAP 553

CHANGE IN ZONING – KIHEI, MAUI

PROJECT DISTRICT PD-K/5

APPROVAL: County Clerk

APPROVAL: Planning Director

PUBLIC HEARING DATE: 9-28-94

ADOPTED BY COUNTY COUNCIL: 11-4-94

ADOPTED BY MAYOR: 12-15-94

ORDINANCE NO.: 2365

DATE: SCALE: 1" = 1000'

OFFICE OF THE COUNTY CLERK

200 SO. HIGH ST., WAILUKU, MAUI, HAWAII, 96793

FIGURE 5

OCTOBER 2006

ZONING MAP
South Maui Community Park

CHRIS HART & PARTNERS, INC.

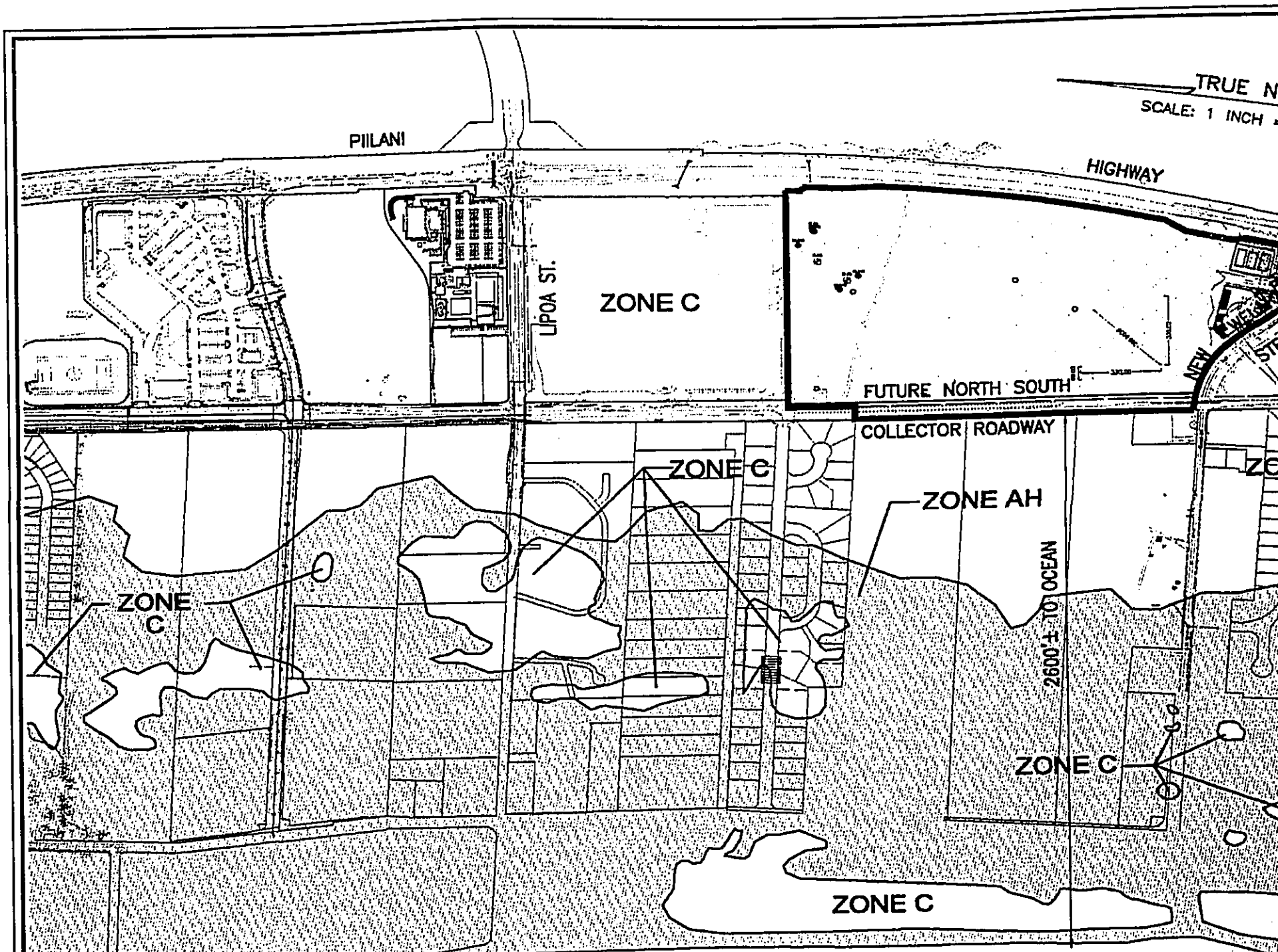
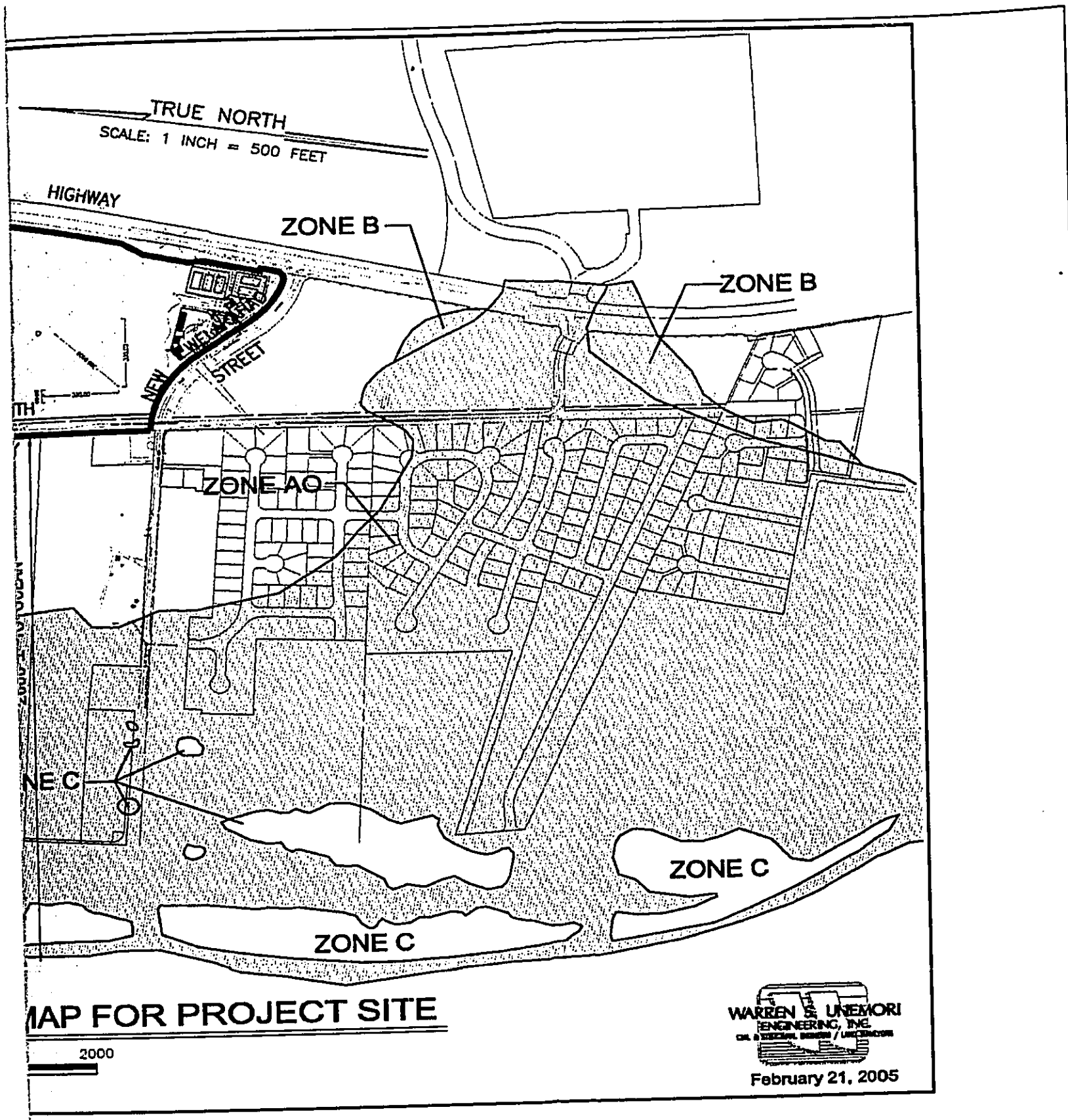


EXHIBIT "E" - FEMA FLOOD INSURANCE MAP FOR PRO

0 500 1000 1500 2000

SCALE: 1 IN. = 500 FT.



MAP FOR PROJECT SITE

WARREN S. UNEMORI ENGINEERING, INC.

February 21, 2005

FIGURE 6

OCTOBER 2006	
FLOOD ZONE MAP South Maui Community Park	CHRIS HART & PARTNERS, INC.

NOTE:
FOR PROJECT PHASING, SEE CIVIL DRAWINGS
ALL LANDSCAPE PLANTS TO BE WATERED USING AUTOMATIC IRRIGATION SYSTEM

ADA COMPLIANT PAVED PATH

GRAVEL PATH

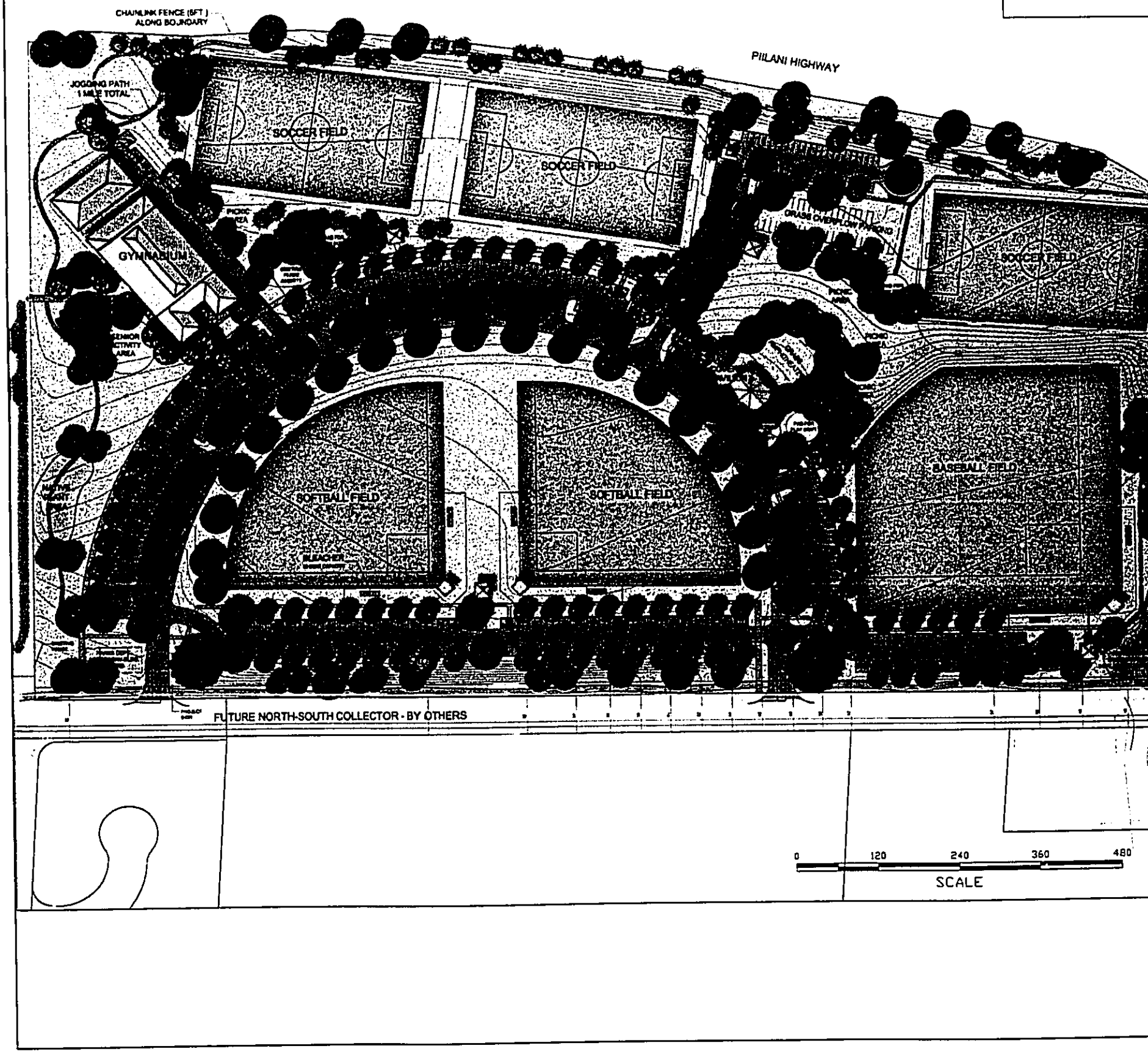
PARK

ACTIVE
(BALLFIELDS, GYM, C

OPEN
• INCLUDES
RECREATION SPACE
(PICNIC AREAS, T

PARKING, &
(INCLUDES RECYCLING C

TOT



PARK AREAS	
ACTIVE AREAS (BALLFIELDS, GYM, COURTS)	13 ACRES
OPEN SPACE • INCLUDES PASSIVE RECREATION SPACE = 4.0 AC. (PICNIC AREAS, TOT LOTS)	25.8 ACRES
PARKING, & ROADS (INCLUDES RECYCLING CENTER)	6.0 ACRES
TOTAL SITE	44.8 ACRES

TREE LEGEND

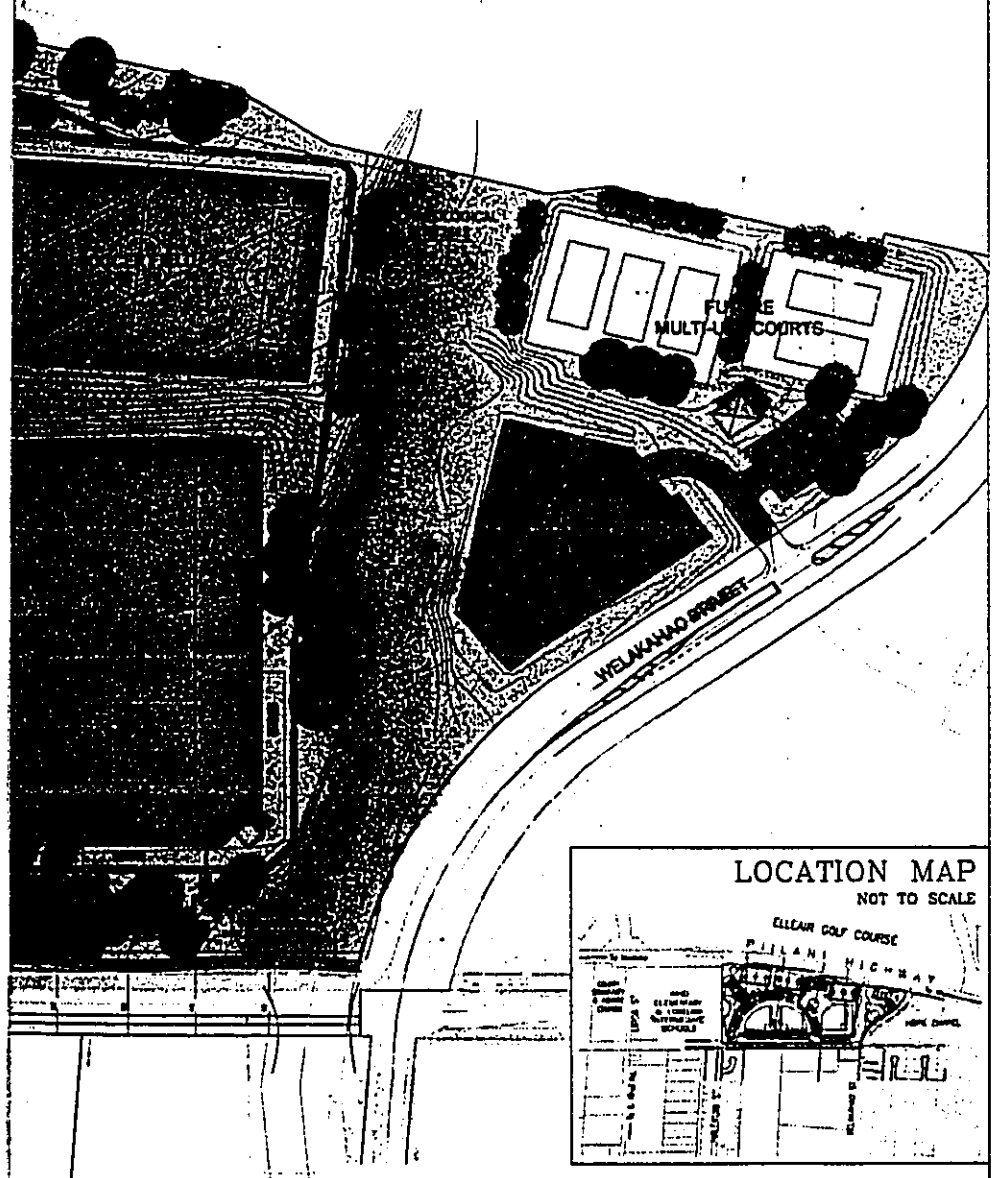
VERY LARGE CANOPY
- BANYAN TREE

LARGE CANOPY
- MONKEY POD
- RAINBOW SHOWER

MEDIUM CANOPY
- NARRA
- KAMANI
- GOLD TREE

PARKING LOT TREES
- KOU
- MILO
- PINK TECOMA

NORFOLK PINE



LOCATION MAP
NOT TO SCALE

0 360 480

LE

LANDSCAPE PLAN
orig. scale: 1"=60'-0"

CHRIS HART & PARTNERS

SOUTH MAUI PARK AT PIILANI

KIHEI, MAUI, HAWAII

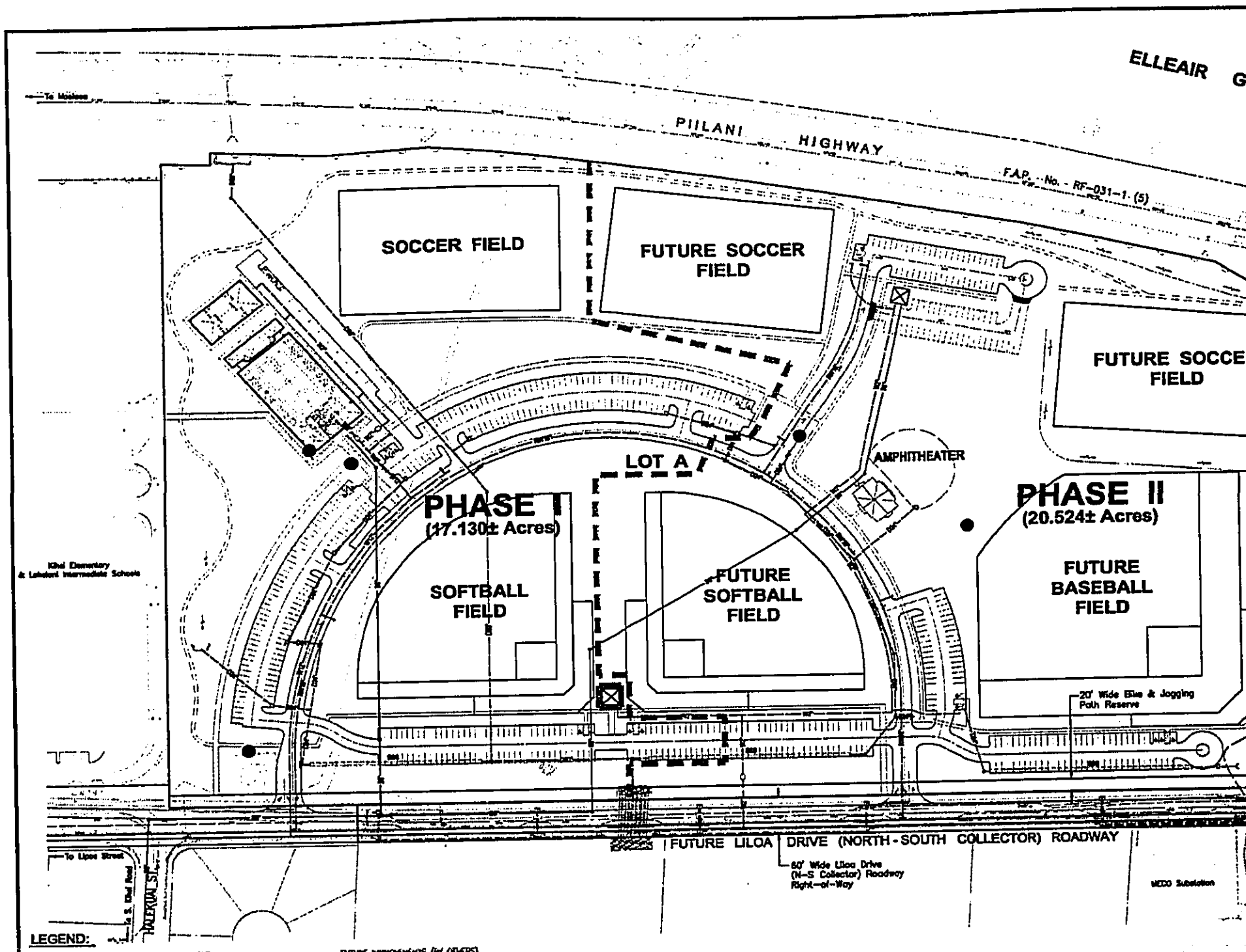
SHEET L-1

FIGURE 7

MAY 2007

CONCEPTUAL SITE/LANDSCAPE PLAN
South Maui Community Park

CHRIS HART & PARTNERS, INC.



LEGEND:

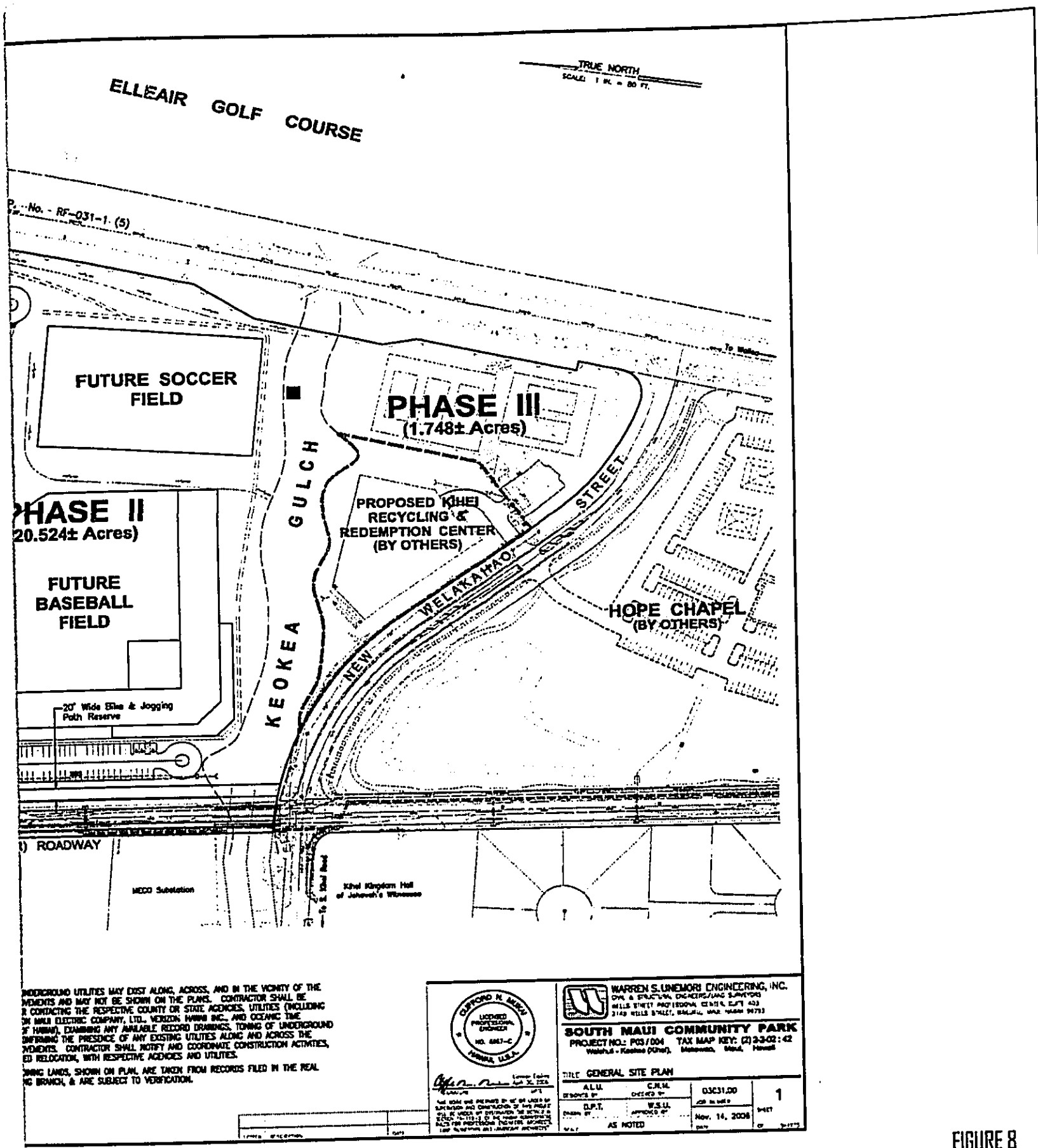
- FUTURE SEWER MANHOLE
- GRATED INLET CATCH BASIN
- HEADWALL WITH WINGWALL
- RECLAIMED WATERLINE W/ SIZE
- DRAINLINE W/ SIZE
- FUTURE SEWERLINE W/ SIZE
- FUTURE WATERLINE W/ SIZE
- EXISTING WATERLINE W/ SIZE
- EXISTING DRAINLINE W/ SIZE
- EXISTING SEWERLINE W/ SIZE
- EXISTING STREET LIGHT
- NO VEHICULAR ACCESS PERMITTED
- VEHICULAR ACCESS PERMITTED
- PROPOSED IMPROVEMENTS (BY OTHERS)
- FUTURE IMPROVEMENTS (BY OTHERS)
- SIDEWALK
- TOP BANK
- BOTTOM BANK
- CENTERLINE SWALE
- ARCHAEOLOGICAL SITES - DATA RECOVERY COMPLETED
- ARCHAEOLOGICAL SITES - DATA RECOVERY COMPLETED
- 100 YEAR FEMA INUNDATION LIMITS (Q_{100} = 8,000 c.f.s.)
- CONCEPTUAL SCHEMATIC LAYOUT OF RECYCLING & REDEMPTION CENTER ONSITE IMPROVEMENTS (BY OTHERS)
- SELF-CONTAINED SOLAR POWERED AREA LIGHTING (SEE DET. SHT. C-8.1)

PARKING TABULATION

	PHASE I	PHASE II	PHASE III
STANDARD PARKING STALLS	307	193	15
COMPACT PARKING STALLS	0	0	0
VAN ACCESSIBLE STALLS	10	6	2
STANDARD ACCESSIBLE STALLS	0	1	0
TOTAL	317	200	17
FUTURE OVERFLOW PARKING	0	39	0

NOTES:

1. OVERHEAD AND UNDERGROUND UTILITIES MAY EXIST ALONG, ACROSS, AN PROPOSED IMPROVEMENTS AND MAY NOT BE SHOWN ON THE PLANS. C RESPONSIBLE FOR CONTACTING THE RESPECTIVE COUNTY OR STATE AGEN WITHOUT LIMITATION MAUI ELECTRIC COMPANY, LTD., VERIZON HAWAII INC., WARNER CABLE OF HAWAII. EXAMINING ANY AVAILABLE RECORD DRAWINGS UTILITIES, AND CONFIRMING THE PRESENCE OF ANY EXISTING UTILITIES A PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOTIFY AND COORDINAT AND ANY REQUIRED RELOCATION, WITH RESPECTIVE AGENCIES AND UTILIT
2. OWNERS OF ADJOINING LANDS, SHOWN ON PLAN, ARE TAKEN FROM REC PROPERTY MAPPING BRANCH, & ARE SUBJECT TO VERIFICATION.



NDERGROUND UTILITIES MAY EXIST ALONG, ACROSS, AND IN THE VICINITY OF THE VEMENTS AND MAY NOT BE SHOWN ON THE PLANS. CONTRACTOR SHALL BE E CONTACTING THE RESPECTIVE COUNTY OR STATE AGENCIES, UTILITIES (INCLUDING OM MAUI ELECTRIC COMPANY, LTD., VERIZON HAWAII INC., AND OCEANIC TIME OF HAWAII), EXAMINING ANY AVAILABLE RECORD DRAWINGS, TONING OF UNDERGROUND DIRECTIONS THE PRESENCE OF ANY EXISTING UTILITIES ALONG AND ACROSS THE VEMENTS. CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION ACTIVITIES, ED RELOCATION, WITH RESPECTIVE AGENCIES AND UTILITIES.

ONING LANDS, SHOWN ON PLAN, ARE TAKEN FROM RECORDS FILED IN THE REAL NG BRANCH, & ARE SUBJECT TO VERIFICATION.

CLIFFORD N. MORIKAWA LICENSED PROFESSIONAL ENGINEER NO. 6867-C HAWAII, U.S.A.

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

SOUTH MAUI COMMUNITY PARK
PROJECT NO.: P03/004 TAX MAP KEY: (2) 3-3-02: 42
Waiohuli - Keokea (Kihei), Makawao, Maui, Hawaii

TITLE: GENERAL SITE PLAN

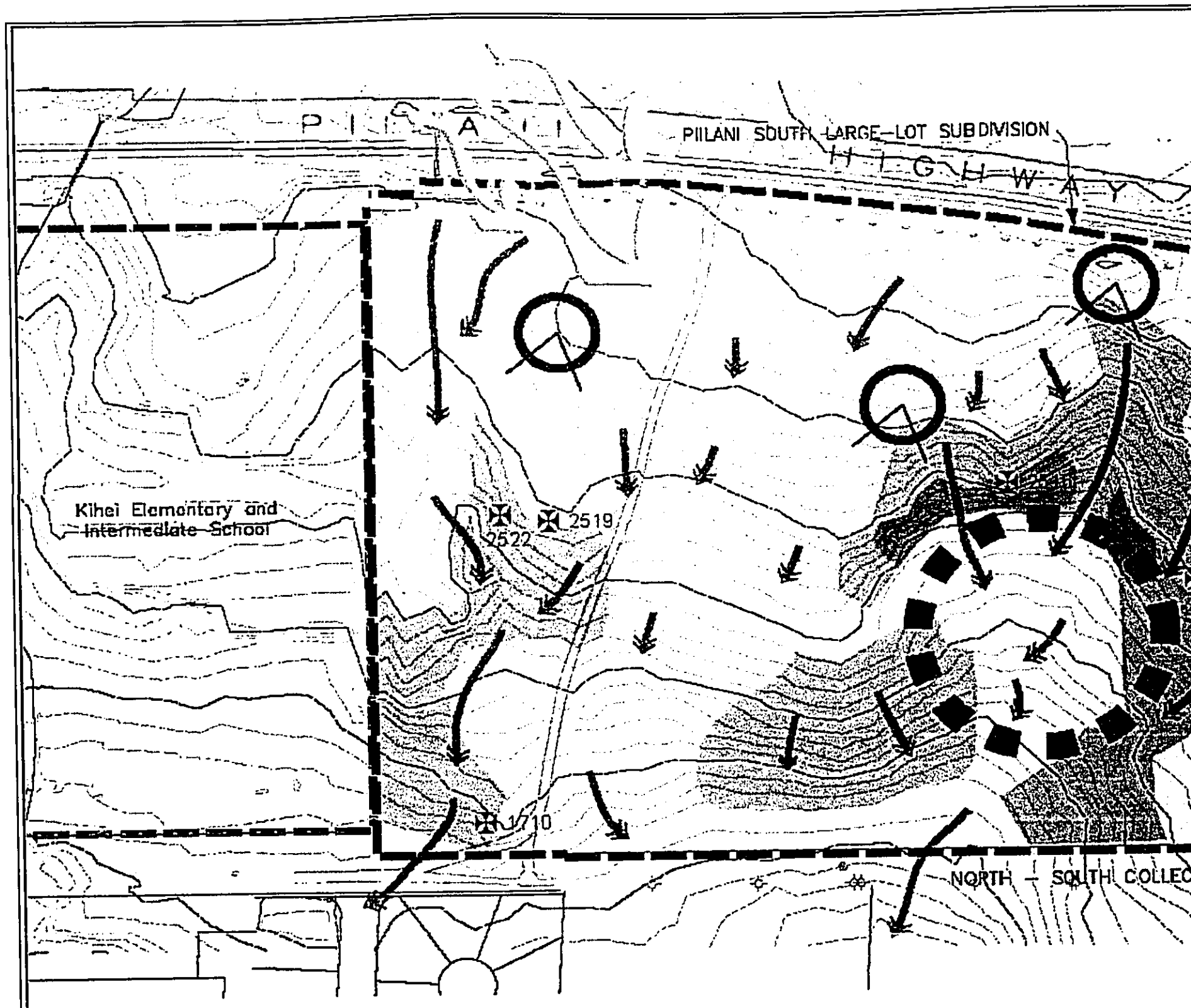
A.L.U.	C.R.M.	03C31.00	1
D.P.T.	W.S.U.	Nov. 14, 2006	SHEET
AS NOTED			

FIGURE 8

OCTOBER 2006

GENERAL SITE PLAN
South Maui Community Park

CHRIS HART & PARTNERS, INC.



LEGEND

DRAINAGE
-Water flow through the site based on contours.

WIND
-Predominant wind direction through the site.

POTENTIAL PASSIVE RECREATION AREAS
-Picnic Facilities & Shelters, Sitting Areas, Tot Lots, Open Space, Trails, Interpretation Areas

VIEW POINT
-Potential view points to be preserved.

SLOPE ANALYSIS
0 - 7 %
8 - 15 %
> 15 %

ARCHAEOLOGICAL SITES
1710

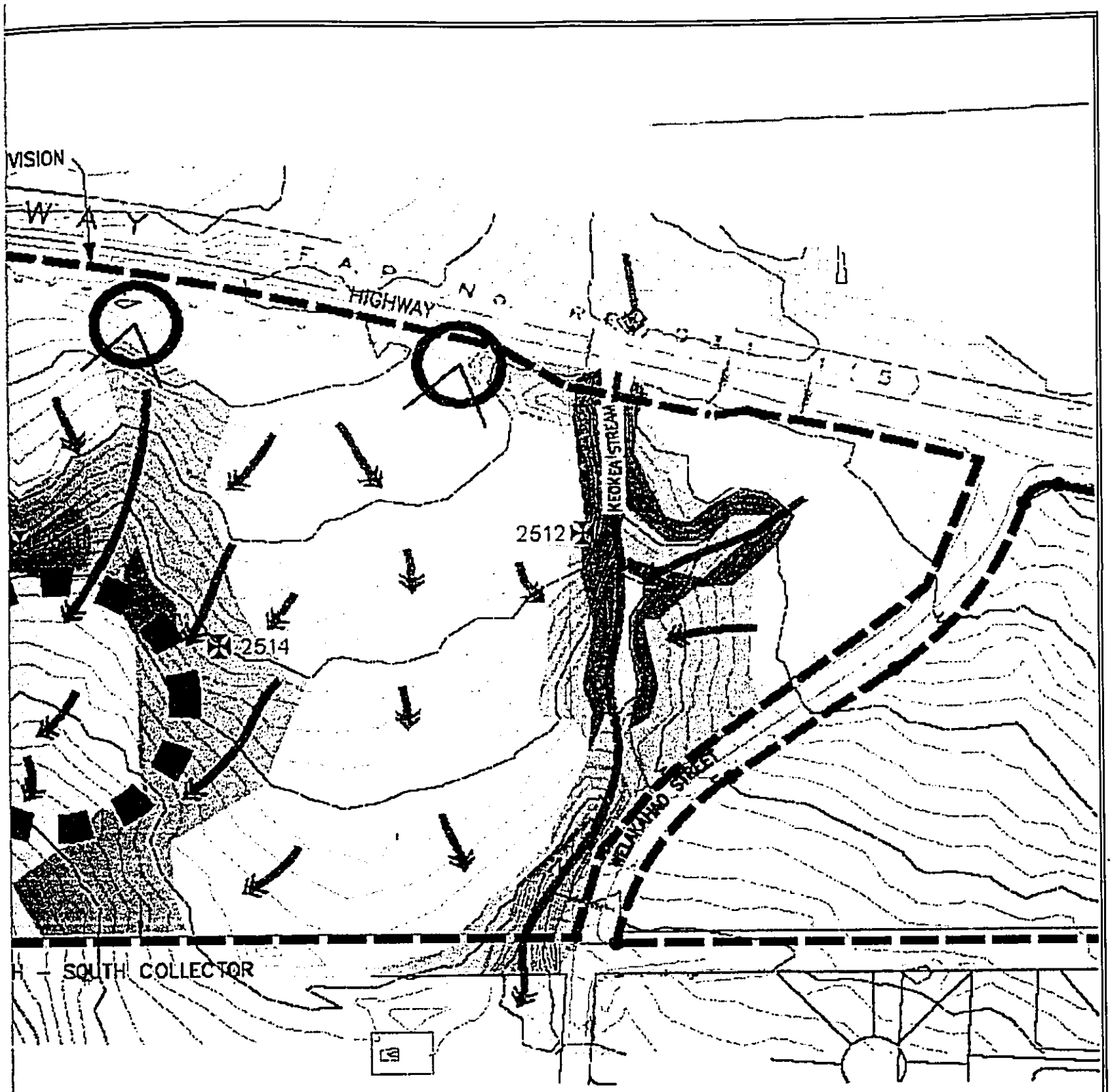
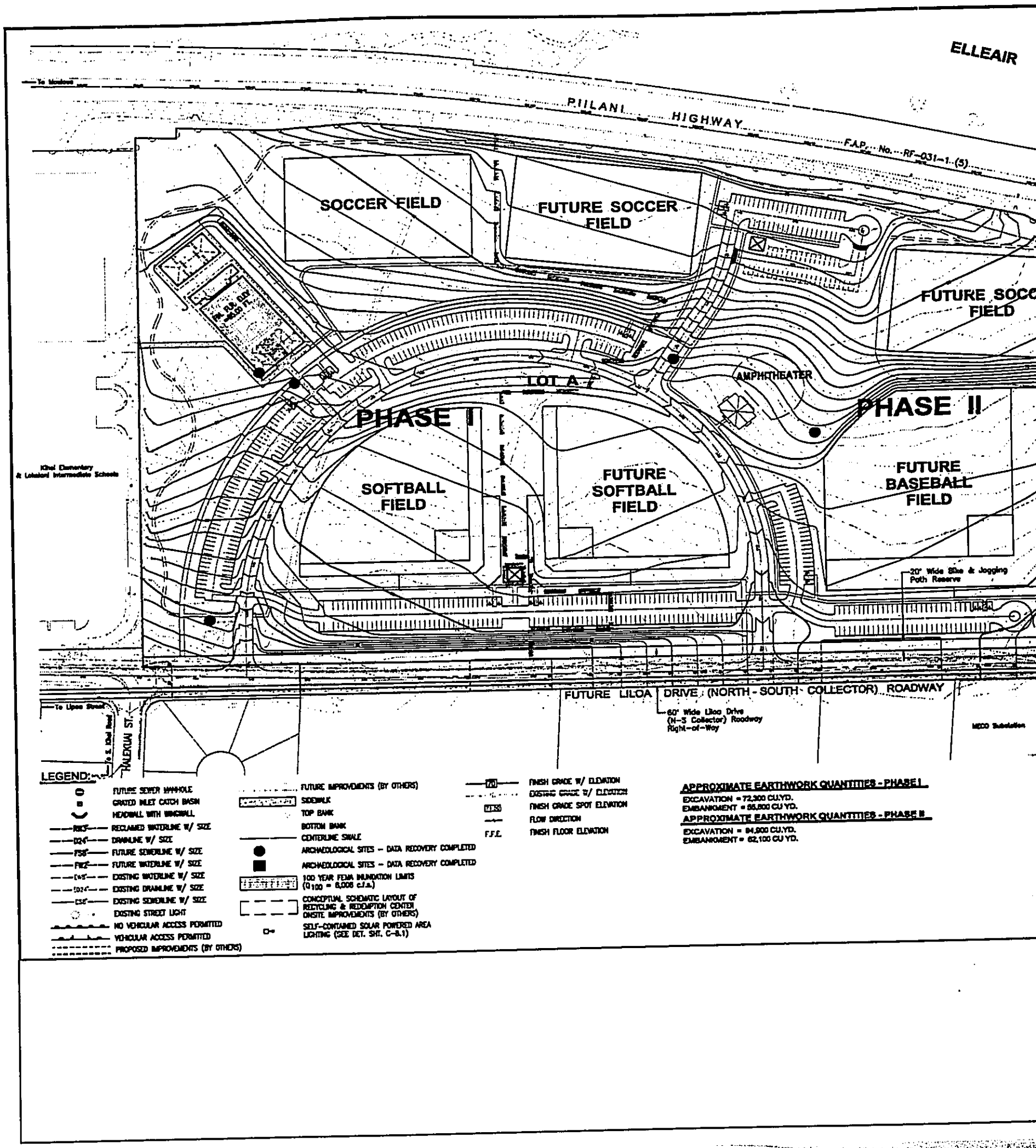


FIGURE 9

OCTOBER 2006

SITE ANALYSIS
South Maui Community Park

CHRIS HART & PARTNERS, INC.


ELLEAIR
PIILANI HIGHWAY
F.A.P. No. RF-031-1-(5)
SOCCER FIELD
FUTURE SOCCER FIELD
FUTURE SOCC FIELD
LOT A
AMPHITHEATER
PHASE I
PHASE II
SOFTBALL FIELD
FUTURE SOFTBALL FIELD
FUTURE BASEBALL FIELD
20' Wide Bike & Jogging Path Reserve
Kihei Elementary & Lokelani Intermediate Schools
To Maalaea
To Upper Kihei Road
HALEKUAI ST.
FUTURE LILOA DRIVE (NORTH - SOUTH COLLECTOR) ROADWAY
60' Wide Liloa Drive (N-S Collector) Roadway Right-of-Way
MECO Substation
LEGEND:
FUTURE SEWER MANHOLE
GRATED INLET CATCH BASIN
HEADWALL WITH WINGWALL
RECLAIMED WATERLINE W/ SIZE
DRAINLINE W/ SIZE
FUTURE SEWERLINE W/ SIZE
FUTURE WATERLINE W/ SIZE
EXISTING WATERLINE W/ SIZE
EXISTING DRAINLINE W/ SIZE
EXISTING SEWERLINE W/ SIZE
EXISTING STREET LIGHT
NO VEHICULAR ACCESS PERMITTED
VEHICULAR ACCESS PERMITTED
PROPOSED IMPROVEMENTS (BY OTHERS)
FUTURE IMPROVEMENTS (BY OTHERS)
SIDEWALK
TOP BANK
BOTTOM BANK
CENTERLINE SWALE
ARCHAEOLOGICAL SITES - DATA RECOVERY COMPLETED
ARCHAEOLOGICAL SITES - DATA RECOVERY COMPLETED
100 YEAR FEMA INUNDATION LIMITS (Q_{100} = 6,000 c.f.s.)
CONCEPTUAL SCHEMATIC LAYOUT OF RECYCLING & REDEMPTION CENTER ONSITE IMPROVEMENTS (BY OTHERS)
SELF-CONTAINED SOLAR POWERED AREA LIGHTING (SEE DET. SHT. C-8.1)
FINISH GRADE W/ ELEVATION
EXISTING GRADE W/ ELEVATION
FINISH GRADE SPOT ELEVATION
FLOW DIRECTION
F.F.E. FINISH FLOOR ELEVATION
APPROXIMATE EARTHWORK QUANTITIES - PHASE I
EXCAVATION = 72,300 CU.YD.
EMBANKMENT = 55,800 CU.YD.
APPROXIMATE EARTHWORK QUANTITIES - PHASE II
EXCAVATION = 84,900 CU.YD.
EMBANKMENT = 62,100 CU.YD.

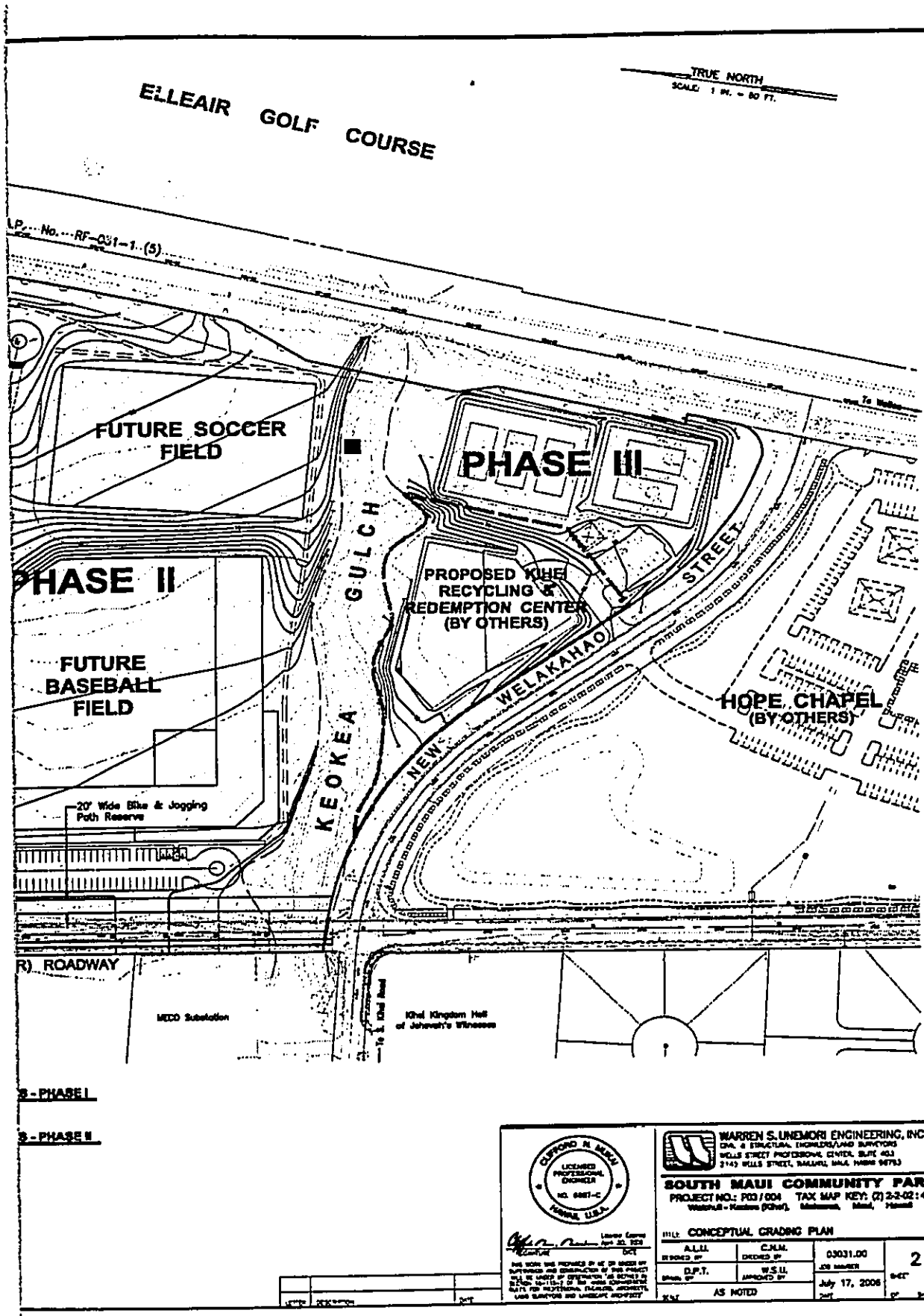
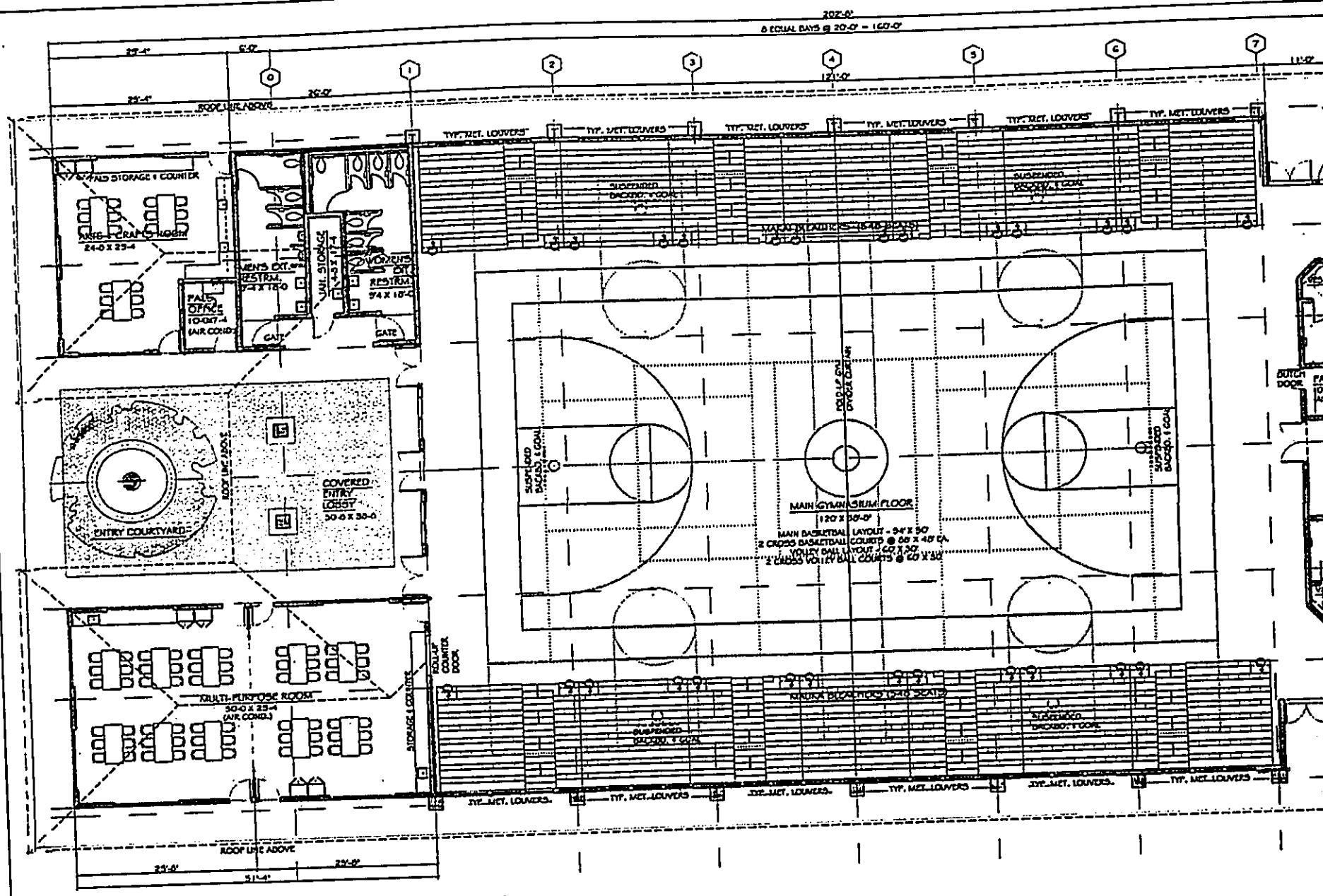


FIGURE 10

OCTOBER 2006

PRELIMINARY GRADING PLAN
South Maui Community Park

CHRIS HART & PARTNERS, INC.



CONCEPTUAL FLOOR PLAN - SCHEME 4

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

GRAPHIC SCALE

BUILDING AREA SUMMARY

GYMNASIUM	12,577 S.F.
COVERED ENTRY LOBBY	790 S.F.
MULTI-PURPOSE ROOMS	1,574 S.F.
ARTS & CRAFTS ROOM & FALS OFF.	916 S.F.
PUBLIC RESTROOMS	777 S.F.
SHOWER/LOCKER/TOILETS & DRTS	2,336 S.F.
ACTIVITY ROOMS (NORTH SIDE)	4,364 S.F.
TOTAL BUILDING AREA	23,364 S.F.

Hiyakumoto + Higuchi
ARCHITECTS · INC
1860 Main Street
Wailuku, Maui, Hawaii 96793
Telephone (808) 242-9705

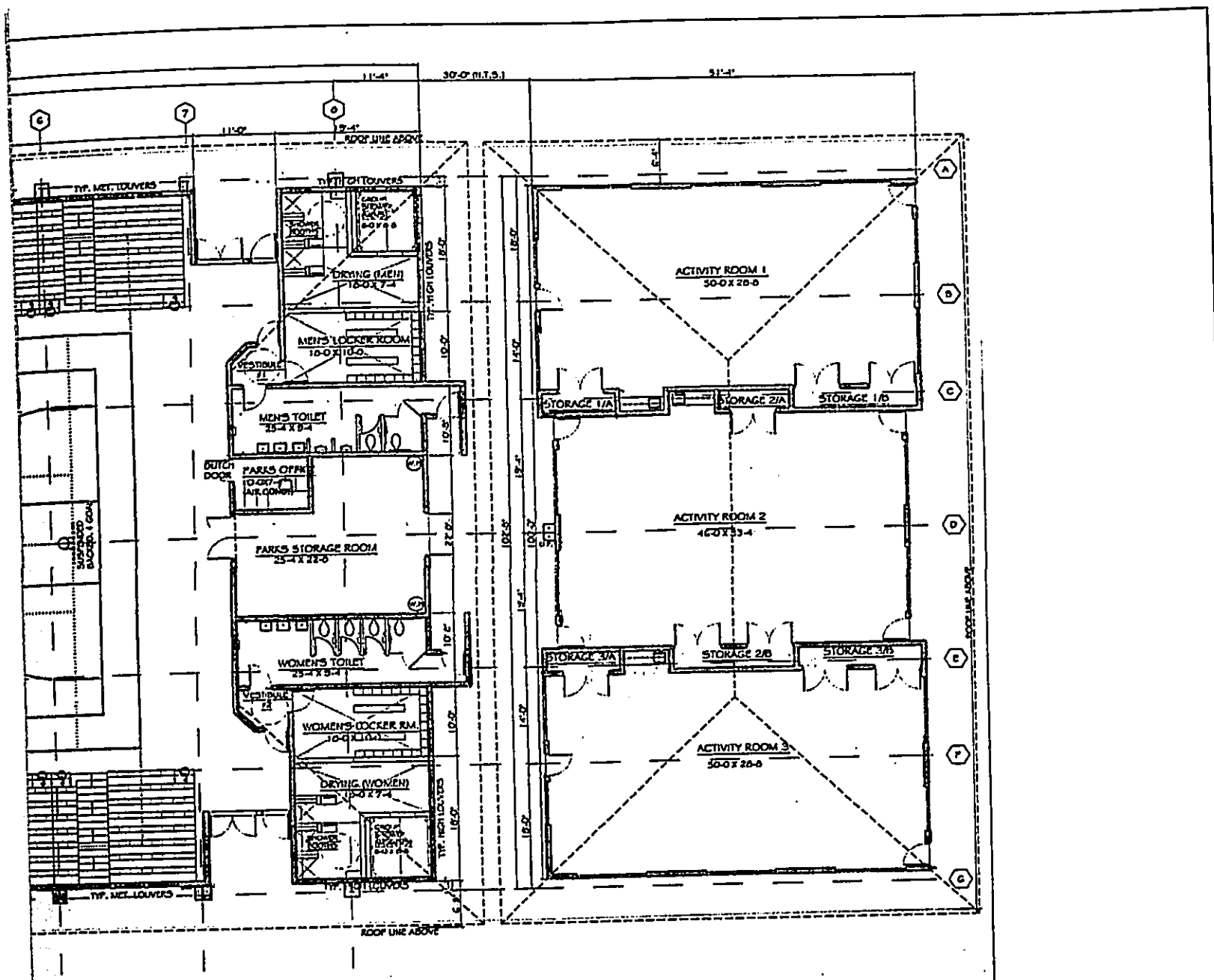
CALVIN S. HIGUCHI
LICENSED PROFESSIONAL ARCHITECT
NO. 4998
HAWAII, U.S.A.

This work was prepared by me or under my supervision.
Construction of this project will be under my observation as defined in HAR 16-115-2.

CONCEPTUAL DESIGN FOR
SOUTH MAUI PARK GYMNASIUM
T.M.K.: 2-2-002: 42 KIHEI, MAUI, HAWAII
County of Maui Dept. of Parks & Recreation

Date:
Revisions:

South Maui Community Park Gymnasium C



BUILDING AREA SUMMARY

GYMNASIUM	12,577 S.F.
COVERED ENTRY LOBBY	756 S.F.
MULTI-PURPOSE ROOMS	1,374 S.F.
ARTS & CRAFTS ROOM & FMLS OFF.	916 S.F.
PUBLIC RESTROOMS	777 S.F.
SHOWER/LOCKERS/TOILETS & CMTS	2,336 S.F.
ACTIVITY ROOMS (NORTH SIDE)	4,996 S.F.
TOTAL BUILDING AREA	23,984 S.F.

PARKING SUMMARY

GYMNASIUM	1 STALL / 6 SEATS	X 1096 SEATS	=	183 STALLS
COVERED ENTRY LOBBY	1 STALL / 500 S.F.	X 756 S.F.	=	2
MULTI-PURPOSE ROOMS	1 STALL / 100 S.F.	X 1,374 S.F.	=	14
ARTS & CRAFTS ROOM & FMLS OFF.	1 STALL / 100 S.F.	X 916 S.F.	=	9
PUBLIC RESTROOMS	1 STALL / 500 S.F.	X 777 S.F.	=	2
SHOWER/LOCKERS/TOILETS & CMTS	1 STALL / 500 S.F.	X 2,336 S.F.	=	5
ACTIVITY ROOMS (NORTH SIDE)	1 STALL / 100 S.F.	X 4,996 S.F.	=	50

TOTAL PARKING STALLS REQUIRED FOR GYMNASIUM COMPLEX: 267 STALLS
(PARKING REQUIRED FOR THE PLAYFIELDS & OTHER PARK AMENITIES NOT INCLUDED)

Date:
Revisions:

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8/24/04

Sheet Title: CONCEPTUAL FLOOR PLAN - SCHEME (2 BLDG.)

Sheet No.: SK-12

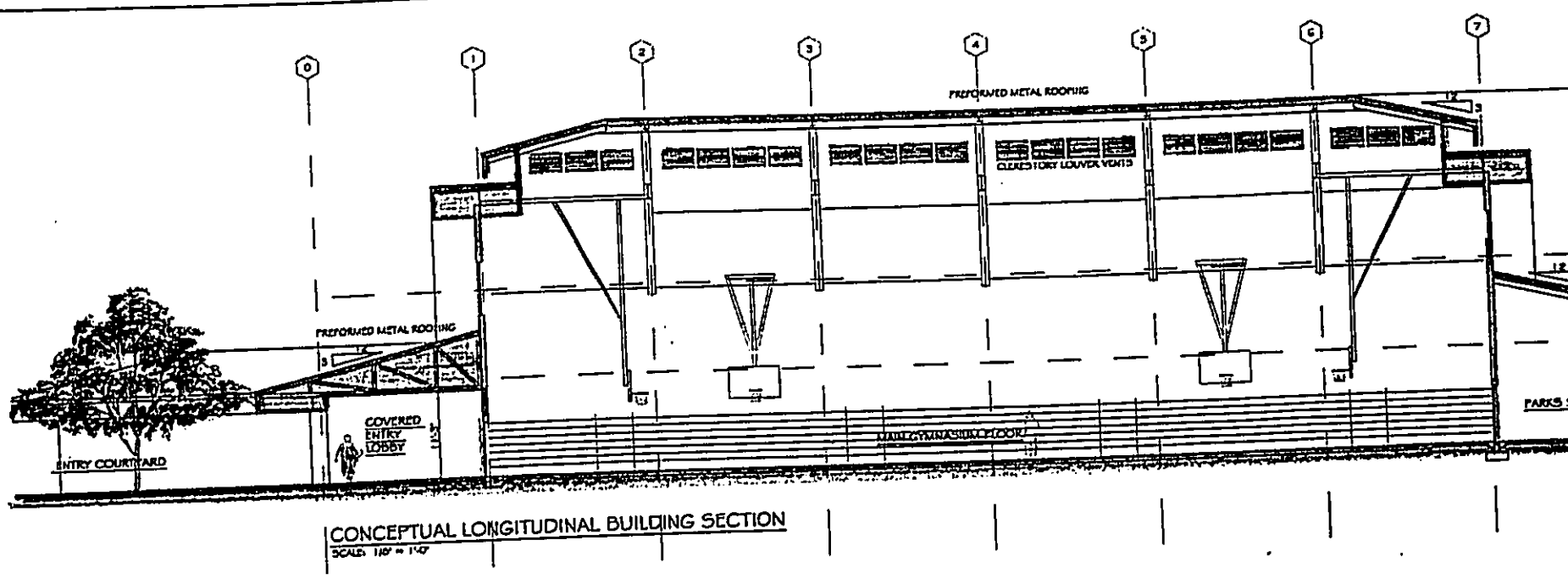
mnasium Concept Floorplan

FIGURE II-a

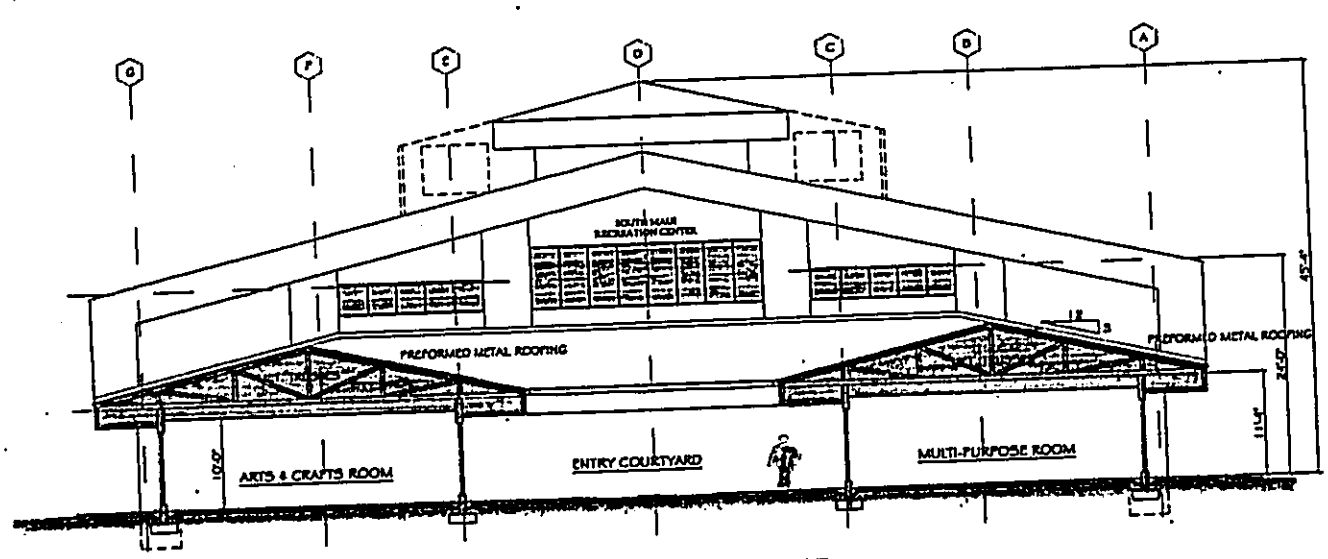
OCTOBER 2006

ARCHITECTURAL DRAWINGS
South Maui Community Park

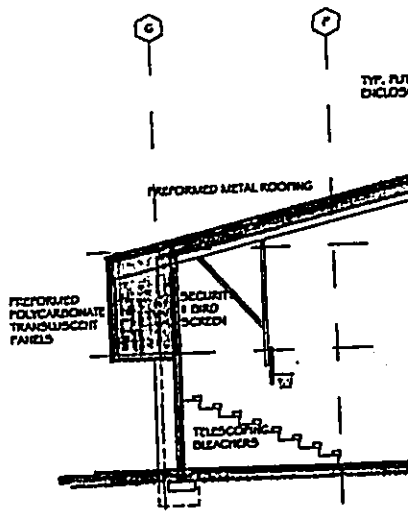
CHRIS HART & PARTNERS, INC



CONCEPTUAL LONGITUDINAL BUILDING SECTION
SCALE: 1/8" = 1'-0"



CONCEPTUAL BUILDING CROSS SECTION @ ENTRY COURT
SCALE: 1/8" = 1'-0"



CONCEPTUAL BUILDING
SCALE: 1/8" = 1'-0"

Hiyakumoto + Higuchi
ARCHITECTS · INC
1860 Main Street
Wailuku, Maui, Hawaii 96793
Telephone (808) 242-9705

LICENSED PROFESSIONAL ARCHITECT NO. 4997 HAWAII, U.S.A.

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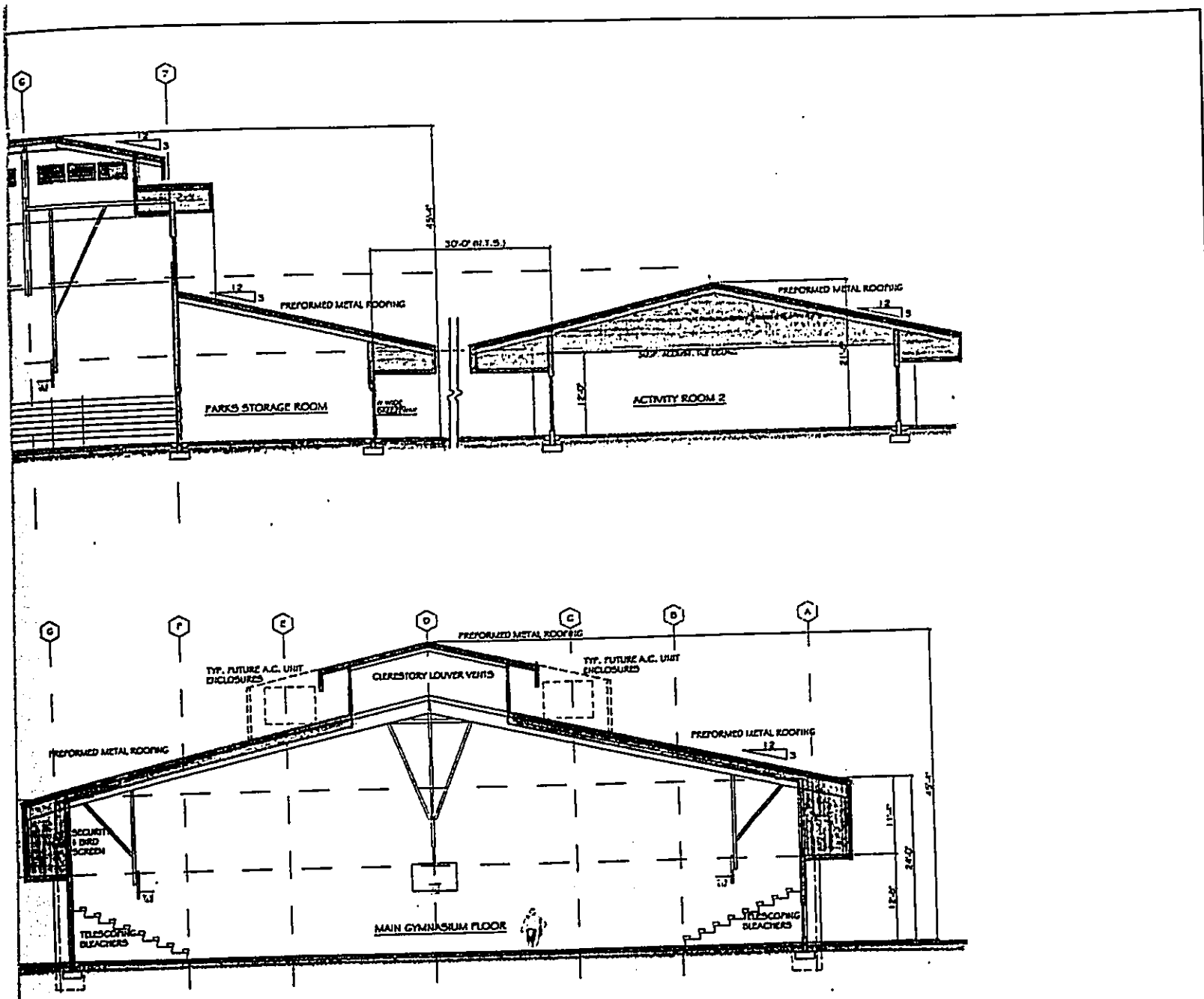
CONCEPTUAL DESIGN FOR
SOUTH MAUI PARK GYMNASIUM
T.M.K.: 2-2-002: 42 KIHEI, MAUI, HAWAII
County of Maui Dept. of Parks & Recreation

South Maui Community Park Gymnasium - Conceptual Buil



CONCEPTUAL BUILDING CROSS SECTION @ GYMNASIUM

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

Date:

Revisions:

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8/24/04

Sheet Title: CONCEPTUAL BLDG SECTIONS - SCHEME 4 (2 BLDG.)

