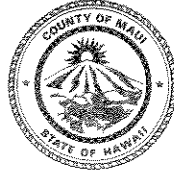


ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

May 10, 2005

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

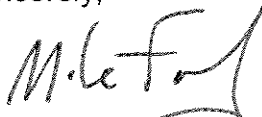
Dear Ms. Salmonson:

RE: Final Environmental Assessment (FEA) - For the Consolidation and Re-Subdivision of Approximately 439 Acres of Land Located at Tax May Key: 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068 and 070, Ukumehame, Island of Maui, Hawaii (EA 2004/0016) (SM1 2004/0033)

The Maui Planning Commission at its regular meeting on May 10, 2005, accepted the Final Environmental Assessment (FEA) for the subject project, and issued a Finding of No Significant Impact (FONSI). Please publish the FEA in the May 23, 2005, Office of Environmental Quality Control (OEQC) Environmental Notice.

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

Sincerely,


MICHAEL W. FOLEY
Planning Director

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

05 MAY 12 P 3:30

RECEIVED

MWF:KAC:
Enclosures

c: Kivette A. Caigoy, Environmental Planner
Thorne Abbott, Staff Planner
Rory Frampton, Chris Hart & Partners
EA Project File
General File
K:\WP_DOCS\PLANNING\EA\2004\16_Ukumehame\OEQCTransmitFEA.wpd

2005-05-23 FONSI
UKUMEHAME SUBDIVISION - PHASE I & II

MAY 23 2005

FINAL ENVIRONMENTAL ASSESSMENT

Prepared in Support of the SMA Use Permit Application
for the
UKUMEHAME SUBDIVISION - PHASE I AND II

TMKs: 4-8-02: 9, 48, 52-56, 60, 61, 65, 66, 68 and 70
Ukumehame, Maui, Hawaii



April 2005

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

05 MAY 12 P 3:30

RECEIVED

FINAL ENVIRONMENTAL ASSESSMENT

Prepared in Support of the SMA Use Permit Application
for the
UKUMEHAME SUBDIVISION - PHASE I AND II

TMKs: 4-8-02: 9, 48, 52-56, 60, 61, 65, 66, 68 and 70
Ukumehame, Maui, Hawai`i



PREPARED FOR:
PACIFIC RIM LAND, INC.
381 Huku Li`i Place, Suite 202; P.O. Box 220
Kihei, Hawaii 96753

Prepared by:
CHRIS HART & PARTNERS, INC.
1955 Main Street, Suite 200
Wailuku, Hawaii 96793

April 2005



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I. PROJECT INFORMATION

Overview of the Request

The proposed action involves the consolidation and re-subdivision of approximately 439 acres of vacant land identified by TMKs 4-8-02: 9, 48, 52-56, 60, 61, 65, 66, 68, and 70 (referred to herein as the subject property) which is situated in the Ukumehame area of West Maui. The subject property is located on the *mauka* side of Honoapiilani Highway and was formerly cultivated with sugar cane until the late 1990s. Since then, the site has been basically fallow and is primarily occupied by kiawe, buffel grass, and scrub vegetation. Three (3) potable water test wells, archaeological features (including burial sites), as well as former agricultural improvements and features (cane haul roads, rock piles, irrigation/drainage ditches and reservoirs) are located on the property. The lands underlying the subject property are owned in fee simple, co-tenancy by a group of individuals and entities collectively referred to herein as the Ukumehame Co-Tenants.

The proposed action involves the consolidation of 12 existing lots and the re-subdivision of this land to create three (3) large lots (aka, Phase I Subdivision). Two (2) of these large lots, with a combined gross area of approximately 100 acres, will be transferred to the County of Maui for a future County park and a future State highway right-of-way. The remaining large lot, which contains a gross area of approximately 339 acres, will be concurrently subdivided into one (1) river corridor lot (Ukumehame Stream) and 45 agricultural lots and related improvements (aka, Phase II Subdivision). With an area of approximately 77 acres, the river corridor lot will basically serve as open space and a natural greenway.

Since the publication of the Draft EA, minor modifications were made to the Phase II Subdivision's General Plan to revise the property lines for five lots at the east end of the subdivision, and to show the locations of several features including the two potable



water wells, the alignment of a new water tank access road, and the location and buffer for Site 3184.

The agricultural lots will range in size from approximately 3 to 13 acres and occupy a total area of approximately 262 acres. The proposed action will involve the planting of street trees, and the provision of infrastructure to serve the agricultural lots, including a new route for the water tank access road, which was discussed as an alternative in the Draft EA and now supersedes the alignment that was originally proposed. The initiation of agricultural activities, the construction of farm dwellings, and the installation of individual wastewater systems for each lot will be the responsibility of future lot purchasers. The sales prices of the agricultural lots will be determined by prevailing market conditions at the time the Phase II Subdivision is completed. In addition, two (2) new intersections at Honoapiilani Highway and four (4) new roads for subdivision access and internal circulation are proposed.


Construction of the improvements for the Phase II Subdivision is anticipated to commence after the receipt of all applicable regulatory permits and approvals. The estimated cost of construction is approximately \$15 million. The construction period is projected to be about 18 months.

The subject property is located within the State Agricultural District and is designated for Agricultural land uses by both the West Maui Community Plan and Maui County zoning. A portion of the *makai* part of the property is located within the limits of the Special Management Area (SMA) for the Island of Maui. As a condition of the Purchase and Sale Agreement between the landowners and the County of Maui for the transfer of the approximately 100 acres to the County, an Environmental Assessment (EA) and an application for a SMA Use Permit has been prepared for Pacific Rim Land, Inc., the agent (Applicant) for the Ukumehame Co-Tenants, in order to describe the proposed action, evaluate the potential impacts the action may have on the environment, public services, and infrastructure, and discuss appropriate measures to minimize impacts to the environment



Project Profile

District:	Ukumehame, Lahaina District, Island of Maui
Tax Map Keys:	4-8-02: 9, 48, 52-56, 60, 61, 65, 66, 68, and 70
Project Name:	Ukumehame Subdivisions, Phases I and II
Location:	Abuts the <i>mauka</i> side of Honoapiilani Highway approximately 2 miles south of Olowalu
Site Area:	Approximately 439 acres
Applicant/Developer:	Pacific Rim Land, Inc. P.O. Box 220 Kihei, HI 96753 Phone: (808) 874-5263 Fax: (808) 879-2557 Contact: Ms. Donna Clayton
Landowner:	Ukumehame Co-Tenants
Planning Consultant:	Chris Hart & Partners, Inc. 1955 Main Street, Suite 200 Wailuku, Maui, Hawaii 96793 Phone: (808) 242-1955 Fax: (808) 242-1956 Contact: Mr. Rory Frampton, Sr. Planner
Land Use Designations:	State Land Use Classification - Agricultural District West Maui Community Plan - Agricultural County Zoning - Agricultural District Federal Flood Insurance Rate Map - Zone C, areas of minimal flooding; the <i>makai</i> limits of the site fall in Zone V8, areas of 100-year coastal flooding with velocity Special Management Area (SMA) –the <i>makai</i> extent of the property lies in the SMA



Existing Land Uses: Primarily fallow agricultural land formerly planted with sugar cane

Proposed Land Use: Agricultural subdivision with one (1) river corridor lot, 45 agricultural lots, and ancillary landscaping and infrastructure; future County park; and future State highway right-of-way

Access: Available from Honoapiilani Highway


Chapter 343, HRS Accepting Agency

Agency: Maui Planning Commission
c/o Department of Planning
County of Maui
250 S. High Street
Wailuku, Maui, HI 96793
Phone: (808) 270-7735
Fax: (808) 270-7634

Required Permits and Approvals

The following permits and approvals will be needed prior to the implementation of the Phase II Subdivision.

1. Work-to-Perform in the State Highway Right-of-Way approval from the State Department of Transportation, Highways Division.
2. Pump Installation Permits from the State Department of Land and Natural Resources, Commission on Water Resource Management.
3. National Pollutant Discharge Elimination System Permit from the State Department of Health (DOH), Clean Water Branch.
4. Public Water System approval from the State DOH, Safe Drinking Water Branch.
5. Approval of Request for Easement to Use State Lands from the Board of Land and Natural Resources.
6. Special Management Area (SMA) Use Permit from the Maui Planning Commission.

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7. Final Subdivision approvals from the Maui County Department of Public Works and Environmental Management (DPWEM).
 8. Grubbing and Grading Permits from the DPWEM.
 9. Special Flood Hazard Area Development Permit from the Maui County Department of Planning.

Pre-Consultation

On September 24, 2004, letters summarizing the proposed action were mailed to the following government agencies for review and comment in connection with early consultation process for the preparation of the Draft Environmental Assessment (EA). Separate meetings were also held with representatives of the Maui County Department of Housing and Human Concerns, the State Department of Transportation, and the State Department of Land and Natural Resources, Division of Forestry and Wildlife.

GOVERNMENT AGENCIES:

Federal

1. Department of the Army, Corp of Engineers

State

1. Department of Health
2. Department of Transportation
3. State Historic Preservation Division

County

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



A copy of a pre-consultation letter and correspondence related to this process are included in this document. See Appendix M, Pre-Consultation Letters.

In April 2004, the Maui County Department of Planning was processing an application for a Special Management Area (SMA) Assessment (SMX 2004/0243) for the Phase II Subdivision's access roads. Subsequently, it was determined by the County that an EA and a SMA Use Permit application would need to be prepared pursuant to the conditions of the Purchase and Sale Agreement. As part of the SMA Assessment process, agency comments were requested for the Planning Department's analysis. These letters have also been included in this document under Appendix M, Pre-Consultation Letters.

Acknowledgements

The following individuals were also consulted and/or provided information that contributed toward the preparation of this document.

- Mr. Dennis Tanga, Valley Isle Sports Shooters
- Mr. Ray Galli, Maui Clay Target Association
- Sgt. Leighton Kanaele and Sgt. Barry Aoki, Maui Police Department
- Sgt. Fidel Balag, Jr.; U.S. Army Reserve
- Col. Orlan "Bud" Peterson (ret.), Hawaii Army National Guard
- Cpt. William "Kalani" Cockett, Maui County Correctional Center
- Mr. Hugh Starr
- Mr. and Mrs. John and Rosemary Duey
- Ms. Adeline Rodrigues

❏

II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

A. PROPERTY LOCATION

The subject property is located on the *mauka* side of Honoapiilani Highway in the Ukumehame area of West Maui. The town of Lahaina lies approximately 6.25 miles to the northwest of the site. The subject property is approximately 2 miles southeast of the rural village of Olowalu and approximately 6.5 miles to the west of the village of Maalaea. See: Figure 1, Project Location Map.

B. EXISTING LAND USE

The subject property was formerly planted with sugar cane until the late 1990s when Pioneer Mill Company terminated cultivation activities. See Figure 2, Site Photographs. The site is largely fallow and primarily occupied by kiawe, buffel grass, and scrub vegetation. Ukumehame Stream flows through the central part of the property in a *mauka-makai* direction. Evidence of past sugar cane cultivation is present on the site including agricultural roads, drainage ditches, and rock piles associated with the clearing of sugar cane fields, as well as an operational irrigation system consisting of ditches, flumes, and four (4) reservoirs. Except for an empty reservoir in the central part of the site, the two (2) large and one (1) small irrigation reservoirs in the upper reaches of the river corridor lot are currently full. In addition, various archaeological features, including burial sites, are located on the property, as well as three (3) test wells that were drilled as a source of potable water for the proposed Phase II Subdivision.

In addition, small-scale farming on other privately-owned property (exclusion areas), which is excluded from this action, occurs within the proposed river corridor lot, as well as in an area adjacent to the northern tip of the subject property and on 2.68-acres of leased land at the eastern extent of the proposed



subdivision. See: Figure 11 Approximate Locations of Small-Scale Farming Activities.

C. LAND USE DESIGNATIONS

State Land Use Classification:	Agricultural District
West Maui Community Plan:	Agricultural
County Zoning:	Agricultural District
Flood Zone Designation:	Zone "C", areas of minimal flooding; a small part of the site lies in Zone "V8", areas of 100-year coastal flooding with velocity

D. SURROUNDING LAND USES

1. North or *mauka*: Vacant land (Community Plan - Conservation; Zoning - Not Applicable).
2. East: Vacant land and the Ukumehame Firing Range (Community Plan - Agricultural; Zoning - Agricultural District).
3. South or *makai*: Honoapiilani Highway.
4. West: Vacant land (Community Plan - Agricultural; Zoning - Agricultural District).

E. DESCRIPTION OF THE PROPOSED ACTION

1. Consolidation and Re-subdivision of the Subject Property

The proposed action involves the consolidation and re-subdivision of 12 existing lots into 48 lots. Inclusive of these 48 lots are two (2) lots for a future County park and future State highway right-of-way, one (1) river corridor lot (Ukumehame Stream), and 45 agricultural lots. Infrastructure and street tree plantings to support the agricultural lots are also part of the proposed action.



As background, the subject property was the subject of a subdivision application for consolidation and re-subdivision in 2002 (Subdivision File No. 4.738). The original TMK parcel numbers that were used for this action are being used to identify the subject property as new TMK parcel numbers for the 12 lots have not yet been assigned.

Subsequently in 2003, the Applicant submitted subdivision applications to the Maui County Department of Public Works and Environmental Management (DPWEM) for the Ukumehame Subdivision, Phase I (Subdivision File No. 4.875) and the Ukumehame Subdivision, Phase II (Subdivision File No. 4.876). On October 10, 2003, the DPWEM granted preliminary subdivision approvals for the Phase I and Phase II subdivision applications.

The Phase I Subdivision application (i.e., a "paper" subdivision) covers a gross area of approximately 439 acres and involves the consolidation of the 12 lots that were created by the 2002 action and the re-subdivision of this land into three (3) large lots. See Figure 3, Phase I Subdivision. Two (2) of the large lots (Lots A-1 and A-2), with a combined gross area of approximately 100 acres, will be transferred to the County of Maui for a future County park and a future State highway right-of-way. The remaining large lot (Lot B), containing a gross area of approximately 339 acres, will be concurrently subdivided for the Phase II Subdivision

The Phase II Subdivision application involves the concurrent subdivision of the approximately 339-acre large lot resulting from the Phase I Subdivision in order to create 45 agricultural lots and one (1) river corridor lot (Ukumehame Stream).

2. Purchase and Sale Agreement

Around August 2003, the Maui County Council approved a \$4.0 million bond for the acquisition of the land for the future County park and future State highway right-of-way (Maui News, August 2004). More recently, the Maui



County Council approved a Purchase and Sale Agreement between the County of Maui and the Ukumehame Co-Tenants on November 5, 2004 (Maui News, November 2004).

The Agreement stipulates that the County will be responsible for obtaining all permits for the use or development of the property as a park and highway and indicates that the right-of-way portion of the property shall be used as a park until it has been subdivided and dedicated (to the State of Hawaii) as a public road or highway. After dedication, the State Department of Transportation is expected to assume the responsibility for the construction and maintenance of the highway and right-of-way. The Agreement also indicates that the transfer of the property is contingent upon the granting of final subdivision and SMA Use Permit approvals for the Phase I and Phase II Subdivision. Until such time that the approximately 100 acres are developed, these lands will be "land banked".

3. Phase II Subdivision

The Applicant proposes to subdivide approximately 339 acres of land to create an agricultural subdivision containing 45 lots totaling approximately 262 acres and one (1) river corridor lot of approximately 77 acres. As previously stated, minor modifications were made to the Phase II Subdivision's General Plan since the publication of the Draft EA, in order to revise the property lines for five lots at the east end of the subdivision, and to show the locations of several features including the two potable water wells, the new alignment of the water tank access road, and the location and buffer for Site 3184. See Figure 4, Phase II Subdivision General Plan. The agricultural lots will range in size from approximately 3 to 13 acres. The intent of creating river corridor lot is to provide passive protection - preservation for the Ukumehame Stream corridor. While the river corridor lot is to be retained as open space and a natural greenway, the Purchase and Sale Agreement gives the Applicant the right to create one additional lot (of not less than 5 acres) out of the river corridor lot.



The Applicant is currently investigating a potential site for this one additional lot (an agricultural lot of not less than 5 acres) within the river corridor lot.

In addition to site work for subdivision infrastructure, the following Phase II Subdivision improvements are proposed:

1. Two (2) unsignalized “T” intersections to provide access from Honoapiilani Highway to the subdivision. See Figure 5, Phase II Subdivision Intersection “A” Details, and Figure 6, Phase II Subdivision Intersection “B” Details. At Intersections “A” and “B,” Honoapiilani Highway will be widened to provide deceleration lanes and median shelter/turning lanes for traffic entering and exiting the Phase II Subdivision. See Figure 7, Honoapiilani Highway Typical Section.
2. Four (4) paved roads for vehicular access and traffic circulation. Roads “A” and “C” will connect to the highway and provide subdivision access and traffic circulation, while Roads “B” and “D” will branch off from Roads “A” and “C” and provide additional circulation. Roads “A” and “C” will also provide access to the future park. See Figure 8, Phase II Subdivision Typical Roadway Sections.
3. Street tree and landscape plantings. See Figure 9, Phase II Subdivision Landscape Plans.
4. A private potable water system consisting of transmission and distribution lines, two (2) wells with pumps, a 0.2 million gallon (MG) water tank (i.e., above-ground reservoir), a water treatment system, and service laterals and meters for each agricultural lot. New transmission lines will convey water from the potable wells to the new 0.2 MG reservoir. New distribution lines will then transport the water to the agricultural lots in the subdivision. At Ukumehame Stream, the new transmission and distribution lines will be placed within an existing concrete irrigation conduit that is anchored to the streambed.



5. A new water tank access road. See Figure 4, Phase II Subdivision General Plan. Based on consultation with the State Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife, the alternative route for the new water tank access road that was described in the Draft EA was deemed to be the most feasible by the Applicant given the steep slopes of the original proposed route. The water tank access road will be constructed within a 20-ft. wide right-of-way and include a 12-ft. wide paved travel lane with grass shoulders or swales. About 1,000 linear feet (LF) of the access road is on the subject property, while the remaining 850 LF lies on State land (TMK 4-8-002: 008). The water tank access road would begin on the north side of Road "B" and proceed along the west side of Lots 11 and 12 where it would be gated at the State property line. The access road would then pass through State land before re-entering the subject property at the water tank site. Potable water and electrical transmission lines will be placed within the right-of-way of access road in order to support the improvements at the water tank site.
6. The present irrigation system will be augmented to serve the agricultural lots for future irrigation purposes. The existing three (3) reservoirs in the upper part of the river corridor lot will be used for storage. Pumps will be installed if adequate pressure for gravity flow is insufficient. Existing ditches and flumes will be used as part of the transmission system. Repairs to these features will be undertaken if necessary. New transmission lines will connect to the existing system and will be installed in street rights-of-way and where needed. Service laterals will also be provided for each agricultural lot.
7. A drainage system consisting of four (4) detention basins; grassed interceptor swales, reinforced concrete pipe roadway culverts and headwalls.
8. Underground electrical, telephone, and cable television distribution systems.



9. Three (3) access roads that would enable government agencies, such as the DLNR, to conduct wildlife surveys and suppress brush fires on adjacent State lands including the West Maui Forest Reserve. Vehicle access to the forest reserve area on the east side of Ukumehame Stream will be provided by a 20-ft. wide graded and grassed road of approximately 180 LF, which will be located between Lot Nos. 31 and 32. An approximately 850 LF section of the water tank access road between Road "B" and the State property line will be used to provide the DLNR with access to the forest reserve area on the west side of the stream. In addition, a 12-ft. wide graded and grassed road of approximately 200 LF will extend from the east end of Road "B" and connect to an existing agricultural road in the valley to facilitate access to adjacent State lands.

Initiation of agricultural activities, associated site work, the construction of farm dwellings, and the installation of individual wastewater systems (septic tanks and leach fields), etc., for each agricultural lot will be the responsibility of future lot purchasers.

The estimated construction cost for the subdivision improvements is approximately \$15 million. Construction is expected to commence after all necessary regulatory permits and approvals have been secured, while completion is anticipated to occur approximately 18 months after construction has been initiated.

4. Future County Park and Future State Highway Right-of-Way

The approximately 100 acres of land to be transferred to the County of Maui, which is being created by the Phase I Subdivision, encompasses an area that is approximately 600 feet in width and 1.4 mile in length. In connection with this project, the County of Maui would trade the future highway right-of-way to the State Department of Transportation (DOT) in exchange for the existing



highway right-of-way along the coastline. The DOT would then utilize this future highway right-of-way as part of its proposed plan to widen and/or realign Honoapiilani Highway between Maalaea and Launiupoko. Moving the highway away from the coastline will eliminate road closures due to high surf and remove the threat of shoreline erosion undermining sections of the highway. The land *makai* of the realigned highway would become a new linear shoreline park that would extend a distance of approximately 1 mile. (Maui News, August 2004).

Although the proposed action includes lands for a future County park and future State highway right-of-way, the scope, cost, and schedule for the development of these lands is uncertain since government funding will need to be secured and appropriate planning studies and development plans must be prepared. In addition, applicable regulatory permits and environmental documents must be approved and accepted before the development of the future park and future right-of-way can occur.

F. ALTERNATIVES

1. No Action

Analysis. Under the “no action” alternative, each of the existing 12 large lots that comprise the subject property could be developed “as is”. Under this scenario, there would be a fewer number of lots when compared to the current proposal, as well as a reduction in building density. Potential impacts to the public services and infrastructure would also be minimized due to the fewer number of lots. However, this scenario would require that certain fixed development costs (e.g., design, planning, and engineering studies; off-site infrastructure) be amortized over fewer lots thereby increasing the individual development cost and sales price for each lot. Another consequence of this alternative is that the development of the future County park and future State highway right-of-way would not occur as the land for this development would



remain privately owned and therefore unavailable. Another outcome of the “no action” alternative could be the individual development of the 12 large lots with each large lot having the potential for further subdivision. This future subdivision potential is described in Alternative No. 2 below.

2. 94-Lot Subdivision

Analysis. In reviewing the subdivision applications for the Phase I and Phase II Subdivisions, the Maui County Department of Public Works and Environmental Management determined that 94 lots is the maximum number of permitted lots that can be created from the 12 original lots being consolidated (excluding the large lots for the future park and future highway right-of-way). However, increasing the number of lots would result in smaller lot sizes and greater building density, as well as potentially significant impacts to the existing environment, public services, and infrastructure. Viewed from this perspective, this alternative was deemed unfeasible and dropped from consideration.

3. Alternative Site Plans

Analysis. During the conceptual planning phase for the Phase II Subdivision, a number of different site plans were prepared and evaluated. For example, a conceptual site plan that was previously examined shows a different lot configuration, street layout, and water system components. See Figure 10, Earlier Phase II Subdivision Conceptual Plan.

The site planning process considered existing topography, soils, drainage patterns, and infrastructure, as well as physical features such as Ukumehame Stream and existing agricultural roads, rock piles, and irrigation ditches and reservoirs. Archaeological features, including burial sites, were also considered. Spatial relationships and adjacencies, infrastructure requirements, lot sizes and configurations, and engineering requirements for access and



utilities were examined during this process as well. While there are other site layouts that can be examined, the proposed site plan for the Phase II Subdivision was deemed the most appropriate in terms of fulfilling the Applicant's desire to develop a project that is functional and well designed.

4. Alternative Land Uses

Analysis. The subject property and surrounding lands are located within the State Agricultural District and are also designated for agricultural uses by both the West Maui Community Plan and Maui County zoning. While it may be possible to amend the property's land use designations to provide for a higher level of land use or a combination of other land uses, such a change would alter the present rural character of the property and surrounding area and would also necessitate a District Boundary Amendment, Community Plan Amendment, and a Change in Zoning. In light of the foregoing, re-classifying the subject property for a higher land use or a combination of different land uses was deemed unfeasible by the Applicant.



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

A. PHYSICAL ENVIRONMENT

1. Land Use

Existing Conditions. The subject property is located along the southern flank of the West Maui Mountains in the ahupua'a of Ukumehame and was previously utilized for sugar cane cultivation until the late 1990s.

The subject property is basically fallow and predominantly vegetated with kiawe and buffel grass. Existing improvements on the site are generally limited and include various archaeological features, including burial sites, and cane haul roads, rock piles, irrigation and drainage ditches, and four (4) man-made reservoirs associated with the past agricultural use of the property. Three (3) of the reservoirs are located in the northern part of the subject property, while the fourth reservoir is situated in the central portion of the site. The subject property is bisected by Ukumehame Stream. A total of three (3) test wells were drilled on the subject property to provide a source of potable water for the proposed Phase II Subdivision. Two (2) of the wells are located on the eastern half of the site, while the remaining well is situated on the western half.

Small-scale farming on other privately-owned property (exclusion areas), which is excluded from this action, occurs within the proposed river corridor lot, as well as in area adjacent to the northern tip of the subject property and on 2.68 acres of land at the eastern extent of the proposed subdivision.

Information about these farming activities is shown in the following table, while their locations are shown in Figure 11, Approximate Locations of Small-Scale Farming Activities.



MAP LOCATION NUMBER.	TMK PARCEL NUMBER	PHYSICAL LOCATION	LAND DESCRIPTION	LAND AREA	FARMING ACTIVITY
1	4-8-002:018	Exclusion 10 in proposed river corridor lot	RP 2443, LCAw 8623 to Kamakakehau	1.65 acre	Taro; various native plants
2	4-8-002:002 (Portion)	South of and adjacent to northern point of proposed subdivision	RP 6862, LCAw 310, Ap 1 to Pikanele	2.05 acres	Ti, taro, bread fruit, banana, papaya, torch ginger
3	4-8-002:021	Exclusion 20 in proposed river corridor lot	RP 2441, LCAw 6751, Ap 2 to Alohi	0.34 acre	Taro
4	4-8-002:009 (Portion)	Lot 45 in proposed subdivision	Grant 4973 to Walter M. Giffard	2.68 acres	Noni

In the past, agricultural lands in the surrounding area were used for sugar cane cultivation and, with the exception of the Ukumehame Firing Range, are largely fallow and undeveloped. Today, lands owned by the State of Hawaii adjoin the subject property and include the West Maui Forest Reserve on the north, Honoapiilani Highway to the south, and former sugar cane fields to the east and west. Other land uses in the nearby area include the Ukumehame Firing Range on the east, Papalaua Wayside Park and Ukumehame Beach Park to the south, and a narrow strip of coastal land *makai* of the highway.

Potential Impacts and Mitigation Measures. From a long-term perspective, the proposed action is not expected to have an adverse impact upon surrounding land uses. The proposed Phase II Subdivision will maintain the existing rural character and ambience of the surrounding area as existing agricultural operations will be allowed to continue. The new agricultural lots will provide opportunities for future agricultural endeavors. The development of the subject property for the Phase II Subdivision is also in keeping with its pre-existing agricultural use and is in consonance with the State land use, community plan, and zoning designations for the site.



In addition to providing an opportunity for a new coastal recreational resource for the community, the future County park would be a natural extension of shoreline activities that presently occur along the *makai* side of Honoapiilani Highway.

Since the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an assessment of surrounding land uses, potential impacts, and measures to minimize harm, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

2. Topography and Soils

Existing Conditions. The Archaeological Inventory Survey report of the project area (Cultural Surveys Hawaii, February 1999) describes the *makai* portion of Ukumehame Valley as being comprised of the large alluvial fans of Ukumehame, Makiwa and Hana'ula Gulches. A central ridge, triangular in form, gently rises inland then climbs steeply to a high-backed ridge. Over time, Ukumehame Stream has cut through its alluvial fan and created a steep-sided gulch. The *mauka* rim of the valley consists of high ridges that separate Ukumehame from Iao and Waikapu Valleys.

The subject property generally slopes in a northerly to southerly (*mauka* to *makai*) direction with onsite elevations ranging from approximately 5 to 310 feet above mean sea level (amsl). The existing gradient near Honoapiilani Highway to the middle of the site is relatively flat (1.5 to 5 percent) and then increases sharply toward the upper end of the property (10 to 18 percent). The topography of the subject property and that of the surrounding area has been extensively disturbed by past agricultural activities such as sugar cane planting, irrigation, harvesting, and operational maintenance activities.



According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, April 1972*, prepared by the United States Department of Agriculture, the following soil series underlie the subject property. See Figure 12, Soils Map.

- Kealia silt loam (KMW) is poorly drained and has a high content of salt. Ponding occurs in low areas after a heavy rain. When the soil dries, salt crystals accumulate on the surface. The soil has a brackish water table that fluctuates with the tides; the water table is nearer the surface along the shoreline than in inland areas. The slope ranges from 0 to 1 percent. Permeability is moderately rapid and runoff is slow to very slow. The hazard of water erosion is no more than slight, but the wind erosion hazard is severe when the soil is dry and the surface layer becomes loose and fluffy. This soil is used for wildlife habitat and pasture, but it has low grazing value. It is not used for crops because of poor drainage and high salt content. Small areas are used for urban development.
- Pulehu clay loam, 0 to 3 percent slopes (PsA). This soil is found on alluvial fans and stream terraces and in basins. Permeability is moderate, runoff is slow, and the erosion hazard is no more than slight. This soil is used for sugar cane, truck crops, and pasture.
- Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA). This soil is similar to Pulehu clay loam, 0 to 3 percent slopes, except that it is cobbly. This soil is used for sugar cane; small acreages are used for pasture.
- Pulehu cobbly clay loam, 0 to 7 percent slopes (PtB). On this soil, runoff is slow and the erosion hazard is slight. This soil is used for sugar cane and small acreages are used for pasture.



- Rock outcrop (rRO) consists of areas where exposed bedrock covers more than 90 percent of the surface. The rock outcrops are mainly basalt and andesite. This land type is gently sloping to precipitous with elevations ranging from nearly sea level to 10,000 feet above mean sea level (amsl). This land type is not suitable for farming and is used for water supply, wildlife habitat, and recreation.
- Stony alluvial land (rSM) consists of stones, boulders, and soil deposited by streams along the bottoms of gulches and on alluvial fans. In most places, the slope is 3 to 15 percent. Elevations range from nearly sea level to 1,000 feet amsl. This land type is suited to pasture in dry areas and to pasture and woodland in wet areas. Improvement of this land is difficult because of the stones and boulders.
- Wainee extremely stony silty clay, 7 to 15 percent slopes (WyC). This soil is moderately sloping and occurs on smooth, alluvial fans. Permeability is moderately rapid, runoff is slow to medium, and the erosion hazard is slight to moderate. The available water capacity is about 0.6 inch per foot of soil. Stones cover 3 to 15 percent of the surface. Roots penetrate to a depth of 5 feet or more. This soil is used mostly for sugar cane; a small acreage is used for pasture and homesites.

A Phase I Environmental Site Assessment (ESA) was conducted to evaluate “*recognized environmental conditions*” on the subject property (Clayton Group Services Inc., June 2002). This term is defined by the American Society for Testing and Materials (ASTM) as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The



term includes hazardous substances or petroleum products even under conditions of regulatory compliance.

For the Phase I ESA, the subject property was surveyed and assessed for signs of the storage, use or disposal of hazardous materials. Two (2) empty 55-gallon drums were located. One (1) of the drums was unlabeled and located on the eastern bank of Ukumehame Stream, while the other drum was labeled as formerly containing hydraulic oil. No stains were observed on the ground around the base of these drums. In addition, there was no evidence of any above ground and under ground storage tanks. Half of an approximately 500-gallon tank shell was located but there was no stained soil around the shell. Solid waste, in the form of wood, metal, and construction debris was observed on the property. Three (3) transformers mounted on a single utility pole were also observed along Honoapiilani Highway on the adjacent parcel to the southwest. The transformers, which are owned by Maui Electric Company, were deemed as not bearing polychlorinated biphenyls (PCBs). Another utility pole containing three (3) transformers owned by Pioneer Mill was located in the same area. It was uncertain if they contain PCBs; however, no stained soil was observed beneath the transformers. The survey did not observe any lead-based paint and asbestos-bearing materials. Due to the relatively young geological age of the Hawaiian Islands, radon gas does not occur at elevated levels in Hawaii. The Phase I ESA also notes that according to the Maui County Board of Water Supply, the water at the subject property is in compliance with Federal, State, and local standards for lead and other metals in potable water supplies.

According to a 1992 re-evaluation by the United States Geological Service, the seismic hazard for Maui County is classified as Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.



Potential Impacts and Mitigation Measures. Site work for the Phase II Subdivision will involve minimal grubbing and grading for infrastructure development. Modifications to the existing landform will unavoidably occur as a result of this work; however, these alterations are not expected to have a significant impact upon existing topographical conditions. To the extent possible, earthwork will be kept to a minimum and cut and fill quantities will be balanced to reduce site work costs and maintain the existing drainage pattern. In addition, erosion control measures and Best Management Practices prepared in accordance with the Maui County grading ordinance (Chapter 20.08) will be implemented during construction activities to minimize soil loss and sedimentation.

Site work and construction permits for each agricultural lot will be the responsibility of lot purchasers. Activities subject to permit processing include clearing and grading for driveways, building pads, plumbing and electrical service connections, and individual wastewater systems, as well as the construction of farm dwellings and ancillary structures.

The Phase I ESA revealed no evidence of recognized environmental conditions associated with the subject property. Although the lower portion of the site was formerly used for agricultural purposes, there was no evidence of storage, mixing or excessive use of agricultural chemicals on the property. Pursuant to Chapter 128D, Hawaii Administrative Rules (HAR) for the State Department of Health, the presence of agricultural chemicals does not constitute a release of a hazardous substance as “*any release resulting from the legal application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act*” is excluded by Section 128D-1, HAR. In conclusion, the Phase I ESA indicates that there is low potential for previously applied agricultural chemicals to affect the subject property.

In as much as the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way,



detailed plans for these uses, as well as an evaluation of topography and soils, potential impacts, and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

3. Flood and Tsunami Hazards

Existing Conditions. The flood insurance rate map (Panel Number 150003 0235B, June 1, 1981) prepared by the Federal Emergency Management Agency, reveals that the majority of the subject property lies within Zone “C”, an area of minimal flooding. A small slender sliver of the property along the *mauka* side of Honoapiilani Highway, which includes a portion of the land for the future County park and future State highway right-of-way, lies within Zone V8, an area of 100-year coastal flooding with velocity (wave action); base flood elevations and flood hazard factors determined. See Figure 13, Flood Hazard Area Map.

Potential Impacts and Mitigation Measures. The Phase II Subdivision will not be affected by tsunami inundation due to its higher elevation and its distance from the ocean. In addition, adverse impacts from stream flooding are not expected due to the grade differences between the agricultural lots and Ukumehame Stream. In addition, no construction or improvements are proposed within the stream. The placement of the new potable water transmission and distribution lines within the existing concrete irrigation conduit that is anchored to the bottom of the streambed, will not result in adverse flood impacts.

Since the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an assessment of flood and tsunami hazards, potential impacts, and measures to minimize harm, will be examined in detail and



addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

4. Flora and Fauna

Existing Conditions. The report documenting the Archaeological Inventory Survey of the project area (Cultural Surveys Hawaii, February 1999) notes that the majority of fauna within the area is classified as the “Kiawe-grass association”. The primary plant species in this category include: kiawe (*Propropis pallida*), koa haole (*Leucaena leucocephala*), klu (*Acacia farnesina*), and `ilima (*Sida fallax*). Flora along the higher elevations of the property is classified as “Mixed Grassland/Shrubland vegetation”. This classification is characterized by patches of grasses interspersed with low thickets of a`ali`i shrubs (*Dononeae viscosa*). Riparian vegetation includes the introduced plants, `opiuma (*Pithecellobium dulce*) and java plumb (*Syzygium cumini*) with some kiawe and a few kukui trees (*Aleurites moluccana*). Native plant species in the uplands include: a`li`i (*Dodonea viscosa*), naio (*Myoporum sandwicense*), sandalwood (*Santalum ellipticum*), ko`oko`olau (*Bidens menziesii*), pili grass (*Heteropogon contortus*), and `ilima. The report also mentions that Handy and Handy (1972:492) indicated, “Ukumehame had extensive terraces below its canyon, some of which were still planted with taro in 1934; these terrace systems used to extend well down below the canyon”. During the archaeological inventory survey, wild taro plants were observed growing along the Ukumehame Stream bed and taro was being cultivated in *lo`i* directly above the project area.

On April 28, 1998, the State Department of Land and Natural Resources’ Division of Forestry and Wildlife inspected portions of the subject property that have the potential to harbor native plant species. The lands that were formerly planted with sugar cane were excluded due to extensive plowing and cultivation over the years. In a follow-up letter dated May 7, 1998, the DLNR indicated that no endangered plant species were found during the inspection.



See Appendix A, Letter from the DLNR, Division of Forestry and Wildlife. However, some common native species such as ilima (*sida fallax*), uhaloa (*waltheria indica*), and nehe (*lipochaeta lavarum*) were identified and primarily found on the dry cliffs on either side of Ukumehame Stream. The letter also indicated that much of the flatter uncultivated lands contained scattered kiawe and buffel grass with no native vegetation whatsoever.

Mammals common to the area include feral cats, dogs, rodents, and mongoose. Wild deer, goats, and pigs have also been observed in the greater area. Avifauna commonly found in this area of West Maui includes mynahs and several species of dove, cardinal, house finch and house sparrow. The endangered Hawaiian stilt has been seen around the irrigation reservoirs in the project area, while the endangered *nene* has been observed on the premises of the nearby Ukumehame Firing Range.

Potential Impacts and Mitigation Measures. The development of the proposed Phase II Subdivision, future park, and future highway right-of-way is not expected to have an adverse impact upon plant and animal life or important wildlife habitats. While the Hawaiian stilt and *nene* have been observed in the project area, awareness and avoidance of these endangered species will help minimize adverse impacts during and after construction activities.

To inform lot owners and minimize impacts to endangered species, information regarding these species and their protected status will be included in all sales documents for the Phase II Subdivision.

5. Ambient Noise

Existing Conditions. The level of ambient noise is an important indicator of environmental quality. In an urban setting, industrial and construction activities, as well as aircraft and automotive traffic can result in adverse noise impacts. In a rural environment, traffic noise, surrounding land uses, and construction activities can impact noise levels based on their proximity to



noise-sensitive receptors. Chronically high noise levels can impact personal health and the ambience and aesthetic appeal of an area.

Noise in the project area is attributable to traffic traveling along Honoapiilani Highway and activities at the nearby Ukumehame Firing Range, which lies south of and nearly adjacent to the easternmost portion of the subject property.

Situated east of and nearly adjacent to the proposed Phase II Subdivision, the Ukumehame Firing Range (TMK 4-8-02: 46 and 47) is the only legal public firing range on the island of Maui. The facility is used by gun clubs; government, law enforcement, and corrections agencies; security companies; the military; and the general public.

As laid out from east to west, the facility includes the Maui Clay Target Association (MCTA) shotgun range, the Maui Police Department (MPD) range, a civilian pistol range, a civilian rifle range, and the Hawaii Army National Guard (HIARNG) military rifle range, and HIARNG military pistol range. Other site improvements include a classroom building, gravel parking areas, and portable toilets, as well as covered shooting patios at the non-military ranges.

The non-military ranges are located on Parcel 46 (44.857 acres), which is owned by the County of Maui, while the military ranges are situated on Parcel 48 (39.279 acres), which is owned by the State of Hawaii and assigned to the HIARNG by Executive Order. The two (2) military ranges lie in close proximity to Lot 44 and Lot 45 of the proposed subdivision.

The Ukumehame Firing Range is used mostly during daylight hours. The non-military ranges are occasionally used during the evenings (up to 10:00 p.m.) for special gun club events and MPD training. The MPD and MCTA ranges are equipped with exterior lighting for nighttime use, while temporary (generator-powered) lighting is employed at the civilian pistol and rifle ranges



for special evening events. The military ranges are subject to around the clock use by HIARNG depending on the specific type of training being conducted (e.g., night fire exercises, squad-level infantry maneuvers). To inform the public of live fire exercises, notices in the local newspaper are published by HIARNG prior to commencement.