Sheet No.: SK-15

Sheet of

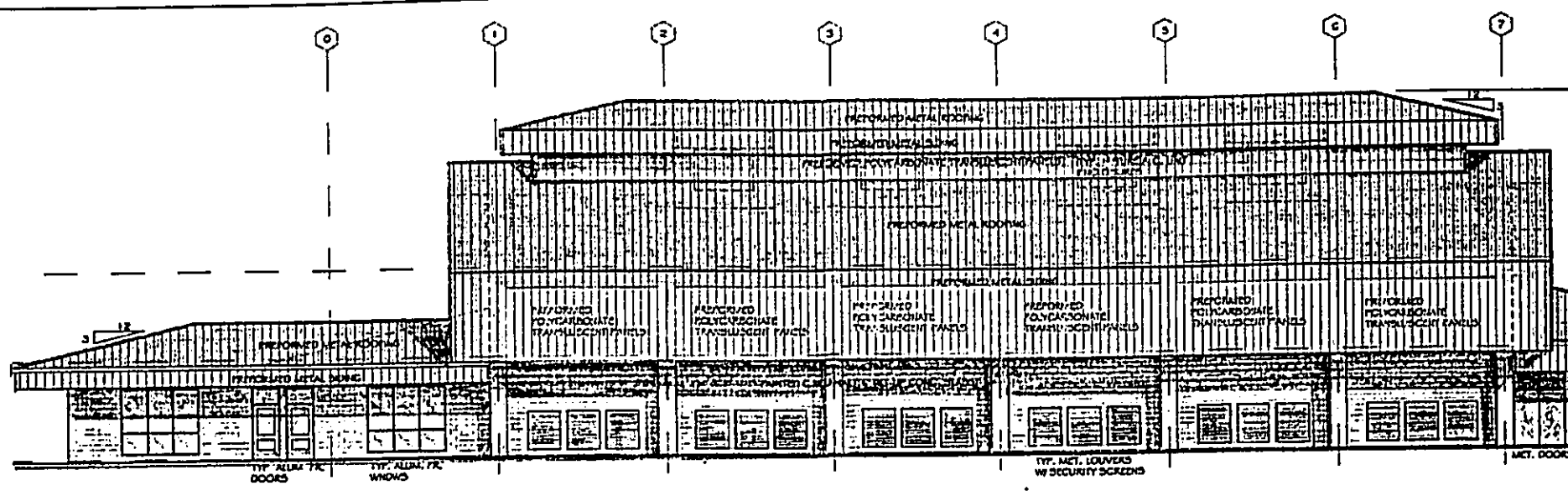
ceptual Building Cross-Sections

FIGURE II-b

OCTOBER 2006

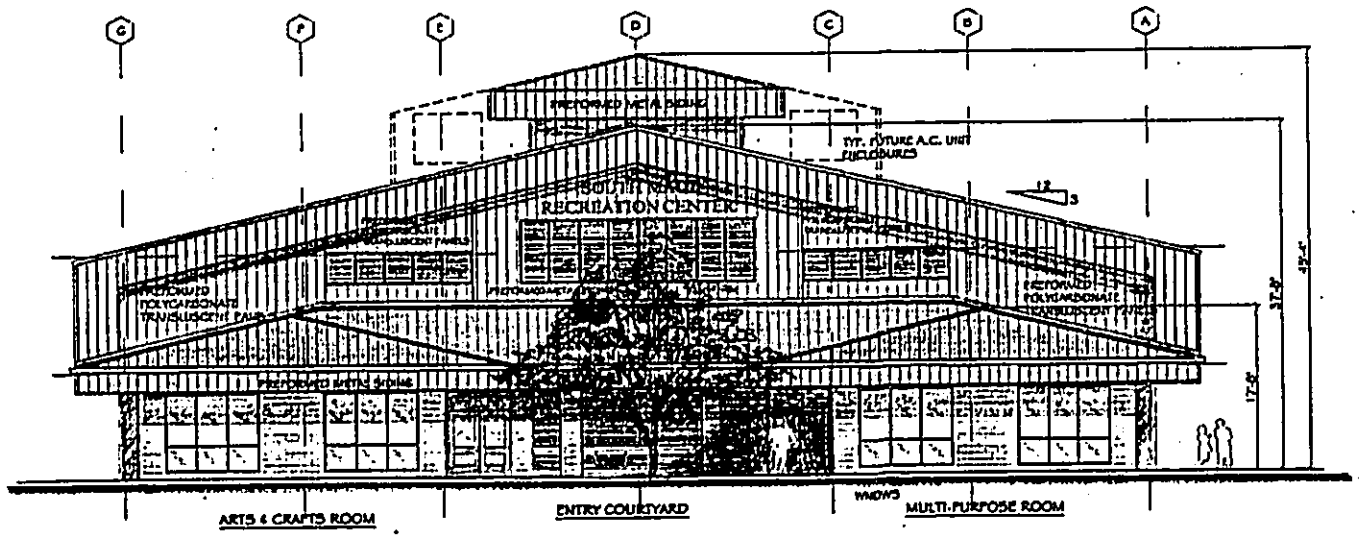
ARCHITECTURAL DRAWINGS
South Maui Community Park

CHRIS HART & PARTNERS, INC



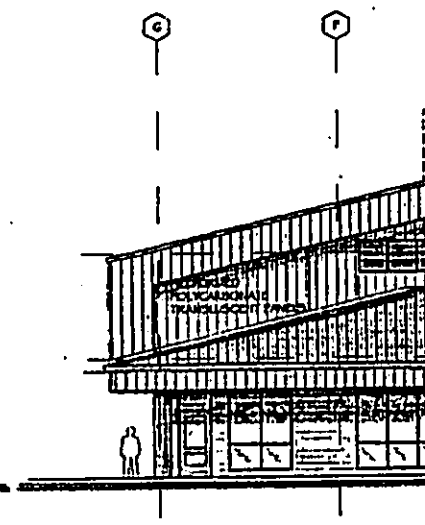
CONCEPTUAL MAUKA EXTERIOR ELEVATION

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



CONCEPTUAL SOUTH EXTERIOR ELEVATION @ ENTRY COURT

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



CONCEPTUAL NORTH EXT

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

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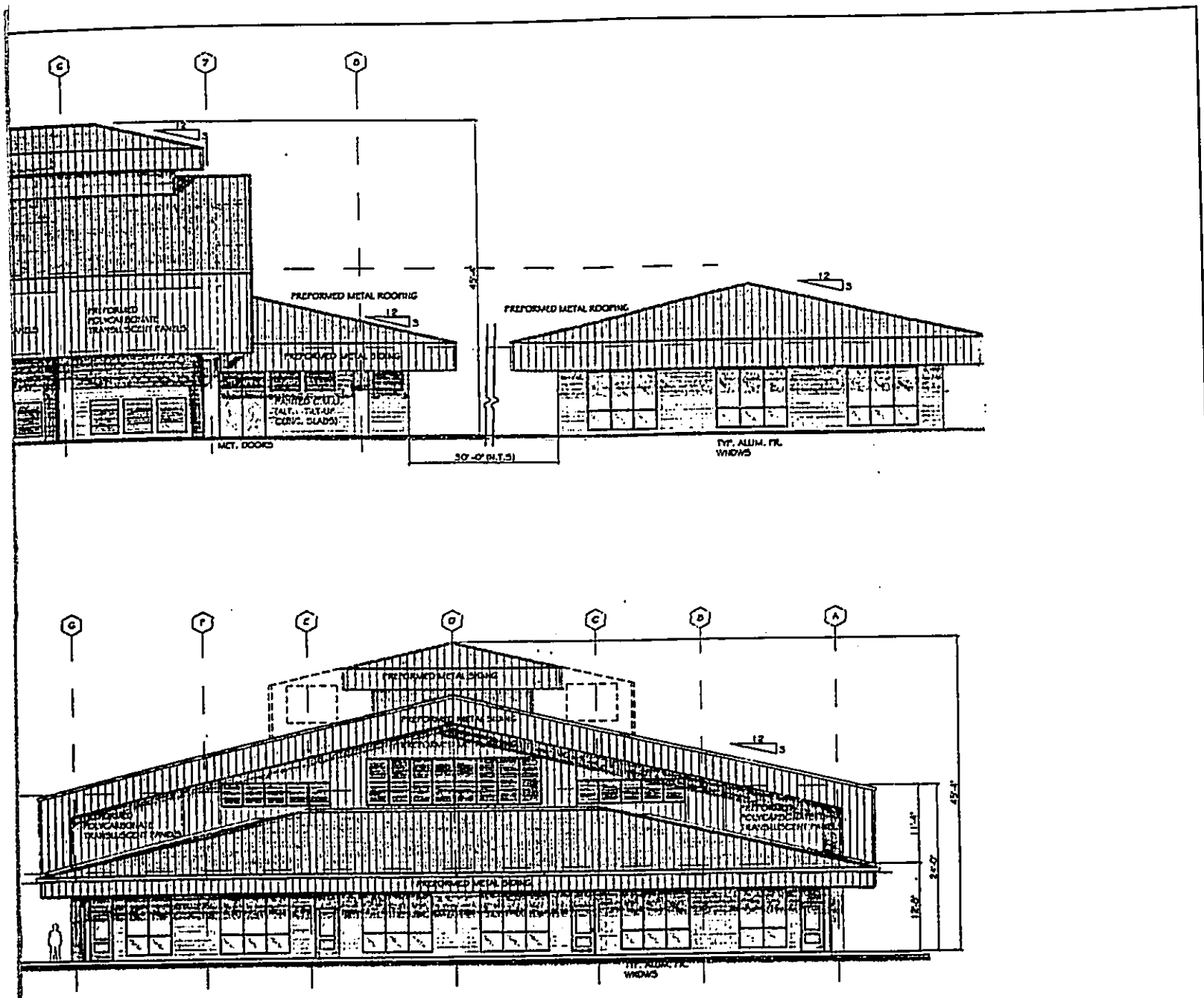
CONCEPTUAL DESIGN FOR
SOUTH MAUI PARK GYMNASIUM
T.M.K.: 2-2-002: 42 KIHEI, MAUI, HAWAII
County of Maui Dept. of Parks & Recreation

Date:
Revisions:

South Maui Community Park Gymnasium - Conceptu



CONCEPTUAL NORTH EXTERIOR ELEVATION (MAALAEA SIDE)
SCALE: 1/8" = 1'-0"

Date:
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8/24/04

Sheet Title
CONCEPTUAL EXTERIOR ELEVATIONS - SCHEME 4 (2-BLDG.)

Sheet No.
SK-13

Sheet of

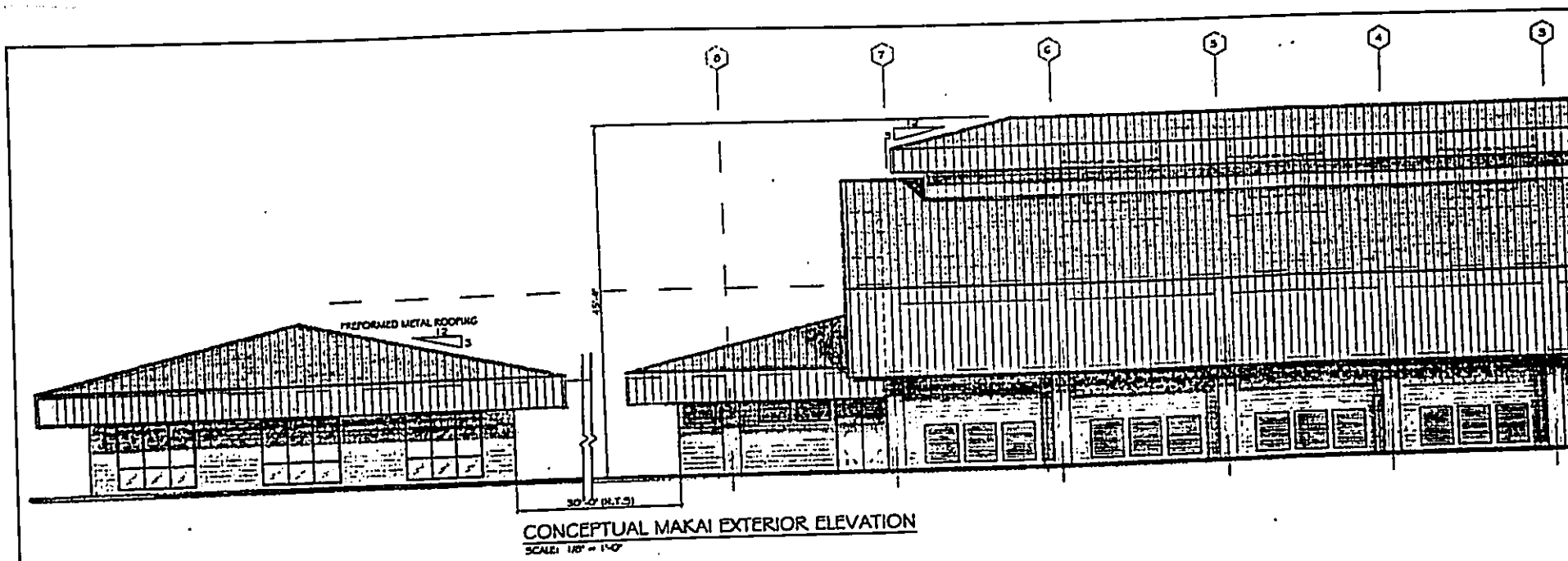
FIGURE II-c

m - Conceptual Exterior Elevations

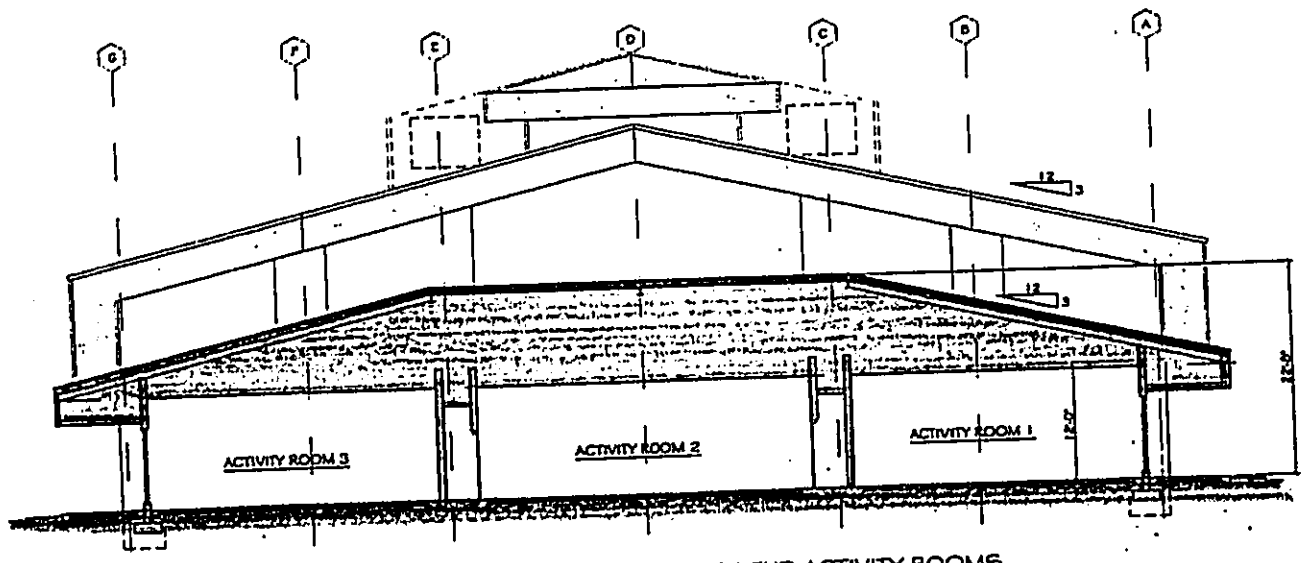
OCTOBER
2006

ARCHITECTURAL DRAWINGS
South Maui Community Park

CHRIS HART & PARTNERS, INC.



CONCEPTUAL MAKAI EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"



CONCEPTUAL BUILDING CROSS SECTION @ NORTH END ACTIVITY ROOMS
SCALE: 1/8" = 1'-0"

CONCEPTUAL BUILD
SCALE: 1/8" = 1'-0"

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EXPIRES 4/30/94

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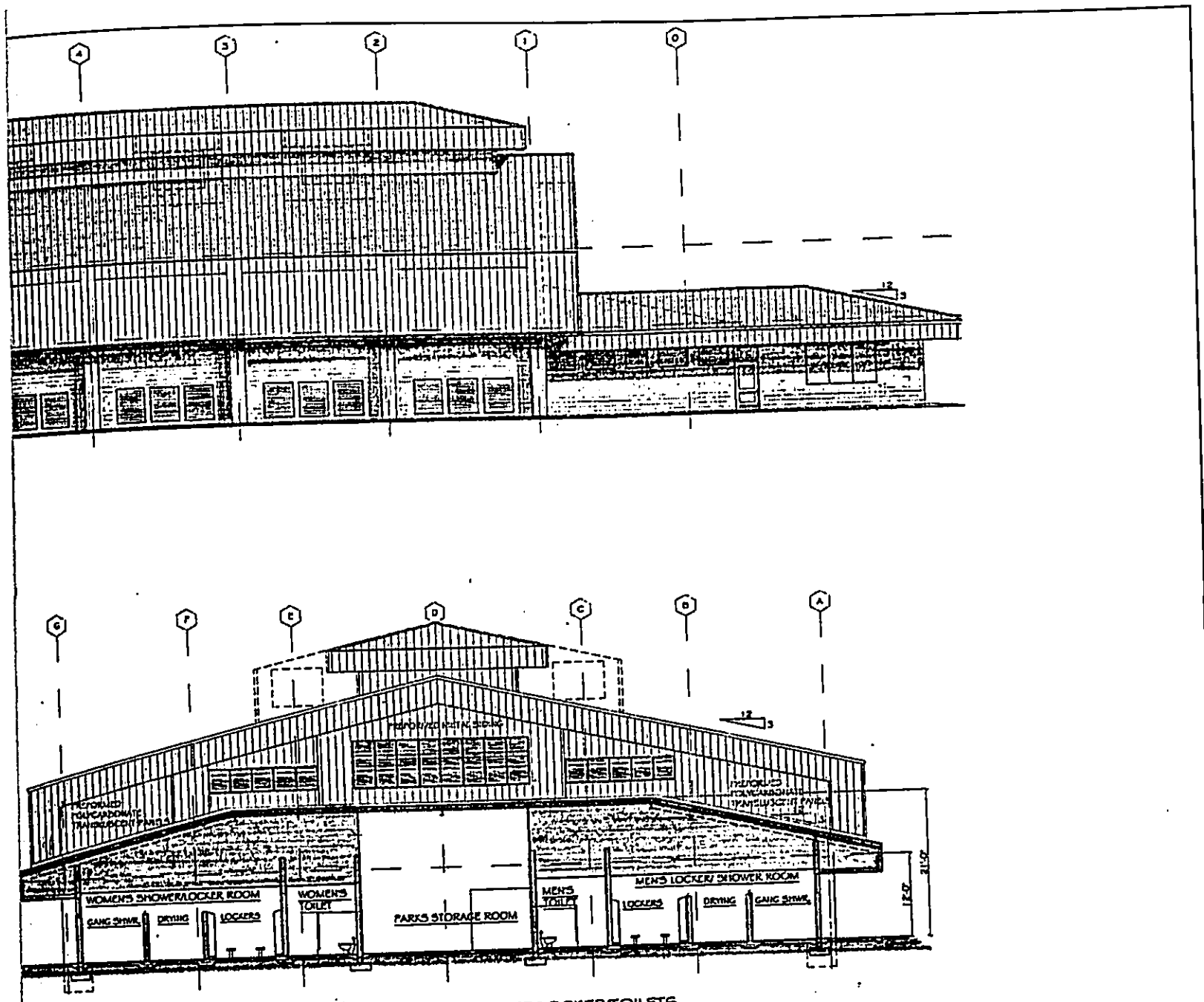
CONCEPTUAL DESIGN FOR
SOUTH MAUI PARK GYMNASIUM
T.M.K.: 2-2-002: 42 KIHEI, MAUI, HAWAII
County of Maui Dept. of Parks & Recreation

Date:
Revisio

South Maui Community Park Gymnasium - Conceptual Buil



CONCEPTUAL BUILDING CROSS SECTION @ SHOWER/LOCKER/TOILETS

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

Date:
Revisions:

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SUBJECT TO CHANGE
8/24/04

Sheet Title
CONCEPTUAL EXT. ELEV. & BLDG. SECTIONS - SCHEME 4 (2 BLDG.)

Sheet No.
SK-14

Sheet of

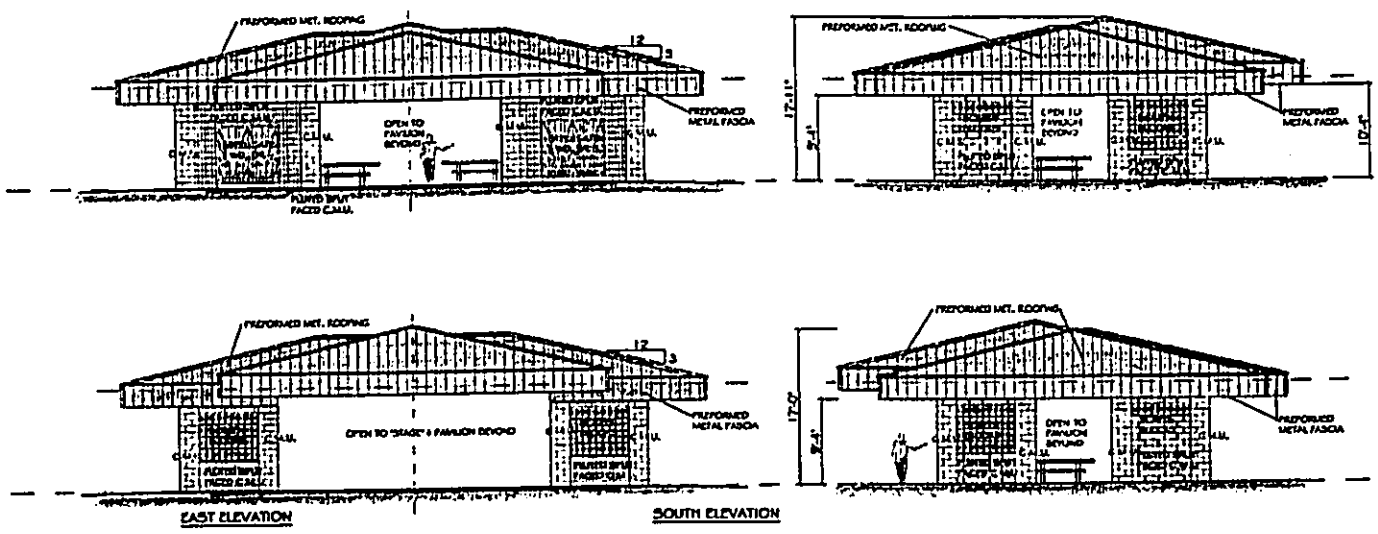
FIGURE II-d

ceptual Building Cross Sections

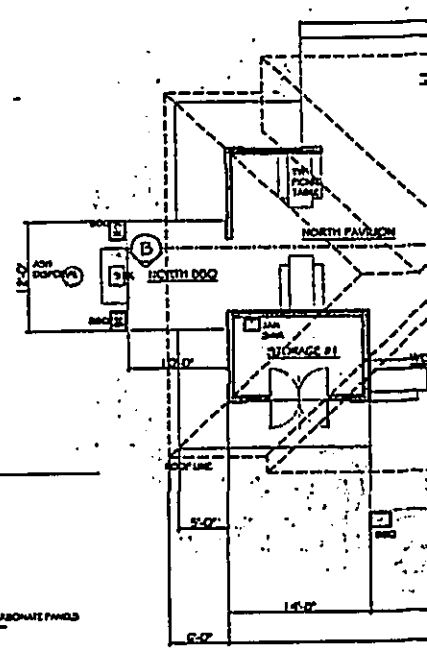
OCTOBER 2006

ARCHITECTURAL DRAWINGS
South Maui Community Park

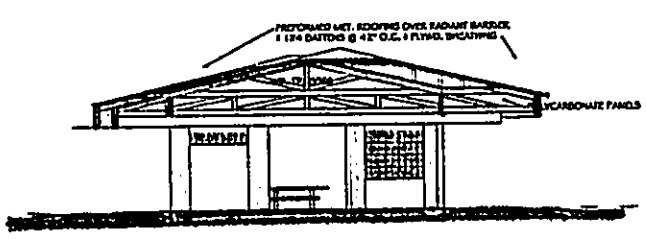
CHRIS HART & PARTNERS, INC.



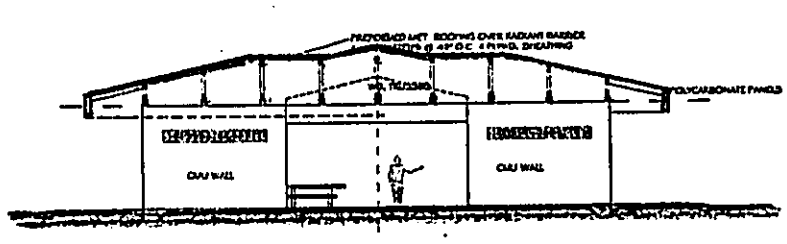
EXTERIOR ELEVATIONS



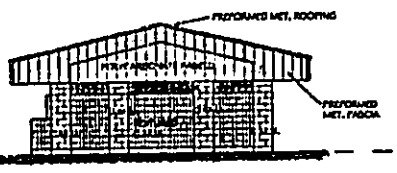
AMPHITHEATER PAVILI

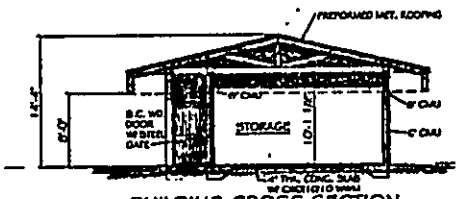


A BUILDING CROSS SECTION

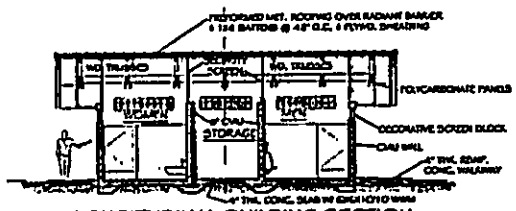


B LONGITUDINAL BUILDING SECTION

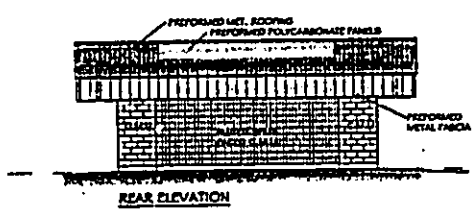


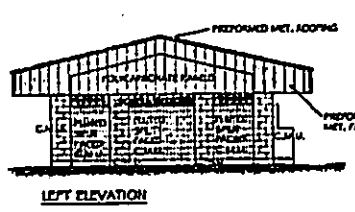


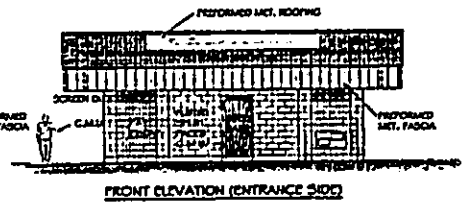
A BUILDING CROSS SECTION



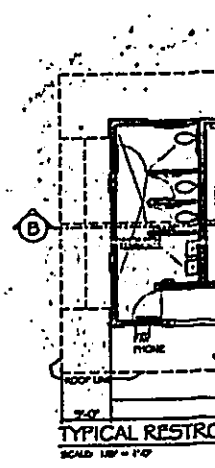
B LONGITUDINAL BUILDING SECTION





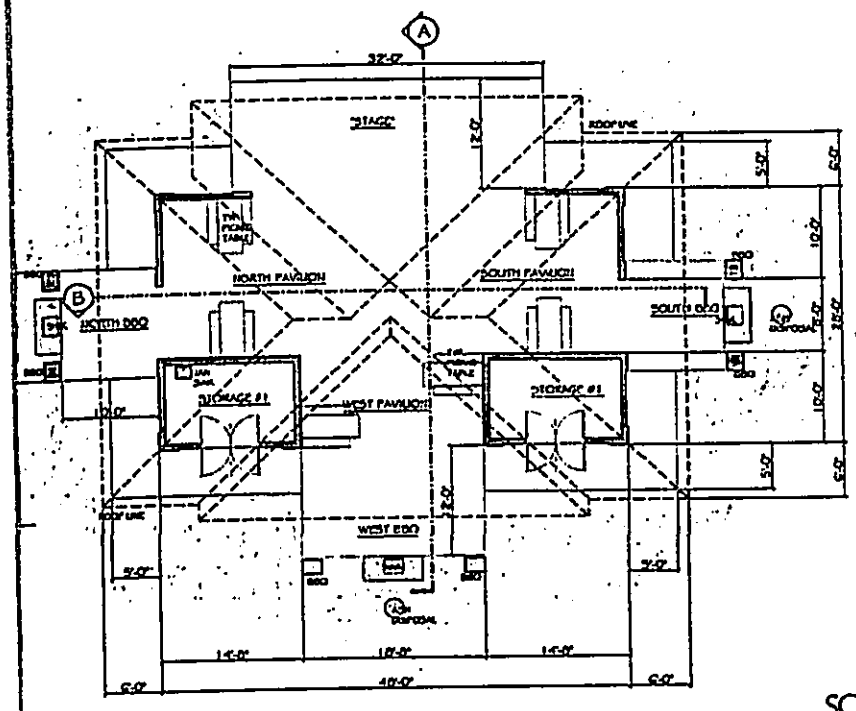


EXTERIOR ELEVATIONS



South Maui Community P

Conceptual Design - Restroom and



AMPHITHEATER PAVILION BUILDING

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

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NO. 4388
HAWAII, U.S.A.
EXPIRES 4/30/08

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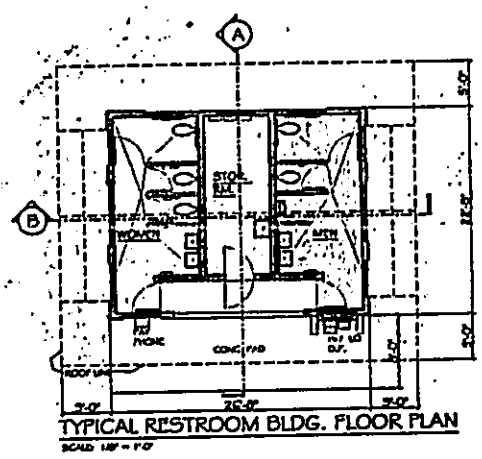
Construction of this project will be under my observation as defined in HAR 16-115-2.

Date:

Revisions:

CONCEPTUAL DESIGN
SOUTH MAUI PARK
RESTROOM & PAVILION
BUILDINGS
T.M.K.: 2-2-002: 42
KIHEI, MAUI, HAWAII

County of Maui
Dept. of Parks & Recreation



TYPICAL RESTROOM BLDG. FLOOR PLAN

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

Sheet Title
AMPHITHEATER PAVILION & TYP. RESTROOM BUILDINGS

Sheet No.
SK-16

Sheet of

FIGURE II-e

Community Park
Restroom and Pavilion Buildings

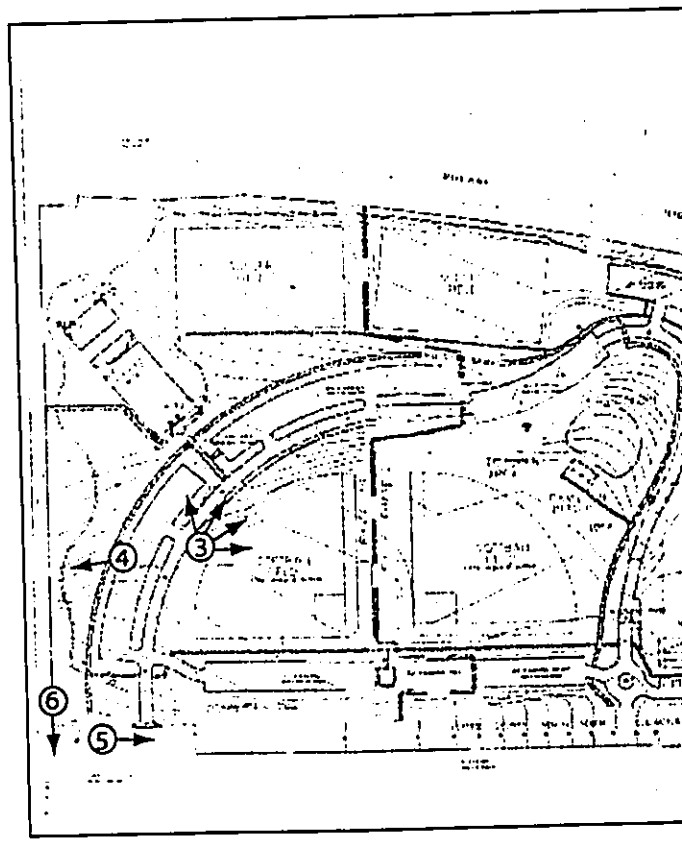
OCTOBER 2006

ARCHITECTURAL DRAWINGS
South Maui Community Park

CHRIS HART & PARTNERS, INC.

1. Looking north accross the subject property from Welakahao Street.

2. Looking south at the Hope Chapel from Welakahao Street.



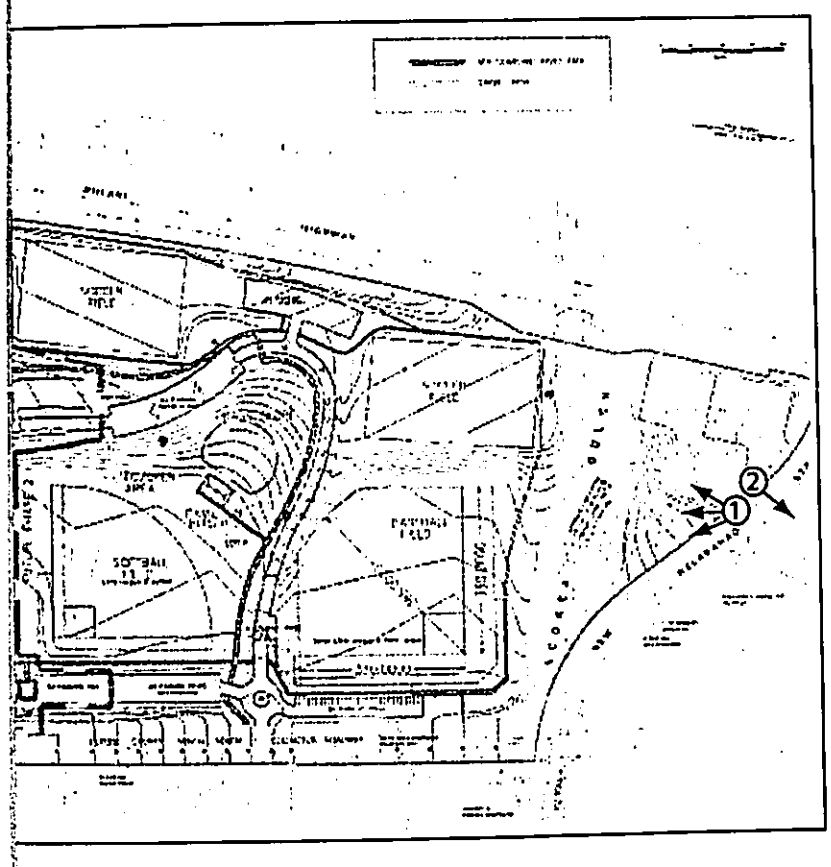


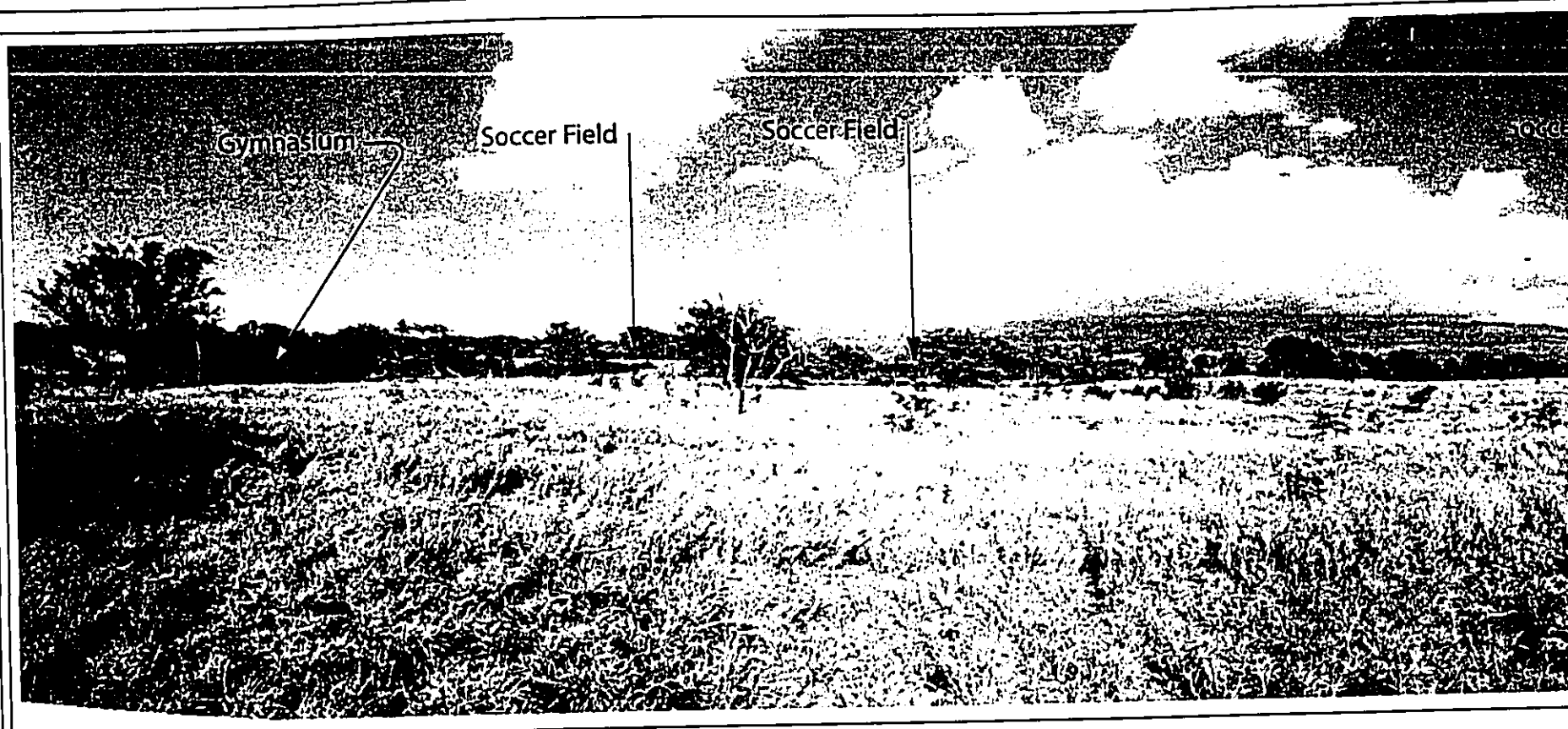
FIGURE 12-a

OCTOBER
2006

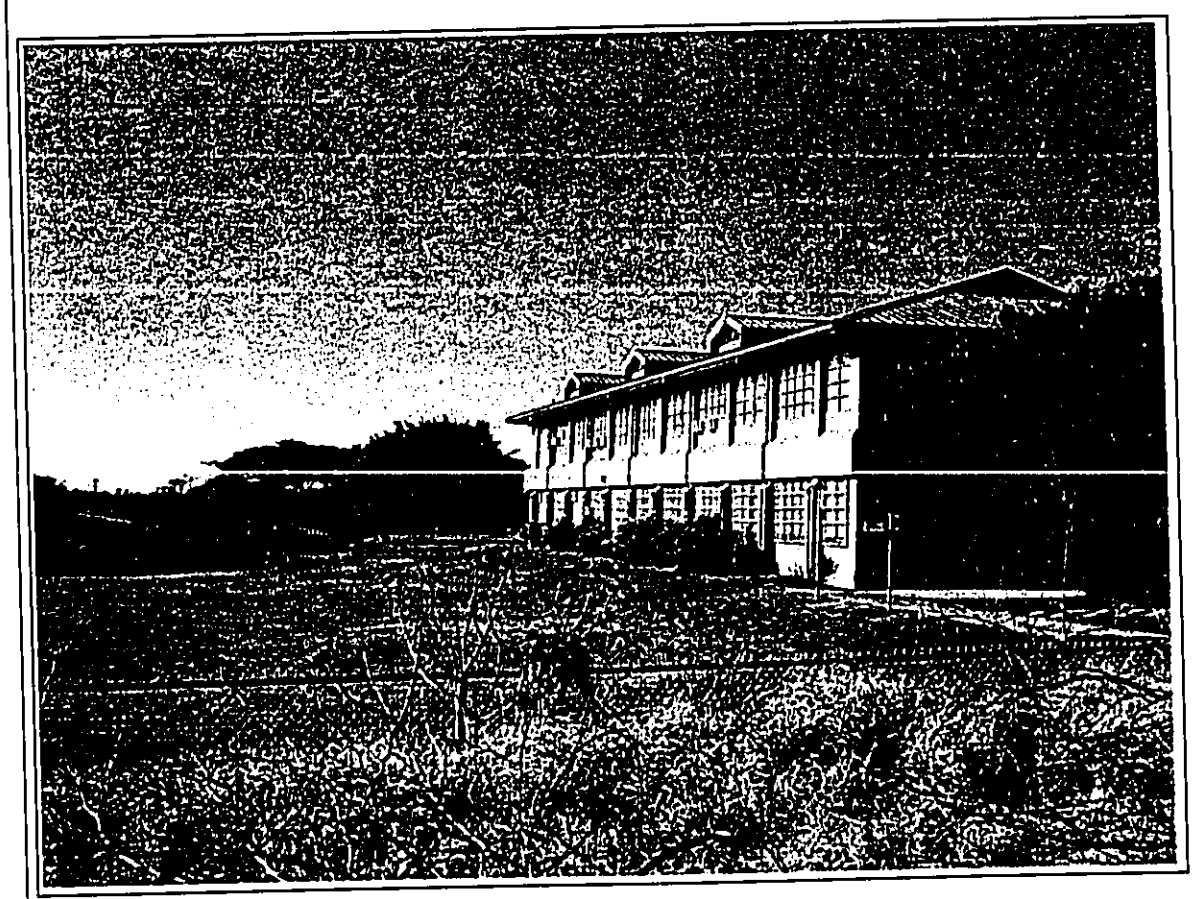
SITE PHOTOGRAPHS

South Maui Community Park

CHRIS HART & PARTNERS, INC.

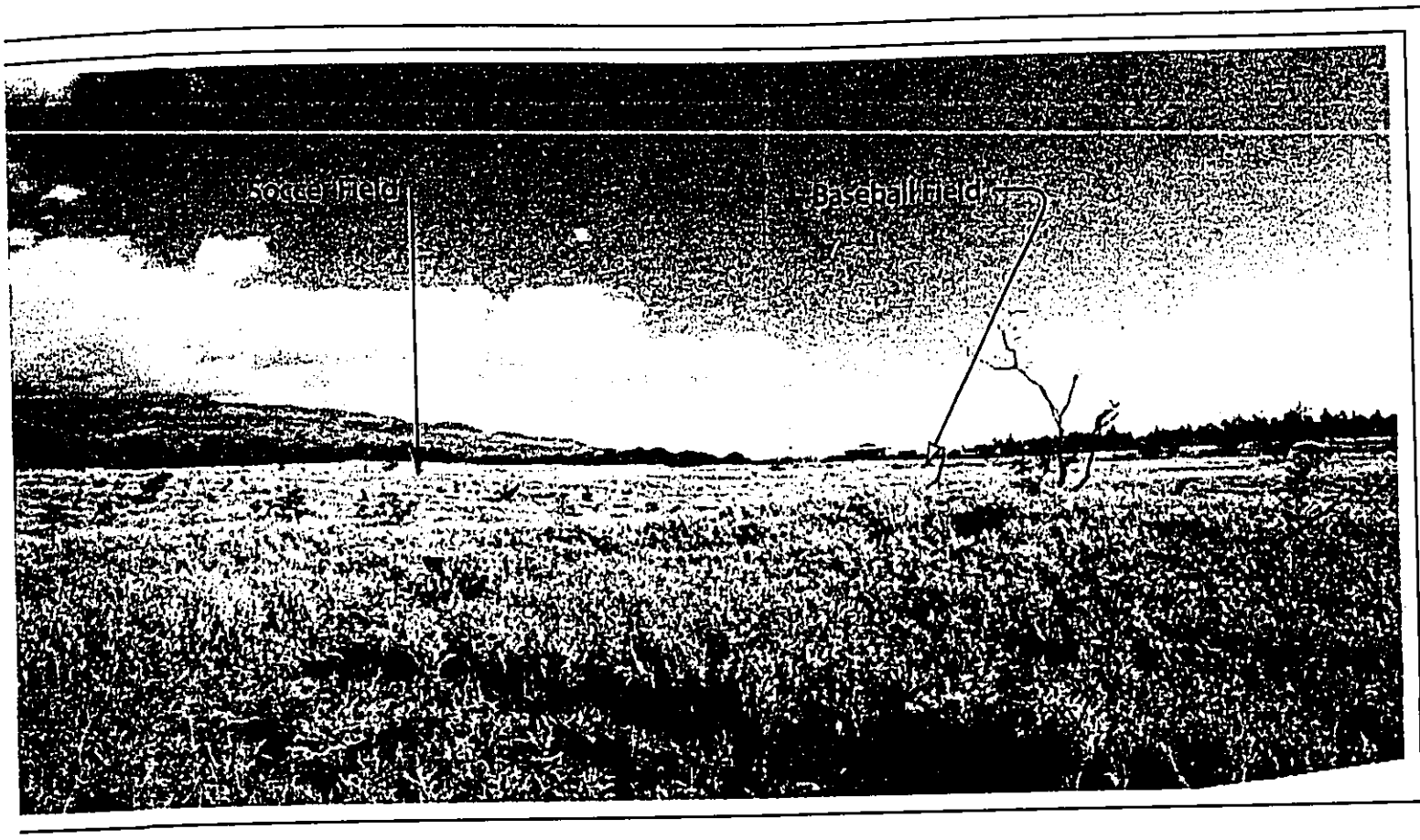


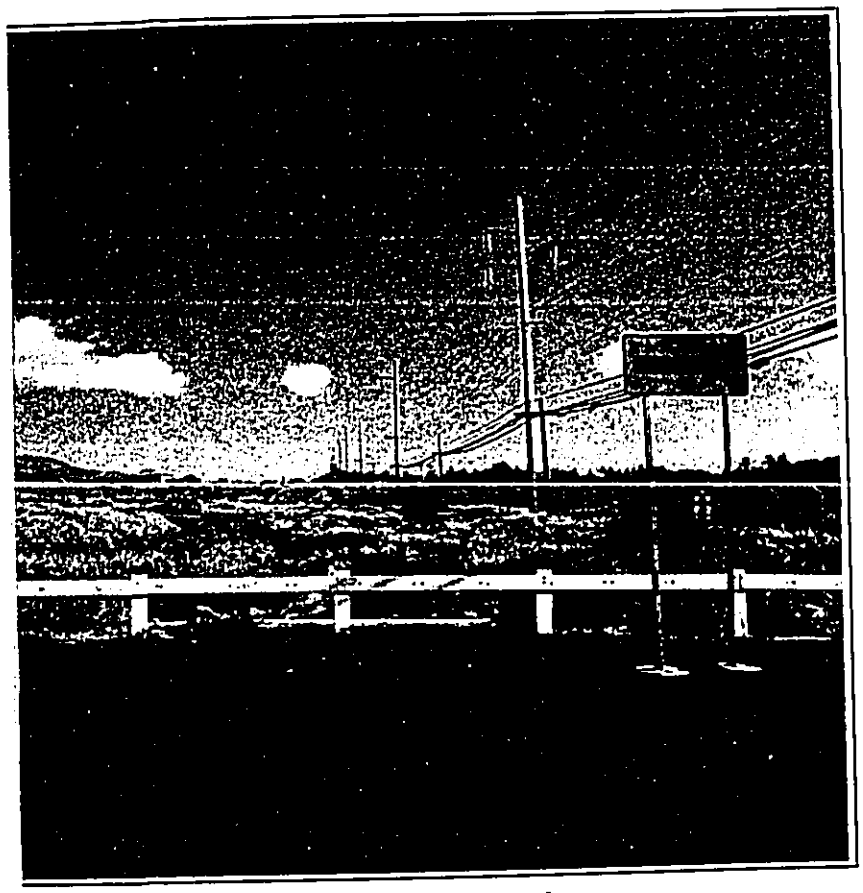
3. Panning south accross the subject property.



4. Lokelani Intermediate School.

5. Looking south along the future North-Sout





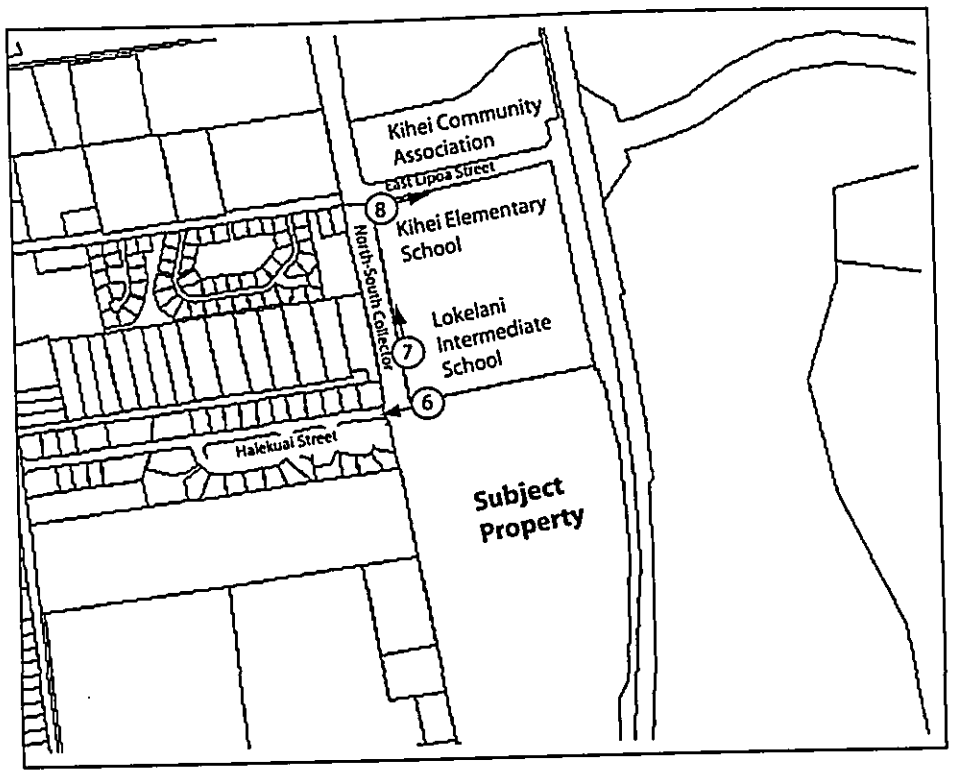
) the future North-South Collector Road.

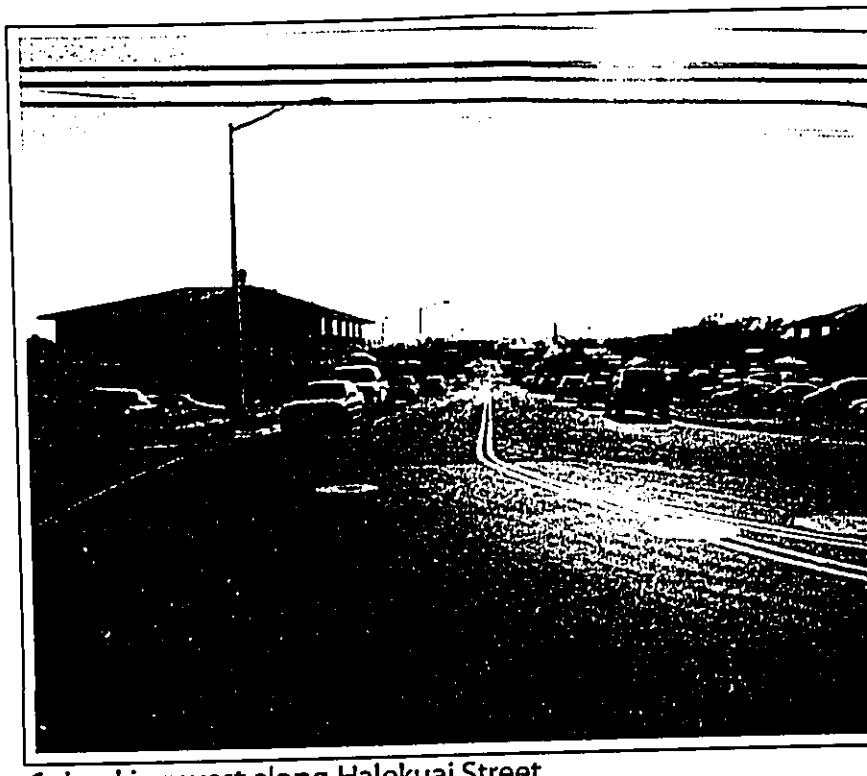
FIGURE 12-b

OCTOBER
2006

SITE PHOTOGRAPHS
South Maui Community Park

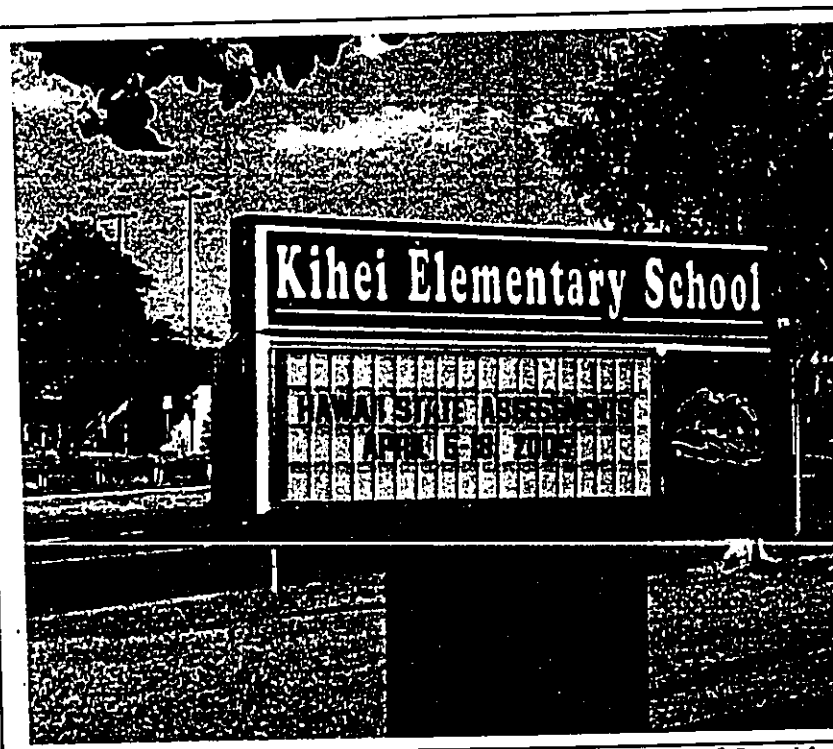
CHRIS HART & PARTNERS, INC.



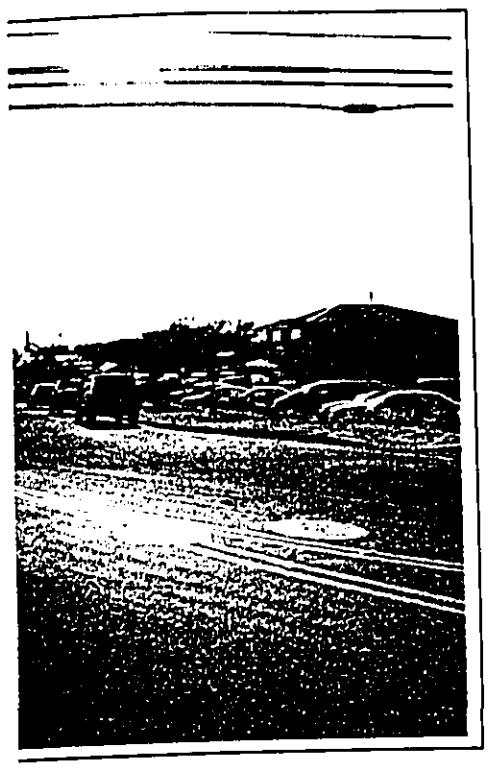


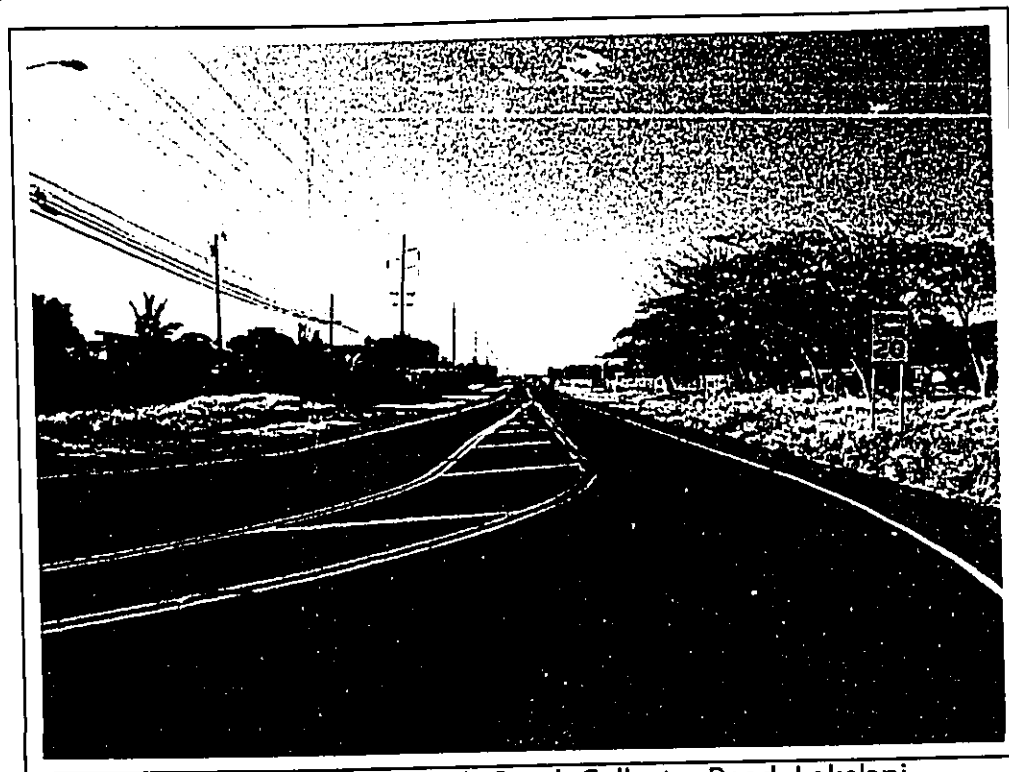
6. Looking west along Halekuai Street.

8. Looking east along East Lipoa Street.

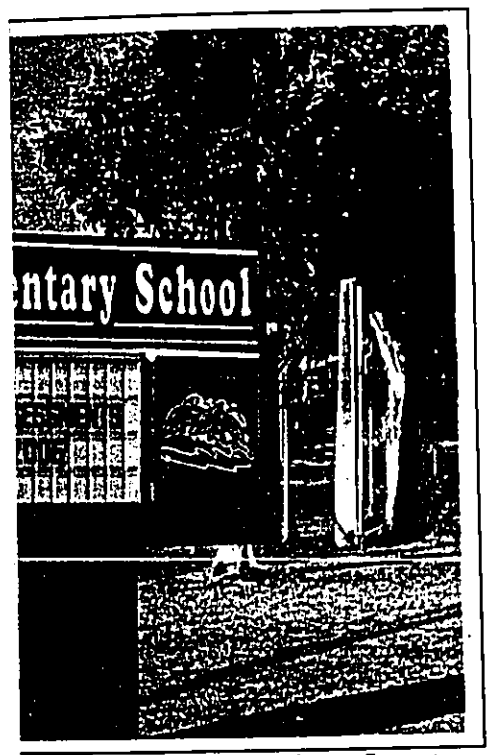


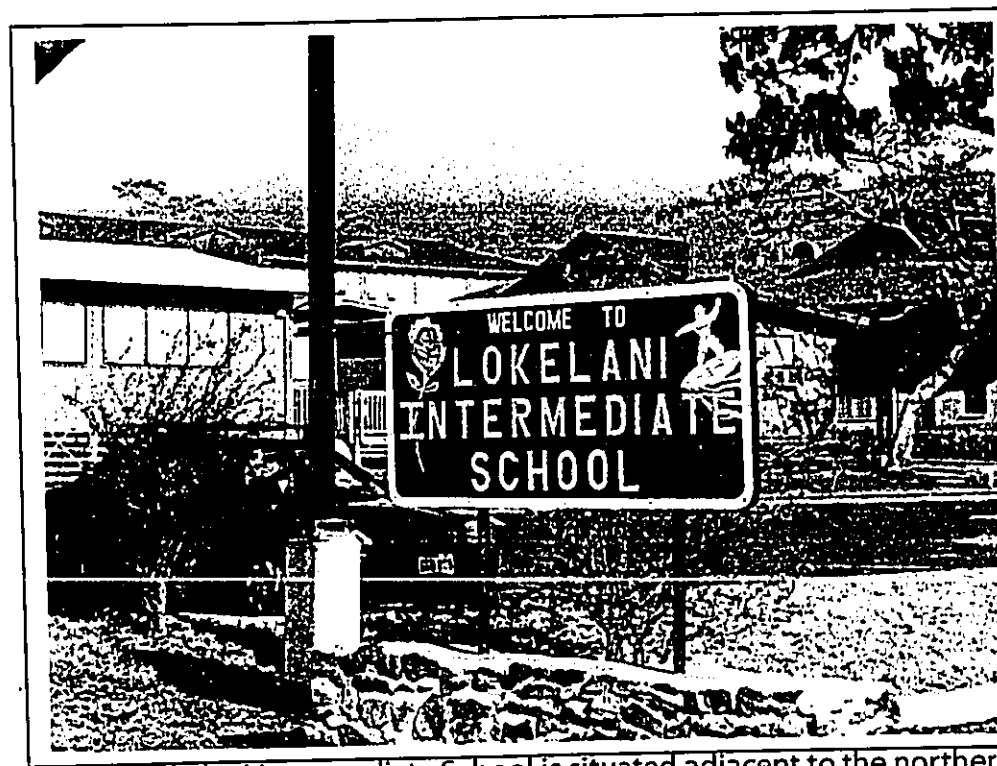
9. Kihei Elementary School is situated at the corner of East Lip
the North-South Collector Road, approximately 400 feet north





7. Looking north along the North-South Collector Road. Lokelani Intermediate School and Kihei Elementary School are situated to the east.





ıt the corner of East Lipoa Street and
ximately 400 feet north of the park.

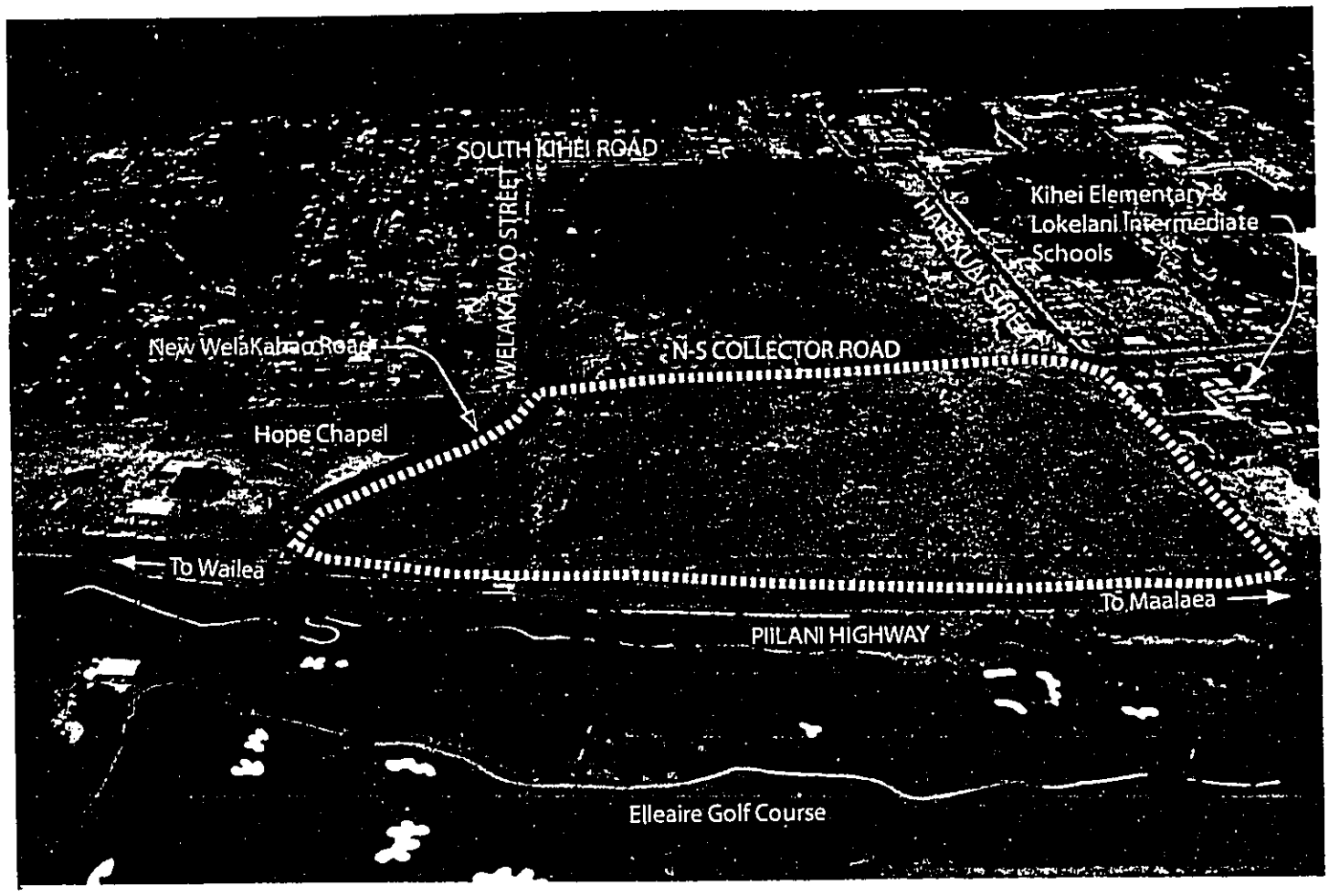
10. The Lokelani Intermediate School is situated adjacent to the northern boundary of the proposed park.

FIGURE 12-c

OCTOBER
2006

SITE PHOTOGRAPHS
South Maui Community Park

CHRIS HART & PARTNERS, INC.



1. Looking west towards the subject property.

2. Looking north towar

2. Looking north towards the subject property.

FIGURE 12-d

OCTOBER
2006

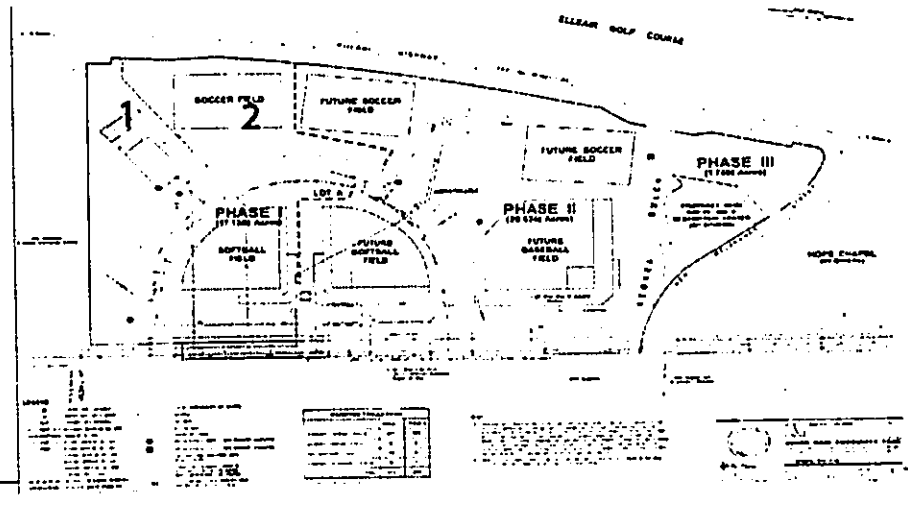
SITE PHOTOGRAPHS

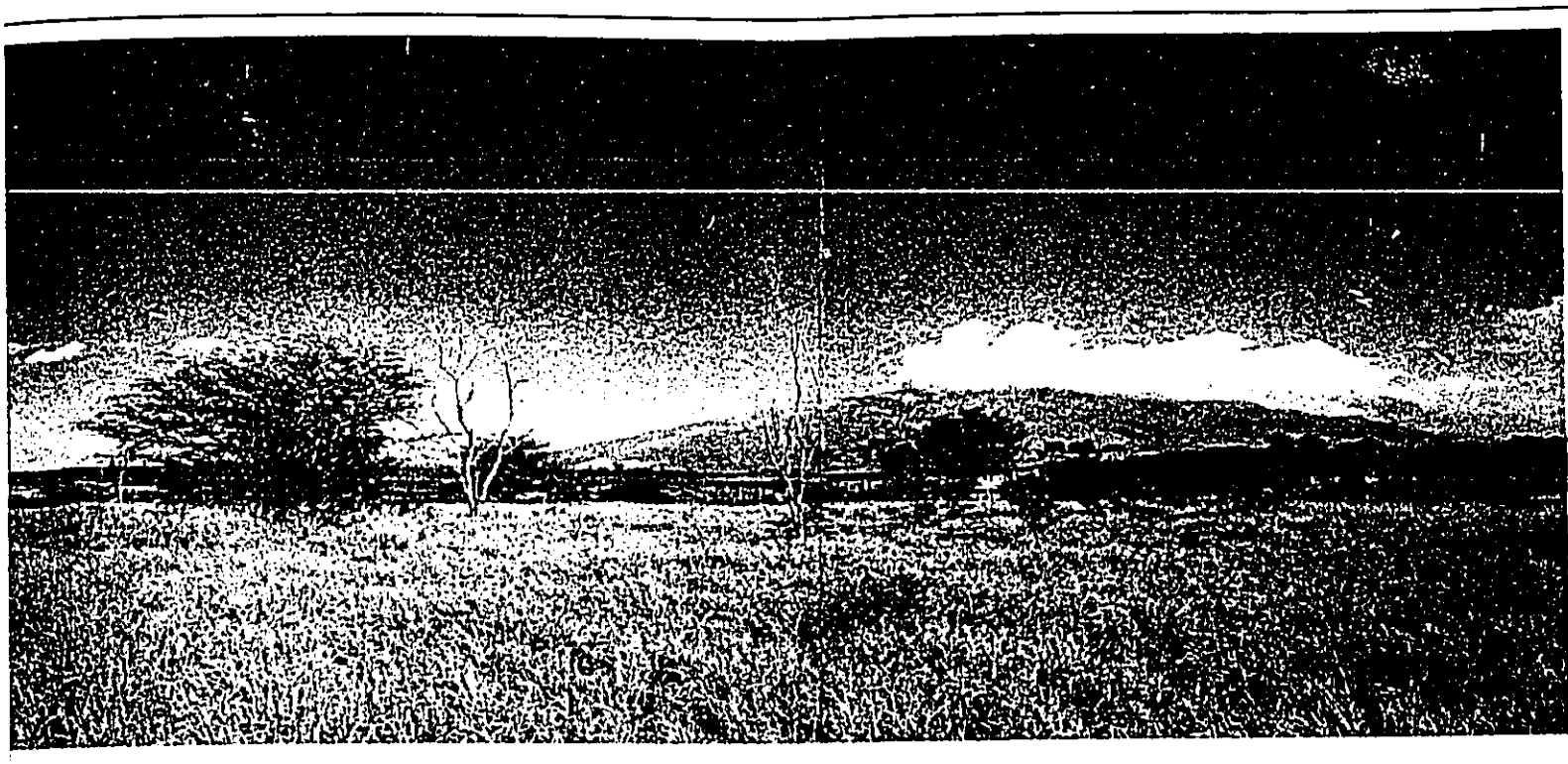
South Maui Community Park

CHRIS HART & PARTNERS, INC.

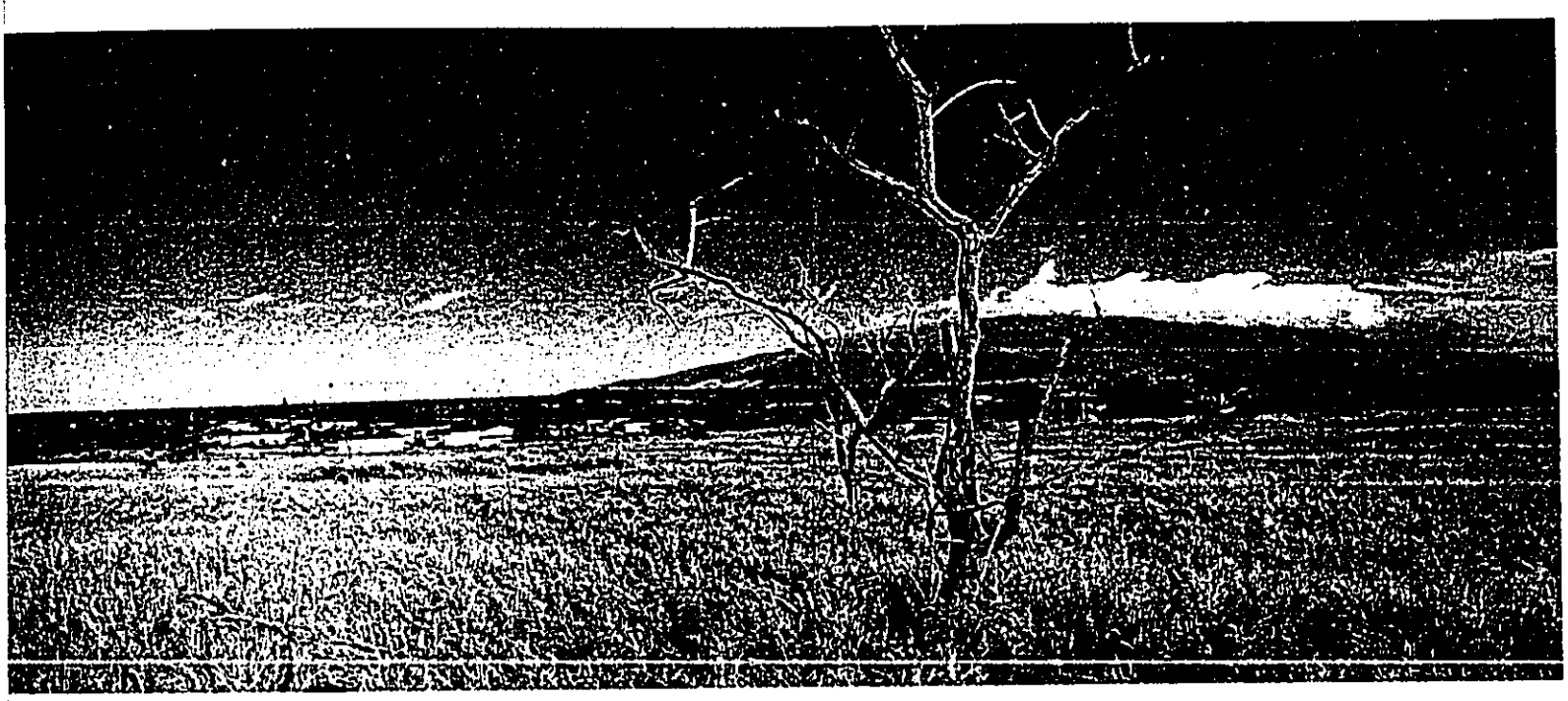
1. Makai view from northeastern portion of the su

2. Makai view from northeastern portion of the s





heastern portion of the subject property

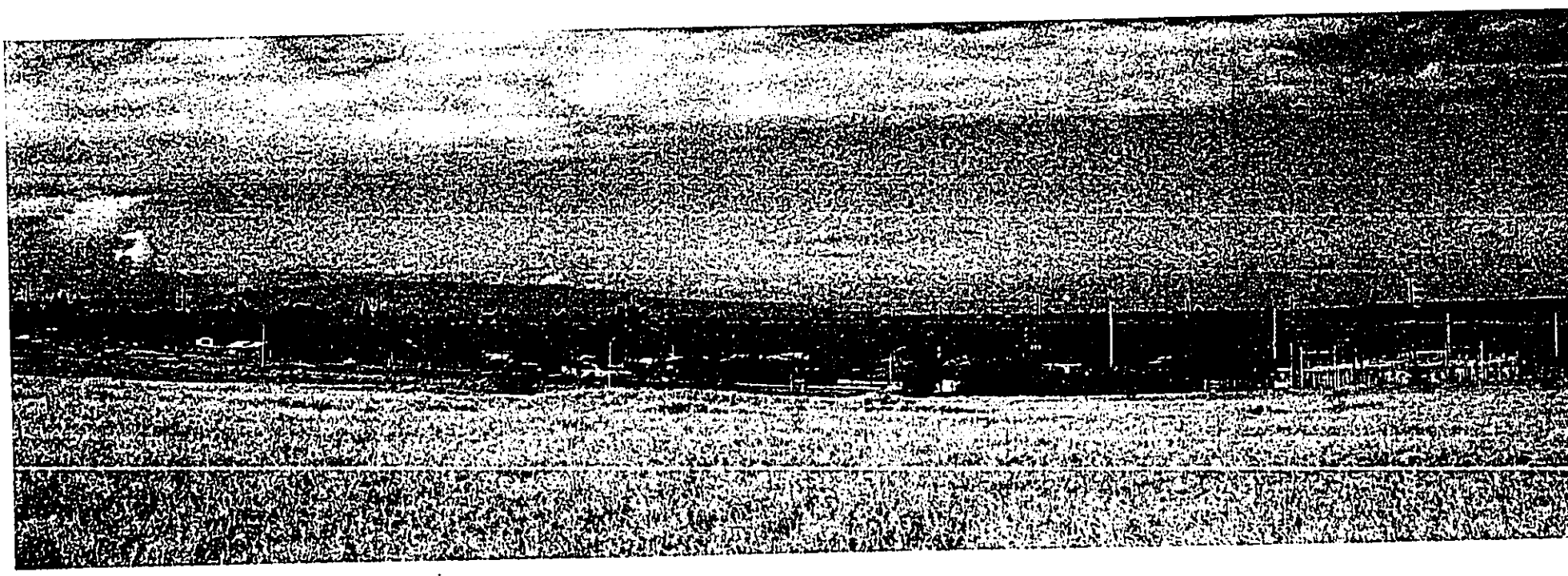


theastern portion of the subject property

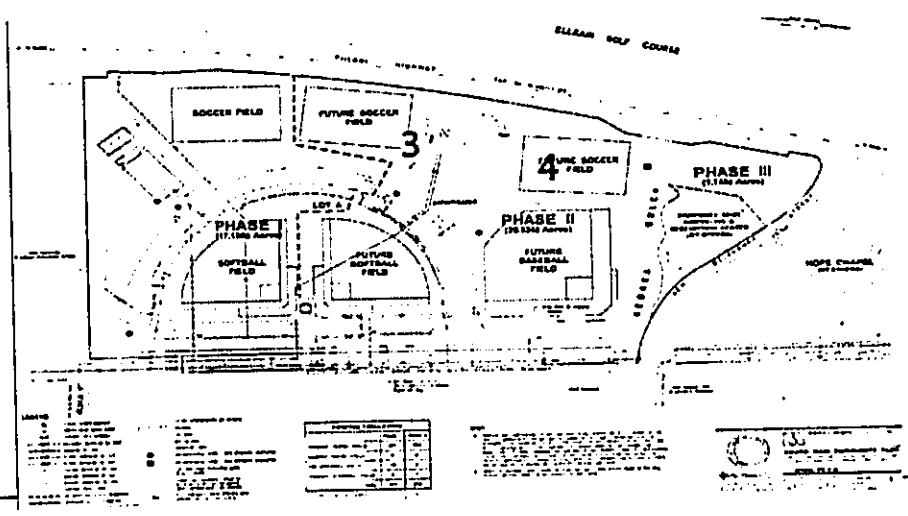
FIGURE 12-e

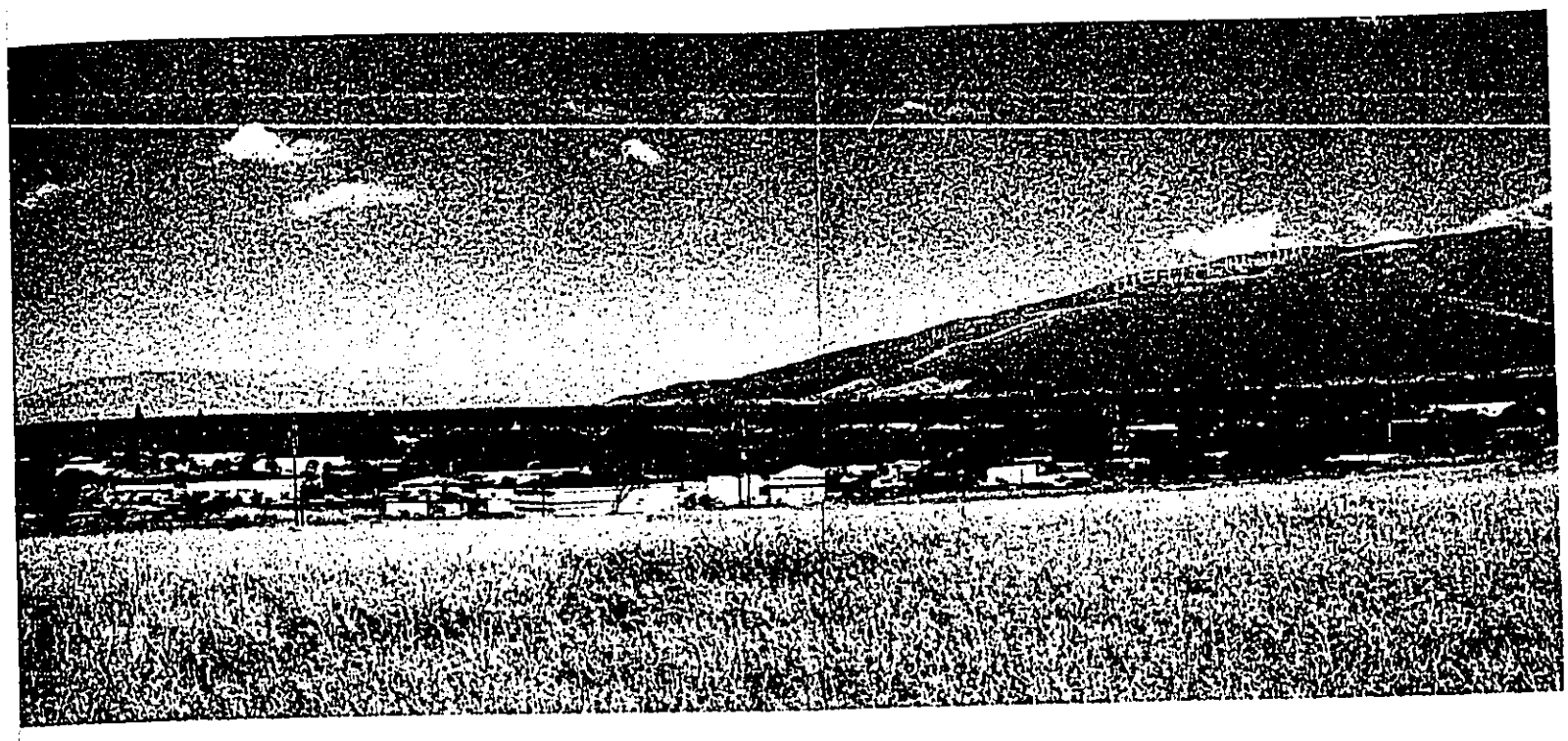
OCTOBER 2006	
SITE PHOTOGRAPHS South Maui Community Park	CHRIS HART & PARTNERS, INC.

3. Makai View from east-central portion

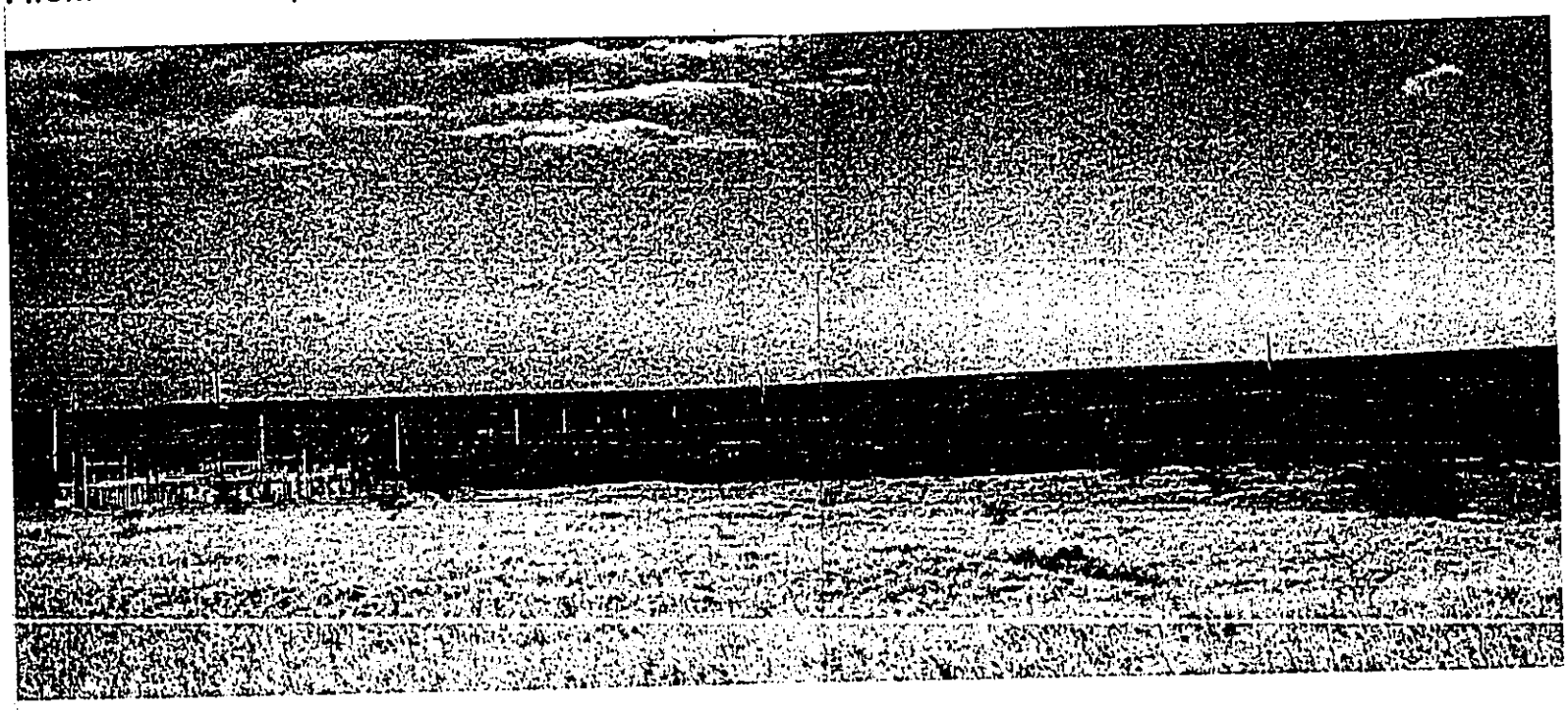


4. Makai view from southwestern porti





v from east-central portion of the subject property, facing northwest



N from southwestern portion of the subject property, facing west

FIGURE 12-f

OCTOBER 2006	CHRIS HART & PARTNERS, INC.
SITE PHOTOGRAPHS South Maui Community Park	

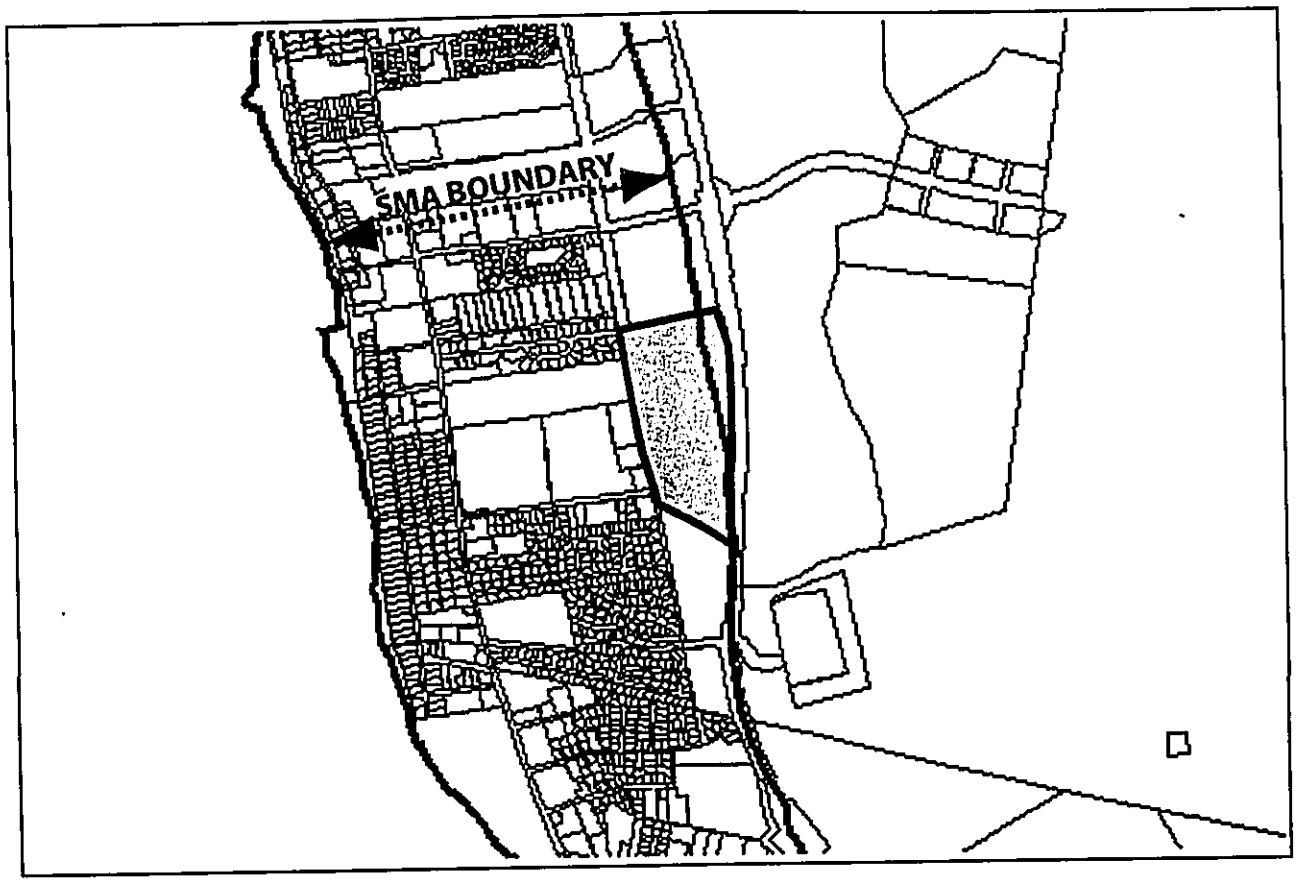
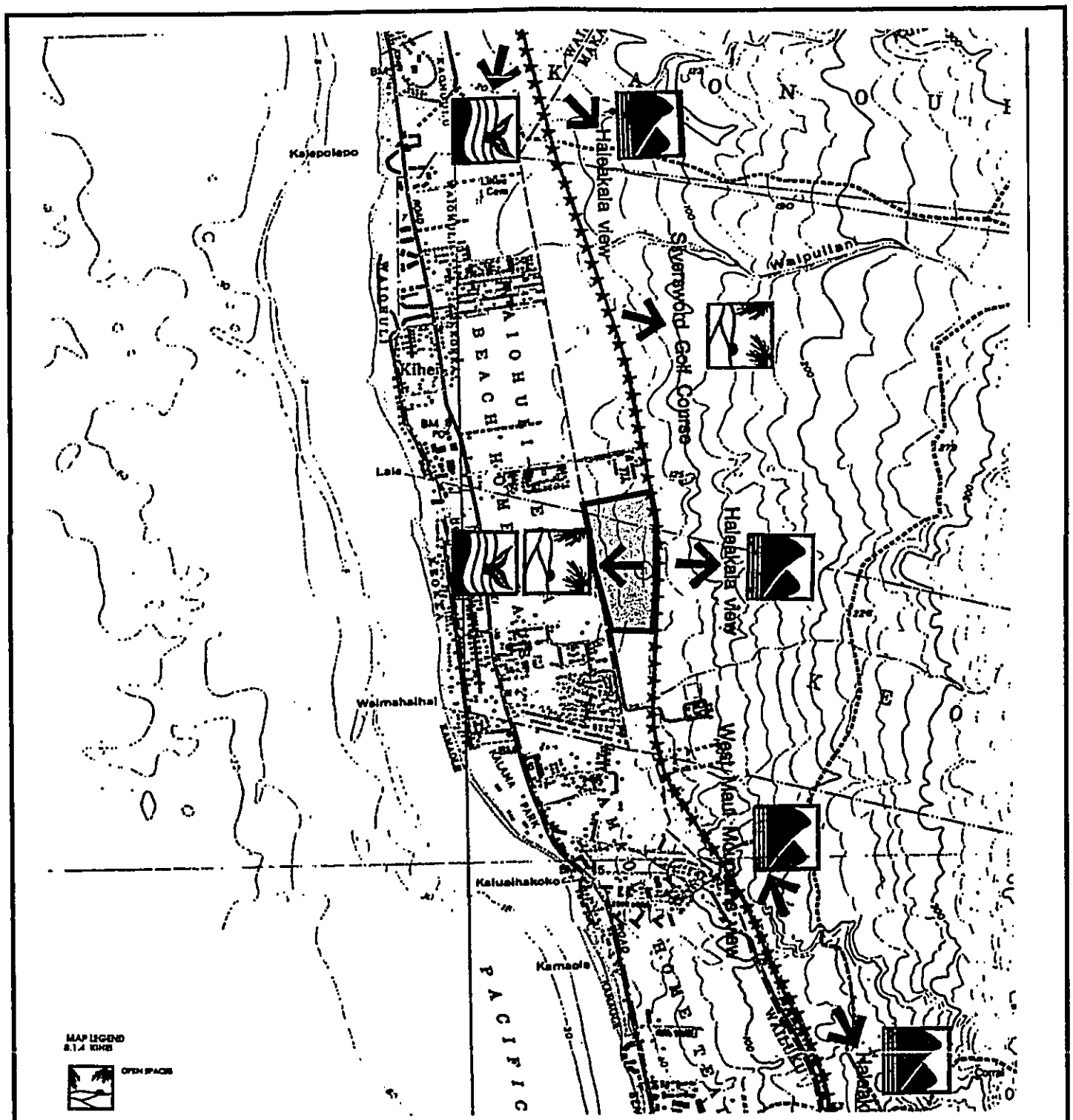


FIGURE 13

2-1-008:041 Portion	OCTOBER 2006
SMA Map South Maui Community Park	CHRIS HART & PARTNERS, INC.



Source: Maui Coastal Scenic Resources Study

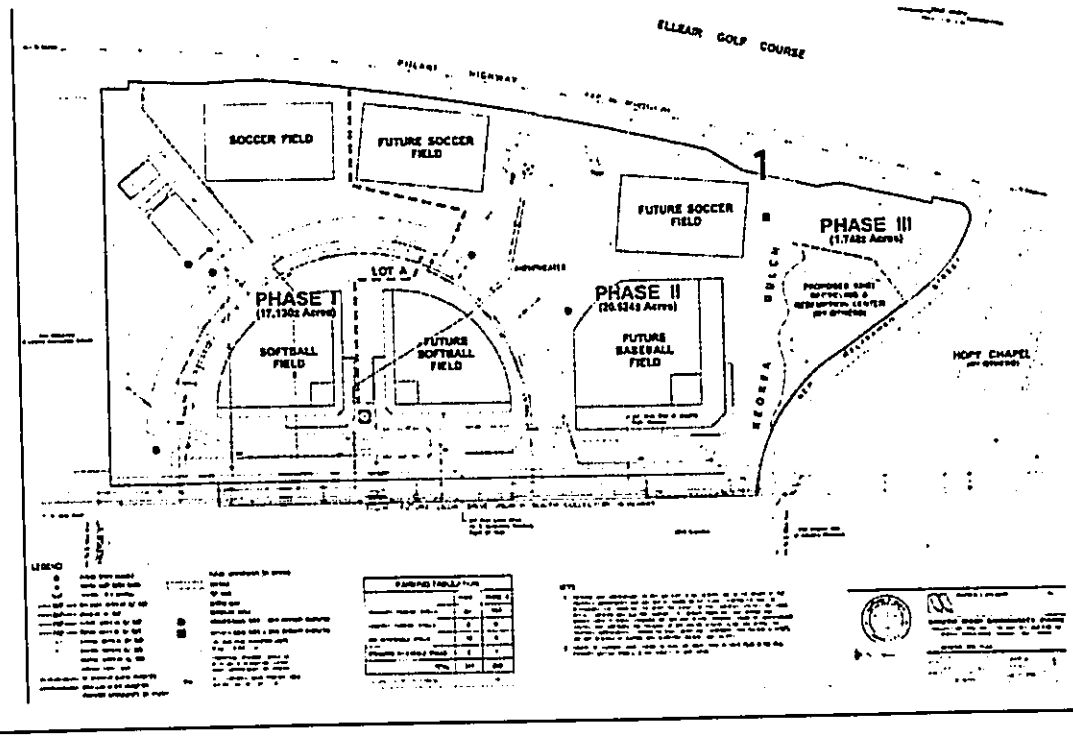
FIGURE 14

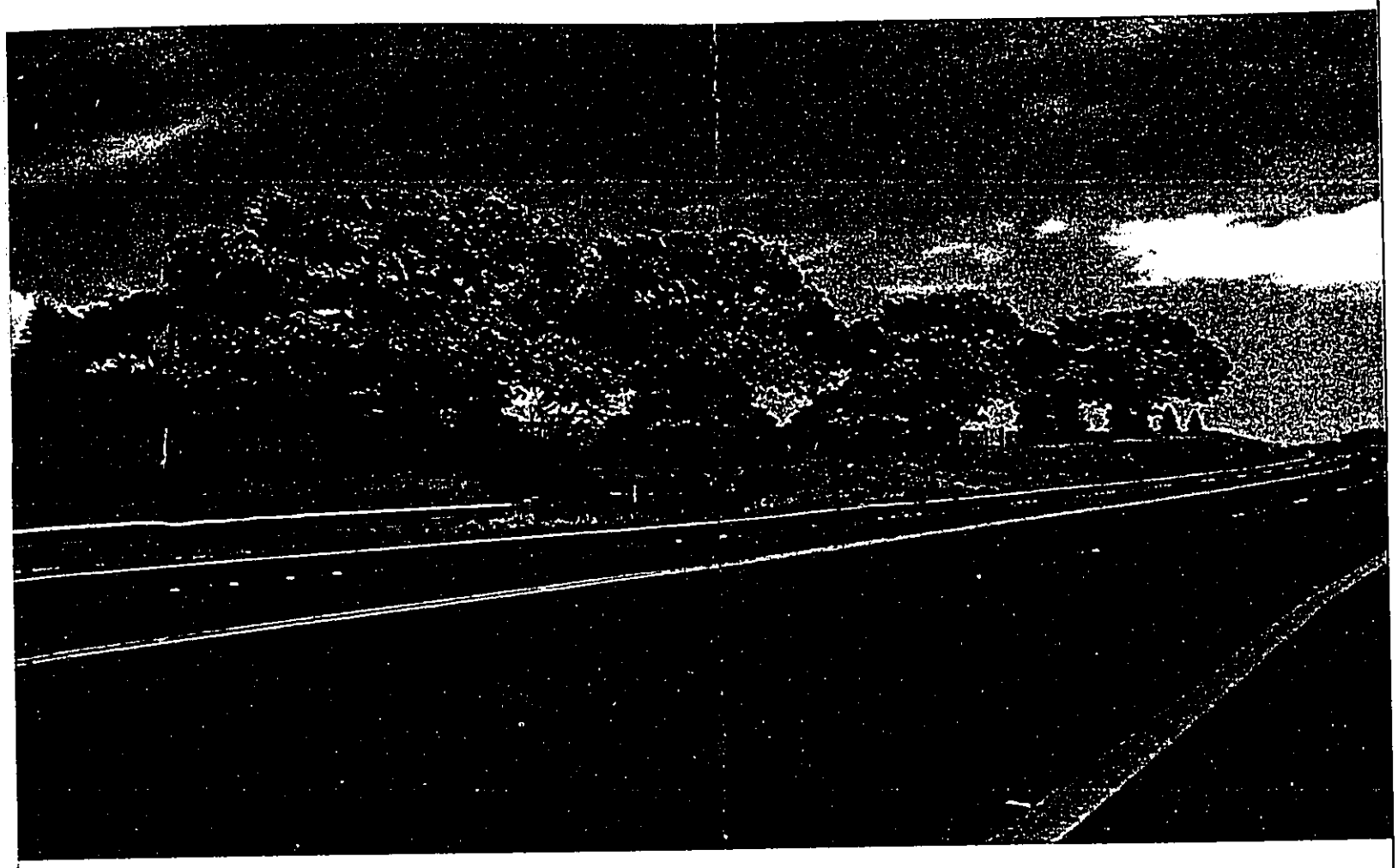
OCTOBER
2006

SCENIC RESOURCES
South Maui Community Park

CHRIS HART & PARTNERS, INC.

1. View across subject property from the



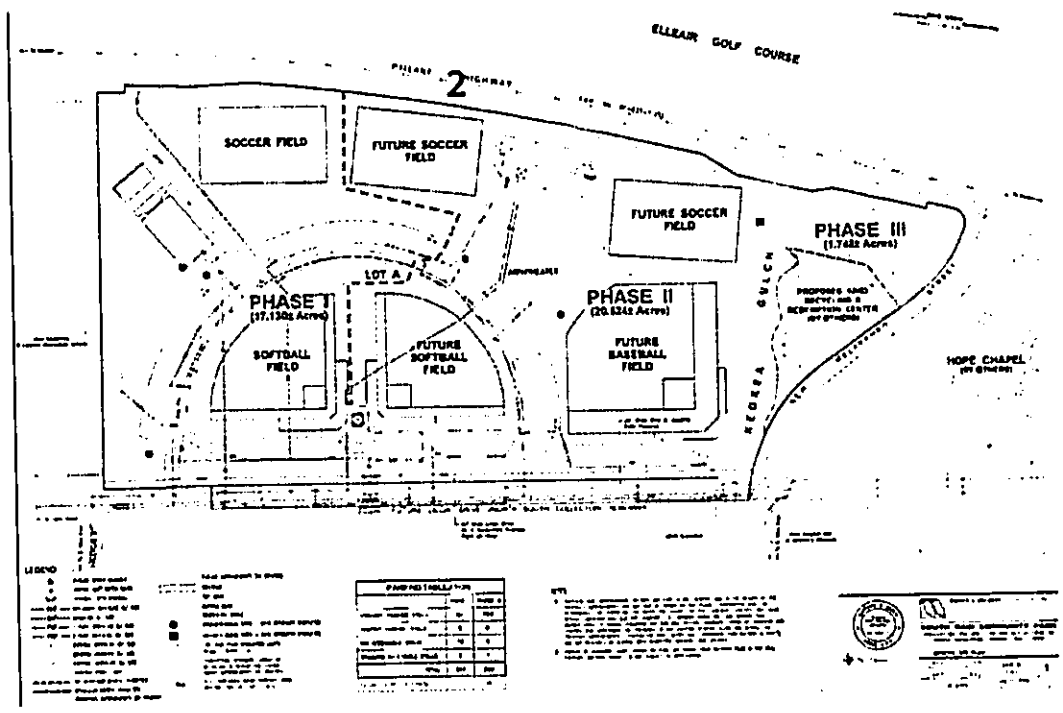


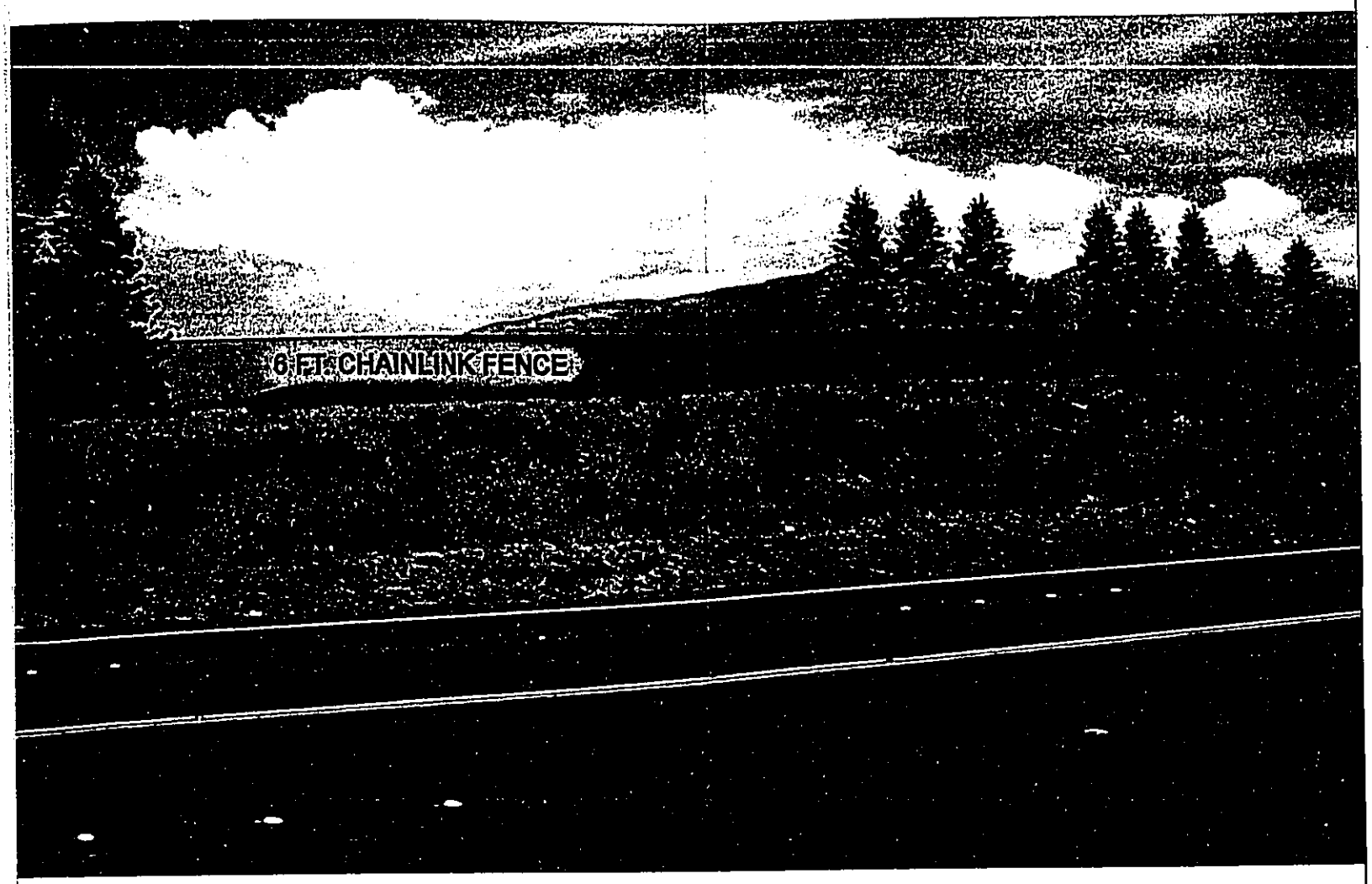
ıbject property from the southeast, at Keokea Gulch

FIGURE 15-a

OCTOBER 2006	CHRIS HART & PARTNERS, INC.
VISUAL IMPACT ASSESSMENT South Maui Community Park	

2. View across central portion of th



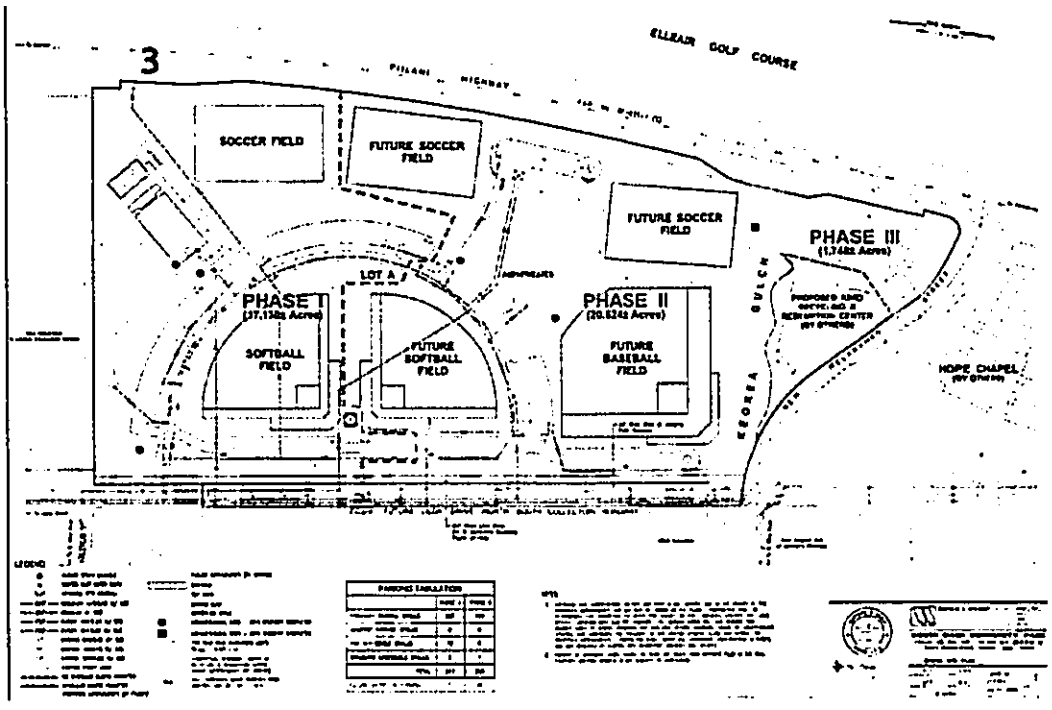


s central portion of the subject property

FIGURE 15-b

OCTOBER 2006	
VISUAL IMPACT ASSESSMENT South Maui Community Park	CHRIS HART & PARTNERS, INC.

3.View across northern portio

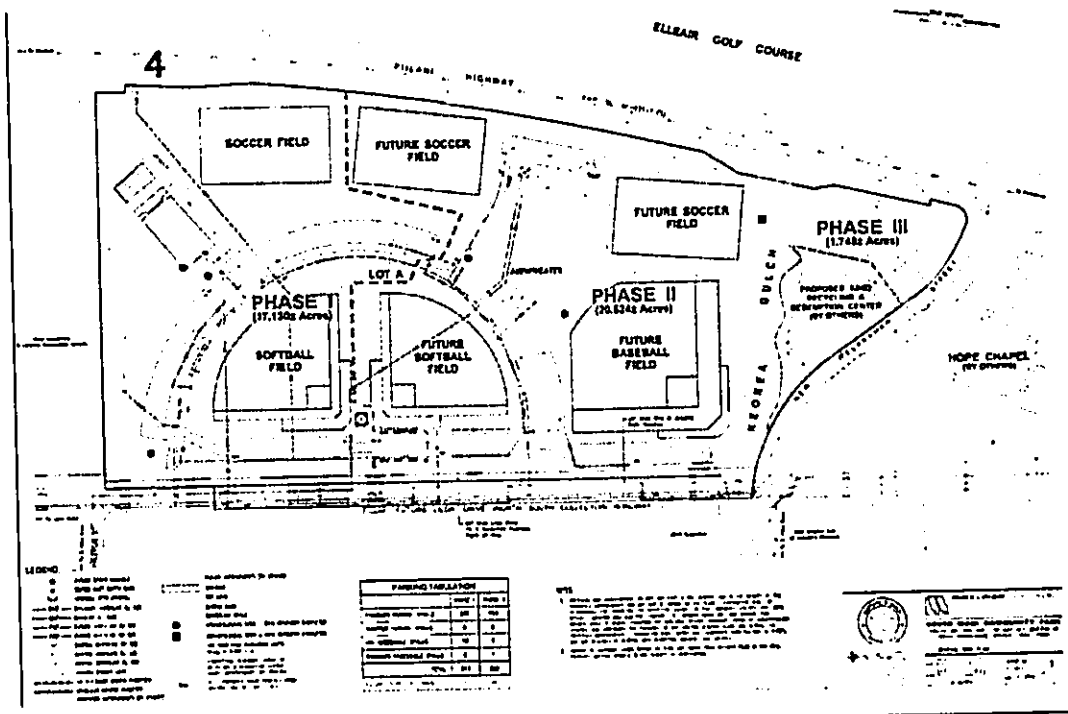


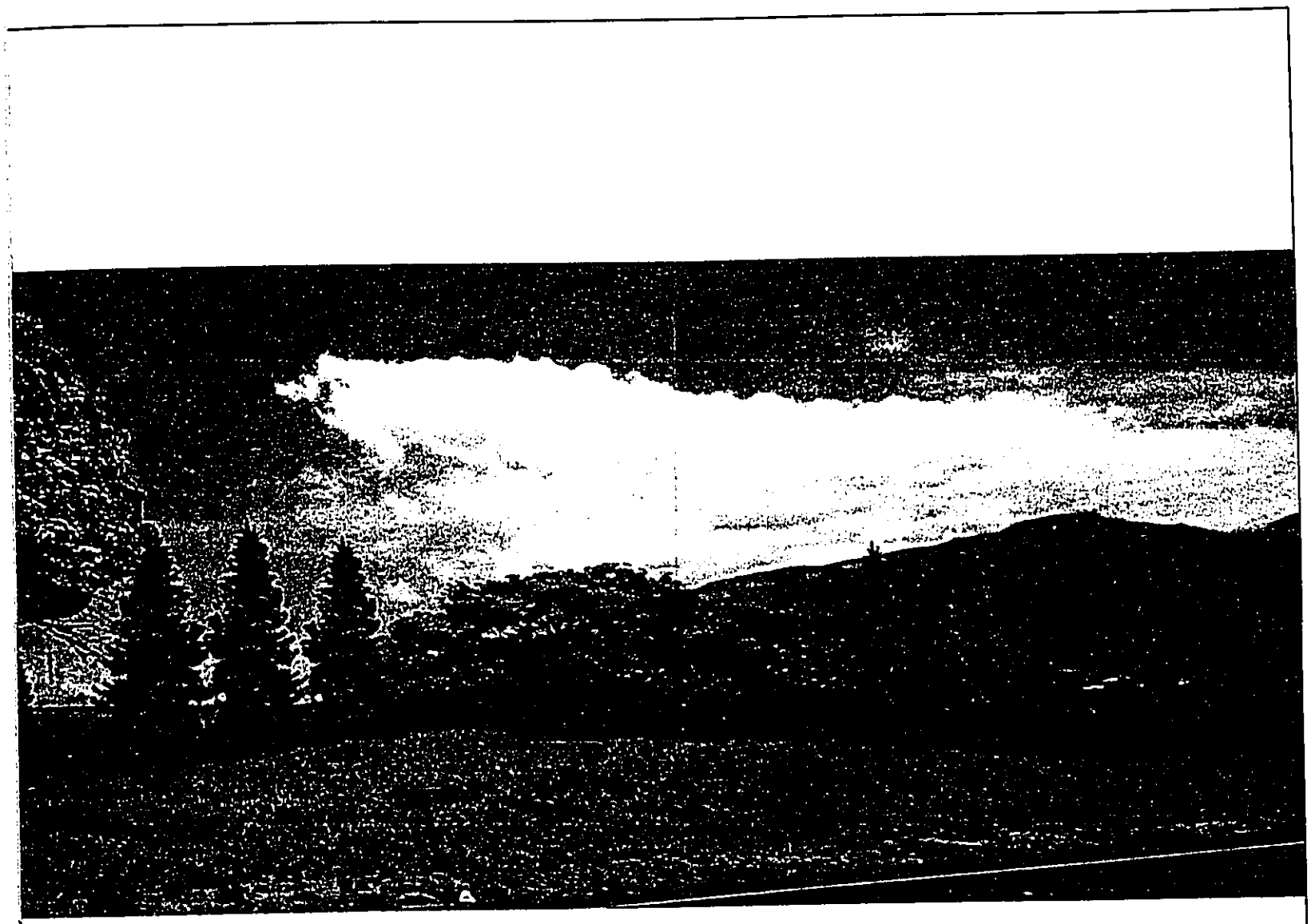
W across northern portion of the subject property, without monkey pod trees

FIGURE 15-c

OCTOBER 2006	
VISUAL IMPACT ASSESSMENT South Maui Community Park	CHRIS HART & PARTNERS, INC.

4. View across northern porti





w across northern portion of the subject property, with monkey pod trees

FIGURE 15-d

OCTOBER 2006	
VISUAL IMPACT ASSESSMENT South Maui Community Park	CHRIS HART & PARTNERS, INC.

ELLEAIR GOLF

PIILANI HIGHWAY

F.A.P. No. RF-031-1-(5)

SOCCER FIELD

FUTURE SOCCER FIELD

FUTURE SOCCER FIELD

AMPHITHEATER

LOT A

PHASE I

PHASE II

SOFTBALL FIELD

FUTURE SOFTBALL FIELD

FUTURE BASEBALL FIELD

20' Wide Bike & Jogging Path Reserve

Kihei Elementary & Lokelani Intermediate Schools

To Mokulele

To Lipoa Street

HALEKUAL ST.

To S. Kihei Road

Outflow Release Line (size to be determined)

FUTURE LILOA DRIVE (NORTH-SOUTH COLLECTOR) ROADWAY

60' Wide Liloa Drive (N-S Collector) Roadway Right-of-Way

Outflow Release Line (size to be determined)

MECO Substation

LEGEND:

- PROPOSED DRAINLINE W/ SIZE
- PROPOSED POTABLE WATERLINE W/ SIZE
- PROPOSED RECLAIMED (R1) WATERLINE W/ SIZE
- PROPOSED SEWERLINE W/ SIZE
- PROPOSED FIRE HYDRANT
- PROJECTED PHASING LINE
- 100 YEAR INUNDATION LIMITS ALONG KEOKEA GULCH
- ARCHAEOLOGICAL SITES – DATA RECOVERY COMPLETED
- ARCHAEOLOGICAL SITES – PRESERVED
- RESTROOM
- PAVILION

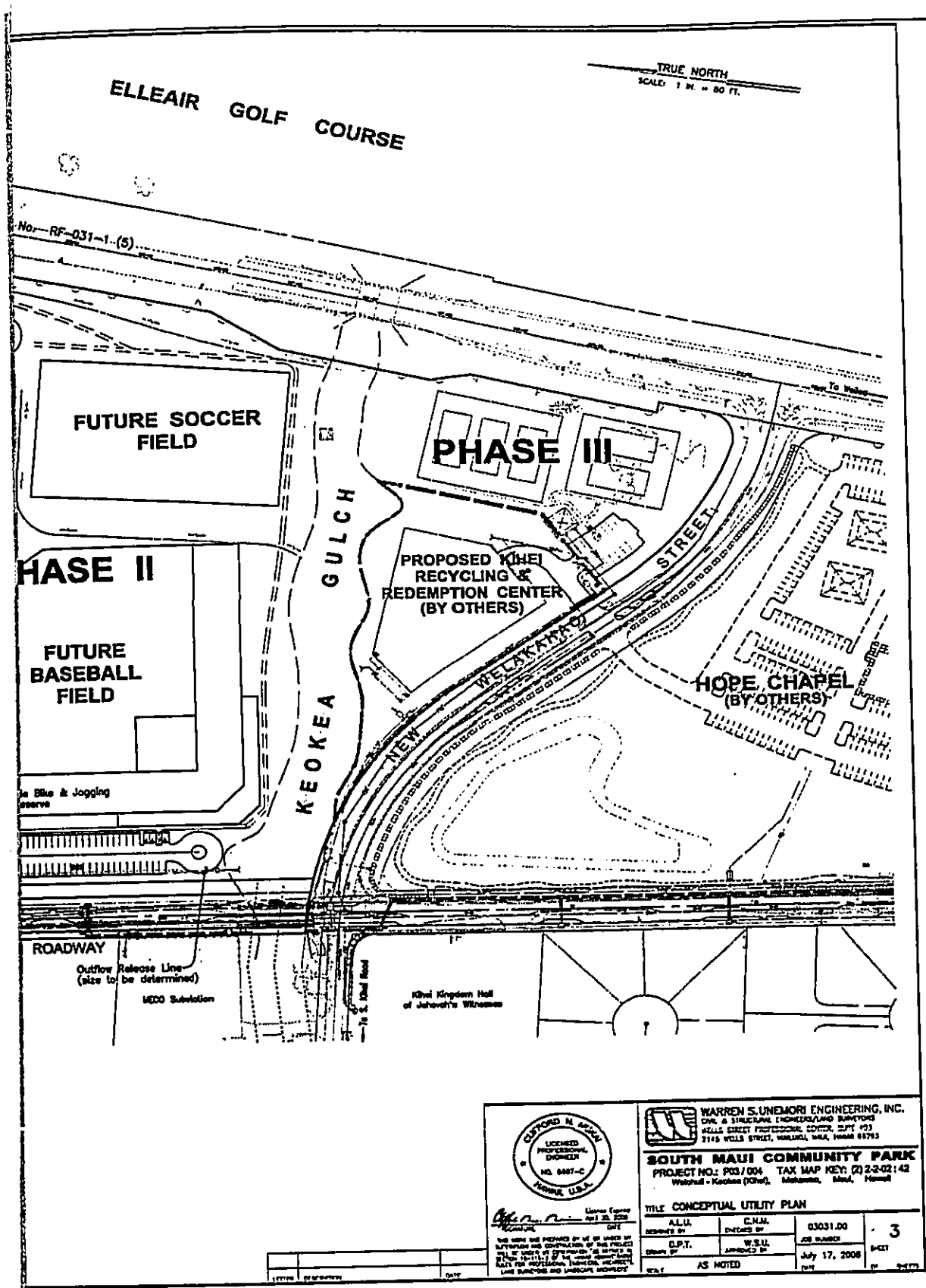


FIGURE 16

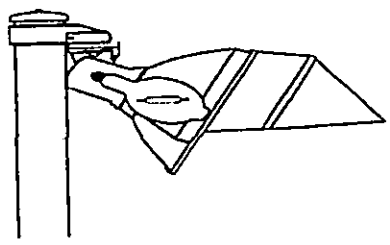
OCTOBER 2006

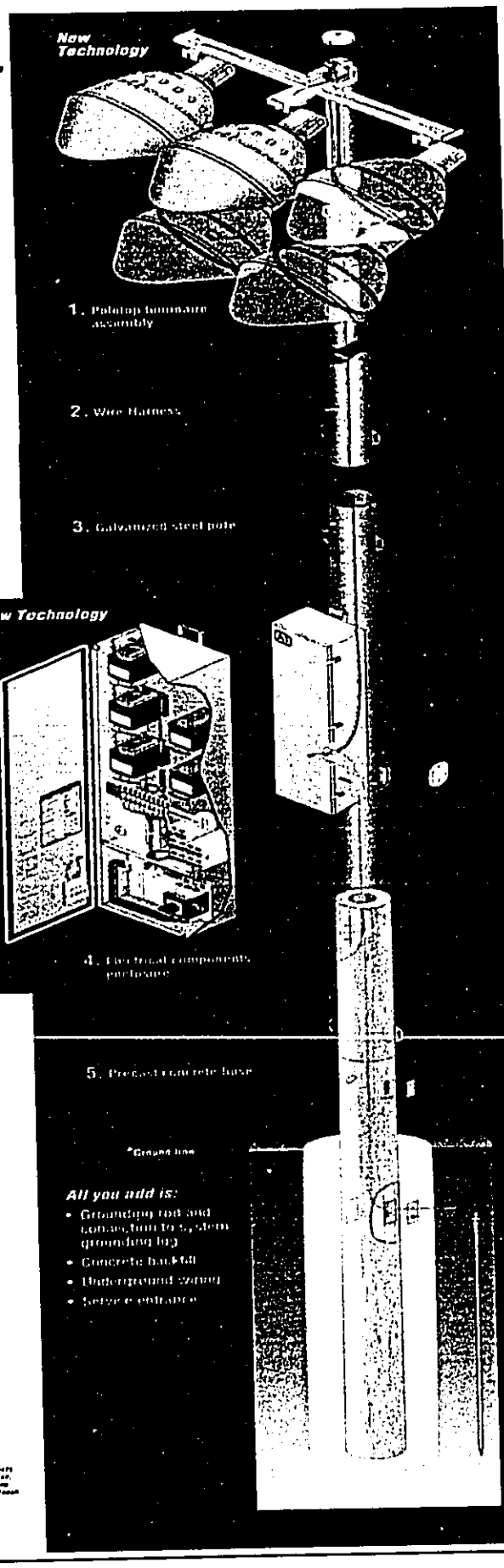
CONCEPTUAL SITE UTILITY PLAN
South Maui Community Park

CHRIS HART & PARTNERS, INC.

Light·Structure GREEN™

For your budget, for the environment.





New Technology

- Cuts operating costs in half
- Reduces spill light by 50%
- Includes system monitoring and remote on/off control services
- Provides constant light levels

Same 5 Easy Pieces™

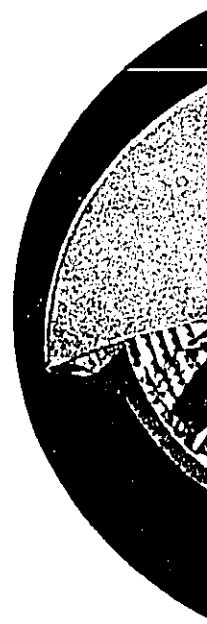
- Complete system from foundation-to-poletop
- Factory wired, aimed and tested
- Fast, trouble free installation
- Comprehensive corrosion package

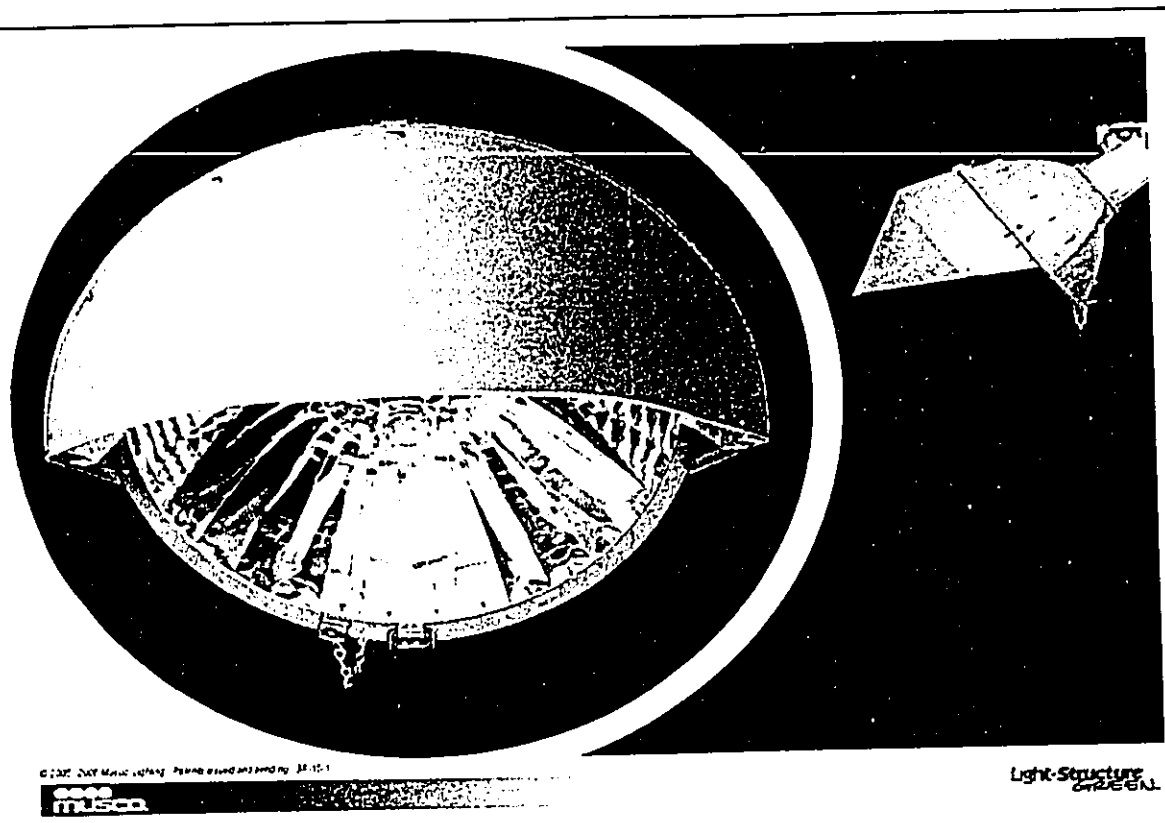
Now covered by
Musco Constant 25™
25-Year Warranty and Maintenance Program

Provides 25 years of trouble-free lighting equipment operation, including parts, labor and group lamp replacement.

We Make It Happen.

641/673-0411
800/825-6030
www.musco.com





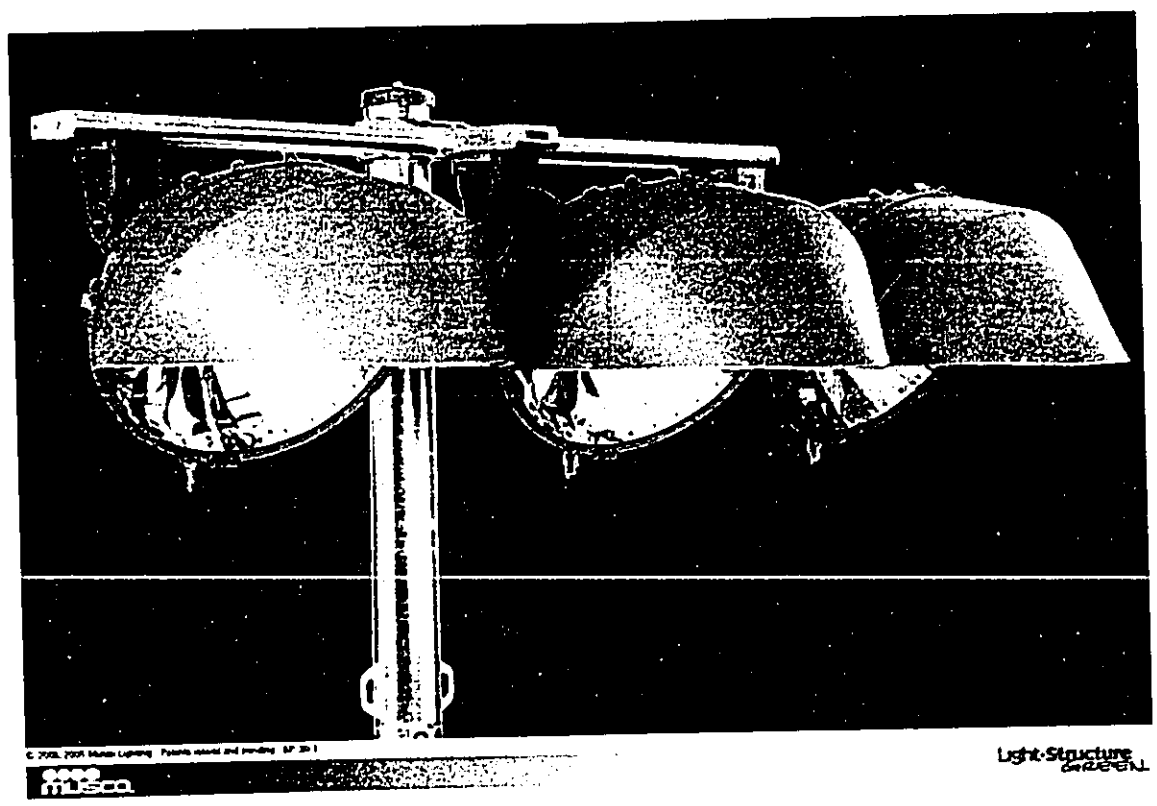
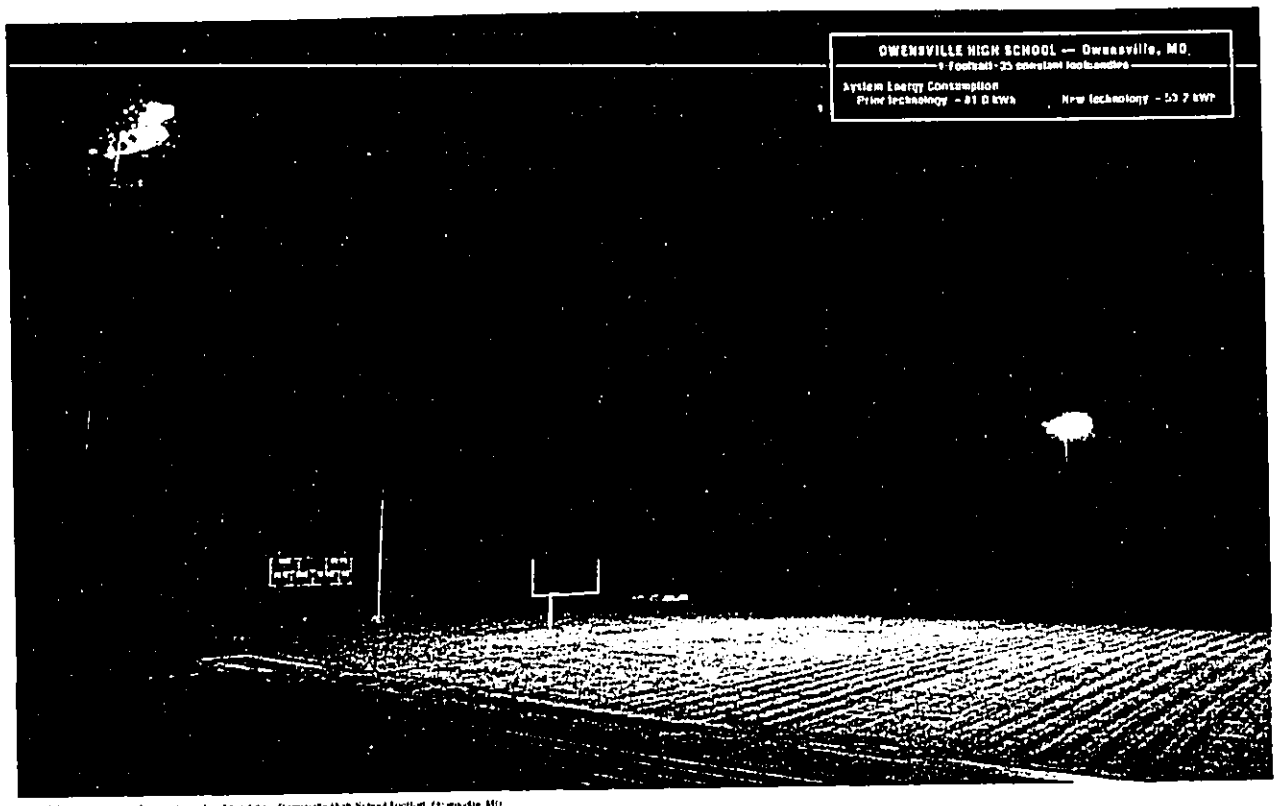


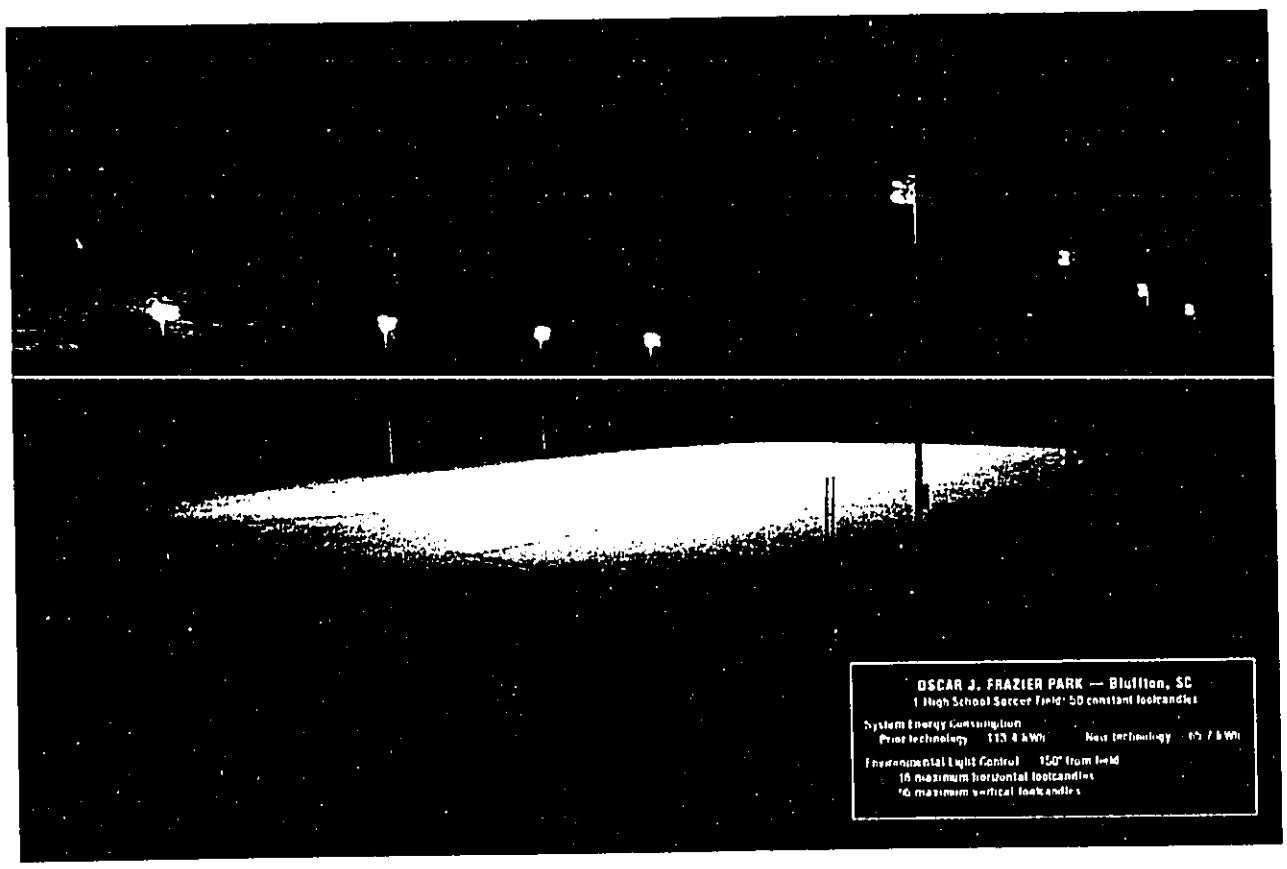
FIGURE 17-a

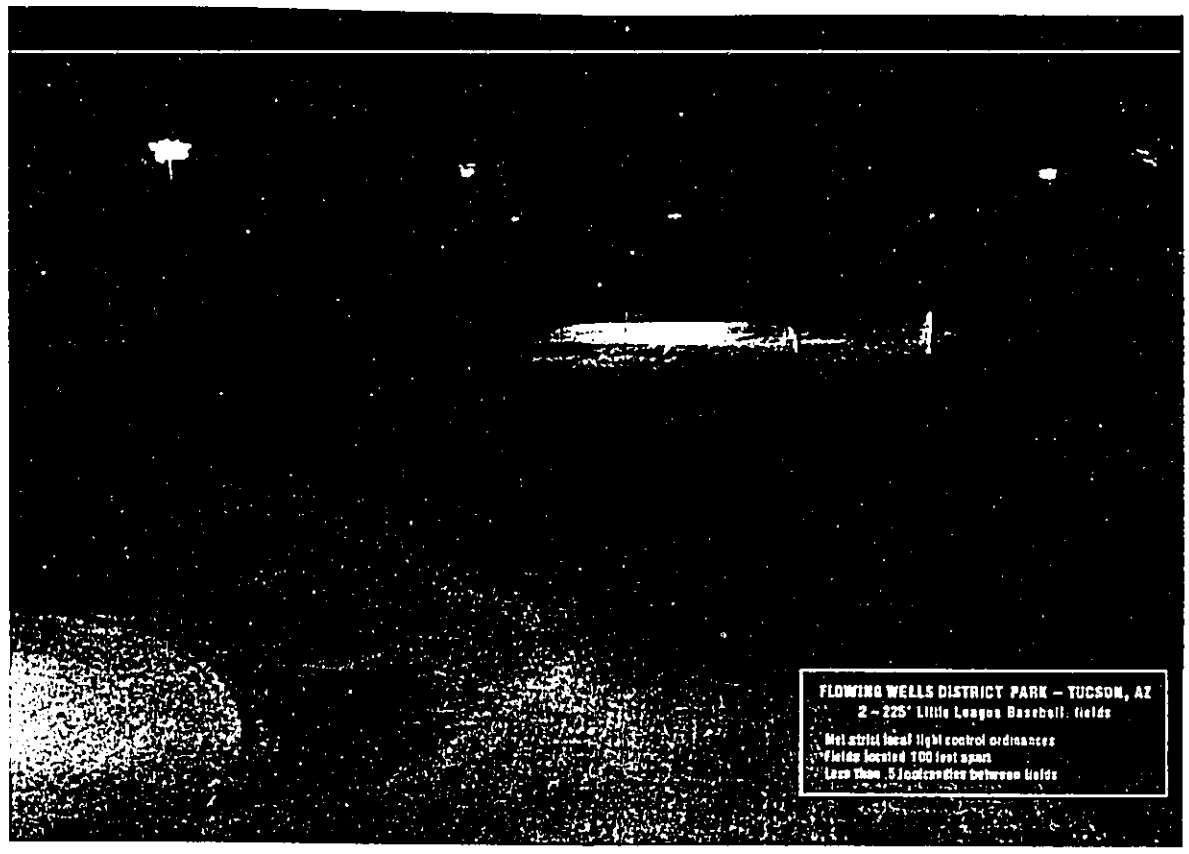
OCTOBER 2006	
BALLFIELD LIGHTING South Maui Community Park	CHRIS HART & PARTNERS INC



musco

Light·Structure GREEN.





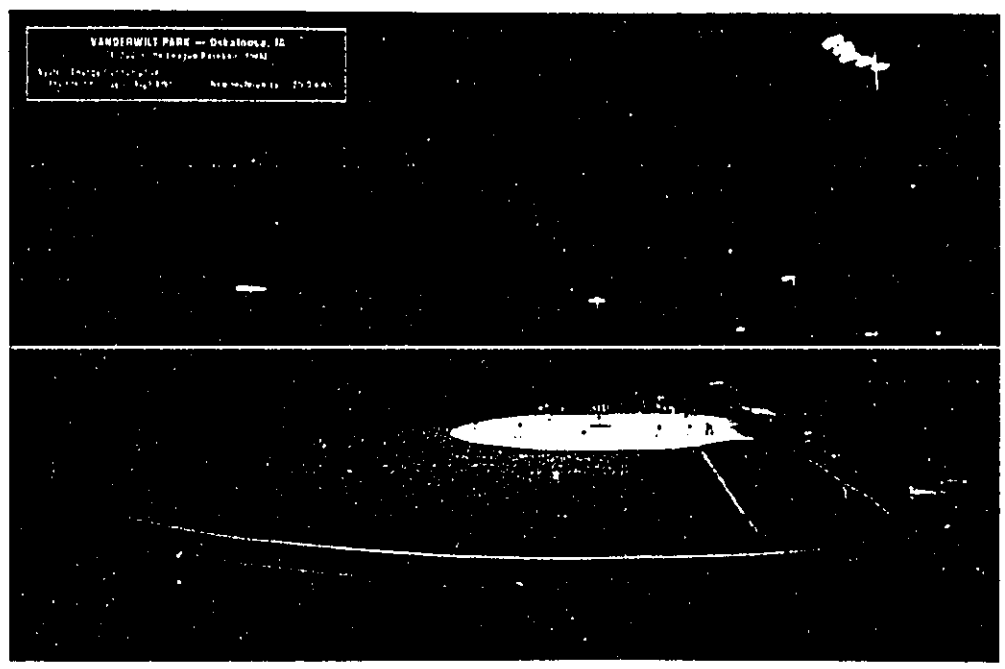
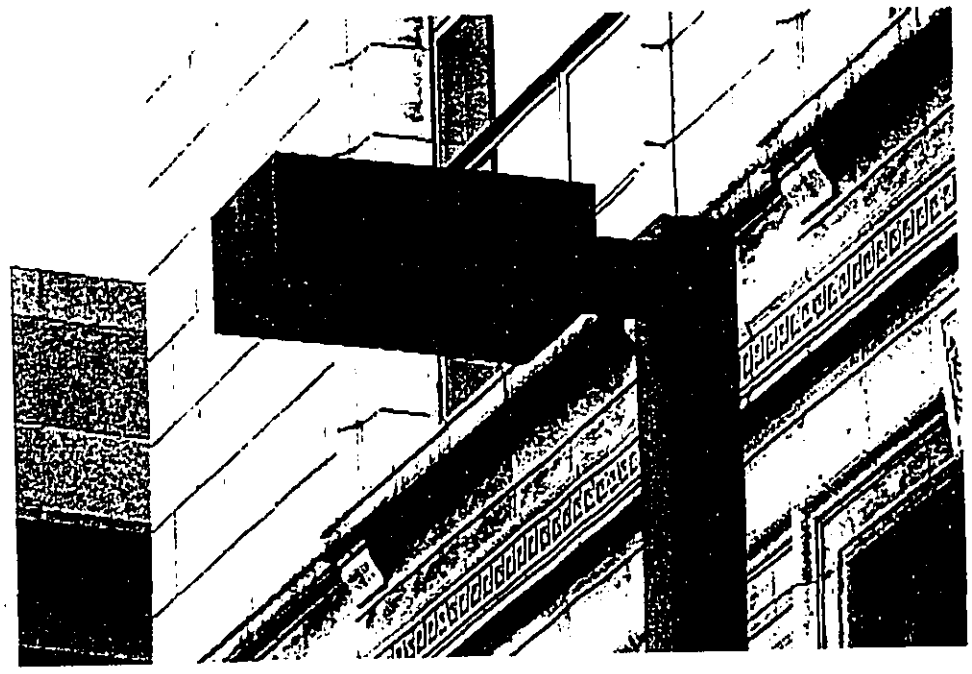


FIGURE 17-b

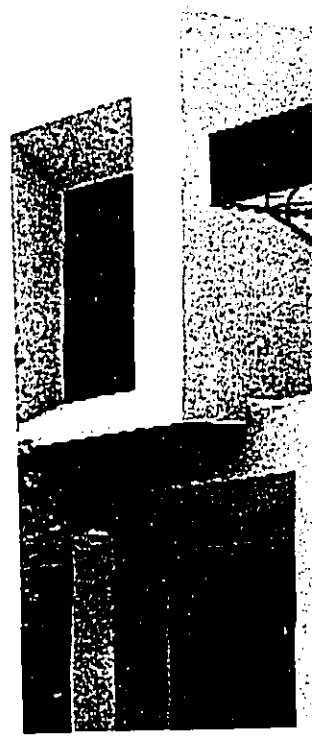
OCTOBER
2006

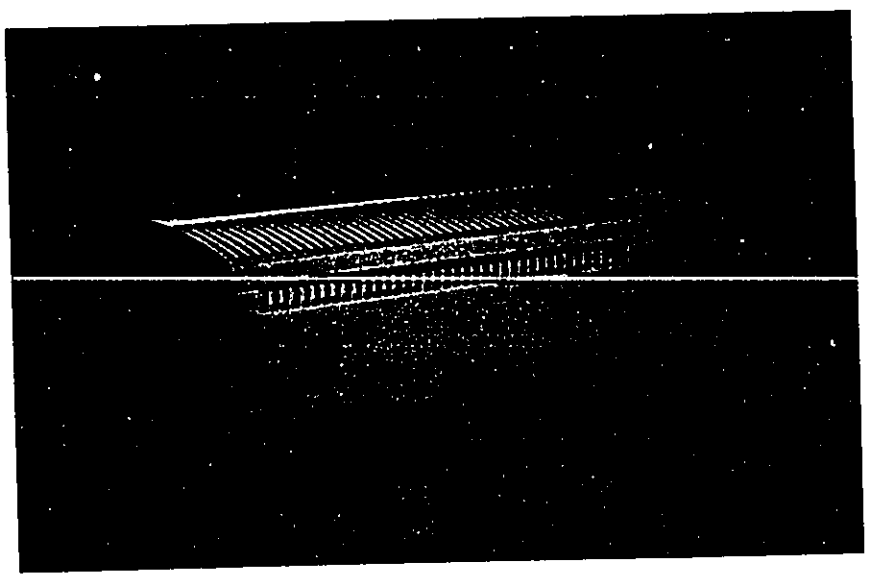
BALLFIELD LIGHTING
South Maui Community Park

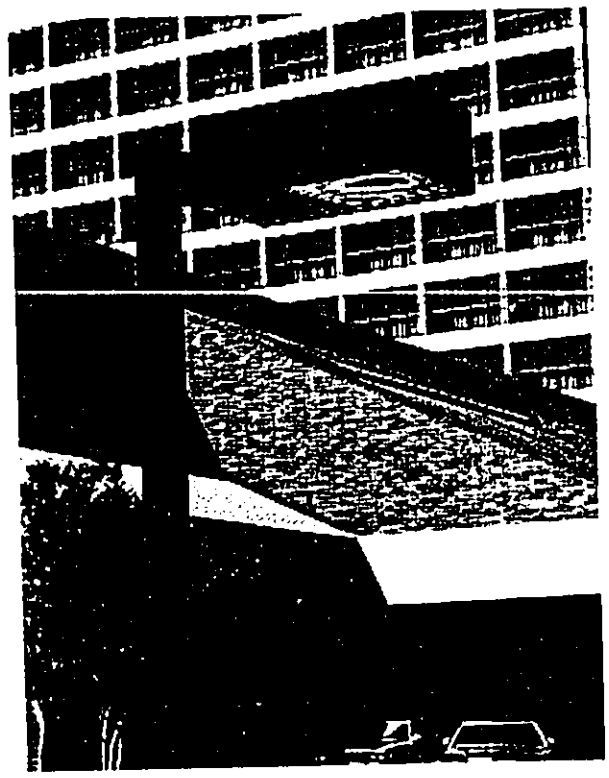
CHRIS HART & PARTNERS, INC.