The various non-military and military ranges are aligned on a 45° axis to the highway and oriented away from the proposed Phase II Subdivision in a *makai-mauka* (southwest to northeast) direction. For safety, firing lines are positioned so that the direction of fire is toward the West Maui Mountains, which provides a natural backstop at the rear of the ranges and along the eastern flank of the MCTA range. Additional safety features are provided by earth berms, which run the length of the ranges and are located along the common boundaries between each firing range. The berms are all 15 feet in height except for an 8-foot high earth berm, which is provided along the western border of the HIARNG pistol and rifle ranges. The non-military firing ranges were designed in accordance with firing range standards in effect at the time. The HIARNG will be upgrading its ranges to current U.S. Department of the Army standards (Col. "Bud" Peterson (ret.), Hawaii Army National Guard, December 2004). For safety purposes, range officers certified by the National Range Officers Institute (NROI) monitor all activities at the non-military ranges when those ranges are in use, while certified military range officers monitor all activities at the HIARNG ranges.

Munitions used at the Ukumehame Firing Range vary in size. For example, 12 and 20 gauge shells are generally used at the shotgun range, while rounds ranging from .40 to .308 caliber are used at the MPD range. Cartridges varying from .22 to .50 caliber are used at the civilian pistol and rifle ranges, while bullets ranging from 9 millimeter to .762 caliber are used at the HIARNG military pistol and rifle ranges.



Potential Impacts and Mitigation Measures. In the short-term, the development of the Phase II Subdivision, future park, and future highway right-of-way will increase ambient noise levels during construction. Noise from construction vehicles and equipment, such as tractor-trailers, front-end loaders, excavators, bulldozers, dump trucks, graders, generators, jackhammers, and power tools would be the dominant source of noise during the construction phase.

To minimize noise impacts during the construction of the Phase II Subdivision, the Applicant will limit construction to normal daylight hours and comply with Chapter 11-46 of the Department of Health's Administrative Rules pertaining to Community Noise Control if required.

In the long-term, noise from agricultural activities occurring within the Phase II Subdivision is not expected to have an adverse impact on ambient noise levels. Given the size of the lots and the physical separation afforded by the extent of the subdivision, no adverse traffic-related noise impacts are anticipated.

To understand the effect that firing range activities may have on the proposed Phase II Subdivision, the Applicant has visited the Ukumehame Firing Range and consulted with representatives of the Maui Police Department, Valley Isle Sports Shooters, Maui Clay Target Association, Hawaii Army National Guard, and U. S. Army Reserve. Pursuant to discussions with these users, potential impacts to the subdivision associated with the use of the Ukumehame Firing Range include the noise from range firing and ordnance demolition, inadvertent bullet ricochets and accidental firearms discharges. An area of potential concern expressed by some firing range users is any future effort to relocate the range as a result of noise complaints from residents living in the Phase II Subdivision.



Activities at the Ukumehame Firing Range would affect agricultural lots in the eastern sector of the proposed Phase II Subdivision. Measures such as existing hunter education and NRA hand gun safety classes, agency and military weapons training, range design standards and safety protocols, monitoring of range activities by certified civilian and military range officers are anticipated to minimize firing range impacts to the proposed Phase II Subdivision.

In addition, the Applicant acknowledges that the Ukumehame Firing Range is a pre-existing use and that the noise and activities associated with range operations could invariably affect lots in the eastern part of the subdivision. For disclosure purposes, the Applicant will include language about firing range activities in all sales documents. Deeds for the agricultural lots will include language that *runs-with-the-land* to ensure that original lot buyers and any subsequent purchasers are aware of the proximity of the firing range and potential noise impacts.

In as much as the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as a further evaluation of ambient noise levels, potential impacts, and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies.

6. Air Quality

Existing Conditions. Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power-generating plants). Generally, the impact of a development upon air quality depends upon the type of project (e.g.,



residential, commercial, industrial) and its stage of progress (e.g., site preparation, infrastructure development, building construction).

The air quality in the West Maui is relatively good. Non-point source vehicle emissions do not generate a significant or high concentration of pollutants, as prevailing winds help to disperse emissions quickly. The West Maui region is currently in attainment of all Federal and State air quality standards.

At the nearby Ukumehame Firing Range, the Maui County Correctional Center (MCCC) and Maui Police Department (MPD) occasionally use tear gas for recruit and riot control training

Potential Impacts and Mitigation Measures. Short-term air quality impacts related to the development of the proposed Phase II Subdivision involve dust generated by site work (grubbing, grading) and construction activities. 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 to minimize the effects of fugitive dust. Examples of such measures include but are not limited to the following:

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



To the extent possible, non-potable water will be used for dust control purposes during construction activities.

From a long-term perspective, the Phase II Subdivision will not generate any adverse air quality impacts after build out. Although dust could be generated by crop-raising activities that involve plowing, sowing, and harvesting, the effect will be temporary and intermittent in nature. Vehicle exhaust attributable to subdivision traffic is not expected to have an adverse effect upon air quality.

Pursuant to discussions with users of the nearby Ukumehame Firing Range, the down wind drift of tear gas from recruit and riot control-training exercises at the firing range could affect the Phase II Subdivision. The Applicant acknowledges that the Ukumehame Firing Range is a pre-existing use and that range activities could affect lots in the Phase II Subdivision. Deeds for the agricultural lots will include language that *runs-with-the-land* to ensure that original lot buyers and any subsequent purchasers are aware of the proximity of the firing range and potential impacts.

As the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an assessment of air quality, potential impacts, and measures to minimize harm, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

7. Archaeological/Historical Resources

Existing Conditions. A report documenting the findings of an Archaeological Inventory Survey of the subject property has been prepared and was accepted by the State Historic Preservation Division (SHPD). The report identified a total of 17 sites and site complexes (Cultural Surveys Hawaii, February 1999).



The archaeological sites were of various site types and included: (1) agricultural features for intensive non-irrigated and irrigated agriculture, (2) temporary and permanent habitation sites, (3) *heiau*, (4) petroglyphs, (5) human graves, (6) irrigation ditches associated with pre-historic agriculture and historic sugar plantation agriculture, and (7) a basalt quarry. Limited testing was undertaken at a permanent habitation site (Site 4451) with results revealing that the site is historic in age. Testing was also conducted in a non-irrigated complex of agricultural terraces (Site 4455) adjacent to a quarried basalt outcropping. The basalt debitage from lithic reduction suggests a function of quarrying, possibly in pre-historic times; while the charcoal collected for dating and interviews indicate the terraces date to early plantation days. It is possible that these terraces, associated with plantation-era agricultural use, were built within an area that was formerly a quarry site.

Of the 17 sites, four (4) sites – Site 3165 (temporary/recurrent habitation), Site 4367 (permanent habitation), Site 4451 (permanent habitation), and Site 4454 (temporary/recurrent habitation) – were recommended for data recovery. Ten (10) sites – Site 2 (*Hiki`i Heiau*), Site 3 (*Ukumehame Heiau*), Site 3184 (permanent habitation/possible burial), Site 4381 (permanent habitation), Site 4438 (irrigation ditch), Site 4452 (prehistoric agricultural terraces), Site 4453 (temporary/recurrent habitation, possible burial), Site 4455 (historic cane agriculture/recurrent habitation/quarry), Site 4456 (permanent habitation), and Site 4494 (family burial/cemetery site) – were recommended for preservation. See Figure 14, Archaeological Sites. The two (2) *heiau* sites have confirmed burial components. No further work was recommended for the remaining three (3) sites – Site 3167 (cattle exclusion/historic wall), Site 4439 (irrigation ditch), and Site 4440 (irrigation ditch). In correspondence dated August 30, 1999, the SHPD accepted the report documenting the findings and recommendations of the Archaeological Inventory Survey. See Appendix B, Archaeological Inventory Survey Approval Letter.



A Preservation Plan for the 10 sites that were recommended for preservation was prepared and submitted to the State Historic Preservation Division (SHPD) for review and approval. See Appendix C, Archaeological Preservation Plan. The preservation plan, which provides for the preservation of these sites through avoidance and protection, provides 10-foot buffers for three (3) of the sites, Site 4438 (irrigation ditch), Site 4451 (permanent habitation), and Site 4452 (prehistoric agricultural terraces); 25-foot buffers for four (4) sites, Site 3165 (temporary/recurrent habitation), Site 3184 (permanent habitation/possible burial), Site 4454 (temporary/recurrent habitation), and Site 4456 (permanent habitation); and a 50-foot buffer for Site 4367 (permanent habitation). In addition, the buffer for Site 4381 (permanent habitation) is incorporated into the preservation area for the Hiki'i Heiau, while the buffer for Site 4455 (historic cane agriculture/recurrent habitation/quarry) is setback 10 feet from the limits of an existing cane haul road. In a letter dated October 2, 2000, the SHPD accepted the Preservation Plan for the 10 sites that were recommended for preservation. See Appendix D, Archaeological Preservation Plan Approval Letter.

A Burial Treatment Plan was also prepared and submitted to the SHPD for review and approval. See Appendix E, Burial Treatment Plan. The Burial Treatment Plan calls for the *in situ* preservation of four (4) identified burial areas which include Hiki'i Heiau (Site 2), Ukumehame Heiau (Site 3), a family burial/cemetery site (Site 4494), and a burial site (Site 4828). Further testing at Site 4453 (possible burial) revealed an absence of human remains, therefore no further work was undertaken and the site was not included in the Burial Treatment Plan. In correspondence dated January 15, 2003, the SHPD indicated that the Maui/Lana'i Islands Burial Council unanimously voted to preserve these sites in place and that the SHPD concurs with and supports the Burial Council's position. See Appendix F, Burial Treatment Plan Approval Letter.



More recently, an Archaeological Monitoring Plan was prepared and submitted to the SHPD for review and approval in connection with the processing of the subdivision application for the Phase II Subdivision. The monitoring plan will ensure that if human remains are located during ground-altering construction activities, appropriate measures regarding the inadvertent discovery of human remains will be implemented in accordance with Section 13-300-40a, b, and c of the Hawaii Administrative Rules. Archaeological monitoring will also ensure that significant cultural resources, if identified on the property, are sampled, documented, and evaluated for their historical significance. In its letter dated December 24, 2003, the SHPD accepted the Archaeological Monitoring Plan and indicated that the plan conforms to its guidelines governing standards for monitoring. See Appendix G, Archaeological Monitoring Plan Approval Letter. In connection with the early consultation process for the preparation of the Environmental Assessment, the SHPD indicated that any effect the proposed action may have on known historic sites would be mitigated provided that the specified conditions of the approved preservation plan are followed. See Appendix M; SHPD letter dated November 26, 2004.

Potential Impacts and Mitigation Measures. The Archaeological Inventory Survey report, Preservation Plan, and Archaeological Monitoring Plans for the subject property have been reviewed and accepted by the SHPD. In addition, the Burial Treatment Plan has been accepted by the Maui/Lana'i Islands Burial Council and has the concurrence and support of the SHPD. The development of the subject property will be conducted in accordance with the specified conditions of the approved preservation, burial, and monitoring plans.

It should be noted, however, that since the publication of the Draft EA, the alternative route for the new water tank access road that was described in the Draft EA was deemed to be the most feasible by the Applicant given the steep slopes of the original proposed route. The new water tank access road will be



constructed within a 20-ft. wide right-of-way and include a 12-ft. wide paved travel lane with grass shoulders or swales. About 1,000 linear feet (LF) of the access road is on the subject property, while the remaining 850 LF lies on State land (TMK 4-8-002: 008). The water tank access road would begin on the north side of Road "B" and proceed along the west side of Lots 11 and 12 where it would be gated at the State property line. See Figure 4, Phase II Subdivision General Plan. The access road would then pass through State land before re-entering the subject property at the water tank site. Potable water and electrical transmission lines will be placed within the right-of-way of the access road in order to support the improvements at the water tank site. As it proceeds to the water tank, the access road would skirt the approved archaeological buffers on the west side of Site 3 (Ukumehame Heiau) and Site 3184 (a permanent habitation/possible burial).

During construction, a qualified archaeologist will be at the site to monitor all ground-altering construction activities. The archaeologist will have the authority to halt excavation in the event archaeological features or cultural deposits are identified during monitoring. Should this occur, the SHPD would be consulted to determine an acceptable course of action. If human remains are located, work will cease in the vicinity of the find and the find protected from further disturbance. The SHPD and the Maui/Lana'i Islands Burial Council will be promptly notified and procedures for the treatment of the remains will be implemented in accordance with Chapter 6E-43, Hawaii Revised Statutes.

In light of the foregoing, the proposed action is not expected to result in adverse impacts to archaeological resources.

8. Cultural Resources

Existing Conditions. A Cultural Impact Assessment for the subject property has been prepared. See: Appendix H, Cultural Impact Assessment. The report includes information gathered from archival and documentary research, as well



as from consultation with individuals with knowledge of the project area, and its cultural resources practices, and beliefs. Many of the persons interviewed have genealogical or residential ties to the Ukumehame *ahupua`a*. The report also includes an assessment of potential impacts to cultural resources and recommendations for mitigation measures.

The following are some important points that surfaced during the interviews for the Cultural Impact Assessment.

- The interviewees are lineal descendants and can trace their genealogical history and family activities in Ukumehame from pre-Contact time up until the time their families had to leave the *ahupua`a* in the 20th century.
- Several lineal descendants are presently engaged in traditional agricultural activities within the proposed river corridor lot, which is not slated for development.
- Since the termination of sugar cane cultivation, the stream's natural ecosystem is reviving, allowing many previously gathered stream resources to return.
- Plants and herbs used in traditional medicine are growing in Ukumehame Valley.
- Certain places in the project area have personal meaning, as they are associated with family members, including sites where some family members are buried.

Potential Impacts and Mitigation Measures. Potential impacts on the traditional and customary activities mentioned above will be mitigated through the following measures: 1) access to the upper valley through the river corridor lot will be maintained; 2) lineal descendants will be allowed to continue farming the exclusion areas within the river corridor lot; and 3) all known burial sites will be preserved and access will be provided to lineal descendants in accordance with the approved burial treatment plan.



Besides kuleana landowners, cultural practitioners will be provided with access to and within the river corridor. New Phase II Subdivision roads will provide a connection to the existing access roads within the river corridor lot, while an access easement (for the use of the existing agricultural roads in the valley) will provide for access within the lot. To promote cultural awareness and sensitivity, information about native Hawaiian access rights and cultural practices will be provided to all prospective and initial lot purchasers, as well as to all subsequent lot buyers, so they are aware of the rights of kuleana landowners and cultural practitioners.

In order to preserve the exercising of native Hawaiian rights related to access, gathering, and other customary activities, pursuant to Hawai'i State Law, Article XII, Section 7; Act 50, the Cultural Impact Assessment recommends that communication continue between the developers, lineal descendants of the original *ahupua`a* residents, and cultural practitioners during the planning process. In this way, mitigation efforts, such as coordination between the developers and cultural practitioners for working out the details for access to the valley and its resources, can be put in place before development occurs.

The development of the Phase II Subdivision, future park, and future highway right-of-way is not expected to have an adverse impact upon cultural resources as access to the valley and river corridor lot for traditional native Hawaiian cultural practices will continue to be allowed. In addition, measures to minimize impacts to known significant historic sites will be implemented in accordance with the specified conditions of the preservation, burial treatment, and monitoring plans, which were accepted by the State Historic Preservation Division. See Appendix D, Archaeological Preservation Plan Approval Letter, Appendix F, Burial Treatment Plan Approval Letter, and Appendix G, Archaeological Monitoring Plan Approval Letter.



In as much as the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as a further evaluation of cultural resources, potential impacts and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

9. Visual Resources

Existing Conditions. As viewed from Honoapiilani Highway, the subject property and the West Maui Mountains can be seen on the *mauka* side of the highway, while the ocean and the islands of Lanai and Kahoolawe can be observed on the *makai* side.

Potential Impacts and Mitigation Measures. The development of the proposed Phase II Subdivision is not expected to have a significant impact upon *mauka* and *makai* views from the existing Honoapiilani Highway and the future (realigned) highway. While farm dwellings will modify the visual landscape, these improvements are not expected to have an adverse effect upon the rural and scenic character of lands in the surrounding area.

The agricultural lots in the Phase II Subdivision will range in size from approximately 3 to 25 acre and will provide a significant degree of open space between farm dwellings, as well as from Honoapiilani Highway. The distance and difference in elevation between the highway and the agricultural lots will help minimize visual impacts. For example, the *makai* boundaries of the agricultural lots along the bottom row of the subdivision are approximately 600 feet *mauka* of the highway and 10 feet above mean sea level. The separation and grade differences between the highway and the agricultural lots gradually increase as the terrain rises in the *mauka* direction.



Agricultural District zoning standards restrict the maximum developable area for farm dwellings to 10 percent of the lot area and limit the maximum height of farm dwellings to 30 feet. In addition, street tree plantings, as well as landscaping, agricultural crops and land conservation activities on the agricultural lots will help integrate the subdivision with its surroundings.

Since the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an updated assessment of visual resources, potential impacts, and measures to minimize harm, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

10. Streams and Wetlands

Existing Conditions. Native stream fish in Hawaii consist of two (2) closely related families, *Gobiidae* and *Eleotridae*, which are collectively referred to as *ʻOʻopu* in the Hawaiian language. Four (4) of these are endemic (found nowhere else on earth) and one is indigenous (native to Hawaii and other locations). Native crustaceans in Hawaiian streams are represented by two (2) species. The *ʻopae kuahiwi*, or mountain *ʻopae*, prefer the higher sections of the streams where there is abundant cool, clear and fast-flowing water. The other is the prawn, *ʻopae oeha ʻa*, which is most common in slow-flowing water in the lowest stream sections. Native stream shellfish in Hawaii, all of which are endemic, consists of two (2) crustaceans, and three (3) mollusks. In addition, there are three (3) endemic species of river *opihi* (limpets) in Hawaiian streams but the most common is the larger *hihiwai* (*Neritina granosa*) which are active at night and are most common in the lower to mid-stream sections. The other two (2) species can mostly be found at the mouth of rivers. Hawaii's streams are also home to the larval forms (nymphs) of



dragonflies and damselflies, both of which have members that are endemic to Hawaii. (State Department of Land and Natural Resources, 2004).

Stream survey data compiled by the State Department of Land and Natural Resources's Aquatic Resources Division indicates that stream life in Ukumehame Stream includes various species of *'o'opu* or gobies (Family Gobiidae) including *'o'opu nakea* (*Awaous guamensis*), *'o'opu nopili* (*Sicyopterus stimpsoni*), and *'o'opu alamo'o* (*Lentipes concolor*), as well as endemic shrimp or *'opae kuahiwi* or *'opae kalaole* (*Atyoida bisulcata*) and the Tahitian prawn (*Macrobrachium lar*), which was introduced in the 1950s. (State Department of Land and Natural Resources, July 1994).

Most native Hawaiian stream animals share a unique life cycle pattern, called amphidromy. This is a specialized pattern where the stream animals live in two different environments (diadromy) during different life stages. For example, gobies live in streams as adults. The gobies lay their eggs in the stream, and upon hatching, the larvae migrate downstream and are swept out to sea. After living in the ocean plankton community for a time, the post-larvae, called *hinana*, return to the adult's habitat by migrating upstream. (State Department of Land and Natural Resources, 2004).

As indicated in the Hawaii Stream Assessment (State Commission on Water Resource Management, 1990), Ukumehame Stream is a perennial stream that has an average annual mean flow of 12.7 cubic feet per second (cfs) and a median flow of 8.1 cfs. Based on an exceedance of numeric water quality standards under dry conditions, Ukumehame Stream was placed on a list of impaired water bodies in Hawaii due to turbidity caused by pollutants (State Department of Health, 2004). It should be noted, however, that the stream did not exceed the wet season turbidity standard and that a 2004 visual assessment of the stream did not support a previous 2002 listing for dry season turbidity. The visual assessment also scored Ukumehame Stream high to very high in terms of desirable habitat conditions.



A survey to determine the presence or absence of wetlands on the subject property has been conducted. See Appendix I, Wetland Survey. The report documenting the findings of the survey identified a pair of suspected wetland areas: one in the southwest part of the subject property (Suspect Wetland No. 1) and another near its southeastern extent (Suspect Wetland No. 2). As used in the report, the term “suspect” refers to suspected wetland areas that were investigated. These suspect wetland areas turned out to be likely former wetlands because of their historic alterations. Marginal wetland areas were located outside the limits of the subject property, in an area southeast of the site on an adjoining parcel.

Suspect Wetland No. 1 is located entirely within the limits of the 100 acres to be transferred to the County. Although a small portion falls within the County’s 100 acres, the majority of Suspect Wetland No. 2 is located beyond the limits of the subject property. Marginal wetland areas were observed on an adjacent parcel to the southeast of the subject property. (To be updated if necessary upon the receipt of a final report from Vuich Environmental).

Some of the existing irrigation/drainage ditches on the property have wetland plants growing along their banks or in the water. These ditches were not included in the survey as the presence of this vegetation is being maintained only through induced, manmade measures and would not exist if this activity were terminated.

Potential Impacts and Mitigation Measures. The development of the Phase II Subdivision will not involve any construction or improvements within Ukumehame Stream. The placement of the new potable water transmission and distribution lines within the existing concrete irrigation conduit that is anchored to the bottom of the streambed, will not result in any adverse impacts to the stream.



Based upon field surveys and borehole sampling, the Wetland Survey report concluded that no areas on the subject property possess the all-inclusive, necessary traits that are indicative of a wetland: hydric soils, hydrophytic vegetation, and wetland hydrology. Historically, the suspect wetlands may have exhibited all three (3) wetland indicators; however, extensive agricultural activities such as tilling and irrigation/drainage control, have resulted in the disappearance of the required wetland characteristics, most notably hydrology.

It was also concluded that the suspect wetlands are exempt from U.S. Army Corp of Engineers jurisdiction since the land underlying the subject property was altered prior to the enactment of Section 404 of the Clean Water Act, which authorized the issuance of permits for the discharge of dredged or fill materials into waters of the United States, including wetlands. In addition, the report recommends that proper planning be undertaken to ensure that any future development does not adversely impact the adjacent offsite wetland areas.

In commenting on the Draft EA (See Appendix N, Draft EA Comments and Responses), the U.S. Army Corps of Engineers indicated that it would need to conduct an onsite inspection in order to provide a final determination on the jurisdictional status of the wetland areas, and to verify whether any of the features associated with the former irrigation system should be defined as waters of the United States. The Corps of Engineers inspection of the subject property is scheduled for April 29, 2005. Should this inspection result in a jurisdictional determination by the Corps, the Applicant would comply with all regulatory requirements for activities that fall under the Corps purview.

Since the publication of the Draft EA, the Applicant met with biologist Skippy Hau of DLNR's Division of Aquatic Resources on February 25, 2005. The purpose of this meeting was to discuss Ukumehame Stream characteristics including stream flow and animals, as well as water use and quality, and the



proposed irrigation system improvements. Key points that were brought up by Mr. Hau regarding the stream include:

- The existing riparian vegetation and tree canopy helps keep the stream cooler in its upper reaches.
- Cooler stream water temperatures foster *taro* growth.
- Stream animals use runs, pools, and riffles for habitats and to move upstream.
- In response to (the irrigation system) leaving up to 1.3 million gallons per day of water in the stream, Mr. Hau indicated that any amount of water left in the stream is good and that stream water saturation would establish stream levels over a period of time.
- Discharges from underground sources (e.g., springs) and tidal influences help add to and raise stream flows and levels.
- Rainy seasons are no longer clearly defined.
- Stream animals have adapted to episodic rainfall.
- During heavy rainfall events, the temperature drops and the stream animals spawn.
- Opening up access to the public could result in an excessive removal of stream animals and a resulting decline in their population.
- The root systems of trees help to stabilize the stream.
- The developer needs to be attentive to the streams recharge sources (perched water table, rainfall) and keep water in the stream.
- Stream water quality is good.

In general, since a significant amount of stream flow would continue to occur, even during periods of maximum withdrawal, Mr. Hau felt that the diversion would not have a significant impact on stream biota.

The following are examples of measures that can help minimize impacts to the stream's ecosystem.

1. Maintenance of the *mauka-makai* connection to the sea (river corridor lot) to ensure healthy populations of native stream flora and fauna and to enable native stream animals to continue their migration to and from the ocean to complete their life cycles.



2. Maintenance of riparian (streamside) vegetation to help prevent erosion of the banks and reduce unwanted sediment and nutrient load into the stream ecosystem. Native stream animals thrive best when the water is as clear and clean as possible. Riparian vegetation also creates a canopy over the stream that provides shaded areas and the cooler water which native stream animals prefer.

In as much as the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an evaluation of streams and wetlands, potential impacts, and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

11. Agriculture

Existing Conditions. Historical research has established that large-scale agricultural development of the subject property initially occurred in the early 1900s by Olowalu Plantation (Clayton Group Services Inc., June 2002). Between the late 1920s to early 1930s, Pioneer Mill Company acquired Olowalu Plantation. By 1951, portions of the subject property continued to be used for sugar cane cultivation. In 1995 to 1996, the property was sold to several entities and was leased to Pioneer Mill. Sugar cane cultivation continued until Pioneer Mill closed its operations in late 1990s. Since then, the subject property has been fallow except for small-scale farming that occurs on privately owned property (exclusion areas) within the proposed river corridor lot and on 2.68 acres of land at the easternmost extent the property.

The island of Maui encompasses a total land area of 465,800 acres. Of this total area, lands in the State Agricultural District comprise 245,783 acres (Maui County Data Book, 2002). The subject property encompasses an area of



approximately 439 acres or 0.0018 percent of the lands in the State Agricultural District.

The “Detailed Land Classification – Island of Maui,” contains productivity ratings for land prepared by the University of Hawaii’s Land Study Bureau (LSB) reveals that the lands underlying the project area have overall productivity ratings of “A”, “B”, and “E”. On the LSB ratings scale, “A” represents the class of highest productivity, while “E” indicates the lowest. See Figure 15, Land Study Bureau Classifications.

The State of Hawaii has established three (3) classes of agriculturally important lands to the State: 1) Prime Agricultural Land, 2) Unique Agricultural Land, and 3) Other Important Agricultural Land.

Prime Agricultural Land is land best suited for the production of food, feed, forage, and fiber crops. Unique Agricultural Land is land other than Prime Agricultural Land and is used for the production of specific high-value food crops. Other Important Agricultural Land is land other than Prime Agricultural Land or Unique Agricultural Land that is of Statewide or local importance for the production of food, feed, fiber, and forage crops. As indicated by the map that depicts Agricultural Lands of Importance to the State of Hawaii (ALISH), an area in the eastern half of the subject property contains Prime Agricultural Land, while a portion of the western half includes Other Important Agricultural Land. The remaining lands on the subject property were unclassified. See Figure 16, ALISH Map.

As noted by Section 19.30A.020 of the Maui County Code, agricultural lands that meet the following criteria should be given the highest priority for retention in the Agricultural Zoning District: 1) lands classified by the ALISH system; 2) lands not classified by the ALISH system whose agricultural land suitability supports the production of agricultural commodities, as well as lands used for intensive animal husbandry and lands in agricultural cultivation in five



of the ten years prior to 1998; and 3) lands which have 75 percent or more of their boundaries contiguous to lands within the Agricultural Zoning District.

Potential Impacts and Mitigation Measures. The proposed Phase II Subdivision will involve the use of 0.0014% or approximately 339 acres of State Agricultural District lands, while the future park and future highway right-of-way will use 0.0004 percent of these lands or approximately 100 acres.

The use of the subject property for the proposed Phase II Subdivision is consistent with past and present agricultural activities occurring on the site and in the vicinity and is also in consonance with the State land use, community plan, and zoning designations for the property. The inventory of agricultural lands will not be impacted by the proposed subdivision, as the lands will continue to be used for agricultural purposes and the existing rural character of the surrounding area will also be maintained.

With regard to agricultural activities in the proposed subdivision, purchasers of agricultural lots in the subdivision will be required to submit a Farm Plan application to the Maui County Department of Planning for review and approval. The purpose of this process is to evaluate farm plans for farm dwellings in the State Agricultural District and/or Maui County Agricultural Zoning District. Under County zoning, farm dwellings are permitted in the agricultural district provided they are ancillary to permitted agriculture and/or agricultural land conservation uses on the property.

The development of the future park and future highway right-of-way is not expected to have an adverse impact upon the use and availability of lands designated for agricultural use. Under County zoning, public parks are permitted as an accessory use within the Agricultural District and roadways are permissible in all zoning districts. The use of approximately the 100 acres of agricultural land for the future park and future highway right-of-way is not expected to have an adverse effect upon the total acreage and inventory of lands that are available for agricultural uses.



Since the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an assessment of agriculture, potential impacts, and measures to minimize harm, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

Existing Conditions. The island of Maui experienced relatively strong population growth during the past decade with the 2000 resident population reaching 117,644, a 29 percent increase over the 1990 population of 91,361. Population growth is expected to continue as the resident population for the year 2020 is projected to reach 160,090, an increase of 36 percent (SMS Research and Marketing Services, Inc., June 2002).

From 1990 to 2000, the West Maui region experienced a similar growth rate as evidenced by a 23 percent increase in its resident population. During this period, the population increased from 14,574 in 1990 to 17,967 in 2000. For the year 2020, the resident population in the region is projected to increase to 25,431, a 41 percent gain over the 2000 population (SMS Research and Marketing Services, Inc., June 2002).

Potential Impacts and Mitigation Measures. At full build out, the number of persons residing in the proposed Phase II Subdivision is not expected to adversely affect the population of the region or contribute toward any disproportionate population growth or impacts. Using national demographic multipliers of standard housing types for total household size (American Housing Survey, 1987), the Phase II Subdivision may increase the region's population by approximately 286 persons (3.18 multiplier x 90 homes = 286.2



or ≈286). In terms of impacts, this gain is considered minimal as it represents only 0.016 percent of the current regional population and is not expected to adversely alter population and demographic characteristics.

As the future park and future highway are not deemed to be population generators, no population-related growth impacts are anticipated. The future park will benefit the populace by providing an additional shoreline recreational resource for the community, while the future highway will benefit the public by supporting the safe and efficient movement of people and goods and by eliminating the threat of high surf and shoreline erosion from impacting highway travel.

2. Economy

Existing Conditions. The visitor industry is a major component of the island's economy and the dominant economic force in the West Maui region. Visitor accommodations and facilities are situated in the town of Lahaina and the outlying areas of Kaanapali, Honokowai, Kahana, Napili, and Kapalua. The Kaanapali and Kapalua Resorts are popular visitor destinations in West Maui, while the historic town of Lahaina is the visitor, service, commercial, and residential center of the region. Agriculture also plays an important role in the region's economy. Maui Pine's pineapple fields occupy portions of the intermediate uplands between Honokowai and Honolua, while small-scale diversified agriculture (e.g., coffee, seed corn) occurs on lands *mauka* of Honoapiilani Highway in the area between Kaanapali and Honokowai.

Potential Impacts and Mitigation Measures. On a short-term basis, the development of the proposed Phase II Subdivision will support the economy via direct and indirect construction-related employment, as well as through the purchase of construction materials and building-related services. In the long term, residents of the Phase II Subdivision will contribute to the economy through the payment of sales and property taxes and the purchase of goods and



services from local businesses, as well as through the sale of any agricultural crops and products.

The positive effects of construction-related employment and spending will also benefit the economy in the short term during the development of the future park and future highway right-of-way. In the long term, resident and visitor expenditures for goods and services associated with outings at the future park will benefit the economy. Long-term economic benefits connected to the future highway include the elimination of repair and maintenance costs and activities attributable to shoreline erosion and the undermining of the highway.

3. Housing

Existing Conditions. For the month ending December 31, 2004, the median price of a single-family home on the island of Maui was \$594,500 compared to \$515,000 a year ago for the same month. The year-to-date median sales price for a home on Maui is \$550,000, a 25 percent increase when compared with the year-to-date median of \$440,000 for the same period a year ago. Year-to-date statistics also reveal that single-family units were on the market for an average period of 114 days (Maui Board of Realtors, January 2004).

Pursuant to Section 19.30A.050 of the Maui County Code, accessory uses permitted within the County's Agricultural Zoning District include two (2) farm dwellings per lot, one of which cannot exceed 1,000 square feet of developable area.

Potential Impacts and Mitigation Measures. While farm dwellings must be incidental or subordinate to a permitted principal agricultural use, the proposed Phase II Subdivision nonetheless has the potential to contribute up to 90 dwellings to the island's inventory of housing units. For lot purchasers, the Phase II Subdivision will provide them with the opportunity to engage in agriculture, agricultural land conservation or raising animals and livestock. For some buyers, the purchase and development of a lot will free them of



monthly rental payments and allow them to build equity in real estate or provide additional household income. For others, the proposed subdivision will provide buyers with an opportunity to transition from a smaller or older residence to a larger or newer dwelling or move from their present location to a more desirable one.

The scope of Maui County's affordable housing policy was originally intended to apply to zoning changes that establish land use designations under which a residential housing project is developed but has been recently broadened by the County to encompass other land use-related requests. As defined by the policy, a residential housing project is a project that provides ten (10) or more long-term residential housing units or lots.

While the Applicant respects the DHHC's attempts to broaden the applicability of the affordable housing policy, it feels that given the unique circumstances of this situation, the provisions of the affordable housing policy do not apply. See Appendix M, Applicant's letter dated January 14, 2005.

C. PUBLIC SERVICES AND FACILITIES

1. Recreational Facilities

Existing Conditions. The Maui County Department of Parks and Recreation (DPR) operates and maintains a total of 19 parks in the West Maui region, as well as community recreational facilities such as the Lahaina Civic Center, Lahaina Aquatic Center, and the Lahaina Recreation Center. In addition, privately owned golf courses and tennis courts in the Kaanapali and Kapalua Resorts are open to the public.

County park facilities in the project area include Papalaua Wayside Park, Ukumehame Beach Park, and the Ukumehame Firing Range. Papalaua Wayside Park is located at the north end of the Pali and *makai* of Honoapiilani



Highway. This 6.7-acre beachfront park allows camping (by permit) and provides beach access for swimming, surfing, snorkeling, and kayaking. Facilities include portable restrooms and a gravel parking area. Ukumehame Beach Park lies adjacent to and north of Papalaua Wayside Park. This 3.8-acre coastal park provides access for swimming and surfing and includes BBQ grills and picnic tables, as well as portable toilets and paved parking areas. The Ukumehame Firing Range, which lies south of and almost adjacent to the easternmost part of the subject property, contains pistol, rifle, and shotgun ranges, gravel parking areas, storage facilities, portable restrooms, and a classroom building.

Potential Impacts and Mitigation Measures. The proposed Phase II Subdivision is not expected to have a significant impact upon recreational facilities. Pursuant to Section 18.16.320 of the Maui County Code, a subdivider must: 1) provide or dedicate land for park and playground purposes; or 2) provide a monetary contribution to the County, or 3) improve a park in the community plan area, or 4) provide an equivalent combination of the foregoing.

In a letter dated October 4, 2004, the DPR determined that the parks assessment fee for the Phase II Subdivision is \$34,615. See Appendix J, Department of Parks and Recreation Letter. Utilizing the County's standard 3-lot exemption, the fee was calculated based upon $\$1.61/\text{SF} \times 500 \text{ SF/Lot} \times 43 \text{ Lots} = \$34,615$. The determination of the fee also considered the date that the Phase II Subdivision received preliminary subdivision approval (October 10, 2003) since preliminary approvals granted on or after February 6, 2004 are subject to another method of calculating fees. The submittal of the Applicant's cash contribution for the parks assessment fee will be coordinated with the DPR.



From a long-term perspective, the development of the future park will provide a new shoreline recreational resource for residents and visitors alike. As envisioned by County officials, the land *makai* of the future highway right-of-way would become a new linear shoreline park that would extend approximately 1 mile and serve as the first phase of a coastal recreation area that would ultimately extend 8 miles, from the north end of the Pali to Puamana Park in Lahaina.

Conceptually, the future park would include restrooms, showers, camping areas, and picnic tables. After the future highway has been constructed, the existing roadway would be used for parking and a bike path and fully shielded lighting would be provided for safety, access, and parking. The future highway would have a positive effect on recreational resources by facilitating access to the future park and by removing the threat of shoreline erosion from undermining the existing highway and affecting access to shoreline areas.

In as much as the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an evaluation of recreational facilities, potential impacts, and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

2. Police and Fire Protection

Existing Conditions. The Maui County Department of Police is responsible for the preservation of the public peace, prevention of crime, and protection of life and property. Headquartered at the Lahaina Civic Center, the department's Lahaina Patrol District is one of six (6) such districts in Maui County. In addition to regular patrol duties, the Lahaina Patrol District has programs for a



bike detail, citizens patrol, parks patrol officer, school resource officer, parking enforcement officer, and visitor- and community-oriented policing. The district also has its own criminal investigation division.

The mandate of the Maui County Department of Fire and Public Safety is to protect life, property, and the environment from fires, hazardous material releases and other life-threatening emergencies. The department has 14 stations throughout the County including ten (10) stations on the island of Maui. In West Maui, the department has two (2) stations, one in Napili and another at the Lahaina Civic Center.

Potential Impacts and Mitigation Measures. From a long-term perspective, the service area limits for police and fire protection will increase slightly due to the development of the proposed Phase II Subdivision and future park. Fire insurance premiums for structures in the proposed subdivision and future park may also be higher as a result. Fire flow requirements for the proposed subdivision and future park will comply with County fire code standards.

The development of the future highway right-of-way will have a beneficial effect on travel as vehicles used for police and fire protection will no longer be impacted by road closures due to high surf, shoreline erosion, and traffic accidents. However, as the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an evaluation of police and fire protection, potential impacts, and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.



3. Schools

Existing Conditions. The State Department of Education (DOE) is responsible for several public schools in the West Maui area. Located in the town of Lahaina, these schools include King Kamehameha III Elementary School, Princess Nahienaena Elementary School, Lahaina Intermediate School, and Lahainaluna High School.

Potential Impacts and Mitigation Measures. The proposed Phase II Subdivision is not expected to adversely impact existing educational facilities. Based on a maximum of two (2) farm dwellings per lot, and utilizing national demographic multipliers of standard housing types for school age children (American Housing Survey, 1987), the Phase II Subdivision may increase the student population in area schools by the following: Grades K to 5: 40 students; Grades 6 to 8: 13 students; and Grades 9 to 12: 12 students. The proposed subdivision does not involve a change in zoning and is therefore not subject to DOE requirements for facility assessment fees.

No adverse impacts to educational facilities are anticipated as a result of the development of the future County park and future State highway right-of-way. In the long term, the future park may be utilized for school outings, while the future highway will facilitate travel during school excursions.

4. Medical Facilities

Existing Conditions. Located in Wailuku, the approximately 200-bed Maui Memorial Medical Center provides acute and emergency health care services for the County of Maui. Various private care physicians and clinics in the West Maui region also provide medical care and out patient services. In addition, American Medical Response (AMR) provides 24-hour emergency medical service through ten (10) ambulance facilities stationed throughout the County, including eight (8) facilities on the island of Maui. Of the two (2)



ambulance facilities located in West Maui, one (1) facility is situated in Lahaina, while the other facility is located in Napili.

Potential Impacts and Mitigation Measures. The development of the proposed Phase II Subdivision is not expected to generate a significant demand for new or additional health care facilities or services and therefore, will not have an adverse impact upon existing medical facilities. In addition, the proposed action will not adversely impact the ability of ambulances to respond to medical emergencies.

5. Solid Waste

Existing Conditions. The Solid Waste Division of the Maui County Department of Public Works and Environmental Management is responsible for the collection and disposal of single-family residential refuse on the island of Maui. County landfills located in Hana, Central Maui, Lanai, and Molokai accepts residential and commercial solid waste for disposal. In addition to the disposal of solid waste, the Central Maui Landfill, which is located near Puunene, contains recycling, and composting facilities and also accepts green waste and used motor oil. In the Lahaina area, a solid waste transfer station at Olowalu receives self-hauled residential refuse for transfer to the Central Maui Landfill. The Maui Demolition and Construction Landfill, a commercial facility near Maalaea, accepts construction and demolition waste for disposal.

Potential Impacts and Mitigation Measures. During the construction of the proposed Phase II Subdivision, cleared and grubbed material may be used as mulch or transported to the County's green waste recycling facility at the Central Maui Landfill for disposal. Construction waste will be hauled to the Maui Demolition and Construction Landfill for disposal. After build out, it is anticipated that a private waste disposal service selected by the subdivision's homeowners association will handle refuse collection and disposal. In the long



term, refuse generated by the Phase II Subdivision is not expected to have an adverse effect upon solid waste collection and disposal services and facilities.