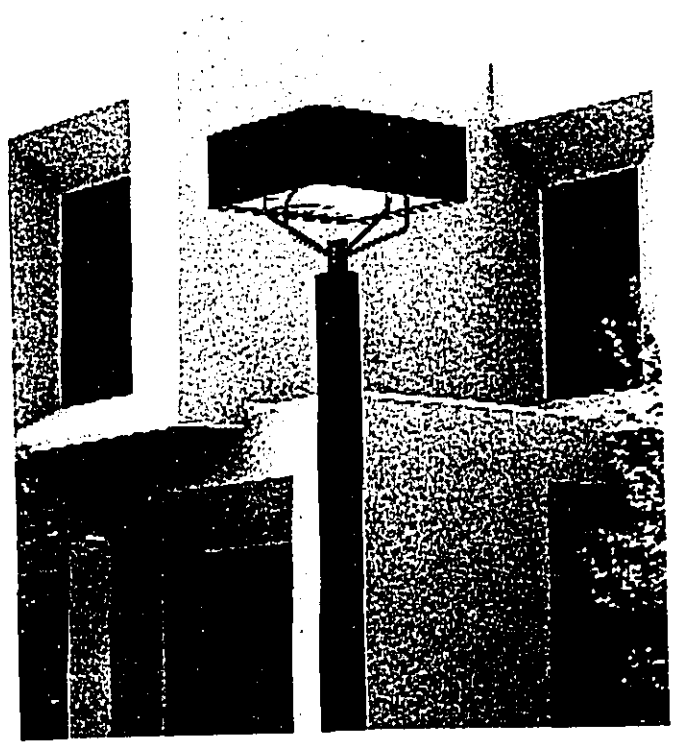
Fixtures with arm will be used for roadway lighting.

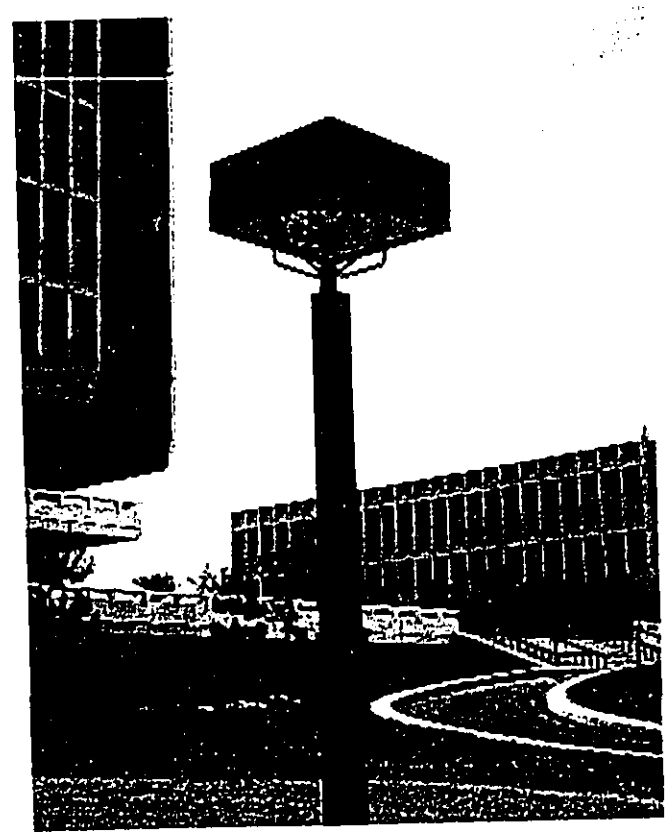


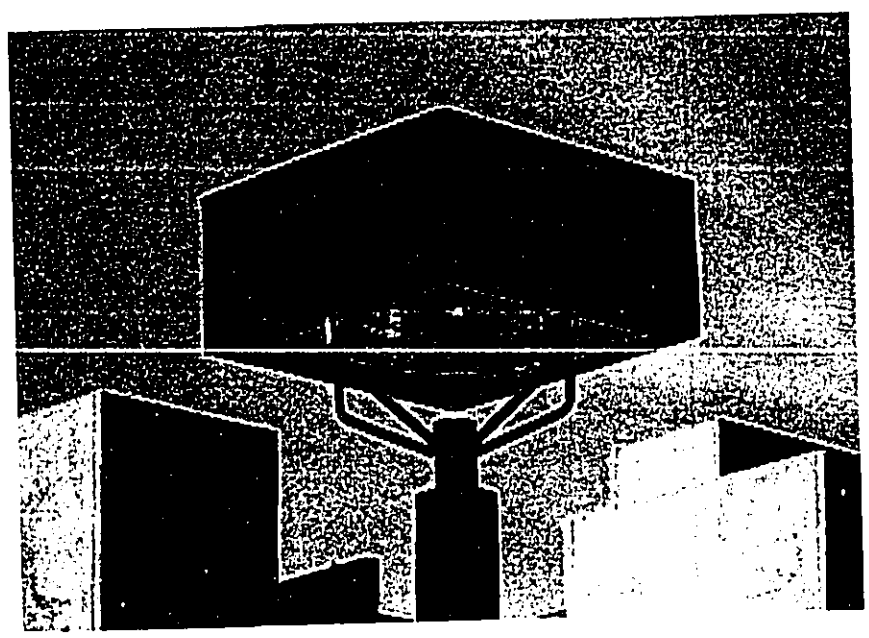




Fixtur



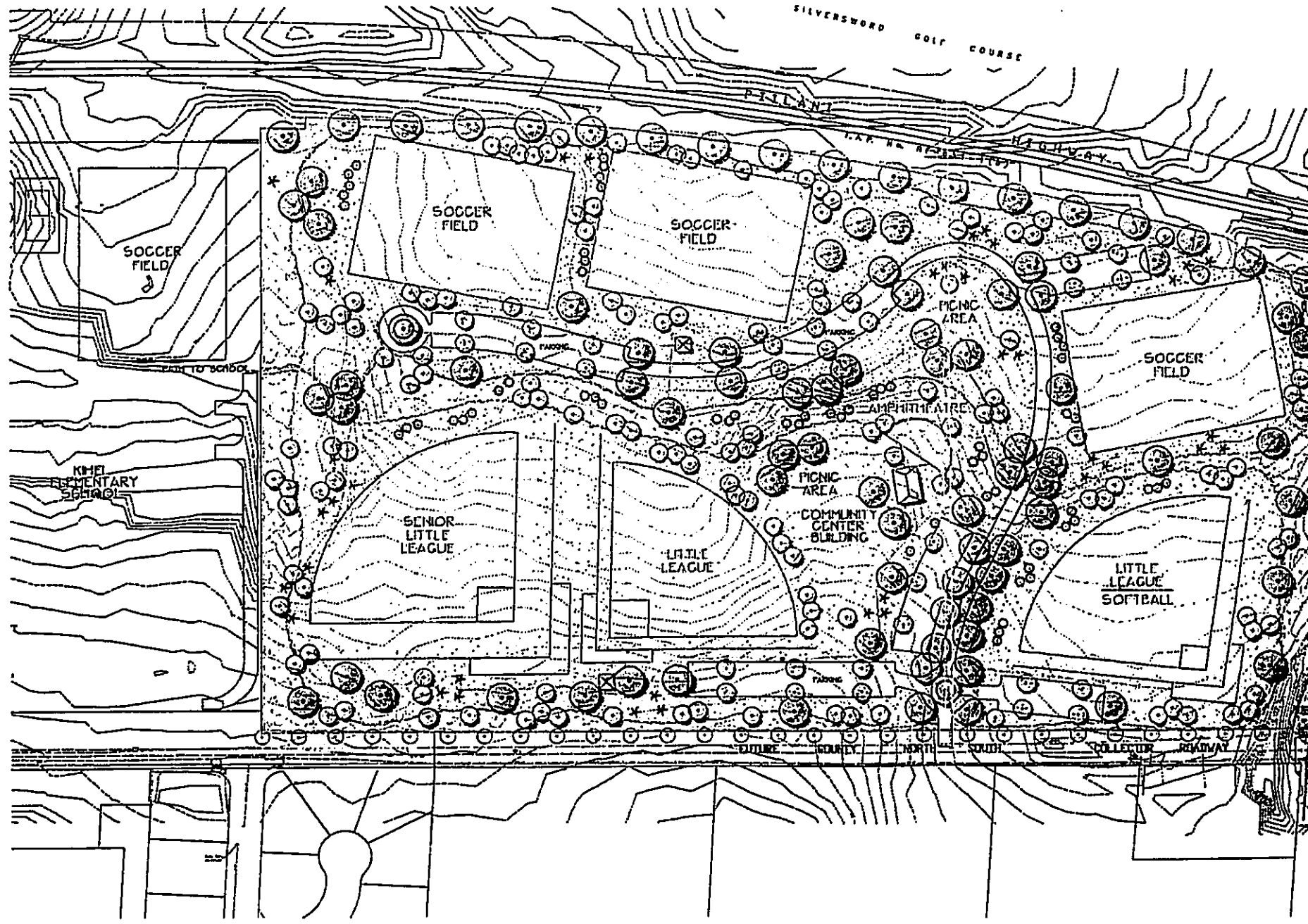




Fixtures without arm will be used for parking lot lighting.

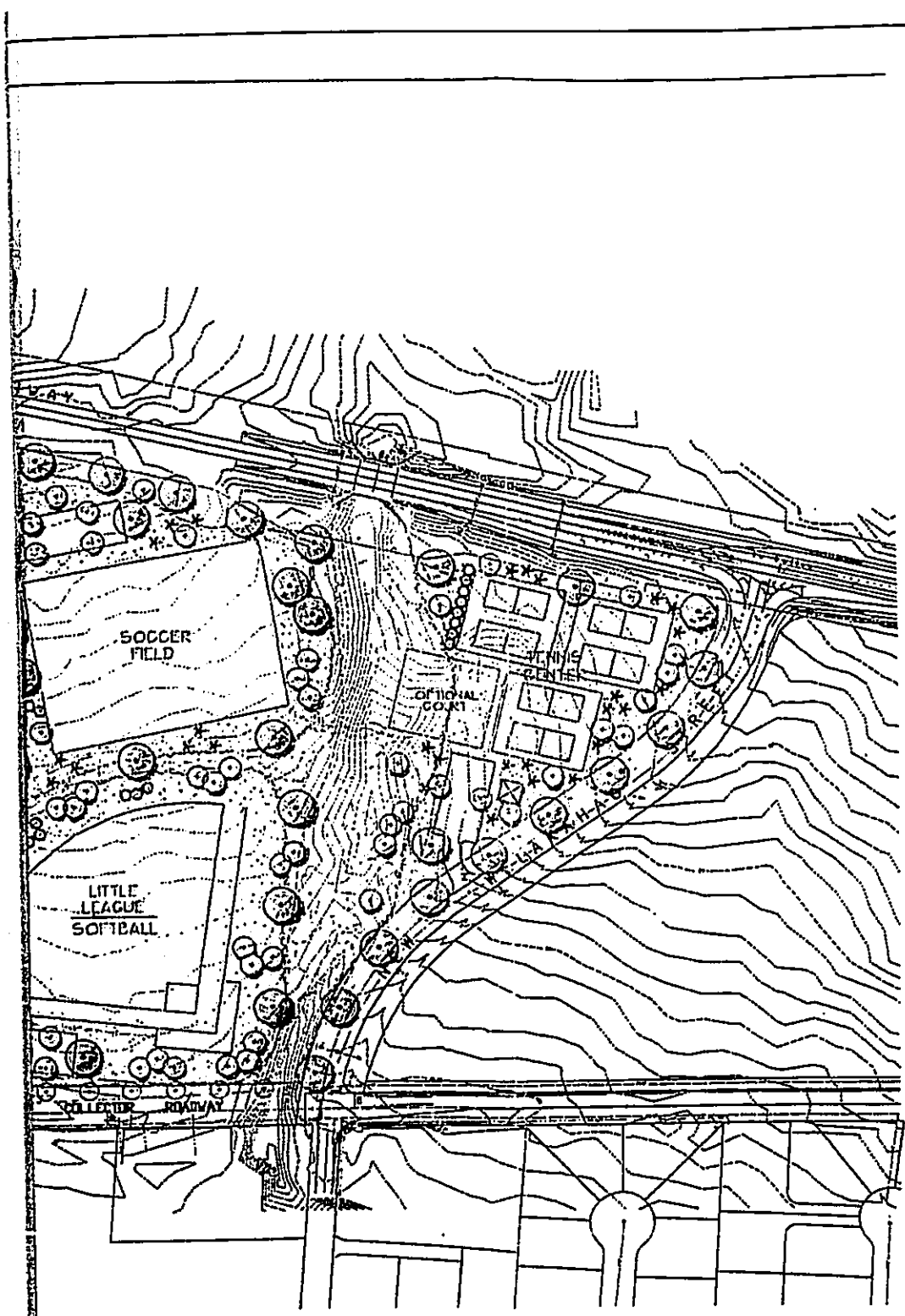
FIGURE 17-c

OCTOBER 2006	CHRIS HART & PARTNERS, INC.
SHOEBOX LIGHTING South Maui Community Park	



CONCEPT

SCALE: 1" =



CONCEPTUAL MASTER PLAN
SCALE: 1" = 200'

FIGURE 18

	OCTOBER 2006
ALTERNATE SITE PLAN South Maui Community Park	CHRIS HART & PARTNERS, INC.

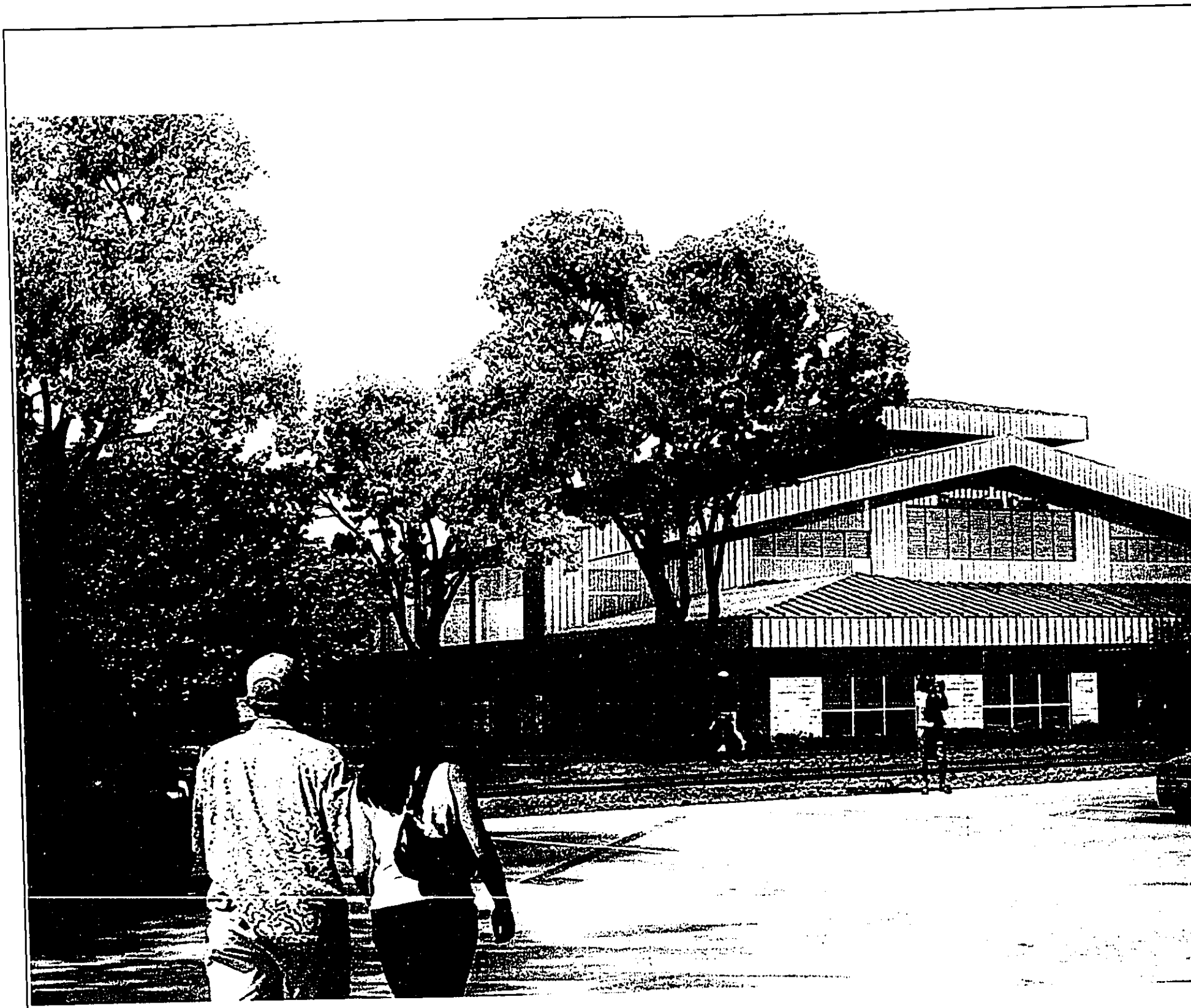
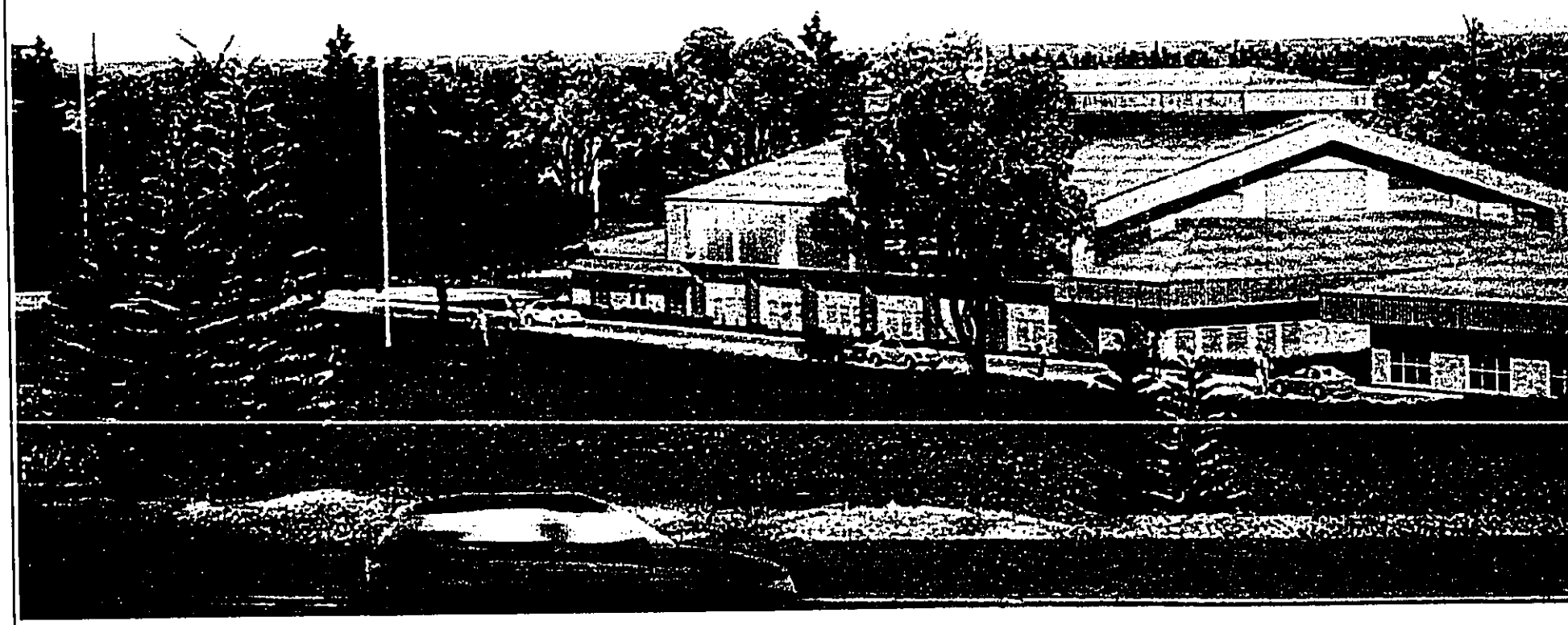


FIGURE 19-a

OCTOBER 2006	
GYMNASIUM RENDERINGS South Maui Community Park	CHRIS HART & PARTNERS INC.



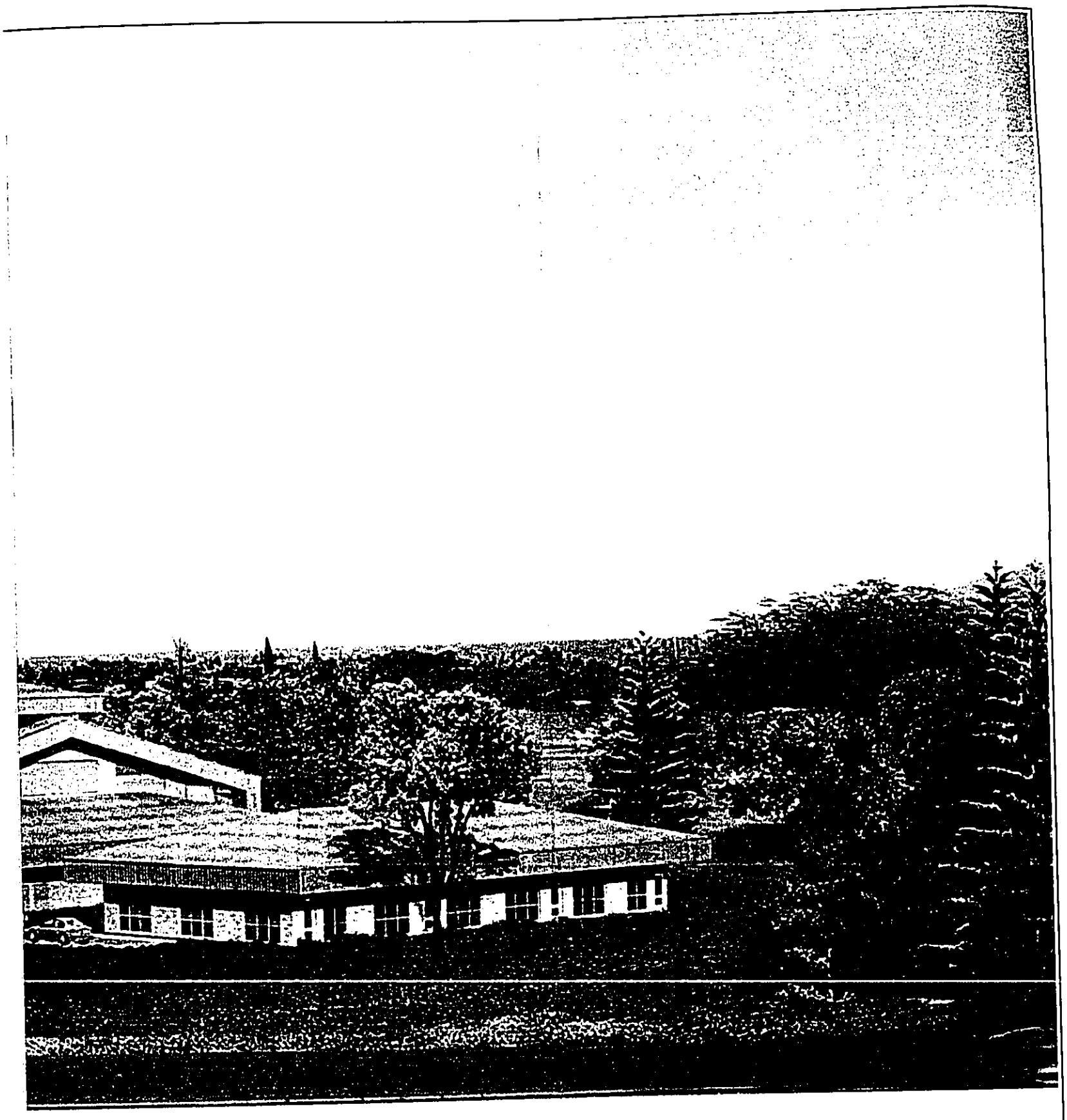
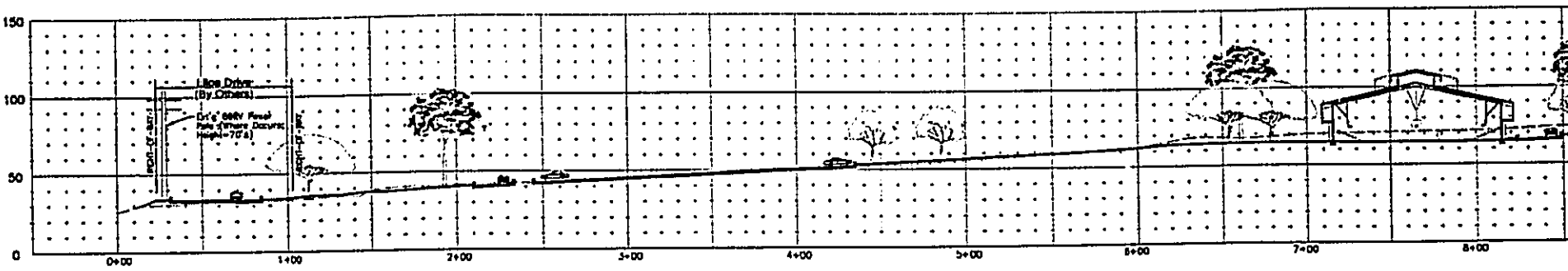


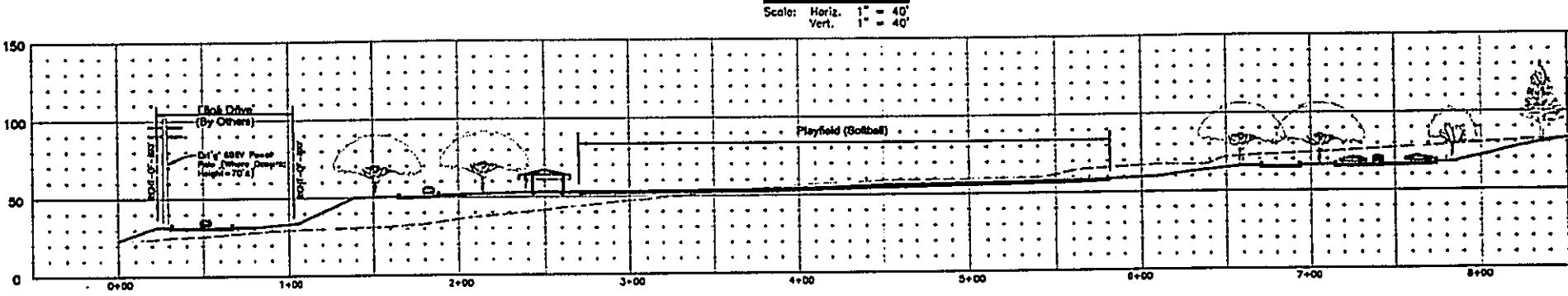
FIGURE 19-6

OCTOBER 2006	
GYMNASIUM RENDERINGS South Maui Community Park	CHRIS HART & PARTNERS INC



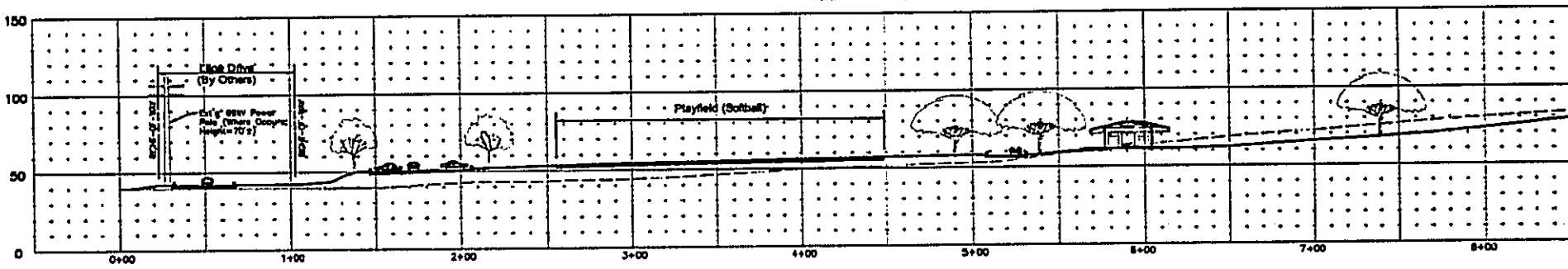
SECTION – 1

Scale: Horiz. 1" = 40'
Vert. 1" = 40'



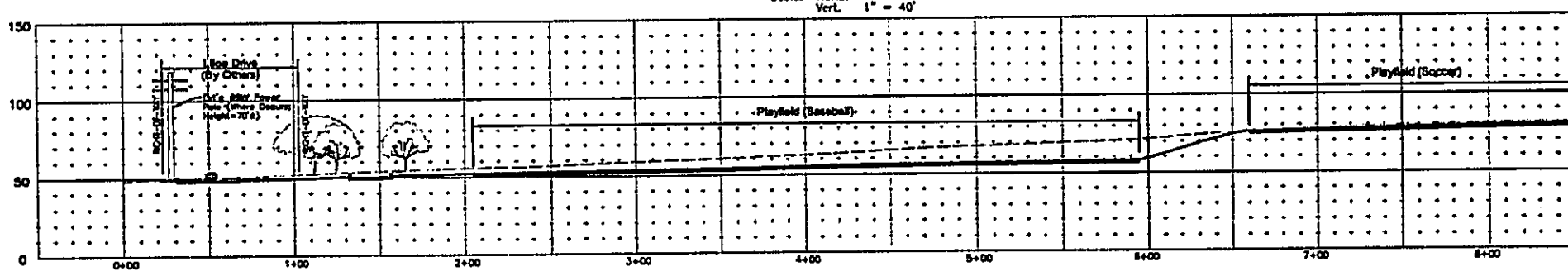
SECTION – 2

Scale: Horiz. 1" = 40'
Vert. 1" = 40'



SECTION – 3

Scale: Horiz. 1" = 40'
Vert. 1" = 40'



SECTION – 4

Scale: Horiz. 1" = 40'
Vert. 1" = 40'

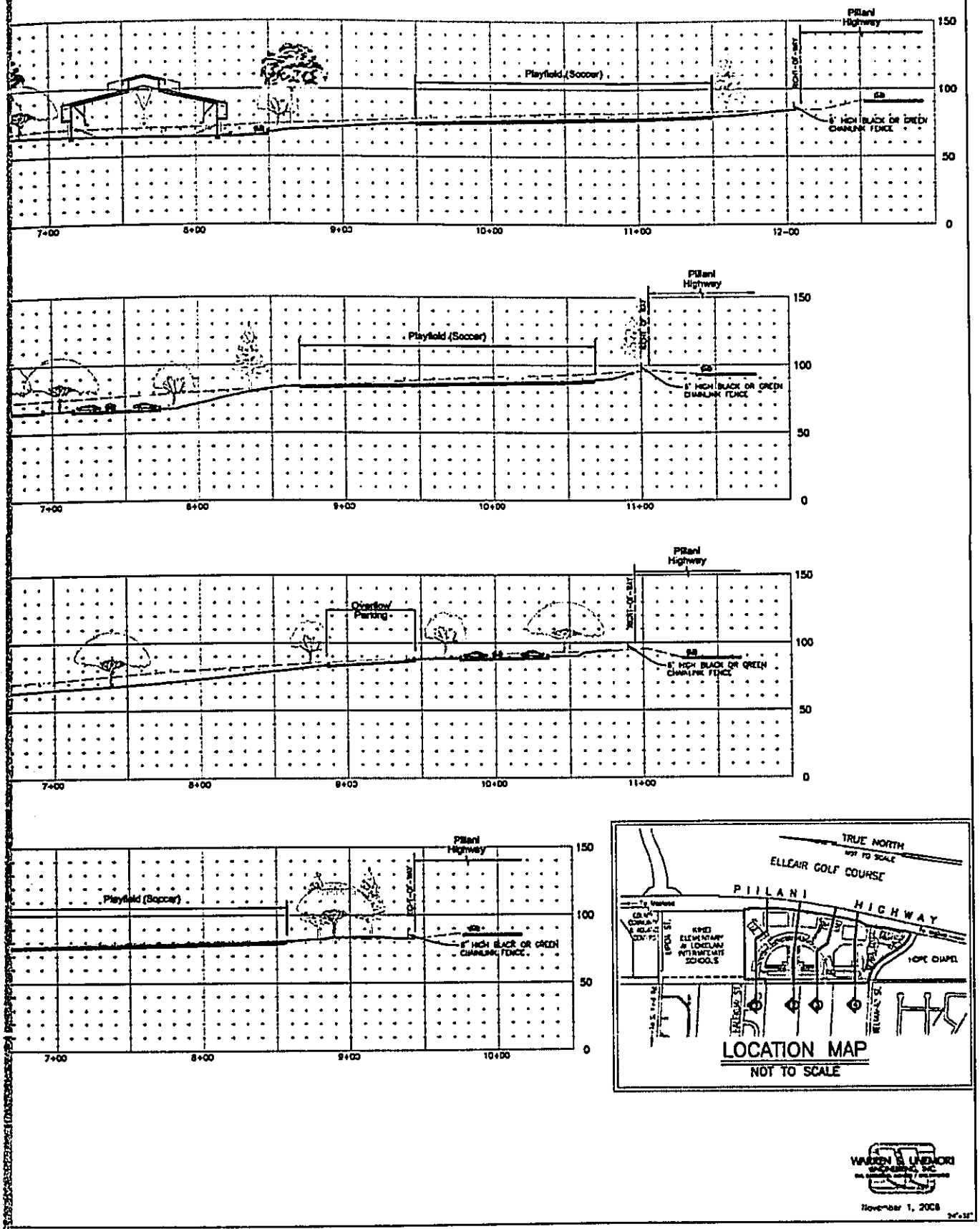


FIGURE 20

OCTOBER 2006

SITE SECTIONS
South Maui Community Park

CHRIS HART & PARTNERS, INC.

APPENDICES

Appendix A Pre-Consultation

- Summary of Pre-Consultation Activities with Community Organizations
- Kihei Community Association Meeting Notes
- KCA Comment Letters and CH&P Responses

Pre-Consultation Associated with the South Maui Region Parks and Open Space Master Plan

An extensive public comment process was conducted during preparation of the South Maui Region Parks and Open Space Master Plan. The proposed South Maui Community Park is a key implementing action of the Master Plan, which includes a concept design for the proposed park. The South Maui Region Parks and Open Space Master Plan was adopted by resolution on September 5, 2006 by the Maui County Council.

The following five pre-consultation meetings were conducted in support of the South Maui Region Parks and Open Space Master Plan, and allowed the community to comment on the conceptual design for the proposed park:

Public Meeting #1
Date: March 19, 2002
Place: Kihei Community Center
Attendance: 50 people

Public Meeting #2
Date: April 15, 2002
Place: Lokelani Intermediate School
Attendance: 50 people

Public Meeting #3
Date: May 19, 2002
Place: Kihei Youth Center
Attendance: 30 youth

Public Meeting #4
Date: June 12, 2002
Place: Maui Bicycle Club
Attendance: 75 people

Public Meeting #5
Date: July 8, 2002
Attendance: 50 people

On the whole, the meetings reflected consensus and enthusiasm for the proposed Master Plan in general, and the South Maui Community Park concept design in particular. Because of the park's proximity to schools there was strong support for sports facilities that could be utilized by the schools and by organized sports groups in the community. There was also consensus that the design should be flexible enough to accommodate a wide variety of continuous uses, both active and passive. Additionally, strong support was voiced for aesthetic features and native plantings that could support a sense of place in Kihei.

Pre-Consultation with Agencies and Community Organizations prior to SMA Hearing

Government Agencies

1. County of Maui, Department of Parks and Recreation: The consultant team has consulted with the County of Maui, Department of Parks and Recreation on an ongoing basis throughout the production of the Draft EA and SMA. Future meetings will be scheduled when the Planning Department has reviewed the Application for completeness, as well as throughout the duration of the project.
2. County of Maui, Department of Public Works and Environmental Management: The consultant team has conducted pre-consultation with the Department of Public Works and Environmental Management during the production of the draft EA and SMA. Additional meetings will be scheduled with the Department of Public Works and Environmental Management once the Application has been reviewed for completeness.
3. County of Maui, Department of Planning: The consultant team has conducted pre-consultation with the Planning Department during the production of the draft EA and SMA. Additional meetings will be scheduled with the Department of Public Works and Environmental Management once the Application has been reviewed for completeness.
4. County of Maui, Department of Fire and Public Safety: A meeting will be scheduled with the Department of Fire and Public Safety to discuss fire and public safety-related requirements and concerns once the Application has been reviewed for completeness.
5. State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division (SHPD): The archaeological consultant conducted pre-consultation with SHPD during preparation of the archaeological data recovery report. Additional meetings will be scheduled to discuss archaeological monitoring requirements and concerns once the Application has been reviewed for completeness.

Community Organizations

1. Kihei Community Association (KCA). Pre-consultation was conducted with the Kihei Community Association's Planning Committee and Board on November 21, 2006, and February 22, 2007. Pre-consultation was also conducted with the KCA General Membership on March 20,2007.

2. Neighbors within 500 feet. A mail-out to neighboring property owners and residents within 500 feet of the subject property was conducted describing the project and inviting property owners to the KCA General Membership meeting.

South Maui Community Park

Kihei Community Association Meeting

November 21, 2006

Summary Meeting Notes

Date: November 21, 2006
Whom: Kihei Community Association, Planning Committee
Kihei Community Association, Board

Overview:

The owner/applicant's planning consultant and landscape architect, engineer, architect and electrical consultant provided an overview of the project as detailed in the draft EA/SMA application, and addressed questions raised by the KCA Planning Committee and Board members. Mr. Michael Summers explained that the County of Maui wished to develop a sub-regional park on lands that were relatively free from environmental constraints and easily accessible to both existing infrastructure systems and the surrounding community, in order to satisfy a demand for additional park space in the fast-growing Kihei-Makena region.

The development team explained that one key issue was the timing of park construction with the construction of the proposed North-South Collector Road. The consultant team explained that the primary ingress and egress to the project site at full build-out would be from the North-South Collector Road. It was anticipated that construction of the North South Collector Road, fronting the project site, would be completed prior to Phase I of the project, but that if the North-South Collector Road was not completed prior to Phase I, a temporary driveway access into the project from the intersection of Liloa Street and Halekuai street could be provided.

Mr. Gerald Hiyakumoto, Hiyakumoto Higuchi Architects, acting on behalf of Calvin Higuchi, the project architect, and Mr. David Sereda, Chris Hart and Partners, the project's landscape architect, provided a more detailed description of the project's conceptual development plans.

The following were some of the primary comments and concerns raised at the meeting:

- South Maui Park as a Component of Community Identity.
  Concern was raised about integration of the park into the surrounding community, to ensure it is not just a not just a park that people drive to. The park is not currently surrounded by any residential development; only church, school and vacant land. A comment was also raised that the park should have a major, centrally located gathering place or defining feature, such as a water feature, that identifies the park as the community's major district park.

Applicant Comments: The applicant responded that vacant land across the future North-South Collector Road, makai of the project, is zoned residential and the park would be designed with integration with future residential or mixed-use development in mind. Some sort of defining feature may be discussed as the design process proceeds; space will be provided to accommodate a future centrally located feature.

- Ballfields.
  Concern was raised that the 10' buffer surrounding the soccer fields may be insufficient to provide seating. Proximity of the soccer fields to Piilani Highway was also a concern for keeping balls out of the highway. Questions from KCA were raised regarding the elevation difference between the soccer fields and Piilani Highway, and whether it would be possible to berm the edge between Piilani Highway and the soccer fields.

  Other questions raised concerned whether there is a sufficient buffer between the soccer fields and the walking path at the park's perimeter, and whether there will be dugouts for the softball and baseball fields.

Applicant Comments: The applicant responded to the KCA's comments as follows: There may be room to move the soccer fields somewhat further downhill from Piilani Highway in order to create a wider buffer around the fields. There could also be an opportunity to place more Norfolk pines along the highway, although this action would further impact makai views from the highway.

- Gymnasium. Several comments were made by the KCA concerning the proposed gymnasium building. There was discussion regarding the relationship of the gym to Piilani Highway and its visual impact/architectural character. A comment was made that the architecture should reflect a community pride when seen - design of the gymnasium building should allow it to stand out. The board was largely in agreement on this issue.

  Restrooms were also discussed. It was suggested that the applicant should consider having joined boys' and girls' facilities so that adults, with boys/girls, can closely supervise their children, i.e. don't have to walk from one end of the room to the next when children are changing. Restrooms in the gym should also

consider providing a facility that a family can use together, in addition to the separated Women's and Men's facilities.

One individual remarked that it may be a mistake to not air condition the entire gymnasium facility.

Applicant Comments: The applicant responded to the KCA's comments as follows:

1. Visual Impact and Architectural Character.
   Elevation of the gymnasium is about 45' above grade; the gymnasium building pad is at 65' elevation and the highway is at 90'elevation.

2. Restrooms. Gerald stated that Hiyakumoto Higuchi will discuss the issues with Patrick Matsui and consider the possibility of reconfiguring / adding restrooms.

- Traffic Calming and Pedestrian Safety. Comments from KCA concerned different types of intersection improvements at Welakahao and Liloa Street: 4-way stop, signalization, and roundabout. It was also suggested that the project should have a major traffic calming feature / pedestrian crossing along Liloa Drive to integrate with future residential communities makai of the project - e.g. a bulb-out with fountain or other defining landscape feature at the mid-point of the project.

Applicant Comments. The applicant is providing a 20' right-of-way, including a bike path, along the future North-South collector Road. The applicant noted that they would consider adding pedestrian safety and traffic calming features along the future North-South Collector Road. The applicant explained that they would consider the issue of pedestrian connectivity along the project's southern boundary in the event of future residential development across the North-South Collector Road, however, since no such development is currently planned, it is not possible to commit to providing specific features. It will be necessary coordinate with the Department of Public Works and Environmental Management at the time of construction of the North-South Collector Road to determine what form pedestrian safety and traffic calming features will take.

- Drainage. KCA members asked about the Flow Guard Inserts which will be used to filter runoff before it enters the subsurface drainage system and discussed the process of removing buildup of debris from the subsurface drainage system. Concern was raised about soil erosion clogging up the filtration system during heavy rain events. Concern was also raised about the issue of drainage through Keokea Gulch.

Applicant Comments. The project engineer noted that manhole access to the subsurface drainage system would allow for clean-out of the filtration system. The project engineer also explained that the turf grass planted throughout the park will prevent heavy soil erosion events such that, should sheet flow across the paved parking areas occur, there will not be significant debris to clog up the drainage system. It was also noted that Keokea Gulch is sufficiently deep and the grade steep enough that flooding events across the subject property are unlikely, even during heavy rain events.

- Lighting. KCA members asked about the 90' pole heights for ballfield lighting. Other questions concerned whether there would be lighting of the amphitheater and whether pedestrian lighting would be provided.

Applicant Comments. The electrical consultant noted that all lighting is downward-shielded to reduce glare from the lights. Ballfield lighting is set at 90' pole heights for the purpose of maximizing the downward-shielding and minimizing glare. The lighting for the tennis courts and parking lots will be set at lower pole heights and also shielded downward to minimize glare. It is anticipated that all ballfields will be lighted and that path lights will be provided along the pedestrian path. Lighting of the amphitheater will be addressed during the construction drawing phase.

- Other Issues. Additional suggestions and comments from KCA included the following. The applicant should consider incorporating eco-friendly plumbing fixtures / LEED standards, where possible, into the project. The park should have another comfort station to serve the soccer, baseball and softball fields. Reclaimed water should be used for irrigation/parking lot cleaning. An additional question was raised about the permanent status of the recycling center at the south end of the project site.

Applicant Comments. It was noted that permanent improvements for the recycling center will begin next year. Patrick Matsui of Maui County Parks and Recreation commented that the War Memorial Complex has a similar ratio of restrooms to playing fields, which seems to provide a sufficient level of service at that facility.

The development team has decided that additional meetings with the KCA's general membership and with neighboring property owners should be scheduled to present the revised architectural plans and landscape concept plans. These meetings will occur on January 23, 2007. Thereafter, a meeting will be scheduled to present the project to the Maui County Planning Commission. It is likely that a hearing before the Maui County Planning Commission will take place on April 6, 2007.

South Maui Community Park

Kihei Community Association Meeting

February 22, 2007

Summary Meeting Notes

Date: February 22, 2007
Who: Kihei Community Association, Board

Attending:

Michael DiBella	(KCA Planning Committee Chair)
David Frazier	(KCA President)
Victoria McGuire	(KCA Executive Director)
Norm Tuttle	(KCA Planning Committee)
Barney Eiting	(KCA Planning Committee)
Mark Coronesi	(KCA)
Patricia Stillwell	(KCA)
Bob Richardson	(KCA Parks Committee)
Kau AhSan	(KCA)
Marina Batham	(KCA Director)
Jon Miller	(KCA Vice President)
Shel Braidman	(KCA Planning Committee)

I. Project Introduction

A. Introduction of project team (Mike Summers, CH&P)

- David Sereda (CH&P, Landscape Architect), Pat Matsui (Director, Parks Planning and Development), Gerald Hiyakumoto (Hiayumoto Higuchi Architects, Alan Unemori (Warren S. Unemori Engineering).

B. Overview and Project Status

- The project is currently scheduled to go before Planning Commission on March 27 for the SMA hearing.

II. Presentation of Conceptual Plan

A. Project Orientation/Description

- David Sereda noted that previous KCA Planning Committee comments raised concern about the proximity of the ballfields to Piilani Highway. The soccer fields have been moved slightly downhill, and the grade has also been lowered. This will both eliminate the risk of soccer balls going into traffic on Honoapiilani Highway as well as provide additional room for spectator seating on the berm above the ballfields.

- The jogging path will pass above the fields along the mauka fenceline, preserving ocean views from the jogging path.

- All paths except for the gravel jogging path will be ADA compliant.

- The only connection between the earlier phases of the project and the recycling center will be along the future N-S Collector Road.

- The central open space area of the park will be maintained as a central gathering place.

KCA Questions and Applicant Comments:

- A question was raised about maximizing visibility for security purposes.

  - The applicant explained that the gymnasium is oriented in such a way as to provide maximum exposure to trade winds while minimizing visual impact.

B. Design Concept / Architecture

- Gerald Hiyakumoto presented the concept architectural plans for the gymnasium.

- Parking will be located along the athletic fields and not just near the gymnasium.

KCA Questions and Applicant Comments:

- Board members inquired whether the gymnasium will be air conditioned.

  - ***Applicant Comments:*** Applicant responded that multipurpose rooms and conference rooms in the gym will be air conditioned;

  - The Parks Director has made recommendations to air-condition the entire gym, which appears to be the direction things are headed. This will require a redesign of the gym.

- Several KCA members inquired about LEED certification for the park.

  - ***Applicant Comments:*** The applicant responded that air-conditioning the entire gym will make the building less energy-efficient than with natural ventilation as currently designed.

  - The applicant suggested that a heat-reflective finish could be used on the metal roof to reduce cooling load.

- Board members inquired about funding

  - ***Applicant Comments:*** Applicant responded that $23.5 million has been appropriated for the first phase of the project and that funding will be available in July of 2007.

  - Applicant responded that the Parks Department does not decide how much money is appropriated to Parks, nor toward which area(s) of the island funding is targeted. It depends on the will of the administration to get projects done.

- Board members suggested that the project cost, as stated now, should take into account the entire cost of all phases of the project.

- Board members inquired whether consideration has been given to how the park will - or can - work with the new Kihei High School

- Board members inquired about when construction will begin.

  - ***Applicant Comments:*** Applicant responded that they can only provide a realistic time frame for Phase I, and the funding for Phase I will come in on July 1st, 2007.

  - The completion of Phase I will likely take 2 years; Phase I is scheduled for completion in 2010.

- Board members indicated that they feel a round-about is necessary at the Park entrance to the future N-S Collector Road in order to mitigate problems with traffic entering and exiting the project.

  - ***Applicant Comments:*** Applicant explained that while perhaps desirable, such a project is outside the scope of the park project. Traffic mitigation at the N-S Collector Road is the responsibility of Public Works.

- Board members inquired what would happen if there was a desire to change the configuration of the Park in the future.

- ***Applicant Comments:*** Applicant responded that changing the configuration is possible, as the current design is still highly conceptual; another SMA will probably also not be necessary if the configuration changes.

- Board members inquired about the amount of open space versus space dedicated to athletic fields.

  - ***Applicant Comments:*** Applicant responded that 25 of the 44 total acres are technically open space.

- Board members inquired about number and location of playgrounds. As older kids might be playing sports, their younger siblings may like to be playing on the playground.

  - ***Applicant Comments:*** Applicant responded that it has not yet been determined exactly what will be going in the "tot lot" areas ... the name is simply a placeholder.

- Board members inquired whether site grading could begin and the recreational fields could be opened and useable without having to wait for the gym to be constructed.

  - ***Applicant Comments:*** Applicant responded that a grading permit can be obtained without a building permit, therefore it would be possible to have use of the ballfields before the gym is fully built.

- Board members inquired whether restrooms require building permits.

  - ***Applicant Comments:*** Applicant responded that restrooms require building permits.

- Board members inquired whether the applicant could present a more concrete plan of what the proposed action involves.

  - ***Applicant Comments:*** Applicant responded that while it is true that insufficient detail can cause difficulties with the project, a balanced level of detail is necessary in order to maintain flexibility in the conceptual stages of the project.

- Board members inquired whether it would be possible to construct a bridge over the gulch to the area near the recycling center (Phase 3), or alternatively, a path through the gulch. The example was cited of the paths through the gulches at Wailea 670.

  - ***Applicant Comments:*** The Applicant responded that constructing a bridge will be very expensive because building in the gulch is not permitted. The

bridge would therefore need to be a single-span bridge. The County would likely not be interested to fund something like that. Also, the county would likely not be interested in assuming any liability associated with providing access through the gulch.

South Maui Community Park

Kihei Community Association Meeting

March 20, 2007

Summary Meeting Notes

Date: March 20, 2007
Who: Kihei Community Association, general membership, and neighboring residents and property owners

I. Introduction of project team (Chris Hart, CH&P)

- David Sereda (CH&P, Landscape Architect), Pat Matsui (Director, Parks Planning and Development), Gerald Hiyakumoto (Hiayumoto Higuchi Architects, Clifford Mukai (Warren S. Unemori Engineering).
- Chris Hart introduced the project and the project team and discussed how the park is an outgrowth of the South Maui regions Parks and Open Space Master Plan, which CH&P produced in 2003.

II. Overview and Project Status

- The Applicant presented a PowerPoint detailing the history, site characteristics, land use designations, design and phasing of the project.

III. Public Questions and Comments

The following were some of the primary comments and concerns raised at the meeting:

- Gymnasium Kitchen Facilities: A member of the public inquired whether the gymnasium would incorporate a kitchen facility. The example was provided of basketball teams traveling in from other islands, who need to be fed.

- ***Applicant Comments:*** The Applicant responded that the design as currently proposed is a conceptual design, and noted that now is an appropriate time for that type of input. The Applicant explained that the gymnasium as currently designed does not include a kitchen facility, but agreed to take note of the recommendation and consider it further.

- Skate Park: A member of the public expressed concern that a skate park is needed at the South Maui Community Park, and there is no skate park in the plan as currently designed.

  - ***Applicant Comments:*** The applicant responded that there is a skate park nearby at Kamaole III Park; however, the applicant noted the recommendation.

- Green Energy Features: A member of the public inquired whether any sustainable energy technologies would be incorporated into the design of the gymnasium. The audience member expressed concern about the lack of photovoltaic panels.

  - ***Applicant Comments:*** The applicant responded that the gymnasium's orientation, chosen due to topography and security concerns, does not provide the building with a southern aspect, and therefore does not make it efficient for solar energy. The Applicant further responded that photovoltaic panels are very expensive. The Applicant explained that the gymnasium building design incorporates natural ventilation, daylighting and heat-reflective roofing, all of which help to reduce energy demand and are recognized as green energy solutions.

- Construction Cost: A member of the public expressed concern about construction cost and the potential for the project to become increasingly more expensive the later it is initiated.

- A second audience member inquired what the current estimated cost would be.

- A third audience member added that it is incumbent on the people of South Maui to pressure the administration if they wish to speed the project along.

  - ***Applicant Comments:*** The Applicant noted and concurred with the first audience member's comment; however, the applicant noted that moving the project along is contingent on sufficient funding and attention from the County government. Current estimated costs are as follows: gymnasium =

$11 million; Phase II = $12 million. Cost for Phase III is as of yet undetermined.

- Bicycle Racks: A member of the public inquired how many bicycle racks are proposed for the project.

  - ***Applicant Comments:*** The Applicant responded that there is no specific number of bike racks proposed as of yet; however, the applicant noted that the audience member's question was another good issue to bring up in the conceptual stage of the project.

- Location of Tot Lots and Play Equipment: A member of the public suggested that the dedicated areas for tot lots and/or play equipment are not close enough to where the other activities are happening. The audience member suggested that organized youth sports will bring in families that include younger siblings, and there should be activities for younger children located closer to playing fields.

  - ***Applicant Comments:*** The Applicant noted the comment and agreed to consider it, although the park design places limits where the playground areas can be located.

- Roundabout: A member of KCA indicated that KCA would like to see a roundabout at the park entrance. Concerns were expressed about the level of through traffic on the future N-S Collector Road.

  - ***Applicant Comments:*** Joe Krueger of Public Works indicated that Public Works will investigate asking for funding for a roundabout at the park entrance.

- Graffiti and Vandalism: An audience member inquired whether the restrooms could be built out of graffiti-proof materials.

  - ***Applicant Comments:*** The applicant noted the audience member's comment and indicated they would investigate further.

- Project Time Frame: An audience member expressed concern about the time frame for the project and expressed a desire for consensus on moving the project forward as quickly as possible.

- Gymnasium Location: An audience member inquired whether the gymnasium could be relocated so that it fronts the N-S Collector road. The audience member suggested that locating the gymnasium as such would reflect community pride up at the street level, serving as an entry landmark to the park.

  - ***Applicant Comments:*** The applicant noted the audience member's comment and responded that the proposed gymnasium location was chosen for a variety of reasons, including security, visual impact, site topography and proximity to neighboring schools.

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KCA
Kihei Community Association
"Working together to shape our Community's future"

Parks & Rec	EVT	HANDLE	SEE ME	COMMENT	DRAFT RESP	FYI
DIR	☐	☐	☐	☐	☐	☐
DEP	☐	☐	☐	☐	☐	☐
ADM	☐	☐	☐	☐	☐	☐
AQ	☐	☐	☐	☐	☐	☐
MAINT	☐	☐	☐	☐	☐	☐
P/D	☐	☐	☐	☐	☐	☐
REC	☐	☐	☐	☐	☐	☐
SP EVT	☐	☐	☐	☐	☐	☐

Comments: PB Resend

Today's Date: 4-18-07

Date Due: 4-25-07

3/26/2007
Director Tamara Horcajo
Maui County Parks Dept.

Dear Director Horcajo:

Thank you for the presentation on the South Maui Regional Park at the March 20 meeting of the Kihei Community Association. We all share the same goal- to provide a safe and functional park facility that will service the South Maui community.

The overriding concern of South Maui residents and the KCA is to have the park completed at once and not as a phased facility. I would refer you to the March 29 edition of the Maui Weekly and the article by Joseph Bean, http://www.mauiweekly.com/localnews/story3947.aspx, which details the KCA meeting and gives the heart of the concern of South Maui.

The Parks Dept has incorporated most of the features that the community has requested, but a few important considerations came to light at the community meeting.

Our first request is that the completed plans should be reviewed by the Maui Police Dept concerning security and safety. Any Police concerns about lighting, child safety, access and visibility to all park areas, vandalism and graffiti, should be considered before construction. Additionally, many of our current parks have restrooms where there is a common partially open wall between men's and women's restrooms, we would like to see these divisions completely separate the men's and women's restrooms in the new park.

It is strongly felt within the community that a commercial kitchen, like the one at the Kihei Community Center, be included in the gym facility. A complete kitchen is considered to be the most important ancillary facility in the gymnasium.

We would like the Parks Dept to plan towards a limited skate park facility at this regional park. We would encourage you to ask your consultants to contact the Maui Skateboard Advocacy Group and incorporate their ideas into this park facility. We would also ask for liberal use of bike racks throughout the park.

We would ask that your consultants contact the Parks Committee at the Kihei Community Association with respect to the placement of the playground equipment at the Regional Park. It is felt that the play structures should be placed central to the ball fields and not in an isolated area.

We would encourage the use of solar panels for the hot water usage in the gym facility. We also suggest photo voltaic lighting in the park in general.

With respect to the more passive features like park benches and picnic tables, the community would like to make the park inviting to the older residents.

We are available to meet at your earliest convenience and look forward to resolving these remaining few items and moving on with funding plans. Let us know what date and time works for your staff and consultants.

Bob Richardson
Kihei Community Association
Parks Committee

South Maui Preschoolers Will Grow Up Without Regional Park

Maui Weekly

Joseph W. Bean

3/29/2007 12:00:00 AM

Good intentions spread over too many years leave the community feeling frustrated, but both the citizens and the park designer continue to believe a park will be built.

The invitation was straightforward: "Aloha from the Kihei Community Association! The KCA will hold its community meeting on Tuesday, March 20, at the Kihei Community Center. The doors will open at 6 p.m. for talk story with your South Maui neighbors. Meeting begins promptly at 6:30 p.m. Pupu and beverages will be provided by Tiki Lounge and Maui Coast Hotel," the invite began.

"Over the last several years the Maui County Department of Parks and Recreation has been working on plans for a new South Maui Regional Park. The Parks Department has met with community organizations including the KCA, a variety of sports organizations, and community members to get input on what type of facility is needed. The plan that came out of those discussions includes a 1,000-plus seat gymnasium with multipurpose and activity rooms, three soccer fields, one baseball and two softball fields, combination tennis/basketball courts, an amphitheater with adjoining pavilion, picnic and play areas and a walking/jogging path." The invitation also explained that the park is intended to be situated on 44.8 acres makai of Pi'ilani Highway and mauka of Liloa Street (the north-south collector road), stretching from Lokelani Middle School to Hope Chapel, and said "The county is ready to begin the permitting process and hopes to begin construction sometime in the next year."

The meeting started hopeful and trusting. A dispiriting burden appeared as people realized the years of planning have delivered a park concept that is—possibly—no longer in step with South Maui life.

The park has been presented to the public many times over the years. "I was reminded as I came in," said Chris Hart, landscape architect for the park, that we were here... during the Kimo Apana administration, in this very room... talking about this South Maui regional park." He added that some of the foundation documents he is still working with were prepared in 2003. Others remembered older plans.

The reaction to the collection of site plans and conceptual art, architectural drawings and property photographs was initially appreciative. Everyone listened as Chris Hart & Partners described their work: the Special Management (coastal) Area permit, Project District approval, draft environmental assessment and the overall design of plantings and spaces.

Many design features seemed extremely well-considered. Parking will be in multiple, smaller, linear spaces throughout the park, so the acreage will "feel like a park and not like a parking lot" as Hart put it.

Many of the people who had questions and suggestions clearly had their concerns in mind before the meeting. Some were of the "why didn't I think of that?" kind. The sharing of these issues brought on a grayer mood.

Bob Richards, a member of the KCA board of directors, kept a list of the requested changes. Here are several of them.

Adding a kitchen facility was mentioned twice—maybe by re-designating some of the gymnasium's non-sporting space.

Another idea that came up twice was the addition of a skate park facility. Skate park advocate Andrew Beerer said he appreciates all the sporting facilities in the park design, but he wanted a skateboard facility. So did several others.

There was concern about sustainable energy/green building systems. Some thought the nearly-600 parking spaces would be inadequate, even if Lokelani School used its own parking when taking advantage of the park.

Bike racks were requested, and someone wanted the playground equipment moved to locations where it would be used more. Another forward-thinking South Mauian wanted the comfort stations built with graffiti-proof surfaces. Still another recommended more "flexible" sporting fields that could be used outside the seasons of the sports they represent.

Not surprisingly for an area that is popular with retirees, someone asked for more facilities for the elderly. The mention of shuffleboard got a bit of a laugh, but the idea was embraced. There was also a concern to keep the park child-safe, avoiding the hard-to-observe areas that are a "plague" in Kalama Park.

State Rep. Joe Bertram recommended moving the gym to the center of the Liloa side of the park. He had appearance in mind, but this would move the gym away from the school that is meant to be a co-user, a fact noticed by several people.

Traffic calming devices, roundabouts and high traffic due to people from the highway taking the road around the park to avoid traffic lights were among the automobile-related issues, but they are all outside the purview of Hart & Partners.

Kihei Little League President Alan Jahn said something that was on everybody's mind: Build it now. Current three-phase construction plans envision that park being finished in 2020—if nothing goes wrong and costs don't go up too much and future mayors, councils and directors of parks are committed enough. Tom Blackburn-Rodriguez put the suggestion in perspective when he said that a 2020 finish date meant another generation of South Maui kids would grow up without the park.

Director of Parks Tamara Horcajo was there with several staff members. After the meeting, she said, "We do realize that some of the specific items in the park design need some adjustment; however, to make major changes in the plan would delay the project further. I have been advised that a revision of the conceptual plans would delay the project for another year and add additional costs. Many of the suggestions that were described at the meeting are worthwhile and can still be incorporated in the plan. Our youth and families of South Maui have gone without

adequate facilities for too long. We hope to keep this project moving so that the health and well being of our community can be achieved through recreation opportunities."

After polling just seven people on the subject after the meeting, the results were unanimous. People are willing to live without any change that is so big it might stop the park from being built, and the most important issue is to have the county give up the 13-year phase-in and just build the park now.

CHRIS HART & PARTNERS, INC.

May 2, 2007

Mr. Bob Richardson
Parks Committee
Kihei Community Association
Azeka Place I, 3rd Floor
PO Box 662
Kihei, HI 96753

Dear Mr. Richardson:

SUBJECT: Kihei Community Association Comments on the proposed South Maui Community Park project, on property situated west of Piilani Highway, Kihei, Maui, Hawaii; TMK No: (2) 2-2-002:042.

Thank you for your March 26, 2007 letter to Ms. Tamara Horcajo, Director, Department of Parks and Recreation, regarding our March 20, 2007 presentation of the South Maui Community Park project. On behalf of the Parks Department, we are pleased to address your comments as follows:

1. The Applicant shares the concern of South Maui residents about the phasing and timing of the Park. The timing and phasing of final build-out of the Park is dependent upon funding. The Applicant has notified the County Administration of the KCA's concern and has copied the Mayor's office on this letter.

2. The Applicant has consulted with the Maui Police Department as part of the agency pre-consultation phase of the project, and will continue to consult with the Department throughout the design phase of the project in order to address security and safety concerns.

3. The project architect has been notified of your request that restroom partitions completely separate the men's and women's restrooms in the Park. The conceptual layout of the Park restrooms includes a storage room 8 feet in width between the men's and women's restrooms. Restrooms will be open beam roofed with masonry walls that go up to the plate height or higher, with aluminum security screens above to allow for full air ventilation across and through the building and provide for more light throughout the building.

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

4. The Applicant is in agreement that the gymnasium should be equipped with an approved kitchen, and one will be provided in the final design of the gymnasium.

5. The Applicant will meet with the Maui Skateboard Advocacy Group and KCA Parks Committee to gather their ideas relating to a skate park and the placement of the playground equipment.

6. The Applicant will incorporate the liberal use of bike racks into the park design.

7. As noted, the Applicant will meet with the KCA Parks Committee to gather their input regarding final placement of playground equipment at the Park.

8. We note your suggestion that solar panels be used for water heating in the gymnasium, and that photovoltaic lighting be incorporated into the design of the Park. These technologies will be investigated and incorporated into the Park to the extent practical.

9. The Applicant will incorporate the use of park benches and picnic tables into the park design, in order to make the Park more inviting to older residents. The Applicant will also include amenities such as shuffleboard to offer activities for older residents. The location of all amenities will be detailed on the construction drawings.

We look forward to meeting with you to discuss these remaining few items and will coordinate with the Parks Committee to determine a convenient date and time. Should you have any questions, please contact myself, or Mr. Jason Medema, Staff Planner, at 242-1955.

Sincerely yours,

Michael J. Summers

Michael J. Summers
Senior Planner

cc. Ms. Charmaine Tavares, Mayor, County of Maui
Ms. Tamara Horcajo, Director, Maui County Parks Department
Mr. Patrick Matsui, Maui County Parks Department
Mr. Clifford Mukai, Warren S. Unemori Engineering
Project File

KCA

Kihei Community Association

"Working together to shape our Community's future"

December 26, 2006

Mike Summers
Senior Planner
Chris Hart & Partners
1955 Main Street
Suite 200
Wailuku, HI 96793

Dear Mike:

Thank you for your presentation of the South Maui Regional Park. We applaud your efforts to move this project forward and we appreciate the opportunity to share our preliminary comments, ideas, and questions.

Considering Kihei is seriously short of park space and this project is long overdue we would like to see the entire park completed in one phase. Can you inform us as to your client's reasoning behind a multi-phase completion?

Of chief concern to the committee is that the park overall appears to be much too dense. The fields appear to be crowded together with, in the case of the soccer fields, inadequate spectator space. We understand that you came to this design after discussions with the community but strongly feel the space is not sufficient for all that is included. Regarding the gym, if it is to be built, we feel it is necessary that it be fully air-conditioned. We do not believe that natural air flow will be adequate to cool a 1000 seat gymnasium plus activity rooms, locker rooms, and bathrooms.

As was mentioned during the presentation, we believe there are insufficient bathrooms and they are not appropriately placed. Even with the gymnasium bathrooms, we feel the distance from the soccer fields to the bathrooms is too far. Also mentioned was our concern over the proximity of the soccer fields to Piilani Highway.

Round-a-bouts are a priority of the KCA; we would like you to include a round-a-bout at Lilioa and Welakahao, as well as, give further consideration to a round-a-bout at the entry point to the park. We are also interested in the proposed relationship between Lokelani Middle School and the South Maui Regional Park facilities. Community feedback has shown that there is a great demand for larger playgrounds and a skateboard park, as well as increased "family use" areas. We would like to look at the possibility of using "multi-sport" field designs to open up space for these other facilities.

P.O. Box 662 – Kihei, HI – 96753 – (808) 879-5390 – info@KiheiCommunityAssociation.org

Lastly, has there been consideration given to the idea that a high school will be constructed in relatively close proximity providing fields and a gym as well? We are aware that you received community input on this plan but are also aware that it was over three years ago. Given the incoming high school facilities and the changes in the area and community, we would like to have another round of community meetings on this project prior to granting approval. We can start this process by having you present to the KCA Community Meeting on February 20 at 6:30 PM.

Mike, the Planning and Development Committee looks forward to working with you, your staff, the community, and Maui County to make this park something we can all be proud of. Please feel free to contact me with any questions or comments you have.

Sincerely,

Matt Kosek

Matt Kosek
Chairman
Planning Committee

CC: Chris Hart
Pat Matsui

CHRIS HART
& PARTNERS, INC.

May 9, 2007

Mr. Michael DiBella
Chairman
Kihei Community Association
Azeka Place I, 3rd Floor
PO Box 662
Kihei, HI 96753

Dear Mr. DiBella:

SUBJECT: Kihei Community Association Comments on the proposed South Maui Community Park project, on property situated west of Piilani Highway, Kihei, Maui, Hawaii; TMK No: (2) 2-2-002:042.

Thank you for your December 26, 2006 letter regarding our November 21, 2006 presentation of the South Maui Community Park project before the KCA Planning Committee. Please accept our sincere apologies for this late response. We are pleased to address your comments as follows:

1. The Applicant shares the concern of South Maui residents about the phasing and timing of the Park. The timing and phasing of final build-out of the Park is dependent upon funding. The Applicant has notified the County Administration of the KCA's concern and has copied the Mayor's office on this letter.

2. We note the desire of the KCA that the entire gymnasium be air conditioned. The Parks Department has committed to incorporating air conditioning into the design of the gymnasium. We note from your letter that the Committee has concerns about the overall density of the park. With specific reference to the soccer fields, the fields have been moved further downhill from Piilani Highway to create additional spectator space. The park design, as detailed in our March 20, 2007 presentation, now includes 13.0 acres of active recreation areas and 25.8 acres of open space, including 4.0 acres of passive recreation space.

LANDSCAPE ARCHITECTURE AND PLANNING
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3. The comments that were made during the November 21, 2006 presentation regarding the number and placement of bathrooms have been noted by the Applicant, and two additional bathrooms have been added to the design of the Park. The location of all the additional bathrooms will be detailed on the construction drawings.

4. We note the desire of the KCA to see a roundabout incorporated as a traffic calming measure at the intersection of Liloa and Welakahao. The building of a roundabout is outside of the scope of the South Maui Community Park project, as it would be the responsibility of the Department of Public Works as a component of the future North-South Collector Road. As indicated at the March 20, 2007 KCA General Membership meeting, Public Works has committed to investigating ways to incorporate roundabouts at the Park.

5. We note that community feedback has consistently been in support of larger playgrounds and a skatepark facility at the Park. The Applicant will meet with the Maui Skateboard Advocacy Group and KCA Parks Committee to gather their ideas relating to the provision of a skate park in the region and the placement of playground equipment within the Park.

6. We note your comment regarding the future construction of a high school in relatively close proximity to the Park, and your desire to have us present the project further. Please note that following our November 26, 2006 presentation, we presented this project before the KCA Board on February 22, 2007 and the KCA general membership on March 20, 2007. We thank you for granting us these opportunities.

Thank you for your consideration of this project. Should you have any questions, please contact myself, or Mr. Jason Medema, Staff Planner, at 242-1955.

Sincerely yours,

Michael J. Summers

Michael J. Summers
Senior Planner

cc. Ms. Charmaine Tavares, Mayor, County of Maui
Ms. Tamara Horcajo, Director, Maui County Parks Department
Mr. Patrick Matsui, Maui County Parks Department
Mr. Clifford Mukai, Warren S. Unemori Engineering
Project File

Appendix B
Archaeological Data Recovery Report

SCS Project Number 463-1

ARCHAEOLOGICAL DATA RECOVERY REPORT FOR PI`ILANI I AND II KĪHEI COMMUNITY PARK PROJECT, KĪHEI, KEOKEA AHUPUA'A, MAKAWAO DISTRICT, ISLAND OF MAUI, HAWAI'I [TMK 2-2-02:42]

Prepared by:
Kirk Johnson, B.A.
and
Robert L. Spear, Ph.D.

June 2005

Prepared for:
Mike Summers
Chris Hart and Partners
1955 Main St., Suite 200
Wailuku, HI 96793

SCIENTIFIC CONSULTANT SERVICES Inc.

711 Kapiolani Blvd. Suite 975 Honolulu, Hawai`i 96813

ABSTRACT

Data recovery was conducted following an "Archaeological Data Recovery Plan, Piilani Residential Community – Phase II", authored by T. Donham (1990), in which a total of six archaeological sites were designated for investigation. Field work for the Data Recovery was performed during a five week period in March and April of 2005 by Field Director Kirk Johnson, B.S. and Field Assistant Eric Pope, B.S. Project Principle Investigator was M. Dega, Ph.D.

The current investigations began by relocating the designated sites identified in the 1990 study. Of these, all but site 2519 were found, with this site believed to be impacted beyond recognition by post-1999 fire suppression activities.

Five sites comprised of ten features were studied and excavated. The only feature investigated that may represent permanent habitation is the platform at Site 2514. This feature yielded the highest density of cultural material of all excavated features.

The radiometric dates obtained from two of the sites this project (Sites 2512 and 2516) and the historic artifacts from Site 1710 demonstrate that most of the sites in the project area were utilized in the late pre-Contact to early post-Contact periods.

Research goals for this present study were to either support or refute the assumption that utilization of the project area was post 1550, and to shed light on the actual prehistoric use patterning for the project area.

As a result of this and earlier studies of the project area, it is recommended that no further work be conducted within the project area excepting Site 2512. As Site 2512 is now interpreted as a ceremonial location, it is recommended that the site be preserved based on a Preservation Plan.

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INTRODUCTION

At the request of Chris Hart and Partners, Inc., and pursuant to recommendations by the Hawai`i State Historic Preservation Division (SHPD), Scientific Consultant Services, Inc. (SCS) conducted Archaeological Data Recovery on property proposed for the development of community recreation areas. The property on which these investigations were performed is located within the city limits of Kīhei, Keokea Ahupua`a, Makawao District, Island of Maui, Hawai`i (TMK 2-2-02:Por.42). Data recovery was conducted following acceptance of an "Archaeological Data Recovery Plan, Piilani Residential Community – Phase II", authored by T. Donham (1990), in which a total of six archaeological sites were designated for investigation. Field work for the Data Recovery was performed during a five week period in March and April of 2005 by Field Director Kirk Johnson, B.S. and Field Assistant Eric Pope, B.S. Project Principle Investigator was M. Dega, Ph.D.

PROJECT AREA DESCRIPTION

The physical nature of the project area has not changed dramatically since the study conducted by Donham, with the exception of its southern boundary, now the eastern extension of Welakahao Road. The research area is bordered on the North by Kihei Elementary and Intermediate School, to the west by Waiohuli-Keokea Beach Homesteads, and to the east by Piilani Highway (Figures 1 and 2). The coastline is located less than one mile to the west of the project area.

The climatic and edaphic regimes for the area generally correspond to the regime known as the "Barren" zone. The specific location of this project, however, puts it on the seaward margin of this zone. The topography of the project area is primarily a gentle east to west descending slope, although a large, notable basin into which several ephemeral drainages flow is present in its northwest portion. A steeply-incised intermittent drainage is located in the southern portion of the project area and is lined with natural bedrock outcrops. Exposed bedrock and bedrock outcrops are also common across the breadth of the parcel and are often visible on low knolls. Bedrock has been exposed on these knolls due to Aeolian transport of existing sediment. Waiakoa extremely stony silty clay loam is the major soil series in the project area (Foote *et al.* 1972: 127). This soil is prone to erosion and exposed rock composes up to 15% of its surface. Much of this exposed rock also exhibits a calcium carbonate crust. Puuone sand is the only other soil found in the project area (Foote *et al.* 1972: 115), and primarily occurs in its western portion. This series consists of grayish brown calcareous sand frequently underlain by a calcium carbonate hardpan.

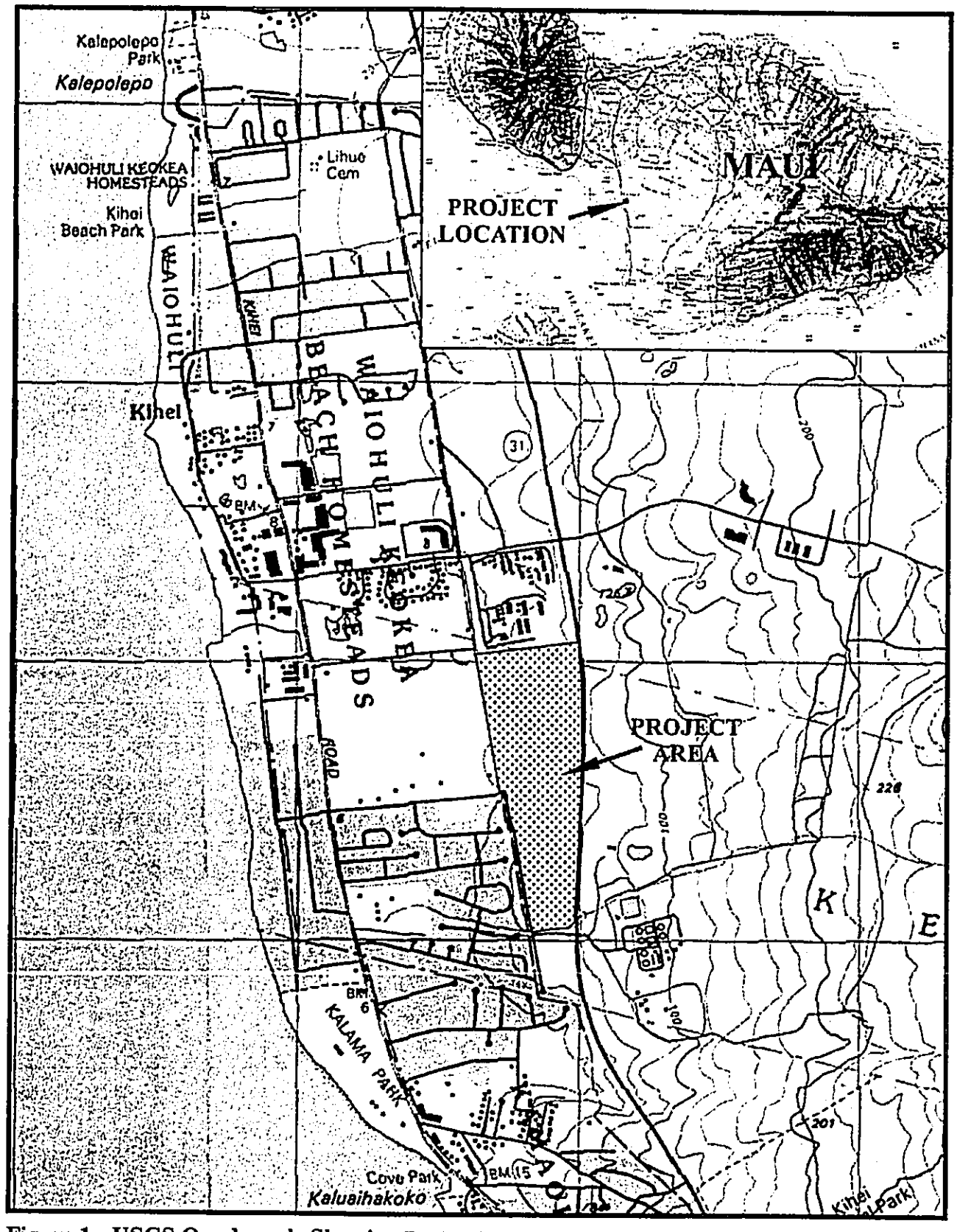

Figure 1: USGS Quadrangle Showing Project Location.

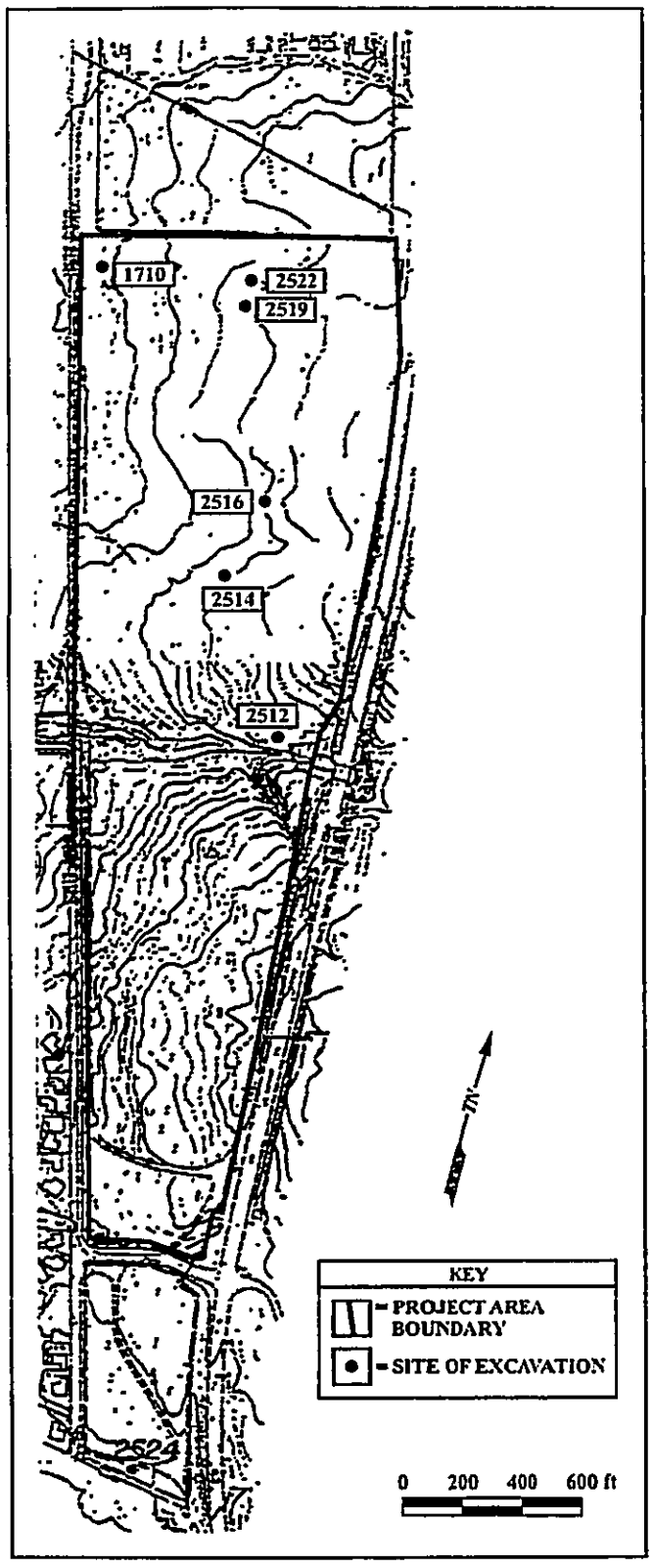

Figure 2: Plan View of Project Area with Site Locations.

The present vegetation regime in the project area differs somewhat from that of Donham's 1990 survey. Although the amount and condition of the observed *kiawe* appears to be similar, the composition of grass species has changed. The chief grass in the project area is now wiregrass (*Eleusine indica*), a bunchgrass occurring in disturbed areas that in several places, allows a moderate amount of surface visibility.

A discussion of the present condition of the project area cannot conclude without mention of fire. While Donham mentions that the northern portion of the project area had been burned in 1978 (Donham 1990:2), personal communication with the Kihei Fire Dept indicated that the entire project area has been completely burned four times since 1999 alone. In addition, several partial burns have occurred within this recent period also. If one considers heavy equipment brought into the area to counteract these frequent conflagrations, coupled with the erosion-prone soils of the property, it comes as somewhat of a surprise that there are any cultural resources surviving in the area at all.

RESEARCH PROBLEMS AND PROCEDURES

RESEARCH PROBLEMS

In the Data Recovery Plan, Donham (1990) identifies two major problems to be addressed through Data Recovery: site chronology and settlement/subsistence patterns. Although subsequent work in the area has contributed more information toward a better understanding of these problems, these remain not completely realized.

In 1990, all radiometric dates in the Kīhei/Makena area were post-dated AD 1550, while dates from upland locations in Keokea were somewhat earlier, beginning as early as AD 680 (Donham, 1990:10). Although these dates supported the assumption that upland occupation was conditional to, and occurred prior to, the occupation of more arid environments along the coast, work conducted in the area after 1969 refuted an earlier assumption that this coastal use was transient. From these studies it was therefore expected that dates from the project area would also post-date AD 1550. If earlier dates were to be located, they were expected to be from a single site in the area that appeared to exhibit two temporal components (Site 2512).

A study performed in 1977 (Cordy in Donham, 1990:11) postulated that permanent coastal residency was more likely to occur in this region where the distance between the coastline and the inland agricultural zone was minimal. In addition, it was proposed that the permanent occupations in the coastal zone (defined as extending 0.25 miles inland of the shoreline) would exhibit evidence of fishing, aquaculture, livestock maintenance and small-scale

agriculture. No provisions in this study, however, were provided for the "Kula" zone. While the findings from the initial survey of this area (Donham 1990) could neither support nor refute the first of these assumptions, information was generated which pertained to the second assumption. Donham's survey identified 15 sites in the project area, comprised of 30 features. These included nine terraces, six low walled enclosures, four "C" shapes, four rock piles, two platforms, two midden scatters, an alignment, a high walled enclosure, and a modified outcrop. Not only was the density of these features surprising, but the fact that any prehistoric sites were located in the project area was remarkable, considering the distance from the coast. Most of these features were considered to be agricultural in function, but seven were thought to indicate at least temporary habitation. This would indicate use of the Kula zone, at least on its margins, for agricultural purposes, extending subsistence catchments further inland than previously thought, in addition to indicating an intensity of use not expected. In her Data Recovery Plan, Donham further writes:

"On the basis of the current survey data it appears that agricultural activities within the project were selectively located on low knolls and along the slopes of these knolls. What is not clear is whether this patterning is caused by selective preservation of the surface features, or actual site selection patterns. The topographic features where agricultural terraces are located are generally the areas of least soil, and appear today to be the least productive for growing plants of any sort. If these locales were of marginal productivity at the time of utilization, then we should expect that the more productive soil flats would have also been utilized, perhaps with only minor modifications that have since eroded away or have been otherwise destroyed. This assumption significantly changes the picture of small scale or limited agriculture to one of relatively extensive use of all available land, and the range of plants being grown" (Donham, 1990:11).

Research goals for this present study would consequently be to either support or refute the assumption that utilization of the project area was post 1550 ad, and to shed light on the actual prehistoric use patterning for the project area.

METHODOLOGY

While site specific field methods are discussed later, general field methods are discussed below.

The current investigations began by relocating the designated sites identified in the 1990 study. Of these, all but site 2519 were found, with this site believed to be impacted beyond recognition by post-1999 fire suppression activities. After site relocation, a two-person crew,

contracted locally, performed vegetation clearing. Areas having the highest potential for data recovery were then identified, and excavation commenced.

Excavation unit placement is dealt with in individual site discussions. It should be noted, however, that study of site architecture during this project was not a high priority. This was due to almost all surface architecture being of piled and/or stacked rock, and soils being obviously shallow, precluding extensive sub-surface architecture. In other words, "What you saw is what you got".

General excavation methods included photographing units both before and after excavation, the removal of unit matrix by either trowel or shovel, and, with the exception of the single shovel probe (SP) at site 2512, the drawing of profiles from at least one exposed wall. Units designated as stratigraphic trenches (STs) were excavated solely to expose profiles, and as such were neither controlled vertically nor screened. Diagnostic artifacts identified during their excavation, however, were collected for analysis. Units designated as test units (TUs) were excavated by natural layers, with arbitrary 10 cm levels. All matrix removed from TUs was screened through $1/8^{th}$ inch screen, with all cultural material recovered for subsequent analysis. Besides the previously mentioned SP, Almost every unit excavated had two walls profiled. Exceptions, however, were the adjacent units of Trench 1, Site 1710, which had only one wall profiled, and ST-1 and TU-6 at Site 2512, which also had a single wall drawn (this was due to the exposure and removal of Sub-surface Feature 2512-B.1). All formally identified sub-surface features were bisected, their profiles drawn, and one half of their matrix screened separately, the other half collected as a soil sample.

Laboratory analysis involved lithic analysis and midden analysis. Lithic analysis was conducted by Robert L. Spear, Ph.D. Midden analysis was performed identifying species and their respective volumetrics.

Before concluding this section, it should be noted that this report draws heavily from Donham's 1990 report for PHRI. Its excellence in description needs little improvement and has provided the author with a solid basis to which current site conditions can be compared.

FIELD WORK RESULTS

SITE 1710 DESCRIPTION

State Site 1710 is a single feature site comprised of a quadrilateral enclosure located on the west side of a prominent rock outcrop, and measuring 15.00 m N-S by 13.00 m E-W. In 1990, it was described by Donham:

"This roughly square enclosure has three free-standing walls and one (east) wall that is mostly a natural rock face. The walls consist of boulders and cobbles and are generally bi-faced with core filling of small cobbles and pebbles.

The eastern portion of the south wall is 0.85 m wide and 0.9 m high on the interior side, 0.40 m high on the exterior side. The faced sides are stacked up to six courses high. At the west end of the south wall, interior height is 0.42 m and exterior height is 0.15 m. This section of the wall appears to be disturbed.

The western wall is vertically stacked and faced on the interior side, 0.65 to 0.37 m above the interior surface. The exterior side of this wall slopes outward and downhill, and is 0.90 to 0.30 m high. Overall wall width from base to base is 1.50 m; the top to the wall is 1.00 m wide. At the northwestern corner, the wall is level with the interior surface and 0.60 m above the exterior surface.

The north wall has a narrow (0.60 m) entrance in the center. Interior wall height at the entrance is 0.20 m and exterior wall height is 0.60 m. At the northeastern corner, the wall is 0.80 m high on the exterior side and 0.70 m high on the interior side.

A 3.00 m long section of the eastern wall is free-standing; the remainder consists of alignments and stacked cobbles placed in cracks or open areas along the bedrock face. This is the highest portion of the enclosure; interior heights range from 1.56 to 1.35 m. Exterior height of the stacked portion averages 0.10 m along the top of the rock face.

The interior of the enclosure is a sloping surface, with the highest portion along the north wall. Very few partially buried cobbles are present inside. The soil consists of sandy loam mixed with aeolian beach sand. No portable remains were observed on the surface inside the enclosure.

A terrace alignment is present at the base of the southeastern corner and south wall. The alignment consists of boulders and cobbles and is raised 0.50 m above the adjacent surface to the

south. The area between the alignment and the enclosure wall is relatively flat, with small cleared patches.

Immediately to the south of the enclosure is a linear arrangement of bulldozed boulders and cobbles, intermixed with ceramic drainage tile. The relationship between this disturbed feature and the enclosure (if any) cannot be determined until additional vegetation clearing is conducted. It is possible that additional terraces are also present nearby." (Donham 1990: A-1-3)

Current investigations found the site 1710 to be well described by Donham, with the exception of post-1990 disturbance. At the time of the present study, the majority of the exterior of the western wall had been obscured by dozer push, much of it consisting of large boulders. In addition, much of the architecture of the north wall, both the exterior and interior, had been obscured by sediment, assumed to be aeolian.

SITE 1710 METHODS

After clearing, four stratigraphic units and five test units were excavated in this site (Figure 3).

Excavation began with laying out a 1.00 m by 10.00 m trench, running parallel to, and about 0.50 m from the interior of the enclosures west wall (Figure 4). This trench consisted of three 1.00 m by 2.00 m stratigraphic units (STs 1-3), separated by two 1.00 m by 2.00 m test units (TUs 1-2), placed on the lowest area of the features interior. Placement of this trench was determined by the belief that both cultural and natural processes would lead to cultural remains concentrating in this area, and that after excavation; a 10.00 long profile would generate a representative cross section of the sites stratigraphy. In addition, the south profile of the trench would also expose the base of the features south wall, establishing its layer of origin. Excavation of these units was taken an average of about 0.50 m below the occurrence of cultural material in order to ascertain the presence of multiple occupations and better understand the geomorphology of the site. TUs were excavated in layers established from the profiles observed in the STs.

After excavation of the trench, a third 1.00 m by 2.00 m TU (TU-3) was excavated in the southeast corner of the enclosure, parallel to the south wall and cutting across the features internal terrace. This unit was placed in order to better understand the nature of the small terrace, and also to compare the unit's stratigraphy with that of the trench. TU-3 was excavated in natural layers to bedrock.

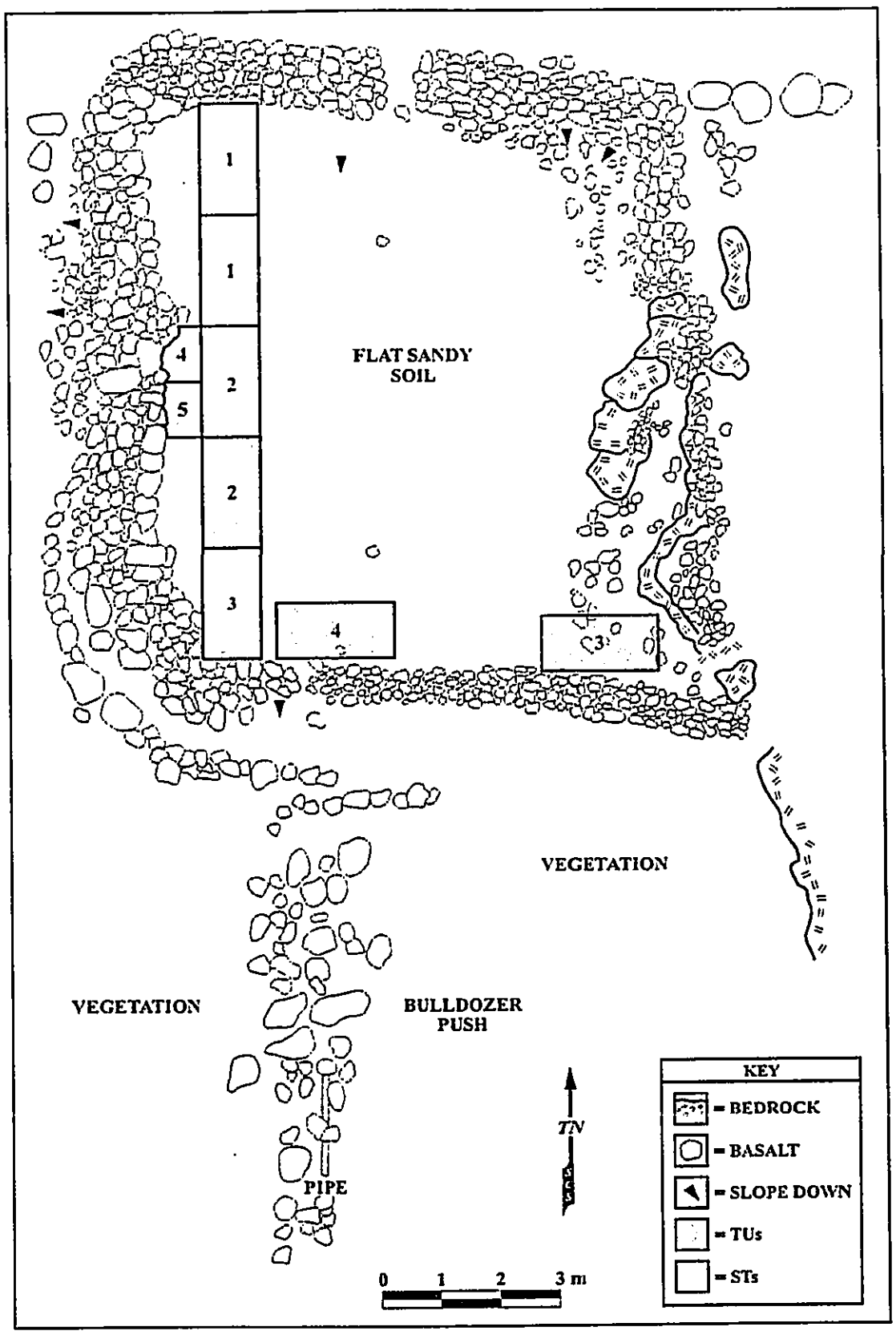

Figure 3: Site 1710 with Unit Locations (adapted from Donham, 1990).

Figure 4: Site 1710, Trench 1 (TUs 1 & 2; STs 1 – 3). View to Southwest.

TU-4 was a 1.00 m by 2.00 m unit also placed parallel to the enclosures south wall, toward the southwest corner of the feature and about 0.30 m east of the south end of the trench. This unit was excavated in hopes of finding subsurface features, this location, on the leeward side of the enclosures south wall, being protected from the prevailing wind direction. Excavation of this unit was conducted by layers and terminated approximately 0.10 m below the cultural layer established by the trench excavations.

The final two units excavated were ST-4 and TU-5. These 1.00 m by 0.70 m units were located adjacent to each other, off of the trenches west wall, between it and the enclosures west wall. Units were limited in their west extent by the presence of a very large boulder, used as internal facing in this wall. Excavation was undertaken in order to locate temporally diagnostic material, and further document the features layer of origin. Units were terminated approximately 0.15 m underneath the base of the wall, in the layer beneath the cultural layer established by trench stratigraphy. Only TU-5 was excavated in layers.

A total of between 16.00 and 17.00 square m of surface area was excavated at the site (9%), completed in approximately 20 person days.

SITE 1710 RESULTS

STRATIGRAPHY: Excavation at the site quickly demonstrated that it was located in a dune environment with its matrix primarily composed of sands.

The profile of units in trench 1, STs 1-3 and TUs 1-2 ranged in depth 1.10 m to 0.60 m, and demonstrated five major layers, further divided into several sub-layers (Figure 5; Appendix A). One layer, Layer II, was limited to the north portion of the trench, in ST-1 and TU-1. The primary cultural layer was Layer III, a level, reddish brown loamy sand averaging around 0.10 m in thickness containing the majority of the units rock (mostly angular). Cultural material, however, also occurred in the lower portion of Layer I, and the upper portion of Layer IVa. In addition, the profile of the south wall of ST-3 demonstrated that the Feature's architecture originated at the bottom of Layer III (Figure 6). Of note was the occurrence of a hard, cemented calcium carbonate layer directly underneath Layer III. This layer, Layer IVa, ranged in thickness from 0.8 to 0.4 m and differed little from the underlying layer, except for this calcium carbonate. Also of note were several thick lenses (sub-layers) lightly stained with ash or carbon which occurred in Layer V. A coating of calcium carbonate was also found on exposed rock (bedrock?) at the bottom of TU-2, a unit taken slightly deeper than the rest of the trench (Figure 7).

The O Horizon in these units was a very dark gray (10 YR 3/1) sandy loam with about 3% small pebbles and about 60% organic material. Layer I was a dark reddish brown (5 YR 3/3) loamy medium grained sand with about 1% small pebbles. The layer was structureless and non-sticky and non-plastic with many fine roots. The lower boundary was very abrupt. Layer IIa was a very dark yellowish brown (10 YR 4/4) loamy coarse sand with no rock. The layer was structureless and non-sticky and non-plastic with many fine roots. The lower boundary was very abrupt. Layer IIb was a dark brown (10 YR 3/3) loamy medium sand with about 2% small pebbles. The layer was structureless and non-sticky and non-plastic with many fine roots. The lower boundary was abrupt. Layer IIc was a brown (10 YR 4/3) sandy loam with no rock. The layer was structureless and non-sticky and non-plastic with moderate to fine roots. The lower boundary was abrupt. Layer III was a dark reddish brown (5 YR 3/3) loamy medium sand. The layer was structureless and non-sticky and non-plastic with many fine roots. The lower boundary was very abrupt. Layer IVa was a very dark grayish brown (10 YR 3/2) loamy fine sand with no rock. The sand was cemented with few large to fine roots. Layer IVb was a dark brown (7.5 YR 3/2) medium sand with no rock. The layer was structureless and non-sticky and non-plastic with few large to fine roots. The lower boundary was abrupt. Layer Va was a dark yellowish brown (10 YR 4/4) fine to medium sand with no rock. The layer was structureless and non-sticky and non-plastic with large to fine roots. Layer Vb, which was a lens within Layer Va,

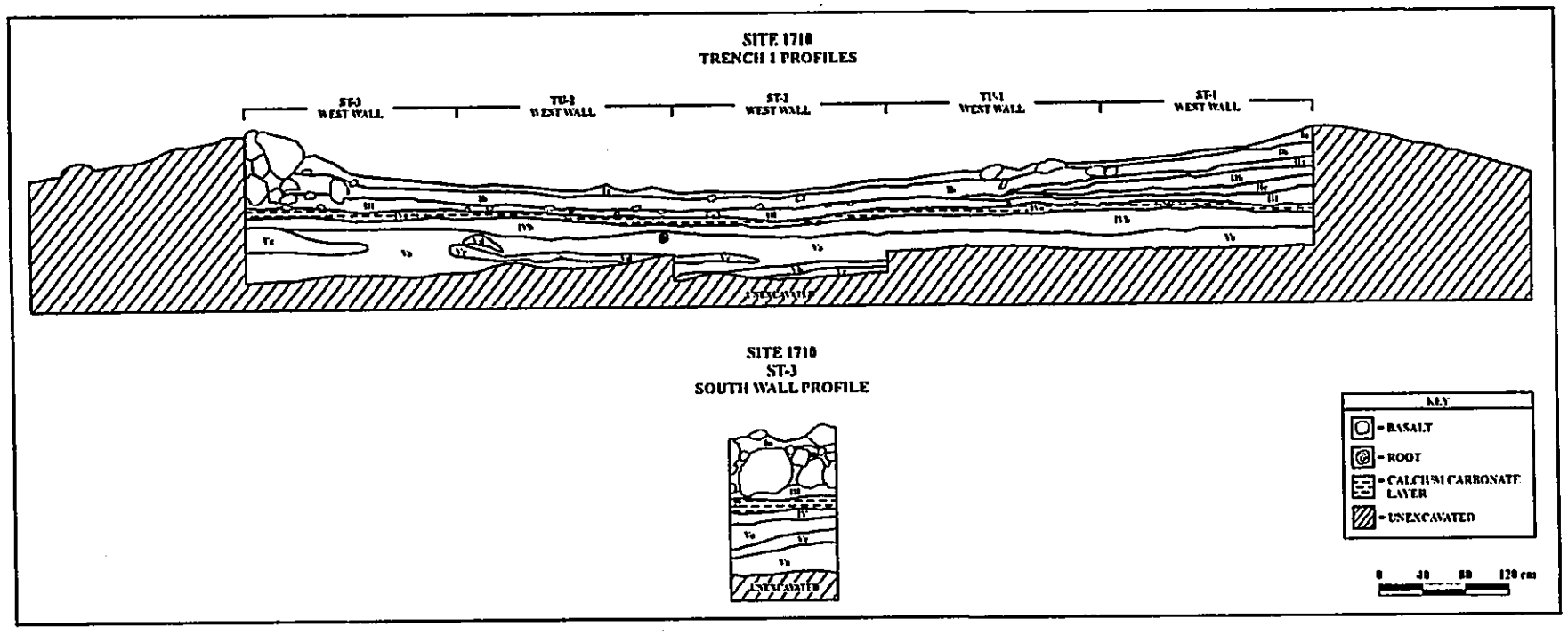

Figure 5: Site 1710, Trench 1 (TUs 1 & 2; STs 1 – 3), Profiles.

Figure 6: Site 1710, Trench 1, ST 3, South Wall.

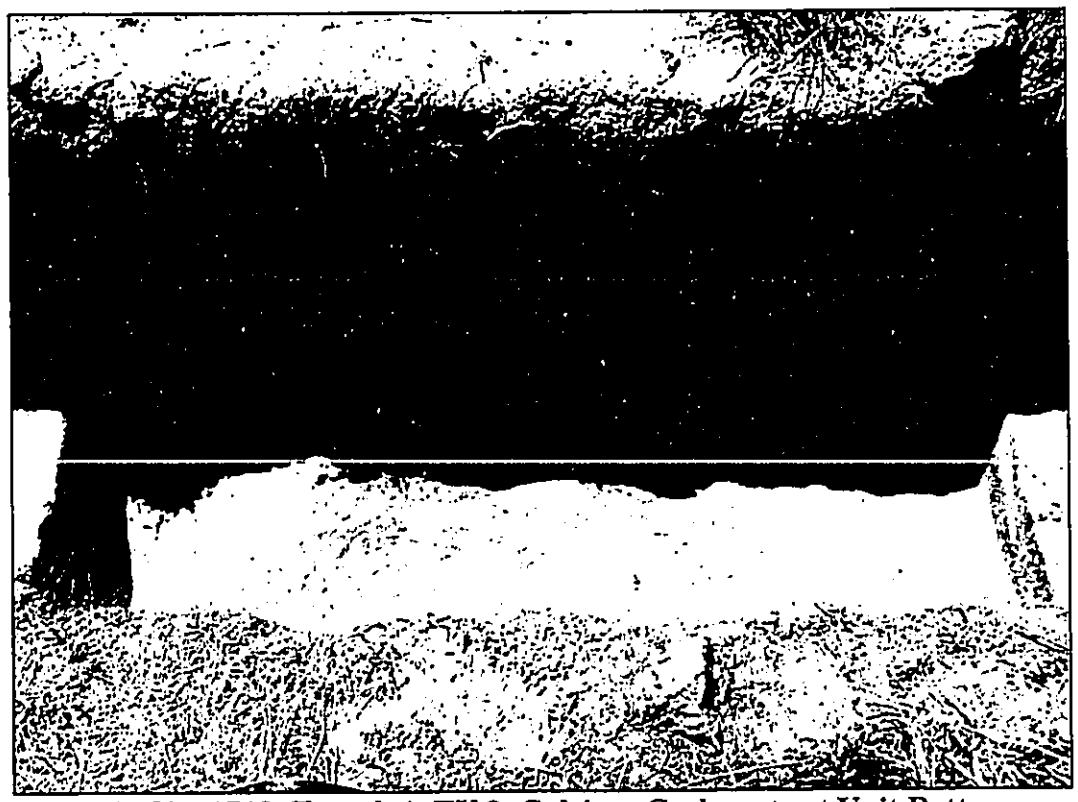

Figure 7: Site 1710, Trench 1, TU 2, Calcium Carbonate at Unit Bottom.

was a yellowish brown (10 YR 5/4) fine to medium sand with no rock. The layer was structureless and non-sticky and non-plastic with large to fine roots. Layer Vc, which is also a lens within Layer Va, was a gray to light gray (10 YR 7/1 to 6/1) ashy fine to medium sand with no rock. The layer was structureless and non-sticky and non-plastic with large to fine roots. Layer Vd, which is also a lens within Layer Va, was a dark gray (10 YR 4/1) carbon-stained fine to medium sand with no rock. The layer was structureless and non-sticky and non-plastic with large to fine roots.

The stratigraphy of TU-3 differed from that of the trench (Figure 8). In this unit, two layers were identified overlying bedrock. Both layers contained cultural material, although the majority of this material occurred toward the bottom of Layer I. Architecture of the enclosure was exposed in the units south wall, and occurred only in layer I, lying near its surface at the west half of the unit and resting on bedrock at its east half (Figure 9). Layers differed little on either side of the terrace's retaining element, although deposits were deeper on its west side.

Layer I was a brown (7.5 YR 4/3) fine sand with about 25% pebbles and cobbles. The layer was structureless and non-sticky and non-plastic with medium to fine roots. The lower boundary was abrupt. Layer II was a dark brown (7.5 YR 3/4) loamy sand with about 25% pebbles and cobbles. The lower boundary was bedrock.

TUs 4 and 5, with ST-4 exhibited stratigraphy similar to that of Trench 1, and were terminated toward the bottom of Layer IVa. Layers I and III in TU-4 both contained cultural material, although the cultural material in Layer I occurred only toward its bottom (Figure 10). Layer IVa of this same unit also contained cultural material, but this was isolated in a small ash deposit, located in its northeast portion. TU-5 and ST-4, extending west of the trench and exposing the sub-surface architecture of the feature's west wall, further demonstrated the architecture to originate at the bottom of Layer III (Figure 11).

For the soil descriptions of these units see ST-1, 2 and 3 and TU-1 and 2, above.

CULTURAL MATERIAL: Both items generally attributed to native Hawaiians and euro-American artifacts were recovered from the site.

Traditional hawaiian items primarily consisted of marine gastropod shell, although bivalve and echinoderm shell was also well represented. Small mammal bone was recovered from several of the units, which contrasted with the recovery of only a single fish bone. Small

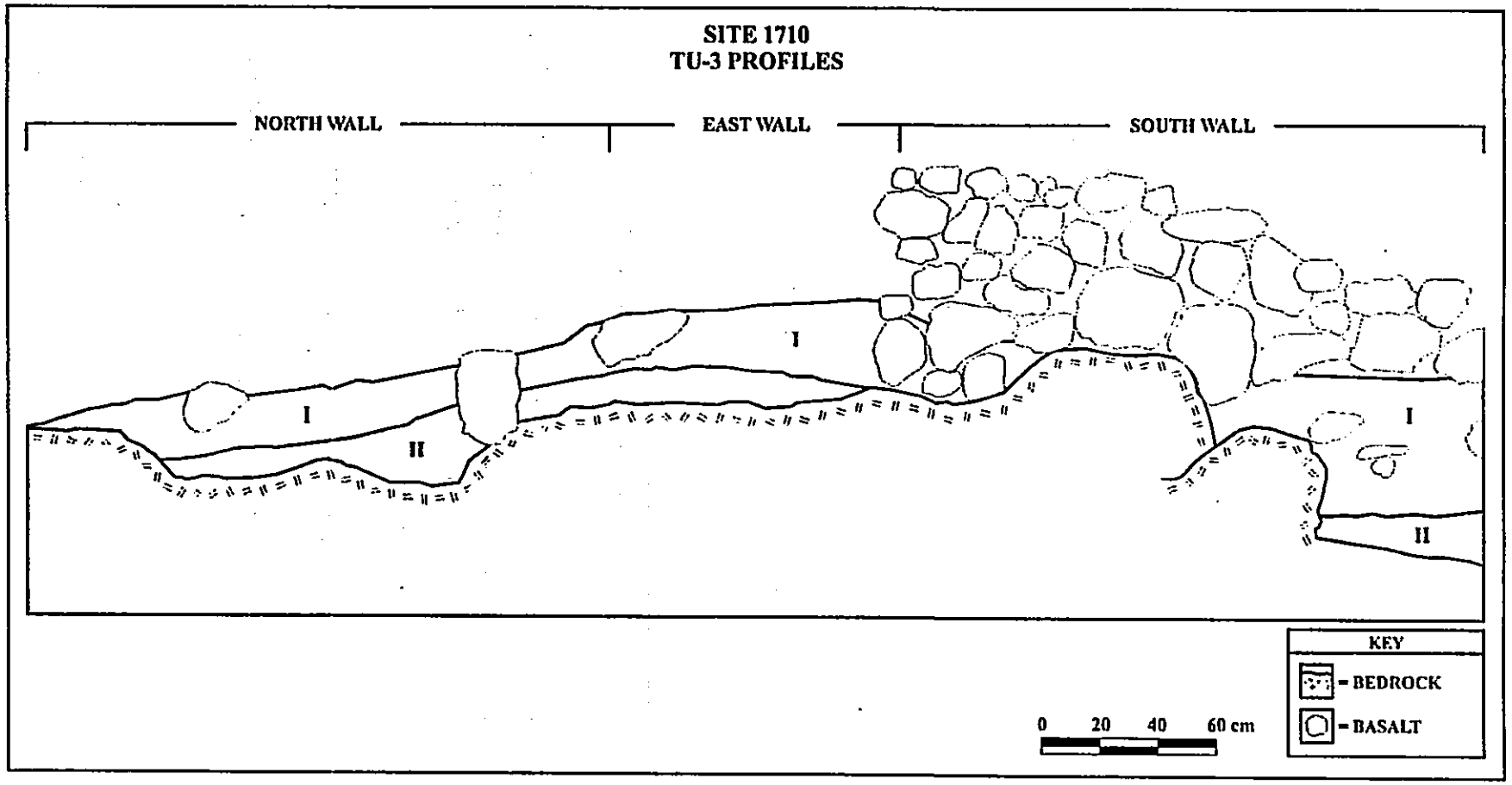

Figure 8: Site 1710, TU 3, Profiles.

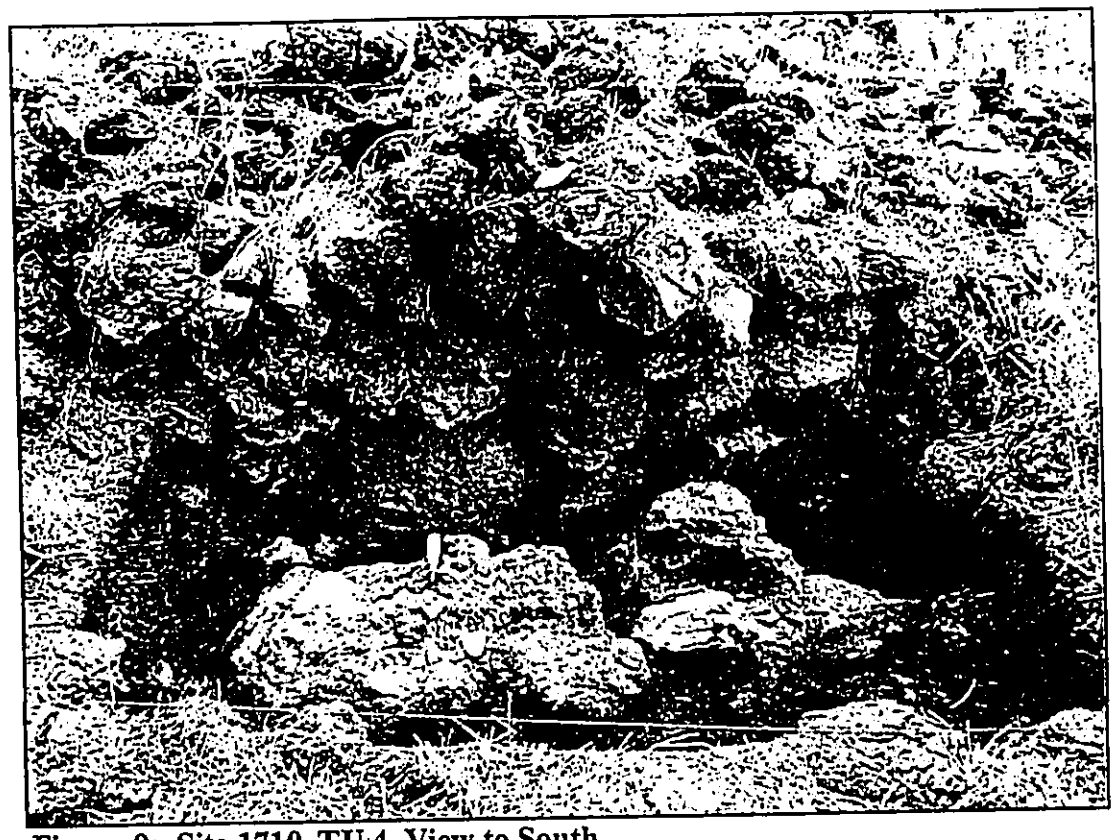

Figure 9: Site 1710, TU 4. View to South.

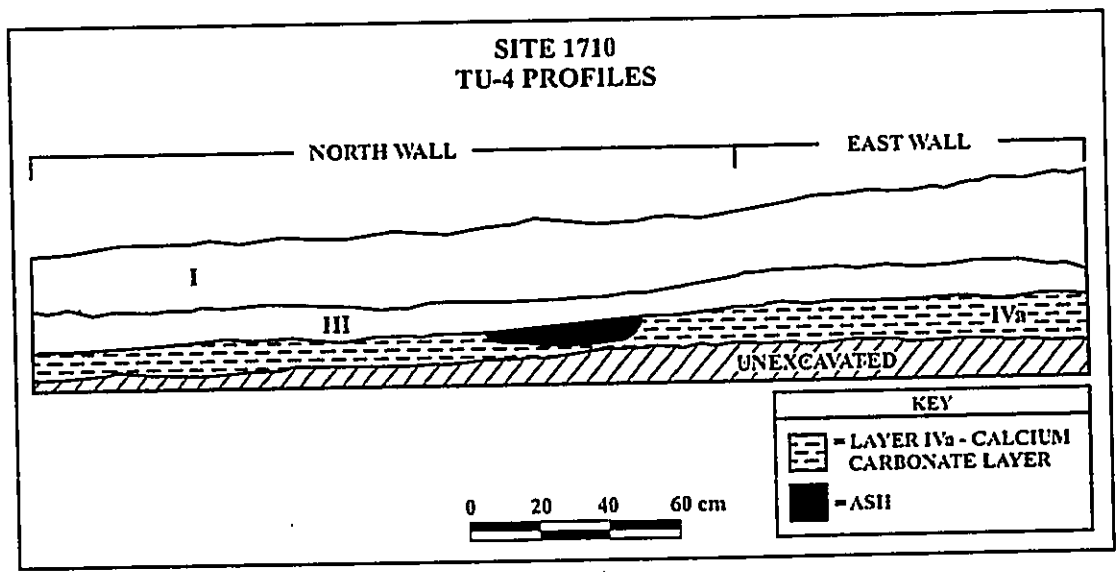

Figure 10: Site 1710, TU 4, Profiles

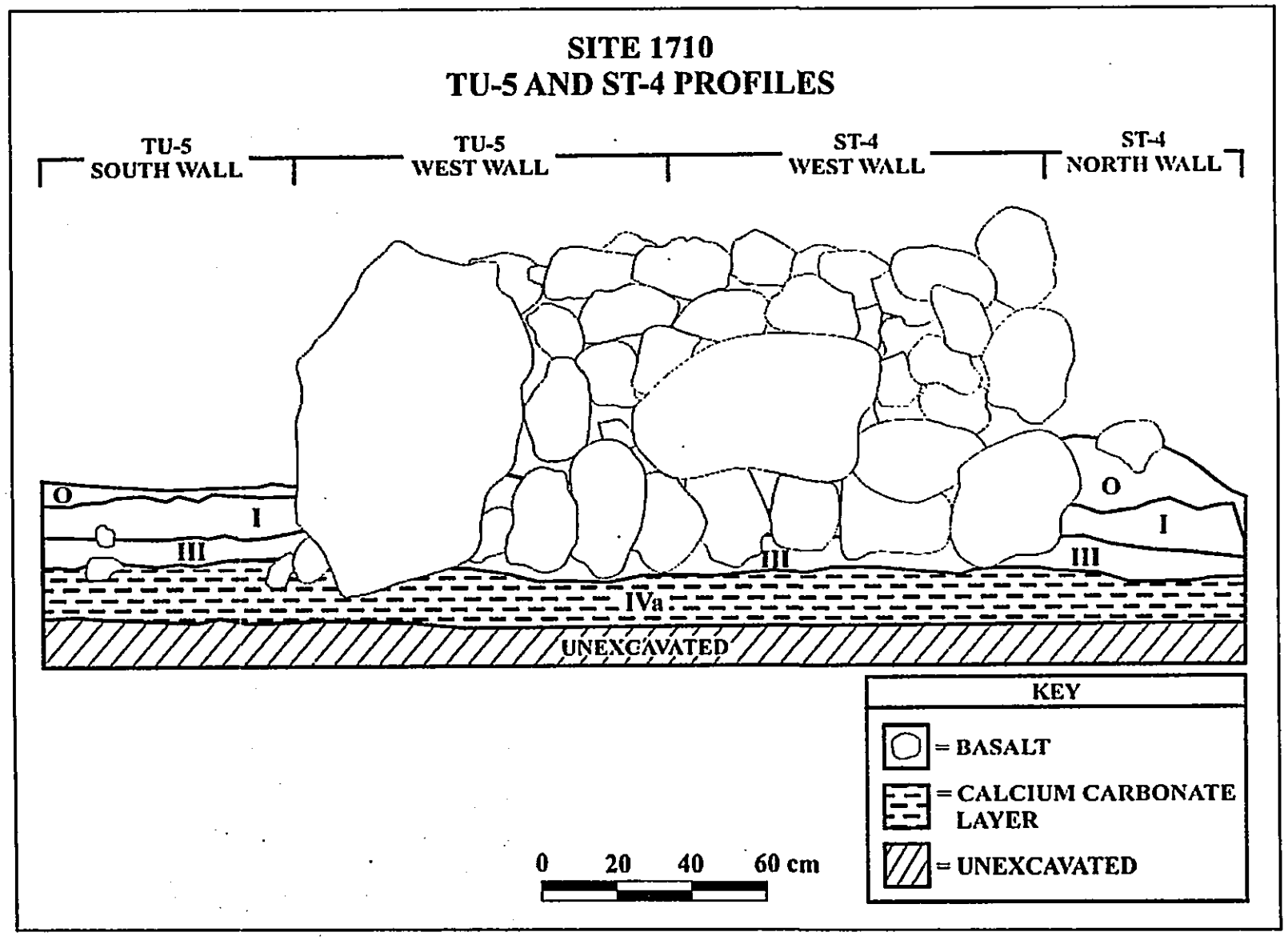

Figure 11: Site 1710, TU 5 & ST 4, Profiles.

amounts of non-worked coral were also recovered from several units. A single possible basalt flake was identified in TU-3, and an unworked volcanic glass pebble was recovered in TU-2. Possible thermally altered, angular rock was ubiquitous in Layer III. Most material was concentrated around Layer III and occurred in all test units excavated. The majority of material, however, occurred in TUs 2 and 4, located in the southwestern portion of the feature.

Recovered euro-American artifacts consisted of several fragments of non-diagnostic bottle glass, two machine-cut nails, one of which was hand headed, and unidentifiable flat metal fragments, probably from a single can. Some of the bottle fragments may be recent, occurring in the upper portion of the profile. Others, however, are firmly associated with Layer III.

Four charcoal samples were collected from this site but none were submitted for radiocarbon dating.

SUBSURFACE FEATURES: The single formal sub-surface feature identified at the site was a possible post-hole, initially observed at the bottom of Layer III in TU-4. It was tapered in profile, 0.35 m in diameter, and extended to 0.61 m in depth from the surface at which it was first identified. Fill was of soft, light colored sand, contrasting sharply with the hard calcium carbonate layer into which it intruded (Figure 12).

Although not formally recorded another possible sub-surface feature was the previously mentioned ash deposit, also located in TU-4. It contained no rock, was somewhat amorphous in plan view, and appeared basin shaped in profile, intruding 0.04 m into the underlying layer. This layer in the unit, Layer IVa, was otherwise culturally sterile.

SITE 2512 DESCRIPTION

State site 2512 is a complex of associated constructions located on the top of a small knoll, immediately north of a deeply incised, intermittent stream gully. With the exception of a possible feature to the east (Feature F), the complex measures 15.00 m N-S by 14.00 m E-W. Investigations conducted by Donham in 1990 divided this complex into 5 component features, described as follows:

"This complex consists of a low, eroded platform (Feature (A) that has a small enclosure (Feature B) at the southeastern corner. Two sets of terraces (Features C and D) are located below the western sides of the platform, along the slope of the knoll. A small rock mound (Feature E) is present on the platform.

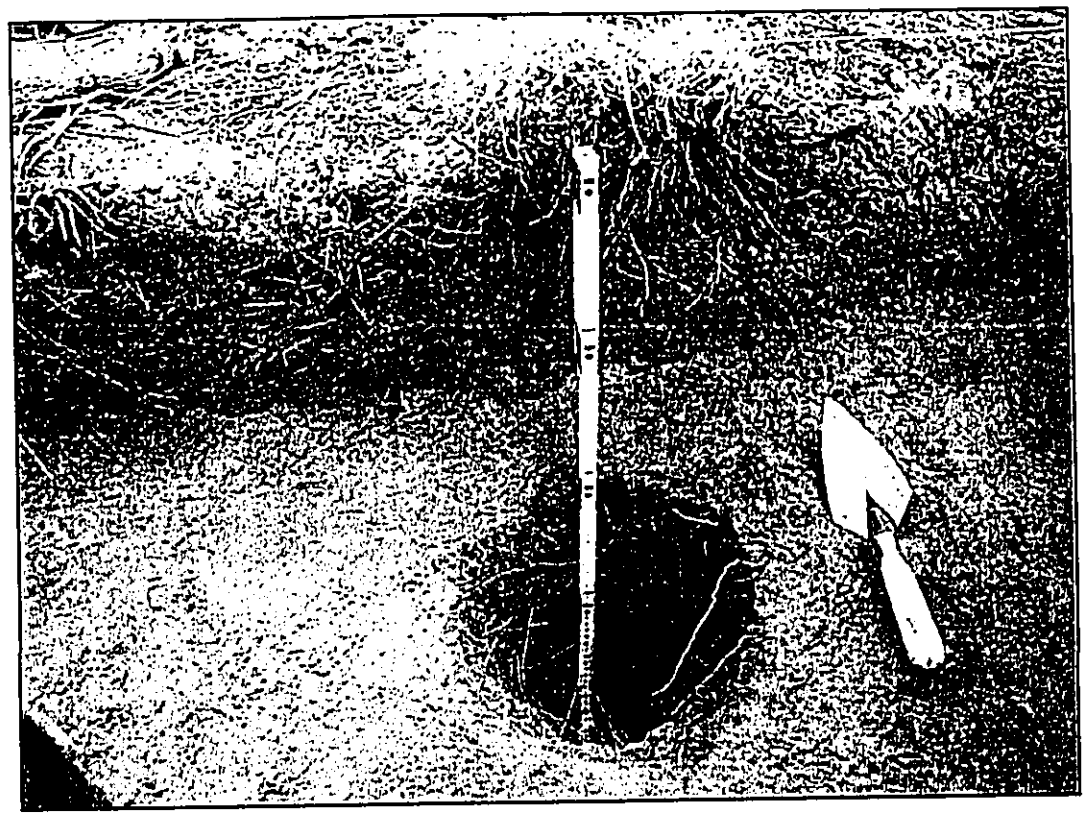

Figure 12: Site 1710, TU 4, SSF 1710.1.

The drainage gulch adjacent to the site has vertical, rock-faced sides. The streambed is c. 24 ft below the level of the site. At the time of survey, two water pools were visible in the streambed from the site. This is the only location of surface water observed within the project area.

FEATURE A: Platform;
FUNCTION: Habitation or shrine
DIMENSIONS: 9.00 m NE-SW by 6.50m NW-SE by 0.90 m maximum height

DESCRIPTION: Feature A appears to have been a rectangular platform situated on the crest of a small knoll, c. 1.20 m above surrounding terrain. The perimeter is intact at northern, western and southern corners, and along the northeast-facing side. Other sections of the perimeter have been washed out by slope erosion or possibly moved during later modifications. Intact portions of the perimeter consist of stacked boulders and cobbles that average 0.25-0.30 m in height. The western comer incorporates a bedrock face, and is 0.90 m high. The surface of the feature is level; the western half is covered with small gravels and the eastern half is dark reddish-brown gravely silt loam, leveled in places.

A small D-shaped terrace is present at the southern corner of the platform. This terrace is defined by a curved perimeter alignment along the west side, which raises the surface 0.15 m above the surrounding platform surface. The small terrace surface is littered with boulders and cobbles, some of which appear to be disturbed.

Down slope from the platform on the northern and southeastern side is a scattered deposit of small gravels and sparse fragments of *Cypraeidae* shell that appear to have washed off the platform. A considerable amount of soil also appears to have eroded from the top of the feature.

Three pieces of branch coral are present at the southwestern edge of the platform, adjacent to the Feature D terraces, which contains additional pieces of coral.

FEATURE B; Low enclosure
FUNCTION: Possible agriculture
DIMENSIONS: Interior area 2.90m N-S by 2.40m E-W; overall, 4.20m N-S by 3.40 m E-W by 0.35 m maximum

DESCRIPTION: Feature B is situated at the eastern corner of Feature A, and may represent a later modification to the original structure. The eastern wall of Feature B connects with the platform perimeter at the northern end of the enclosure. The southern side of the enclosure is also the southeastern side of the platform. Portions of the enclosure wall are up to 0.70 m wide and consist of two parallel boulder alignments with core filling. Other portions of the wall are loosely piled cobbles and boulders, or a single alignment of boulders.

The interior of the enclosure is cleared of all stones, and consists of level, light reddish-brown sandy loam with little to no gravel. The soil here contrasts with the soil present on most of the adjacent features. No portable remains were observed inside the enclosure. The interior surface is raised slightly above the platform surface and the adjacent ground to the east.

No opening is apparent in the low wall. The western side is in poor preservation, and the interior surface is nearly level with the top of the wall along this side.

FEATURE C: Terrace
FUNCTION: Agriculture/landscaping
DIMENSIONS: 8.90 m N-S by 1.50 m E-W by 0.30 m
FUNCTION: Agriculture

DESCRIPTION: Feature C is a long, narrow terrace situated along the western slope of the knoll, immediately down slope from the Feature A platform. The terrace may have extended around the northern base of the platform at one time; this area is presently much eroded and only traces of a possible perimeter are currently discernable. The terrace riser (along the downhill side) is defined by aligned boulders and stacked cobbles. The back of the terrace (uphill side) is defined by a vertical bedrock face with stacked boulders and cobbles on the north end and by the Feature D terraces on the south end.

Most of the interior surface area of the terrace is cleared of surface stone and leveled, with reddish-brown silty loam soil. No portable remains were observed on this terrace

FEATURE D: Terraced slope
FUNCTION: Agriculture/landscaping; possible shrine
DIMENSIONS: 7.00 m NW-SE by 4.00 m NE-SW by 1.02 m
maximum height

DESCRIPTION: At the southern end of Feature C, immediately upslope is a series of small semicircular alignments arranged in five levels along a relatively steep portion of the knoll slope. The upper level of the feature is a small soil flat (2.00 by 0.50m) adjacent to and just below the platform (Feature A) surface. The perimeter for this level is raised 0.20 m above the lower level to the west, and consists of cobbles and branch coral heads. A narrow flat is present around the base of this perimeter (3.00 by 0.30m), which is defined by aligned cobbles 0.35 m above the adjacent, lower level. A single large branch coral head is incorporated into this riser.

A third soil flat (3.00 by 0.80m) is present below the narrow terrace. This level is raised 0.32 m above the level below. At the northern end of this flat are two positioned upright slabs, both of which are 0.60 m high< The slabs are 0.40 m apart and define the southern end of a fourth small soil flat, which is raised 0.22m above the Feature C terrace. Coral is scattered around the uprights and on the lower level soil flats. The lower terrace alignments are positioned exposed bedrock.

FEATURE E: Rock mound
FUNCTION: Indeterminate/possible clearing pile
DIMENSIONS: 1.50 m NE-SW by 1.20m NW-SE by 0.20 m
maximum height

DESCRIPTION: This low rock mound (or pile) is located near the center of the Feature A platform, along the northwestern side. It consists of loosely piled boulders and cobbles, and is

situated along the western edge of the cleared portion of the platform surface. The feature may represent a clearing pile; as such, it would probably be a later modification to the original platform." (Donham 1990).

The present investigations found Donham's description of the site open to interpretation. First, the assertion that Feature B may be a later modification to Feature A brings into question its division into a separate feature. While indeed its level surface is a few centimeters higher than the adjacent surface of Feature A, the surface of Feature A is not completely level, the alignment separating the two not very pronounced, and that the surface soil of Feature B adjacent to Feature A contains only slightly more sand. Second, the nature of Features C and D can be questioned with the uppermost terrace of Feature D actually being a continuation of the retaining element of Feature A. In addition, several of the lower terraces of Feature D presently appear ephemeral, possibly the result of colluvial processes. Portions of these lower terraces, however, may also be steps to a trail. This would make Feature C the western manifestation of this trail, which continues through the uprights identified in Feature D, wraps around the south portion of Feature A, and increases in elevation to join Feature A at its southeast corner.

A sixth possible feature, ephemeral at best, was not noted by Donham and lies about 5 m to the east of the previously described complex. This is Feature F, a possible trail which runs for about 18 m along the bedrock overlooking the north side of the drainage (Figure 13). It is oriented in a rough east-west direction and incorporates three possible uprights into the bedrock, above the drainage's steep drop-off (Figure 14).

SITE 2512 METHODS

Site 2512 was excavated with five test units, one stratigraphic unit, and one shovel probe (Figure 15).

Excavation of the site began with the placement of two 2.00 m by 2.00 m test units placed in Feature A, TU-1 located toward the western edge of the feature, and TU-2 located toward the center of the feature, about 0.50 m to the east of TU-1. These units were excavated in order to open up large surface areas of the feature in hopes of maximizing the recovery of cultural remains while anticipating shallow soil depth. Both units were excavated in natural layers, TU-1 taken to bedrock, and TU-2 exposing bedrock in the majority of the unit, while being terminated 0.10 m into the culturally sterile substrate overlying bedrock in its northeastern quarter.

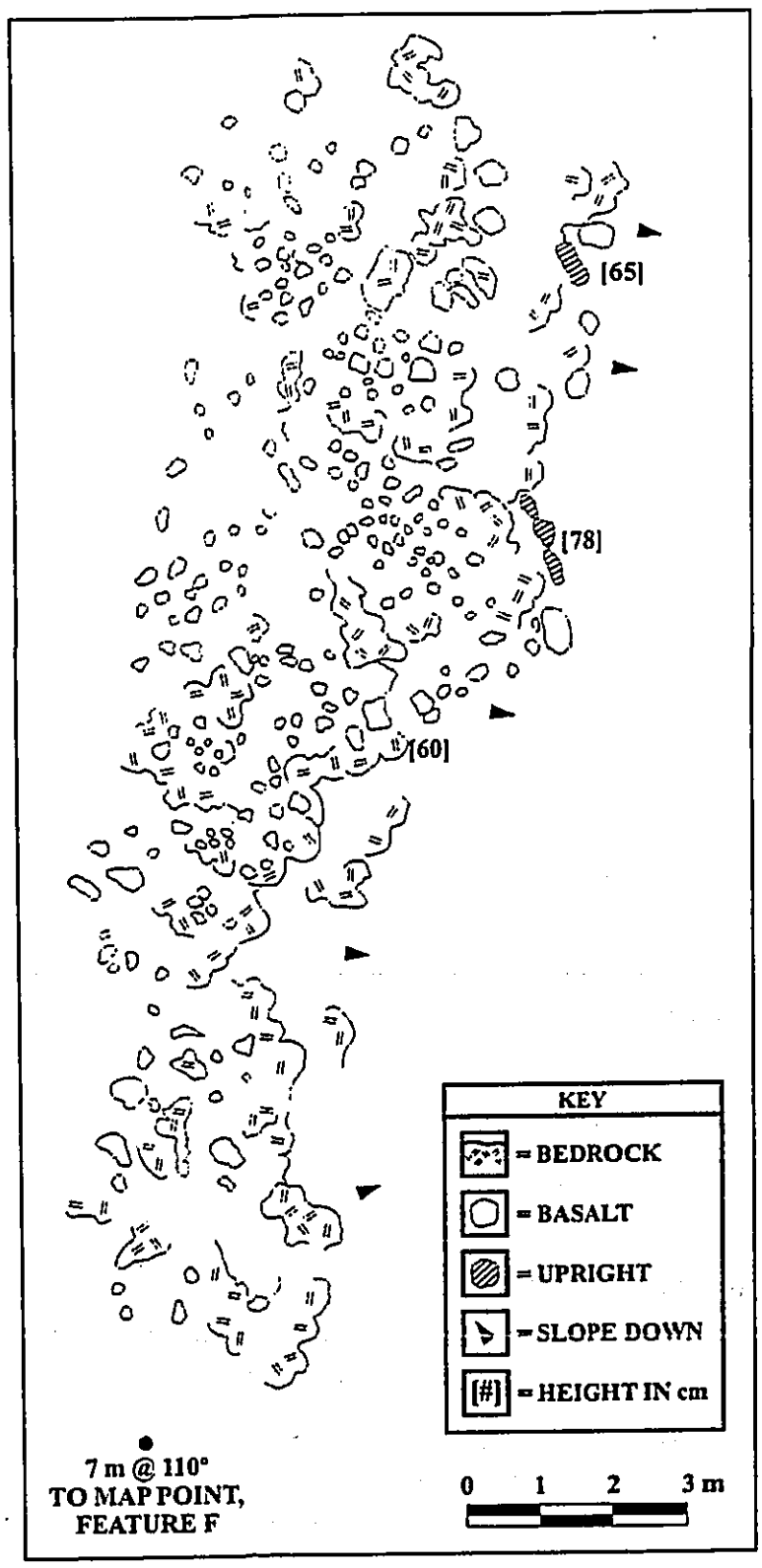

Figure 13: Site 2512, Feature F.

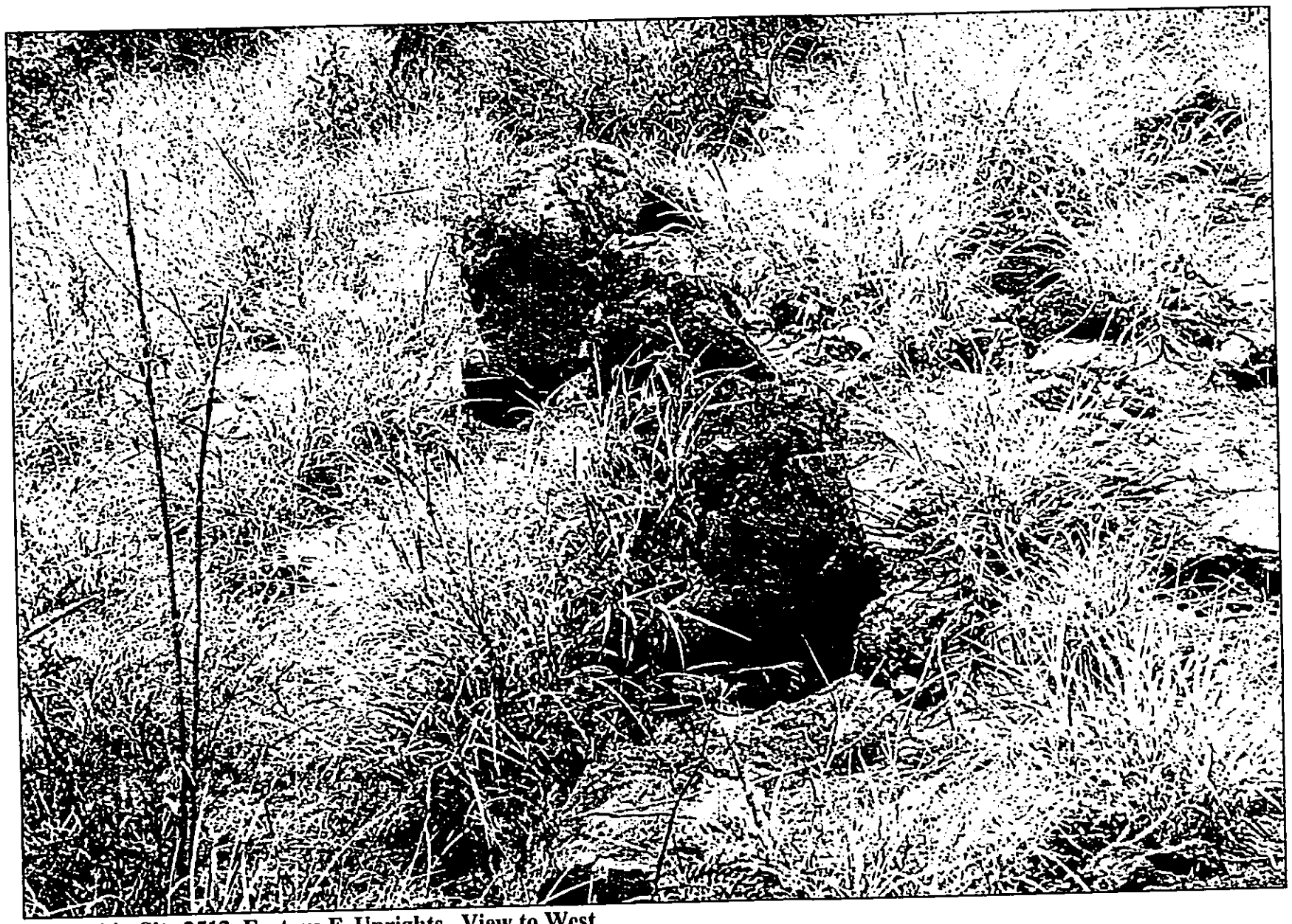

Figure 14: Site 2512, Feature F, Uprights. View to West.

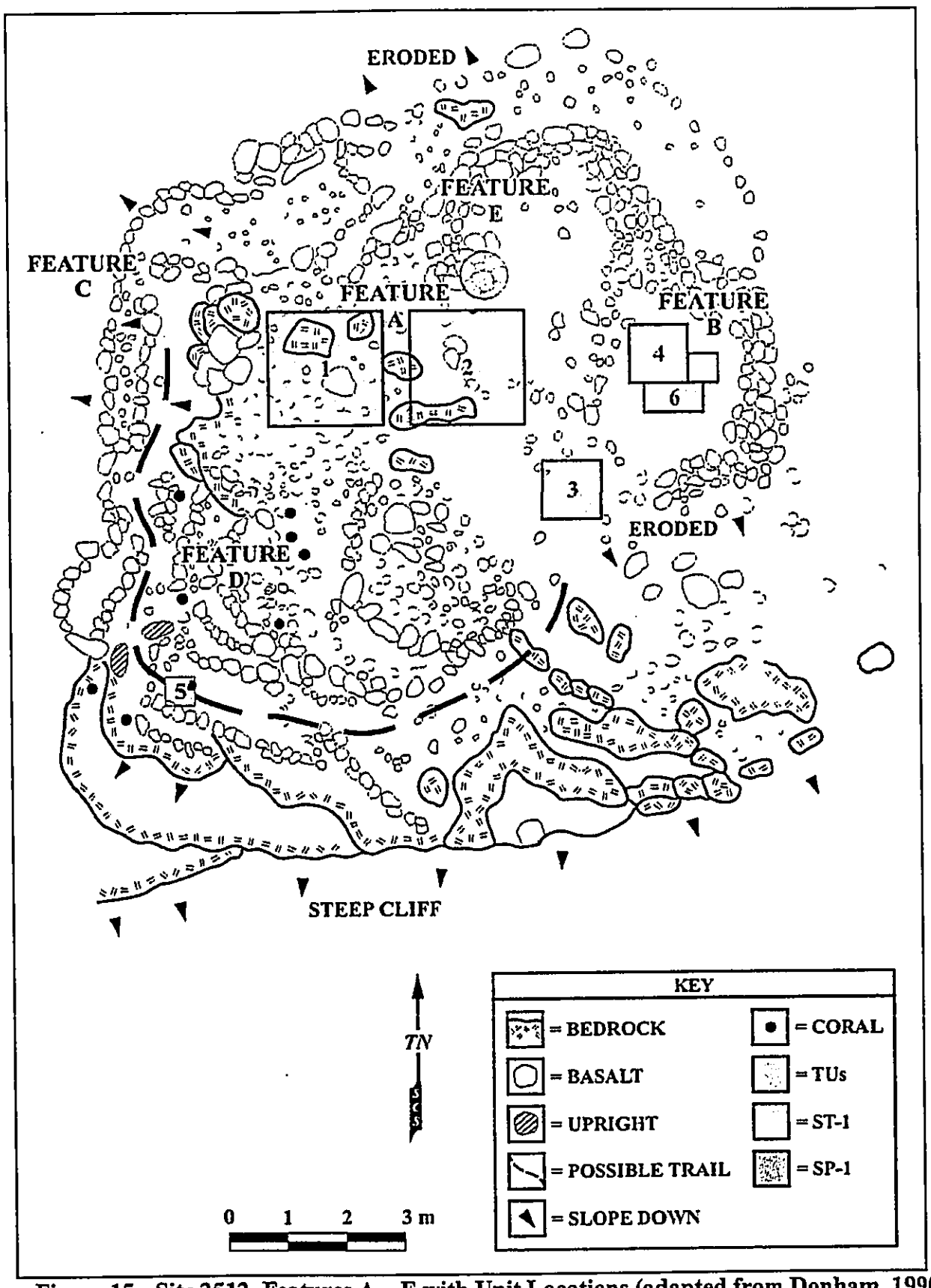

Figure 15: Site 2512, Features A – E with Unit Locations (adapted from Donham, 1990).

The next unit excavated was TU-3, a 1.00 m by 1.00 m unit placed in the southeastern portion of Feature A, in a soil filled area having apparent depth. The unit was located here to explore this apparent depth, and was excavated to bedrock according to natural layers.

The fourth unit excavated was TU-4, another 1.00 m by 1.00 m unit located in the northwest portion of Feature B, placed in order to explore this feature's nature. This unit was excavated according to natural layers, and exposed the northwestern portion of Subsurface Feature 2512-B.1, which then generated the excavation of ST-1 and TU-6. ST-1 was a 0.50 m by 0.50 m unit placed adjacent to TU-4, to the east, in order to completely expose the profile of SSF B-1. TU-6, a 1.00 m by 0.50 m unit, was located to the south of TU-4 and ST-1 in order to remove the southern half of the SSF, its fill collected in its entirety. TU-4 was terminated about 0.10 m below the bottom of the SSF, well into the sterile substrate identified in TU-2, while both ST-1 and TU-6 were terminated once they reached this same level. TUs 4 and 6 were excavated by natural layers.

TU-5 was a 0.50 m by 0.50 m unit located on the largest terrace-like component of Feature D, placed here in an attempt to determine its function. It was excavated in natural layers and taken to bedrock.

SP-1, the final excavation at the site, was a 0.80 m diameter shovel probe located in Feature E to determine the presence or absence of human remains. This unit was also terminated at bedrock.

A total of 11.80 square m of surface area was exposed at the site (6 % of Features A-D), and completed in approximately 11 person days.

SITE 2512 RESULTS

STRATIGRAPHY: Profiles at site 2512 were fairly consistent depending on depth of bedrock. They do, however, suggest deflation (see Appendix A).