D. INFRASTRUCTURE

1. Water

Existing Conditions. There is no existing public potable water system on the subject property neither is there such a system in proximity of the site.

Generally, water for domestic and fire flow use in the urban areas of West Maui is provided by a public water system that is operated and maintained by the Maui County Department of Water Supply (DWS). Within the region, private water utilities such as the Kapalua Water Company and the Hawaii Water Service Company provide water service for the Kapalua Resort and Kaanapali Resort, respectively.

As indicated in the Phase I Environmental Site Assessment for the subject property, the three (3) aquifers that underlie the site all belong to the Ukumehame Aquifer System of the Lahaina Aquifer Sector. A single aquifer underlies the hilly, northern part of the property, while upper and lower aquifers underlie the coastal, southern portion of the site. The aquifer underlying the northern section of the property is classified as an unconfined basal aquifer of the flank type. The upper and lower aquifers in the southern part of the site are respectively classified as an unconfined basal aquifer of the sedimentary type and a confined basal aquifer of the flank type. Generally, the direction of regional shallow groundwater flow is inferred to be south-southwest based on surface topography.

There are three (3) test wells on the subject property that were drilled to provide a source of potable water for the proposed Phase II Subdivision. The State Commission on Water Resource Management (CWRM) granted well Construction Permits for these wells to the Applicant. Ukumehame Well No. 1 (State Well No. 4835-02) is located to the west of Ukumehame Stream,



Ukumehame Well No. 2 (State Well No. 4835-03) is situated on the east side of the stream, and Ukumehame Well No. 3 (State Well No. 4835-04) is located approximately 150 feet to the east of Well No. 2.

Potential Impacts and Mitigation Measures. Since there is no public water system in the project area, this component of the public infrastructure system will not be affected by the proposed Phase II Subdivision.

As previously noted, three (3) test wells were drilled on the subject property to provide a source of potable water for the Phase II Subdivision. Due to its thermal temperature and high chloride content (salinity), Well No. 1 cannot be used as a potable water source. Based on preliminary test results, Well Nos. 2 and 3 provide an adequate source of drinking water that will satisfy the domestic water demand for the subdivision. While test results reveal that the water quality of Well Nos. 2 and 3 is good, the results must be evaluated by the DOH before the drinking water can be certified for public use and consumption. Pursuant to this evaluation, and if required by the DOH, a chlorination system will be installed for water treatment purposes.

The proposed water system for the Phase II Subdivision will involve two (2) private systems: one for domestic and fire flow use and one for irrigation purposes.

The domestic water system for the Phase II Subdivision will include two (2) wells with pumps, a 0.2 million gallon (MG) above-ground reservoir (i.e., water tank) with paved access road and water treatment system (if needed), transmission lines, and domestic service laterals and meters for each agricultural lot. New transmission lines will convey water from the potable wells to the new 0.2 MG reservoir. New distribution lines will then transport the water to the agricultural lots in the subdivision. At Ukumehame Stream,



the new transmission and distribution lines will be placed within an existing concrete irrigation culvert, which is anchored to the streambed.

As indicated by the project's civil engineer, the average daily domestic water demand for an agricultural lot is estimated to be approximately 1,200 gallons per lot per day or a total of 54,000 gallons per day for the 45 lots in the subdivision. Irrigation water use for each agricultural lot is expected to vary and depends on site landscaping and the type of agricultural activity on each lot.

According to the project's irrigation engineer, Ukumehame Stream flows throughout the year, with a sustainable flow of about 2.5 to 3 million gallons per day (mgd). In the past, sugar cane growers used this water to irrigate their crops for nearly a century. There is an existing stream water diversion system on the subject property (from the streambed into a ditch and reservoir system), which was constructed by the growers and has historically been used for sugar cane cultivation. This system, which is located above the former crop-growing area, is still functional and in fairly good condition.

New and existing irrigation system improvements will be used to provide irrigation water to the subdivision's agricultural lots through a separate non-potable transmission system. The Phase II Subdivision proposes to utilize the existing stream water diversion system to provide the 45 agricultural lots with water for irrigation purposes. A distribution system consisting of new PVC pipe would accept water from the existing diversion ditch and reservoir system and convey it to the agricultural lots. About 1.7 mgd of the total stream flow would be used in this manner leaving approximately 0.8 to 1.3 mgd of stream flow in the channel.

For irrigation purposes, the proposed distribution system is designed to provide standard 3/4-inch water meters for 36 of the agricultural lots and 1-inch meters



for the remaining 9 lots. This would limit the flow rate at each parcel to about 23 gallons per minute (gpm) of continuous flow at each of the 36 smaller parcels and 40 gpm at the 9 larger lots. The distribution system would be designed to allow continuous flow at these rates to all 45 agricultural lots. This would provide each parcel with a maximum of approximately 33,000 gallons per day (gpd) for irrigation purposes at each of the smaller lots, and approximately 58,000 gpd at each of the 9 larger parcels.

If each of the 45 agricultural lots uses the maximum daily amount, the total usage for the Phase II Subdivision would be 1.7 mgd. Based on the meter capacity for each of the 45 agricultural lots, the maximum potential irrigation usage for the Phase II Subdivision would be approximately 1.7 mgd. If the maximum amount is utilized, the unused quantity of approximately 1.3 mgd will continue to flow in the stream to the ocean. It should be noted that it is unlikely that all lot owners would be utilizing their maximum irrigation flows at the same time, thus, the unused quantity would be greater than 1.3 mgd

At Ukumehame, the sugar cane growers switched to modern drip irrigation methods about 30 years ago. Although it has since been abandoned, the old PVC distribution system that the growers installed still exists today. Using modern drip irrigation methods, the proposed flow rate to each parcel is adequate for most of the crops that could be grown at Ukumehame. If higher irrigation application rates of shorter duration are desired on any of the parcels, onsite tank storage would be required for each parcel involved, in order to accumulate a quantity of water suitable for the desired short-term application rate. Where desired, details for customizing this measure would be coordinated with the involved parcel owner.

The domestic and irrigation water systems for the Phase II Subdivision will be owned, operated, and maintained by the Lua Wai Water Company, a private water utility company. The private water systems will comply with State



Department of Health (DOH) start-up requirements for *New Community and New Non-transient Non-Community Water Systems*. The potable water system proposed for the subdivision is defined as a “Public Water System” by Chapter 11-20, Hawaii Administrative Rules (HAR) since it will provide water for human consumption and has at least 15 service connections or regularly serves a minimum of 25 persons daily for at least 60 days annually. Since “Public Water Systems” are regulated by the DOH, Safe Drinking Water Branch, the potable water system for the subdivision will be developed in accordance with Chapter 11-20, HAR.

The development of the private water systems for the Phase II Subdivision will comply with all Federal and State drinking water regulations, including all applicable provisions of the State Water Code. This includes the required permitting process and any conditions that may be imposed.

2. Wastewater

Existing Conditions. There is no existing public wastewater system on the subject property nor is there any such system in the vicinity of the site. The County of Maui operates and maintains a public wastewater system that primarily serves the urban areas of West Maui.

The collection, transmission, treatment, and disposal of the sewage falls under the jurisdiction of the Wastewater Reclamation Division (WWRD), a branch of the Maui County Department of Public Works and Environmental Management. The WWRD operates a network of sewer lines and pump stations that conveys sewage to the Lahaina Wastewater Reclamation Facility at Honokowai for treatment and disposal. R-1 effluent, a by-product of the facility’s treatment process, is used for golf course irrigation at the Kaanapali Resort.



Potential Impacts and Mitigation Measures. As there is no public wastewater system serving the project area, the proposed Phase II Subdivision will not impact this component of the public infrastructure system.

The purchasers of agricultural lots in the Phase II Subdivision will be responsible for the installation of their own individual wastewater systems (septic tank, leach field), as needed. The design and installation of these systems is regulated by the State Department of Health (DOH) and will comply with Chapter 11-62, HAR pertaining to Wastewater Systems

3. Drainage

Existing Conditions. The subject property is not served by a public drainage system. The existing grade near Honoapiilani Highway to the mid-section of the site is relatively flat (1.5 to 5 percent) and then sharply increases toward the upper reaches of the site (10 to 18 percent). Ukumehame Stream bisects the subject property. Manmade earth and rock berms line the stream banks from the highway to the central part of the site.

Surface runoff follows the existing drainage pattern and generally flows in a *mauka* to *makai* direction. Onsite runoff sheet flows across the subject property and collects in low-lying areas where it evaporates or percolates into the ground. In addition, Ukumehame Stream accommodates some of this runoff, while small, unnamed natural drainageways throughout the site help capture the remaining flow. Along the highway, the Ukumehame Bridge allows runoff to pass beneath the roadway and flow into the ocean. A number of existing drainage culverts, which are located to the east and west of Ukumehame Bridge, also allow runoff to enter the ocean.

Potential Impacts and Mitigation Measures. A Preliminary Drainage and Erosion Control Report has been prepared for the proposed Phase II Subdivision. See Appendix K, Preliminary Drainage and Erosion Control



Report. The hydrologic criteria used for this report was derived from the Rules for the Design of Storm Drainage Facilities in the County of Maui.

The drainage system proposed for the Phase II Subdivision will consist of the following components.

1. To protect the subdivision Roads B and D from runoff (in cut conditions), grassed triangular swales will be constructed along the upper sides of the roads to intercept stormwater flows.
2. Runoff intercepted by the grassed triangular swales will be channeled to headwalls and reinforced concrete pipe (RCP) culverts, which will allow flows to pass under the subdivision roads and through the subdivision.
3. To collect runoff from subdivision Roads A and C, triangular-shaped, grassed roadside swales will be constructed. These swales will outflow through RCP culverts at natural low points.
4. Four (4) shallow grassed detention basins designed with 2-feet of freeboard will be constructed along the lower parts of the subdivision. The purpose of these basins is to accommodate the incremental increase in runoff created by the addition of impervious areas throughout the subdivision (e.g., roads, driveways, building surfaces).

As indicated in the report, the existing onsite runoff is 2,233.94 cubic feet per second (cfs). Under post-development conditions, surface runoff is projected to be 2,255.57 cfs, an incremental increase of 21.63 cfs. The increase in runoff was calculated by the rational method using a 50-year storm recurrence interval and 1-hour rainfall duration (for drainage areas less than 100 acres) and by the Natural Resource Conservation Service (NRCS) TR-20 method using a 100-year, 24-hour storm event (for drainage areas over 100 acres).



The proposed drainage system will be designed in accordance with the Rules for the Design of Storm Drainage Facilities in the County of Maui. In addition, a National Pollutant Discharge Elimination System (NPDES) Permit will be obtained from the State Department of Health, Clean Water Branch for the discharge of stormwater associated with construction activities such as clearing, grading, and excavation. Best Management Practices (BMPs) and appropriate drainage and erosion control measures will also be implemented during construction to ensure that surface runoff will not adversely affect downstream and adjacent properties or negatively impact stream and coastal resources and water quality. Pollutants that could be generated by construction activities and measures to mitigate their effects, as well as practices which minimize erosion and prevent sediments from leaving the site, are described in Appendix K, Preliminary Drainage and Erosion Control Report.

In conclusion, the report indicates that the proposed drainage system will adequately serve the developed Phase II Subdivision and that the use of BMPs will minimize impacts to surrounding properties during the construction of the subdivision.

As the County of Maui and the State of Hawaii will be responsible for the development of the future park and future highway right-of-way, detailed plans for these uses, as well as an evaluation of drainage conditions, potential impacts, and mitigation measures, will be examined in detail and addressed in all permit applications and environmental review documents prepared by County and State agencies prior to the implementation of these projects.

4. Roadways

Existing Conditions. Falling under the jurisdiction of the State Department of Transportation (DOT), Highways Division, Honoapiilani Highway is the only major roadway linking West and Central Maui. In West Maui, the highway generally follows a coastal alignment and is configured as a two-lane facility



except for a four-lane segment between Lahaina and Honokowai. The posted speed limit in the project area is 55 miles per hour.

Honoapiilani Highway is subject to occasional road closures due to brush fires, storm surf, and car accidents. Between the Pali and Lahaina, in areas close to the ocean, high surf and wave action pose a threat to public safety and transportation and have contributed to shoreline erosion and the undermining of the highway.

While the DOT has dropped its plans to add a passing lane to Honoapiilani Highway or undertake some other road-widening measure, as announced at a meeting with County officials last March, it is moving forward with its plans for the future widening and/or realignment of Honoapiilani Highway between Maalaea and Launiupoko. If the highway is relocated further *mauka* and away from the coastline, the effects of road closures due to high surf and shoreline erosion undermining sections of the highway will be eliminated (State Department of Transportation, October 2004 and January 2005).

Work on the estimated \$2.5 million corridor study for this project is anticipated to commence sometime in 2005. The study will address planning and environmental issues associated with the development of the widened and/or relocated highway, as well as identify preferred and alternative routes. Construction of this project is estimated to commence sometime after 2012 (State Department of Transportation, October 2004 and January 2005).

Potential Impacts and Mitigation Measures. New intersections and roadways will provide vehicular access and circulation for the Phase II Subdivision. The existing roadway cross section at Honoapiilani Highway will be modified for the proposed intersection improvements. Since the publication of the Draft EA, the design of Intersections "A" and "B" has been modified to eliminate the 0 to 12-foot wide right-turn acceleration/deceleration lanes for traffic leaving the subdivision as there is more than adequate site distance in both directions



along the highway from Intersections “A” and “B”. As such, the intersection approaches now feature a roadway cross section with two (2) 12-foot wide travel lanes, two (2) 6-foot wide paved shoulders, a striped median (width varies), and a tapered 0 to 12-foot wide median left-turn/ storage lanes (for incoming and outgoing subdivision traffic). During peak traffic, the median left-turn/storage lanes would enable motorists to execute left turns into or out of the subdivision in two steps by using the lane for shelter until there is an opening in traffic for vehicles to enter the subdivision or safely merge with highway traffic. In addition to the subdivision, the intersections will provide access to the future County park. See Figure 5, Phase II Subdivision Intersection “A” Details, Figure 6, Phase II Subdivision, Intersection “B” Details, and Figure 7, Honoapiilani Highway Typical Section.

Vehicular access to the Phase II Subdivision will be provided via two (2) new roads (Roads “A” and “C”), which will extend *mauka* toward the subdivision from two (2) new intersections along Honoapiilani Highway. Road “A” will serve the 20 agricultural lots on the western half of the subdivision, while Road “C” will provide entry to the 25 lots on the eastern half. Roads “A” and “C” will also be used to provide access to the future County park.

Roads “A” and “C” will be built within a 60-foot wide right-of-way with two (2) 12-foot wide travel lanes, two (2) 10-foot wide paved shoulders, and two (2) 6-foot wide grassed swales. To provide traffic circulation within the subdivision, new Roads “B” and “D” will be constructed within a 40-foot wide right-of-way and include two (2) 12-foot travel lanes and two (2) 8-foot wide grass shoulders. See Figure 8, Phase II Subdivision Typical Roadway Sections.

All new roadway and intersection improvements will be designed in accordance with applicable State and County design standards

A traffic control plan will be implemented during construction of the Phase II Subdivision’s traffic improvements in order to safely and effectively manage



traffic traveling along Honoapiilani Highway. The traffic control plan will be included in the construction plans for the subdivision, which will be submitted to the County and routed to appropriate government agencies for review and approval.

The part of Roads "A" and "C" that pass through the land for the future park and future highway right-of-way will be dedicated to the County of Maui, while the remaining sections of these roads and the rest of the subdivision streets will be privately owned and maintained by the subdivision's homeowners association.

A Traffic Assessment has been prepared for the proposed Phase II Subdivision. See Appendix L Traffic Assessment. Under Agricultural District zoning, a maximum of two (2) farm dwellings can be constructed on each lot. Under this scenario, it is estimated that the subdivision (at full build out) will generate 17 incoming and 51 outgoing trips during the morning peak hour and 58 inbound and 33 outbound trips during the afternoon peak hour. The assessment notes that the maximum number of trips generated by the subdivision (58 vehicles per hour), is less than the 100 vehicles per hour threshold that has been recommended by the Institute of Transportation Engineers as the threshold for conducting a traffic impact or site access study.

DOT traffic count data (May 2001) for Honoapiilani Highway, taken about 1 mile west of the Pali tunnel, shows there were 1,096 westbound and 543 eastbound vehicles during the AM peak hour and 842 westbound and 1,139 eastbound vehicles during the PM peak.

The DOT's traffic estimates for 1993 and 2001 were used as the basis for examining future traffic conditions at the intersections leading to the Phase II Subdivision. From 1993 to 2001, average daily traffic along Honoapiilani Highway (between Maalaea and Launiupoko) increased an average of 3.34 percent per year. If this rate of increase were to continue to 2010, traffic



volumes would increase 34.4 percent in nine years. For purposes of evaluating traffic impacts related to the subdivision, 2001 highway counts were increased by 34.4 percent to develop highway volumes for future year 2010.

Each of the intersections leading to the Phase II Subdivision was analyzed as an unsignalized intersection using the methodology described in the "Highway Capacity Manual". As part of this process, average traffic delays are computed and a level of service is identified for each controlled movement. Level of Service (LOS) is a qualitative measure which denotes traffic operating conditions at a given roadway or intersection and ranges from LOS "A" for minimal delays to LOS "F" for very long delays. LOS "C" is considered acceptable for rural conditions.

The traffic analyses of these intersections (with future peak hour volumes) reflect poor levels of service for vehicles wishing to turn onto Honoapiilani Highway. During the morning peak hour, both right- and left-turn movements onto the highway (from the subdivision access roads) will operate at LOS "E". During the afternoon peak, right-turns from both access roads will operate at LOS "C", while left-turns will operate at LOS "E" for the west access road and LOS "F" for the east access road.

The assessment notes that the addition of a median refuge (shelter) lane, so that left turns onto the highway could be made in two steps, would be an improvement but would not improve the levels of service even though adequate capacity for this movement would be available. Acceleration lanes could reduce delays for traffic turning onto the highway since a merge would replace the need to find an acceptable gap in traffic. However, peak hour volumes for each acceleration lane would be less than 20 vph. Traffic volume on the subdivision roads, even under a worst case scenario of all left turns, would be less than half of the volume needed to meet the peak hour warrant (minimum requirement) for traffic signals. Despite the poor levels of service,



volumes are at most, one-fifth of the capacities and further improvements are not deemed necessary.

The assessment indicates that the Phase II Subdivision will not have an adverse impact upon traffic conditions. The addition of the subdivision access roads (Roads "A" and "C") will introduce new intersections that will need to be considered by the State in the design of any improvements to the highway. Guidelines to assist designers in laying out the intersections are included in the assessment. See Appendix L, Traffic Assessment. The design and construction of the new intersections will be in accordance with State standards and coordinated with the DOT. Construction plans will be submitted to the DOT for review and approval and a permit for performing work in the State highway right-of-way will also be obtained.

5. Electrical and Telephone Systems

Existing Conditions. Maui Electric Company (MECO), Verizon Hawaii, and Oceanic TimeWarner Cable provide electrical, telephone, and cable television (CATV) service for the West Maui region. Existing power and phone systems in the project area are placed on overhead utility poles and include a small 3-phase MECO electrical line and a Verizon telephone line along the *mauka* side of the Honoapiilani Highway right-of-way. In addition, two (2) existing MECO easements for electrical transmission purposes traverse the upper section of the Phase II Subdivision in an area south of the proposed reservoir site.

Potential Impacts and Mitigation Measures. The existing MECO and Verizon systems will be consolidated and relocated further *mauka* to clear the widened highway section resulting from the two (2) new intersections for the Phase II Subdivision. The consolidated and relocated facilities will also be upgraded to serve the proposed subdivision. New underground power, phone, and CATV ducts will be provided throughout the subdivision. Street lighting



is not required nor is it proposed for the subdivision. The design and construction of the subdivision's electrical, telephone, and CATV systems will be coordinated with the respective utilities to ensure that these systems meet applicable design and operational criteria.

All electrical and telephone system requirements for the future park will require coordination between the County of Maui and MECO. The Purchase and Sale Agreement between the landowner and the County stipulates that no portion of the park shall be illuminated for nighttime use, except for fully shielded down lighting (as necessary) for safety, access, and parking. The placement of any electrical, telephone, and CATV systems within the future highway right-of-way will require coordination between these utility companies and the State Department of Transportation.



IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE LAW

Hawaii Revised Statutes Chapter 205 relating to the Land Use Commission establishes the designation of all lands within the State of Hawaii into one (1) of four (4) districts: Urban, Agricultural, Rural and Conservation.

The subject property is located within the State Agricultural District. See Figure 17, State Land Use Districts Map. As it relates to the proposed action, permissible uses within this district include the cultivation of crops, the raising of livestock, farm dwellings, public open area types of recreational uses including parks, and public, private, and quasi-public utility lines and roadways.

The use of the subject property for the proposed Phase II Subdivision, future park, and future highway is in consonance with the uses permitted in the State Agricultural District.

B. GENERAL PLAN OF THE COUNTY

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

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

The General Plan identifies five (5) major themes as follows:

1. Protect Maui County's agricultural land and rural identity.
2. Prepare a directed and managed growth plan.



3. Protect Maui County's shoreline and limit visitor industry growth.
4. Maintain a viable economy that offers diverse employment opportunities for residents.
5. Provide for needed resident housing.

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

I. B. Land Use

Objective:

2. To preserve lands that are well suited for agricultural pursuits.

Policies:

- 1b. Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental, and economic needs of the community.
- 1c. Identify and preserve significant historic and cultural sites.
- 2b. Encourage land use patterns that foster a pedestrian oriented environment to include such amenities such as bike paths, linear parks, landscaped buffer areas, and mini-parks.
- 3e. Provide adequate irrigation water and access to agricultural lands.

C. Environment

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

1. To use the County's land-based physical and ocean-related coastal resources in a manner consistent with sound environmental planning practice.

Policies:

- 1a. Preserve for present and future generations the opportunity to experience the natural beauty of the islands.
- 1b. Preserve scenic vistas and natural features.
- 2b. Evaluate all land based development relative to its impact on the County's land and ocean ecological resources.



D. Cultural Resources

Policy:

- b. Encourage the recordation and preservation of all cultural and historic resources, to include culturally significant natural resources.

II. A. Economic Activity

Objective:

1. To provide an economic climate which will provide controlled expansion and diversification of the County's economic base.

C. Agriculture

Objective:

1. To foster growth and diversification of agriculture and aquaculture throughout Maui County.

Policies:

- 2a. Ensure the availability of land that is well suited for agricultural production.
- 2c. Ensure the availability of adequate irrigation water for agricultural purposes during periods of limited rainfall.

IV. A. Transportation

Objective:

1. To support an advanced and environmentally sensitive transportation system, which will enable people and goods to move safely, efficiently, and economically.
2. To develop a program for anticipating and enlarging the local street and highway systems in a timely response to planned growth.

V. B. Recreation and Open Space

Objective:

1. To provide high-quality recreational facilities to meet the present and future needs of our residents of all ages and physical ability.

Policies:

- 1d. Develop facilities that will meet the different recreational needs of the various communities.



- 1g. Expand, improve, and create new beach rights-of-way, parks, campsites, and other facilities designated for family use.

C. WEST MAUI COMMUNITY PLAN

Maui County has adopted nine (9) community plans. Each community plan examines the conditions and needs of the planning region and outlines objectives, policies, planning standards and implementing actions to guide future growth and development in accordance with the Maui County General Plan. Each community plan serves as a relatively detailed agenda for implementing the broad General Plan themes, objectives and policies.

The subject property is located within the West Maui Community Plan region and is designated for Agricultural use by the Community Plan's land use map. See Figure 18, West Maui Community Plan Map. The Community Plan was adopted by Ordinance No. 2476 and went into effect on February 27, 1996.

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

Land Use

Goal:

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

Objectives and Policies (in General):

3. Ensure that appropriate lands are available to support the region's present and future agricultural activities.
10. Where possible, relocate the Honoapiilani Highway south of Puamana in order to reduce potential inundation and disruption of service due to



storm-generated wave action. Where the highway is relocated for the purpose stated, lands *makai* of the new alignment shall be designated Open Space (OS) or Park (PK) to provide for ocean-related recreational use. Notwithstanding the foregoing, continued agriculture use shall be allowed within these areas.

11. Provide and maintain parks and beach access for the present and future needs of residents and visitors.

Environment

Goal:

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

Objectives and Policies:

2. Preserve agricultural lands and open space with particular emphasis on natural coastal areas along major highways.
15. Promote drainage and stormwater management practices that prevent flooding and protect coastal water quality.

Economic Activity

Objectives and Policies:

2. Provide for the preservation and enhancement of agriculture.
 - a. Encourage maintenance and development of water sources for agricultural activities, which do not conflict with domestic demand for potable water.



Cultural Resources

Objectives and Policies:

1. Preserve and protect significant archaeological, historical and cultural resources that are unique in the State of Hawaii and the island of Maui.
6. Ensure that new projects or developments address potential impacts on archaeological, historical, and cultural resources and identify all cultural resources located within the project area as part of initial project studies. Further require that all proposed activity adequately mitigate potential adverse impacts on cultural resources.
10. Recognize the importance of buffer areas to enhance and protect historical or archaeological sites.

Infrastructure (Transportation)

Objectives and Policies:

2. Support improvements for the safe and convenient movement of people and goods, pedestrians and bicyclists in the Lahaina region particularly along Honoapiilani Highway, Front Street, and Lower Honoapiilani Road and seek to establish a regional network of bikeways and pedestrian paths.

Infrastructure (Water and Utilities)

Objectives and Policies:

2. Encourage the installation of underground electrical, telephone, and cable television lines.

Infrastructure (Drainage)

Objectives and Policies:

3. Insure that new developments will not result in adverse flooding conditions for downstream properties by requiring onsite



retention facilities for stormwater runoff generated by the development.

Social Infrastructure (Recreation and Open Space)

Objectives and Policies:

4. Provide resource-oriented regional park facilities and public access along the shoreline for picnicking, camping, informal play, swimming, sunbathing, and other coastal-related activities along coastal lands *makai* of the existing or future realigned coastal highways from Honokahua Bay to the district's north boundary and from Puamana to the district's south boundary, except for the agriculture designated lands *makai* of the highway at Olowalu.

C. Planning Standards

Land Use Standards:

- 1a. All zoning and land use approvals shall be consistent with the West Maui Community Plan and its land use policies.

Landscape Planting Standards:

- 4d. Require all future subdivisions, construction projects and developments to comply with the Maui County Planting Plan.

Cultural Resources:

- 5b. Recognize the importance of buffer areas to enhance and protect sites.

Environmental Aspects:

- 6d. Insure that new developments will not result in adverse soil erosion or flooding conditions for downstream properties.



D. MAUI COUNTY ZONING

The subject property is zoned for Agricultural District uses by the County of Maui as indicated by Land Zoning Map No. 7, which was adopted by Ordinance No. 297 and went into effect on May 10, 1961. Zoning standards for this district are promulgated by Chapter 19.30A of the Maui County Code (MCC). As it pertains to the proposed action, principal and accessory uses permitted within the County's Agricultural Zoning District include:

- Agriculture.
- Agricultural land conservation
- Animal and livestock raising.
- Farm dwellings.
- Parks for public use.

It is noted that public and private roadways are considered permissible uses in all County zoning districts. In addition, zoning performance standards for the Agricultural District include the following:

- Minimum lot area: 2 acres.
- Minimum lot width: 200 feet.
- Minimum yard setbacks: front yards – 25 feet; side/rear yards – 15 feet.
- Maximum developable area for farm dwellings: 10 percent of the total lot area.
- Maximum height limit for farm dwellings: 30 feet.
- Maximum height limit for non-dwelling structures: one additional foot of setback for each foot over 35 feet in height.
- Maximum number of lots that may be created from a lot, or portion thereof, is based on the gross area of a lot.

In connection with the processing of the subdivision applications for the Phase I and Phase II Subdivisions, the Maui County Department of Public Works and Environmental Management (DPWEM) determined that 94 lots is the maximum number of permitted lots that can be created from the 12 original



lots being consolidated exclusive of the two (2) large lots to be transferred to the County for the future park and future highway right-of-way. The DPWEM also indicated that the Applicant is required to allocate the maximum number of lots that can be created between the original lots and any new lots created as a result of the subdivision in accordance with Chapter 19.30A, MCC.

Based on the maximum number of permitted lots (94), and deducting the lots allocated to the Phase II Subdivision (46), there are 48 lots that remain to be allocated. It should be noted, however, that the terms of the Purchase and Sale Agreement includes a prohibition against subdividing any of the Phase II subdivision's 46 lots except that the Applicant has the right to create one (1) additional lot (of not less than 5 acres) out of the river corridor lot and that the Applicant relinquishes and waives its development right to the remaining 47 lots that can be allocated. As such, the Agreement for Allocation of Future Subdivision Potential will include provisions to this effect and will be submitted to the DPWEM for review and approval prior to recordation with the State Bureau of Conveyances.

The use of the subject property for the proposed Phase II Subdivision, future park, and future highway is permitted within, and is in consonance with, the provisions of the County's Agricultural Zoning District.

E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES

A narrow strip of land along the *makai* extent of the subject property, which ranges in width between 100 to 200 feet, is located within the limits of the Special Management Area (SMA) for the island of Maui. The SMA map for this part of the island, which encompasses Olowalu, Ukumehame, and McGregor Point, went into effect on December 28, 1979. Although the remainder of the property does not fall within the SMA, an application for a SMA Use Permit has been prepared in accordance with the terms of the



Purchase and Sale Agreement between the Applicant and the County of Maui for the transfer of the lands for the future park and future highway right-of-way.

The following section discusses the relationship of the proposed action to the objectives and policies of the coastal zone management area pursuant to Chapter 205A, HRS and the SMA Rules and Regulations of the Maui Planning Commission.

1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreation planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - (ii) Requiring placement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or require reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
 - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;



- (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having standards and conservation of natural resources;
- (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
- (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing;
- (viii) Encourage reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

Analysis. At its closest point, the proposed Phase II Subdivision is located approximately 600 feet from the shoreline. The remainder of the property does not abut the shoreline and is separated from the ocean by Honoapiilani Highway and a narrow strip of coastal lands under State jurisdiction. The proposed subdivision will not impact coastal recreational resources, as existing shoreline access and uses will be maintained. The future park will provide a new shoreline recreational resource for residents and visitors alike, while the future highway will facilitate travel to coastal recreational areas. In addition, once the future park and future highway are completed, subdivision Roads "A" and "C" will provide access from the new highway to the new park.

2. Historical/Cultural Resources

Objective: Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.



Policies:

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

Analysis. As discussed in Section III of this report, the State Historic Preservation Division (SHPD) accepted the Archaeological Inventory Survey, Archaeological Preservation Plan, and Archaeological Monitoring Plan for the subject property. The SHPD also indicated that the proposed action would have “no adverse effect upon significant historic sites.” In addition, the Maui/Lanai Islands Burial Council approved the Burial Treatment Plan for the property and received the SHPD’s concurrence and support for this action. The development of the proposed Phase II Subdivision, future park, and future highway right-of-way is not expected to have an adverse impact upon historical and cultural resources. Measures to minimize impacts to known significant historical sites will be implemented in accordance with the specified conditions of the preservation and monitoring plans, which were accepted by the State Historic Preservation Division. Besides kuleana landowners, cultural practitioners will be provided with access to and within the river corridor. New Phase II Subdivision roads will provide a connection to the existing access roads within the river corridor lot, while an access easement (for the use of the existing agricultural roads in the valley) will provide for access within the lot. The proposed action is consistent with the SMA objective of protecting and preserving historic and cultural resources in the coastal zone management area that are significant in Hawaiian and American history and culture.



3. Scenic and Open Space Resources

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

Policies:

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

Analysis. As discussed in Section III of this report, the proposed action will modify existing *mauka* and *makai* views from the existing Honoapiilani Highway and the future (realigned) highway. However, no significant impacts to scenic and open space resources are anticipated as the proposed Phase II Subdivision is not within a scenic view corridor and provides a river corridor lot which will be kept as open space and a natural greenway. The future park would contain limited above-grade structures (restrooms, showers, picnic tables), while the new future highway would be an at-grade facility. As the future park and future highway would be visually unobtrusive facilities, no significant impacts to scenic and open space resources are expected.

4. Coastal Ecosystems

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



Policies:

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

Analysis. As described in Section III of this report, the proposed action is not expected to have an adverse effect upon the region's coastal ecosystem. With the incorporation of Best Management Practices and appropriate mitigation measures during construction, no significant adverse impacts to nearshore waters from non-point sources of pollution are anticipated.

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 subject property is located in the State Agricultural District and is also designated for agricultural uses by the West Maui Community Plan and Maui County zoning. As such, the uses advanced by the proposed action are enabled and permitted under these land use classifications. In the context of the proposed action, the subject property is located in an appropriate area as lands in the vicinity of the site are also designated for agricultural uses.

6. Coastal Hazards

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

Policies:

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



Analysis. As discussed in Section III of this report, the majority of the subject property is located within Zone “C”, an area of minimal flooding. A small portion of the site along the *mauka* side of Honoapiilani Highway lies within Zone V8, an area of 100-year coastal flooding with velocity. See: Figure 13, Flood Hazard Area Map. Adverse impacts to the Phase II Subdivision from stream flooding are not expected due to the grade differences between the agricultural lots and Ukumehame Stream. In addition, the development of the subdivision will not involve any construction or improvements within the stream. Depending on their location, improvements within the future park could be subject to coastal flooding and tsunami inundation. The future highway would be an at-grade facility and is not deemed a significant flood hazard risk. To address and minimize the threat of flood and tsunami hazards, Special Flood Hazard Area Development Permits will be obtained prior to the start of construction for all improvements within flood hazard areas, streams, rivers, and drainageways.

7. Managing Development

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

Policies:

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



Analysis. The development of the subject property is being conducted in accordance with applicable State and County requirements, including Chapter 343, HRS and the SMA Rules and Regulations of the Maui Planning Commission.

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 mediations to respond to coastal issues and conflicts.

Analysis. Public participation will be facilitated as part of the review and comment process for the Draft Environmental Assessment (EA) and through the processing of the SMA application, which involves public hearing notification and a public hearing before the Maui Planning Commission. In addition, opportunities for public participation were afforded during the preparation of the EA.

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 proposed Phase II Subdivision will be located approximately 600 feet from the shoreline and will not require the placement of any structures within the shoreline setback area or *makai* of the shoreline. Although the future park will include improvements such as restrooms, showers, camping areas, and picnic tables, no permanent structures will be placed within the shoreline setback area or *makai* of the shoreline. The future highway will be ultimately located an average of 400 feet inland from its present location and will therefore be removed from the threat of shoreline erosion. In light of the foregoing, no adverse impacts to public beach use and recreation are expected to occur.



10. Marine Resources

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

Policies:

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

Analysis. The proposed action does not involve the direct use or development of marine resources. In addition, by incorporating site-specific erosion and sedimentation control measures during and after construction, adverse impacts to nearshore waters from point and non-point sources of pollution are not expected. From this perspective, the proposed action is not expected to have a significant impact on coastal or marine resources.



V. CHAPTER 343, HRS SIGNIFICANCE CRITERIA

As a condition of the Purchase and Sale Agreement for the transfer of the approximately 100 acres of land to the County for the future park and future highway right-of-way, an application for a Special Management Area (SMA) Use Permit and an Environmental Assessment (EA) have been prepared in order to describe the proposed action, evaluate the potential impacts the action may have on the environment, public services, and infrastructure, and discuss appropriate measures to minimize impacts to the environment. The preparation of an EA is also required as the proposed action involves the use of County funds for the acquisition of the land for the future park and future highway right-of-way.

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

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

As documented in this report, the proposed action will not result in the loss or destruction of any natural or cultural resources. The small wetland that is located next to the southeast corner of the subject property will be unaffected, as mitigation measures to prevent wetland impacts will be addressed by preservation and avoidance. Burial treatment and archaeological preservation and monitoring plans have been approved by the State Historic Preservation Division and will be implemented during construction to mitigate impacts to archaeological sites.

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

The range of beneficial uses of the environment will not be curtailed by the proposed action. The proposed action is a permissible land use, which is in consonance with the State land use, community plan, and zoning designations for the subject property. In addition, the proposed action will provide



opportunities for agricultural cultivation, enhance shoreline recreation, and promote safe, efficient travel.

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

The proposed action is not contrary to the State's long-term environmental policies or goals. As documented in this report, mitigation measures will be implemented to minimize potentially adverse impacts to the environment.

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

The proposed action will generate beneficial socio-economic effects that will accrue to the community. Residents of the Phase II Subdivision will contribute to the economic well being of the community through the purchase of goods and services and the payment of sales and real property taxes. The future park will provide the community with new opportunities for shoreline recreation, while the future highway will support safe and convenient travel for residents and visitors alike. As documented in this report, the proposed action is not expected to result in any significant adverse impacts to the socio-economic environment.

- E. *Substantially affects public health.*

The proposed action does not involve any circumstances or conditions that will adversely affect public health.

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

As documented in this report, the proposed action is not expected to affect population density or growth nor is it expected to have a significant impact upon public facilities. In addition, new development projects are subject to the regulatory review and approval process, in which potentially adverse impacts are identified and evaluated, and appropriate mitigation measures are prescribed. Specific compliance standards may also be established depending on the potential severity of the impacts. While development projects can potentially impact water quality, the preceding measures are expected to minimize the effects of non-point source pollution.

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

Mitigation measures to minimize degradation of environmental quality will be implemented to minimize short-term construction-related impacts such as soil erosion and sedimentation, non-point source pollution, and fugitive dust. The



drainage system for the proposed Phase II Subdivision will be designed to effectively manage stormwater runoff and to ensure that runoff will not have an adverse impact upon adjacent and downstream properties.

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

The proposed action is not individually limited nor is it expected to result in any cumulative impacts that are not capable of being mitigated.

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

The Hawaiian stilt has been seen around the irrigation reservoirs in the area, while the *nene* has been observed on the premises of the nearby Ukumehame Firing Range. To inform individuals and minimize impacts to these endangered species, information regarding the protected status of these species will be included in all sales documents for the proposed Phase II Subdivision.

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

Short-term impacts upon air and water quality and ambient noise levels will occur during construction. These effects, however, will be minimized through the use of appropriate mitigation measures. Adverse long-term impacts to these environmental components are not anticipated.

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

A small portion of the land for the future park and future highway right-of-way lies within Zone V8, an area of 100-year coastal flooding. As the future highway will be located further mauka, the threat of coastal flooding and tsunami inundation would be removed. However, improvements within the future park may be subject to coastal flooding and tsunami inundation depending on their location. To minimize impacts, Special Flood Hazard Area Development Permits requirements must be addressed prior to the construction of park improvements.

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

The proposed action will not substantially impact *mauka* and *makai* view planes from the existing Honoapiilani Highway and the future (realigned) highway nor will scenic vistas be adversely affected. Street tree plantings, as well as landscaping, agricultural crops, and land conservation activities on the agricultural lots will help integrate the subdivision with its surroundings. In



addition, parks and at-grade roadways are generally unobtrusive in appearance and will significantly impact scenic vistas and view planes.

M. *Requires substantial energy consumption.*

After full occupancy of the Phase II Subdivision, energy consumption will increase; however, given existing usage levels in the West Maui region, the incremental increase in energy use is considered insignificant.



VI. CONCLUSIONS

This document has been prepared in accordance with Title 11, Chapter 200 of the Hawaii Administrative Rules for the State Department of Health, which sets forth criteria for the preparation of environmental assessments and environmental impact statements.

The proposed action involves the concurrent consolidation and re-subdivision of 12 existing lots into 48 lots. Inclusive of the 48 lots, are two (2) lots for a future County park and future State highway right-of-way, one (1) river corridor lot, and 45 agricultural lots. Infrastructure and street tree plantings to support the agricultural lots are also part of the proposed action.

In the context of the proposed action, this document assesses the natural and manmade environment, evaluates potential environmental impacts, and examines measures to minimize harm to the environment

The proposed action will not significantly affect the physical environment at the subject property and in the surrounding area. Public services and infrastructure are either adequate or will be improved to accommodate the proposed action

In light of the foregoing, the proposed action is not expected to result in any significant environmental impacts and therefore, a Finding of No Significant Impact (FONSI) is warranted.



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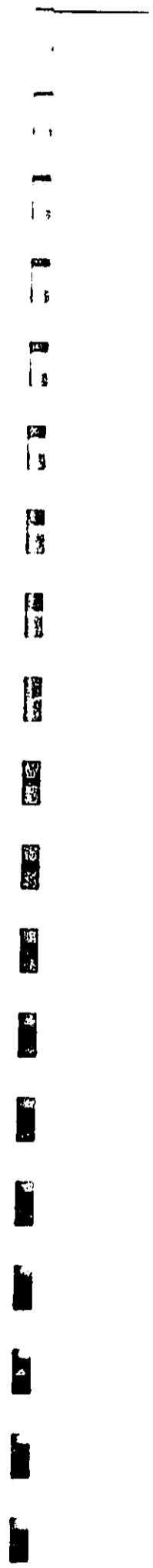
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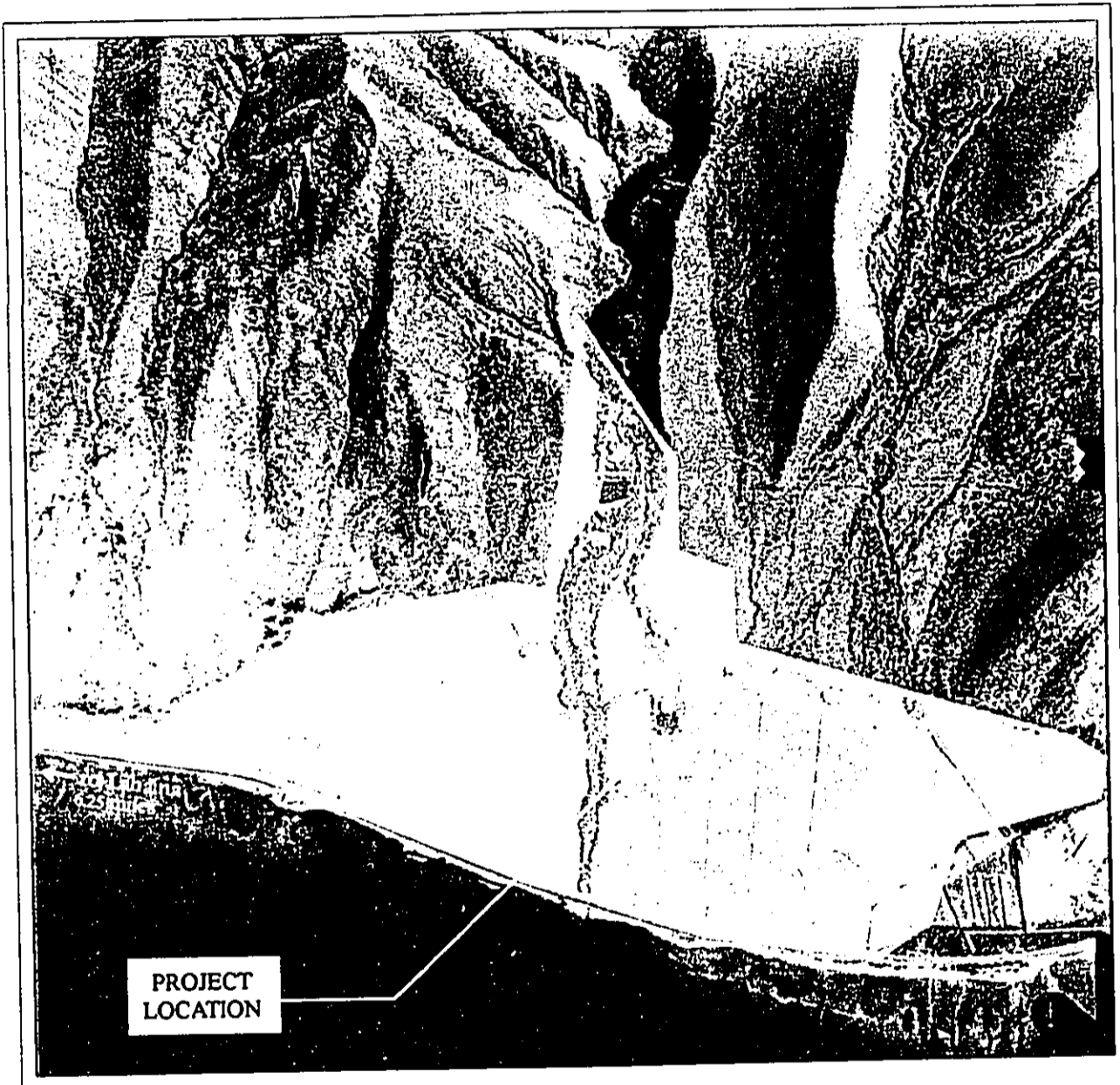


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FIGURES



PROJECT
LOCATION

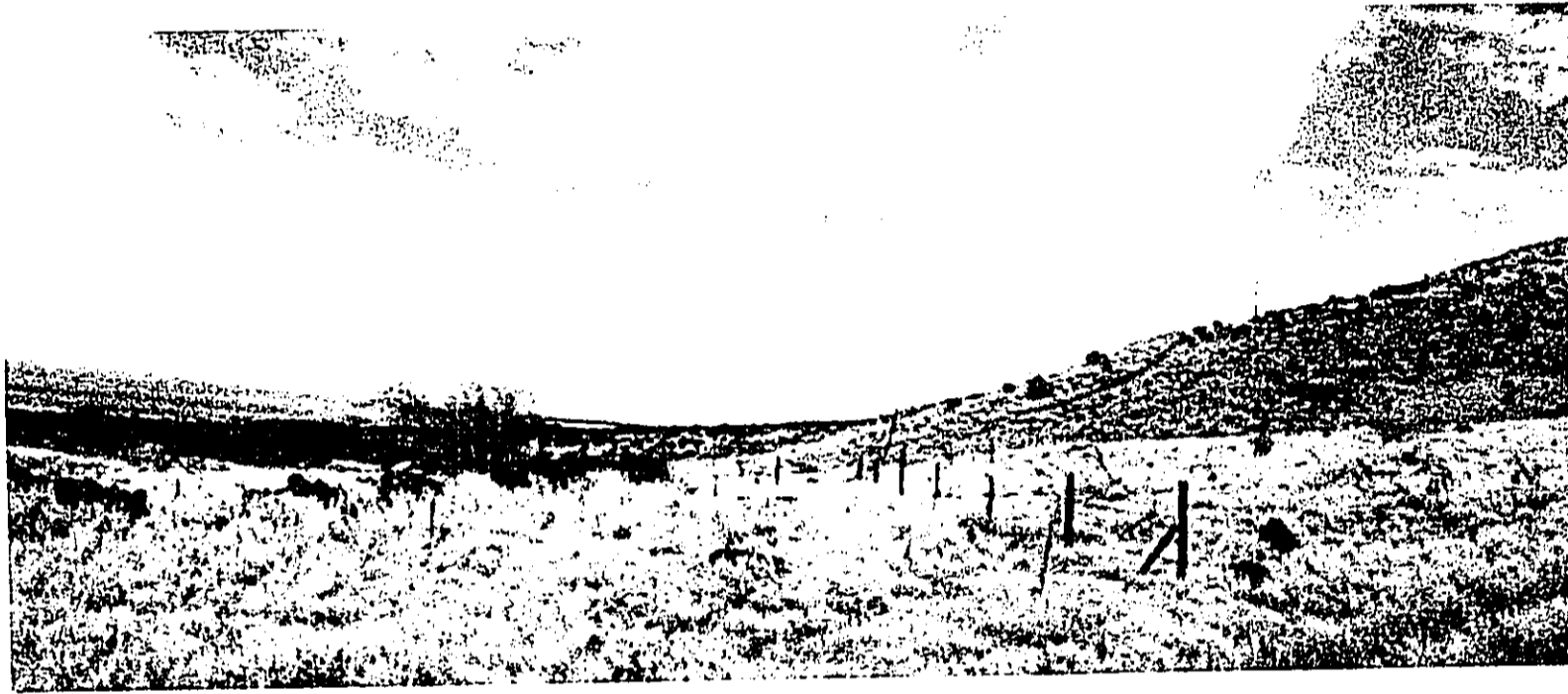
Ukumehame
PROJECT AREA



FIGURE 1

Not to Scale February 2005
Project Location Map
Ukumehame Subdivision - Phase I and II

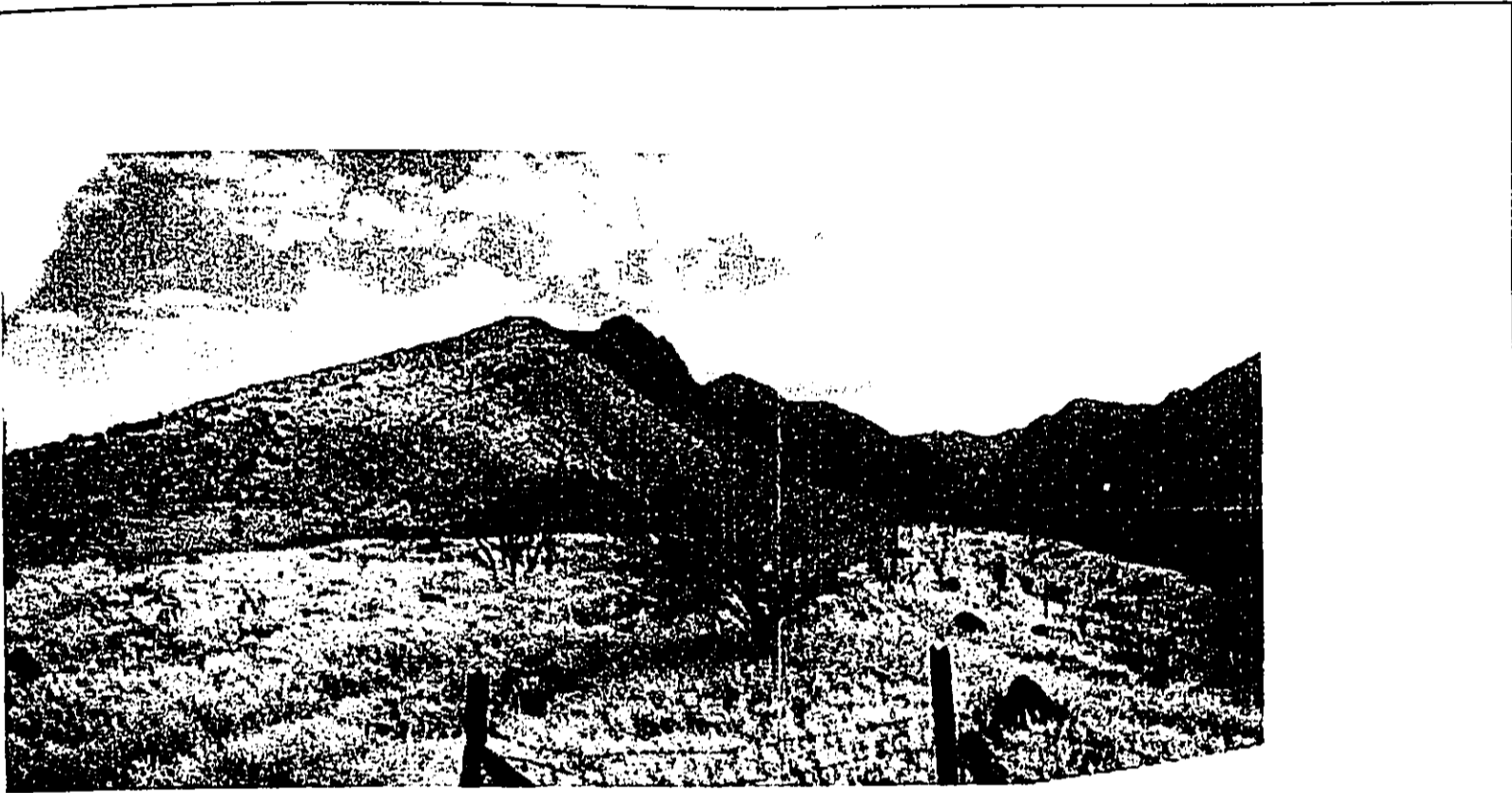




This view is from the area around Ukumchame Heiau, on the west side of Ukumchame Stream, near the center of the subject property covers an area encompassing the western portion of the subject property.



This view is also from the area around Ukumchame Heiau. This panorama, which was taken in a north to south direction (from left to




enter of the subject property. This panorama, which was taken in a northerly to southerly direction (from right to left),



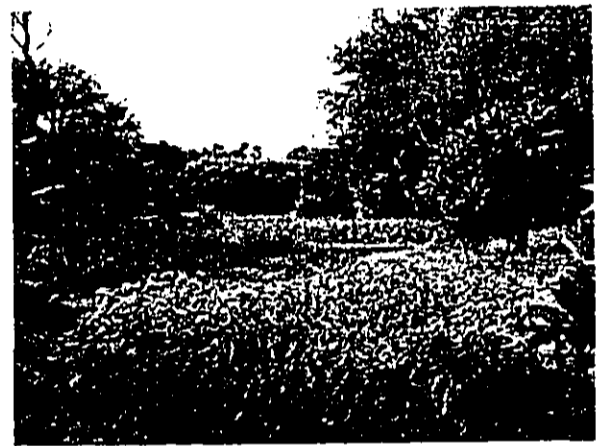
th direction (from left to right), encompasses an area covering the eastern part of the subject property.

FIGURE 2

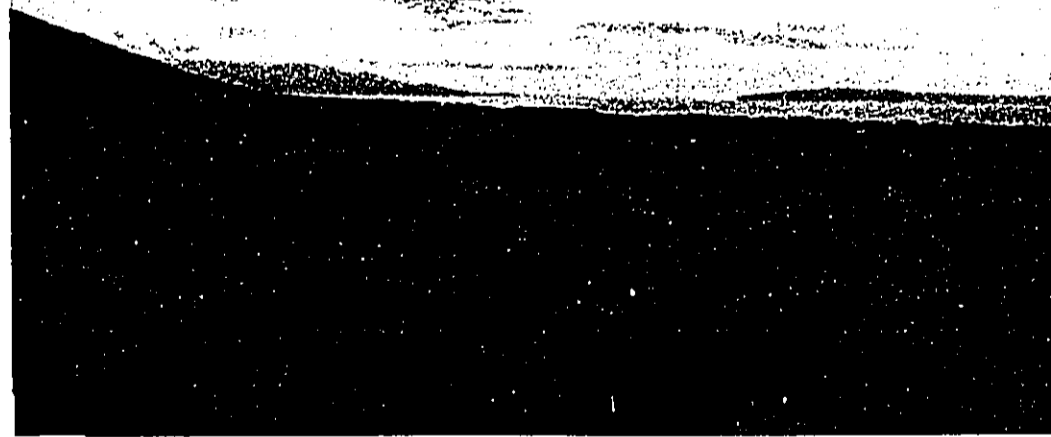
<p>February 2005</p>	 <p>CHRIS HART & PARTNERS</p>
<p>Site Photographs Ukumehame Subdivision - Phase I and II</p>	



This is a photograph of one of the three existing reservoirs that are located in the mauka limits of the river corridor lot (camera facing south).



This photograph of a lo'i was taken near the mauka extent of the subject property (camera facing south).



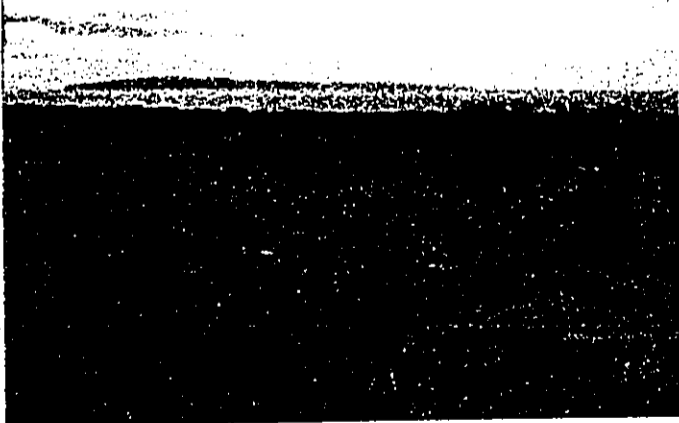
This view is from the area around Hiki'i Heiau, on the east side of Ukumehame S of the subject property (camera facing southeast).



This photograph was taken near the subject property (camera facing north).




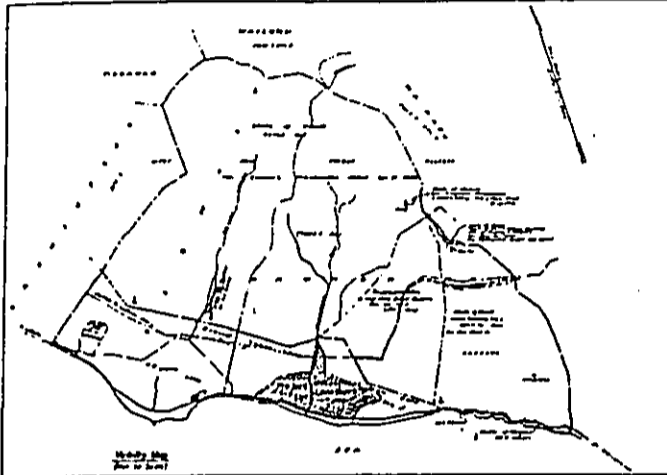
This is a photograph of Ukumehame Stream that was taken near the mauka limits of the subject property (camera facing south).



This photograph was taken on the east side of Ukumehame Stream, near the center of the property.

FIGURE 2

February 2005	
Site Photographs Ukumehame Subdivision - Phase I and II	
CHRIS HART & PARTNERS	



EXCLUSION SUMMARY

Exclusion	Area	Acres	Net Area
1	P.P. 2764, L.C.A. 1795, Ac. 2 to 2nd	0.07	Acres
2	L.C.A. 1795, Ac. 1 to 2nd	0.17	Acres
3	P.P. 2764, L.C.A. 1795, Ac. 1 to 1st	0.17	Acres
4	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
5	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.12	Acres
6	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.22	Acres
7	P.P. 2764, L.C.A. 1795, Ac. 1 to 1st	0.20	Acres
8	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.18	Acres
9	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
10	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
11	L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
12	P.P. 2764, L.C.A. 1795, Ac. 1 to 1st	0.27	Acres
13	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
14	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
15	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
16	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
17	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
18	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
19	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
20	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
21	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres
22	P.P. 2764, L.C.A. 1795, Ac. 2 to 1st	0.20	Acres

Exclusions 1 to 22 are owned by John B. & Ada A. Ryan, Inc.

Notes: All acreage and boundaries are subject to Government Survey Disposition.

Exclusion 1 is for Access and Utility Purposes (20 feet wide) affecting Lot A-1 and is shown on Lot B.

Exclusion 2 is for Access and Utility Purposes (20 feet wide) affecting Lot A-2 and is shown on Lot C.

Portions of the County of Grant, State of New Hampshire, the County of this is not responsible for any part of the survey (including but not limited to) errors, omissions, or omissions, or any other errors, which the State Surveyor is not responsible for or liable for, and which are the responsibility of the party or parties of record or other parties of the said County.

Surveyor: [Name] State Surveyor, New Hampshire
 Commission Expires: [Date]

Reference: [Reference text]

Reference: [Reference text]

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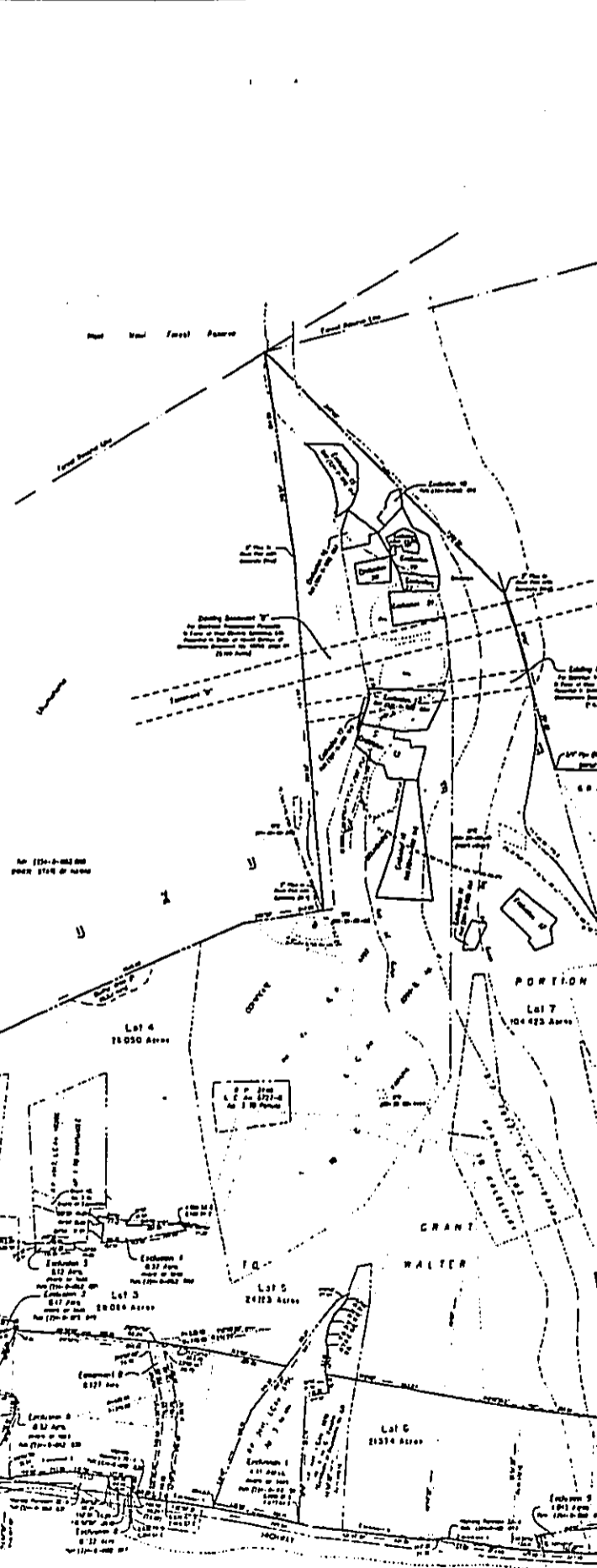
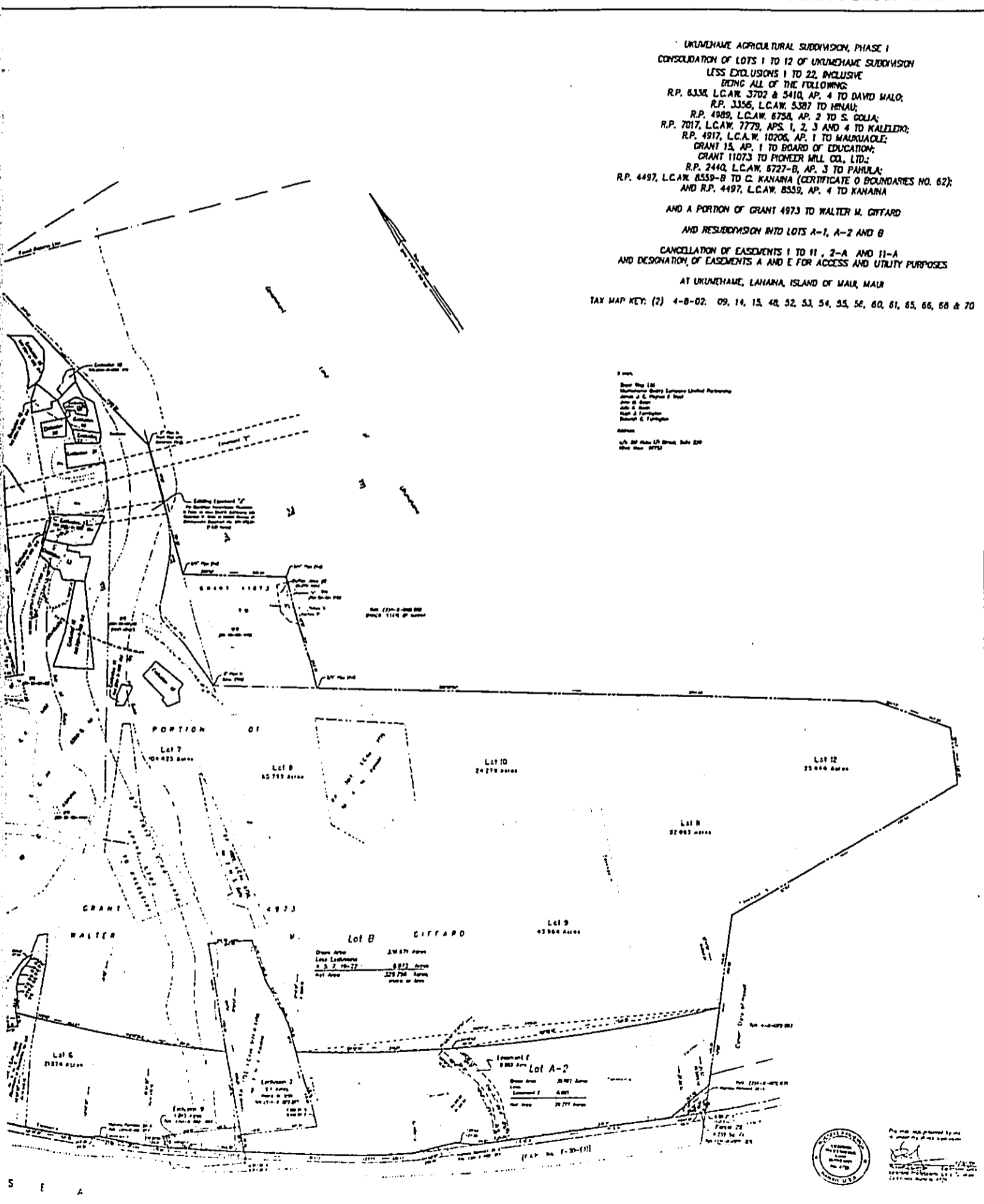


FIGURE 3

Phase I Subdivision Plan

UKUMEHAME AGRICULTURAL SUBDIVISION, PHASE I
 CONSOLIDATION OF LOTS 1 TO 12 OF UKUMEHAME SUBDIVISION
 LESS EXCLUSIONS 1 TO 22, INCLUSIVE
 BEING ALL OF THE FOLLOWING:
 R.P. 6338, L.C.A.W. 3702 & 3410, AP. 4 TO DAVID MALO;
 R.P. 3356, L.C.A.W. 5387 TO HINAU;
 R.P. 4989, L.C.A.W. 6758, AP. 2 TO S. GOLLA;
 R.P. 7017, L.C.A.W. 7779, APS. 1, 2, 3 AND 4 TO KALELEKI;
 R.P. 4917, L.C.A.W. 10206, AP. 1 TO MAUKUACLE;
 GRANT 15, AP. 1 TO BOARD OF EDUCATION;
 GRANT 11073 TO PIONEER MILL CO., LTD.;
 R.P. 2440, L.C.A.W. 6727-B, AP. 3 TO PAHULA;
 R.P. 4497, L.C.A.W. 8559-B TO C. KANANA (CERTIFICATE OF BOUNDARIES NO. 62);
 AND R.P. 4497, L.C.A.W. 8559, AP. 4 TO KANANA
 AND A PORTION OF GRANT 4973 TO WALTER M. GIFFARD
 AND RESUBDIVISION INTO LOTS A-1, A-2 AND B
 CANCELLATION OF EASEMENTS 1 TO 11, 2-A AND 11-A
 AND DESIGNATION OF EASEMENTS A AND E FOR ACCESS AND UTILITY PURPOSES
 AT UKUMEHAME, LAHANA, ISLAND OF MAUI, MAUI
 TAX MAP KEY: (2) 4-B-02: 09, 14, 15, 48, 52, 53, 54, 55, 56, 60, 61, 65, 66, 68 & 70



S E A

NOTE:

THE STREET NAMES FOR THE SUBDIVISION ARE AS FOLLOWS:

- ROAD "A" - EMEHE STREET
- ROAD "B" - KEHALEA PLACE
- ROAD "C" - POHAU 'AKO STREET
- ROAD "D" - PUKU PLACE

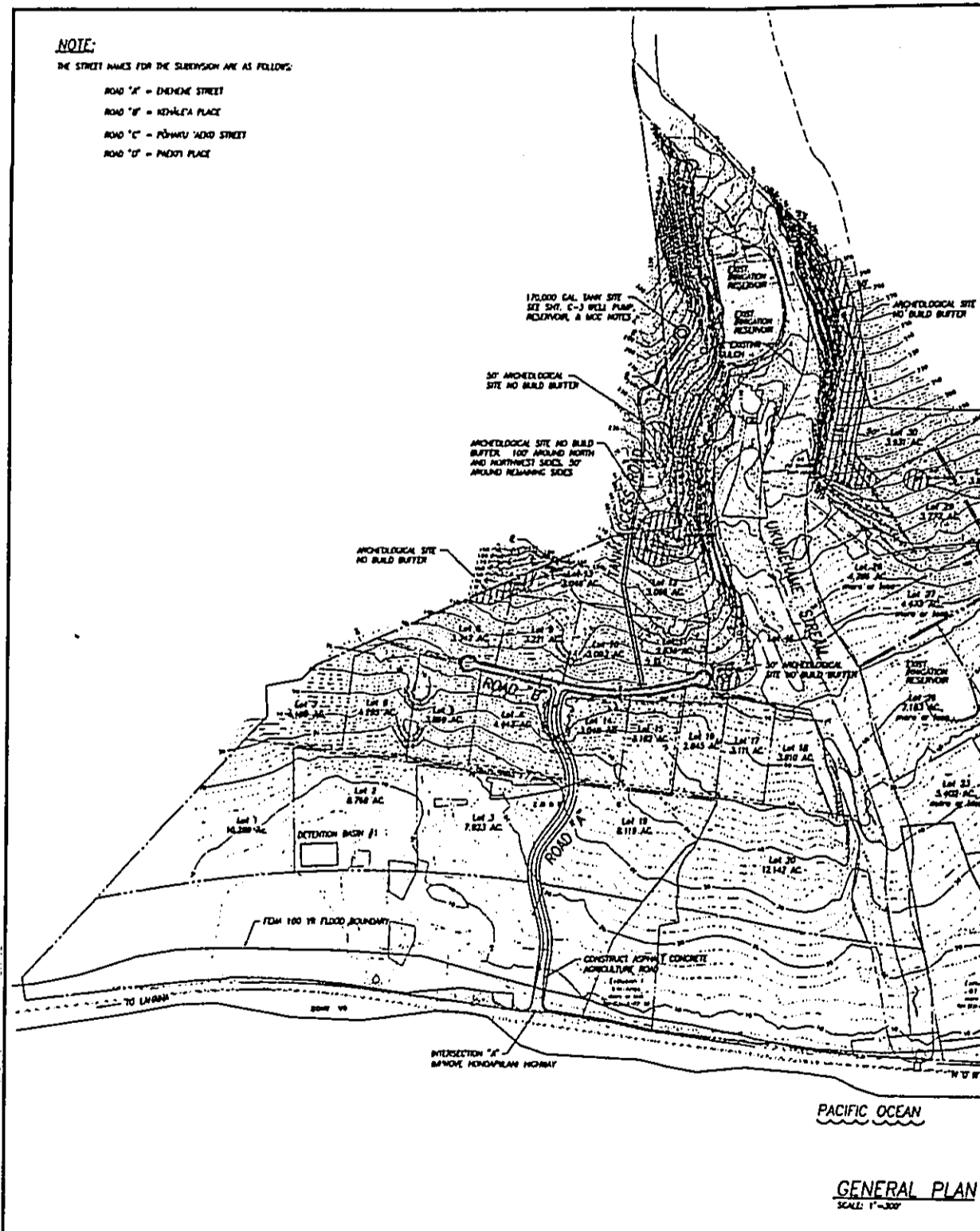
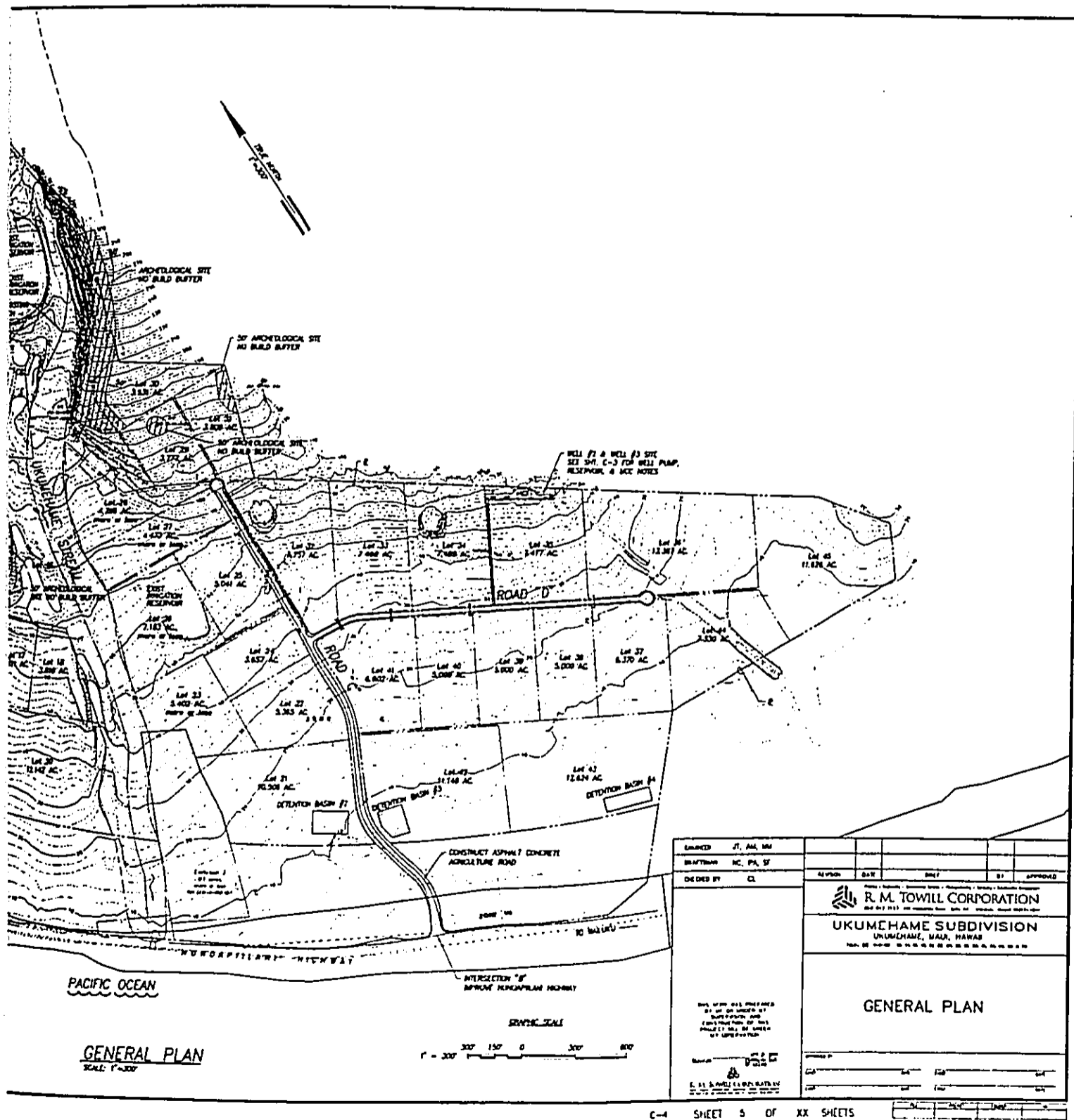
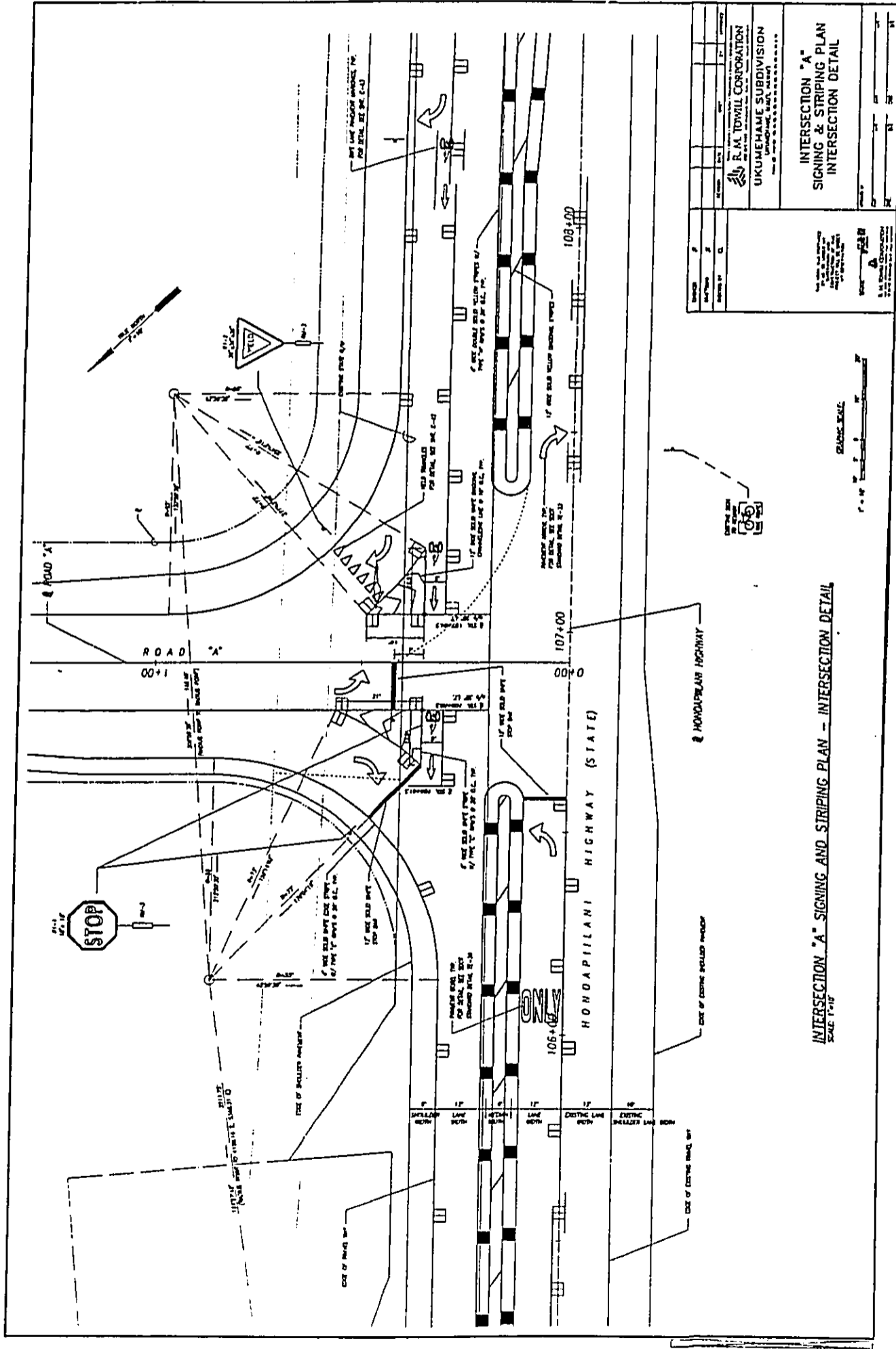


FIGURE 4

Phase II Subdivision General Plan



April 27, 2005



NO.	DATE	BY	CHKD.	DESCRIPTION

B. M. TOWILL CORPORATION
UKUMEHAME SUBDIVISION
UKUMEHAME, HAWAII

**INTERSECTION "A"
SIGNING & STRIPING PLAN
INTERSECTION DETAIL**

DATE: 4/27/05
BY: [Signature]
CHKD.: [Signature]