The stratigraphy of the three units excavated in Feature A differed according to their position on the feature. The profile of TU-1 exhibited a single layer of soil overlying bedrock, the unit reaching a maximum depth of 0.14 m below surface. Indeed, approximately 20% of the surface of this unit was exposed bedrock (Figure 16). TU-2, however, exhibited three soil layers, with the second and third discontinuous. This is primarily due to the slope of the bedrock, which increases in depth across the feature to the north and east. While Layer Ia was ubiquitous across

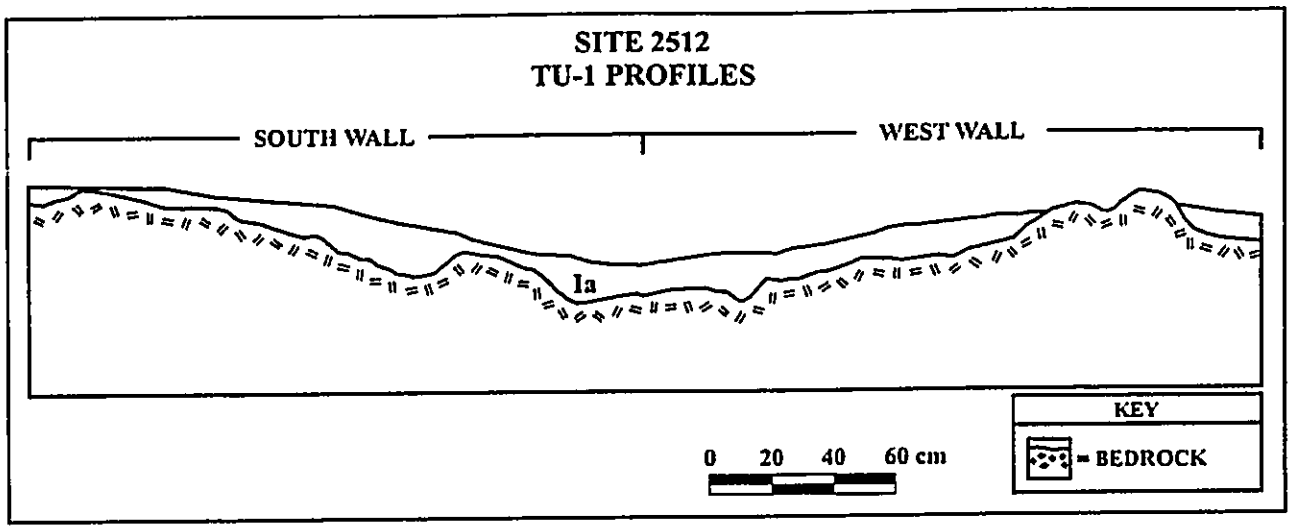

Figure 16: Site 2512, Feature A, TU 1, Profiles.

the unit, Layer IIb, a thin darker layer, was seen only the southern portion of the unit and overlay bedrock. Layer III only occurred in the northeastern portion of the unit, directly under Layer Ia, and was the reddish clay dominant substrate visible in the areas exposed by disturbance beyond the site. As such, where bedrock had not already been exposed, the unit was terminated approximately 0.10 m into this layer, with the unit reaching a maximum depth of about 0.25 m (Figure 17). TU-3 was located about a meter to the southeast of TU-2 and only exhibited 2 layers: Ia and IIb. Layer Ia was ubiquitous while IIb was isolated to a small area in the north portion of the unit. This unit was taken to a maximum depth of 0.23 m below surface, with the entire unit terminated at bedrock (Figure 18).

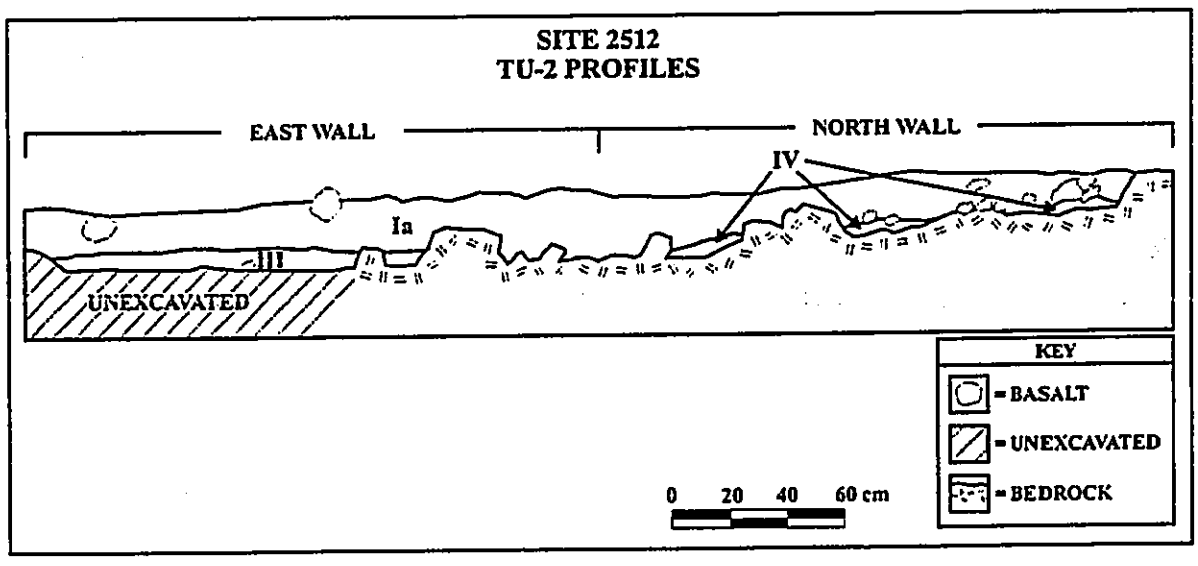

Figure 17: Site 2512, Feature A, TU 2, Profiles.

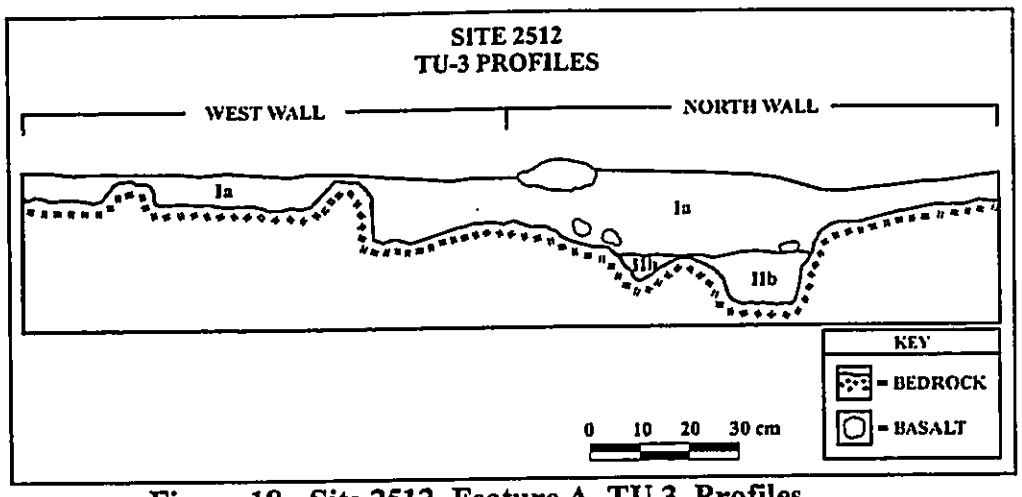

Figure 18: Site 2512, Feature A, TU 3, Profiles.

Three layers were also observed in Feature B, and occurred in all the three units excavated in a similar fashion. The major difference between the layers of Feature A and Feature B were the occurrence of Layer Ib, which was ubiquitous to all these units and up to 0.15 m thick, and Layer IIa, also ubiquitous and up to 0.18 m thick. Again, as in TU-2, where bedrock was not exposed, units were terminated after significant profile exposure was achieved in the culturally sterile Layer III (below Sub-Surface Feature 2512-B.1) (Figure 19).

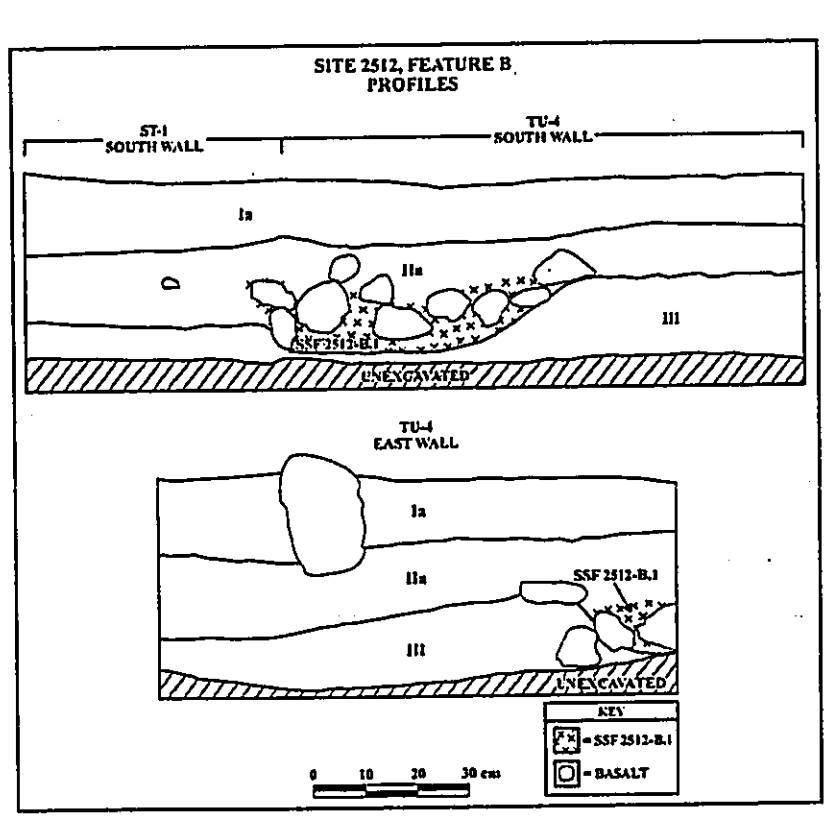

Figure 19: Site 2512, Feature B, TU 4 & ST 1 Profiles with SSF 2512-B.1.

The profile of the 0.50 m by 0.50 m unit excavated in Feature D, TU-5 exhibited two layers before being terminated 0.20 m below surface, at bedrock. The majority of the unit was comprised of Layer Ia, with the second layer being Layer IV. Layer IV reached a maximum of 0.05 m in thickness and appeared lighter in color with a diffuse boundary (Figure 20).

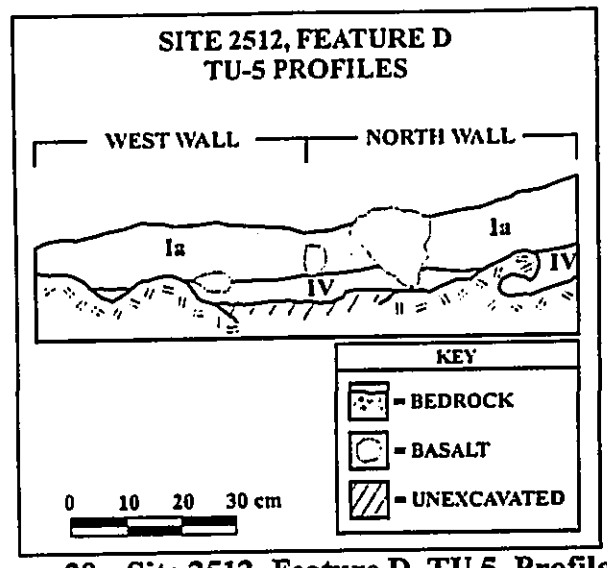

Figure 20: Site 2512, Feature D, TU 5, Profiles.

The soil layers at this site were consistent throughout all of the units. Layer Ia was a brown (7.5 YR 4/3) fine loamy sand to fine sandy clay loam with about 10% pebbles. The layer was structureless and non-sticky and non-plastic with many medium roots. The lower boundary is abrupt, and in some areas the layer bounds on bedrock. Layer Ib was a brown (7.5 YR 4/3) fine sand with about 5% pebbles. The layer is structureless and non-sticky and non-plastic with medium roots. The lower boundary was abrupt. Layer IIa was a dark brown (7.5 YR 3/3) fine sandy loam with about 5% pebbles. The layer was structureless and non-sticky and non-plastic with few medium roots. The lower boundary was abrupt. Layer IIb was a dark brown (7.5 YR 3/3) fine sandy loam with about 25% pebbles. The layer was structureless and non-sticky and non-plastic with few medium roots. The lower boundary was abrupt. Layer III was reddish brown (5 YR 4/4) silty clay loam with about 5% pebbles. The layer was structureless and non-sticky and non-plastic with few fine roots. The layer rested on bedrock. Layer IV was a brown (7.5 YR 5/4) silty clay loam with about 35% small pebbles. The layer consists of fine crumb peds with a weak structure and was slightly sticky and slightly plastic with many very fine to fine roots. The layer bounds on bedrock.

CULTURAL MATERIAL: All cultural material recovered from the site was attributable to native Hawaiians, and other than coral, was minimal. Many large pieces of non-worked

branch coral were identified on the site and coral was the only item found in TUs 1 and 5 (Figure 21). Both coral (much of it burnt) and marine invertebrate shell were recovered from TU-2, primarily occurring in the northeastern portion of the unit, at the bottom of Layer I. TU-3 also yielded coral and marine invertebrate shell, all invertebrate shell recovered from the eighth inch screen and all material deriving from Layer I. All cultural material recovered from the units in Feature B was derived from Layer II, with the majority being from a single, fragmented echinoderm shell occurring in SSF 2512-B.1.

Figure 21: Site 2512, Feature D, TU 5, Showing Coral on Surface.

SUBSURFACE FEATURES: SSF 2512-B.1 was the single subsurface feature was identified at the site, located in Feature B in all three units excavated (see Figure 19; Figure 22). This SSF originated at the bottom of Layer II, intruding 0.12 m into Layer III, and was a 0.70 m diameter pit filled with rock; charcoal and carbon stained soil (Figures 23 and 24). Also recovered from this SSF was a large fragmented echinoderm shell. The feature fill was a very dark brown (10 YR 2/2) sandy silt clay with about 60% pebbles and cobbles and charcoal and carbon staining throughout. The soil was structureless and slightly sticky and slightly plastic with few fine roots. The lower boundary was abrupt.

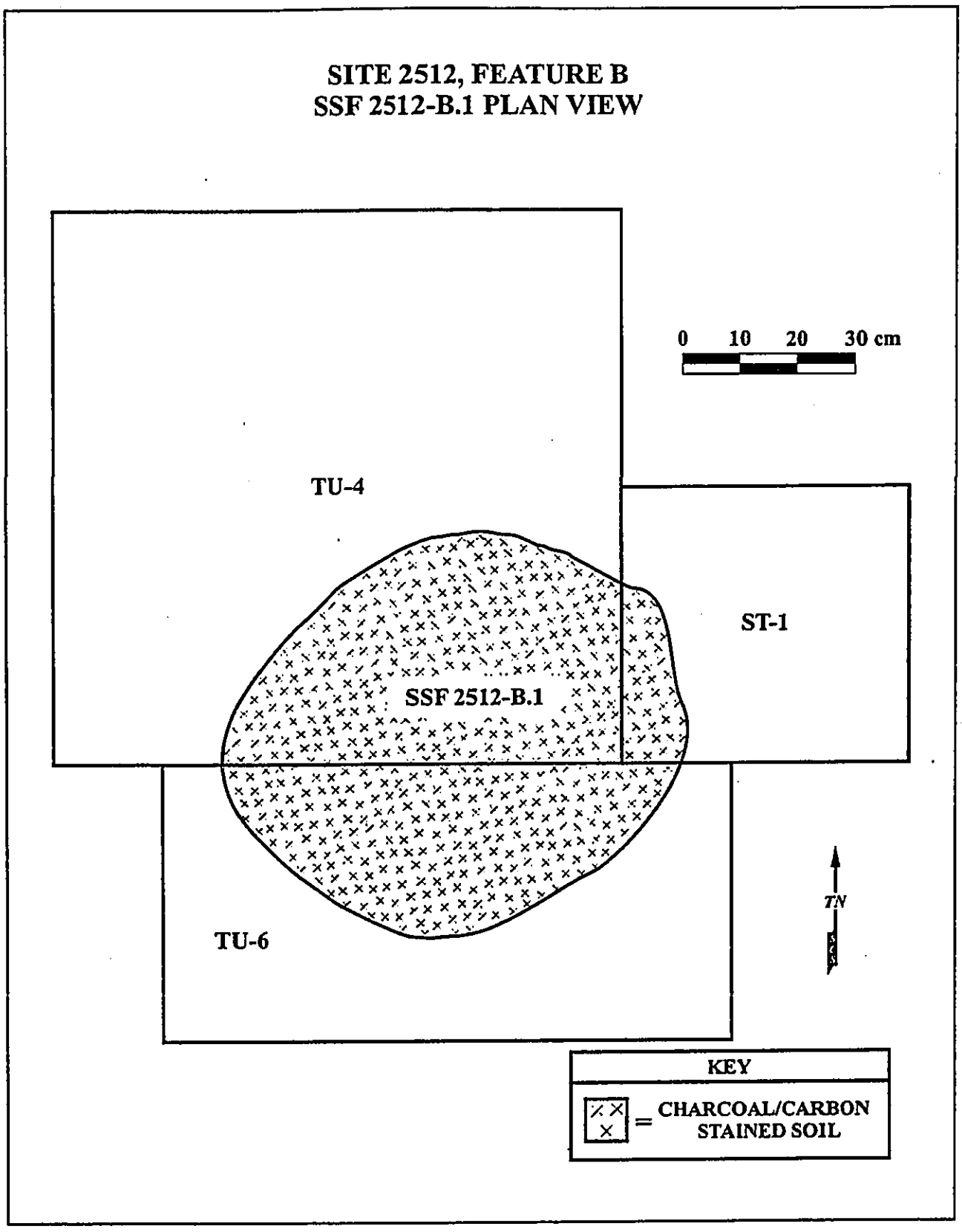

Figure 22: Site 2512, Feature B, SSF 2512-B.1, Plan View.

Figure 23: Site 2512, Feature B, SSF 2512-B.1. View to Southeast.

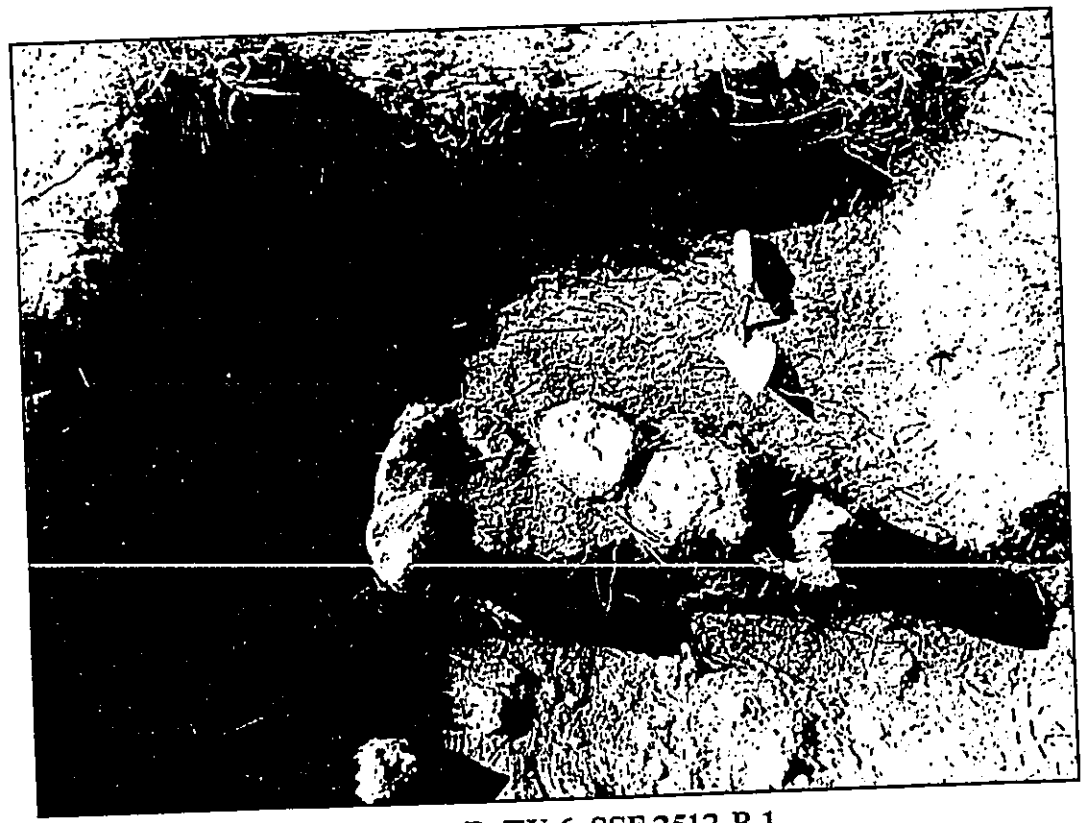

Figure 24: Site 2512, Feature B, TU 6, SSF 2512-B.1.

The large amount of charcoal was subsequently submitted for a radiocarbon date (Beta sample 204583/SCSRC422). The conventional radiocarbon age obtained from SCSRC422 was 20±60 BP. OxCal v3.5 provided a calibrated date, at 2 sigma, of 1680 (0.23)1740AD, 1800 (0.64) 1930AD, and 1940 (0.13) 1955 AD.

SITE 2514 DESCRIPTION

State Site 2514 is a platform located on a flat-topped knoll, overlooking a broad drainage area (Figure 25). It measures approximately 10.00 m N-S by 8.00 m E-W, and in 1990 was described by Donham as follows:

"The platform is situated on a level knoll and incorporates natural bedrock outcrops present along the slope and crest of the knoll. The perimeter consists of a'a boulders and vesicular pahoehoe boulders and cobbles. The western side is terraced, and extends horizontally 5.25 m out from the platform surface. The eastern side is vertically stacked, with a maximum width of 0.75 m.

Figure 25: Site 2514, Site Overview. View to North.

The platform surface is level, but irregular, due to protruding, partially buried stones. No pavement is evident. Sparsely scattered Cypraeidae shell fragments are present on the platform, in addition to several waterworn basalt pebbles. Pockets of reddish-brown sandy loam are present on and adjacent to the platform.

Additional terrace alignments may well be present along the natural terrace slope, to the north and south sides of the platform. These features will only be identified through extensive vegetation clearing" (Donham, 1990).

The present investigations observed further details. Mapped, but not described was the occurrence of a sub-feature at the southern end of the site. This consisted of a near perfect semicircular arrangement of rocks surrounding an approximately 0.50 m diameter area containing dense small echinoderm fragments. Also mapped but not described was a cluster of small waterworn cobbles on the sites eastern margin. In addition, it should be noted that the entire area surrounding the platform appears quite disturbed, although a fair amount of scattered midden was observed extending out into this disturbance, from the eastern and northeastern side of the feature.

Terrace alignments beyond this feature were not observed.

SITE 2514 METHODS

Excavation at site 2514 was conducted with three test units (Figure 26).

TU-1 was a 1.00 m by 2.00 m unit placed in the southern half of the platform in an area of surface soil within its interior, with the south end of this unit also overlaying a portion of the features south retaining element. The unit was placed to help understand the temporal and functional nature of the feature, in addition to expose its architecture. TU-1 was excavated by natural layers and terminated at bedrock.

TU-2 was a 1.00 m by 0.50 m unit placed over the sub-feature (SF 2514.1) located on the southern margin of the site in order to explore the nature of this sub-feature. This unit was positioned so that it could divide the SSF in half, bisecting it across its center. Excavation began with the east half of the sub-feature being removed and screened separately, followed by the excavation and screening of non-feature matrix, which was taken to bedrock. A profile of this bisect was then drawn, followed by the removal of the sub-features west half, collected in its

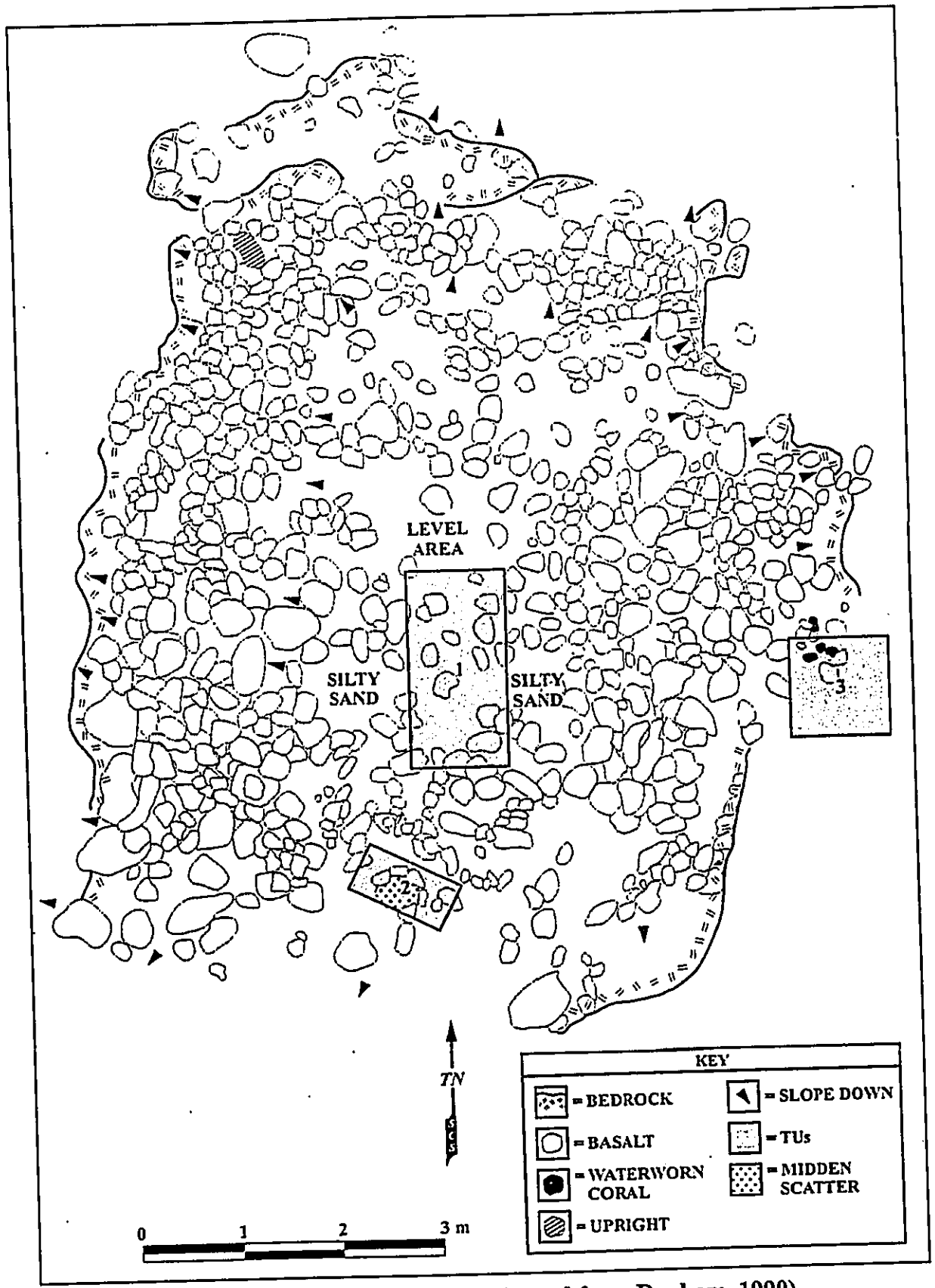

Figure 26: Site 2514 with Unit Locations (adapted from Donham, 1990).

entirety. Non-feature matrix in the units west half was not excavated, and the unit terminated. Material from this SSF was submitted for radiocarbon dating.

The final unit excavated, TU-3, was a 1.00 m by 1.00 m unit placed along the features east edge in the area containing several water-worn cobbles. This unit was excavated to see if the area contained additional subsurface cultural material, although much of the unit appeared to be in disturbed area. TU-3 was excavated in natural layers and taken to bedrock.

A total of 3.5 m of surface area was excavated at this site (4%), and completed in about 5 person days.

SITE 2514 RESULTS

STRATIGRAPHY: Only a single layer was recorded in all three of the units excavated at the site, and all were shallow, excavated to bedrock (see Appendix A). The soil of TU-1 was slightly different than the other units, containing more sand toward its surface and more silt toward its bottom. In addition, a poorly defined carbon stained area was identified in its northwest portion. Otherwise, the soils of all three units were remarkably similar. Maximum depths were 0.23 m for TU-1, 0.10 m for TU-2, and 0.20 for TU-3 (Figures.27 and 28).

Layer I was a brown (10 YR 4/3) loamy fine sand with about 25% pebbles and cobbles. The layer was structureless and non-sticky and non-plastic with medium to fine roots. The layer bounds on bedrock.

The southern portion of TU-1 was also situated so that it penetrated the interior of the features retaining element (Figure 29). Excavation revealed that this architecture consisted of a single course of cobbles resting on bedrock.

CULTURAL MATERIAL: Gastropod shell formed the majority of the cultural material at the site, followed by echinoderm shell. Densities of marine shell were similar between TUs 1 and 3, units located within and outside of the features retaining element, although TU-3 also contained several small water worn cobbles. A single piece of volcanic glass debitage was recovered from TU-1, while a single piece of basalt debitage was recovered from TU-3. These were the only other manufactured artifacts recovered from the site. A fairly large quantity of echinoderm shell was also found in the sub-feature in TU-2.

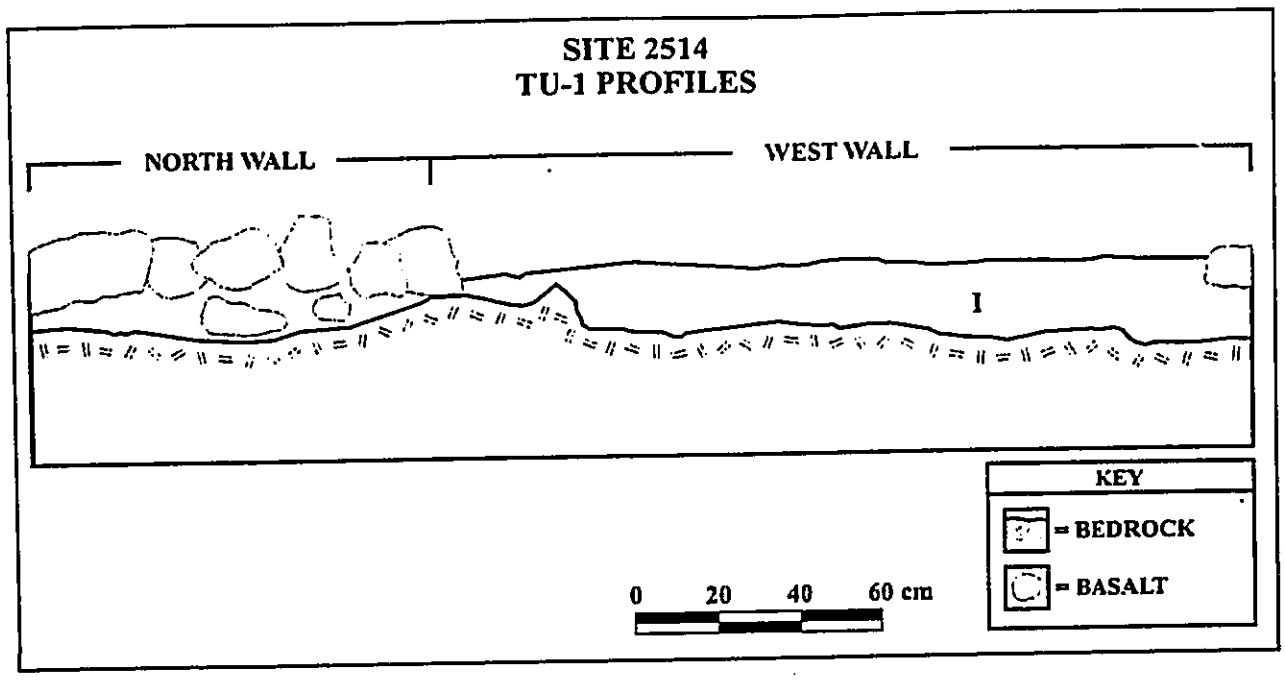

Figure 27: Site 2514, TU 1, Profiles.

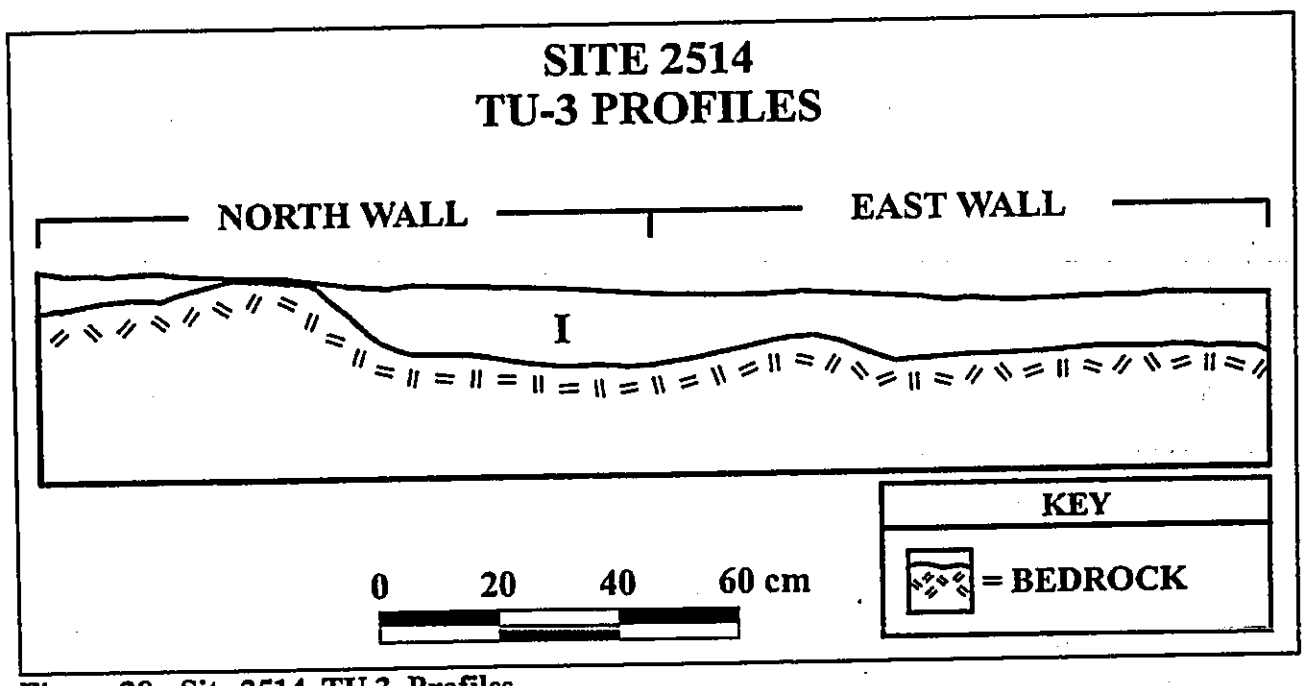

Figure 28: Site 2514, TU 3, Profiles.

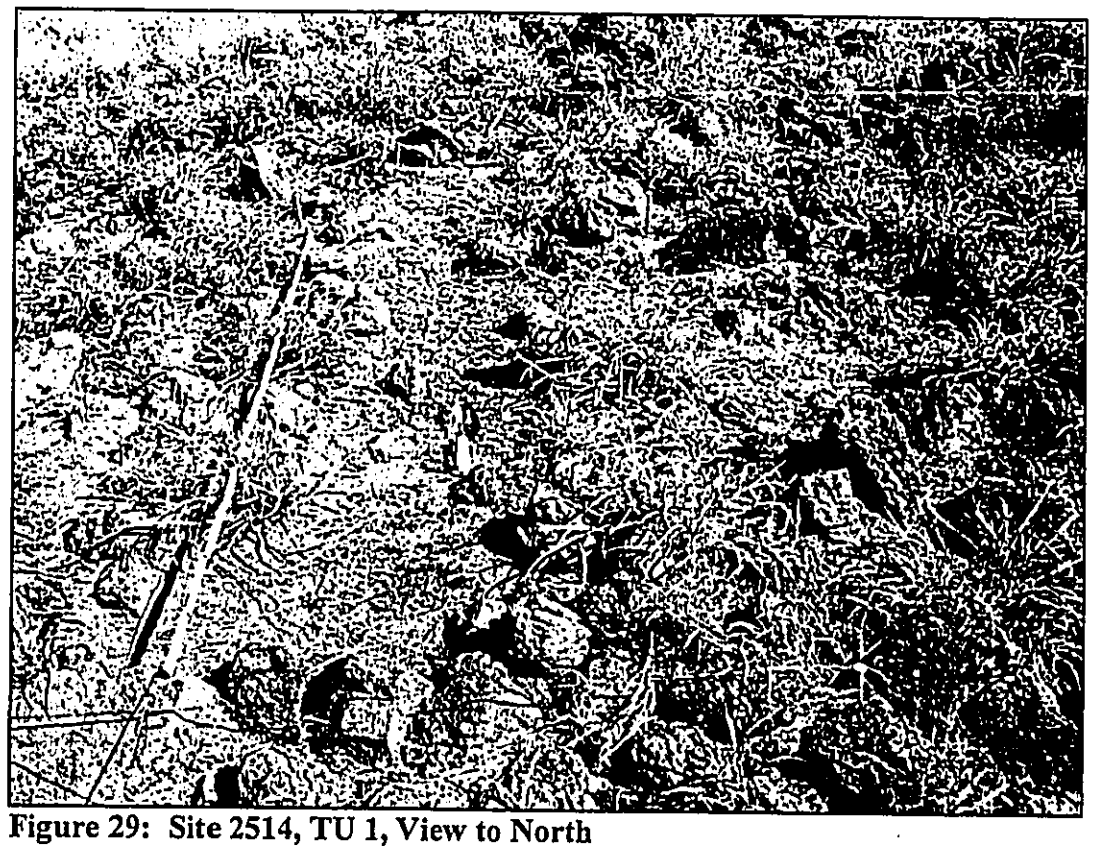

Figure 29: Site 2514, TU 1, View to North

SUBFEATURES: Identified at the southern end of the site, immediately outside of the platforms retaining element was sub-feature 2514.1 (Figure 30). On the surface this sub-feature appeared as a semi-circular alignment of large cobble slabs, delineating the northern boundary of a 0.80 m diameter area containing many small echinoderm shell fragments. Excavation subsequently revealed it to be less than 0.10 in depth, rested on bedrock, and did not contain additional buried rocks in the alignment (Figure 31). The matrix was ashy silt with and enough charcoal recovered to be submitted for a radiocarbon date.

The feature fill was a brown (10YR 4/3) loamy fine sand with about 25% pebbles and cobbles. The soil was structureless and non-sticky and slightly plastic with few medium to fine roots. SSF 2514.1 rests on bedrock.

The radiocarbon dating sample (Beta sample 204585/SCSRC424) provided a conventional radiocarbon age of 320±40 BP. OxCal v3.5 provided a calibrated date, at 2 sigma, of 1460 (1.00)1660AD.

Figure 30: Site 2514, TU 2, SSF 2514.1.

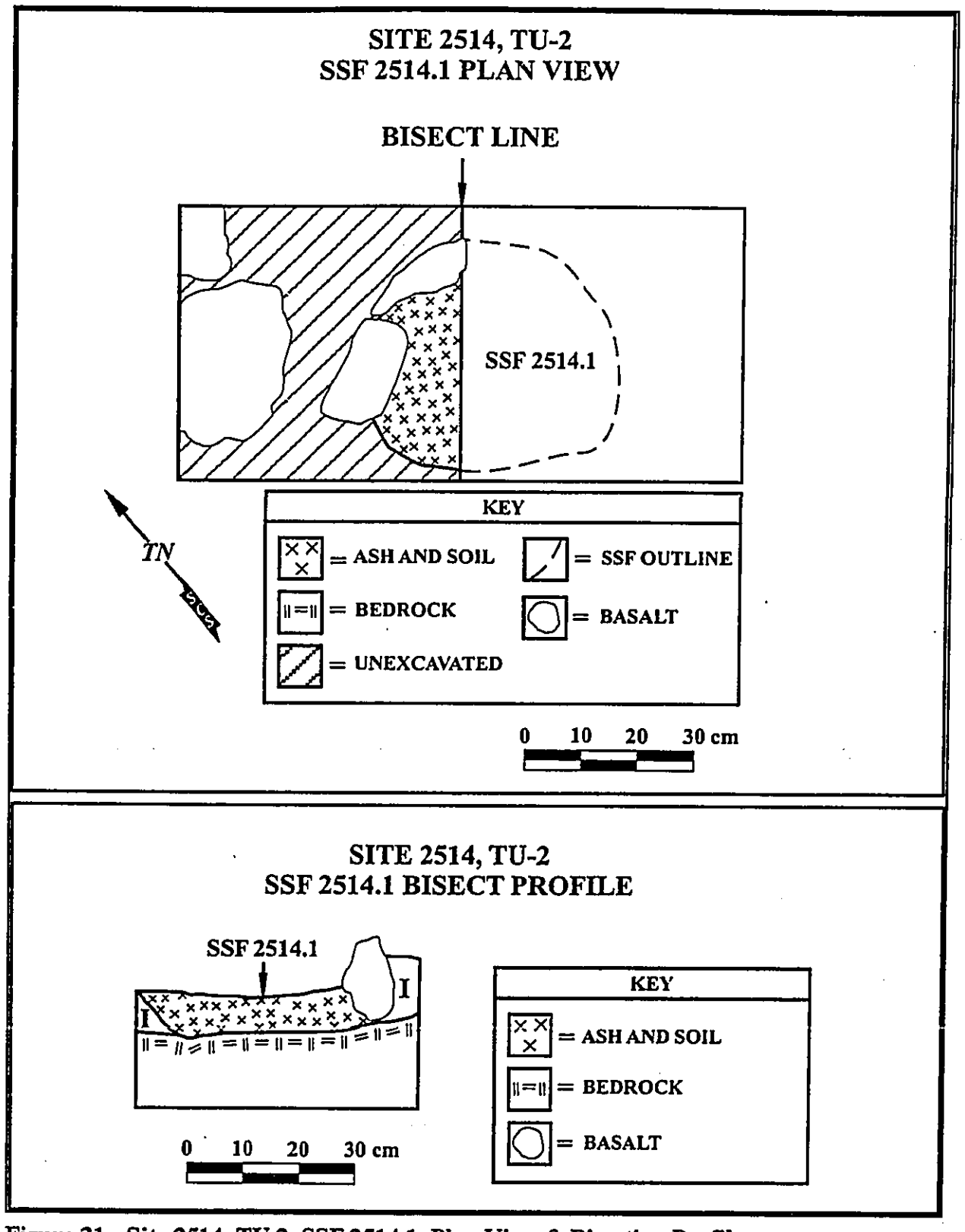

Figure 31: Site 2514, TU 2, SSF 2514.1, Plan View & Bisection Profile.

SITE 2516 DESCRIPTION

State site 2516 consists of two features located on a flat area, just below the steep west-facing slope of a large natural terrace. Overall site dimensions are 16.00 m N-S by 5.00 m E-W. In 1990 it was described by Donham:

"Two low enclosures were identified at this site. Feature A is a circular enclosure and Feature B is roughly rectangular. They are located 6.50 m apart, along a N-S line. Feature A is the northernmost enclosure. Subsurface midden remains were collected from Feature B.

FEATURE A: Low enclosure
FUNCTION: Agriculture
DIMENSIONS: Interior, 2.05 m N-S by 2.00 m E-W; overall 3.80 m N-S by 4.70 m E-W by 0.45 m maximum wall height

DESCRIPTION: Feature A is a doughnut-shaped wall consisting of loosely piled or mounded a`a cobbles. A portion of the wall (northwest side) is stacked up to four courses high, but is not formally faced. This section has the highest exterior wall height (0.45 m). Average exterior wall height is 0.10 m, and average interior wall height is 0.20 m. Width of the wall varies from 0.90 to 1.40 m.

The interior area is level and free of surface stones, however, numerous buried stones are slightly protruding. Reddish-brown silty loam that is slightly darker than exterior soil is present inside the feature. No portable remains were found inside, however, two Cypraeidae fragments were observed outside, along the adjacent hillside to the east.

No obvious opening is present in the wall; however, there is a 2.00 m wide section at the south side that consists of a partially buried alignment with few surface stones. This section of the wall is considerably narrower than other sections.

FEATURE B: Low enclosure
FUNCTION: Temporary habitation
DIMENSIONS: Interior 4.80 m N-S by 2.70 m E-W; overall 6.00 m N-S by 4.40 m E-W by 0.40 m maximum wall height

DESCRIPTION: This enclosure is roughly rectangular in plan view, with the major axis oriented N-S. The wall consists of stacked cobbles and a single course of boulders turned on edge. Portions of the wall appear to have been double alignments (possibly bi-faced) with core filling. Maximum wall height (0.40 m) is on the exterior side of a large boulder set on edge. This

boulder is located at the southeastern corner of the wall, where four large boulders are concentrated. A 1.75 m wide opening is present in the center of the west side of the enclosure. Large boulders are set on end at both sides of this opening.

The interior area is flat and cleared of nearly all surface stones: no buried stones are indicated under the leveled soil floor. A 0.50 by 0.50 m square test unit was excavated near the center of the enclosure. Three soil layers were encountered, one of which (Layer II) contained cultural remains.

Layer I extends from the surface to 0.10 m below surface and consists of dark reddish-brown silty clay loam with a moderate amount of pebble-size gravel. Layer II extends from 0.10 to 0.19 – 0.21 m below surface and consists of dark reddish-brown silty clay with very few pieces of gravel. The boundary between Layers I and II is very diffuse, as is the boundary between Layers II and III. Layer III extends from 0.19-0.21 to 0.26 m below surface and consists of reddish-brown silty clay with densely packed large pebbles and small cobbles. This layer overlies impenetrable decomposing bedrock.

Portable remains recovered from screened Layer II soil include minute basalt and volcanic glass waste flakes (one of each), wood charcoal, *Echinoidea, Crustacea, Cypraedae*, and *Brachidontes* c.. All of the recovered portable remains are less than 1/4 inch in sizs. A single minute piece of *Crustacea* was recovered from the Layer III soil" (Donham, 1990).

The current investigations found Donham's description accurate, with the exception of subsequent disturbance. At present, the southern portion of Feature A has been quite disturbed with a short wall section built, approximately 0.70 m in height, located about 4.00 m to the northwest. A moderate sized dozer push pile is also located in this area (Figure 32). Evidence of recent disturbance additionally occurs to the southeast of Feature B. In this area, two mounds of rocks have been constructed, about 0.70 m high and about 1.00 m in diameter (Figure 33).

Donham's 1990 test unit in feature A was easily identified.

SITE 2516 METHODS

After extensive clearing exposing both site features and the area around them, two test units were excavated (Figure 34).

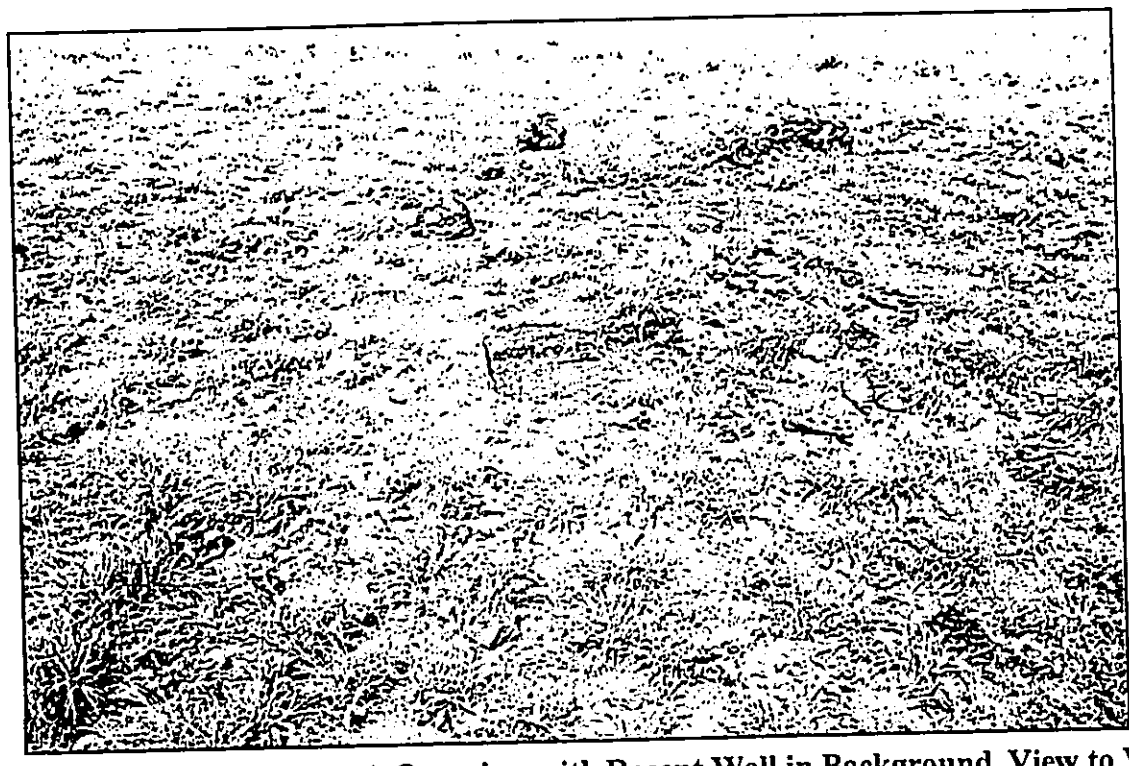

Figure 32: Site 2516, Feature A Overview with Recent Wall in Background. View to West.

Figure 33: Site 2516, Feature B Overview with Recent Rock Piles in Background. View to Southeast.

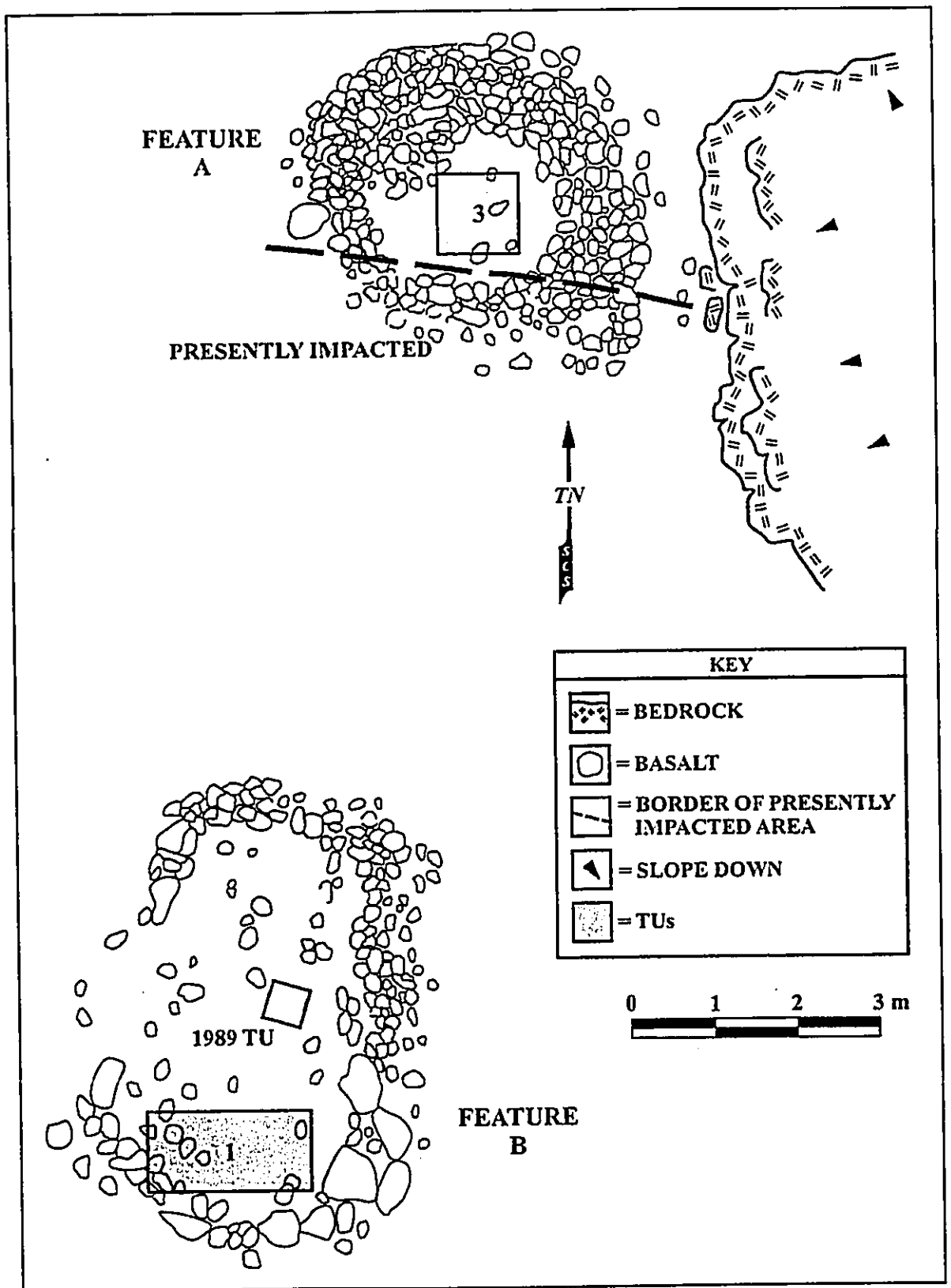

Figure 34: Site 2516, Features A & B with Unit Locations (adapted from Donham, 1990).

TU-1 was a 1.00 m by 2.00 m unit placed in the interior of Feature B, along its southern margin, adjacent to its south wall. This unit was located in hopes of finding subsurface features, being placed on the leeward side of the features south wall, with this portion of the feature apparently least affected by the prevailing winds. The unit was excavated in layers and levels, the data from the 1990 test unit indicating the unclear nature of natural layer boundaries. TU-1 was terminated at contact with a layer of dense, hard packed colluvial gravel mixed with decomposing bedrock, which corresponded to the 1990 units layer III, a nearly sterile layer under laying its primary cultural layer.

The second unit excavated at this site was TU-2, a 1.00 m by 1.00 m unit placed in the center of Feature A, and encompassing approximately a third of its soil filled interior. Placement of this unit was implemented to investigate feature function and temporal position. Excavation was conducted in natural layers, with the unit terminated at its contact with the same substrate identified in TU-1. A sub-surface feature was identified in this unit and bisected on a N-S axis. Fill from the south half of this subsurface feature was screened separately, while the fill from its north half was collected in its entirety.

A total of 3.00 m of surface area was excavated at this site, comprising 7% of its feature area and completed in about 5 person days.

SITE 2516 RESULTS

STRATIGRAPHY: Stratigraphy differed between Features A and B, with the stratigraphy in TU-1, differing from the 1990 test unit excavated in the same feature (see Appendix A).

TU-1 was located in Feature B and demonstrated two soil layers before reaching a maximum depth of 0.27 m (Figure 35). Because layer boundaries were ephemeral, however, and the unit was excavated in three arbitrary levels, the thickness' of these layers being problematic. The primary difference between layers in TU-1 and the first two layers in the 1990 TU is that Layer I, a silty clay loam, is the primary cultural bearing layer in TU-1, while Layer II is the primary cultural bearing layer in the 1990 TU. An ill defined lightly carbon stained area containing much charcoal was observed toward the Layer I/IIIa interface in the southern portion of TU-1, and a fair amount of charcoal and cobble sized rock also observed in the vicinity. This charcoal was collected and combined with that of the carbon stained area and subsequently submitted for a radiocarbon date.

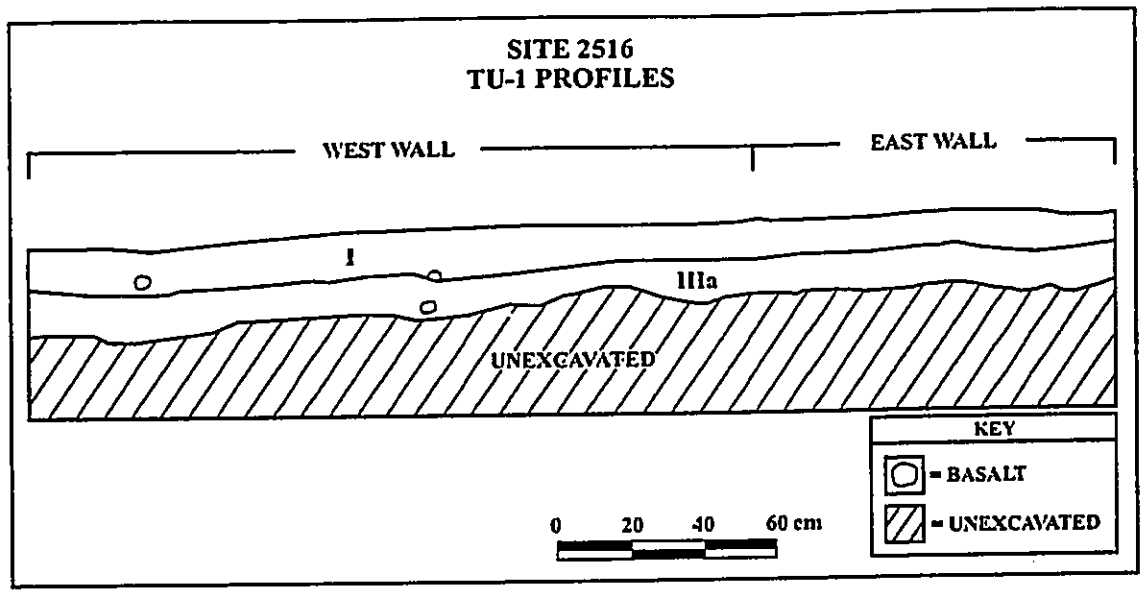

Figure 35: Site 2516, Feature B, TU 1 Profiles.

TU-2, located in Feature A, demonstrated three well-defined layers before being terminated at its contact with a pavement similar to that of TU-1 (0.35 m below surface) (Figure 36). All layers contained cultural material, with Layer II containing the overwhelming majority. Layer IIIb, with the exception of an intrusive sub-surface feature, corresponded well with Layer II in the 1990 unit of Feature B, in its relative lack of rock.

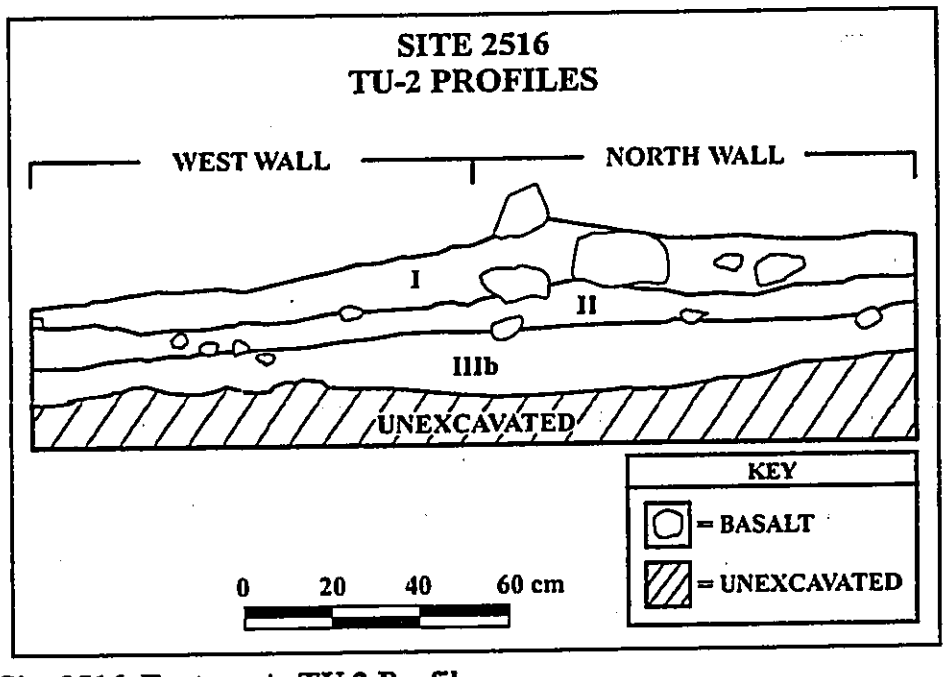

Figure 36: Site 2516, Feature A, TU 2 Profiles.

CULTURAL MATERIAL: All cultural material recovered is attributable to native Hawaiians and consisted primarily of marine gastropod shell, although coral is well represented, especially in TU-1. Echinoderm remains were minimal in this unit with the exception of a large *Heterocentrotus* spine, which may be a tool. This situation contrasts with the 1990 TU, where echinoderm shell was the dominant remains.

Cultural remains from Layer I in TU-2 were minimal, although the recovery of a piece of volcanic glass is noteworthy. Another piece of volcanic glass was also recovered from Layer II, but gastropod shell remains were common. The midden recovered from Layer IIIb outside of the intrusive sub-surface feature was greater than that of Layer I, but less than Layer II, and also dominated by marine gastropod shell. Coral is poorly represented in this unit.

SUBSURFACE FEATURES: Sub-surface Feature 2516-A.1 was not completely excavated, extending into the east wall of TU-2. About four fifths of it was exposed in plan view, however, and this exposure showed it to be a hearth lined with large cobbles with a north-south diameter of 0.60 m (Figures 37 and 38). A bisection revealed the feature to be 0.12 m in depth and filled with brown loamy silt containing large pebbles/small cobbles (Figure 39). Although several burnt shell fragments were recovered, the feature yielded little charcoal. Rock in the fill appeared to be thermally altered

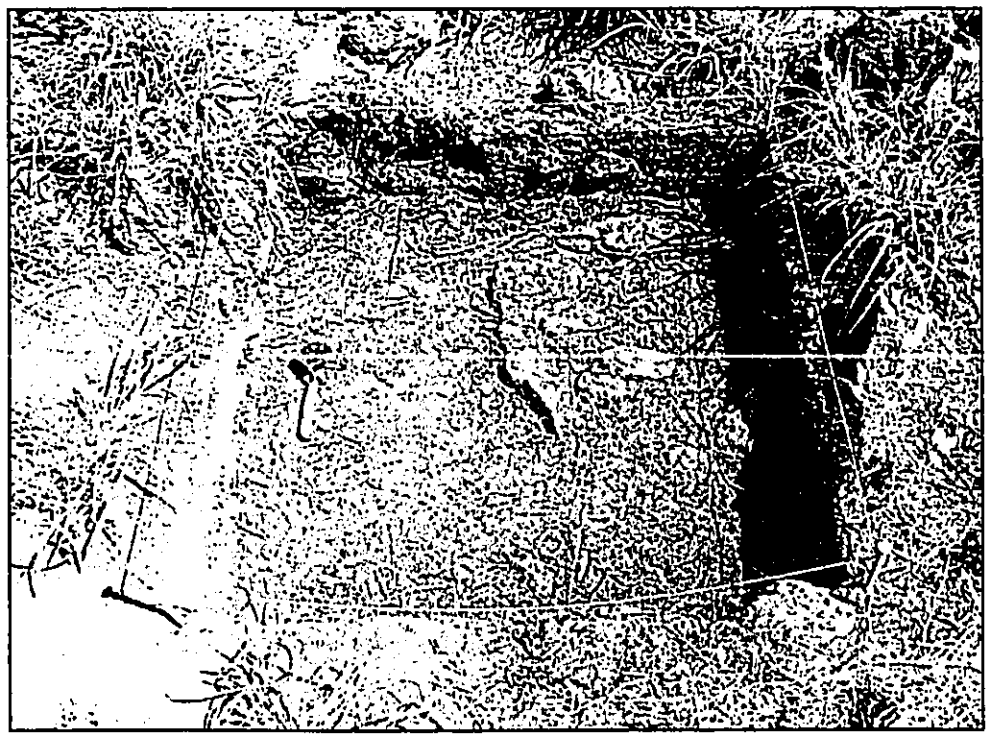

Figure 37: Site 2516, Feature A, TU 2, SSF 2516-A.1.

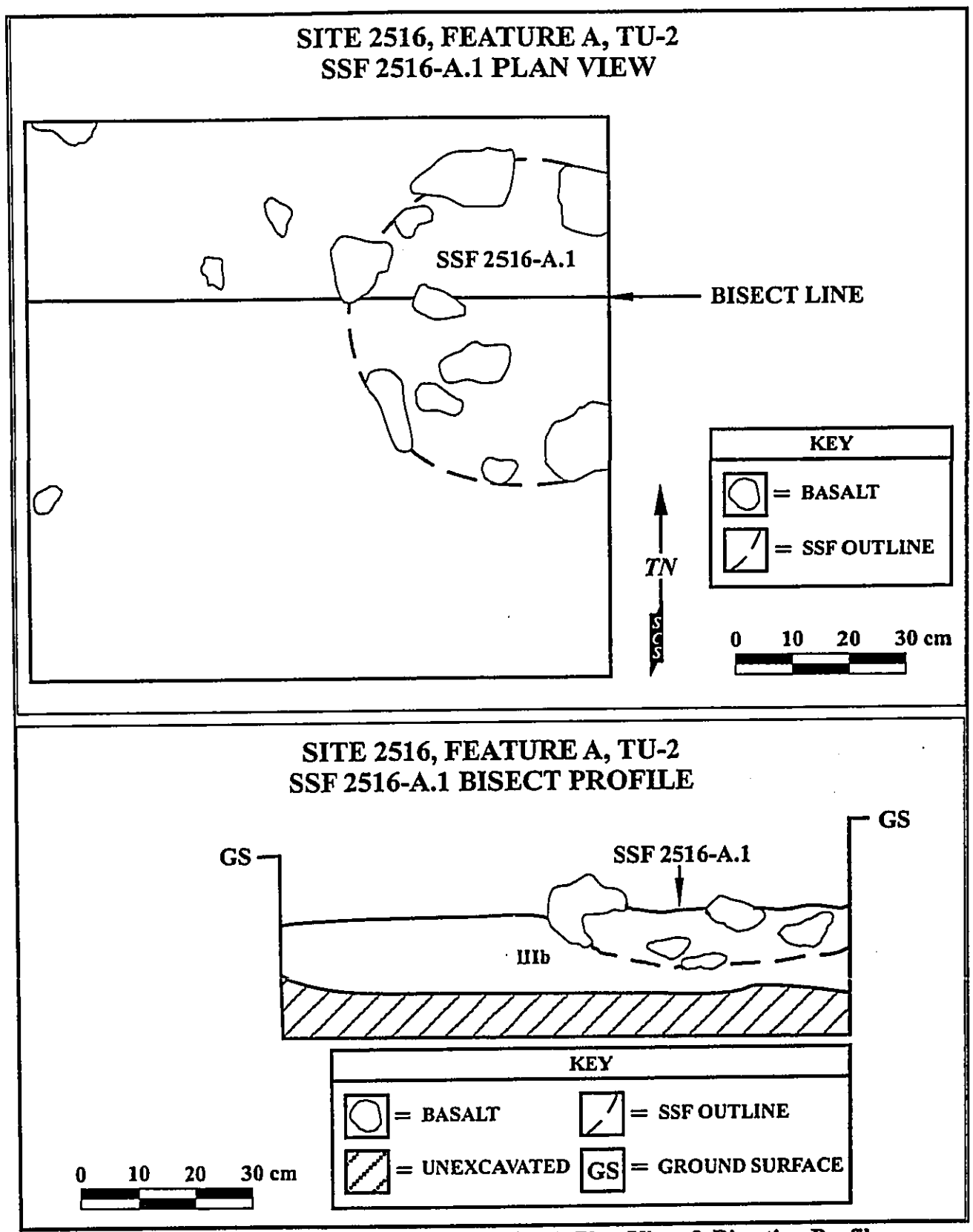

Figure 38: Site 2516, Feature A, TU 2, SSF 2516-A.1, Plan View & Bisection Profile.

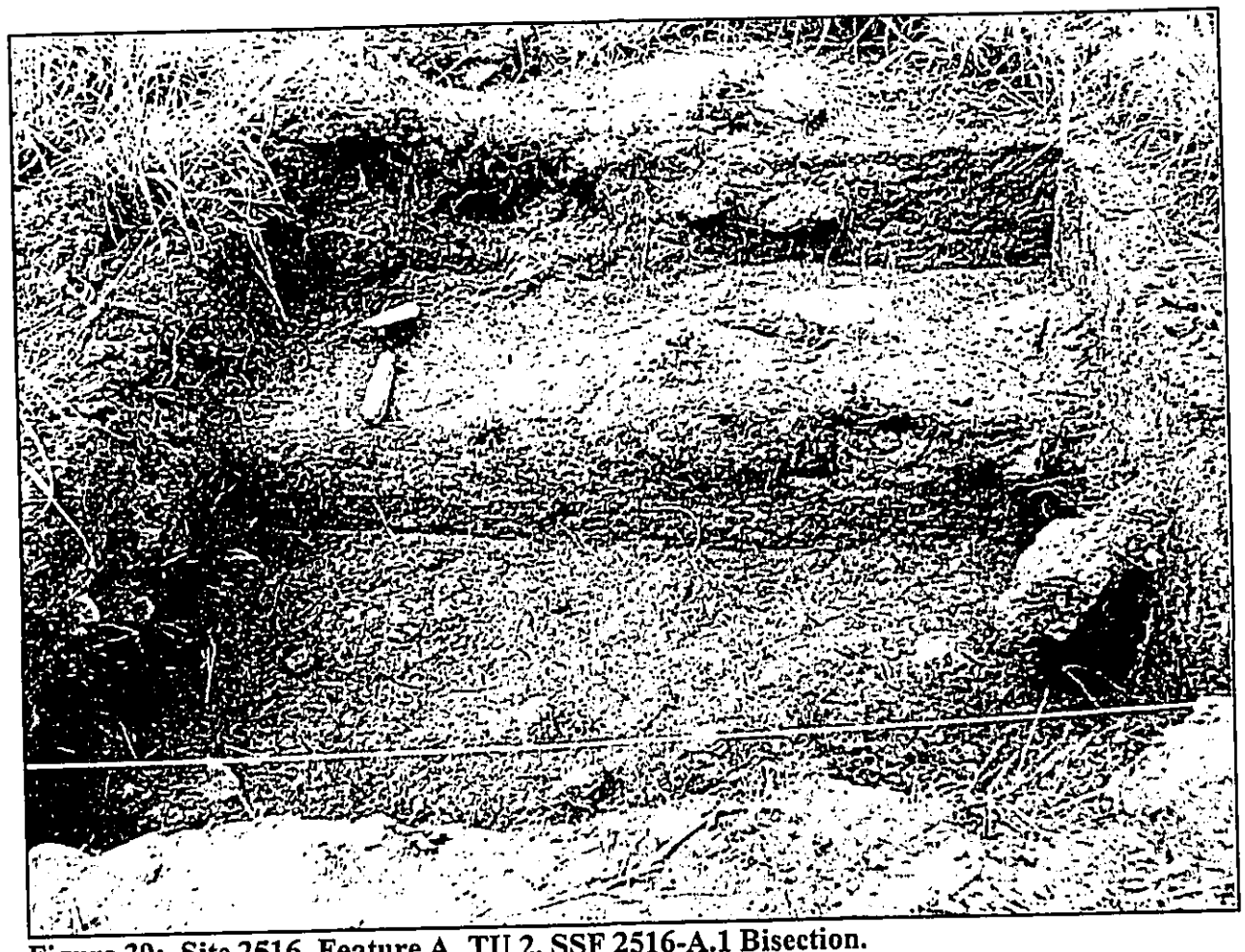

Figure 39: Site 2516, Feature A, TU 2, SSF 2516-A.1 Bisection.

The previously mentioned ill-defined carbon stained area noted in TU-1 was also once a probable hearth. Charcoal from this feature and the associated portion of the layer was submitted for radiocarbon dating analysis (Beta sample 204584/SCSRC423). The conventional radiocarbon age obtained from this sample was 70±50 BP. Using OxCal v3.5, this age provided a calibrated date of 1670 (0.30) 1780 AD and 1800 (0.70) 1955 AD.

The soil layers were consistent throughout the site. Layer I was a brown (7.5 YR 4/4) silty clay loam with about 15% pebbles and cobbles. The layer was structureless and slightly sticky and slightly plastic with many fine to medium roots. The lower boundary was abrupt to clear. Layer II was a brown (7.5 YR 4/4) silty clay with about 35% cobbles. The layer has a weak structure with very fine granular peds and is slightly sticky and slightly plastic with many fine to very fine roots. The lower boundary is abrupt to clear. Layer IIIa was a dark reddish brown (5 YR 3/4) silty clay loam with about 15% pebbles and cobbles. The layer consists of very fine granular peds with a weak structure and was slightly sticky and slightly plastic with medium to fine roots. The lower boundary was abrupt. Layer IIIb was a strong brown (7.5 YR

4/6) silty clay loam with about 15% pebbles and cobbles. The layer consists of very fine granular peds with a weak structure and was slightly sticky and slightly plastic with many fine to medium roots. The lower boundary was abrupt to clear. Subsurface Feature 2516-A.1 fiil was a brown (7.5 YR 4/4) silty clay with about 15% large pebbles and small cobbles. The soil was structureless and slightly sticky and slightly plastic with charcoal flecks scattered throughout and many fine roots. The lower boundary was abrupt.

SITE 2519 DESCRIPTION

State site 2519 is a terrace system located along the upper west facing slope of a knoll, situated at the edge of a natural terrace overlooking a small drainage basin. It measures 7.5 m E-W by 5.0 m N-S, and in 1990 was described by Donham:

"This site consists of a stepped terrace system constructed around the contours of a natural terrace and knoll. Three levels were identified at the time of this survey, and it appears that additional levels are present, obscured by vegetation. The lower level contains a triangular rock-filled terrace 0.15 m high, adjacent to a narrow drainage channel (possibly artificial). This terrace is 3.00 m long and 1.80 m wide. The two upper levels consist of aligned cobbles and small boulders; narrow soil flats are present immediately behind (upslope) the risers.