C-70 SHEET 71 OF 72 SHEETS

April 27, 2005

FIGURE 5
Phase II Subdivision Intersection "A" Details

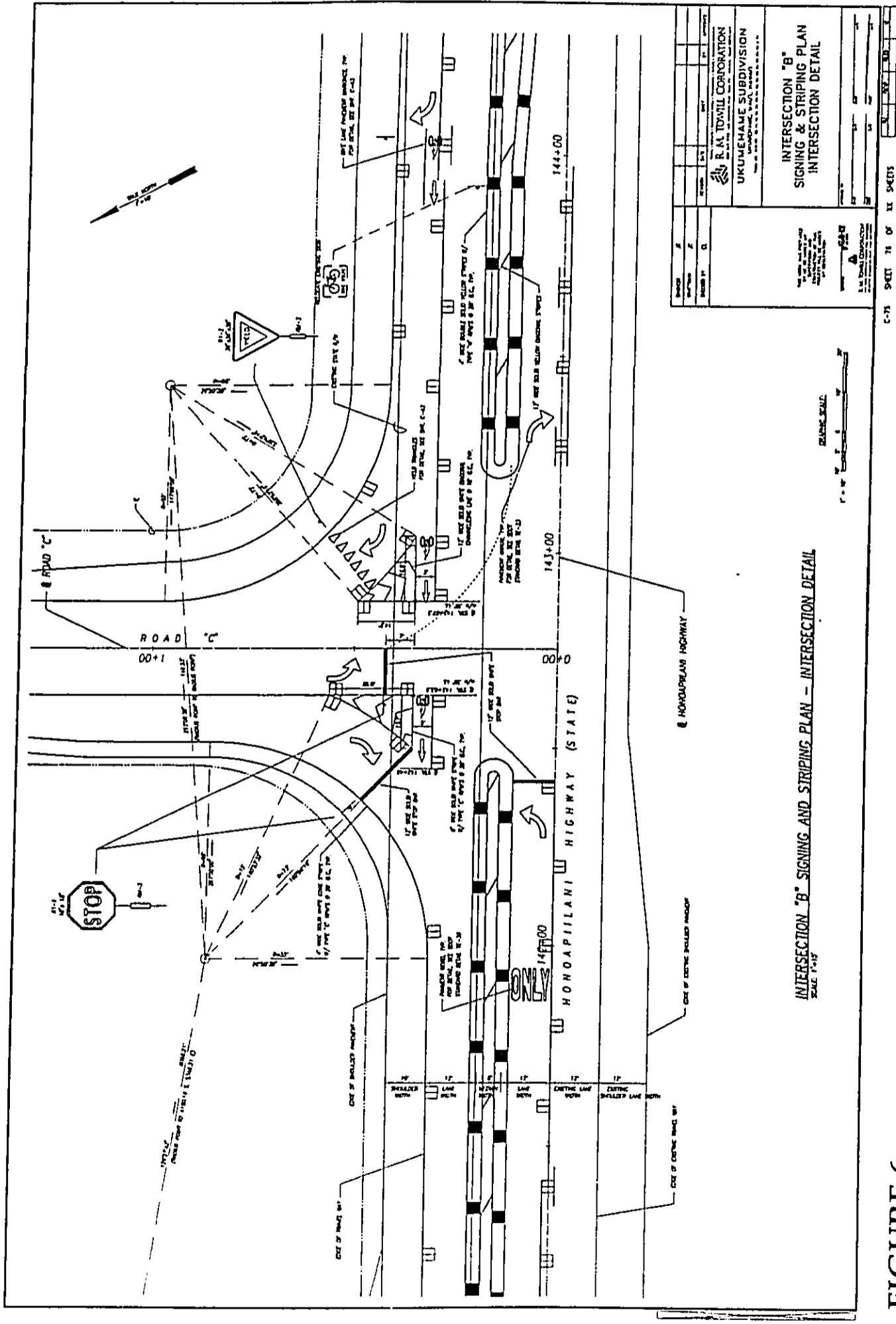
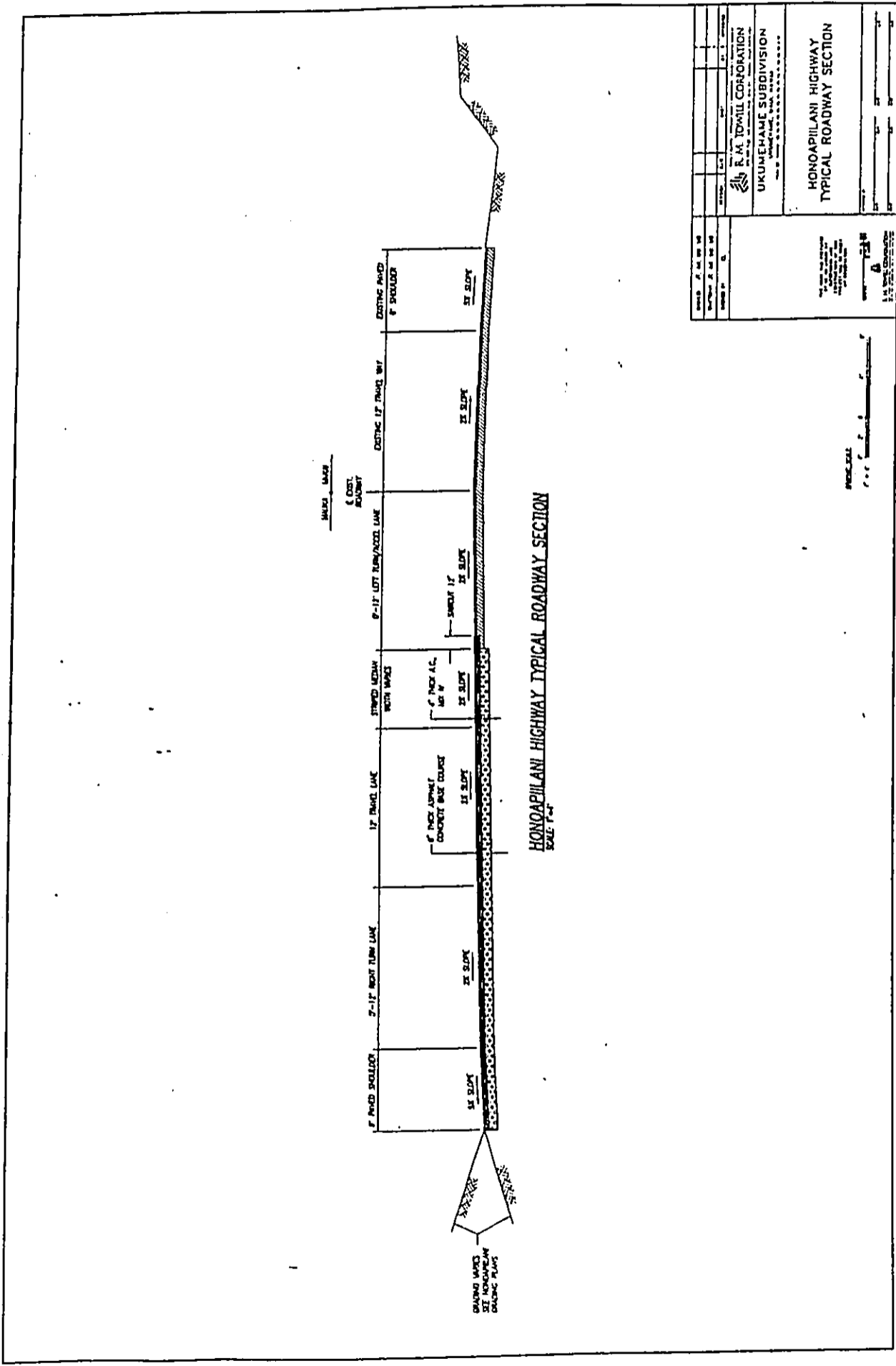


FIGURE 6
Phase II Subdivision Intersection "B" Details

April 27, 2005



April 27, 2005

FIGURE 7
Honoapiilani Highway Typical Section

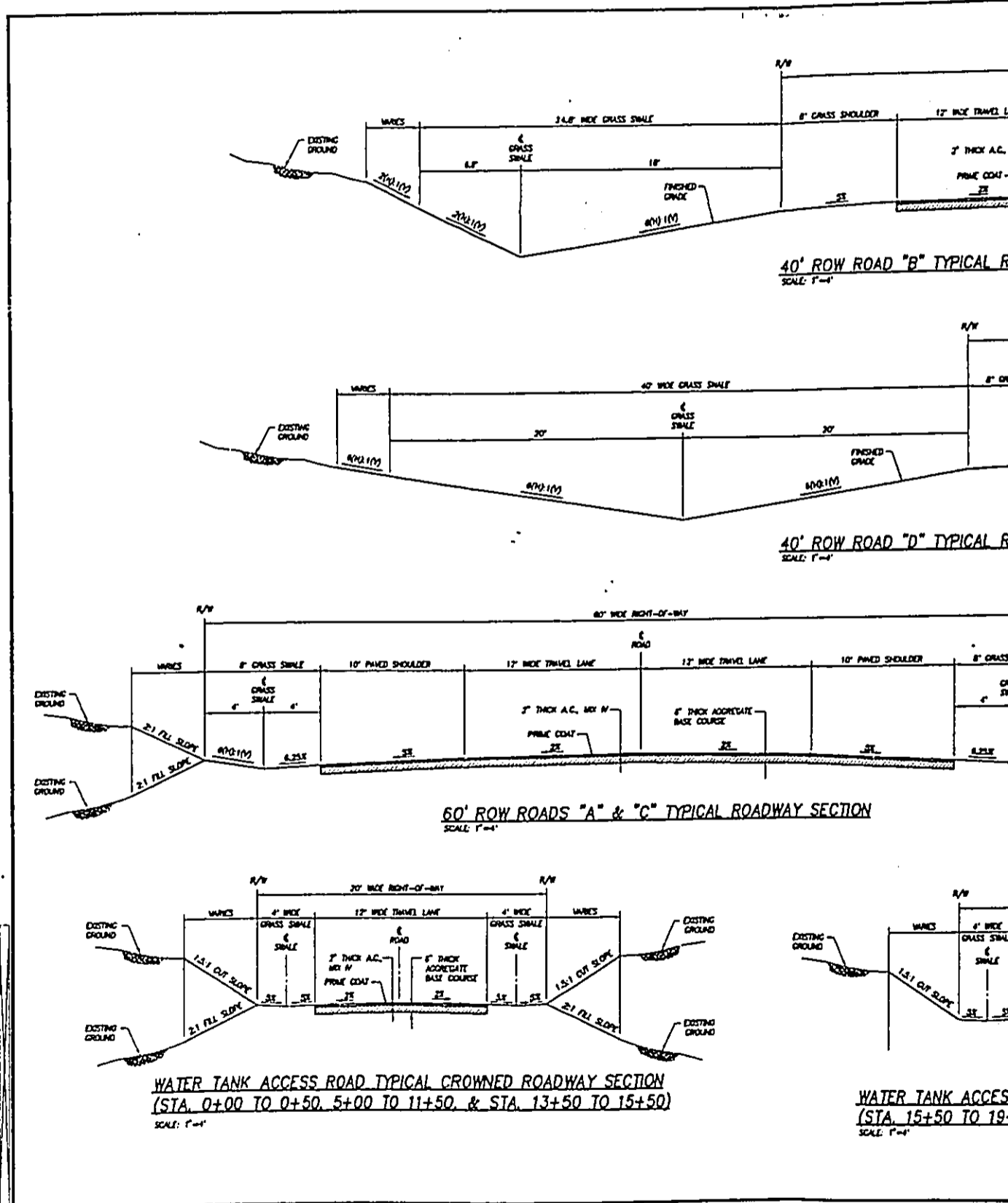
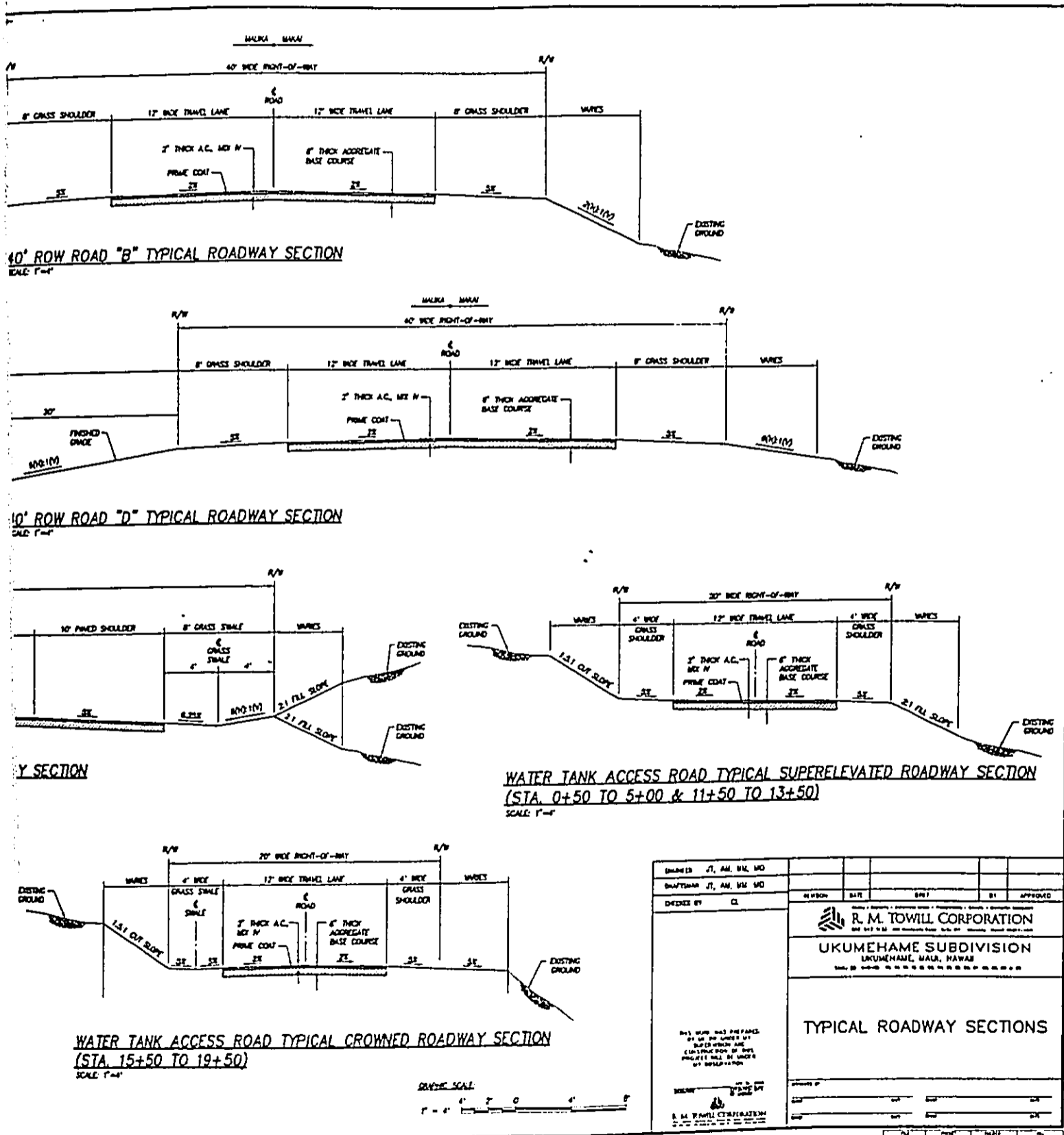


FIGURE 8
Phase II Subdivision Typical Roadway Sections

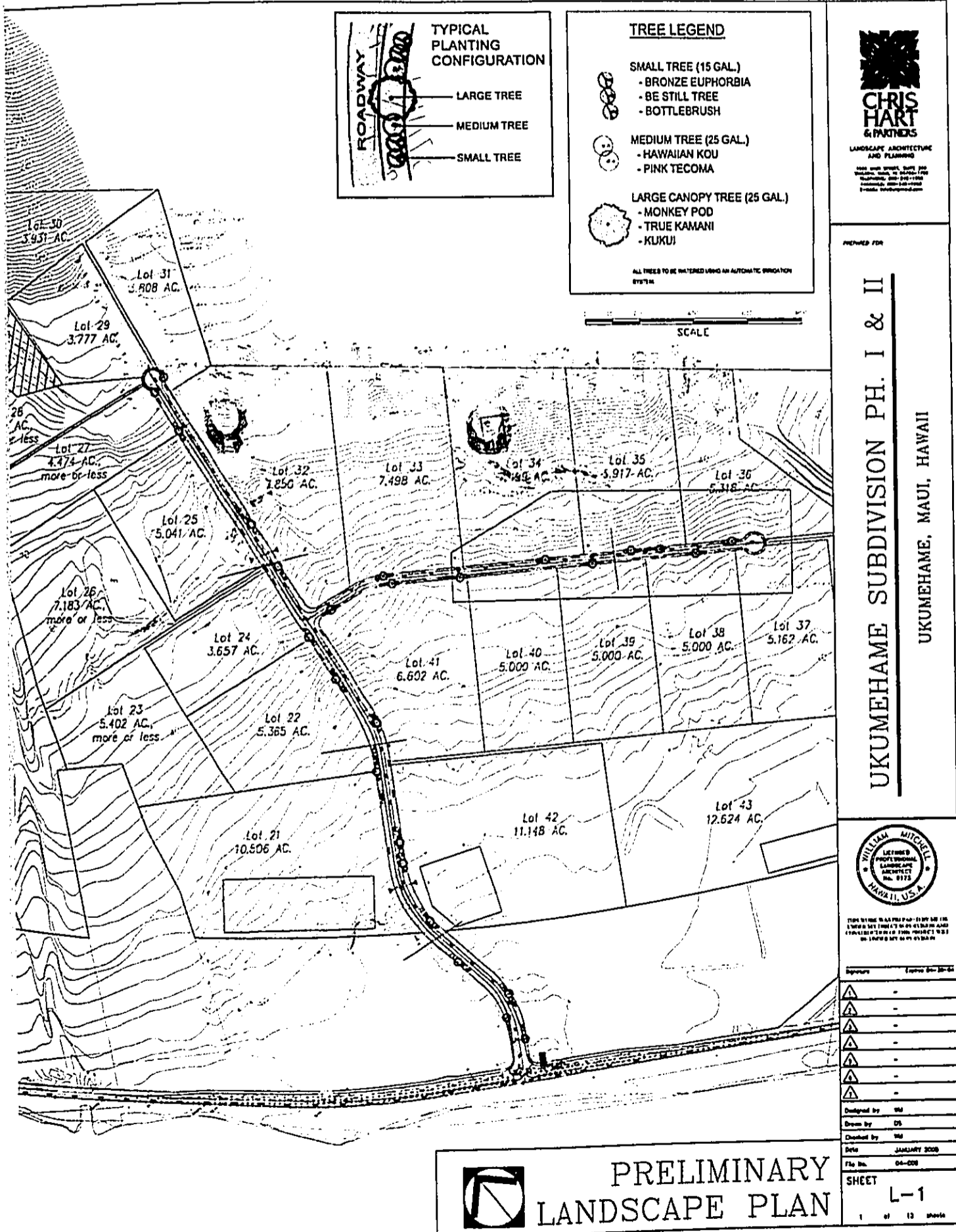


April 27, 2005










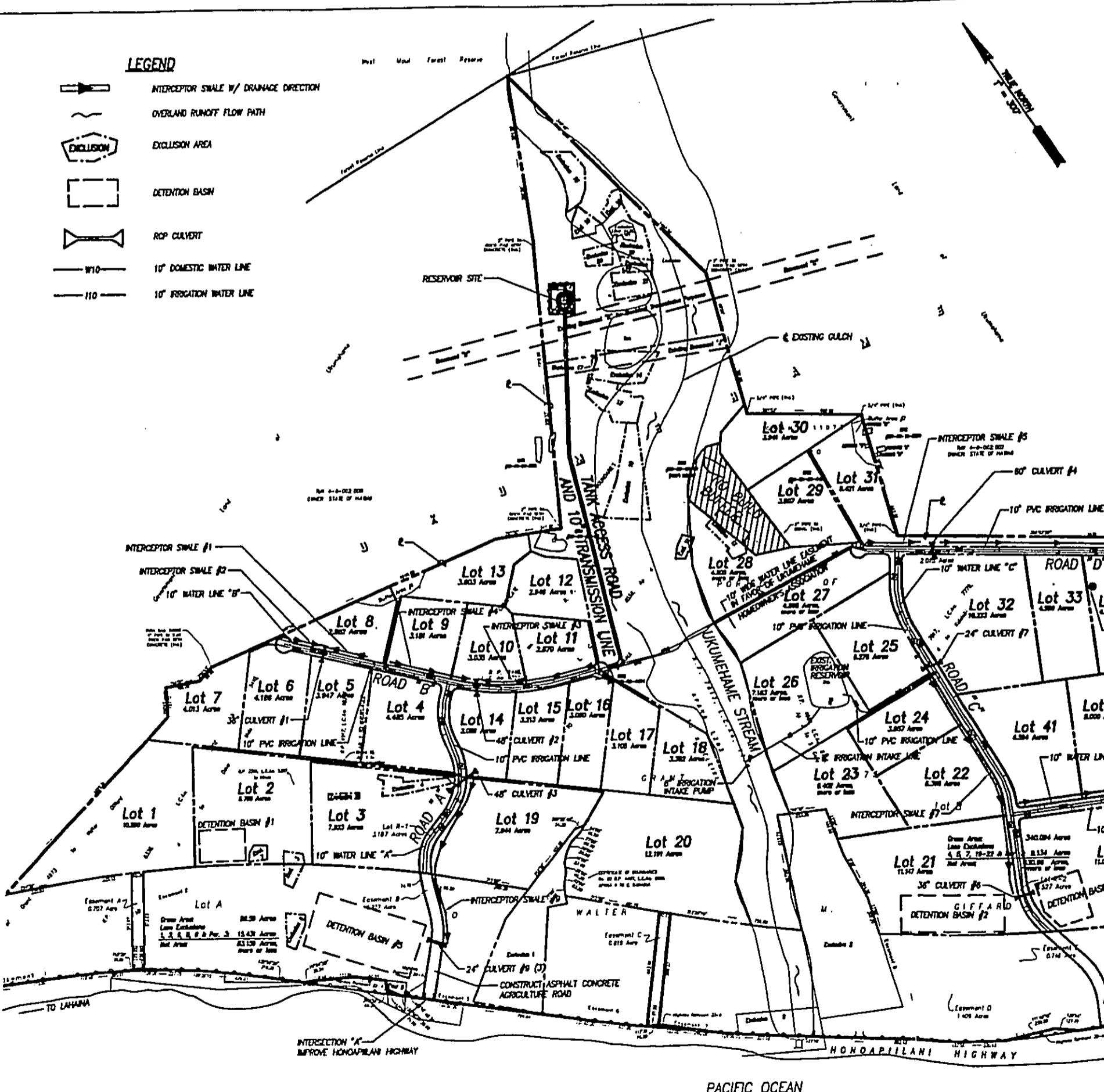
FIGURE 9

Phase II Subdivision Landscape Plan



LEGEND

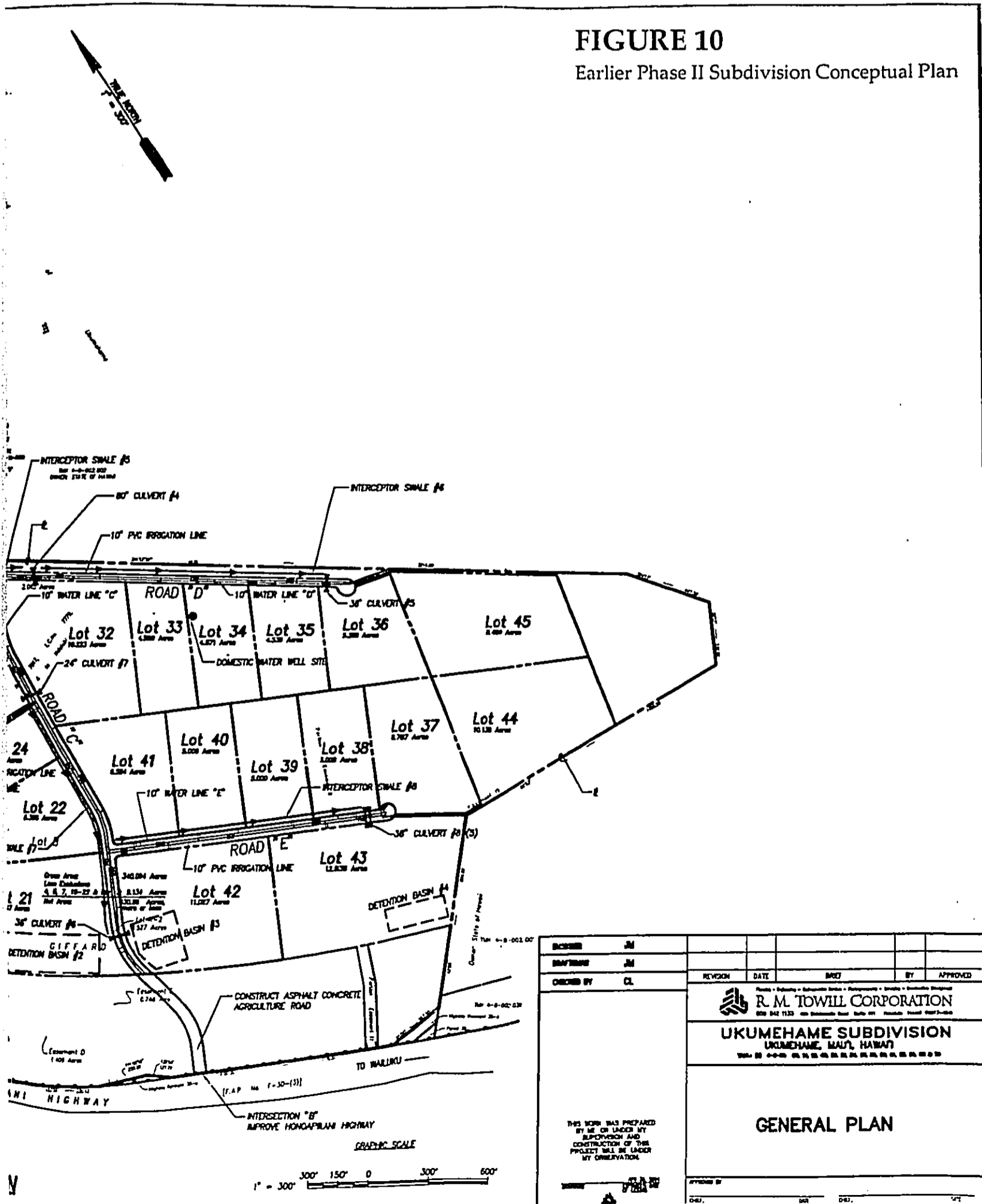
-  INTERCEPTOR SWALE W/ DRAINAGE DIRECTION
-  OVERLAND RUNOFF FLOW PATH
-  EXCLUSION AREA
-  DETENTION BASIN
-  RCP CULVERT
-  10" DOMESTIC WATER LINE
-  10" IRRIGATION WATER LINE



GENERAL PLAN
SCALE: 1"=300'

FIGURE 10

Earlier Phase II Subdivision Conceptual Plan



DESIGNED BY	JM	REVISION	DATE	BY	APPROVED
DRAWN BY	JM				
CHECKED BY	CL				
 R. M. TOWILL CORPORATION <small>Plumbing • Sanitary • Sewerage • Storm • Drainage • Irrigation • Electrical • Mechanical</small> 809 KALANANĀʻOHI DRIVE, HONOLULU, HAWAII 96813					
UKUMEHAME SUBDIVISION UKUMEHAME, MAUI, HAWAII					
GENERAL PLAN					
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.					
APPROVED BY: _____ DATE: _____					

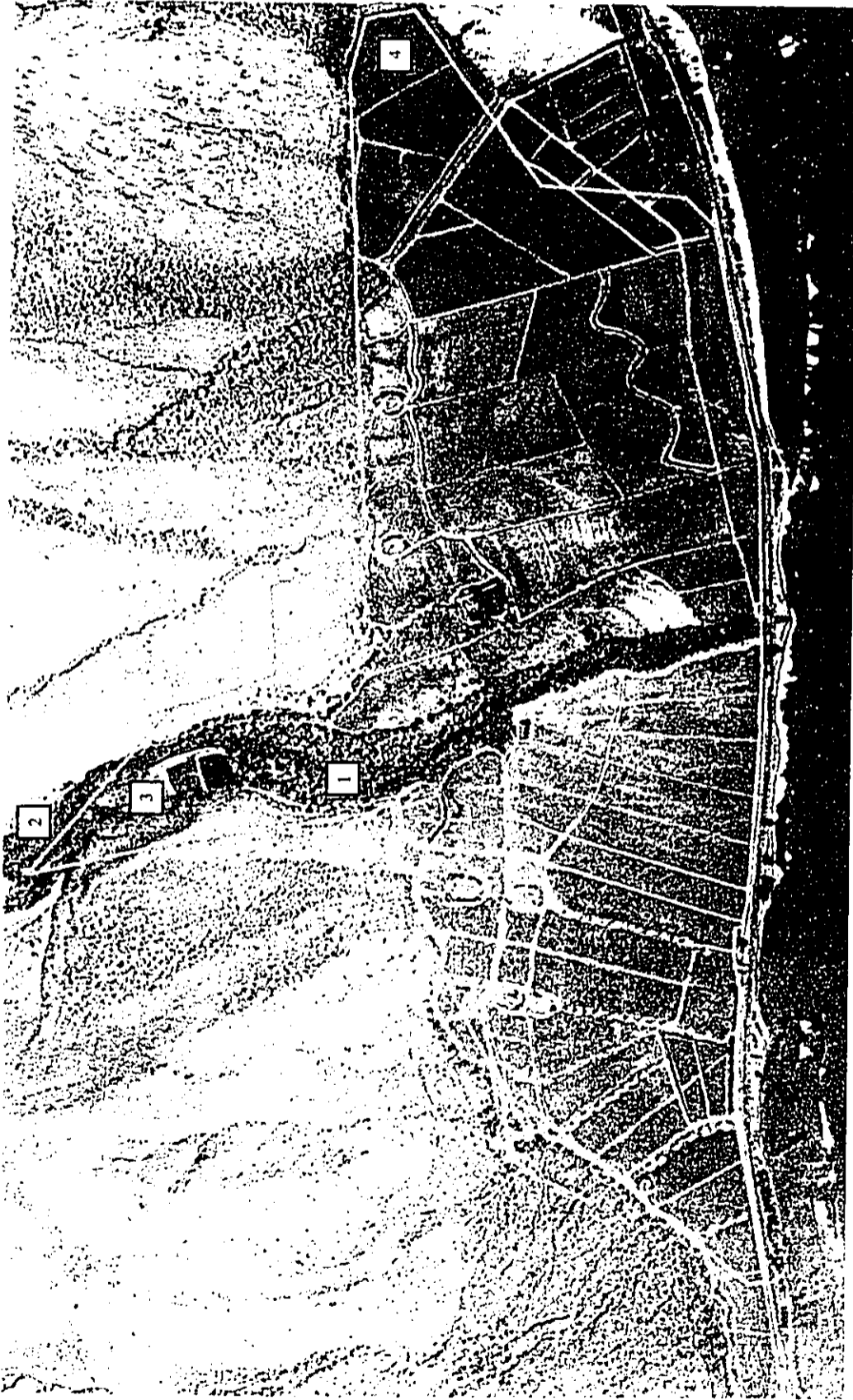


FIGURE 11

KEY:

- 1. TMK 4-8-002: 018
- 2. TMK 4-8-002: 002 (por.)
- 3. TMK 4-8-002: 021
- 4. TMK 4-8-002: 009 (por.)



Not to Scale

April
2005



APPROXIMATE LOCATIONS OF SMALL-
SCALE FARMING ACTIVITIES

Ukumehame Subdivision - Phase I and II





FIGURE 12

 <p>Not to Scale</p>	<p>February 2005</p>	
<p>Soils Map Ukumehame Subdivision - Phase I and II</p>		<p>CHRIS HART & PARTNERS</p>

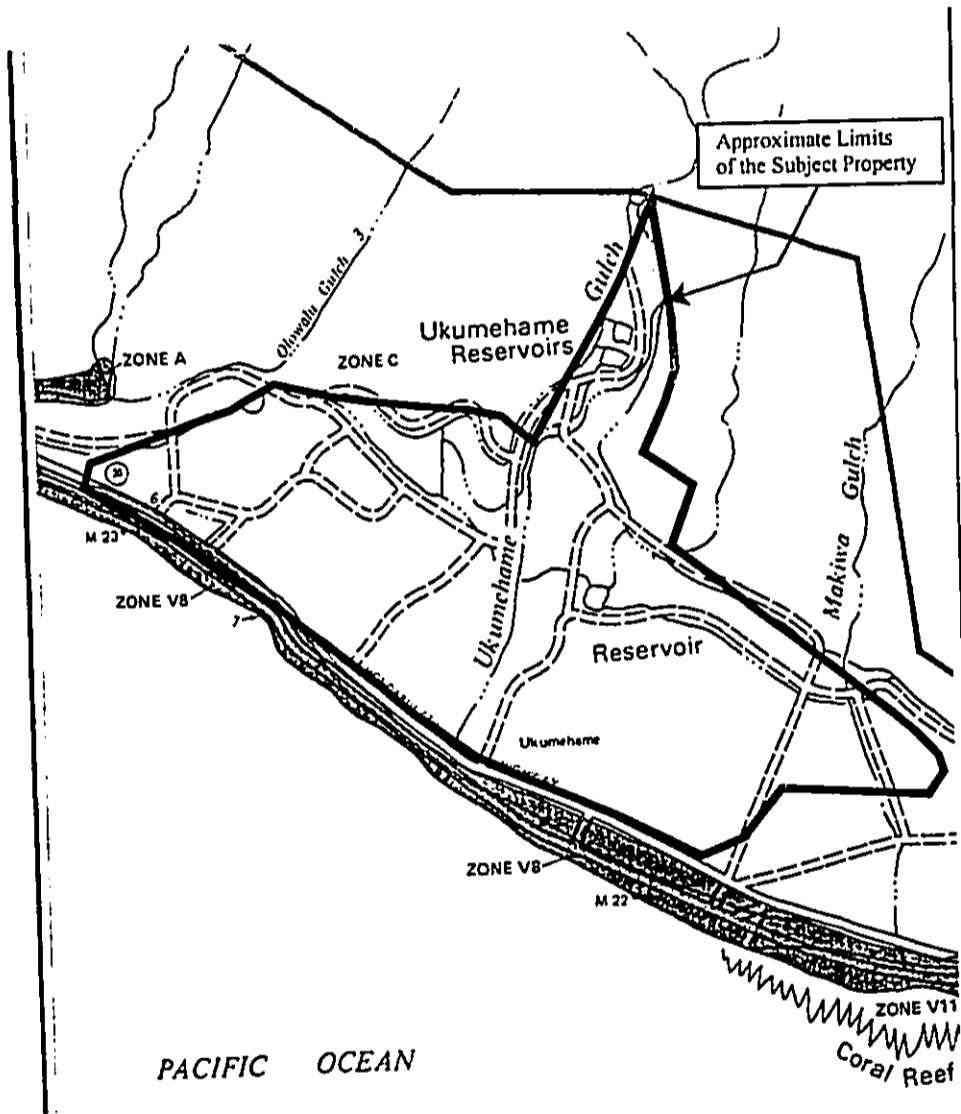




FIGURE 13

 Not to Scale	February 2005	
Flood Hazard Area Map Ukumehame Subdivision - Phase I and II		CHRIS HART & PARTNERS

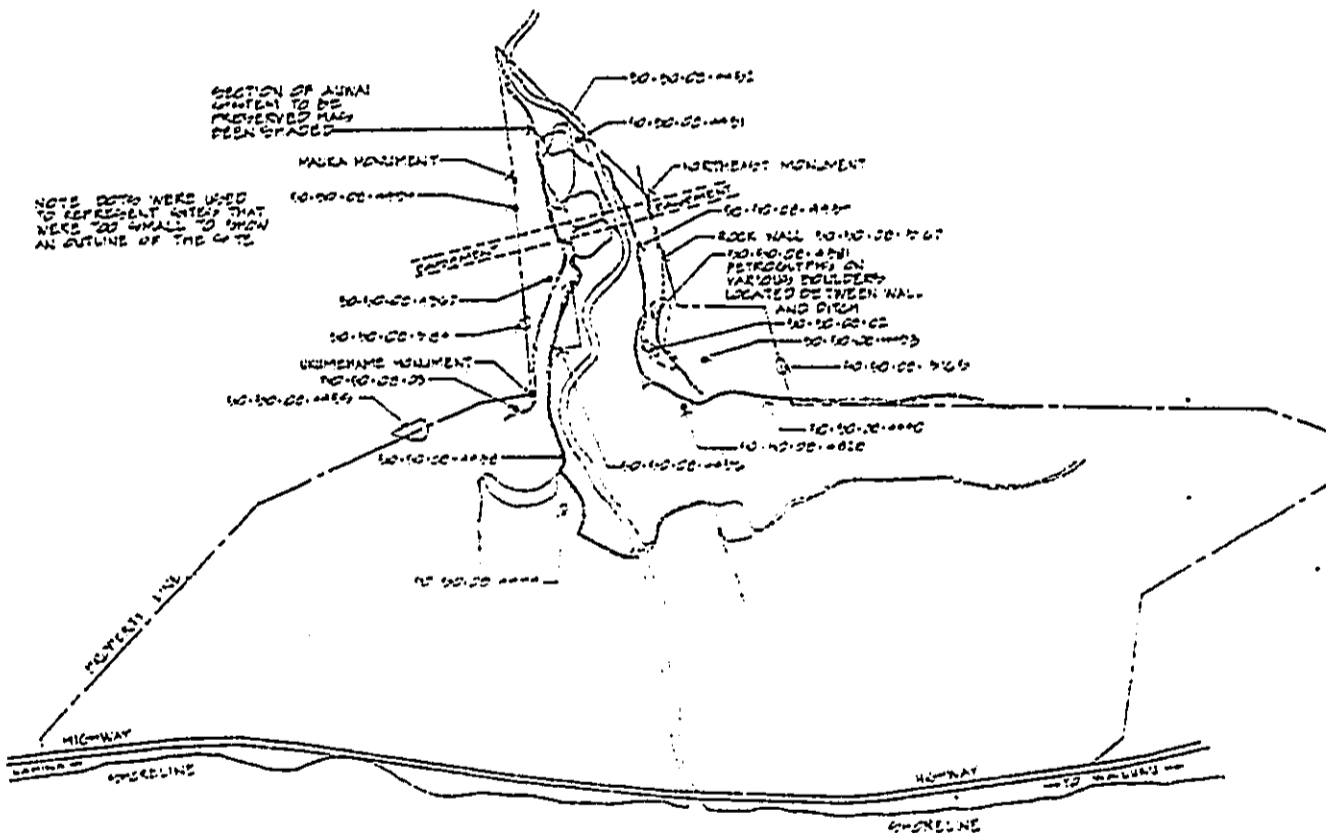




FIGURE 14

	Not to Scale	January 2005	 CHRIS HART & PARTNERS
	ARCHAEOLOGICAL SITES Ukumehame Subdivision - Phase I and II		

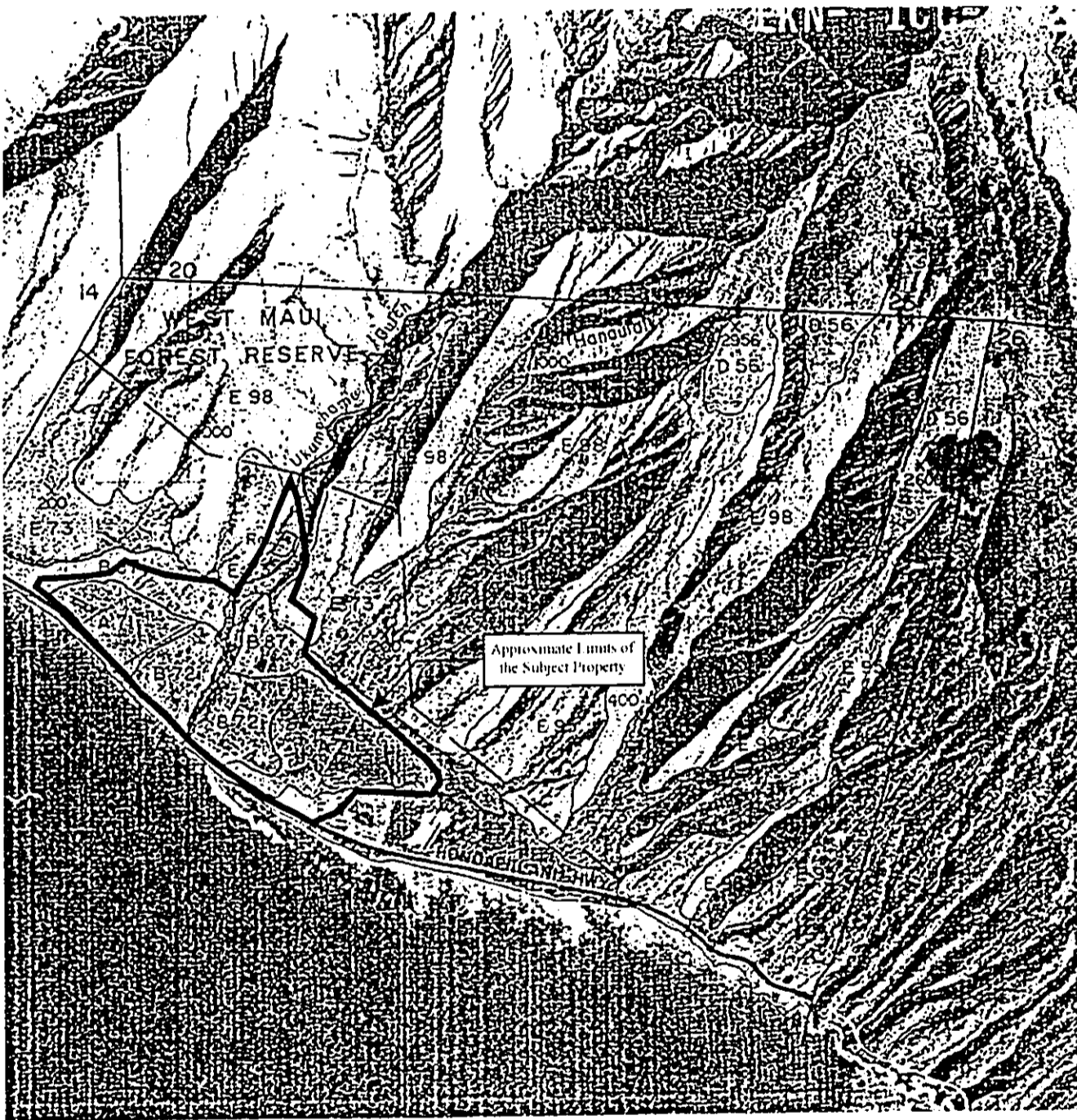


FIGURE 15



Not to Scale

February
2005

Land Study Bureau Classifications
Ukumehame Subdivision - Phase I and II



**CHRIS
HART
& PARTNERS**

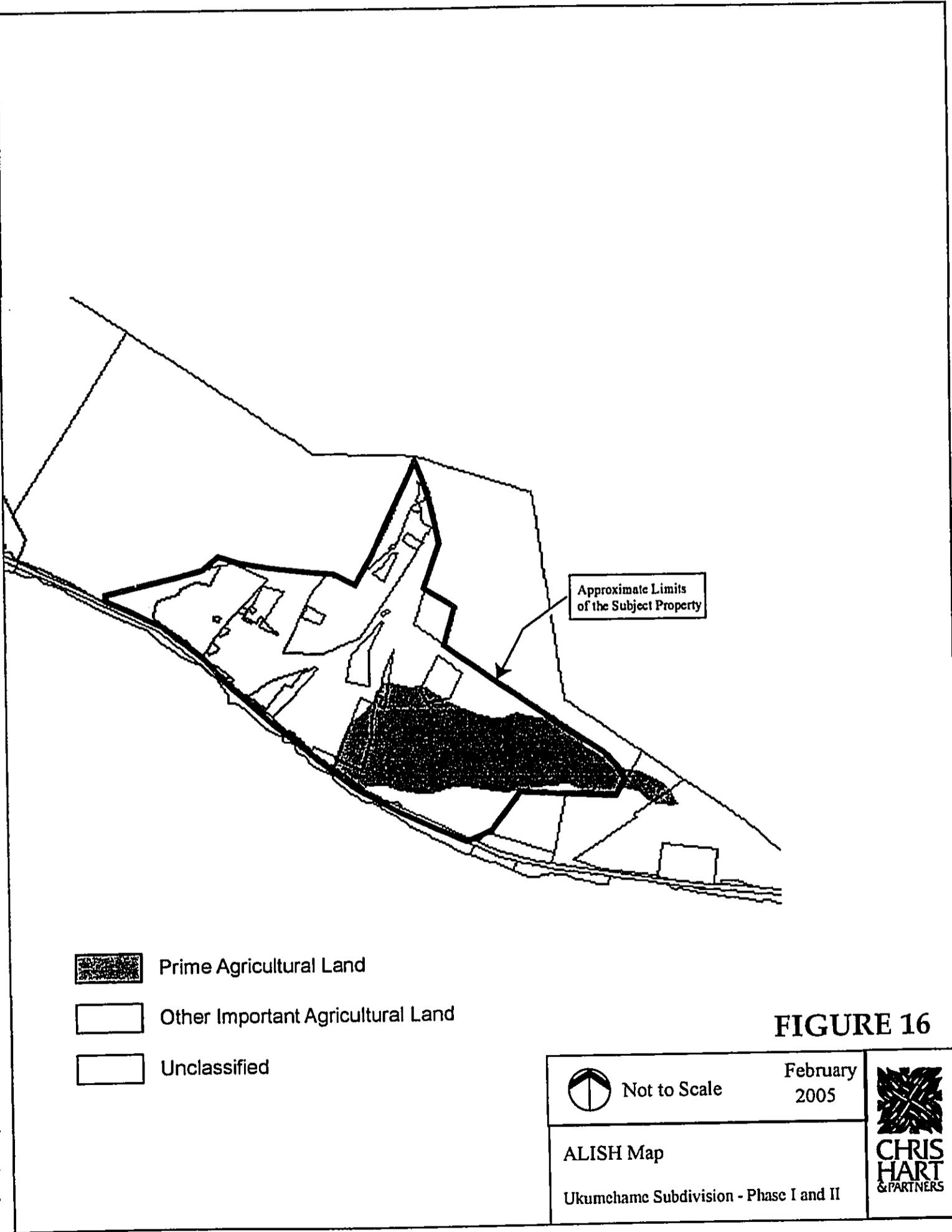




FIGURE 16

 Not to Scale	February 2005	
ALISH Map Ukumchame Subdivision - Phase I and II		CHRIS HART & PARTNERS

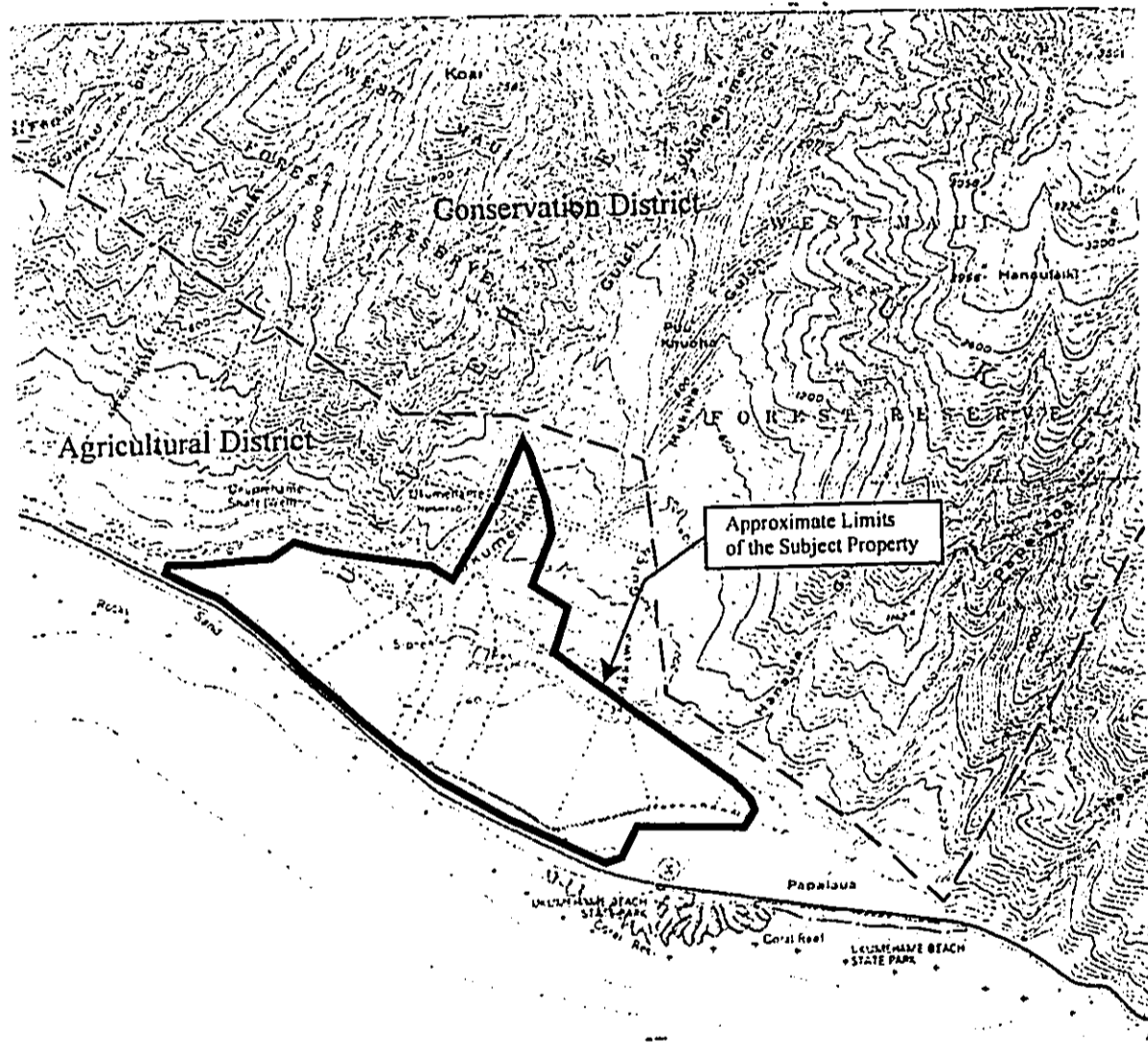




FIGURE 17

	Not to Scale	February	
State Land Use Districts Map			CHRIS HART & PARTNERS
Ukumehame Subdivision - Phase I and II			

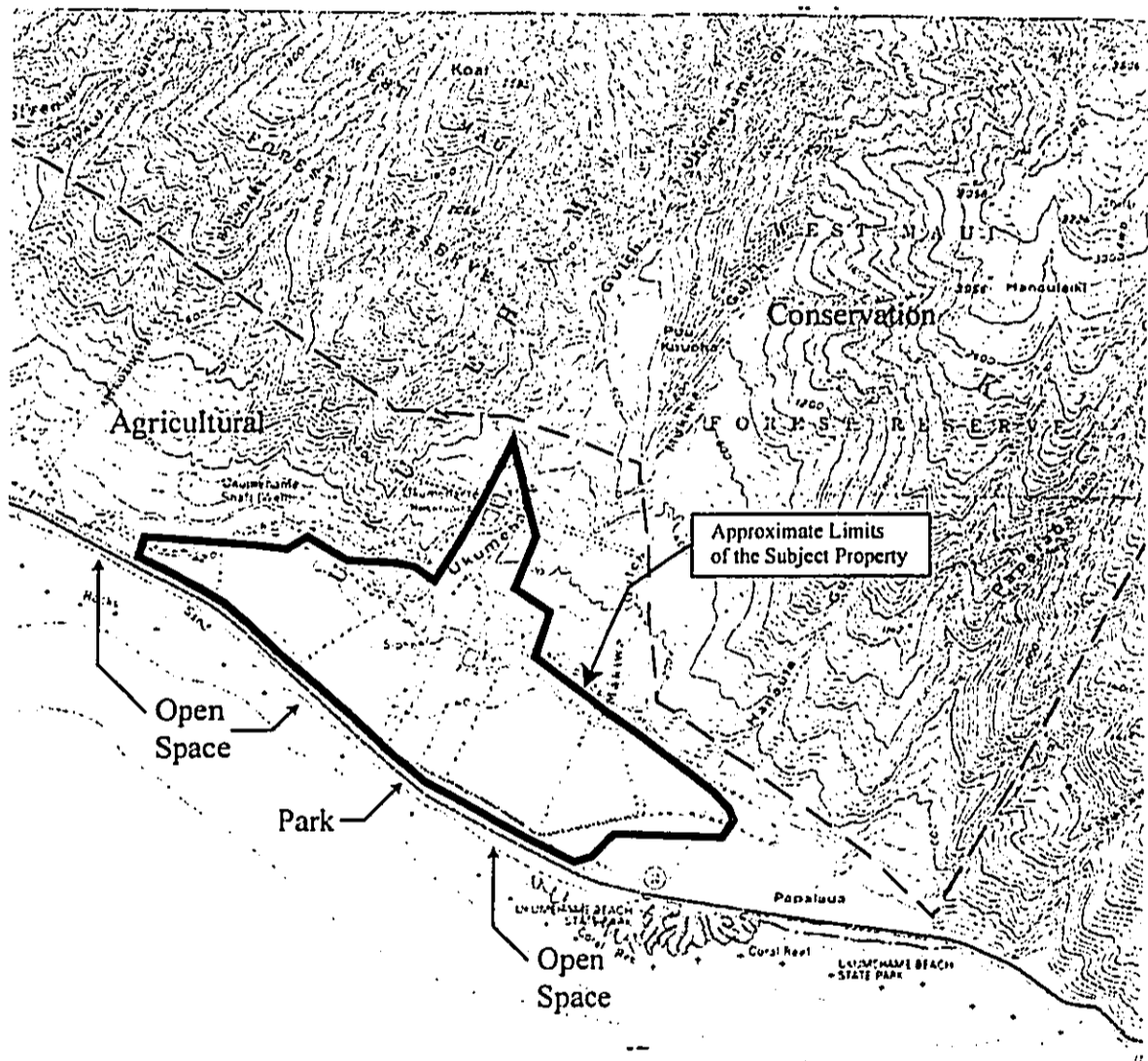




FIGURE 18

 Not to Scale	February 2005	 CHRIS HART & PARTNERS
West Maui Community Plan Map		
Ukumehame Subdivision - Phase I and II		

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APPENDICES



APPENDIX A
Letter from the
Department of Land and
Natural Resources,
Division of Forestry and
Wildlife

JUN-15-2004 10C 00:40 PM FROM: LAW OFF 2H

MAY-11-88 14:35 FROM: LAW OFF 2H

BENJAMIN J. CAYSTANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
44 SOUTH HIGH ST., ROOM 101
WAILUKU, HAWAII 96793-2188

MICHAEL D. WILSON
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTY DIRECTOR
GILBERT S. COLOMA-AGARAN

AGRICULTURE DEVELOPMENT
PROGRAMS
ADULTIC RESOURCES
BOATING AND COAST RECREATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONSERVATION
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

May 7, 1998

James R. Judge
2233 Vineyard Street, Suite B
Wailuku, HI 96793

Dear Mr. Judge:

I am responding to your request for an assessment on the presence of any endangered species pursuant to our inspection of your Ukumehame property on April 28, 1998. On that date Rene Sylva, Anna Palomino and myself accompanied you, Jack Keane and John Duey over those portions of your property that had any remote possibility of containing native plant species. We avoided those lands under cane as they have been continuously plowed and cultivated for over a hundred years.

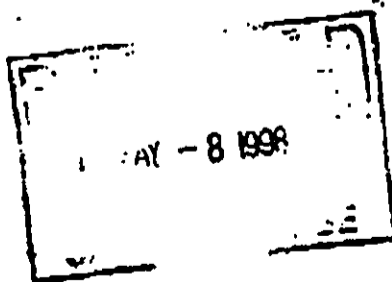
We found no endangered plant species during our inspection. There were a number of common native species such as ilima (*sida fallax*), uhaloa (*waltheria indica*) and nehe (*lipochagta lavarum*) that have wide distribution. These grow primarily on the dry cliffs on either side of Ukumehame Stream. Much of even the flatter uncultivated lands, however, have been burned-over repeatedly in the past and are now scattered Kiawe (*Prosopis pallida*) and buffel grass (*cenchrus ciliaris*) with no native vegetation whatsoever.

There are excellent native ecosystems way up in the back of Ukumehame Canyon two to three miles upstream from your property, but this area is quite remote from your area and the land uses now occurring below have no impact on the upper valley.

Sincerely,

Robert Hobdy

Robert W. Hobdy
Forestry Manager



APPENDIX B
Archaeological Inventory
Survey Approval Letter

Oct-08-2004 05:55pm From-STATE Historic Preservation

808 682 8020

T-172 P.002/004 F-938

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhine Building, Room 555
501 Kamehale Boulevard
Kapala, Hawaii 96707

TIMOTHY B. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
JANET E. KAWILO

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

August 30, 1999

David Shideler
Cultural Surveys Hawaii
733 North Kalaheo Avenue
Kailua, Hawaii 96734

LOG NO: 24021
DOC NO: 9908RC71

Dear Mr. Shideler:

**SUBJECT: Revised Archaeological Inventory Survey Report -- Sugar Way Ltd.
Ukumehame, Lahaina Moku, Maui
TMK: 4-8-02: 09**

This letter reviews the revised report which you submitted on August 10, 1999 (Devereux et al. 1999. Archaeological Inventory Survey and Subsurface Testing of a 440 Acre Parcel, Ahupua'a of Ukumehame, ... CSH ms.). The revisions responded to our review letter of July 26, 1999 (Hibbard to Hammatt Log: 23,841; Doc: 9907RC61).

We had requested that the mitigation commitments section of the report be revised to avoid confusion on the sites being preserved. This has now been done. We also note that you have added new information to the report, inserting a new site and its description (a historic era cattle wall).

Based on the new information, we now agree that 17 historic sites are present. We agree with significance evaluations proposed for these sites -- 7 sites significant solely for their information content, the other 10 for multiple criteria.

We agree with the mitigation proposals -- (2) no further work at 3 sites (a cattle wall and two cane irrigation ditches) as reasonable amounts of their significant information were recovered in the survey and (2) preservation of the remaining 14 sites (which include Ukumehame heiau, Hiki'i heiau, the Lindsey family cemetery, precontact agricultural terraces, and several examples of habitation sites, 2 with burial features and 1 with petroglyphs).

The next steps in the historic preservation process were stated in our last letter, and are briefly restated here.

Oct-08-2004 05:55pm

From-STATE Historic Preservation

808 692 8020

T-172 P.003/004 F-938

David Shideler
Page 2

1. Burial preservation proposals must be taken to the Maui/Lana'i Island Burial Council for a decision. Please coordinate with Mr. Ka'iana Markell of our Burials Program on this matter (587-0010).

2. A preservation plan needs to be prepared for the sites to be preserved (excluding burials). This preservation plan must include suitable buffers; interim protection measures as needed; and long-term preservation measures. This should be submitted to our Archaeology Branch for review, and Ross Cordy, our Branch Chief for Archaeology (692-8025) can be contacted on this matter.

Aloha,


Den Hibbard, Administrator
State Historic Preservation Division

RC:jen

c: K. Markell, DLNR Burials Program
Department of Planning, Maui County
Department of Public Works, Maui County

SEP -8 1999

APPENDIX C
Archaeological
Preservation Plan

ARCHAEOLOGICAL PRESERVATION PLAN
FOR 10 SITES WITHIN
A 440 ACRE PARCEL,
AHUPUA`A OF UKUMEHAME,
DISTRICT OF LAHAINA, ISLAND OF MAUI
(TMK 4-8-02: 09)

by

Hallett H. Hammatt, Ph.D.

Prepared for
Sugar Way, Ltd.

Cultural Surveys Hawaii
June 2000

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INTRODUCTION

Purpose of Plan

This preservation plan has been prepared as a required step in accordance with the draft "Rules Governing Minimal Requirements for Archaeological Site Preservation and Development" (13-277-3 & 4). This preservation plan addresses ten sites to be preserved in a 440-acre parcel in Ukumehame *ahupua`a*, Maui, Hawaii. These ten archaeological sites include 84 features although only 62 of the 84 features are located in or extend into the project area.

This plan is to serve as a scope of work for the preservation of the sites and features enumerated here-in. Upon review and approval by the State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR), the accepted preservation plan will be executed.

Background Overview

At the request of Sugar Way Ltd., Cultural Surveys Hawaii, Inc., conducted an archaeological inventory survey with limited subsurface testing on a 440-acre parcel in Ukumehame *ahupua`a*, District of Lahaina, Maui, Hawaii (TMK 4-8-02: 09). The report was accepted by the SHPD/DLNR (Log no: 24021, Doc no: 9908RC71). Eighteen sites and site complexes were identified within the project area. The archaeological sites identified are of various site types including: agricultural features for intensive non-irrigated and irrigated agriculture, temporary and permanent habitation sites, *heiau*, petroglyphs, human graves, a basalt quarry, irrigation ditches associated with prehistoric agriculture and historic sugar plantation agriculture.

Based on the inventory survey results, it was recommended that of the 18 sites in the project area, fourteen (77%) sites be preserved (Sites -02, -03, -3165, -3184, -4367, -4381, -4438, -4451, -4452, -4454, -4455, -4456, -4494, -4828). No further work was recommended for the remaining four sites (23%) (Sites -3167, -4439, -4440, -4453). Five of the preservation sites contain or potentially contain human burials.

Site -4453, was listed as a possible burial site to be preserved during the inventory survey. Based on further testing conducted after the inventory survey the site was determined to be an agricultural complex. Site -4453 requires no further work.

Fourteen sites are to be preserved in the project area. Five of these fourteen sites to be preserved are addressed in the Burial Treatment Plan (accepted by SHPD/DLNR). Ten of the fourteen sites to be preserved are addressed in this preservation plan. One of the fourteen sites to be preserved is addressed in both plans due to a non-burial component, within the project area, that is to be preserved and the site is therefore addressed in this document as well as the Burial Treatment Plan.

This document is the preservation plan for ten of the fourteen preservation sites (50-50-08-3165, -3184, -4367, -4381, -4438, -4451, -4452, -4454, -4455, and -4456). This plan outlines interim preservation measures to be in place during development of the parcel and the long term protective buffers.

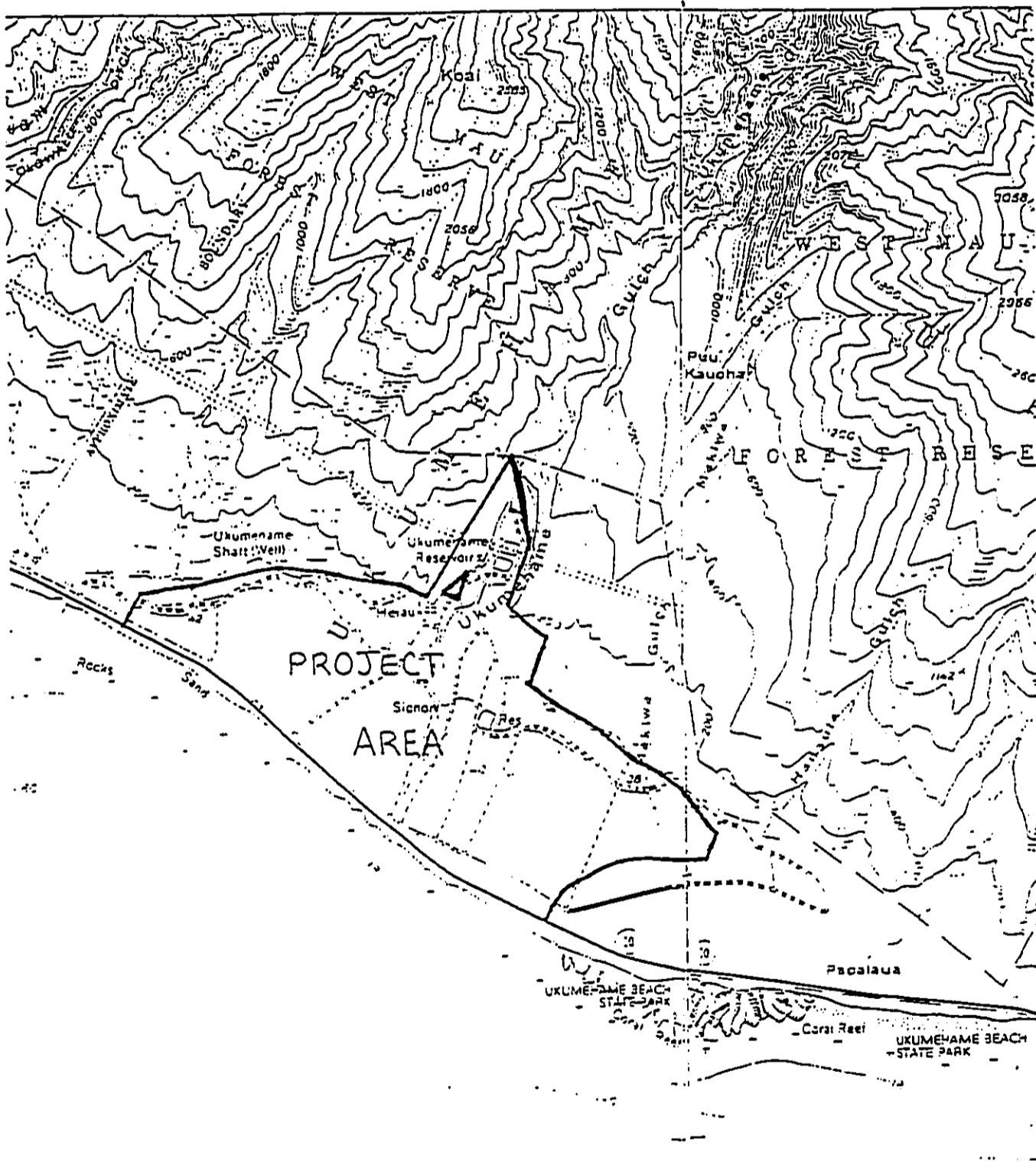


Figure 1 Portion of USGS 7.5 Minute Series Topographical Map - Olowalu Quadrangle - Showing Location of Project Area

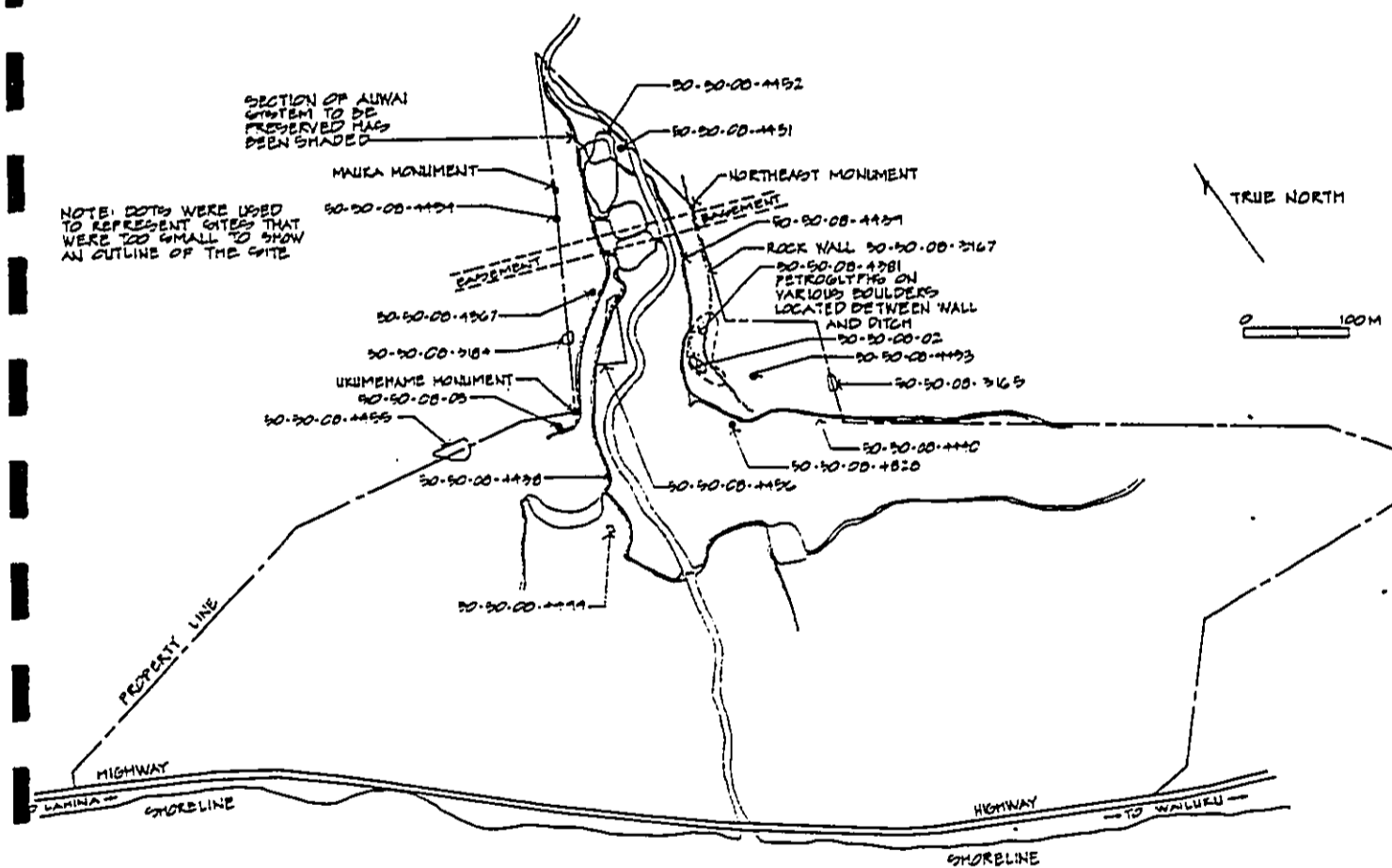


Figure 2 Project Map Showing Location of Archaeological Sites

PRESERVATION SITE DESCRIPTIONS

As a result of the inventory survey a total of ten sites and complexes were recommended for preservation that were not associated with human burials. The ten sites and 62 features covered by this plan are presented in Table 1 with columns for State site#, Site/Feature Type, Formal Interpretation, Significance, and Recommended Treatment.

Table 1: Occurrences of Feature/Site Types

State Site #	Site/Feature Type and #	Formal Interpretation	Significance	Recommended Treatment
50-50-08-3165	4 enclosures, (only Features A and B are inside the project area)	temporary/ recurrent habitation	C,D	Preservation
50-50-08-3184	5 enclosures, 2 alignments, 1 mound (only Feature A, an enclosure, is in the project area)	permanent habitation/ possible burial. (Feature A is considered permanent habitation)	D, E ^m (Feature A is given only criterion D) only	Preservation
50-50-08-4367	3 terraces, 1 alignment, 1 enclosure	permanent habitation	D	Preservation
50-50-08-4381	22 petroglyphs and midden scatter	permanent habitation	D,E	Preservation
50-50-08-4438	1 irrigation ditch (operational)	agriculture	A,B,C,D	Preservation
50-50-08-4451	1 platform	permanent habitation	D	Preservation
50-50-08-4452	24 terraces	prehistoric intensive agriculture	C,D	Preservation
50-50-08-4454	2 enclosures, 1 rock shelter (only Feature A, an enclosure, is in the project area)	temporary/ recurrent habitation	D	Preservation

State Site #	Site/Feature Type and #	Formal Interpretation	Significance	Recommended Treatment
50-50-08-4455	9 terraces, 2 mod. outcrop, 1 enclosure(only Feature A extends into the project area)	historic cane agriculture/ recurrent habitation/ quarry	C,D	Preservation
50-50-08-4456	1 terrace, 1 platform, 1 wall, 1 petroglyph	permanent habitation	D	Preservation

Site Descriptions

State Site #: 50-50-08-3165
Site Type: Complex
Function: Temporary/Recurrent habitation
Features (#): 4 (only Feature A and B are located in project area)
Probable Age: Prehistoric
Condition: Good
Dimension: 1,512 m.² (16,329.6 ft²)
Elevation: 160 ft. a.m.s.l.

Description: Site -3165 is a complex (See Figure 3), of four features (designated A through D) situated on an alluvial fan east of Ukumehame Gulch. Of the four features only Feature A and B are within the project area, but all have been mapped and described as they are part of the same complex. Site vegetation consists of a few *hiawe* trees, klu and dense grasses.

Feature A is a rectangular enclosure with interior measurements of 8.0 m. (26.2 ft.) SE/NW by 5.0 m. (16.4 ft.) NE/SW. The enclosure wall is bi-faced with large cobbles and small boulders and rises to a maximum height of 0.6 m. (2.0 ft.). A short wall segment (4.0 m. [13.1 ft.] SE/NW) extends from the southwest corner of the enclosure, forming a possible entryway. A basalt hammerstone was observed near the possible entryway and a fine-grain basalt flake was observed on top of the northwest wall of the enclosure.

Feature B is a small rectangular enclosure located 20.0 m. (65.6 ft.) southwest of Feature A. The enclosure has interior dimensions of 2.0 m. (6.6 ft.) SE/NW by 2.5 m. (8.2 ft.) NE/SW. The enclosure wall is bi-faced with large cobbles and is 0.5 m. (1.6 ft.) wide by a maximum of 1.1 ft. high. A probable entrance is located in the southeast corner; it measures 1.0 m. (3.3 ft.) wide. An inscribed cobble was present on top of the enclosure wall near the northeast corner; the inscription is as follows:

"C. ARON 136TH INFANTRY 33RD DIVISION 12/28/43"

Feature C (outside of project area) is an L-shaped enclosure located 20.0 m. (65.6 ft.) southeast of Feature B. The northeast wall measures 9.0 m. (29.5 ft.) and the northwest wall measures 5.0 m. (16.4 ft.). Both wall sections have an average width of 0.5 m. (1.6 ft.) and a maximum height of 0.7 m. (2.3 ft.). The walls are constructed of large cobbles and are partially faced. The enclosure is open

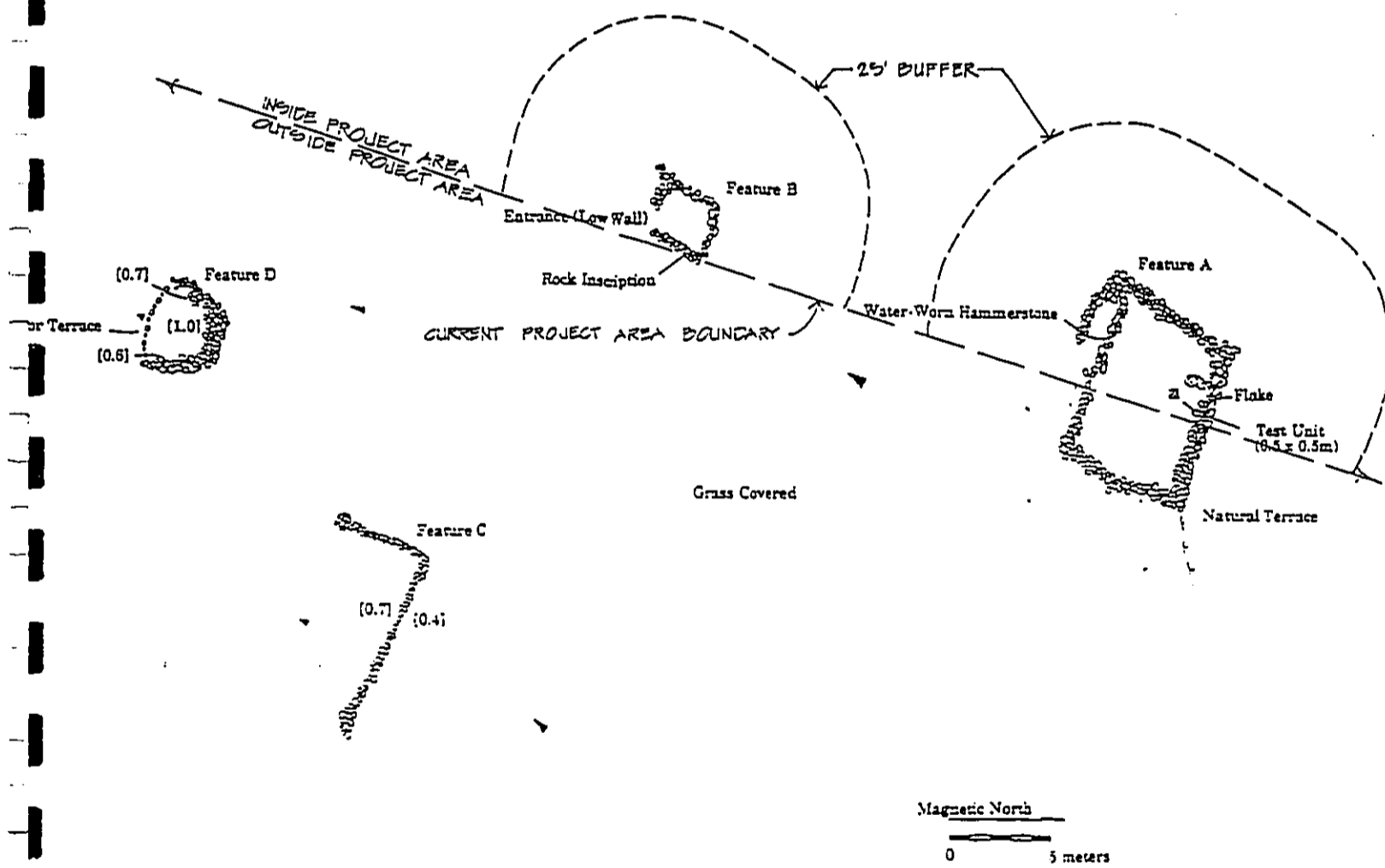


Figure 3 State Site 50-50-08-3165, Plan View

to the south. The feature partially encloses a gentle to moderately sloped surface. No artifacts or midden were observed at Feature C.

Feature D (outside of the project area) is a C-shaped enclosure located 9.0 m. (29.5 ft.) southwest of Feature C. The enclosure wall is constructed of large cobbles, enclosing an area roughly 3.0 m. NE/SW by 3.5 m. (11.5 ft.) NW/SE. The C-shape is open to the southwest. The wall is an average of 1.0 m. (3.3 ft.) wide by a maximum of 1.0 m. (3.3 ft.) high. The enclosure interior is level with a soil base. No artifacts or midden were observed at Feature D.

State Site #: 50-50-08-3184
Site Type: Complex
Function: Permanent habitation; Possible burial
Features (#): 8 (Only Feature A is within the project area)
Probable Age: Prehistoric
Condition: Fair
Dimension: 900.0 m.² (9720.0 ft.²)
Elevation: 160 ft. a.m.s.l.

Description: Site -3184 is a complex of eight features (See Figure 4) located on the west side of Ukumehame Gulch. The site is situated on a moderately sloped terrain descending to the southeast. Site vegetation consists of a dense grass cover and scattered *koa haole* and *kiawe*. The site consists of 8 features, labeled A - H, with only Feature A within the project area.

Feature A is an L-shaped enclosure located on the north perimeter of the site complex. The L-shape is open to the west and is composed of southeast and northeast wall sections. The northeast wall is constructed of three rows of piled small boulders. It measures 3.0 m. (9.8 ft.) SE/NW by 0.5 m. (1.6 ft.) wide and rises a maximum 0.85 m. (2.8 ft.) high. The southeast wall of the L-shape is constructed of medium boulders stacked on outcrop with a few collapsed boulders present in the south. This wall measures 4.5 m. (14.8 ft.) NE/SW by 0.8 m. (2.6 ft.) wide and rises a maximum height of 1.3 m. (4.4 ft.). The L-shape surrounds a level soil area measuring 12.0 m.² (130.0 ft.²).