Additional vegetation clearing is needed in order to determine the extent and structure of this site. It may adjoin Site T-14, currently located c. 20 m to the north" (Donham, 1990).

After considerable effort, the present study failed to relocate this site. It appears to have been a casualty of post-1990 disturbance.

SITE 2522 DESCRIPTION

State site 2522 consists of two conjoined features located on the top of a low knoll, overlooking a small drainage to the north, and a small drainage basin to the west (Figure 40). It measures 6.0 m N-S by 7.5 m E-W and was described in 1990 by Donham as follows:

"A box C-shape (Feature A) and a terrace (Feature B) were identified at this site. The two features are immediately adjacent to one another, with Feature B to the east side of Feature A. It appears that additional hillside terracing is present at the site, obscured by vegetation. This site may be connective with Site 2519, located c. 20.0 m to the south on the same ridge formation.

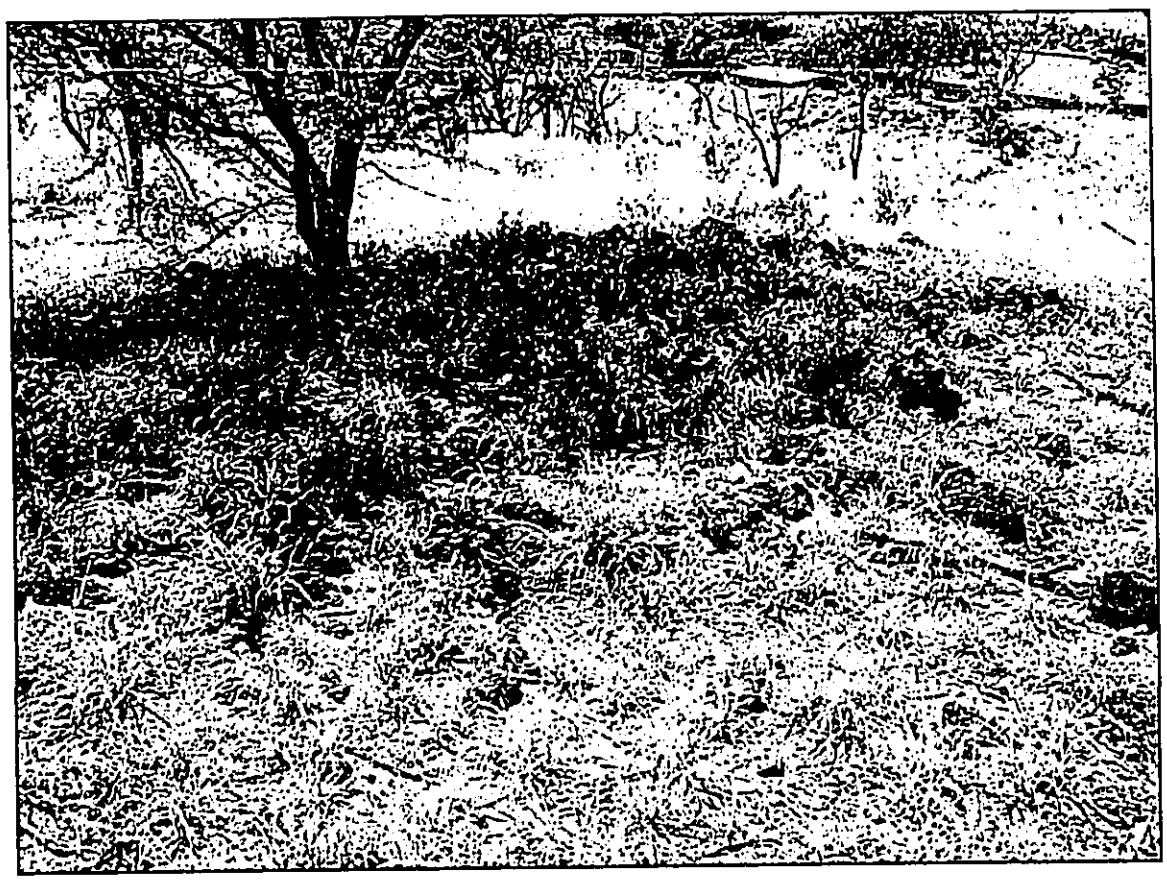

Figure 40: Site 2522, Site Overview, View to West.

FEATURE A: Box C-shape
FUNCTION: Agriculture or temporary habitation
DIMENSIONS: Interior area 2.60 m NW-SE by 1.40 m NE-SW; overall 4.40 m NW-SE by 2.80 m NE-SW; maximum wall height 0.30m

DESCRIPTION: This feature consists of a straight-sided square cornered C-shape that opens to the south side. The walls consist of loosely stacked cobbles set in parallel alignments an average of 0.50 m apart. The walls are filled with additional cobbles; no faced portions are present. The east and west sides incorporate exposed bedrock, and the two corners are squared. Maximum wall height is at natural bedrock areas; the stacked portions average 0.15 m in height (2-3 courses). The interior area is level and generally cleared of loose rubble, with a few cobbles scattered on the surface. The soil deposit appears to be at least 0.10 thick in places: no portable remains were observed in or around the feature.

FEATURE B: Terrace
FUNCTION: Agriculture
DIMENSIONS: 3.00 m N-S by 3.00 m E-W

DESCRIPTION: Feature B abuts Feature A along the east wall, where exposed bedrock is present. It is a rock filled terrace with perimeters defined by large aligned cobbles. It is triangular in plan view, with the broad side adjacent to Feature A and the point to the northeast. The surface of the terrace is level with the tops of the perimeter stones consists of rough cobbles and pebbles. A second terrace may be present to the northwest; additional vegetation clearing is necessary in order to determine the actual extent of the site" Donham, 1990).

The current investigations at this site found it somewhat different.

At the present, Feature A is a C shape, with one possible squared corner located in its southeast. Walls occur on its north, east and west sides, are of stacked cobbles and boulders, incorporate bedrock and reach a maximum height of 0.31 m. Low pahoehoe exposures form a southern perimeter, which drops off moderately to the south, although it may also incorporate at least one ephemeral alignment. The entire feature measures 3.50 m N-S by 4.00 m E-W, with its interior being somewhat level, but strewn with small boulders and cobbles. The differences between the 1990 description and this present one may be due to interim disturbances.

Feature B is a low, oval enclosure, attached to Feature A on its east side. It utilizes the east wall of Feature A as its west wall and is constructed of loosely stacked boulders and cobbles one to two courses high. Construction is best preserved on its north and northeast sides, while its south side is somewhat ephemeral and quite deteriorated. It measures 4.00 m N-S by 3.50 m E-W and has a level soil interior with a few scattered cobbles. The low pahoehoe exposures noted on the south side of Feature A, also continue along the south side of Feature B, although less frequently.

SITE 2522 METHODS

Because Site 2522 was the only site relocated in the present study that had not been previously mapped, following clearing, the site was mapped with two test units subsequently excavated (Figure 41).

The first test unit to be excavated (TU-1) was a 0.50 m by 0.50 m unit placed in Feature A, in the center of its soil filled interior. The unit was located with consideration toward retrieving data leading to an understanding feature function and temporal placement. TU-1 was excavated by natural layers and terminated at its contact with decomposing bedrock.

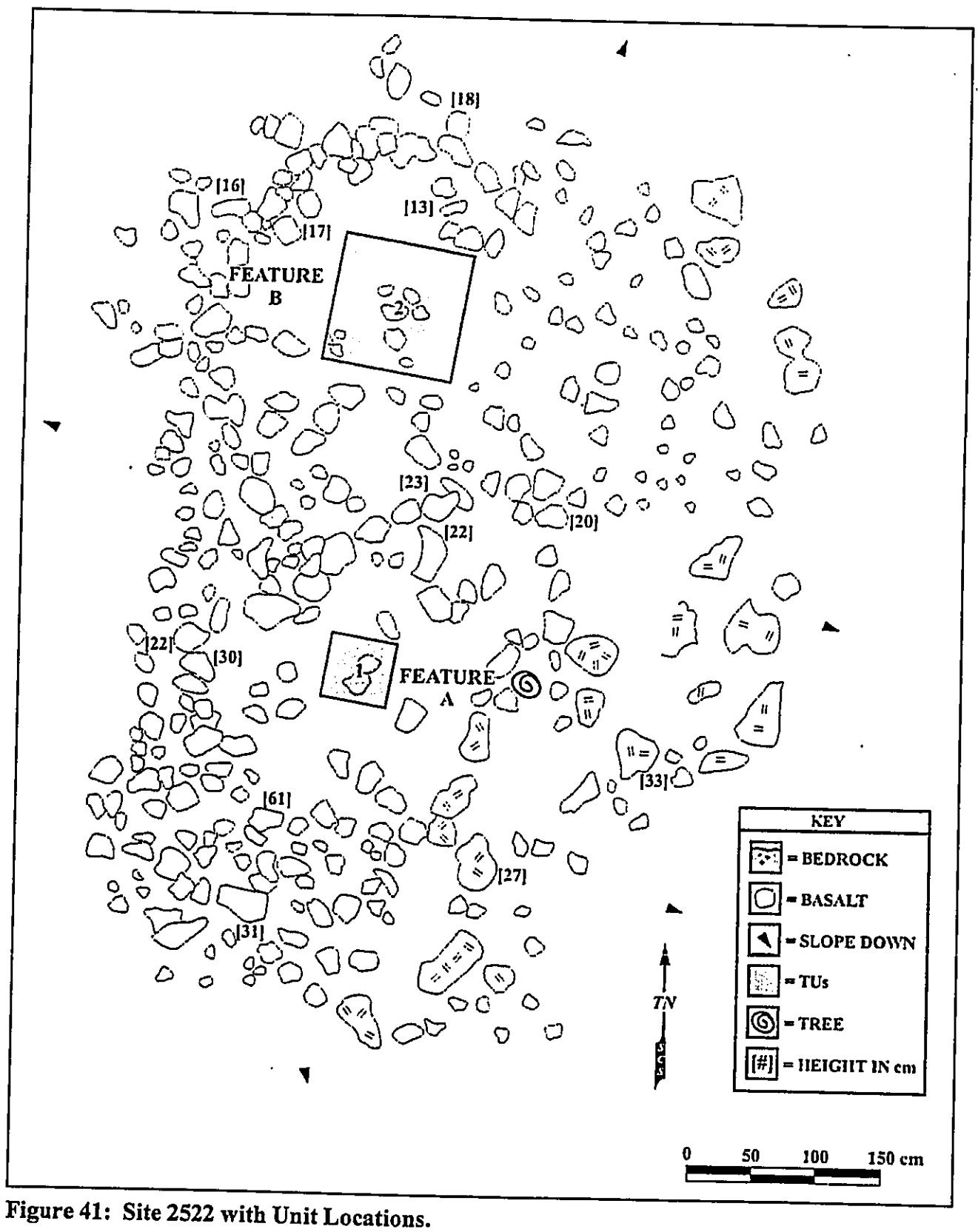

Figure 41: Site 2522 with Unit Locations.

The second test unit (TU-2) was a 1.00 m by 1.00 m unit placed in Feature B, also in the center of its soil filled interior. Again, it was placed to better understand feature function and temporality, and terminated at bedrock or 0.10 m into a dense, hard packed substrate demonstrated to be culturally sterile in exposure in disturbed areas throughout the project area.

A total of 1.50 m of surface area was excavated at this site (5%) with mapping and excavation completed in approximately 2 person days.

SITE 2522 RESULTS

STRATIGRAPHY: The profile of TU-1 revealed a single shallow layer of brown silty clay loam extending to 0.05 m below surface before the unit was terminated. Termination was at a pavement of decomposing bedrock (Figure 42). The profile of TU-2 revealed a thin dark brown layer extending about 0.05 m below surface, underlain by a reddish brown silty clay loam. This unit was terminated after excavating 0.10 m into this substrate due to its lack of cultural material (Figure 43; see Appendix A).

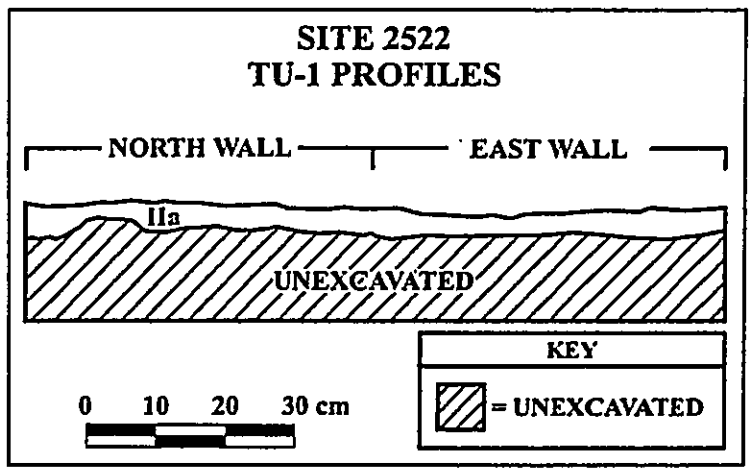

Figure 42: Site 2522, Feature A, TU 1 Profiles.

Layer I was a dark brown (7.5 YR 3/2) sandy clay loam with about 10% small pebbles. The layer consisted of very fine granular peds with a weak structure and was non-sticky and non-plastic with medium to fine roots. The lower boundary was abrupt. Layer IIa was a brown (7.5 YR 4/4) silty clay loam with about 20% pebbles. The layer was structureless and slightly sticky and slightly plastic with medium to fine roots. The lower boundary was abrupt. Layer IIb was a dark reddish brown (5 YR 3/4) silty clay loam with about 35% pebbles and cobbles. The layer consists of very fine granular peds with a weak structure with fine to medium roots. The lower boundary was abrupt.

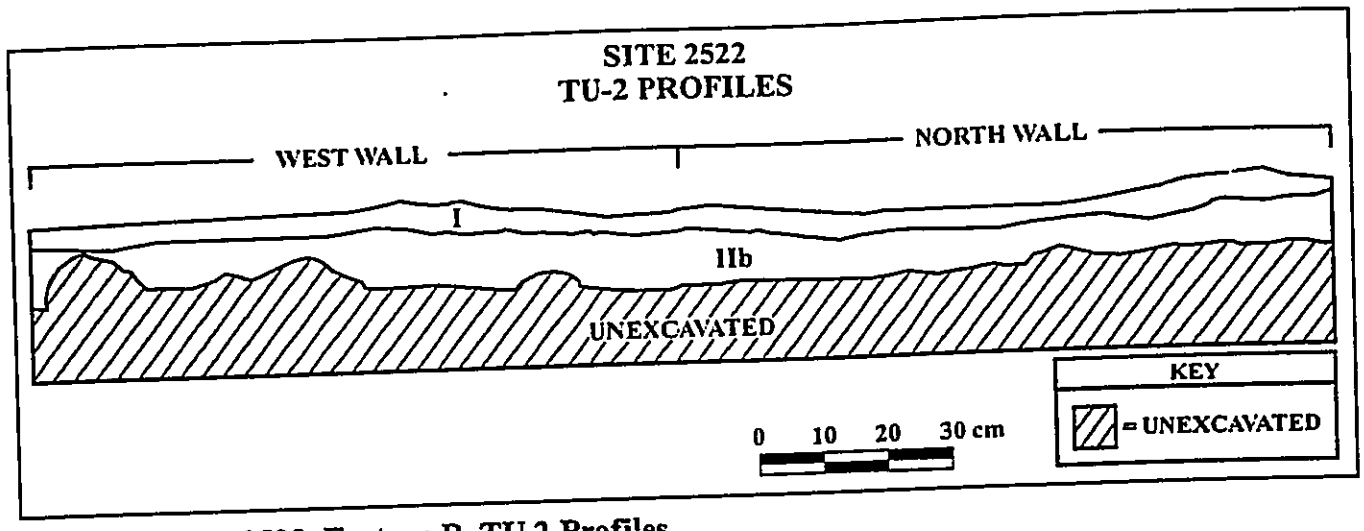

Figure 43: Site 2522, Feature B, TU 2 Profiles.

CULTURAL MATERIAL: Three small unidentifiable marine shell fragments were the only cultural items recovered from this site, occurring near the top of the silty clay loam in TU-2

DISCUSSION

SITE 1710

The evidence from these investigations indicates site 1710 to be historic. Although some euro-American material is probably recent, the majority of it, at least from trench 1, was firmly associated with both the site's architecture and its primary cultural bearing layer. This layer, Layer III, was also a well defined, discreet deposit overlain by considerable recent deposition. The recovery of traditionally manufactured items was limited to large thick items of coarse grained basalt and a single large primary flake with use wear. Although there is the possibility that the large thick items may be thermally altered rock, if they are manufactured stone artifacts, the continuation of this technology into the historic period is not unusual, especially for rough casual use. An unmodified volcanic glass pebble was also recovered, but is easily attributable to historic activities. Unfortunately, none of the euro-American material from the site is temporally diagnostic.

SITE 2512

The presence of several small boulder/large cobble sized pieces of unmodified branch coral at this site points toward ceremonial use. Its position on one of the highest knolls in the surrounding area, overlooking its largest drainage, also gives it a ceremonial functional. The presence of ceremonial trails leading to shrines and heiau are well documented. If the reinterpretation of Feature D as a trail is correct, it further substantiates the assertion that this site had ceremonial functions.

The stratigraphy of TUs 4 and 6 and ST-5 deserves some comment. Layer IIa in these profiles is a moderately thick, dark brown deposit of sandy silt that appears anthropogenic, being the origin of the only SSF located at the site. While Layer III correlates reasonably well with the other units at the site, Layer IIa was observed no where else. Consequently, it would seem that either Feature B was the primary use area at the site, other areas having little depositional activity, or that this deposit was once more widespread, and has since been eroded away.

The hypothesis that site 2512 may have multiple occupations remains a question. Although cultural material was collected from Feature A, it was minimal at best, with units quickly reaching bedrock and exhibiting no definite cultural layer. Feature B, however, exhibited a well defined cultural layer and provided a late pre-Contact to post-Contact date for the site. Given the recent date for Feature B, it seems most likely that the site represents a single, late occupation, and that it functioned as a ceremonial site.

SITE 2514

Site 2514 yielded the highest densities of cultural material of all sites excavated in the project area. Like most of the other sites located on knolls, however, it exhibited only thin soils overlying bedrock. It is interesting that TU-3 yielded as much material as it did considering its disturbed appearance. This may be the result of deflation. The density of echinoderm shell in SSF 2514.1, in contrast to other marine shell, is also interesting, appearing to indicate a specific feature function. The calibrated date for this site of 1460 to 1660 AD clearly places this site in the pre-Contact period and, as such, it appears to have been utilized and abandoned before the other sites identified in the project area.

SITE 2516

The contrast between the stratigraphy in TU-1 and the 1990 test unit is significant. While the differences in the density of cultural material between Layers I in these two units is somewhat interesting, the differences between Layer II and IIIa in the two units is more so. Layer IIIa in TU-1 is a dark reddish brown clay loam/loamy clay with relatively little rock and little cultural material, while Layer II in the 1990 test unit, also a dark reddish brown silty clay, is its primary cultural bearing layer. Cultural material from this layer in the 1990 TU, however, may point toward an explanation of this discrepancy. Echinoderm remains account for over half of the material recovered in this TU, and considering the shell content of the SSF at Site 2514, it is quite possible that this small TU may have encountered a subsurface feature. This is also suggested by the occurrence of a Layer IIa in the unit's profile (Donham 1990: Figure A-7).

Layer III in this 1990 unit, a culturally sterile layer of densely packed gravel corresponds well to the layer at which TU-1 was terminated.

TU-2 contrasts with TU-1 in at least two ways. First, Layer I of TU-2 is relatively devoid of cultural material, indicating a post-occupational deposit, which TU-1 appears not to have. Second, Layer IIIb of TU-2 contains a moderate amount of cultural material, which Layer IIIb in TU-1, the corresponding layer, does not. The explanation for the presence of this cultural material, however, may lie with a possibly incomplete removal of SSF 2516-A.1.

As with Site 2512, the radiocarbon date for this site indicates its occupation sometime in the very late pre-Contact to post-Contact periods.

SITE 2522

Other than the shallow soils and the lack of cultural material described above, there is not much to discuss at this site.

PROJECT CONTEXT

Putting this project into the overall contexts of the areas history and prehistory is difficult. The lack of temporally diagnostic artifacts is a hindrance not only for the present study, but for Hawaiian archaeology as a whole. The retrieval of charcoal samples during the present study, two of which came from restricted areas in sub-surface features, however, somewhat alleviates this situation. The radiometric dates obtained from two of the sites this project (Sites 2512 and 2516) and the historic artifacts from Site 1710 demonstrate that most of the sites in the project area were utilized in the late pre-Contact to early post-Contact periods. On the other hand the clear pre-Contact occupation of Site 2514 indicates the utilization of the project area perhaps as early as the mid-15th century.

Investigation of the Kula, or barren zone, a dry region of xeric vegetation extending about 7 miles inland in the Kīhei area, is a relatively recent development. Formerly it was dismissed as being generally unimportant during prehistoric times, and having limited archaeological potential. Modern expansion of coastal communities into its seaward fringe, however, have necessitated a closer inspection of this zone and proven this earlier belief false. Whether or not this holds true to the entire zone is as yet unknown.

The project area is located adjacent to the Kīhei coastal zone, a low area formerly dominated by freshwater ponds, and on the edge of the terminal seaward terrace of a vast area of Waiakoa extremely stony silty clay loam. Although this soil is prone to erosion, having up to 50% of its surface removed (Foote *et al.* 1971:127), and not very amenable to agriculture, runoff along this terrace edge has created numerous small drainages and drainage basins (Figures 44 and 45). Of the 15 sites located in the project area by the previous 1990 study, 9 are either located on the upslope edge of one of these basins, overlooking one of them, or overlooking the end of a channel that drains into them. While Donham postulates the importance of the low knolls that surround these basins, if one includes sites within these basins, this association becomes even more prominent. In addition to having more mesic conditions than adjacent soils, these basins also have soil depth. Although, in contrast with previous ideas, it has already been observed that the Kula zone was utilized for agricultural purposes, it is proposed here that the majority of sites in this zone represent use by permanent coastal settlements of specific, stable areas along the its margin conducive to agriculture. Identification of these drainage basins further inland in the Kula zone, and identification of sites clustering in and around them, would be a test of this idea.

The recovery of midden from six out of the 10 features excavated would seem to point toward their use as at least temporary habitations. This concurs with Donham's predictions for four of the 10 features, but indicates non-agricultural activities at Feature B at Site 2512 (ceremonial), and Feature A at Site 2516 (habitation). Both of these features were assessed as agricultural or possible agricultural, yet both yielded sub-surface hearths. In contrast, both features at Site 2522 assessed as possible habitations, yielded less than a gram of cultural material. The only feature investigated that may represent permanent habitation is the platform at Site 2514. This feature yielded the highest density of cultural material of all excavated features.

RECOMMENDATIONS

As a result of this and earlier studies of the project area, it is recommended that no further work be conducted within the project area excepting Site 2512. As Site 2512 is now interpreted as a ceremonial location, it is recommended that the site be preserved based on a Preservation Plan. The SHPD will review this Preservation Plan prior to construction work in this portion of the parcel.

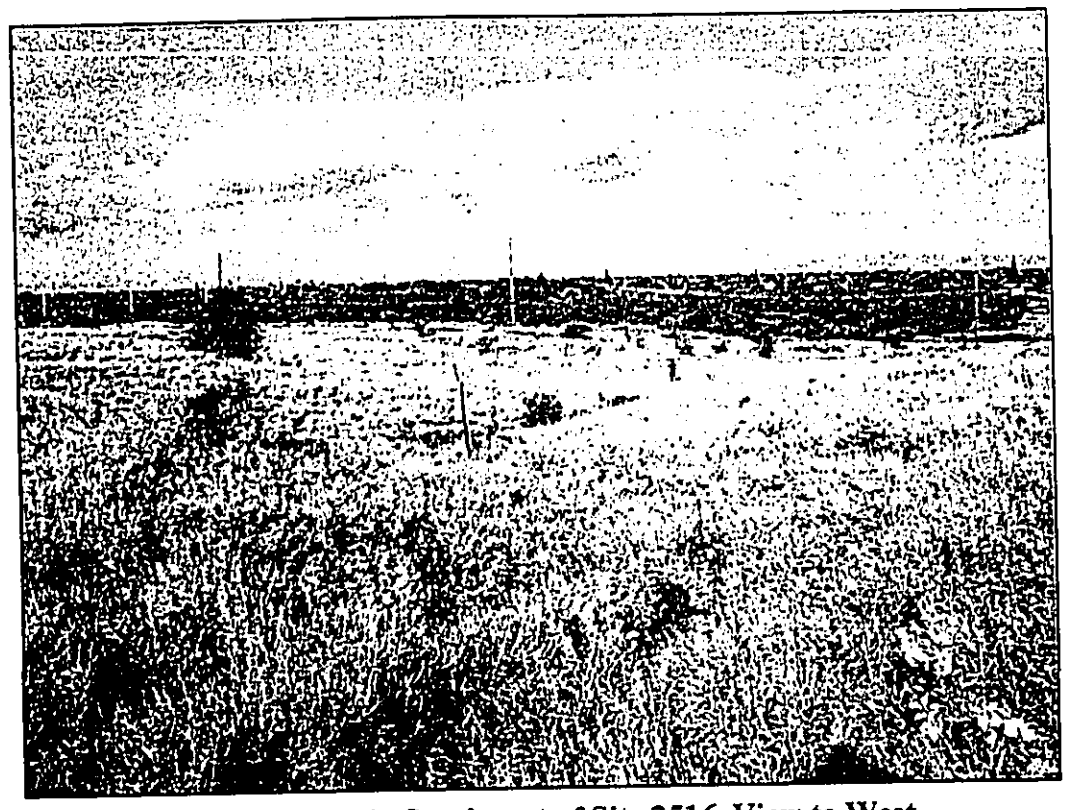

Figure 44: Drainage Basin Southwest of Site 2516. View to West.

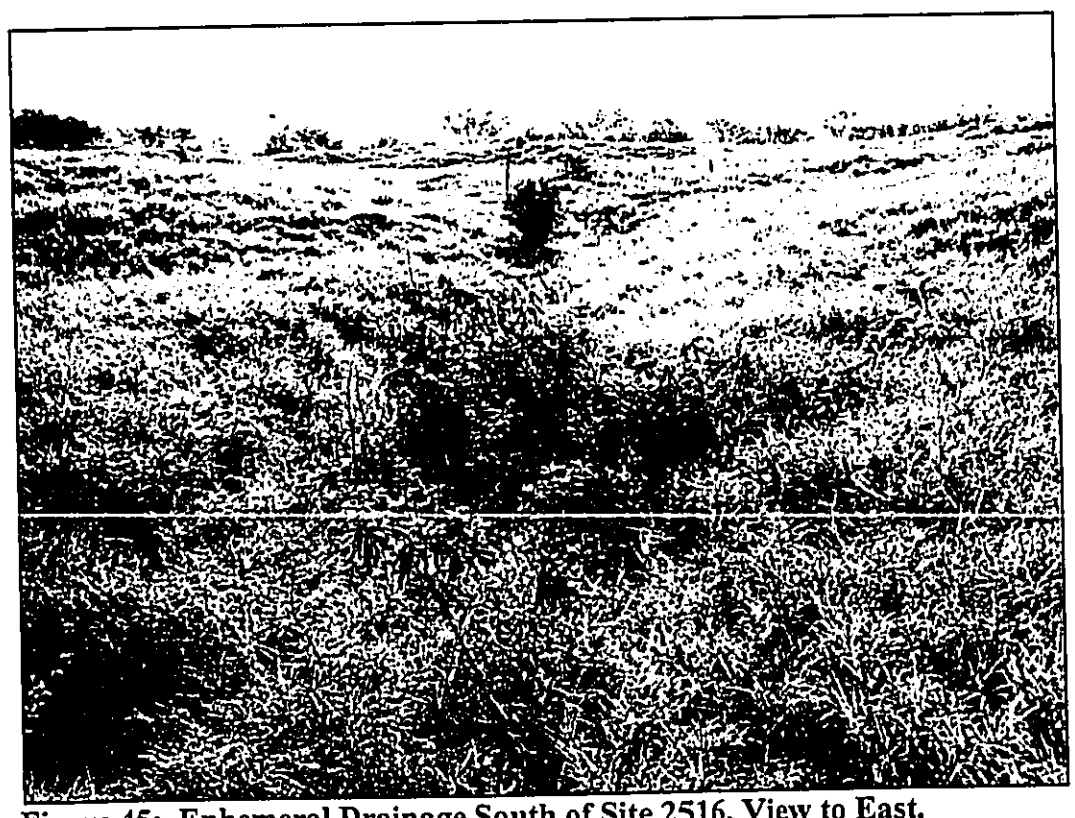

Figure 45: Ephemeral Drainage South of Site 2516. View to East.

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APPENDIX A SOIL DESCRIPTIONS

SITE 1710 SOIL DESCRIPTIONS

TEST UNITS 1, 2, 4 & 5; STRATIGRAPHIC UNITS 1, 2, 3 & 4

O - Very dark gray (10 YR 3/1) sandy loam with about 3% small pebbles: about 60% organic material – "O" horizon.

I – Dark reddish brown (5 YR 3/3) loamy medium grained sand with about 1% small pebbles; non-plastic; non-sticky; no structure; many fine roots; very abrupt lower boundary.

IIa – Dark yellowish brown (10 YR 4/4) loamy coarse sand to coarse sand with no rock: non-plastic; non-sticky; no structure; many fine roots; very abrupt lower boundary.

IIb – Dark brown (10 YR 3/3) loamy medium sand with about 2% small pebbles: non-plastic; non-sticky; no structure; many fine roots; abrupt lower boundary.

IIc – Brown (10 YR 4/3) sandy loam with no rock: non-plastic; non-sticky; no structure; moderate fine roots; abrupt lower boundary.

III – Dark reddish brown (5 YR 3/3) loamy medium sand with about 15% pebbles and cobbles; : non-plastic; non-sticky; no structure; many fine roots; very abrupt lower boundary.

IVa- Very dark grayish brown (10 YR 3/2) loamy fine sand with no rock; non-plastic; non-sticky; cemented; few fine to large roots; clear lower boundary.

IVb – Dark brown (7.5 YR 3/2) medium sand with no rock; non-plastic; non-sticky; no structure; few fine to large roots; abrupt lower boundary.

Va – Dark yellowish brown (10 YR 4/4) fine to medium sand with no rock; non-plastic; non-sticky; no structure; moderate fine to large roots.

Vb* - Yellowish brown (10 YR 5/4) fine to medium sand with no rock; non-plastic; non-sticky; no structure; moderate fine to large roots

Vc* - Gray to light gray (10 YR 7/1 to 6/1) ashy fine to medium sand with no rock; non-plastic; non-sticky; no structure; moderate fine to large roots

Vd* - Dark gray (10 YR 4/1) carbon stained fine to medium sand with no rock; non-plastic; non-sticky; no structure; moderate fine to large roots.

Note – "*" denotes lenses within **Va**

TEST UNIT 3

I – Brown (7.5 YR 4/3) fine sand with about 25% pebbles and cobbles: non-plastic; non-sticky; no structure; moderate fine to medium roots; abrupt lower boundary.

II – Dark brown (7.5 YR ¾) loamy sand with about 25% pebbles and cobbles; non-plastic; non-sticky; no structure; moderate fine to medium roots; bedrock as lower boundary.

SITE 2512 SOIL DESCRIPTIONS

Ia - Brown (7.5 YR 4/3) fine loamy sand to fine sandy clay loam with about 10% pebbles: non-sticky; non-plastic; no structure; many medium roots; abrupt or bedrock lower boundary.

Ib - Brown (7.5 YR 4/3) fine sand with no about 5% pebbles; non-sticky; non-plastic; no structure; moderate medium roots; abrupt lower boundary.

IIa – Dark brown (7.5 YR 3/3) fine sandy loam with about 5% pebbles; non-sticky; non-plastic; no structure; few medium roots; abrupt lower boundary.

IIb – Dark brown (7.5 YR 3/3) fine sandy loam with about 25% pebbles; non-sticky; non-plastic; no structure; few medium roots; abrupt lower boundary

III – Reddish brown (5 YR 4/4) silty clay loam with about 5% pebbles; slightly sticky; slightly plastic; no structure; few fine roots; bedrock lower boundary.

IV - Brown (7.5 YR 5/4) silty clay loam with about 35% small pebbles; slightly sticky; slightly plastic; very weak small crumb peds; many very fine to small roots; bedrock lower boundary.

SSF 2512-B.1 – Very dark brown (10 YR 2/2) sandy silt clay with about 60% pebbles and cobbles; slightly sticky; non-plastic; no structure; few fine roots; charcoal and carbon staining; abrupt lower boundary.

SITE 2514 SOIL DESCRIPTIONS

I – Brown (10 YR 4/3) loamy fine sand with about 25% pebbles and cobbles; non-sticky; non-plastic; no structure; few to moderate fine to medium roots; bedrock lower boundary.

SSF 2514.1 – Dark gray (10 YR 4/1) ashy, loamy fine sand with about 10% small pebbles; non-sticky; slightly plastic; no structure; few fine roots; abrupt lower boundary.

SITE 2516 SOIL DESCRIPTIONS

I – Brown (7.5 YR 4/4) silty clay loam with about 15% pebbles and cobbles; slightly sticky; slightly plastic; no structure, many fine to medium roots; abrupt to clear lower boundary.

II – Brown (7.5 YR 4/4) silty clay with about 35% cobbles; slightly sticky; slightly plastic; small weak granular peds; many fine to very fine roots; abrupt to clear lower boundary.

IIIa – Dark reddish brown (5 YR ¾) silty clay loam with about 15% pebbles and cobbles; ; slightly sticky; slightly plastic; small weak granular peds; many fine to medium roots; abrupt lower boundary.

IIIb – Strong brown (7.5 YR 4/6) silty clay loam with about 15% pebbles and cobbles; slightly sticky; slightly plastic; small weak granular peds; many fine to medium roots; abrupt to clear lower boundary.

SSF 2516-A.1- Brown (7.5 4/4) silty clay with about 15% large pebbles and small cobbles; slightly sticky; slightly plastic; no structure; many fine roots; charcoal flecks; abrupt lower boundary.

Appendix C

- Archaeological Preservation Plan and SHPD Approval Letter
- Archaeological Monitoring Plan
- E-mail Correspondence with Dr. Melissa Kirkendall, SHPD

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GOVERNOR OF HAWAII

PETER Y. YOUNG
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COMMISSION ON WATER RESOURCE MANAGEMENT

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December 21, 2005

Michael Dega, Ph.D.
Scientific Consultant Services
711 Kapiolani Blvd., Suite 975
Honolulu, Hawaii 96813

LOG NO: 2005.2692
DOC NO: 0512MK34
Archaeology

Dear Dr. Dega:

SUBJECT: **Historic Preservation Review Chapter 6E-42**
Preservation Plan For SIHP 50-50-10-2512, at the Pi'ilani I and II Kihei Community Park Project in Kihei for Chris Hart and Partners
Keokea Ahupua'a, Makawao District, Maui
TMK (2) 2-2-002:042

Thank you for the opportunity to review this plan which was sent to our office on October 28, 2005 (Dega 2005, *Preservation Plan for Site 50-50-10-2512 of the Pi'ilani I and II Kihei Community Park Project, Kihei, Keokea Ahupua'a, Makawao District, Island of Maui [TMK 2-2-02:42]*...Scientific Consultant Services ms). We have previously provided comments for other actions on the subject parcel.

The site consists of six features, five of which were recommended for preservation. The sixth feature is peripheral to the complex, and is in degraded condition. The five features for preservation are situated on a small knoll to the north of a deep, intermittent gully. They include a platform and associated terraces enclosure, and a mound. The platform has been interpreted as a shrine, with the terraces enclosure and mound as supportive features.

Data recovery on the site (Johnson and Spear 2005) yielded evidence of the a single subsurface feature consisting of a 0.70 m diameter pit filled with rock, charcoal and carbon stained soil, as well as one large fragmented echinoderm shell. The radiocarbon assay submitted from this sampled deposit returned a calibrated date of 1680-1800 AD. Unmodified branch coral identified at the site suggests ceremonial use of the site. Final interpretation of the site suggests a single late occupation with SIHP 50-50-10-2512 functioning as a traditional ceremonial site, significant under multiple criteria.

The site will be passively preserved (conservation). The buffer area for the site is irregular in shape, with a 5 m (15 feet) interim buffer zone around the north, east and west flanks and a 3 meter (10 foot) permanent buffer. The south flank borders the deep gulley which provides natural protection. No construction is allowed within the buffer, which will be demarcated by landscaping and/or boulders placed at the corners. The permanent buffer zone will be kept free of all structures, and landscaping with native plants may occur within the buffer (not on the terraces). No heavy equipment is allowed within the buffer, and the buffer will be plotted on all construction plans.

Clearing will proceed by hand, and all existing stones will be left in place, within the site boundaries as well as within the buffer. Refuse removal will be the responsibility of the County, and other groups visiting the site. The signage is appropriate, regarding initial information; interpretive information can be discussed at a later date with SHPD.

Interim protection will include the erection of orange construction fencing around the entire perimeter of the site at the 5m interim buffer. Evidence of this will be provided to SHPD prior to construction commencement.

The plan is acceptable. If you have any questions, please contact Dr. Melissa Kirkendall at 243-5169.

Aloha,

Melanie A. Chinen, Administrator
State Historic Preservation Division

MK: kf

c: Bert Ratte, DPWEM, County of Maui
Michael Foley, Director, Dept of Planning, 250 S. High Street, Wailuku, HI 96793
Maui Cultural Resources Commission, Dept. of Plng, 250 S. High Street, Wailuku, HI 96793

SCS Project Number 463-PP-1

PRESERVATION PLAN FOR SITE 50-50-10-2512 OF THE PI`ILANI I AND II KĪHEI COMMUNITY PARK PROJECT, KĪHEI, KEOKEA AHUPUA'A, MAKAWAO DISTRICT, ISLAND OF MAUI, HAWAI'I [TMK 2-2-02:42]

Prepared by:
Michael Dega, Ph.D.
October 2005

Prepared for:
Chris Hart and Partners
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INTRODUCTION

This Preservation Plan has been prepared by Scientific Consultant Services (SCS), Inc. for Chris Hart and Partners, LLC. in anticipation of the development of community recreation areas near the Kihei School in Kīhei, Keokea Ahupua`a, Makawao District, Island of Maui, Hawai`i (TMK 2-2-02:Por.42) (Figure 1). This Preservation Plan specifically focuses on interim and long-term, permanent preservation of a portion of one site (State Site No. 50-50-10-2512, possible ceremonial structure) on the County-owned parcel (Figure 2). Five features composing Site -2512 will be preserved under this plan, with a six feature semi-associated with this site (Feature F; see below) not being preserved due to its poor preservation quality and its redundant nature (terraces). Previous archaeological work, including Inventory Survey (Donham 1989, 1990a) and Data Recovery (Johnson and Spear 2005) has been completed, the latter occurring in 2005 following methods outlined in two accepted Data Recovery Plans (Donham 1990b, 1990c).

The present Preservation Plan follows procedures outlined in the Hawai`i Administrative Rules, Title 13 Department of Land and Natural Resources, Subtitle 13 State Historic Preservation Division Rules, Chapter 277 Rules Governing Minimal Requirements for Archaeological Site Preservation and Development (DLNR/SHPD 2003). This Preservation Plan provides standards to ensure proper preservation and a "no adverse effect" in the public's interest (DLNR/SHPD 2003).

Preservation means the mitigation form in which a historic property is preserved, whether through avoidance and protection (conservation) or exhibition (interpretation). There are four steps to preserving a site, the first of which is executed here: preparation of a Preservation Plan. The following three steps include review and approval of the Preservation Plan by SHPD prior to preservation work, execution of the Preservation Plan, and verification by SHPD that the plan has been successfully executed.

This Preservation Plan provides a brief background to the archaeology of the parcel, discusses preservation procedures pertaining to Site -2512, and enumerates the methods to be utilized during preservation. This plan is primarily based on information gleaned through Inventory Survey (Donham 1989, 1990a) and Data Recovery (Johnson and Spear 2005).

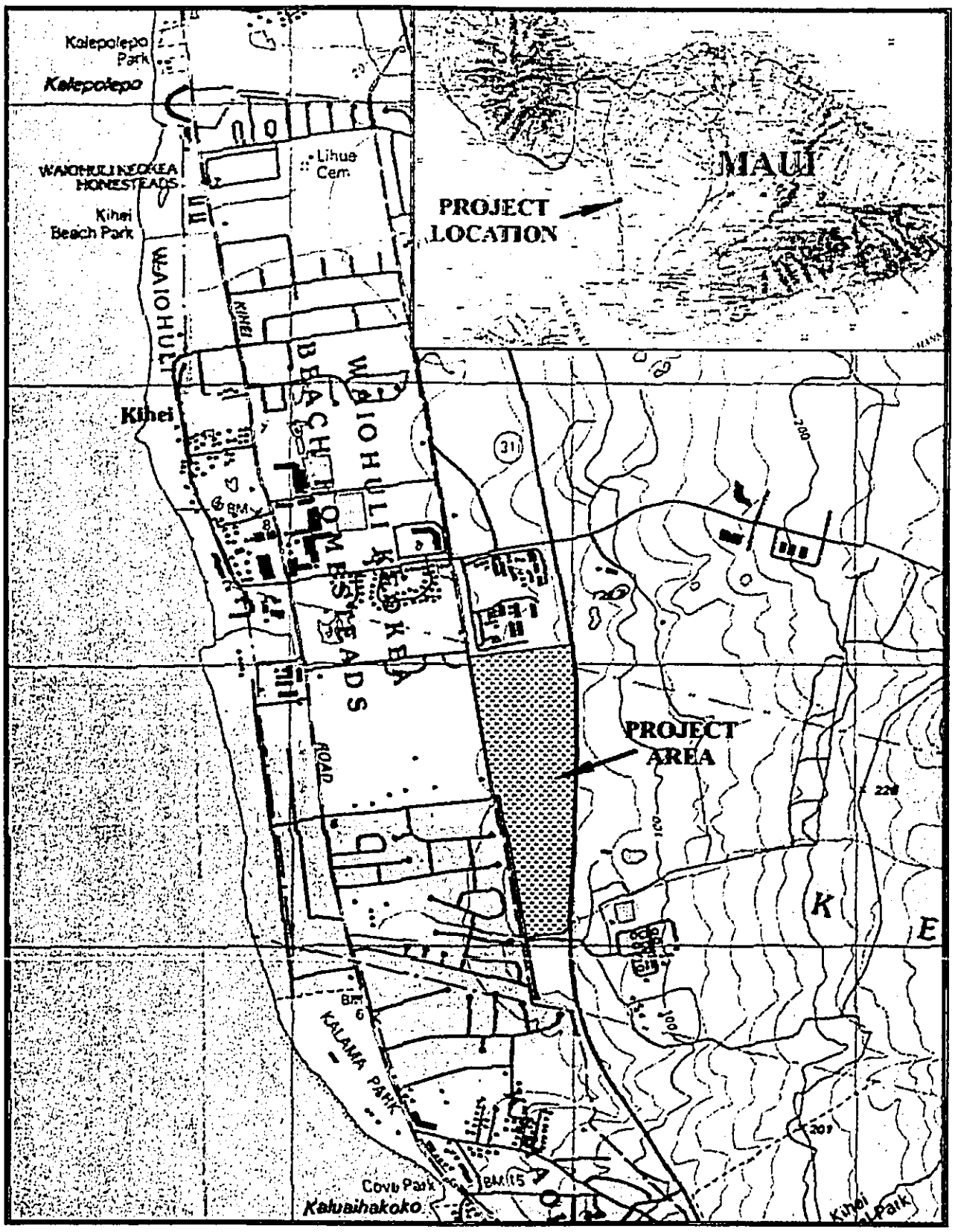

Figure 1: USGS Quadrangle Showing Project Area.

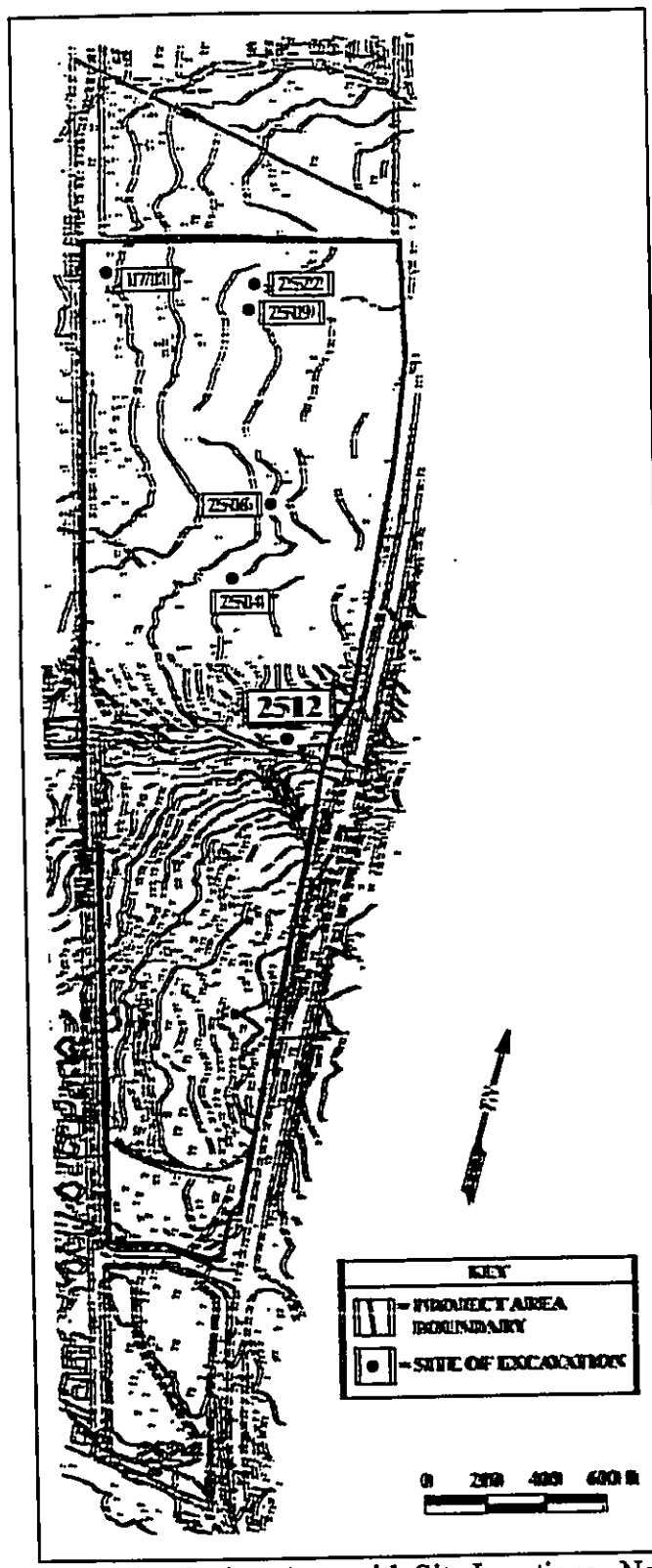

Figure 2: Tax Map Key Showing Project Area with Site Locations. Note: Site -2512 Highlighted.

LOCATION AND PREVIOUS ARCHAEOLOGICAL INQUIRY

PROJECT AREA ENVIRONMENT

The physical nature of the project area has not changed dramatically since the studies conducted by Donham (1989, 1990a), with the exception of the southern boundary, now an eastern extension of Welakahao Road. The research area is bordered on the North by Kihei Elementary and Intermediate School, to the west by Waiohuli-Keokea Beach Homesteads, and to the east by Piilani Highway (see Figure 1). The coastline is located less than one mile to the west of the project area.

The climatic and edaphic regimes for the area generally correspond to the regime known as the "Barren" zone. The specific location of this project, however, puts it on the seaward margin of this zone. The topography of the project area is primarily a gentle east to west descending slope, although a large, notable basin into which several ephemeral drainages flow is present in its northwest portion. A steeply-incised intermittent drainage is located in the southern portion of the project area and is lined with natural bedrock outcrops. Site 2512 was constructed above this drainage. Exposed bedrock and bedrock outcrops are also common across the breadth of the parcel and are often visible on low knolls. Bedrock has been exposed on these knolls due to Aeolian transport of existing sediment.

The present vegetation regime in the project area differs somewhat from that of Donham's (1990a) survey. Although the amount and condition of the observed *kiawe* appears to be similar, the composition of grass species has changed. The chief grass in the project area is now wiregrass (*Eleusine indica*), a bunchgrass occurring in disturbed areas that in several places, allows a moderate amount of surface visibility.

DATA RECOVERY RESEARCH BACKGROUND

In Data Recovery Plans, Donham (1990a, 1990c) identifies two major problems to be addressed through Data Recovery: site chronology and settlement/subsistence patterns. Although subsequent work in the area has contributed more information toward a better understanding of these problems, these remain not completely realized.

In 1990, all radiometric dates in the Kīhei/Makena area post-dated AD 1550, while dates from upland locations in Keokea were somewhat earlier, beginning as early as AD 680 (Donham, 1990:10; Note: this latter date has not been verified and appears far too early; a cluster of verified "early" dates for Keokea begins in the 12th century; see Dega *et al.* 2004). Although the lowland dates supported the assumption that upland occupation was conditional to, and

occurred prior to, the occupation of more arid environments along the coast, work conducted in the area after 1969 refuted an earlier assumption that this coastal use was transient. From these studies it was therefore expected that dates from the project area would also post-date AD 1550. If earlier dates were to be located, they were expected to be from a single site in the area that appeared to exhibit two temporal components (*e.g.*, Site 2512).

A study performed in 1977 (Cordy in Donham, 1990:11) postulated that permanent coastal residency was more likely to occur in this region where the distance between the coastline and the inland agricultural zone was minimal. In addition, it was proposed that the permanent occupations in the coastal zone (defined as extending 0.25 miles inland of the shoreline) would exhibit evidence of fishing, aquaculture, livestock maintenance and small-scale agriculture. No provisions in this study, however, were provided for the "Kula" zone. While the findings from the initial survey of this area (Donham 1990) could neither support nor refute the first of these assumptions, information was generated which pertained to the second assumption. Donham's survey identified 15 sites in the project area, comprised of 30 features. These included nine terraces, six low walled enclosures, four "C" shapes, four rock piles, two platforms, two midden scatters, an alignment, a high walled enclosure, and a modified outcrop. Not only was the density of these features surprising, but the fact that any prehistoric sites were located in the project area was remarkable, considering the distance from the coast. Most of these features were considered to be agricultural in function, but seven were thought to indicate at least temporary habitation. This would indicate use of the Kula zone, at least on its margins, for agricultural purposes, extending subsistence catchments further inland than previously thought, in addition to indicating an intensity of use not expected. In her Data Recovery Plan, Donham (1990a:11) further writes:

> "On the basis of the current survey data it appears that agricultural activities within the project were selectively located on low knolls and along the slopes of these knolls. What is not clear is whether this patterning is caused by selective preservation of the surface features, or actual site selection patterns. The topographic features where agricultural terraces are located are generally the areas of least soil, and appear today to be the least productive for growing plants of any sort. If these locales were of marginal productivity at the time of utilization, then we should expect that the more productive soil flats would have also been utilized, perhaps with only minor modifications that have since eroded away or have been otherwise destroyed. This assumption significantly changes the picture of small scale or limited agriculture to one of relatively extensive use of all available land, and the range of plants being grown."

Research goals for the Data Recovery (Johnson and Spear 2005) would consequently be to either support or refute the assumption that utilization of the project area was post A.D. 1550, and to shed light on the actual prehistoric use patterning for the project area.

DATA RECOVERY RESEARCH (JOHNSON AND SPEAR 2005)

Data Recovery investigations began by relocating the designated sites identified during Donham's studies (Donham 1989, 1990b). Of these, all but Site -2519 were found, with this site believed to be impacted beyond recognition by post-1999 fire suppression activities. Five sites comprised of ten features were studied and excavated. The only feature investigated that may represent permanent habitation was the platform at Site -2514.

The radiometric dates obtained from two of the sites (Sites -2512 and -2516) and the historic artifacts from Site -1710 demonstrate that most of the sites in the project area were utilized in the late pre-Contact to early post-Contact periods.

Following Data Recovery, putting this project into the overall context of the area's history and prehistory was challenging. The lack of temporally diagnostic artifacts was a hindrance not only for this Data Recovery work, but for Hawaiian archaeology as a whole. The retrieval of charcoal samples during the present study, two of which came from restricted areas in subsurface features, however, somewhat alleviates this situation, with Sites -2512 and -2516 dating to late pre-Contact to early post-Contact times. On the other hand, the clear pre-Contact occupation of Site -2514 indicates utilization of the project area perhaps as early as the mid-15th century.

SITE -2512 DESCRIPTION

Site -2512 is a complex of associated constructions located on the top of a small knoll, immediately north of a deeply incised, intermittent stream gully (Figures 3, 4, 5, and 6). With the exception of a possible feature to the east (Feature F), the complex measures 15.00 m N-S by 14.00 m E-W (210 m²). Investigations conducted by Donham (1990b) divided this complex into 5 component features, described as follows:

> "This complex consists of a low, eroded platform (Feature (A) that has a small enclosure (Feature B) at the southeastern corner. Two sets of terraces (Features C and D) are located below the western sides of the platform, along the slope of the knoll. A small rock mound (Feature E) is present on the platform. The drainage gulch adjacent to the site has vertical, rock-faced sides. The streambed is c. 24 ft below the level of the site. At the time of survey, two water pools were visible in the streambed from the site. This is the only location of surface water observed within the project area.

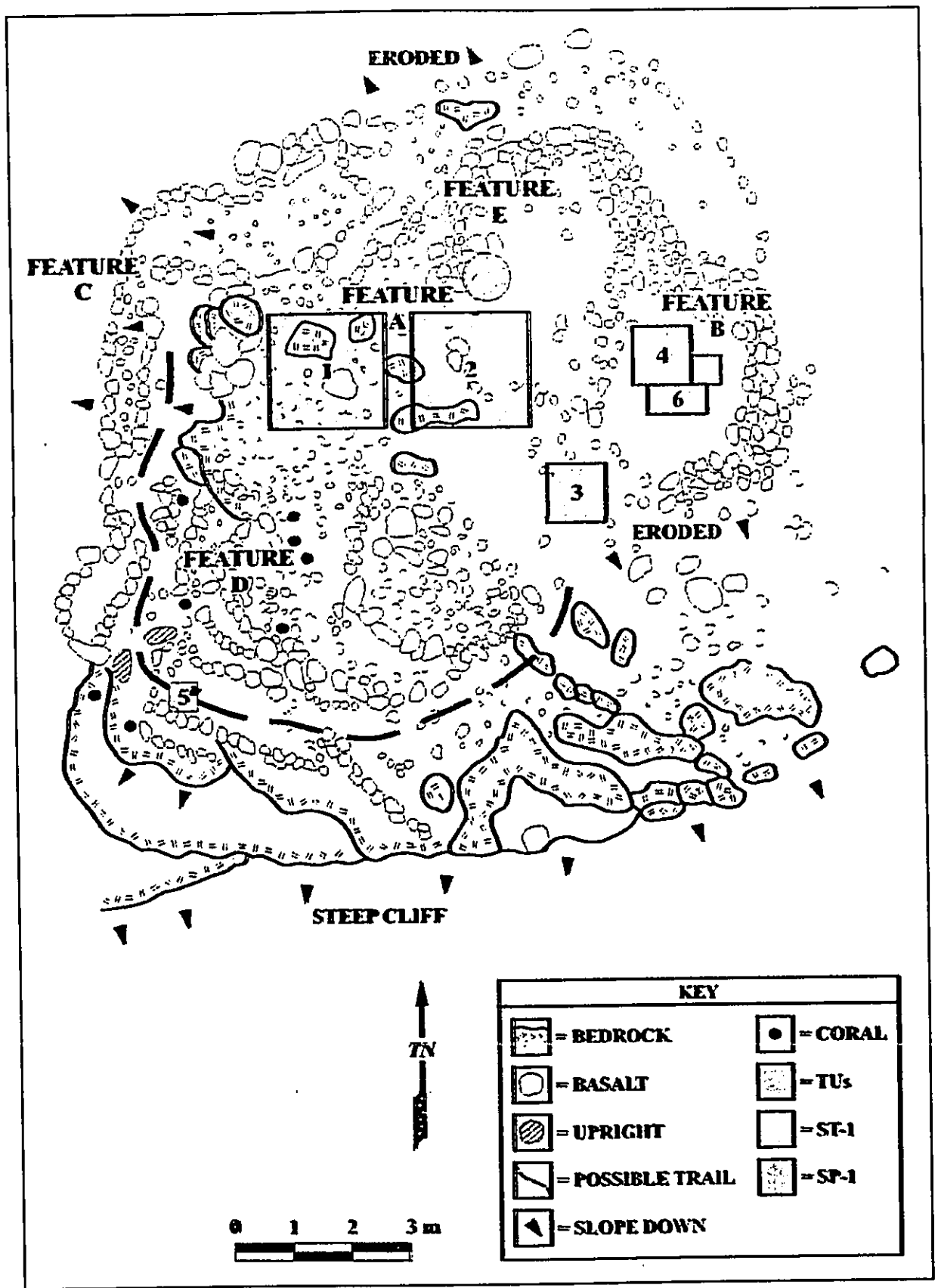

Figure 3: Plan View Map of Site -2512.

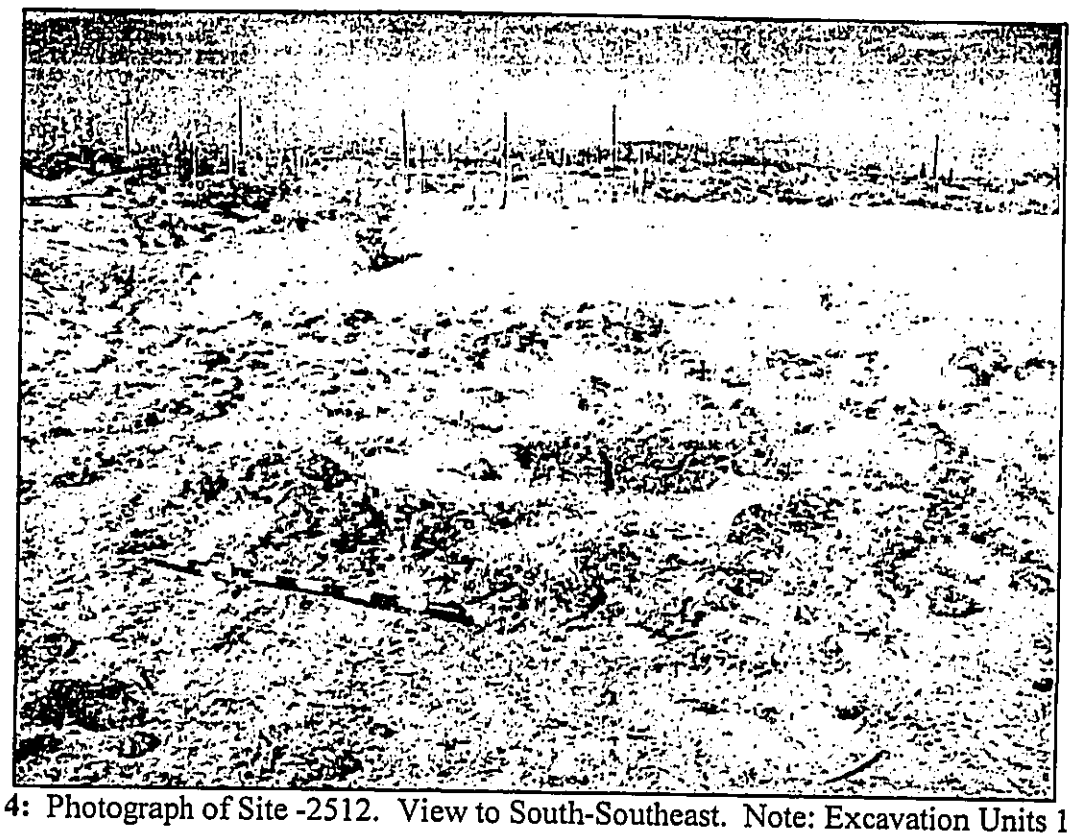

Figure 4: Photograph of Site -2512. View to South-Southeast. Note: Excavation Units 1 and 2.

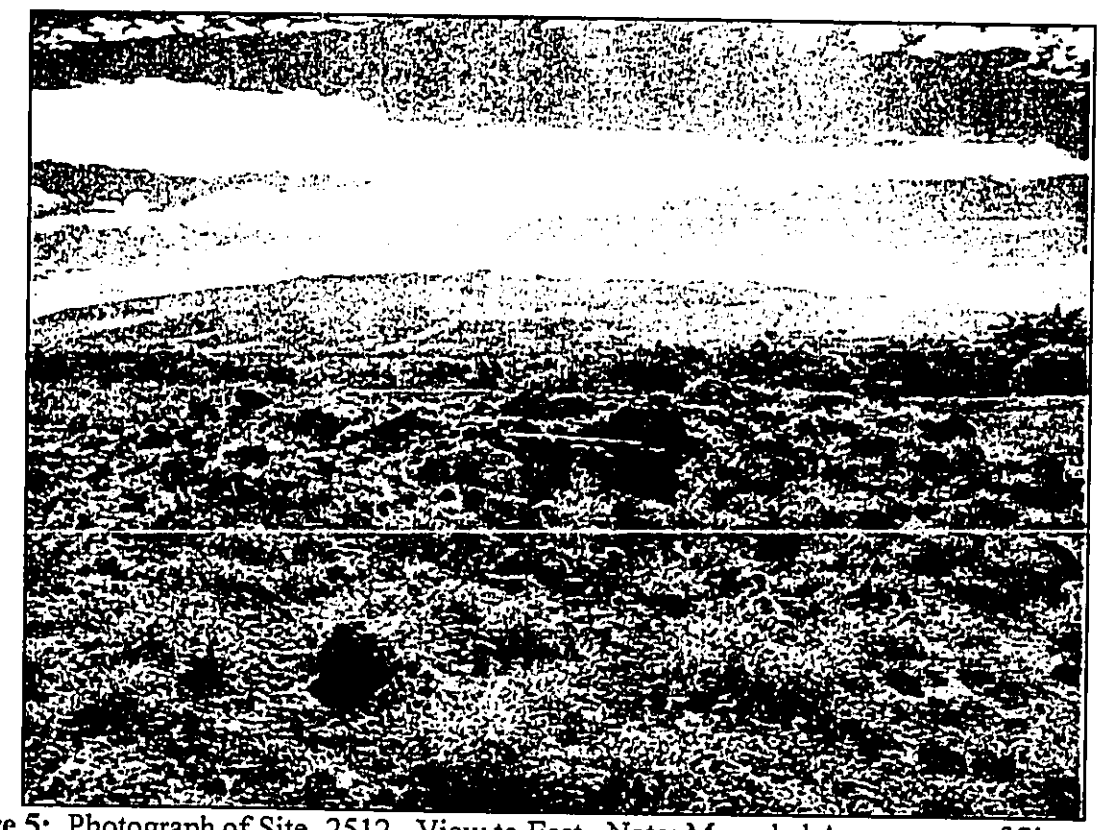

Figure 5: Photograph of Site -2512. View to East. Note: Mounded Appearance of Site.

Figure 6: Photograph of Site -2512. View to Northeast. Note: Mounded Appearance of Site.

These features are more fully described below, with most descriptions being from Donham (1990b):

FEATURE A: Platform;
FUNCTION: Habitation or shrine
DIMENSIONS: 9.00 m NE-SW by 6.50m NW-SE by 0.90 m maximum height

DESCRIPTION: Feature A appears to have been a rectangular platform situated on the crest of a small knoll, c. 1.20 m above surrounding terrain. The perimeter is intact at northern, western and southern corners, and along the northeast-facing side. Other sections of the

perimeter have been washed out by slope erosion or possibly moved during later modifications. Intact portions of the perimeter consist of stacked boulders and cobbles that average 0.25-0.30 m in height. The western comer incorporates a bedrock face, and is 0.90 m high. The surface of the feature is level; the western half is covered with small gravels and the eastern half is dark reddish-brown gravely silt loam, leveled in places.

A small D-shaped terrace is present at the southern corner of the platform. This terrace is defined by a curved perimeter alignment along the west side, which raises the surface 0.15 m above the surrounding platform surface. The small terrace surface is littered with boulders and cobbles, some of which appear to be disturbed. Down slope from the platform on the northern and southeastern side is a scattered deposit of small gravels and sparse fragments of *Cypraeidae* shell that appear to have washed off the platform. A considerable amount of soil also appears to have eroded from the top of the feature. Three pieces of branch coral are present at the southwestern edge of the platform, adjacent to the Feature D terraces, which contains additional pieces of coral.

FEATURE B; Low enclosure
FUNCTION: Possible agriculture
DIMENSIONS: Interior area 2.90m N-S by 2.40m E-W; overall, 4.20m N-S by 3.40 m E-W by 0.35 m maximum

DESCRIPTION: Feature B is situated at the eastern corner of Feature A, and may represent a later modification to the original structure. The eastern wall of Feature B connects with the platform perimeter at the northern end of the enclosure. The southern side of the enclosure is also the southeastern side of the platform. Portions of the enclosure wall are up to 0.70 m wide and consist of two parallel boulder alignments with core filling. Other portions of the wall are loosely piled cobbles and boulders, or a single alignment of boulders.

The interior of the enclosure is cleared of all stones, and consists of level, light reddish-brown sandy loam with little to no gravel. The soil here contrasts with the soil present on most of the adjacent features. No portable remains were observed inside the enclosure. The interior surface is raised slightly above the platform surface and the adjacent ground to the east. No opening is apparent in the low wall. The western side is in poor preservation, and the interior surface is nearly level with the top of the wall along this side.

FEATURE C: Terrace
FUNCTION: Agriculture/landscaping

DIMENSIONS: 8.90 m N-S by 1.50 m E-W by 0.30 m
FUNCTION: Agriculture

DESCRIPTION: Feature C is a long, narrow terrace situated along the western slope of the knoll, immediately down slope from the Feature A platform. The terrace may have extended around the northern base of the platform at one time; this area is presently much eroded and only traces of a possible perimeter are currently discernable. The terrace riser (along the downhill side) is defined by aligned boulders and stacked cobbles. The back of the terrace (uphill side) is defined by a vertical bedrock face with stacked boulders and cobbles on the north end and by the Feature D terraces on the south end.
Most of the interior surface area of the terrace is cleared of surface stone and leveled, with reddish-brown silty loam soil. No portable remains were observed on this terrace

FEATURE D: Terraced slope
FUNCTION: Agriculture/landscaping; possible shrine
DIMENSIONS: 7.00 m NW-SE by 4.00 m NE-SW by 1.02 m
maximum height

DESCRIPTION: At the southern end of Feature C, immediately upslope is a series of small semicircular alignments arranged in five levels along a relatively steep portion of the knoll slope. The upper level of the feature is a small soil flat (2.00 by 0.50m) adjacent to and just below the platform (Feature A) surface. The perimeter for this level is raised 0.20 m above the lower level to the west, and consists of cobbles and branch coral heads. A narrow flat is present around the base of this perimeter (3.00 by 0.30m), which is defined by aligned cobbles 0.35 m above the adjacent, lower level. A single large branch coral head is incorporated into this riser.

A third soil flat (3.00 by 0.80m) is present below the narrow terrace. This level is raised 0.32 m above the level below. At the northern end of this flat are two positioned upright slabs, both of which are 0.60 m high< The slabs are 0.40 m apart and define the southern end of a fourth small soil flat, which is raised 0.22m above the Feature C terrace. Coral is scattered around the uprights and on the lower level soil flats. The lower terrace alignments are positioned exposed bedrock.

FEATURE E: Rock mound
FUNCTION: Indeterminate/possible clearing pile
DIMENSIONS: 1.50 m NE-SW by l.20m NW-SE by 0.20 m
maximum height

DESCRIPTION: This low rock mound (or pile) is located near the center of the Feature A platform, along the northwestern side. It consists of loosely piled boulders and cobbles, and is situated along the western edge of the cleared portion of the platform surface. The feature may represent a clearing pile; as such, it would probably be a later modification to the original platform.

DATA RECOVERY RE-ASSESSMENT OF SITE -2512

Data Recovery investigations (Johnson and Spear 2005) found Donham's description of the site open to interpretation. First, the assertion that Feature B may be a later modification to Feature A brings into question its division into a separate feature. While indeed its level surface is a few centimeters higher than the adjacent surface of Feature A, the surface of Feature A is not completely level, the alignment separating the two not very pronounced, and the surface soil of Feature B adjacent to Feature A contains only slightly more sand. Second, the nature of Features C and D can be questioned with the uppermost terrace of Feature D actually being a continuation of the retaining element of Feature A. In addition, several of the lower terraces of Feature D presently appear ephemeral, possibly the result of colluvial processes. Portions of these lower terraces, however, may also be steps to a trail. This would make Feature C the western manifestation of this trail, which continues through the uprights identified in Feature D, wraps around the south portion of Feature A, and increases in elevation to join Feature A at its southeast corner.

A sixth possible feature, ephemeral at best, was not noted by Donham (1990b) and lies about 5 m to the east of the previously described complex. This is Feature F, a possible trail which runs for about 18 m along the bedrock overlooking the north side of the drainage. The feature is oriented in a rough east-west direction and incorporates three possible uprights into the bedrock, above the drainage's steep drop-off. This feature will not be preserved with the remainder of Site 2512 features as it occurs slightly above the southern boundary cliff facing, itself a natural protective buffer zone (see below).

Data Recovery Excavation Results

Site 2512 was excavated with five test units, one stratigraphic unit, and one shovel probe (see Figure 3). A total 11.80 square m of surface area was exposed at the site (6 % of Features A-D), and completed in approximately 11 person days. The reader is referred to Johnson and Spear (2005) for in-depth discussions of the following results.

STRATIGRAPHY: Profiles at Site -2512 were fairly consistent depending on depth of bedrock. They do, however, suggest deflation. The soil layers at this site were consistent

throughout all of the units. Layer Ia was a brown (7.5 YR 4/3) fine loamy sand to fine sandy clay loam with about 10% pebbles. The layer was structureless and non-sticky and non-plastic with many medium roots. The lower boundary is abrupt, and in some areas the layer bounds on bedrock. Layer Ib was a brown (7.5 YR 4/3) fine sand with about 5% pebbles. The layer is structureless and non-sticky and non-plastic with medium roots. The lower boundary was abrupt. Layer IIa was a dark brown (7.5 YR 3/3) fine sandy loam with about 5% pebbles. The layer was structureless and non-sticky and non-plastic with few medium roots. The lower boundary was abrupt. Layer IIb was a dark brown (7.5 YR 3/3) fine sandy loam with about 25% pebbles. The layer was structureless and non-sticky and non-plastic with few medium roots. The lower boundary was abrupt. Layer III was reddish brown (5 YR 4/4) silty clay loam with about 5% pebbles. The layer was structureless and non-sticky and non-plastic with few fine roots. The layer rested on bedrock. Layer IV was a brown (7.5 YR 5/4) silty clay loam with about 35% small pebbles. The layer consists of fine crumb peds with a weak structure and was slightly sticky and slightly plastic with many very fine to fine roots. The layer bounds on bedrock.

CULTURAL MATERIAL: All cultural material recovered from the site was attributable to traditional times, and other than coral, was minimal. Many large pieces of non-worked branch coral were identified on the site and coral was the only item found in TUs 1 and 5. Both coral (much of it burnt) and marine invertebrate shell were recovered from TU-2, primarily occurring in the northeastern portion of the unit, at the bottom of Layer I. TU-3 also yielded coral and marine invertebrate shell, all invertebrate shell recovered from the eighth inch screen and all material deriving from Layer I. All cultural material recovered from the units in Feature B was derived from Layer II, with the majority being from a single, fragmented echinoderm shell occurring in SSF 2512-B.1.

SUBSURFACE FEATURES: SSF 2512-B.1 was the single subsurface feature was identified at the site, located in Feature B in all three units excavated. This SSF originated at the bottom of Layer II, intruding 0.12 m into Layer III, and was a 0.70 m diameter pit filled with rock, charcoal and carbon stained soil. Also recovered from this SSF was a large fragmented echinoderm shell. The feature fill was a very dark brown (10 YR 2/2) sandy silt clay with about 60% pebbles and cobbles and charcoal and carbon staining throughout. The soil was structureless and slightly sticky and slightly plastic with few fine roots. The lower boundary was abrupt.

The large amount of charcoal was subsequently submitted for a radiocarbon date (Beta sample 204583/SCSRC422). The conventional radiocarbon age obtained from SCSRC422 was 20±60 BP. OxCal v3.5 provided a calibrated date, at 2 sigma, of 1680 (0.23)1740AD, 1800 (0.64) 1930AD, and 1940 (0.13) 1955 AD.

SITE -2512 INTERPRETATION

The presence of several small boulder/large cobble-sized pieces of unmodified branch coral at this site points toward ceremonial use. Its position on one of the highest knolls in the surrounding area, overlooking its largest drainage, also suggests a ceremonial function (see Figures 5 and 6). The presence of ceremonial trails leading to shrines and *heiau* are well documented. If the reinterpretation of Feature D as a trail is correct, it further substantiates the assertion that this site had ceremonial functions.