Feature B (outside project area) is an irregular enclosure located 4.0 m. (13.1 ft.) southwest of Feature A. A gap, measuring 4.0 m. (13.1 ft.) wide, occurs in the southeast corner of the enclosure wall. The feature encloses a level surface measuring 9.0 m. (29.5 ft.) NE/SW by 4.0 m. (13.1 ft.) NE/SE. The northwest enclosure wall is curved and is constructed of stacked cobbles and small boulders. It has a maximum width of 0.6 m. (2.0 ft.) and is faced along its interior side at a maximum height of 1.0 m. (3.3 ft.). The northeast end of this wall section is collapsed and may represent a second opening into the enclosure. The northeast and southwest walls of the enclosure are similar in size and construction but the interior side of the southeast wall is flush to the ground surface. A 3-sided enclosure is incorporated into the enclosure's southwest wall and is open to the southwest.

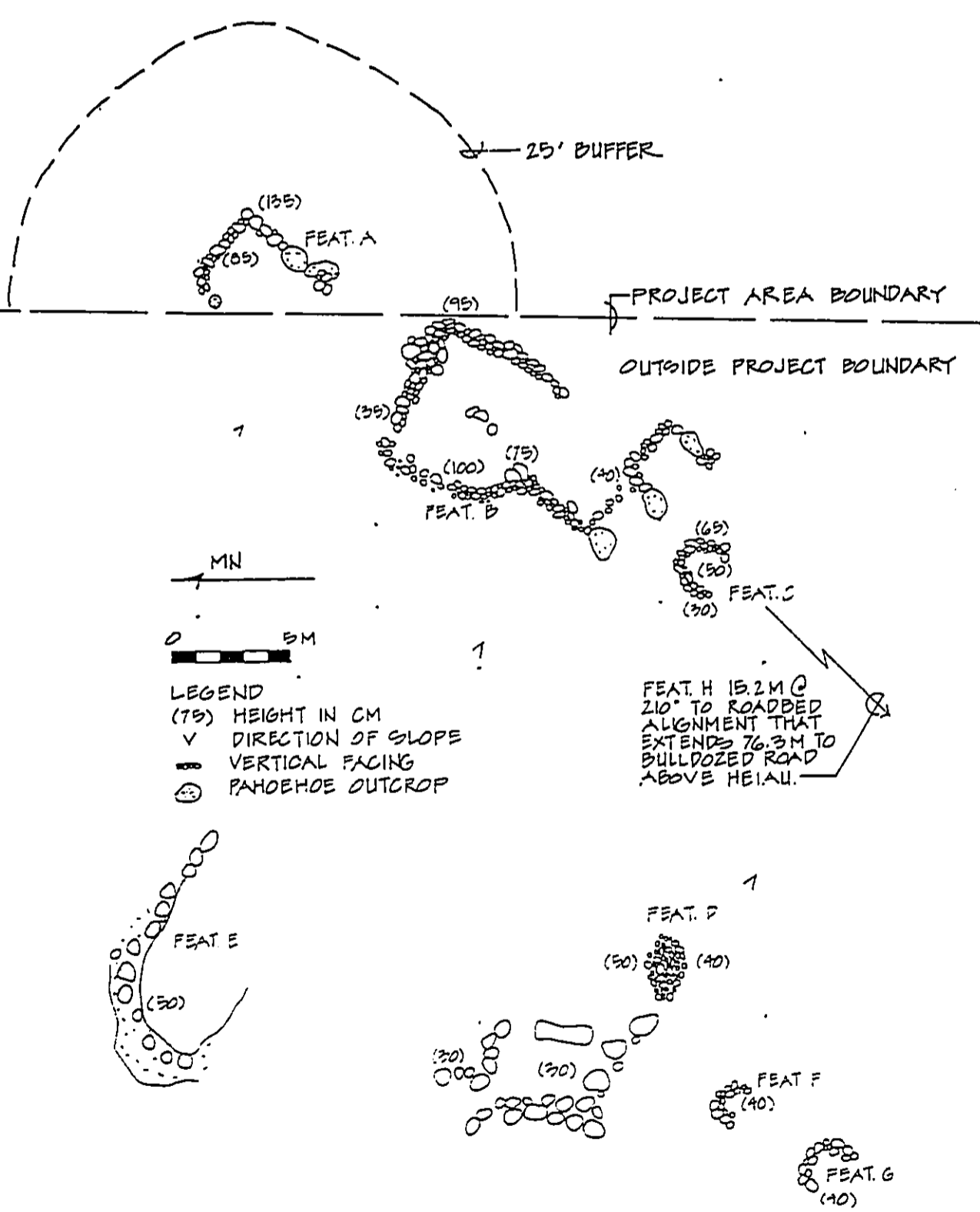


Figure 4 State Site 50-50-08-3184, Plan View

Feature C (outside project area) is a C-shaped enclosure located 2.0 m. (6.6 ft.) southwest of Feature B. Its wall is constructed of piled large cobbles and small boulders and measures 0.5 m. (1.6 ft.) wide by a maximum of 0.6 m. (2.0 ft.) high. The feature partially encloses an area measuring 1.5 m. (4.9 ft.) in diameter and is open to the southwest.

Feature D (outside project area) is a mound located 14.0 m. (46.0 ft.) west of Feature C. It is constructed of a mix of loosely piled small and medium boulders. Its surface is roughly level and contains a depression at its center. The mound measures 3.0 m. (9.8 ft.) E/W by 2.0 m. (6.6 ft.) N/S. Two alignments are associated with the mound. The first alignment is an L-shape that extends northwest from the west edge of the mound, it measures 6.0 m. (19.7 ft.) NW/SE by 6.0 m. (19.7 ft.) N/S. The second alignment is an L-shape within the first, it measures 2.5 m. (8.2 ft.) N/S by 3.0 m. (9.8 ft.) E/W. Both alignments are approximately 0.3 m. (1.0 ft.) in height and are constructed of boulders and cobbles. A large pahoehoe slab is also present at the east end of and between the two alignments.

Feature E (outside project area) is a cobble and small boulder alignment modifying the edge of a pahoehoe outcrop. Feature E is situated 17.0 m. (55.8 ft.) northwest of Feature B. The alignment roughly forms a U-shaped enclosure open to the southeast, measuring 8.0 m. (26.2 ft.) E/W by 4.0 m. (13.1 ft.) N/S. The alignment is one course high and measures 0.5 m. (1.6 ft.) high from the rocky soil interior to the top of the alignment.

Feature F (outside project area) is a small C-shape enclosure situated 4.0 m. (13.1 ft.) south of Feature D. It measures 1.5 m. (4.9 ft.) N/S by 2.0 m. (6.6 ft.) E/W and is open to the south/southwest. The enclosure measures 0.4 m. (1.3 ft.) in height and is constructed of cobbles and small boulders.

Feature G (outside project area) is a second C-shape enclosure situated 3.0 m. (9.8 ft.) southeast of Feature F. It measures 2.5 m. (8.2 ft.) NW/SE by 2.0 m. (6.6 ft.) NE/SW and is open to the southwest. The enclosure measures 0.4 m. (1.3 ft.) in height and is constructed of cobbles and small boulders.

Feature H (outside project area) is a roadbed alignment located 15.2 m. (49.8 ft.) southwest of Feature C. The alignment measures 76.2 m. (249.9 ft.) in length, extending *makai* (southwest) to the bulldozed access road above Ukumehame *heiau* site 50-50-08-03. The alignment is not more than 0.4 m. (1.3 ft.) in height and is stacked one to two courses high.

No artifacts or midden were observed at the site. Features A through C are likely permanent habitation structures, while Feature D may represent a burial monument. Features E, F, and G are likely agricultural features related to the habitation complex. Feature F is probably the original access road alignment constructed most likely in historic times and relating to early industrial agricultural endeavors (i.e. sugarcane production).

State Site #: 50-50-08-4367
Site Type: Complex
Function: Permanent Habitation
Probable Age: Prehistoric
Condition: Good
Dimensions: 44.5 m.² (1980.5 ft.²)
Elevation: 220 ft. a.m.s.l.

Description: Site 50-50-08-4367 is a site complex comprising four features, a C-shaped enclosure, a stone and earthen terrace, an alignment, and a bi-level terrace (See Figure 5). The site is situated on the western slope of Ukumehame Gulch approximately 150 feet downslope of Pole 68. The vegetation consists of *kiawe* and grasses. Site 50-50-09-4367 is considered a permanent habitation site. Marine midden and *Conus* sp. shell were observed at the site. The enclosed area between Features B, C, and D, through which a barbed-wire fence runs, is relatively level soil and appears to have been utilized.

Feature A: Feature A is a small C-shaped enclosure situated in the northwest corner of the complex, and directly abuts the northwest corner of Feature B. The enclosure measures 3.5 m. (11.5 ft.) N/S by 2.0 m. (6.6 ft.) E/W with a maximum height of 0.3 m. (1.0 ft.). The interior is relatively level soil. The eastern portion of the enclosure is comprised of a portion of the face of Feature B. The enclosure is open to the south.

Feature B: Feature B consists of a stone and earthen terrace situated in the central portion of the complex. The terrace measures 6.0 m. (19.7 ft.) N/S by 4.0 m. (13.1 ft.) E/W with a maximum height of 0.7 m. (2.3 ft.). The terrace is constructed of stacked and piled boulders and cobbles along the east, west, and southern perimeter. The interior of the terrace is level soil and the northern edge abuts the natural slope. Portions of the southern and eastern edges of the terrace are faced.

Feature C: Feature C is an alignment extending from the northeast corner of Feature B to the northern portion of Feature D. It measures 4.0 m. (13.1 ft.) N/S and is 1.0 to 1.3 m. (3.3 to 4.2 ft.) E/W wide. The height ranges from 0.4 to 0.7 m. (1.3 to 2.3 ft.). It is constructed of stacked and piled boulders. The northern portion is well-faced in portions. The southern portion is stacked. An old cattle barbed-wire fence runs through Feature C.

Feature D: Feature D consists of two cross-slope terraces oriented in a north/south direction. The larger of the two abuts one end of Feature C; it measures 12.5 m. (41.0 ft.) N/S, is flush with the terrain on the *mauka* (west) side and has a maximum height of 0.8 m. (2.6 ft.) along the *makai* terrace wall. This wall is a rough alignment of staked and piled cobbles and boulders. The smaller terrace is situated approximately 1.0 m. (3.3 ft.) east of the larger terrace and is similar in construction. The terrace measures 4.1 m. (13.4 ft.) N/S and is 0.5 m. (1.6 ft.) in height.

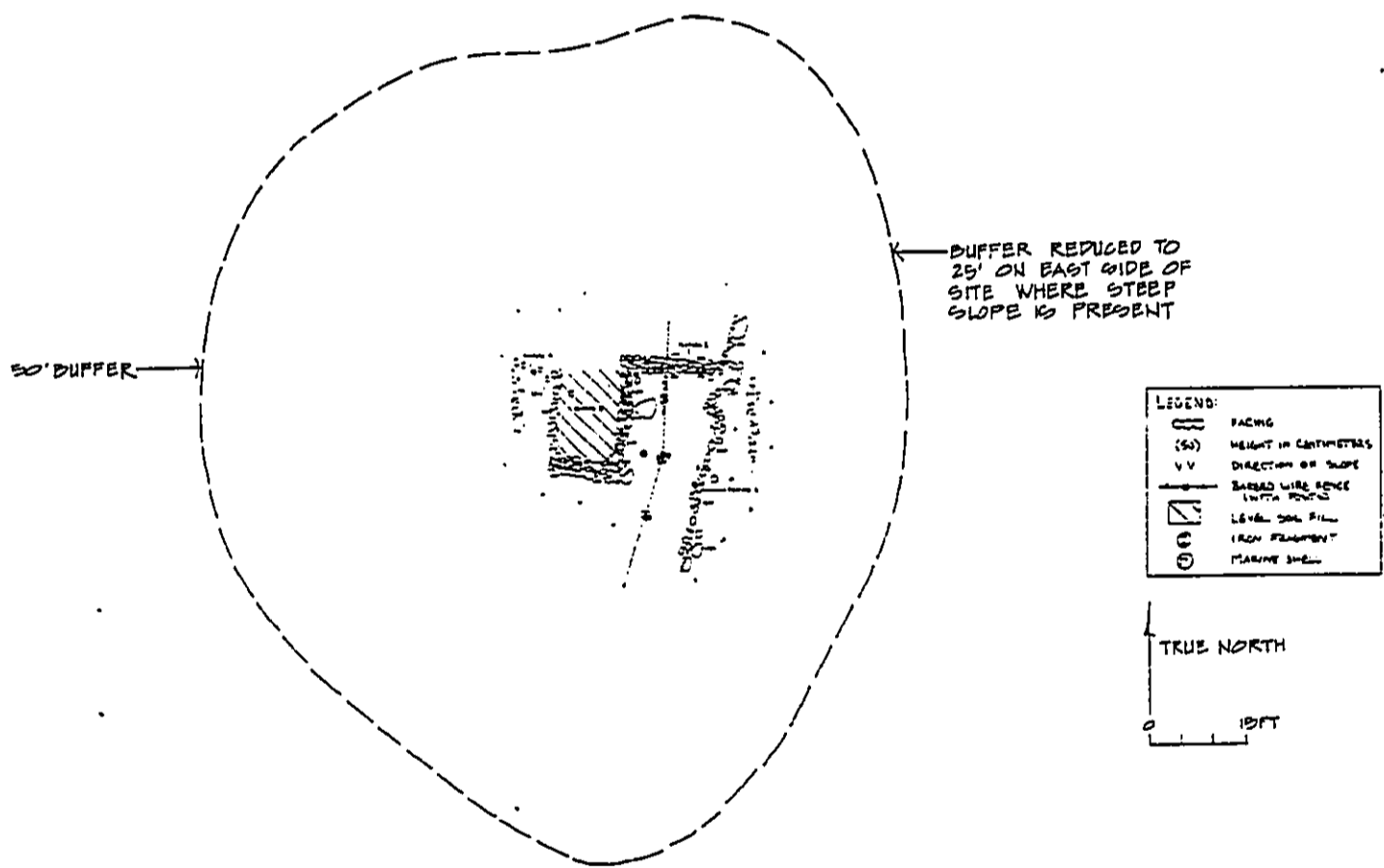


Figure 5 State Site 50-50-08-4367, Plan View

State Site #: 50-50-08-4381
Site Type: Petroglyphs and cultural scatter
Function: Temporary/Recurrent Habitation
Features (#): 22

Description: Site 50-50-08-4381 is comprised of 22 petroglyph boulder features, and an area of cultural scatter (See Figure 6). The site is situated on the eastern ridge line of Ukumehame Gulch to the west of the site 3167 cattle wall, *mauka* of Hiki'i *heiau*. The site area extends approximately 220 m. (*mauka/makai*) from Hiki'i *heiau* toward the existing wooden power poles, and from the western side of site 3167 to the steep sloping edge of the eastern side of Ukumehame Gulch (approximately 35-40 m. wide). Petroglyph occurrences cease approximately 122 m. (400 ft.) *makai* of the wooden power poles.

Twenty-two petroglyph features comprised of both human figures and abstract shapes, were observed on large boulders scattered along the western edge of the site area. These petroglyphs ranged in size from 10 cm. tall by 15 cm. wide, to 30 cm. tall by 215 cm. wide. Various types of marine midden and lithic material were also observed in all sections of the site area. Vegetation at the site consists of *kiawe*, and various grasses. The site is considered a work area and habitation site. Excavation potential is good.

State Site #: 50-50-08-4438
Site Type: Ditch
Function: Irrigation - Agriculture
Probable Age: Historic
Condition: Good
Dimensions: Not applicable
Elevation: Not applicable

Description: State Site 50-50-08-4438 is a working historic cane irrigation ditch consisting of several component features. The site is located along the western side of Ukumehame Gulch extending *makai* to a small reservoir located in the cane fields. The *mauka* portion of the ditch utilizes a large portion of the prehistoric *'auwai*, therefore preservation is recommended for this site. Vegetation in the area consisted of *kiawe*, *'opiuma*, ginger, sugarcane, klu, java plum, and various grasses.

Site -4438 irrigation ditch has its origins at the *mauka* boundary of the project area within Ukumehame Gulch streambed where a weir, water control wheel, and ditch intake have been installed. From the intake location, the stone and mortar ditch travels across slope maintaining its elevation along the western cliff face of the gulch. At the border of the non-cultivated scrub land and cultivated canelands the ditch angles steeply down slope forming a flume. This flume section continues down slope between the cane fields and the western side of the Ukumehame streambed until it reaches a flat area at the base of the foothills. At this point the flume begins to level out and makes a sharp eastward turn into a siphon. The siphon extends down the west side of the stream bank, crosses over Ukumehame Stream, and up the east side of the stream bank where it then reverts back to the open stone and mortar ditch as seen in the *mauka* sections of the structure. The open ditch then extends in an east/west direction and empties into a reservoir located in the middle of the canelands. Site -4438 passes nearby Land Commission Awards #3702 and #5410, Apana 3.

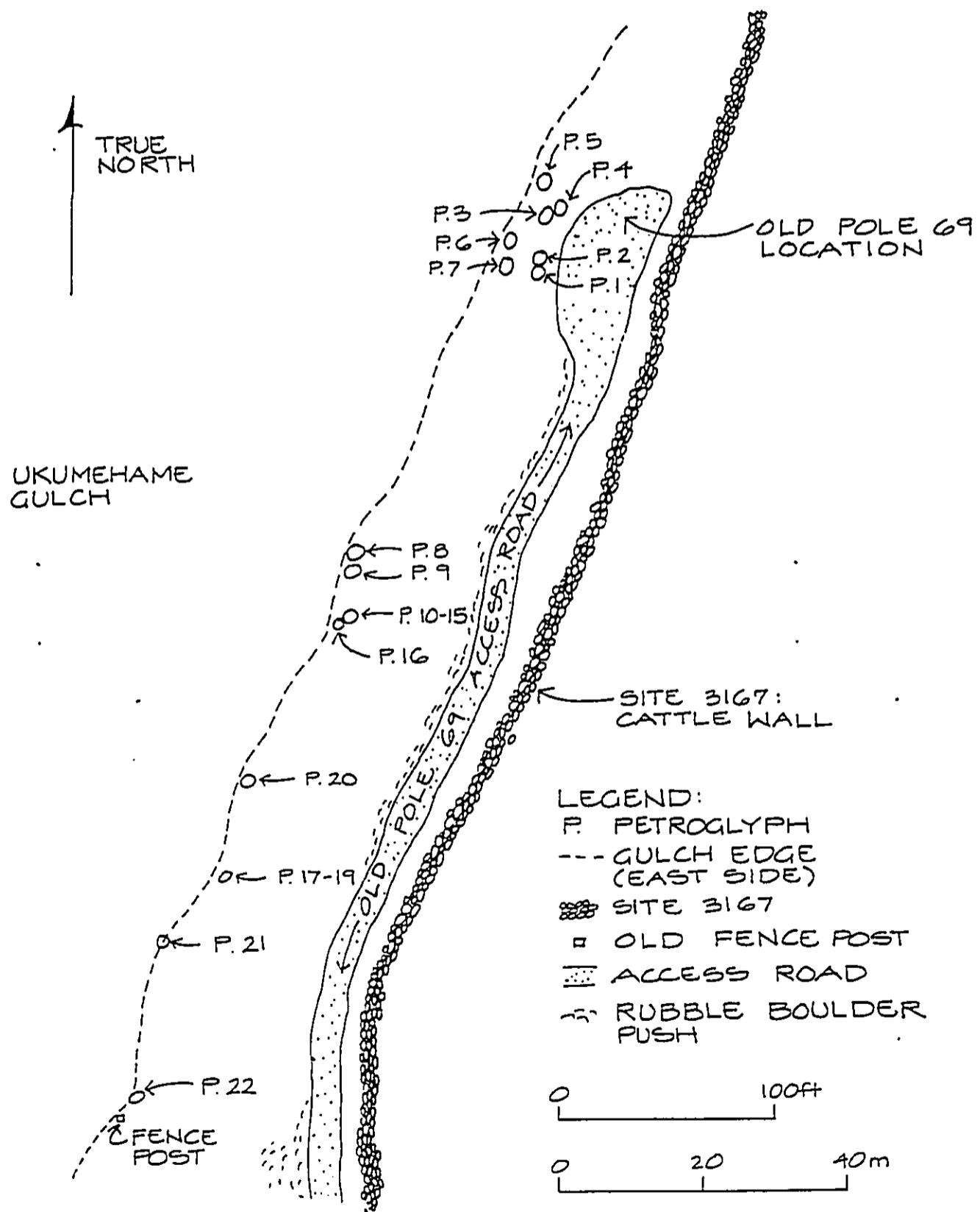


Figure 6 Plan View Map of Site 4381, Petroglyph boulders

The ditch and its component features are all constructed of small to medium boulders, stone slabs, and mortar. Width of the ditch ranges between 1.0 m. (3.3 ft.) and 1.4 m. (4.6 ft.), and between 0.5 m. (1.6 ft.) and 1.1 m. (3.6 ft.) deep. The floor of the ditch is unpaved in most areas, however in several sections of the flume as well as the intake area around the siphon mortar has been poured to line the floor. The *makai* section of the open ditch appears to have been constructed only of mortar as the sides of the ditch in this area appear to have been constructed from cement pre-forms leaving perfect rectangular shaped sides.

State Site #: 50-50-08-4451
Site Type: Platform
Function: Permanent Habitation
Probable Age: Prehistoric/Historic
Condition: Fair
Dimensions: 91 m.² (1,014.8 ft.²)
Elevation: 40 ft. a.m.s.l.

Description: Site -4451 consists of a platform atop a boulder outcropping located on the western edge of Ukumehame Stream, between Site -4452 agricultural field complex, and Ukumehame stream, directly adjacent to an unimproved dirt road (See Figure 7). The terrain slopes gently to the south with a steep slope into Ukumehame Stream to the east, and is characterized by a shallow soil surface over a rocky alluvial substrate. Vegetation at the site consists of tamarind, *hiawe*, and various grasses.

The platform is roughly rectangular, measuring 7.0 m. (23.0 ft.) E/W by 6.5 m. (21.3 ft.) N/S and is raised along its west, north, and east sides. The eastern side is constructed of small to large waterworn basalt boulders stacked 2-5 courses high attaining a maximum height of 70 cm. The north and west sides are constructed of steep sloping berms of soil and boulder mix each with a maximum height no greater than 40 cm. The southern side of the platform is covered by a layer of soil which gradually slopes *makai* into tall grasses making the southern boundary of the site difficult to determine. A small section of stone paving is evident at the *makai* end of the eastern side of the platform, possibly indicating the southern edge of the platform. The interior of the platform consists of a substantial soil deposit with no stone paving. Cultural material observed at the site consisted of a single piece of shell midden (*Conus Sp.*) one basalt core, and several glass bottle fragments.

Site -4451 platform appears to post-date the Site -4452 agricultural field complex identified to the west of the bulldozed road. The platform was constructed atop an abandon *lo'i* and used in historic times, as evidenced by the existence of historic artifacts at the site, the relatively low paucity of indigenous artifacts, and possibly its close proximity to a historic dam directly adjacent to the platform in Ukumehame stream. Also, personal communication with a Mr. David Duey, whose parents reconstructed the *lo'i* just *mauka* and east of the project area, revealed that in the late 1800s two brothers resided at the house until they had an argument which proved fatal to one brother. The house had since burned down (long ago), and no one has resided there since (per. comm., May 28, 1997). Any direct connection with the historic dam is unclear.

Testing Results

A one square meter test unit was excavated in the southeast corner of the platform surface (see Figure 7). Excavations were carried out to investigate stratigraphy and to yield radiocarbon dates which would inform on habitation chronology. The unit was excavated to a depth of 96 cm. below the terrace surface. Five distinct stratigraphic units, designated Stratum I through V, were identified during the testing.

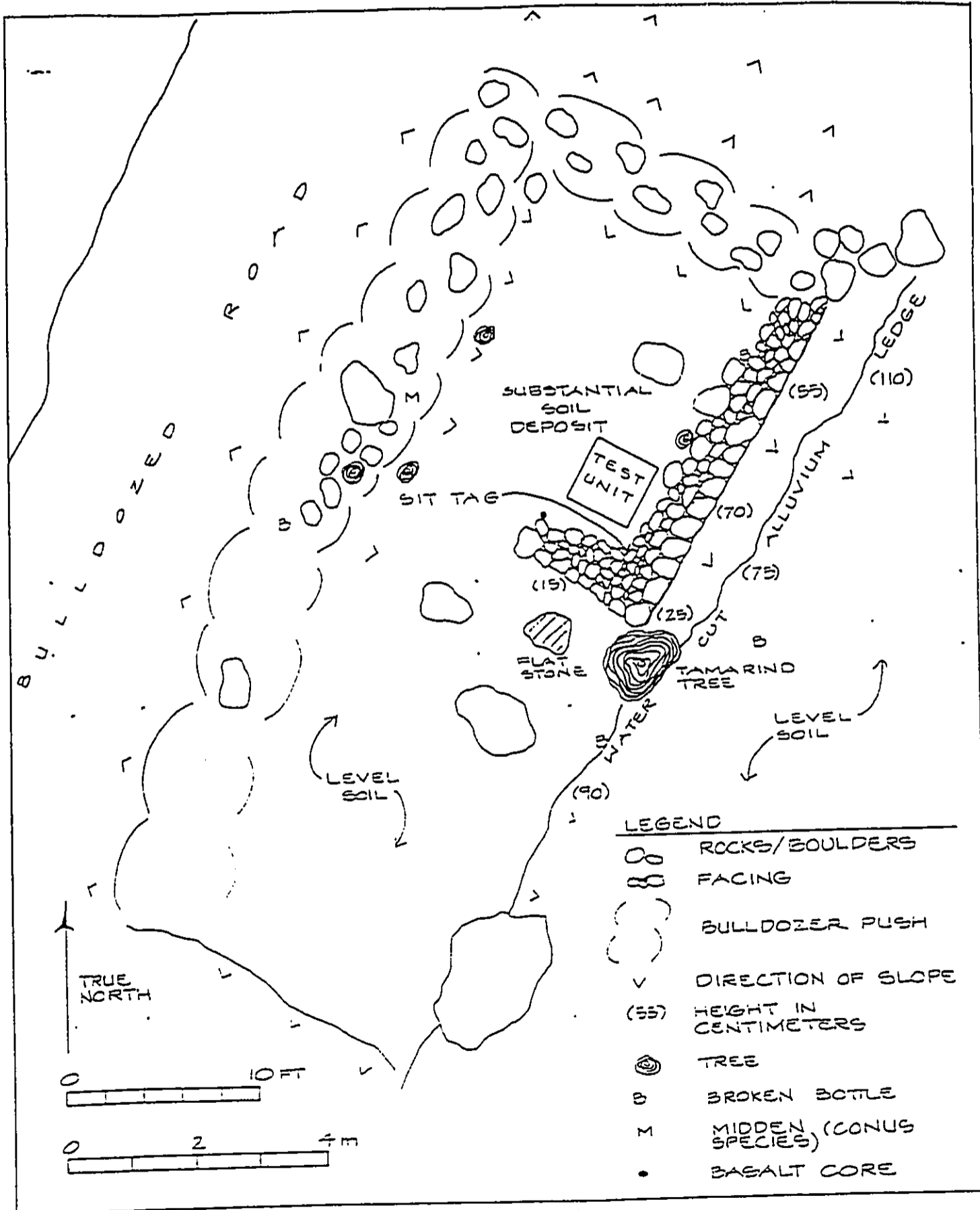


Figure 7 State Site 50-50-08-4451. Plan View. Showing the Location of Test Unit 1

State Site #: 50-50-08-4452
Site Type: Complex
Function: Agriculture
Probable Age: Prehistoric
Condition: Fair/Good
Dimensions: 9,416 m.² (101,500 ft.²)
Elevation: 100 ft. a.m.s.l.

Description: Site -4452 is an complex consisting of numerous terrace features (24 features recorded) associated with intensive wetland agriculture or *lo'i* (agricultural pond/field) used for the cultivation of taro (See Figure 8). Site -4452 is located on the western side of a crook in Ukumehame Stream directly adjacent to the western edge of house site -4451. Two cane irrigation control access roads run through the site and extend mauka to dams which mark the beginnings of the irrigation ditches. The first ditch constructed of stone and mortar is channeled out of the stream and flows along the western face of the gulch. This ditch was probably constructed on the original *'auwai* system as it appears to be the main water source for these *lo'i*. This site has added significance because a portion of the irrigation ditch (50-50-08-4438) is located nearby to LCA claim #3702 & #5410 awarded to David Malo, an important person in Hawaiian history who was interested in Ukumehame during the 19-century period. David Malo was one of a few men who had been an important *konoiki* for Hoapili Kane, the then Governor of Maui who had most of his lands taken away in 1847.

Site -4452 terraces are constructed in two fashions, as vertically faced stone walls and mounded, sloping berms of soil and stone. The stone walls are constructed of small to large weathered and water-rounded vesicular basalt cobbles and boulders stacked vertically and well faced except where recent collapse has occurred. These walls range from 25 cm. tall, 1 to 3 courses, to 120 cm. tall, 4 to 6 courses. Most of the walls are 60 to 100 cm. thick with cobbles set in between the boulders. The berm walls are constructed mostly of soil with less than 60% basalt cobble inclusions. These moderately to steeply sloping berms are packed soils. These types of walls seem to be utilized more on the perimeters for shoring up the *lo'i* and in areas where natural slope is sufficient to provide for a lower terrace but not steep enough to warrant shoring the upper terrace with a stone wall. Also, with the disadvantage of heavy ground vegetation it was difficult to determine if some of these walls were actually collapsed stone walls. The terrace interiors consist of deep, level soil deposits with scattered cobbles on the surface from the collapsed walls.

State Site #: 50-50-08-4454
Site Type: Complex
Function: Temporary/Recurrent Habitation
Features (#): 3 (only Feature A is located in project area)
Probable Age: Prehistoric
Condition: Good
Dimensions: 30.0 m.² (98.5 ft.²)
Elevation: 330 ft. a.m.s.l.

Description: Site -4454 is a complex of three features surrounding a large boulder at the edge of the western cliff of Ukumehame on the alluvial plain (See Figure 10). Two of the features, a C-shape, and a rock shelter, utilize the large boulder as a natural wind block and ceiling. The third feature is a C-shape enclosure just above the large boulder on the alluvial plain. The surrounding terrain gently slopes *makai* and to the west, while the cliff drops off to the east. Vegetation consists of *hiawe*, *klu*, and grasses. The property boundary bisects the site.

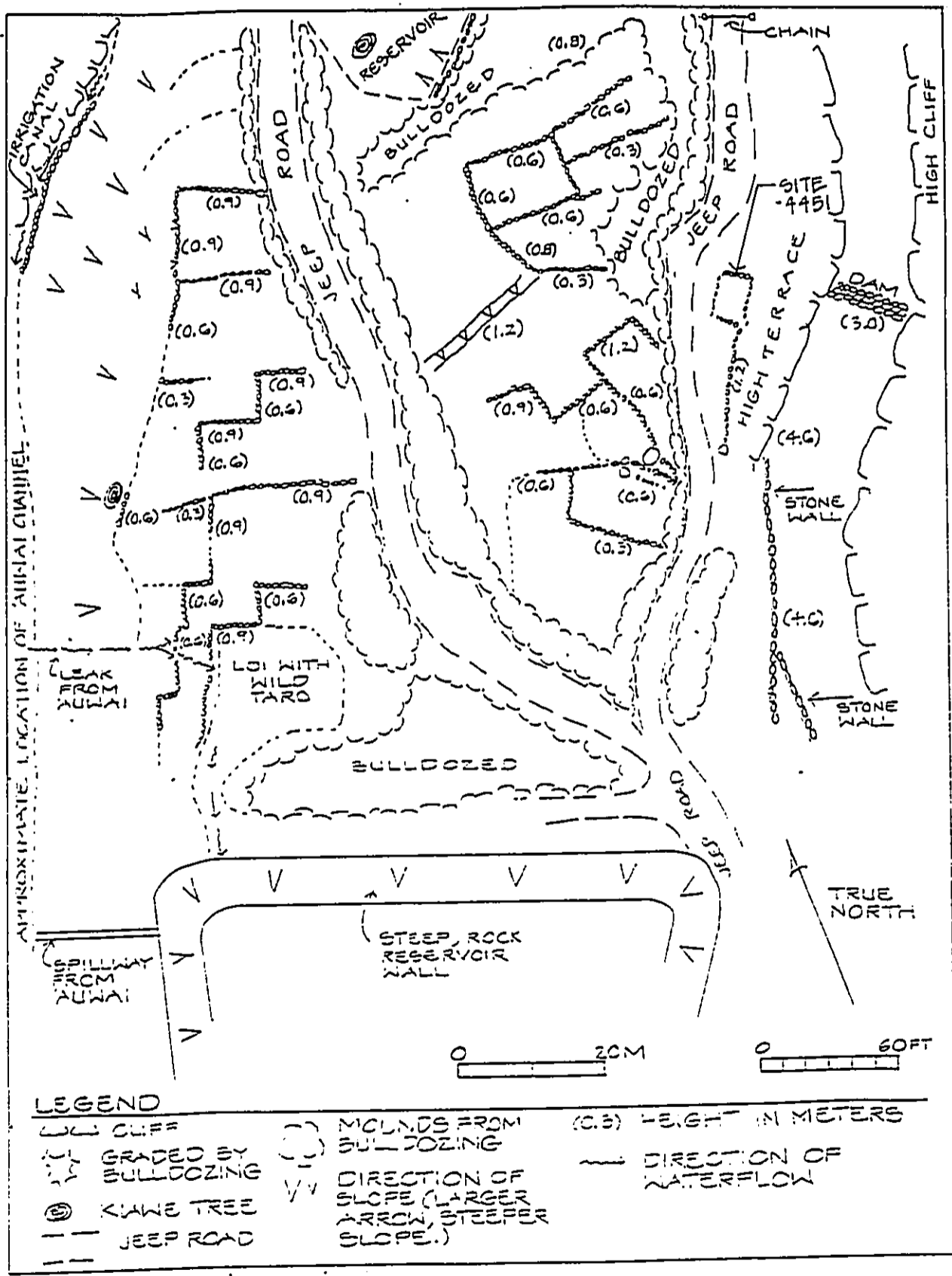


Figure 8 State Site 50-50-08-4452, Plan View

Feature A: Feature A is a C-shaped enclosure which utilizes the large boulder as the west wall, thereby providing wind protection. The wall is constructed of weathered sub-angular cobbles and boulders faced three to five courses to a height of 0.8 m. (2.6 ft.). It extends from the northeast corner of the boulder, which stands 2.1 m. (6.9 ft.) tall and measures 2.5 m. (8.2 ft.) N/S by 5.5 m. (18.0 ft.) E/W. The wall is vertically faced and provides protection from the wind coming out of the valley. Feature A is in good condition and offers fair excavation potential. The C-shape is interpreted as a temporary habitation shelter.

Feature B: Feature B is a rock shelter on the southwest side of the boulder. Modifications consist of a mounded wall enclosing an overhang by forming the east, west, and south walls. This mound in effect levels the ground surface as it slopes away *makai*. The walls are piled approximately 1.0 to 1.5 m. (3.28 to 4.9 ft.) wide and have a maximum height of 0.4 m. (1.3 ft.). The shelter contains cobbles sloping down to a rocky soil floor. The northwest corner of Feature B adjoins the southeast corner of the Feature C enclosure. Feature B is in fair condition and offers fair excavation potential. The overhang is interpreted as a temporary habitation shelter.

Feature C: Feature C is a rectangular enclosure situated immediately northwest of the large boulder. The enclosure measures approximately 5.0 m. (16.4 ft.) NW/SE by 5.0 m. (16.4 ft.) NE/SW with a maximum wall height of 0.4 m. (1.3 ft.) on the interior of the *mauka* wall. The walls are constructed of cobbles and small boulders stacked and piled 1 to 3 courses high. The entire *mauka* wall is faced on both sides. The northwest and southeastern walls are more like alignments, and the entire *makai* portion of the enclosure is completely collapsed, almost non-existent. The enclosure has a soil and scattered cobble interior. A basalt core, volcanic and basalt flakes, marine midden, and a coral abrader were observed at the site. Feature C is in remnant condition although it offers good excavation potential. The enclosure is interpreted as a temporary habitation feature.

State Site #:	50-50-08-4455
Site Type:	Complex
Function:	Recurrent habitation/Quarry /Agriculture
Probable Age:	Prehistoric/Historic
Condition:	Remnant
Dimensions:	145.5 m. ² (21,168 ft. ²)
Elevation:	200 ft. a.m.s.l.

Description: Site -4455 is a series of at least nine terraces, a C-shape enclosure, and two modified outcrops situated at the base of the mountain slope just *mauka* of the existing cane fields (See Figure 11). The terrain steeply slopes at the uppermost terraces and fans out into a gentle slope *makai*. The slope has abundant outcrops with intermittent areas of shallow soil and is vegetated with *hiawe* and grasses.

Feature A: Feature A is a series of closely spaced terraces buttressing the base of a steeply sloping ridge, curving around the ridge crown just below a prominent outcrop which is in line with the *mauka* property boundary. The terraces measure approximately 32.0 to 54.0 m. (105.0 to 177.1 ft.) long and continue around the ridge and out of the project area. More terraces also exist *mauka* of the project boundary. The terraces range from 20 to 80 cm. (0.7 to 2.6 ft.) tall and are constructed of faced cobbles and boulders stacked and piled 2 to 5 courses high. The terraces are fairly uniform except where the terraces follow the terrain and incorporate exposed outcrops. All the terraces have intermittent areas of collapse and are all collapsed at the ridge crown. Basalt cores and debitage, coral, and marine midden were observed throughout the site. The debitage is thought to have been mined, possibly in pre-historic times, from nearby outcrops and exposed dikes. The upper five

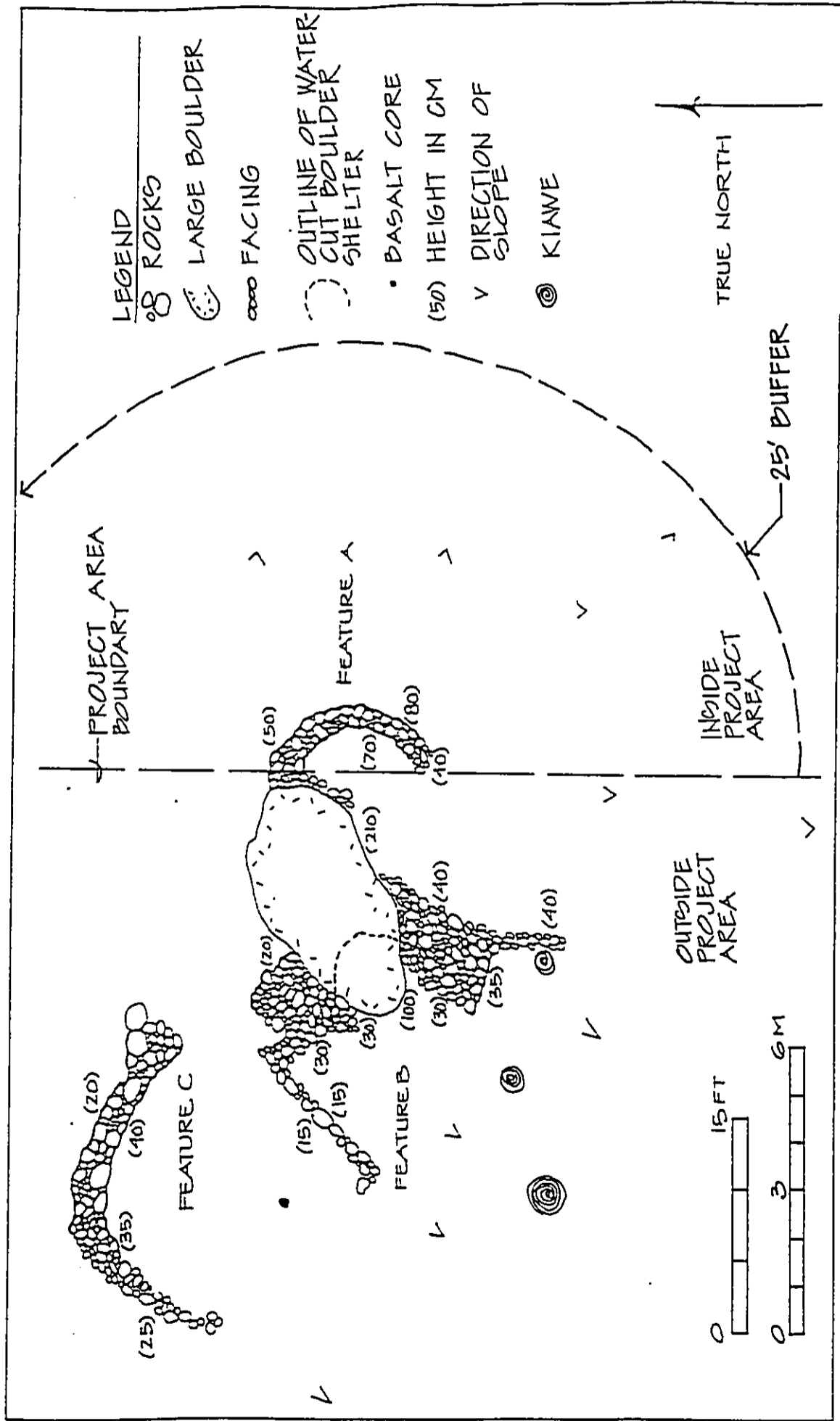


Figure 9 State Site 50-50-08-4454, Plan View

terraces are in good condition. The lower four are in remnant condition and may have been impacted by grading for the cane access and power line access roads. Similar terraces have been reported in Launiupoko by Paul H. Rosendahl, Ph.D., Inc. (Graves 1991). In a telephone interview with Herbert Kinores, Pioneer Mill Co. ranch foreman, Mr. Kinores reported that "the earlier agriculture terraces and ditches were plainly evident when cattle were being grazed...(the terraces) were always attributed to the earlier plantation activities" (*Op cit.*: 7). The Site -4455 terraces are thought to be of similar origin and possibly related to the historic flume wall (Site -3170) which skirts *mauka* of this site. It is unclear whether the cultural material observed was deposited prior to the construction of these terraces (i.e., prehistoric times) or is associated with early plantation crews. Excavation potential is considered fair.