The stratigraphy of TU-4, TU-6, and ST-5 deserves some comment. Layer IIa in these profiles is a moderately thick, dark brown deposit of sandy silt that appears anthropogenic, being the origin of the only SSF located at the site. While Layer III correlates reasonably well with the other units at the site, Layer IIa was observed no where else. Consequently, it would seem that either Feature B was the primary use area at the site, other areas having little depositional activity, or that this deposit was once more widespread, and has since eroded away.

The hypothesis that Site -2512 may have had multiple occupations remains a question. Although cultural material was collected from Feature A, it was minimal at best, with units quickly reaching bedrock and exhibiting no definite cultural layer. Feature B, however, exhibited a well defined cultural layer and provided a late pre-Contact to post-Contact date for the site. Given the recent date for Feature B, it seems most likely that the site represents a single, late occupation, and that it functioned as a ceremonial site.

CONSULTATION

This Preservation Plan is being submitted to the Office of Hawaiian Affairs and the State Historic Preservation Division for review. Comments from these consulting groups will be incorporated into the final preservation plan.

SITE PRESERVATION

Preservation of Site -2512 will take the form of avoidance and protection, also referred to as conservation. As this could be a fairly high traffic area near the recreation fields, there are

initial plans to install a sign at the site (see below). There will be special provisions accorded cultural and lineal descendants of the area, school groups, other Native Hawaiian organizations, and any other groups so permitted by the landowner (County of Maui) for allowing access to the site for cultural and educational practices. In addition, a provision for access by archaeological researchers is offered here. However, no excavation or additional archaeological work will be conducted at the site unless approved by SHPD. Public access to the site may be made available by contacting the County of Maui. Parking affording such visits could occur within designated facility parking spaces. Access for upkeep of the site, as needed, will be afforded descendants, the County, and any neighborhood/school groups with permission to visit the site. The County of Maui is ultimately responsible for maintenance and protection of the site.

The following measures will be carried out to provide the maximum preservation and conservation of Site -2512 within the context of the proposed development:

- The preservation area for the site is irregular, with three sides (north, east, west) being artificial and one side (south) being natural (cliff face). An interim 5 m (16 feet) buffer zone and 3 meter (10 feet) permanent buffer zone will be established around the north, east, and west flanks from the respective exterior wall directions of the site (Figure 7). The southern flank buffer zone will consist of the southern portion of Feature F as it is naturally protected along a steep cliff face rising 24 feet (7.31 m) above the intermittent drainage below. The preservation area will protect some 210 m^2 (2, 259 sq. ft.) of land encompassing the site.

- No construction will be allowed to be conducted within the established preservation area. During construction activity on the parcel, the interim buffer zone (5 m or 16 feet) around Site 2512 will be demarcated on the north, east, and west flanks by orange construction fencing around the entire perimeter of the buffer zone. Once construction has been completed, the fencing may be removed and a permanent buffer zone will be established around the site (3 m or 10 feet) that may be demarcated by landscaping and/or boulders placed at the corners of the buffer zone. The permanent buffer zone shall be kept free of all structures. Only landscaping with native plants may occur within the permanent buffer zone. However, no landscaping shall be allowed within the sites itself.

- Demarcation of the interim and permanent buffer zone will be duly recorded by the client's surveyors and must be reviewed and accepted as appropriate by the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) prior to construction on the parcel. The interim and permanent buffer zone shall be surveyed and plotted on all construction plans.

- No heavy equipment or other construction-related machines or materials will be allowed to be moved or stored in the preservation area. The preservation buffer zone surrounding the site shall not be used as staging and/or storage areas.

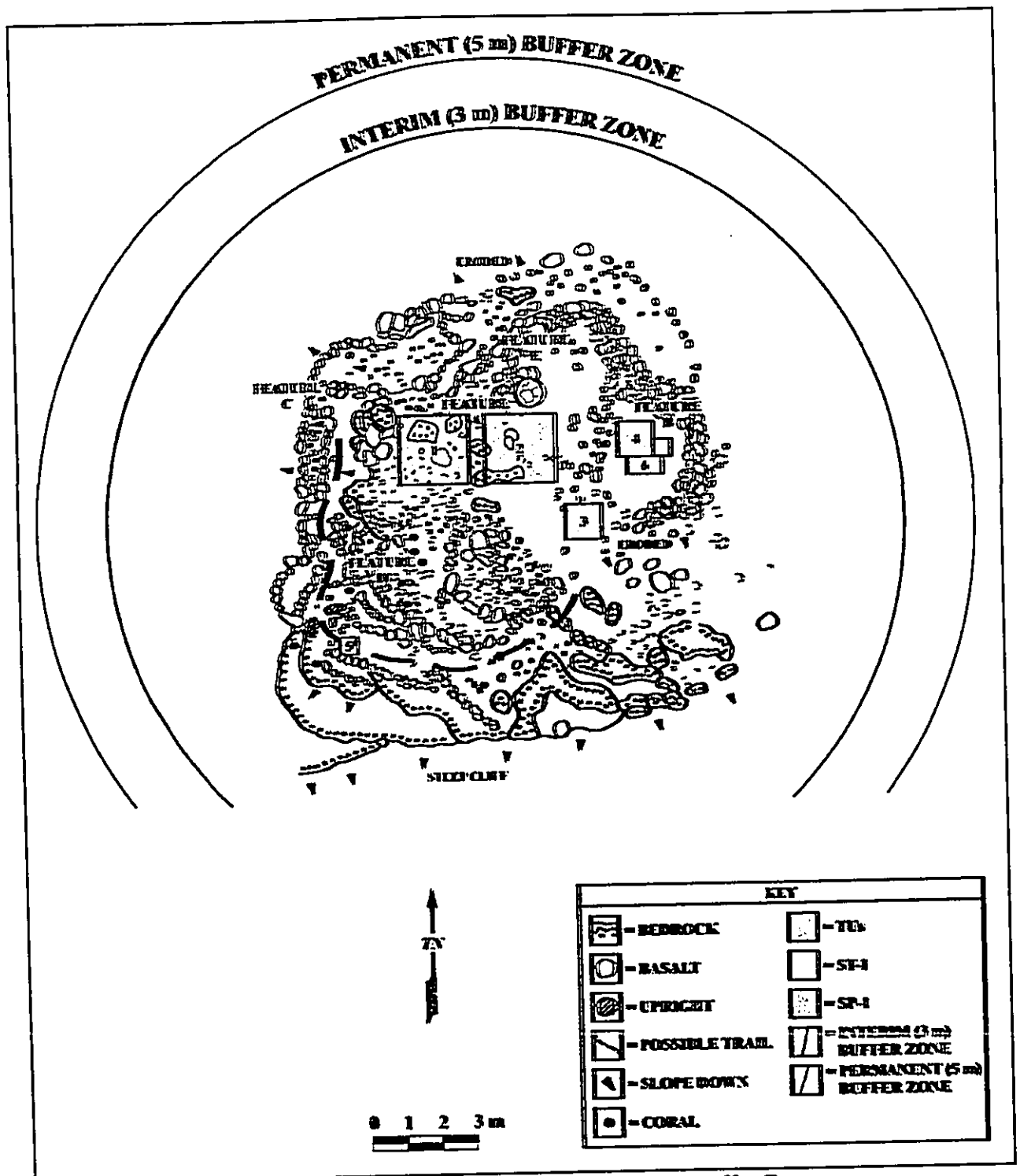

Figure 7: Plan View Map of Site -2512 Interim and Permanent Buffer Zones.

- All understory brush in the preservation zone may be removed using hand-clearing techniques.

- All existing stones, whether stacked or not, will be left in place.

- Should storm, earthquake, or other natural or cultural damage occur to the site and its environs, and should this necessitate repairs to ensure the safety of descendants and others wishing to visit the site, the landowner (County) will notify the SHPD of the situation and reach an agreement with the SHPD on how to proceed prior to implementing any alterations to the ground surface, site, or vegetation within the preservation area.

- Modern debris generated by users of the site or that may have been blown into the site may be removed by hand from within the preservation area whenever is deemed necessary by the County, descendants, or other groups visiting the site.

- These provisions are made for on-going preservation of Site 2512. The portion of the property containing the site and its permanent preservation zone will be preserved, with preservation provisions being binding on any successive owners and/or lessees of the TMK parcel 2-2-2:-42.

- Information and protection signs for the site may be created for the County. The signs would be recognizable as official County signs to the public. The following provides an example of one possible sign. The upper portion of the sign would include the following text:

Historic Site 2512
Possible Ceremonial Site
Keokea Ahupua`a, Makawao Moku
This area is preserved as part of Hawaiian heritage.
Damage to this Historic Site is punishable under Chapter 6E-11 Hawai`i Revised Statutes.
Please help protect this important historic site.

- The lower portion of the site could be interpretive and would summarize the results of archaeological research at the site in the area, discussing settlement patterns and chronology. SCS will work with the SHPD on sign language, size, and placement.

- This Preservation Plan shall be made part of the binding lease agreement for TMK 2-2-2:042.

VERIFICATION

As is illustrated in Figure 7, both an interim and permanent buffer zone will be founded around three flanks of Site 2512. Orange construction fencing will be required around the site on an interim basis should areas nearby the site be developed. Verification that orange construction

fencing has been set in place around the site pursuant to this plan must be made to SHPD before construction begins on the subject parcel. Verification will take the form of both a telephone and written notification. Verification will be accomplished by SCS. Written notification will be accompanied by photographs showing in place buffer fencing. A permanent buffer zone will remain around this site irregardless whether development occurs on the parcel.

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1989 *Archeological Inventory Survey, Piilani Residential Community – Phase I.* PHRI Report 548-071489. Prepared for Baldwin Pacific

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2005 *Archaeological Data Recovery Report for Pi`ilani I and II Kīhei Community Park Project, Kīhei, Keokea Ahupua'a, Makawao District, Island of Maui, Hawai'i [TMK: 2-2-02:42].* Scientific Consultant Services, Inc., Honolulu.

Michael Summers

From: Melissa.A.Kirkendall@hawaii.gov
Sent: Monday, April 16, 2007 1:10 PM
To: Michael Summers
Subject: corrected site designation

Mike, please note that the correct site designation should be 50-50-10-1710, not 50-50-14-1710.

Thanks, Melissa

Melissa Kirkendall, Ph.D.
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Melissa A Kirkendall/DLNR/StateHiUS

04/16/2007 12:24 PM

To msummerst@chpmaui.com
cc Jenny L Pickett/DLNR/StateHiUS, Melanie A Chinen/DLNR/StateHiUS
bcc mike@scshawaii.com
Subject South Maui Community Park

Mike,
Thank you for requesting a meeting with me today regarding the South Maui Community Park. We apologize for the delay in our review of your document, and I am currently preparing an immediate response to your Special Management Area Permit Application and Draft Environmental Assessment.

As we discussed, SIHP 50-50-14-1710 appears to reflect primarily post contact use of the area, given its construction and cultural materials identified. Traditional materials were also identified within the trenches, and included marine gastropod with some bivalve and echinoderm. Small mammal bone and one fish bone rounded out the assemblage. Unit-3 also revealed an unworked volcanic glass pebble, and a single possible basalt flake. Historic material identified included fragments of non-diagnostic bottle glass, machine cut nails, and flat metal fragments. Some of these were firmly associated with Layer III. The cultural material derived primarily from Layer I, and excavations, as reported in the data recovery report, terminated at rock which exhibited a coating of calcium carbonate. One subsurface feature was identified as a possible post hole, initially observed at the base of Layer III in TU-4. It was filled with soft light colored sand.

Following our meeting, I conducted a field inspection of the site. As indicated in the report, the west and east sides of the enclosure maintain some integrity, however the south side exhibited bulldozer push during the intervening period between inventory survey and data recovery. I was able to identify the well described stratigraphic deposit within the trench. As was suggested by the data recovery report, the strata in the majority of the units and stratigraphic trenches relatively homogenous and were comprised of a dark gray sandy loam (Layers I, IIa, b, c, III, IVa) while strata IVb through Vd were comprised of fine to medium sand with no plasticity. Test Unit 3 varied and was comprised of fine sand, loamy sand, with bedrock as the lower boundary. All of the units were excavated to either 50 cm into sterile

deposit or the above mentioned bedrock.

These findings are consistent with expectations in an area adjacent to the wetlands. No historic properties were identified on the adjacent properties during construction of Lokelani Intermediate School, or the small industrial area to the west, nearer the wetlands. We believe that given the presence of the sand deposits in this area, archaeological monitoring will mitigate against possible impacts to historic properties that may be located in the area.

We appreciate your willingness to work with us on this matter, given our delayed review. We will be drafting a letter detailing the above today. We understand that a monitoring plan is in preparation and anticipate reviewing and accepting it prior to onset of construction.

Melissa

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SCS Project Number 826-AMP-1

ARCHAEOLOGICAL MONITORING PLAN FOR PI`ILANI I AND II KĪHEI COMMUNITY PARK PROJECT, KĪHEI, KEOKEA AHUPUA'A, MAKAWAO DISTRICT, ISLAND OF MAUI, HAWAI'I [TMK 2-2-02:42]

Prepared by:
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and
Michael F. Dega, Ph.D.

April 2007

Prepared for:
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INTRODUCTION

At the request of Chris Hart and Partners, Inc., and pursuant to recommendations by the Hawai'i State Historic Preservation Division (SHPD), has prepared this Archaeological Monitoring Plan (AMP) in advance of construction work for the Pi`ilani I and II, Kīhei Community Park Project, Kīhei, Keokea Ahupua'a, Makawao District, Island Of Maui, Hawai'i [TMK 2-2-02:42] (Figures 1 and 2). Scientific Consultant Services, Inc. (SCS) conducted Archaeological Data Recovery on the subject property (Johnson and Spear 2006; accepted by SHPD on March 6, 2006), following acceptance of an Archaeological Data Recovery Plan (Donham 1990a, 1990c). A total of six archaeological sites were designated for Data Recovery investigation. One of these sites is slated for Preservation (Site 50-50-14-2512).

Archaeological Monitoring will ensure that identified significant cultural resources are sampled, documented, and evaluated for their historical significance, per State Historic Preservation Division (SHPD) recommendations. This Monitoring program will also ensure that, in the unlikely events human remains are identified during subsurface work, appropriate and lawful protocol concerning the Inadvertant Discovery of Human Remains (pursuent to 13-300-40a, b, c, HAR) is followed. Please note that Monitoring herein is limited to locations containing sandy deposits. This would primarily entail the northwestern corner of the parcel. Monitoring will not be conducted in non-sandy areas of the project parcel.

This AMP is being prepared for Chris Hart & Partners and will require the approval of the State Histoic Preservation Division (Dr. Melissa Kirkendall, SHPD-Maui) prior to the commencement of any excavation activities on the parcels. The following text provides more detailed information on the reasons for monitoring, potential site types to be encountered during excavation, monitoring conventions and methodology for both field and laboratory work, and curation and reporting. The preliminary grading plan can be seen in Figure 3 and the proposed project phases can be seen in Figure 4.

PROJECT AREA DESCRIPTION

The physical nature of the project area has not changed dramatically since the Inventory Survey study conducted by Donham (1989), with the exception of its southern boundary, now being the eastern extension of Welakahao Road. The research area is bordered on the North by Kihei Elementary and Intermediate School, to the west by Waiohuli-Keokea Beach Homesteads, and to the east by Piilani Highway (see Figures 1 and 2). The coastline is located less than one mile to the west of the project area.

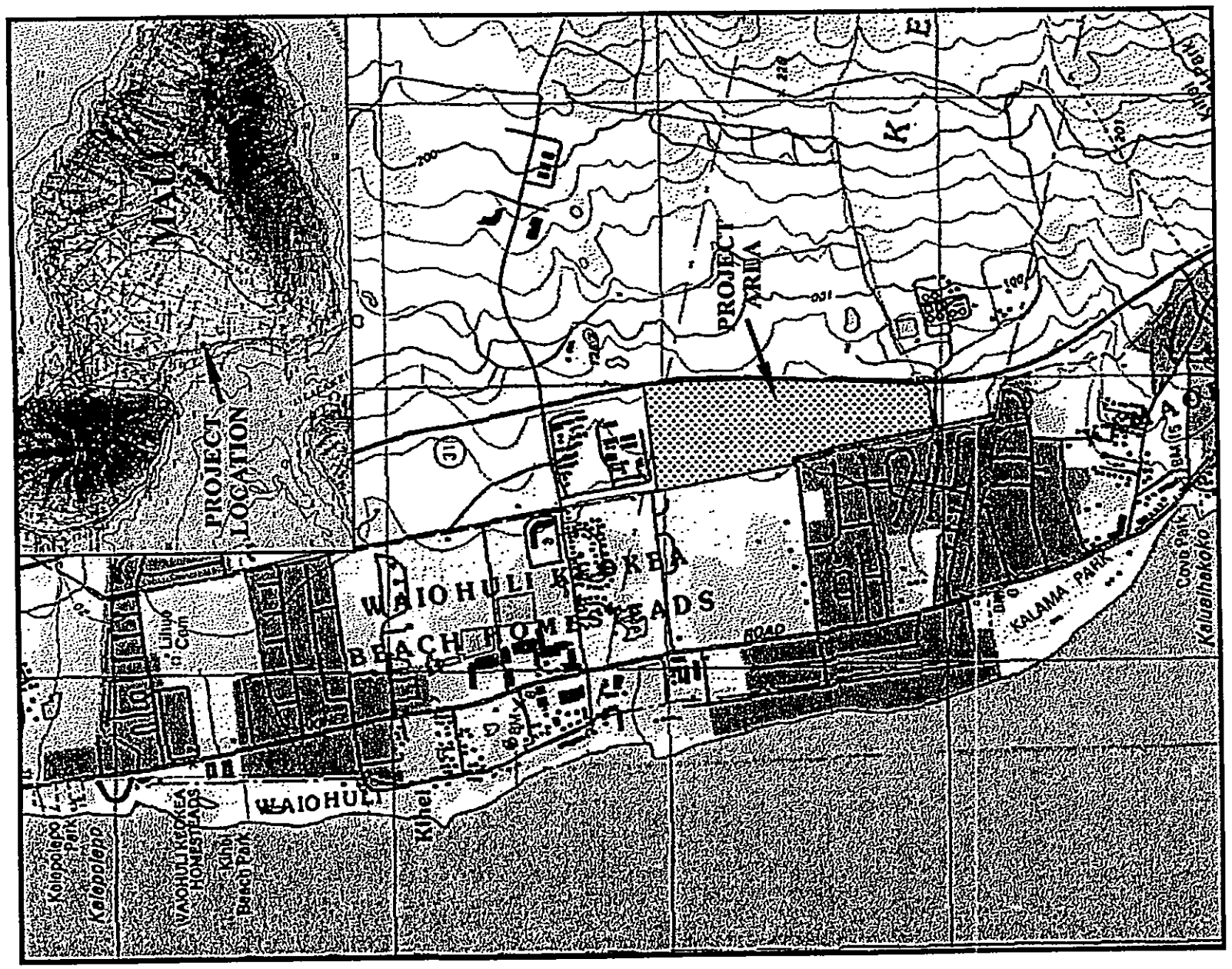

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Figure 1: USGS Quadrangle Showing Project Location..

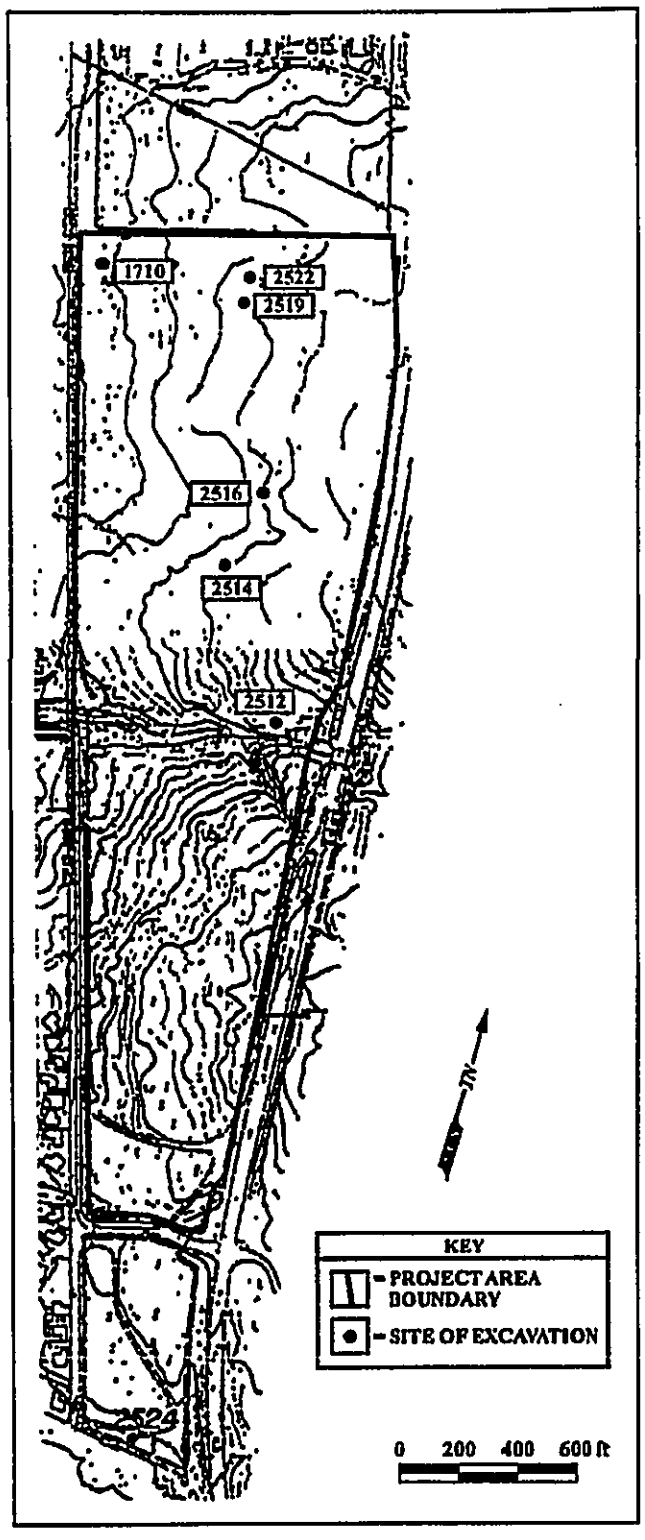

Figure 2: Plan View of Project Area with Site Locations.

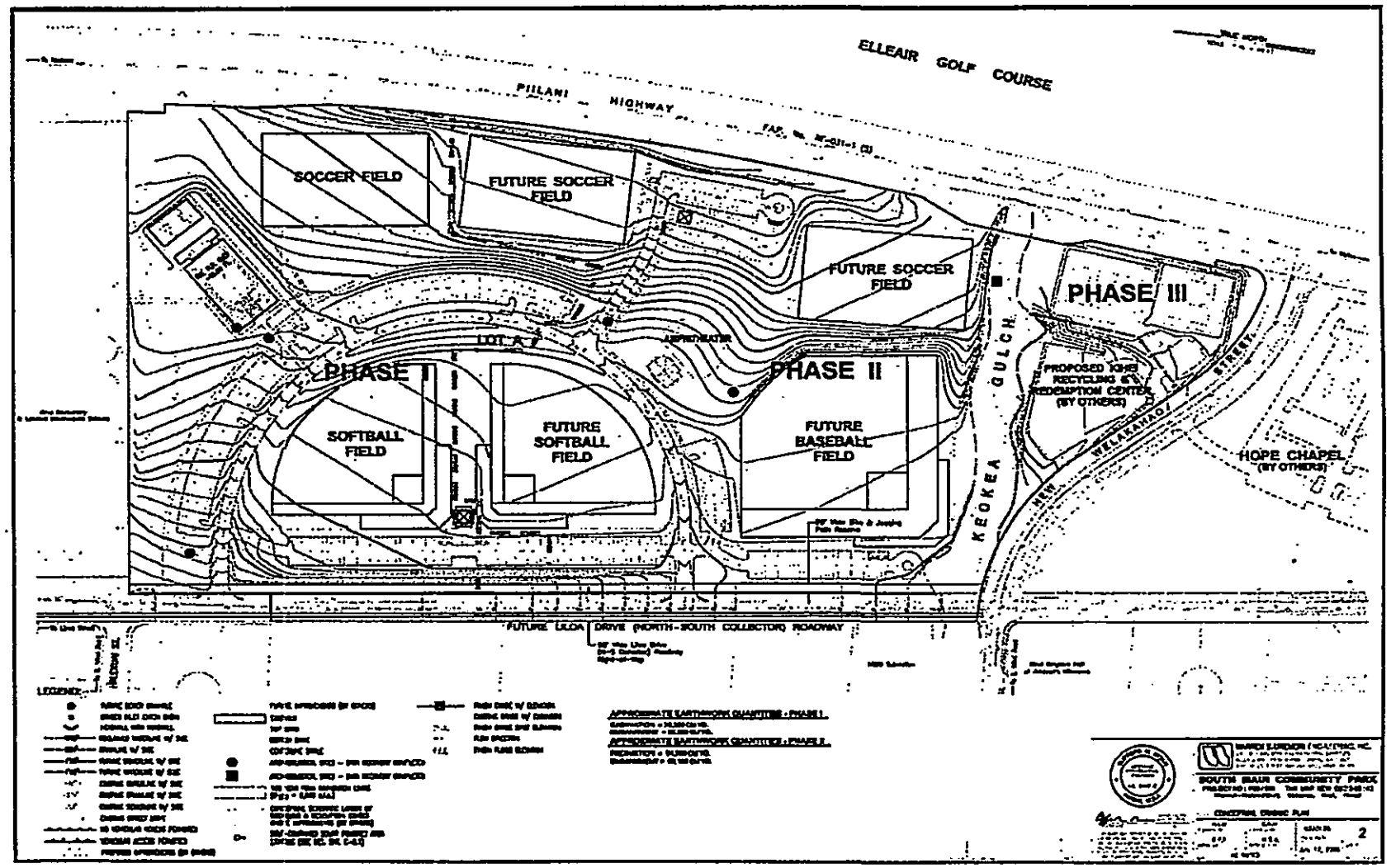

Figure 3: Proposed Grading Plan View Map.

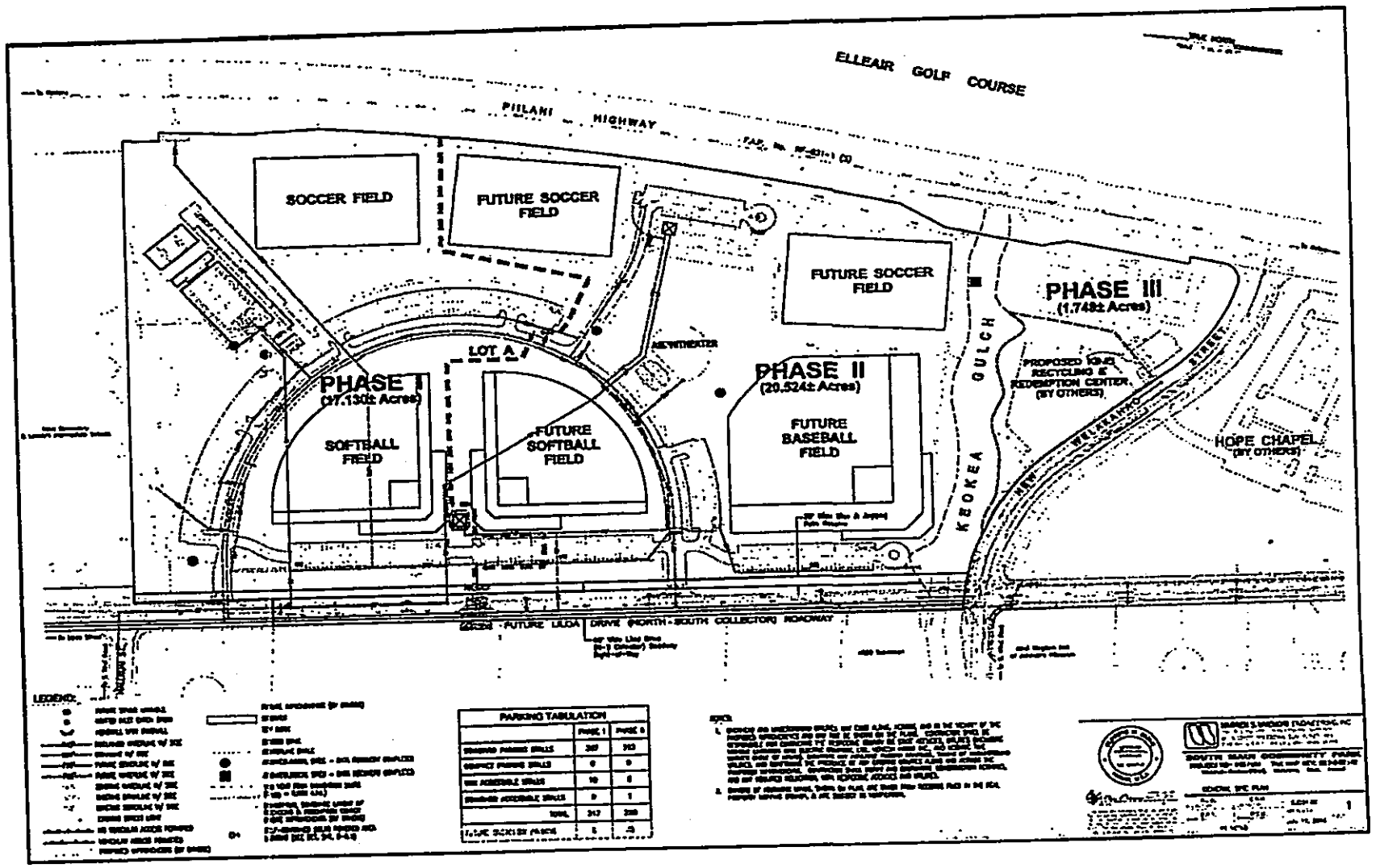

Figure 4: Plan View of Site Map Showing Work Phases.

The climatic and edaphic regimes for the area generally correspond to the regime known as the "Barren" zone. The specific location of this project, however, puts it on the seaward margin of this zone. The topography of the project area is primarily a gentle east to west descending slope, although a large, notable basin into which several ephemeral drainages flow is present in its northwest portion. A steeply-incised intermittent drainage is located in the southern portion of the project area and is lined with natural bedrock outcrops. Exposed bedrock and bedrock outcrops are also common across the breadth of the parcel and are often visible on low knolls. Bedrock has been exposed on these knolls due to Aeolian transport of existing sediment. Waiakoa extremely stony silty clay loam is the major soil series in the project area (Foote *et al.* 1972: 127). This soil is prone to erosion and exposed rock composes up to 15% of its surface. Much of this exposed rock also exhibits a calcium carbonate crust. Puuone sand is the only other soil found in the project area (Foote *et al.* 1972: 115), and primarily occurs in its northwestern portion. This series consists of grayish brown calcareous sand frequently underlain by a calcium carbonate hardpan. It is within this section that *Monitoring will occur during construction.*

In brief, the Kihei area is characterized as hot and arid, with daytime temperatures ranging between 80 and 90 degrees Fahrenheit. The low average annual rainfall is approximately 250 to 300 mm (10 to 12 inches) and typically supports only xerophytic vegetation (Armstrong 1983). Soil in this area of Kihei consists of Waiakoa extremely stony silty clay loam (WID2), with 3 to 25 percent slopes (Foote *et al.* 1972:127). In most areas where this soil occurs, approximately 50 percent of the surface layer has been eroded. Runoff levels are average, and the erosion hazard is severe. The combination of low rainfall and fairly unproductive soils support the characterization as the area being labeled the "barren zone" (Cordy 1977; see also Tome and Dega 2002). Based on background research (Foote *et al.* 1972), observations of surface sediment, and previous archaeological testing in the general area (see Johnson and Spear 2006; McGerty *et al.* 2000), soil in the assessment area is predominantly composed of stony silty clay with an extremely minor loam component. The soils have derived from the *in situ* weathering of igneous rock. Much of this soil has been graded during recent times, allowing for almost immediate exposure of bedrock and the area's hardpan. Stratigraphic variation in the area is very modest.

REASON FOR MONITORING

Monitoring is being conducted only on a small portion of this parcel due to the presence of natural sand in the northwestern corner, the sand indicating the potential that subterranean excavation could impact burials or significant cultural features. The project area contains known sites that have been documented to both Inventory Survey and Data Recovery levels. Thus, the project area contains a known cultural landscape. What is of concern for this Monitoring work is the sandy sediment in the northwestern portion of the parcel. Both subterranean cultural materials and burials are often identified in sandy sediment. This pattern has been documented *ad nauseum* through the islands (see Kirch 1985 for example). Monitoring is being conducted in this small portion of the project due to the presence of sandy sediment.

HISTORICAL BACKGROUND OF THE PROJECT AREA

While Kula is an arid region, a considerable population existed along its seashore—where fishing was excellent—and on the lower slopes of Haleakala at elevations high enough (at least 303 meters above mean annual sea level) to support dryland cultivation. There is no evidence—oral or written—of taro farming, but the sweet potato, or *`uala*, "was the staple of life here" (Handy and Handy 1972:511).

In the uplands of the Kula district, at elevations higher than *c.* 1,000 feet above mean annual sea level, traditional agriculture was based on dryland field systems. Handy and Handy (1972:488) write:

> The great bulk and altitude of Haleakala makes its southern flank practically a water less desert, and the southeast and west flanks relatively dry, so that there were no *lo`i* (pond fields) cultivation at all. The arid country below the west and south slopes of Haleakala, including Kula, Honua`ula, Kahikinui, and Kaupo, were dependent on sweet potato.

Handy and Handy (1972:131) also describe the planting methods in the drier sections of Kula:

> Where potatoes are planted in crumbling lava with humus, as on eastern Maui and in Kona, Hawaii, the soil is softened and heaped carelessly in little pockets and patches using favorable spots on slopes the crumbling porous lava gives ample aeration without much mounding

At lower, drier elevations, in the so-called barren zone, agriculture was a relatively minor component of the traditional subsistence economy.

The fact that few references to Kula District are found in traditional sources is likely an accurate reflection of its relative unimportance compared to the often-cited and better-known districts of Hana, Lahaina, Wailuku, and other population centers on Maui. Most references to Kula are minimal even when describing important battles and their participants. Other references allude to the difficulties of living in the fairly harsh environment of Kula. During a drought in the time of Kihaa Pi`ilani (*c.* A.D. 1500–1600s), people in this area were forced to subsist on weeds such as *laulele*, *pualele*, and *popolo* (Kamakau 1961). They could restore their crops only by obtaining potato slips from neighboring districts. However, sustained settlement did occur on the Kula slopes over time. By the 15th century, for example, large settlements were appearing in upcountry Kula and the building of religious temples flourished (Kolb *et al.* 1997).

Early historical accounts and archaeological evidence suggest that the barren zone, in which the subject parcel is situated, was a transitional area in which people moved resources between the coast and the uplands to heights of *c.* 1,000 feet (above mean annual sea level). Large, permanent settlements—with clusters of habitations, *heiau,* petroglyphs, and large agricultural terraces and garden enclosures—have been documented in the uplands of Kula, above the 30-inch annual rainfall line (Kolb *et al.* 1997). Fishponds (three at Kalepolepo) and coastal *heiau* indicate a relatively sizable coastal population relying on marine resources. Both the uplands and the coast were settled by at least A.D. 1200, if not earlier, and trails linking these areas, and crossing through the barren zone, have been identified in Waiohuli and Keokea (Kolb *et al.* 1997).

Although relatively general and of varying quality, early accounts of explorers, travelers, and missionaries can shed some light on traditional land use and lifestyles in the project area. Eight years after Captain James Cook's initial arrival, La Perouse sailed up the western coast of East Maui and stopped at Keone`o`io. La Perouse was greeted by 120 Native Hawaiians, who offered "...hogs, potatoes, bananas...taro, with cloth and some other curiosities..." (La Perouse 1798:345). He also noted that this part of the island was hot, dry, and rough, with soil "...wholly composed of lava and other volcanic matter" (La Perouse 1798). Water was scarce and the villagers drank from a shallow, brackish well.

Vancouver recorded his impressions of the southern and western coasts of Maui during his second visit in 1793:

> ...the part we were abreast of [east of Pohakueaea Point] at daylight in the morning, though terminating very abruptly in the ocean, and though its surface was very uneven, had yet a verdant

> and fertile appearance, and was seemingly in an advanced state of cultivation. From the number of villages and distinct houses, we were let to consider it as tolerably well inhabited [Vancouver 1884:850].

Cultivation of Irish potatoes in the Kula district began shortly before 1840, after which time Kula became known as "the potato district" because of its great success in their cultivation. During Kula's peak potato producing period of the 19th century, dryland gardens in the uplands extended all the way from Kula to Kaupo. The resulting deforestation adversely affected the amount of rainfall in the district and periods of drought became more common (Kolb *et al.* 1997). The *Honolulu Advertiser* describes the changes to Kula and the Kihei area:

> Before 1850 Kula was supplied with moisture naturally through the existence of a large forest. That forest was cut down when land was cleared in Kula to open farm plots in 1850. This was in answer to the demand for food in California during the gold rush... [and] by ranchers clearing for pasture. A secondary result of clearing forests was destruction of existing fresh water ponds in Kihei on the Maalaea Bay coast below Kula. When forest was cleared, water was free to rush down the mountains carrying soil from Kula and filling with mud the ponds for which Kihei was once famous [1962:A15].

Ranching was also present in Kula prior to the 1840s (Land Court Awards, State Archives). Large sections of Crown Land were leased for grazing cattle, and, by the 1880s, lower Kula consisted primarily of pastureland for ranching. Archaeological evidence of ranching is present near the subject parcel (see below). In 1888, Edwin H. Baily, Lorrin A. Thurston, W.H. Baily, and Henry P. Baldwin met in Honolulu and purchased Maui ranch lands owned by Charles Alexander for $50,000. The resulting ranch included 33,817 acres with 400 to 500 acres set aside for corn cultivation. Haleakala Ranch Company historically used the land in and around the project area for ranching activities.

There are no Land Commission Awards (LCA) for the subject property, which typically implies that the land was not formally settled at the time of the *Great Māhele* (1848). Again, this aligns with the 'barren zone' model of settlement in that it was not prime real estate. The subject parcel was, however, a portion (*apana* 1) of Royal Grant 9325 to Haleakala Ranch Company, Waiohuli-Keokea, Kula (Kihei), Maui.

Twentieth century activities in the Kula District included a significant World War II military presence along the beach of Ma'alaea Bay, a combat demolition training station at

Kama`ole, two naval air stations at Pu`unene and Kahalui, and Army camps and hospitals in the Kula and Makawao areas. In particular, small, low walls and C-shaped rock formations—used as fighting positions by gunners—have been documented near the project area (see below).

PREVIOUS ARCHAEOLOGICAL RESEARCH

Project Area Studies

The project area has been subject to Inventory Survey (Donham 1989, 1990b) and Data Recovery (Johnson and Spear 2006). The Data Recovery Plans were authored by Donham (1990a, 1990c). The initial Inventory Survey by Donham (1989, 1990b) led to the documentation of 15 sites in the project area, comprised of 30 features. These sites included nine terraces, six low walled enclosures, four "C" shapes, four rock piles, two platforms, two midden scatters, an alignment, a high walled enclosure, and a modified outcrop. Most of these features were considered to be agricultural in function, but seven were thought to indicate at least temporary habitation. During Data Recovery (Johnson and Spear 2006), a total of six archaeological sites were designated for investigation: Sites -1710, 2512, 2514, 2516, 2519, and 2522. All but Site -2519 were subject to additional mapping and testing (Site -2519 was not re-located, likely having been destroyed during post-1999 fire suppression activities). Thus, five sites comprised of ten features were studied and excavated. The only feature investigated that potentially representing permanent habitation was the platform at Site 50-50-01-2514. This feature yielded the highest density of cultural material of all excavated features. The radiometric dates obtained from two of the sites this project (Sites 50-50-01-2512 and 50-50-01-2516) and the historic artifacts from Site 50-50-01-1710 demonstrate that most of the sites in the project area were utilized in the late pre-Contact to early post-Contact periods. Site -2512, a potential ceremonial site, has been preserved under an accepted Preservation Plan (Dega 2005). Archaeological Monitoring represents the fourth state of archaeological involvement of the project area.

General Area Studies

Additionally, several studies have been conducted nearby, in association with development of the Maui Research and Technology Park and the Elleair Maui Golf Club (Kennedy 1986; Hibbard 1994; Chaffee *et al.* 1997; McGerty *et al.* 2000; Sinoto *et al.* 2001; Tome and Dega 2002; Dega 2003; Monahan 2003). Before describing these specific studies, it is first necessary to present a general picture of the previous archaeological research in the area.

Work by Cordy (1977) in the Kihei area resulted in a pre-Contact settlement model that divides the landscape into three environmental zones: coastal, transitional/barren, and inland. The current project area falls into the transitional/barren zone, which refers to "the slopes back of the coast with less than 30 inches of rainfall" (Cordy 1977:4). This barren zone is viewed as relatively marginal for permanent habitation because of its dryness, rocky soils, and dearth of natural resources, in general. Archaeological surveys in the barren zone around Kihei have confirmed these earlier suppositions about land use as there was very little evidence of pre-Contact Native Hawaiian settlement. Cox (1976) surveyed near the project area along the corridor of the Pi`ilani Highway and failed to notice a single site or significant feature. Kirch (1985) examined similar geographic settings to the south (towards Makena) and also failed to find any evidence of traditional Native Hawaiian activities in the barren zone. In fact, as Kennedy (1986) observes, this settlement pattern of avoiding the barren zone probably continued from ancient times through the early historic period, at least in the Waiohuli Ahupua`a, as all 27 LCAs for the *ahupua`a* were issued for land situated in the far upland reaches of the land unit. Dega's (2003) synthesis of previous archaeological studies in the Kihei area demonstrates that the coast was settled in traditional times, but that the density of human occupation was probably never great in this part of Maui.

According to Kennedy (1986), there are several important *heiau* located quite a distance *mauka* of the subject parcel, but none in the near vicinity. Sterling (1998) includes three *heiau* for the Waiohuli Ahupua`a: Kaumeheiwa (Walker Site 212), Kaimupeelua (Walker Site 213), and Pauhu (Walker Site 214, since destroyed).

Kennedy (1986) conducted an archaeological reconnaissance of the entire 150.032 acres of the then-proposed Maui Research and Technology Park (TMK:2-2-02, since changed to 2-2-24), situated immediately upslope (*mauka*) of the project area. Kennedy's study, which did not include subsurface testing (excavation), concluded that no archaeological sites or features were located within the proposed site.

Chaffee *et al.* (1997) conducted an Archaeological Inventory Survey, including subsurface testing (excavation), of a portion of the Maui Research and Technology Park, within the area investigated by Kennedy (1986). Three sites consisting of ten archaeological features were identified. The features included remnant terraces, stone alignments, a mound, and a modified outcrop. All of the sites were interpreted as agricultural in function with the exception of a rock mound that may have functioned as a religious feature.

Monahan (2003) conducted an Archaeological Inventory Survey, including subsurface testing (excavation), of a 28.737-acre portion of the Maui Research and Technology Park, within the area investigated by Kennedy (1986), situated immediately upslope (*mauka*) of Lot No. 1-B. Other than one surface feature—a small arrangement of stacked boulders interpreted as a 'push pile,' this survey yielded no evidence of historic or prehistoric significance.

Theresa Donham conducted an archaeological reconnaissance of the Haleakala Greens Subdivision area (Hibbard 1994). She identified a low, circular rock mound, a historical site with multiple features on the crest of a prominent ridge, a linear rock mound or wall remnant, a rock-filled terrace outlined with a low, rock wall, and other modifications along a rock outcrop. Shell midden was observed on the surface inside an enclosure.

McGerty *et al.* (2000) surveyed fifteen selected areas within the Elleair Maui Golf Club, and identified five archaeological sites (State Site Nos. 50-50-10-5043, -5044, -5045, -5046, and -5047) containing a total of seven surface features. The surface features were interpreted as agricultural terraces, perhaps dating from the pre-Contact period, and C-shaped rock formations (fighting positions) built during World War II training. Ten excavation units placed within these features yielded no cultural material.

Sinoto *et al.* (2001) conducted an Archaeological Inventory Survey of a parcel adjacent to the subject property. No archaeological or historical sites or features were identified.

Tome and Dega (2002) conducted an Archaeological Inventory Survey along the northeastern flank of the Elleair Maui Golf Club property. They identified a historical ranching corral and a short agricultural wall, collectively designated State Site No. 50-50-10-5233. No other structures or subsurface deposits were identified. No traditional Native Hawaiian sites or features were identified. Another Inventory Survey along the southern flank of the Elleair Maui Golf Course (Dega 2003) failed to yield any archaeological or historical site or features.

In summary, previous archaeological research has documented a fairly limited degree of human settlement in the Kihei barren zone, of which the present project area is a part. Archaeological reconnaissance and survey adjacent to, and nearby, the subject parcel, some of which included subsurface testing, have yielded a modest amount of evidence of both historical and traditional human activities. These include: agricultural terraces, possibly dating to the pre-Contact period, temporary habitation loci, C-shaped rock formations interpreted as World War II-era training features, and a historical ranching corral and a short agricultural wall.

EXPECTED FINDINGS

Given several factors—previous archaeological findings in the area, geographic location and resources in the project area, and historical land use patterns in the area—expected findings of Monitoring are expected to be modest. This is primarily due to the dearth of intensive cultural deposits in the project area and the shallow nature of the soil matrices. Several phases of work in the project area have not led to the documentation of high frequency deposits. However, evidence for prehistoric-historic habitation and agricultural pursuits may again be documented during Monitoring.

MONITORING CONVENTIONS AND METHODOLOGY

This AMP has been prepared in accordance with DLNR-SHPD rules governing standards for Archaeological Monitoring (DLNR-SHPD 2003). SCS monitors will adhere to the following guidelines during monitoring:

1. A qualified archaeologist from SCS intimately familiar with the project area and the results of previous archaeological work conducted there will monitor subsurface construction activities only where sand is present (northwest corner of the parcel). Non-sandy areas will not be monitored. If significant deposits or features are identified and additional field personnel are required, SCS will notify the contractor or representatives before additional personnel are brought to the site.

2. Monitoring will be conducted during all excavations in the northwestern portion of the subject parcel and only within sandy sediment.

3. There will be one archaeological monitor per each piece of machinery conducting excavation or other ground altering activities.

4. If features or cultural deposits are identified during Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is conducted. SHPD (Dr. M. Kirkendall) will be contacted to establish feature significance and potential mitigation procedures. Treatment activities primarily include documenting the feature/deposit by plotting its location on an overall site map, illustrating a plan view map of the feature/deposit, profiling the deposit in three dimensions, photographing the finds—with the exception of human burials, collecting any artifacts and/or significant soil samples, and triangulating the finds. Construction work and/or back-filling of excavation pits or trenches will only continue in the sample location when all documentation has been completed.

5. Control stratigraphy in association with subsurface cultural deposits will be

noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant by SHPD and SCS, these deposits will be sampled.

6. In the very unlikely event that human remains are encountered, all work in the immediate area of the find will cease; the area will be secured from further activity until burial protocol has been completed. The SHPD island cultural historian (H. Rodrigues) and SHPD-Burial Sites Program (located in Kapolei, O'ahu) will both be immediately contacted about the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Islands Burial Council by either SHPD (H. Rodrigues) or by SCS (Dr. Michael Dega). A determination of the minimum number of individuals (MNI), age(s), and ethnicity of the burial(s) will be ascertained in the field by SCS. Rules outlined in Chapter 6e, Section 43 shall be followed. Profiles, plan view maps, and illustrative documentation of skeletal parts will be recorded to document the burial(s). The burial location will be identified and marked. If a burial is disturbed during trench excavations, materials excavated from the vicinity of the burial(s) will be manually screened through 1/8-inch wire mesh screens to recover any displaced skeletal material. If the remains are to be removed, the work will be in compliance with HRS 6.E-43.6, *Procedures Relating to the Inadvertent* Discovery of Human Remains after approval from all parties (SHPD, Burial Council).

7. To ensure that contractors and the construction crew are aware of this Archaeological Monitoring Plan and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials could be encountered and how they should proceed if they observe such remains.

8. SCS will provide all coordination with the contractor, SHPD, and any other group involved in the project. SCS will coordinate all monitoring and sampling activities with the safety officers to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.

9. As necessary, verbal reports will be made to SHPD and any other agencies as requested.

LABORATORY ANALYSIS

All samples collected during the project, except human remains, will undergo analysis at the SCS laboratory in Honolulu. In the event that human remains are identified and the SHPD and Maui/Lanai Islands Burial Council authorize their removal, they will be curated on Maui.

Photographs, illustrations, and all notes accumulated during the project will be curated at the Honolulu laboratory. All retrieved artifact and midden samples will be thoroughly cleaned, sorted, and analyzed. Significant artifacts will be photographed, sketched, and classified (qualitative analysis). All metric measurements and weights will be recorded (quantitative analysis). These data will be presented in tabular form within the final monitoring report. Midden samples will be minimally identified to major class (*e.g.*, bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). All data will be clearly recorded on standard laboratory forms, which also include number and weight (as appropriate) of each constituent category. These counts will also be included in the final report.

Should any samples amenable to dating be collected from a significant cultural deposit, they will be prepared in the SCS laboratory and submitted for specialized radiocarbon analysis. While primary emphasis for dating is placed on charcoal samples, we do not preclude the use of other material such as marine shell or nonhuman bone materials. SCS will consult with SHPD and the client if radiocarbon dates are deemed necessary.

All stratigraphic profiles will be drafted for presentation in the final report. Representative plan view sketches showing the location and morphology of identified sites/features/deposits will be compiled and illustrated.

CURATION

If requested by the land owner, SCS will curate all recovered materials in Honolulu (except human remains, which would remain on-island) until a permanent, more suitable curation center is identified. The land owner may request to curate all recovered cultural materials once analysis has been completed.

REPORTING

An Archaeological Monitoring report documenting the project findings and interpretation, following SHPD guidelines for Archaeological Monitoring reports, will be prepared and submitted 180 days following the completion of fieldwork. This time line is requested to account for any radiocarbon age determinations (typically 30–45 days), if necessary.

If cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State and Federal Significance Criteria. The

Archaeological Monitoring report will be drafted until accepted by SHPD and will be submitted to both SHPD and to the client.

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Appendix – D
Cultural Impact Assessment

SCS Project Number 604-CIA-2

A CULTURAL IMPACT ASSESSMENT OF A PIECE OF PROPERTY LOCATED IN KĪHEI, KĒŌKEA AHUPUA`A, MAKAWAO DISTRICT, MAUI ISLAND, HAWAI`I [TMK 2-2-02: POR. 042]

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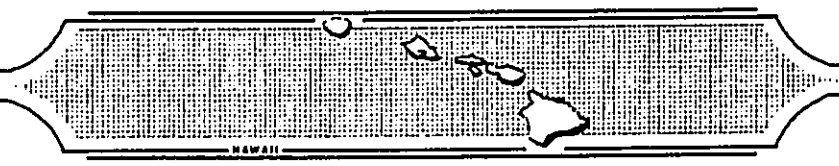

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INTRODUCTION

At the request of Chris Hart and Partners, Scientific Consultant Services, Inc. (SCS) conducted a Cultural Impact Assessment, on a piece of property (TMK: 2-2-02: por. 042) located in Kīhei, Kēōkea Ahupua`a, Makawao District, Maui Island (Figure 1). Documents submitted by Chris Hart and Partners describe the proposed project as the Kīhei Recycling and Redemption Center and the Kīhei Community Park.

The Constitution of the State of Hawai`i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua`a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778" (2000). In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights...may extend beyond the *ahupua`a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

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].

Act 50 requires state agencies and other developers to assess the effects of proposed land use or shore line developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, "to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other ethnic groups, and it also amends the definition of 'significant effect' to be re-defined as "the sum of effects on the quality of the environment including actions that are...contrary to the

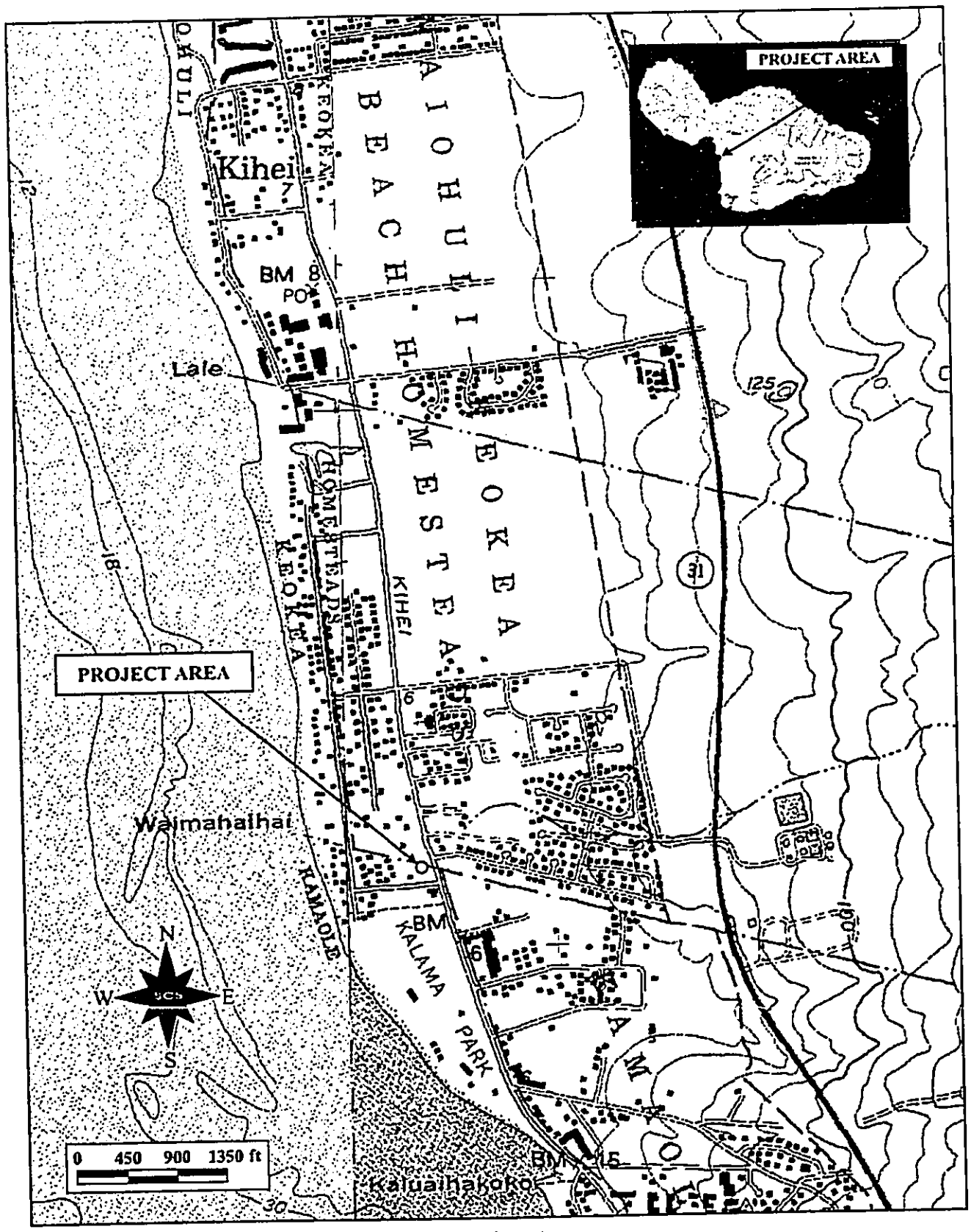

Figure 1: USGS Quadrangle Map Showing Project Area.

State's environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires an assessment of cultural practices to be included in the Environmental Assessments and the Environmental Impact Statements, 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.

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 manmade and natural, which support such cultural beliefs.

This Cultural Impact Assessment involves evaluating the probability of impacts on cultural values and rights within the project area and its vicinity.

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). In outlining the "Cultural Impact Assessment Methodology", the OEQC state:

> ...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories... (1997).

The report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. This Cultural Impact Assessment was prepared in accordance with the methodology and

content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997). The assessment concerning cultural impacts should address, but not be limited to, the following matters:

(1) a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints of limitations with might have affected the quality of the information obtained;

(2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;

(3) ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;

(4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;

(5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;

(6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;

(7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;

(8) an explanation of confidential information that has been withheld from public disclosure in the assessment;

(9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;

(10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed

action to introduce elements which may alter the setting in which cultural practices take place, and;

(11) the inclusion of bibliography of references, and attached records of interviews, which were allowed to be disclosed.

Based on the inclusion of the above information, assessments 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.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws and guidelines. Individuals and/or groups who have knowledge of traditional practices and beliefs associated with a project area or who know of historical properties within a project area are sought for consultation. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information. Organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs, historical societies, Island Trail clubs, and Planning Commissions are invited to contribute their input and suggest further avenues of inquiry, as well as specific individuals to interview.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the information available for this study. When telephone interviews occur, a summary of the information is often sent for correction and approval, or dictated by the informant and incorporated into the document. Key topics discussed with the interviewees vary from project to project, but usually include: personal association to the *ahupua`a*, land use in the project's vicinity; knowledge of traditional trails, gathering areas, water sources, religious sites; place names and their meanings; stories that were handed down concerning special places or events in the vicinity of the project area; evidence of previous activities identified while in the project vicinity.

In this case, letters briefly outlining the development plans along with maps of the project area were sent to individuals and organizations whose jurisdiction includes knowledge of the area and local informants with an invitation for consultation and recommendations for further contacts. Consultation was sought from Lance Foster, the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O`ahu; Thelma Shimaoka, Coordinator of the Maui branch of the Office of Hawaiian Affairs; the Central Maui Hawaiian Civic Club; Kīhei Community Association; and the Maui Planning Department. If cultural resources are identified based on the information received from these organizations and additional informants, an assessment of the potential effects on the identified cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

PROJECT AREA AND VICINITY

The project area is located in Kēōkea Ahupua`a, but near its boundary with Kama`ole Ahupua`a. It is bordered on the north by Kīhei Elementary and Intermediate School, to the west by Waiohuli- Kēōkea Beach Homesteads, and to the east by Pi`ilani Highway. The coastline is located less than one mile to the west of the project area (Figure 2). The local Fire Department indicated that the entire project area had been completely burned four times since 1999. Several more partial burns have occurred, and heavy equipment was brought into extinguish the fires, affecting the terrain and destroying what vegetation was left and seriously impacting the integrity of the parcel for cultural activities.

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. The Island was formed by two volcanoes, Mount Kukui in the west and Haleakalā in the east. The younger of the two volcanoes, Haleakalā, soars 2,727 m (10,023 feet) above sea level and embodies the largest section of the island. Unlike the amphitheater valleys of West Maui, the flanks of Haleakalā are distinguished by gentle slopes. Although it receives more rain than its counterpart in the east, the permeable lavas of the Honomanū and Kula Volcanic Series prevent the formation of rain-fed perennial streams. The few perennial streams found on the windward side of Haleakalā originate from springs located at low elevations. Valleys and gulches were formed by intermittent water run-off. The environment factors and resource availability heavily influenced pre-Contact settlement patterns. Although an extensive population was found occupying the uplands above the 30-inch rainfall line where crops could easily be grown, coastal settlement was also common (Kolb *et al.* 1997). The existence of three fishponds at Kalepolepo, north of the project area, and at least two *heiau* identified near the shore

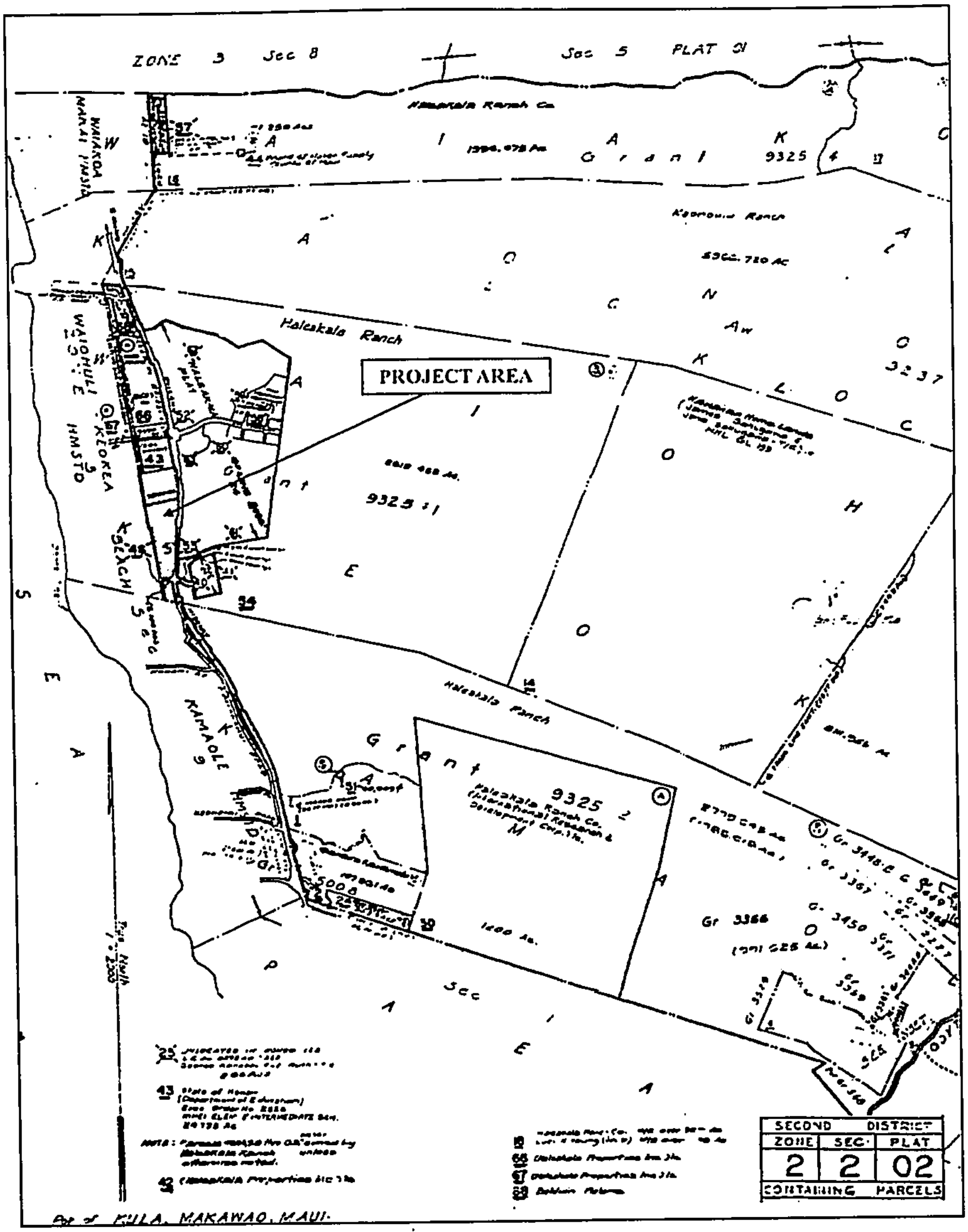

Figure 2: Tax Map Key [TMK] Showing Project Area.

Confirm the presence of a stable population relying mainly o coastal and marine resources. Agriculture may have been practiced behid the dune berms in low-lying marshland or in the vicinity of Kealia Pond. It is suggested that permanent habitation and their associated activities occurred from A.D. 1200 through the present in both the uplands and coastal regiond (*Ibid.*).

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 to 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 an *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the *ahupua`a* of Kēōkea, which translated means literally "the white sand", as the *ō* is short for *one*, or sand (Pukui *et al.*:107).

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*. Within the *ahupua`a*, residents were 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).

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 officinaruma*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (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 (AD 1200-1400, Kirch 1985). According to Handy, there was "continuous cultivation on the coastal region along the northwest coast" of Maui. He writes:

> On the south side of western Maui the flat coastal plain all the way from Kihei and Ma`alaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish...[1940:159].

There is little specific information pertaining directly to Kīhei, which was originally a small area adjacent to a landing built in the 1890s (Clark 1980). Presently, Kīhei refers a six-mile section along the coast from the town of Kīhei to Keawakapu. Scattered amongst the agricultural and habitation sites were places of cultural significance to the *kama`āina* of the district including at least two *heiau*. In ancient times, there was a small village at Kalepolepo based primarily on marine resources. It was recorded that occasionally the blustery Kaumuku Winds would arrive with amazing intensity along the coast (Wilcox 1921).

There were several fishponds in the vicinity of Kīhei; Waiohuli, Kēōkea-kai, and Kalepolepo Pond (also known by the ancient name of Kō`ie`ie Pond; Kolb *et al.* 1997). Constructed on the boundary between Ka`ono`ulu and Waiohui Ahupua`a, these three ponds were some of the most important royal fishponds on Maui. The builder of Kalepolepo and two other ponds (Waiohuli and Kēōkea-kai) has been lost in antiquity, but they were reportedly rebuilt at least three times through history, beginning during the reign of Pi`ilani (1500s; *ibid*; Cordy 2000).

Oral tradition recounts the repairing of the fishponds during the reign of Kiha-Pi`ilani, the son of the great chief Pi`ilani, who had bequeathed the ponds to Umi, ruler of Hawai`i Island. Umi's *konohiki* (land manager) ordered all the people from Maui to help repair the walls of Kalepolepo's fishponds. A man named Kikau protested that the repairs couldn't be done without the assistance of the *menehune* who were master builders (Wilcox 1921:66-67). The *konohiki* was furious and Kikau was told he would die once the repairs had been made. Kēōkea-kai was the first to be repaired. When the capstone was carried on a litter to the site, the *konohiki* rode proudly on top of the rock as it was being placed in the northeast corner of the pond. When it was time for repairs on Waiohuli-kai, the *konohiki* did the same. As the last pond, then known as Ka`ono`ulu-kai, was completed, the *konohiki* once again rode the capstone to its resting place. Before it could be put into position, the capstone broke throwing both the rock and *konohiki* into the dirt. The workers reportedly said "*Ua konohiki Kalepolepo, ua eku i ka lepo,*" or, "the manager of Kalepolepo, one who roots in the dirt" (*ibid*:66). That night a tremendous storm threw down the walls of the fishponds. The *konohiki* implored Kikau to help him repair the damage. Kikau called the *menehune* who rebuilt the walls in one night. Umi sent for Kikau who lived in the court of Waipi`o valley from then on. The region o Kēōkea-kai and Ka`ono`ulu-kai fishpond became known as Kalepolepo fishpond (*ibid*).

The Kalepolepo fishponds were rebuilt by Kekaulike, chief of Maui in the 1700s, at which time it supplied *`ama`ama* (mullet) to Kahekili II. Again, it was restored by Kamehameha I when he ruled as governing chief over Maui and for the last time in the 1840s when prisoners from Kaho`olawe penal colony were sent to do repairs (Kamakau 1961; Wilcox 1921). At this time, stones were taken from Waiohuli-kai pond for the reconstruction of Kalepolepo. It was here at Kalepolepo that Kamehameha I reportedly beached his victorious canoes after subduing the Maui chiefs. The stream draining into Kealia pond (north of the project area) became sacred to royalty and *kapu* to commoners (Stoddard 1894).

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the *alanui* or "King's trail" built by Kihapi`ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, including Kīhei . One trail, named "*Kekuawaha`ula`ula*" or the "red-mouthed god", extended from Kīhei inland to Kēōkea. Another, the Kaleplepo trail, began at the Kalepolepo fishpond and continued to upland Waiohuli. These trails were not only used in the pre-Contact era, but were expanded to accommodate wagons bringing produce to the coast in the 1850s (Kolb *et al.* 1997:61).

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 south of Kīhei 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, but added little to our direct knowledge of Kīhei. During the second visit of Vancouver in 1793, his expedition becalmed in the Ma`alaea Bay close to the project area. (A marker commemorating this visit is located across from the Maui Lu Hotel). He reported:

> The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the waterside, and the inhabitants who came off to us, like those seen the day before, had little to dispose of [Vancouver 1984:852].

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 1984:856).

MĀHELE

In the 1840s a drastic change in traditional land tenure resulted in a division of island lands. This system of private ownership was based on western law. While a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kuykendall Vol. I, 1938:145 footnote 47, 152, 165-6, 170; Daws 1968:111; Kelly 1983:45; Kame`eleihiwa 1992:169-70, 176).

Among other thing, 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 the *maka`āinana* (commoners) were able to claim the plots on which they had been cultivating and living, if they had been made aware of the foreign procedures (*kuleana* lands, Land Commission Awards, LCA). These claims could not include any previously cultivated or presently fallow land, *`okipū* (on O`ahu), stream fisheries or many other resources necessary for traditional survival (Kelly 1983; Kame`elehiwa 1992:295; Kirch and Sahlins 1992). This land division, or Māhele, occurred in 1848. The awarded parcels were called Land Commission Awards. If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA, issued a Royal Patent number, and could then take possession of the property (Chinen 1961: 16). Kēōkea became Crown land in which 46 LCA claims were made. No land claims were in or near the project area.

As western influence grew, Kalepolepo in Kīhei became the important provisioning area. Europeans were now living or frequently visiting the coast and several churches and missionary stations were established. A Mr. Halstead left medical school on the East coast of the continent to become a whaler and after marrying the granddaughter of Issac Davis, settled in Kalepolepo on land given him by Kamehameha III (Kolb et al. 1997). His residence and store situated at Kalepolepo landing was known as the Koa House having been constructed of *koa* logs brought from the uplands of Kula. The store flourished due to the whaling and potato industry and provided an accessible port for exported produce. Several of Hawai`i's ruling monarchs stayed at the Koa House, including Kauikeaouli (Kamehameha III), Kamehameha the 1V, Lot Kamehameha (V), and Lunalilo. Wilcox, giving a glimpse of the surroundings before abandonment stated, "...Kalepolepo was not so barren looking a place. Coconut trees grew beside pools of clear warm water along the banks of which grew taro and ape..." (1921:67). However, by 1887 this had changed. Wilcox continues:

> ...the Kula mountains had become denuded of their forests, torrential winter rains were washing down earth from the uplands, filling with silt the ponds at Kalepolepo...ruins of grass huts [were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand..." [1921]

As early as 1828, sugar cane was being grown on Maui (Speakman 1981:114). Sugar was established in the Makawao area in the late 1800s and by 1899, the Kihei Plantation Company (KPC) was growing cane in the plains above Kīhei. The Kihei Plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&SC) in 1908, and they continued cultivating what had been the KPC fields into the 1960s. A 200-foot-long wharf was constructed in Kīhei at the request of Maui plantation owners and farmers and served inter-island boats for landing freight and shipping produce to Honolulu (Clark 1980). In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973). A landing was built at Kīhei around 1890.

With the introduction of a dependable water supply in 1952, came overseas investment and development, which has continued up to, and including this time.

SUMMARY

The "level of effort undertaken" (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a "good faith effort". However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort would undoubtedly mean an entirely different level of research activity.

In the case of the present parcel, letters of inquiry were sent to organizations whose expertise would include the project area. Consultation was sought from Lance Foster, the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O`ahu; Thelma Shimaoka, Coordinator of the Maui branch of the Office of Hawaiian Affairs; the Central Maui Hawaiian Civic Club; Kīhei Community Association; and the Maui Planning Department.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as Beckwith, Chinen, Kame`eleihiwa, Fornander, Kuykendall, Kelly, Handy and Handy, Puku`i and Elbert, Thrum, and Cordy have contributed, and continue to contribute to our knowledge and understanding of Hawai`i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona `Aina 2005 Data base.

CIA INQUIRY RESPONSE

As suggested in the "Guidelines for Accessing Cultural Impacts" (OEQC 1997), CIAs incorporating personal interviews should include ethnographic and oral history interview procedures, circumstances attending the interviews, as well as the results of this consultation. It is also permissible to include organizations with individuals familiar with cultural practices and features associated with the project area.

As stated above, consultation was sought from the Director of Native Rights, Land and Culture, Office of Hawaiian Affairs on O`ahu; the Maui branch of the Office of Hawaiian Affairs; the Central Maui Hawaiian Civic Club; Kīhei Community Association; and the Maui Planning Department. None of the native Hawaiian organizations, the Community Association, or the Maui Planning Department that is mandated "to preserve and protect customary and traditional practices of Native Hawaiians" (94 Haw. 31, 45 2000) responded with information concerning the potential for cultural resources to occur in the project area (TMK 2-2-002:042), or with additional suggestions for further contacts. Therefore, no interviews were conducted for this property, as there were no interviewees identified.

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). To our knowledge, the project area has not been used for traditional cultural purposes within recent times. Based on historical research and the lack of response from the above listed contacts, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities within the project area will not be affected and there will be no direct adverse effect upon cultural practices or beliefs as long as coastal access is insured. The visual impact of the project from surrounding vantage points, e.g.

the highway, mountains, and the ocean is minimal as open space will be created by the proposed Kīhei Community Park that can be accessed by everyone.

CULTURAL ASSESSMEMNT

Based on organizational response, and archival research 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 development activities on a portion of plot 42. However, it is recommended that Cultural Advisors be consulted during the planning process. In this way, appropriate mitigation measures, if needed, can be put in place before development occurs. Because there were no activities identified within the project area, there are no adverse effects.

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