Feature B: is a modified outcrop located directly *mauka* of Feature A terraces. The feature consists of an exposed section of dike which has been extensively mined. A high concentration of basalt cores and debitage were observed in the area surrounding the feature.

Feature C: is a modified outcrop situated west of the terraces at the base of the slope. Modifications consist of a large semi-circular boulder alignment abutting the *makai* edge of the outcrop. The top of the terrace is level pahoehoe outcrop with a shallow soil deposit. The terrace measures 3.5 m. (11.5 ft.) in diameter and has a height of 0.75 m. (2.5 ft.). The site is in fair condition and offers poor excavation potential.

Feature D: Feature D is a C-shaped enclosure formed by a large boulder and wall segment situated immediately west of Feature C. The boulder is 2.0 m. (6.6 ft.) in diameter and stands 1.0 m. (3.28 ft.) tall. The wall extends from the southeast corner of the boulder and curves around the *makai* edge. The wall measures 3.5 m. (11.5 ft.) long and is constructed of small to large cobbles stacked and faced to a height of 0.8 m. (2.6 ft.). The enclosure is open to the west. The interior consists of rocky soil. Feature D is in fair condition and offers poor excavation potential. It is possible that this shelter predates the terraces and is associated with other prehistoric temporary habitation shelters located in the vicinity.

Testing Results

Limited testing was conducted at Feature A of Site -4455 to assist in functional interpretation of the site and to collect charcoal for radiocarbon dating analysis. A one meter by 50 cm. test unit was excavated 13.5 m. (44.3 ft.) at 219°TN from the datum point located on Feature B modified outcrop. The test unit was placed on a level soil surface and also incorporated a section of the stone terrace facing. The base of excavation was determined upon reaching a sterile C-horizon soil layer.

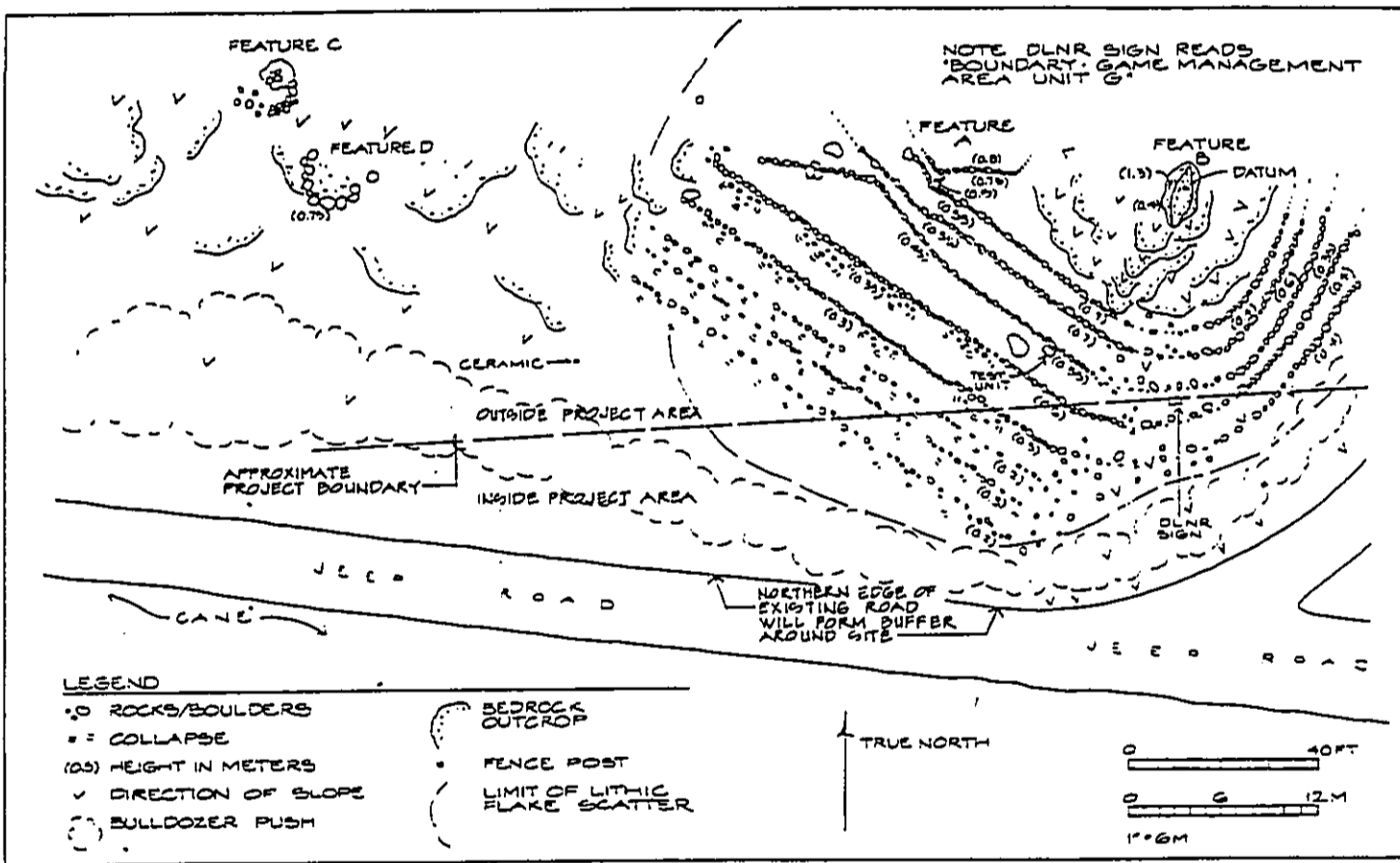


Figure 10 State Site 50-50-08-4455, Plan View, Showing Location of Test Unit 1

State Site #: 50-50-08-4456
Site Type: Complex
Function: Permanent Habitation
Probable Age: Prehistoric/Historic
Condition: Fair/Good
Dimensions: 219 m.² (47,916 ft.²)
Elevation: 40 ft. a.m.s.l.

Description: Site -4456 is a site complex consisting of four features (one terrace, one platform, one wall segment, one petroglyph boulder) located within Ukumehame Gulch directly *makai* of two Pioneer Mill reservoirs and *mauka* of all cultivated cane land (See Figures 12). All features lie integrated within an existing working pig farm and other related historic structures. Vegetation at the site consists of *kiawe*, *hi*, *kalo*, various types of ginger, assorted vegetables, and java plum. The site is presently occupied by Mr. Hinano Kaleleiki and family.

Feature A: Feature A is a roughly rectangular terrace feature with an associated L-shaped cement segment extending southward from the southern side of the terrace. The terrace measures 13.2 m. (43.2 ft.) N/S by 5.0 m. (16.4 ft.) E/W and is raised along its east, and south sides. The terrace is constructed of a level soil and cobble pavement retained by a medium boulder facing stacked 5 to 8 courses high along the east side, and a well-constructed cement section as well as boulder facing along the south. Both sides reach a maximum height of 1.1 m. (3.6 ft.).

Feature B: Feature B is a roughly rectangular platform perched upon an embankment directly above the western edge of Ukumehame stream approximately 13.4 m. (44.0 ft.) east of the Feature A terrace. The platform measures 10.6 m. (34.7 ft.) N/S by 8.8 m. (28.9 ft.) E/W and is raised along all sides. The platform is constructed of a level soil surface retained by medium boulder facing stacked 3-6 courses high and reaching a maximum height of 1.0 m. (3.2 ft.) along its eastern side. The platform is presently covered by numerous scrap metal items.

Feature C: Feature C consists of a faced wall segment located directly above the western edge of Ukumehame stream 16.0 m. (52.5 ft.) north from the Feature B platform. The wall segment measures 3.9 m. (12.8 ft.) in length and extends in a roughly a N/S direction. The wall segment attains a maximum height of 0.8 m. (2.6 ft.) along its western side with the eastern side remaining just above (10 cm.) the soil surface. No culture was observed at this feature location.

Feature D: Feature D consists of a single petroglyph positioned on the northeast side of a large boulder situated on the western edge of the site 64.5 m. (211.6 ft.) west of Feature C wall segment. The pecked petroglyph is composed of two connected human figures. The first figure measures 45.0 cm. high and approximately 37.0 cm. wide with the pecked surface no wider than 2.0 cm. The second and much smaller human figure is perched on the left shoulder of the larger figure. The two figures join together where the right foot of the small figure touches the left shoulder of the larger figure. The smaller human figure measures 22.2 cm. high and approximately 11.0 cm. wide, with the pecked surface no wider than 1.0 cm.

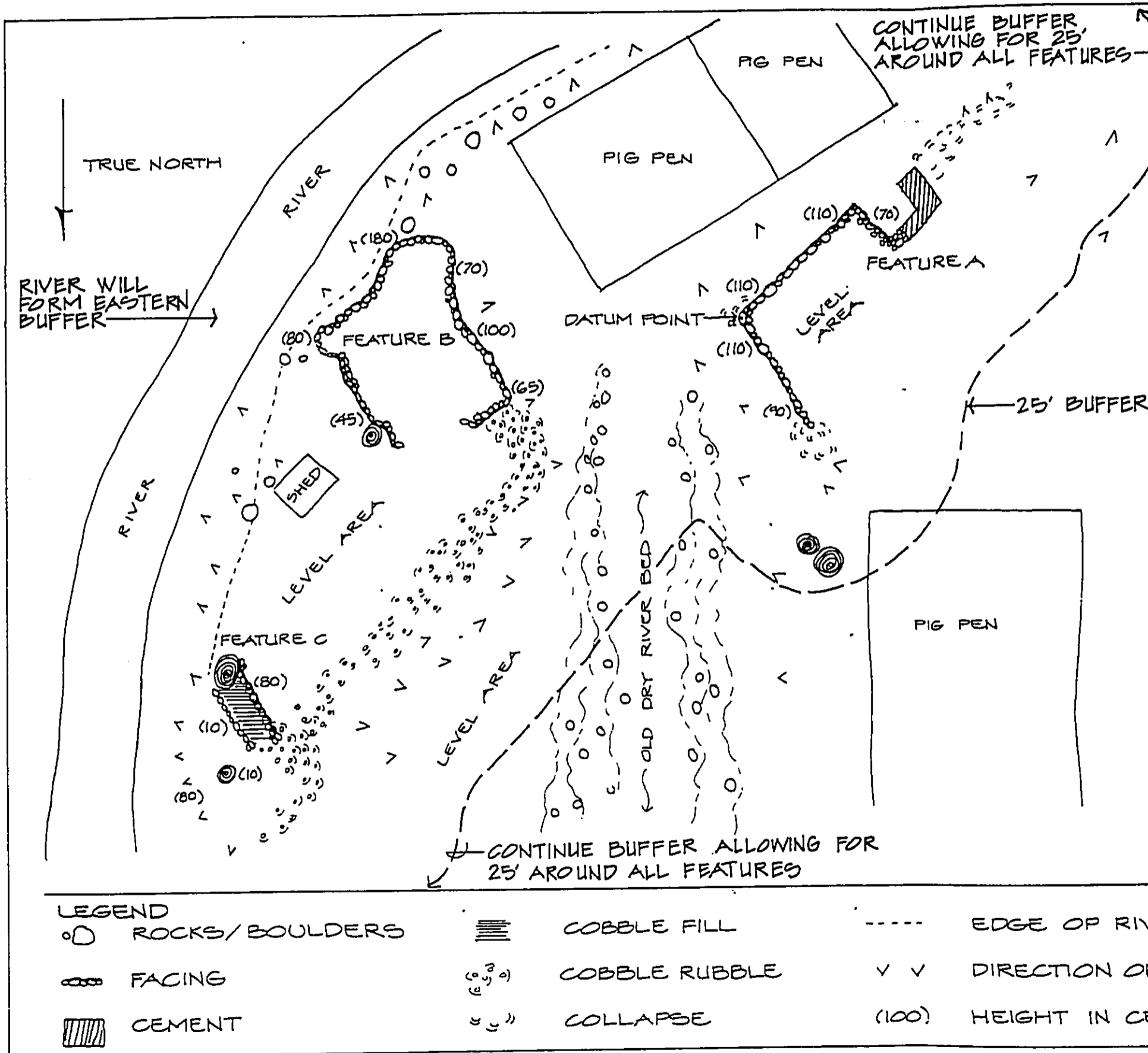
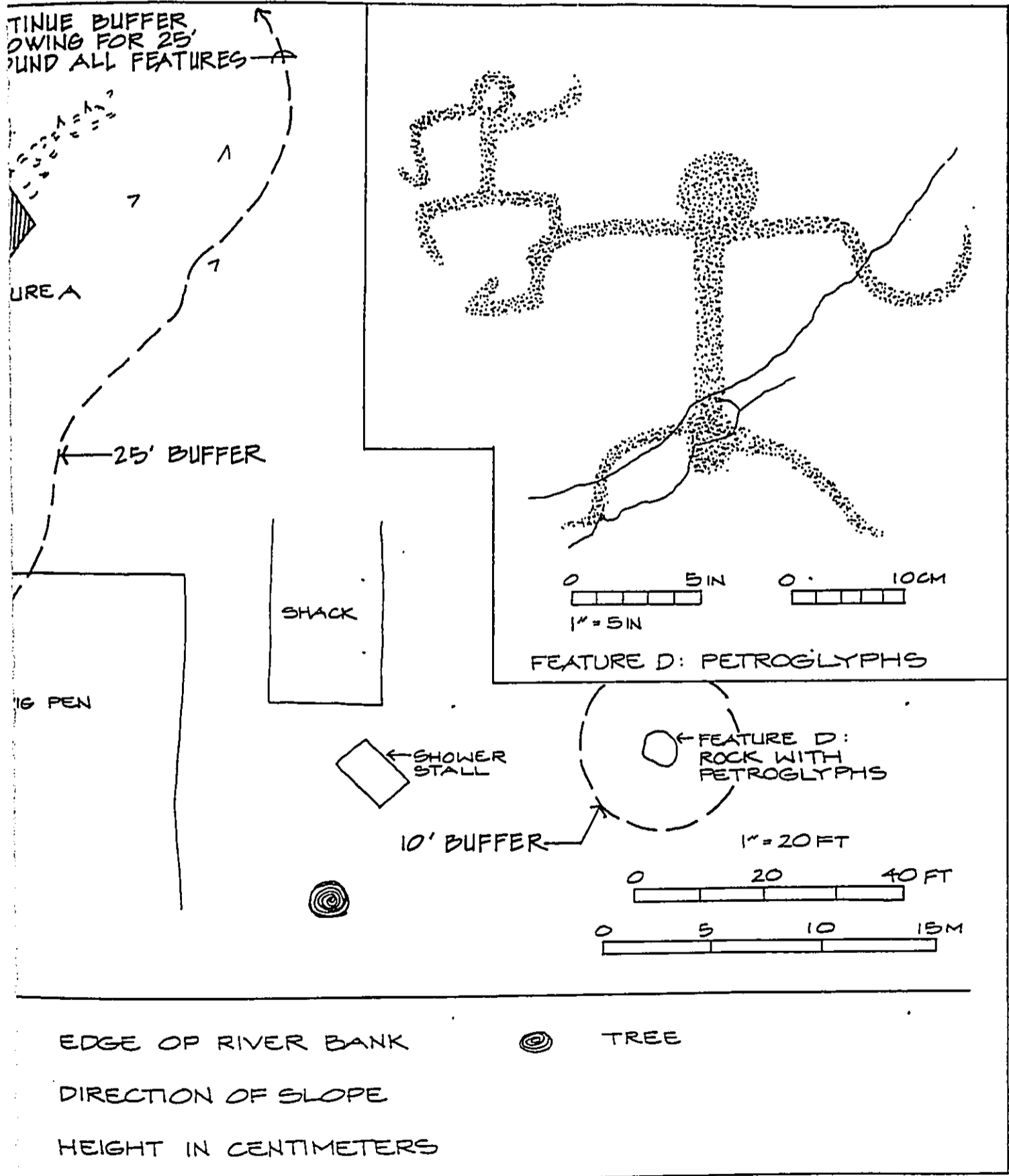


Figure 11 State Site 50-50-08-4456, Plan View



PROPOSED PRESERVATION MEASURES

The proposed mitigation for all archaeological sites to be preserved is one of avoidance and protection, except for sites -4438, an irrigation ditch, and -4456 which are actively in use and functioning and therefore should be allowed to remain in operation.

Table 2: Recommendations by site

State Site #50-50-08	Site/Feature Type and #	Formal Interpretation	Significance	Preservation Status	Buffer Zone
3165	4 enclosures, (2 ½ outside project area)	temporary/recurrent habitation	C,D	Avoidance and Protection	25 ft.
3184	5 enclosures, 2 alignments, 1 mound (only Feature A, an enclosure, is in the project area)	permanent habitation/possible burial, (Feature A is considered permanent habitation)	D, E* (Feature A is given only criterion D) only	Avoidance and Protection	25 ft.
4367	3 terraces, 1 alignment, 1 enclosure	permanent habitation	D	Avoidance and Protection	50 ft.
4381	22 petroglyphs and cultural scatter	permanent habitation	D,E	Avoidance and Protection	incorporated within preserve for Hiki'i Heiau
4438	1 irrigation ditch (operational)	agriculture	A,B,C,D	Protection and use	10 ft.
4451	1 platform	permanent habitation	D	Avoidance and Protection	10 ft.
4452	24 terraces	prehistoric intensive agriculture	C,D	Avoidance and Protection	10 ft.
4454	2 enclosures, 1 rock shelter (only Feature A and enclosure is in the project area)	temporary/recurrent habitation	D	Avoidance and Protection	25 ft.

State Site #50-50-08	Site/Feature Type and #	Formal Interpretation	Significance	Preservation Status	Buffer Zone
4455	9 terraces, 2 mod. outcrop, 1 enclosure (only Feature A, terraces, extend into the project area)	historic cane agriculture/ recurrent habitation/ quarry	C,D	Avoidance and Protection	The existing roadway and project boundary. The closest the road comes to Feature A is 10 ft.
4456	1 terrace, 1 platform, 1 wall, 1 petroglyph	permanent habitation	D	Avoidance and Protection	The buffer will utilize the stream along the west and a 25 ft. buffer on the north, south and east sides

Specific Preservation Measures by Site

Site -3165

Of the four features which comprise -3165, only two extend into the present project area. Feature A an enclosure, is bisected by the property line and Feature B, also an enclosure, is almost entirely within the project area. Only the northeast corner of Feature B extends outside of the project area. Features C and D of site -3165 are located outside of the present project area and therefore are not addressed here.

A buffer zone of 25 ft. will be flagged with yellow caution tape prior to any ground disturbing activities. Due to the sites location on the boundary of the project area, construction activities are not expected to encroach upon the buffer zone.

Site -3184

Only Feature A, a permanent habitation enclosure of site -3184, extends into the project area. A buffer zone of 25 ft. will be flagged with yellow caution tape prior to any ground disturbing activities. Due to the sites location on a steep slope and on the project boundary, construction activities are not expected to encroach upon the buffer zone.

Site -4367

All four of the features which comprise site -4367 are located within the present project area. The site is situated along the upper western edge of Ukumehame valley cliff that provides an excellent natural boundary to the east of the site. A buffer zone of 50 ft. surrounding the site will be flagged prior to construction activities. An access driveway is potentially going to be located to the west of the site but will not encroach within the 50 ft. buffer zone.

Site -4381

All of the 22 petroglyph boulder features of site -4381 are located within the project area. Site -4381 is located between site -3167, a north/south oriented cattle wall, and the eastern upper edge of the Ukumehame valley cliff, both of which provide excellent boundaries for the site. In addition Site -4381 lies completely within the preserve area for Hiki'i Heiau. The Hiki'i Heiau preserve area is delineated by site -3167, a cattle wall, which is to be preserved, within the project area, as a protective buffer for sites -02 and -4381. Construction activities will not encroach within the preserve area.

Site -4438

Site -4438, an irrigation ditch, is currently still carrying water and functions as part of the existing reservoir system. The preservation status of this site will include flexibility to maintain and improve the irrigation system in any way which is consistent with the design and integration of the system. For example, repairs and improvements should utilize building material of the same type (i.e. basalt rock and mortar) or dry stone stacking. Due to the extent of the site only the most intact and presently functioning portions are recommended for preservation (see Figure 2). The ditch will be preserved from where it enters the project area to where it empties into the southern most reservoir. The ditch will then be preserved from where it exits the aforementioned reservoir until it crosses Ukumehame Stream. From the stream crossing approximately 500 ft. more of the ditch will also be preserved. The only sections of the ditch not assigned for preservation are the western split and an approximately 120 ft. along the eastern end.

The buffer zone of 10 ft. will be flagged with yellow caution tape along both sides of the preserved portions of the ditch prior to any ground disturbing activities. The buffer will have to follow the road edge where the ditch parallels existing roads. Due to the large area that the site covers, crossings should be allowed, as long as the ditch is returned to its pre-construction or better condition after the completion of construction activities. In addition, the construction of outlets should be allowed as long as they conform to the general style of the existing ditch.

Site -4451

Site -4451, a habitation platform, is situated along the northeastern boundary of the project area in Ukumehame Valley. The site is bounded by an existing road to the west and Ukumehame Stream to the north, east and south. The stream provides a good natural boundary while the road provides a border to the west. Although this site was identified as a house site based on oral testimony, what is visible on the ground are *lo'i* terraces extending from the stream to the road with the portion adjacent to the road displaying disturbance from bulldozer push. For purposes of preservation, this site will be treated as an integral part of -4452, the *lo'i* complex (see below).

Site -4452

Site -4452, a complex of 24 agricultural terraces, is located in the north central portion of the project area. Some portions of this complex have well preserved, intact, nearly vertical *lo'i* walls while other portions have been eradicated by bulldozing. The preservation plan for this complex will include incorporation of single family residential building sites with the understanding that the intact *lo'i* walls will be integrated as landscape elements within the residential lots. The actual building sites and access roads should be designed to avoid damage to the *lo'i* walls.

Site -4454

Site -4454, a complex of two enclosures and one rock shelter. Only Feature A, an enclosure, is situated within the project area. The site complex is located along the north western boundary of the project area. No construction activities are expected in the area. A 25 ft buffer zone will be flagged prior to any construction activities.

Site -4455

Site -4455, a complex of 12 features, is located along the western boundary of the project area. Only a portion of Feature A extends into the project area. An access road to HECO pole 67 and an existing cane access road provide a good southern and eastern boundary for the portion of Feature A in the project area. The road does not extend within 10 ft. of Feature A at any location. The northern perimeter of the road should be flagged with yellow caution tape prior to any ground disturbing activities.

Site -4456

Site -4456, a complex of four features, is situated in the north central portion of the project area along Ukumehame Stream. A modern piggery is operating within the site complex. The stream provides an excellent natural boundary for Features A-C along their south and east sides. A buffer of 25 ft. along the north and west side should be flagged with yellow caution tape prior to any ground disturbing activities. Due to Feature D being removed from Features A-C a separate 10 ft circular boundary will be flagged around the large stone with a petroglyph figure.

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APPENDIX D
Archaeological
Preservation Plan
Approval Letter

Oct-08-2004 05:56pm
GOVERNOR OF HAWAII

From-STATE Historic Preservation

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October 2, 2000

Hallett H. Hammatt, Ph.D.
Cultural Surveys Hawaii
733 North Kalaheo Avenue
Kailua, Hawaii 96734

LOG NO: 26200 ✓
DOC NO: 0008MK12

Dear Dr. Hammatt,

SUBJECT: Review of An Archaeological Preservation Plan for Ten Sites within a 440 Acre Parcel
Ahupua'a of Ukumehame, District of Lahaina, Island of Maui
TMK: 4-8-02:09

Thank you for the opportunity to review the preservation plan which our staff received on July 20, 2000, (Hammatt 2000, *Review of An Archaeological Preservation Plan for Ten Sites within a 440 Acre Parcel Ahupua'a of Ukumehame, District of Lahaina, Island of Maui TMK 4-8-02:09... CSH ms.* A site visit was conducted by Dr. Melissa Kirkendall on September 13, 2000 to verify that the suggested protection measures would adequately protect the sites.

The preservation plan includes ten sites for which long term preservation is recommended. All sites will be avoided and protected. Buffer zones vary by site /feature type, ranging from 10' buffers on the three agricultural sites and one permanent habitation site, 25' for four temporary/recurrent habitation sites, and 50' for one permanent habitation site. One site is slated to be incorporated within the preserve for Hiki'i Heiau. Buffer distances are also dictated by topography. Seven of the sites either straddle the property boundary with land owned by the State of Hawaii'i, or are situated close to this boundary.

Interim protection measures recommended suggest that the sites be marked with flagged/delineated by yellow caution tape prior to any ground disturbance in the immediate vicinity.

The preservation plan is acceptable. Should you have questions, please contact Dr. Melissa Kirkendall (Maui/Lana'i SHPD 243-5169).

Aloha

Don Hibbard, Administrator
State Historic Preservation Division

MKjen

c: John Min, Director, Department of Planning, County of Maui, FAX 270-7634
Bert Ratt, County of Maui, Land Use and Codes, FAX 270-7972

APPENDIX E
Burial Treatment Plan

**BURIAL TREATMENT PLAN FOR THE
ARCHAEOLOGICAL INVENTORY SURVEY AND SUBSURFACE
TESTING OF A 440 ACRE PARCEL,
AHUPUA`A OF UKUMEHAME,
DISTRICT OF LAHAINA, ISLAND OF MAUI
(TMK 4-8-02: 09)**

by

Ian A. Masterson
and
Hallett H. Hammatt, PhD.

Prepared for
Sugar Way Ltd.

Cultural Surveys Hawaii
February 2000

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I. INTRODUCTION

A. Survey Location

Ukumehame *ahupua`a*, located on the south side of West Maui (Pu`u Kukui) between the *ahupua`a* of Waikapu and Olowalu, is in the judicial district of Lahaina, Maui in the Hawaiian Islands (Figures 1-4).

The 440-acre project area, in the *ahupua`a* of Ukumehame, comprises: (1) the lower stream valley and its flood plain to the *mauka* edge of Honoapi`ilani Highway along the seashore, and (2) portions of an ancient alluvial fan on both sides of the stream to the forest reserve line at an elevation of 200 ft. a.m.s.l. Most of the alluvial soils of the flood plain and alluvial fan have been cultivated in sugarcane by the Pioneer Mill plantation for almost one hundred years.

The coastal section of the project area is bordered on the east by the Ukumehame Shooting Range, and on the west by rocky, uncultivated, State land east of the "Teen Challenge" compound and Pioneer Mill Gate. The project area narrows where it extends *mauka* of the sugarcane lands, up Ukumehame Gulch, with the steep sides of the gulch generally serving as the east and west boundaries. Within the gulch, the *mauka* boundary of the project area is represented by a cement weir and section of cultivated wetland taro fields.

B. Inventory Survey Overview

Cultural Surveys Hawaii conducted an archaeological inventory survey and limited subsurface testing for the proposed reconfiguration of lots in a 440-acre parcel in Ukumehame *ahupua`a*. Fieldwork for the inventory survey was conducted between 27 May and 30 June 1997, directed by William Folk with a crew of two to four archaeologists. Results of the survey are detailed in an *Archaeological Inventory Survey and Subsurface Testing of a 440 Acre Parcel, Ahupua`a of Ukumehame, District of Lahaina, Island of Maui (TMK 4-8-02: 09)* (Devereux, *et al.*, 1998); this report also provides the foundation for the Burial Treatment Plan presented below. A total of sixteen sites and complexes were identified during the inventory survey. Of the sixteen sites identified, nine represent site complexes which comprise a total of 57 component features. However, this total number of features does not account for the features of the two *heiau* (State Site 50-50-08-02, 50-50-08-03) with numerous concentrations of internal features at each location. Another site (State Site 50-50-08-4381) consisted of 22 petroglyph boulders previously recorded during the Ma`alaea to Lahaina 69kV transmission line survey. Also identified during the transmission line survey was a cattle wall of historic age (State Site 50-5-08-3167). The remaining identified sites consisted of single-featured sites, bringing the total number of features observed to 82. Additional sites located in the project area consisted of irrigation features related to historic sugarcane cultivation.

Five of the sites were evaluated as having "cultural or religious significance" (Criterion E), one of which, site 50-50-08-4381, is not relating to a burial component but refers to the petroglyphs at the site. Of the four remaining sites, one is a site complex (50-50-08-3184)

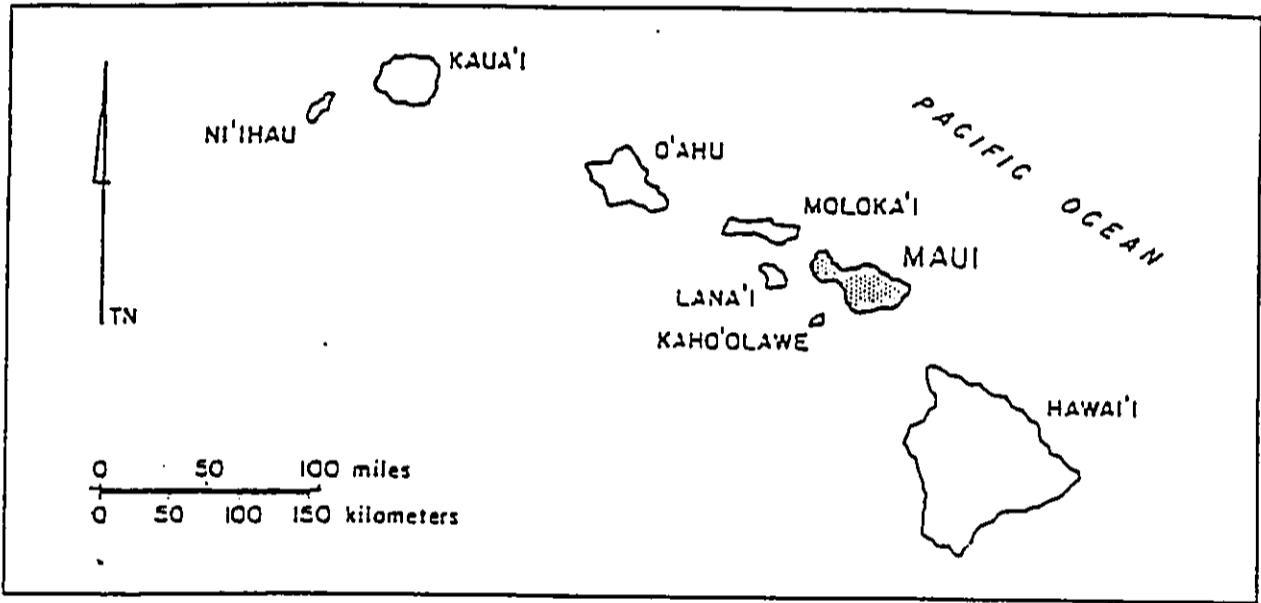


Figure 1 State of Hawai'i

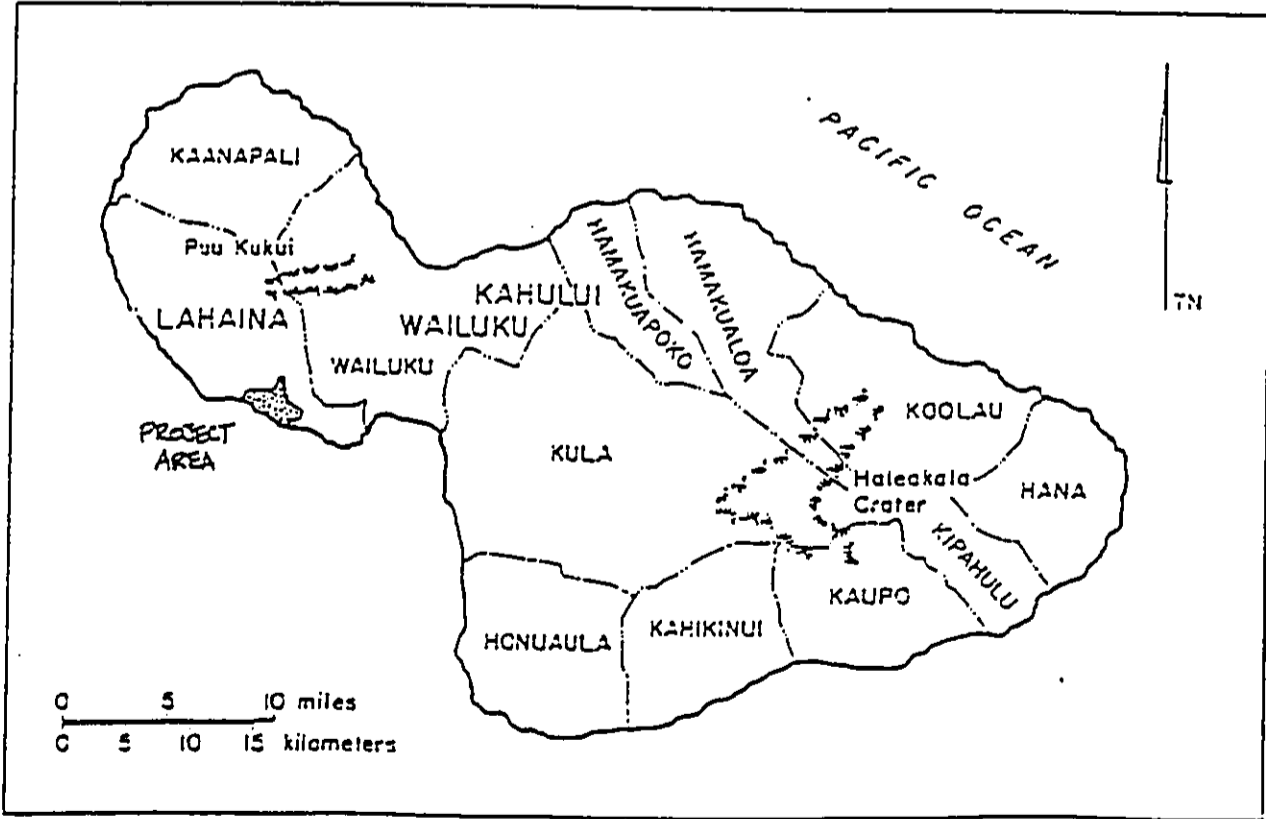


Figure 2 General Location Map, Maui Island

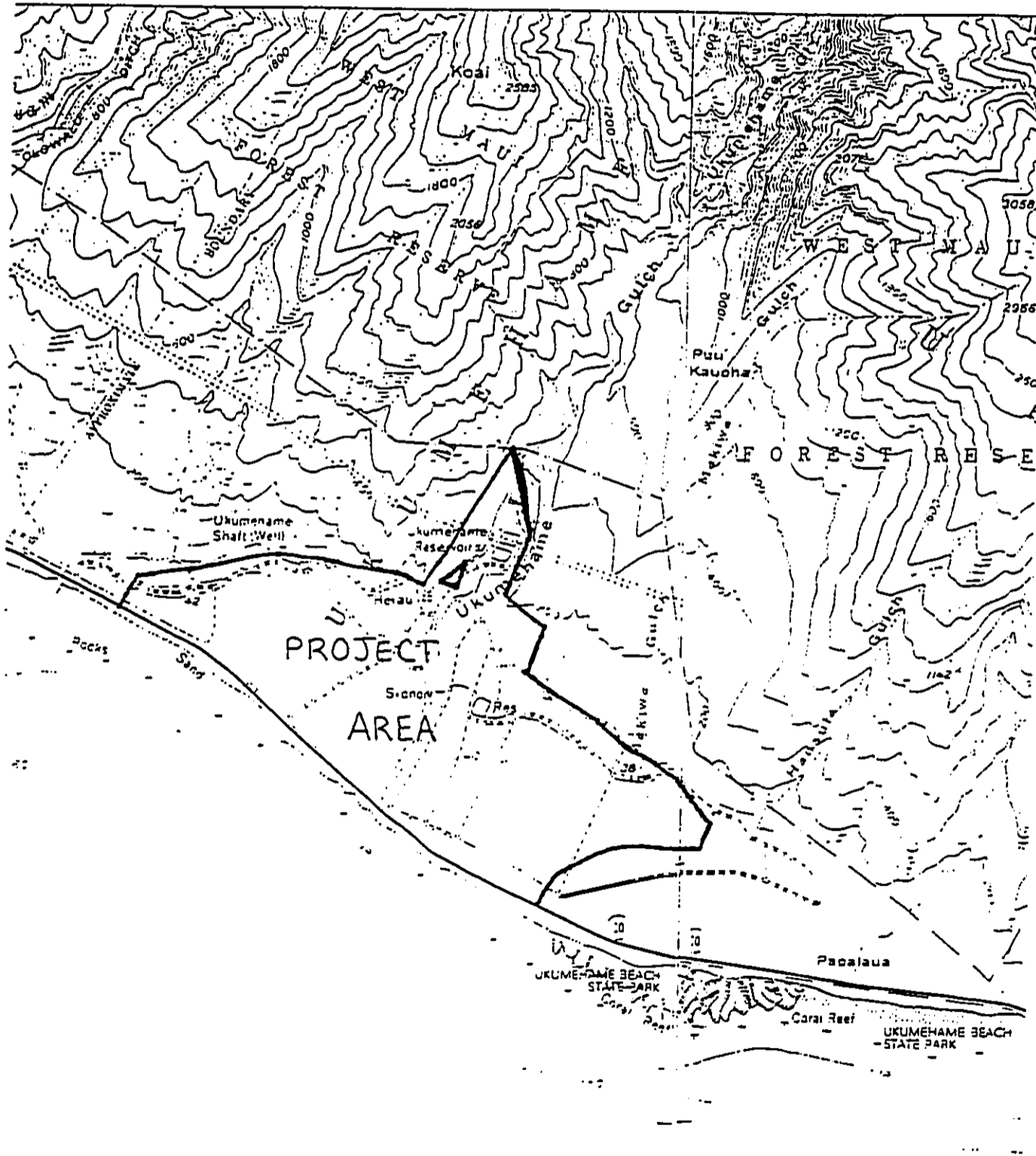


Figure 3 Portion of USGS 7.5 Minute Series Topographical Map - Olowalu Quadrangle - Showing Location of Project Area

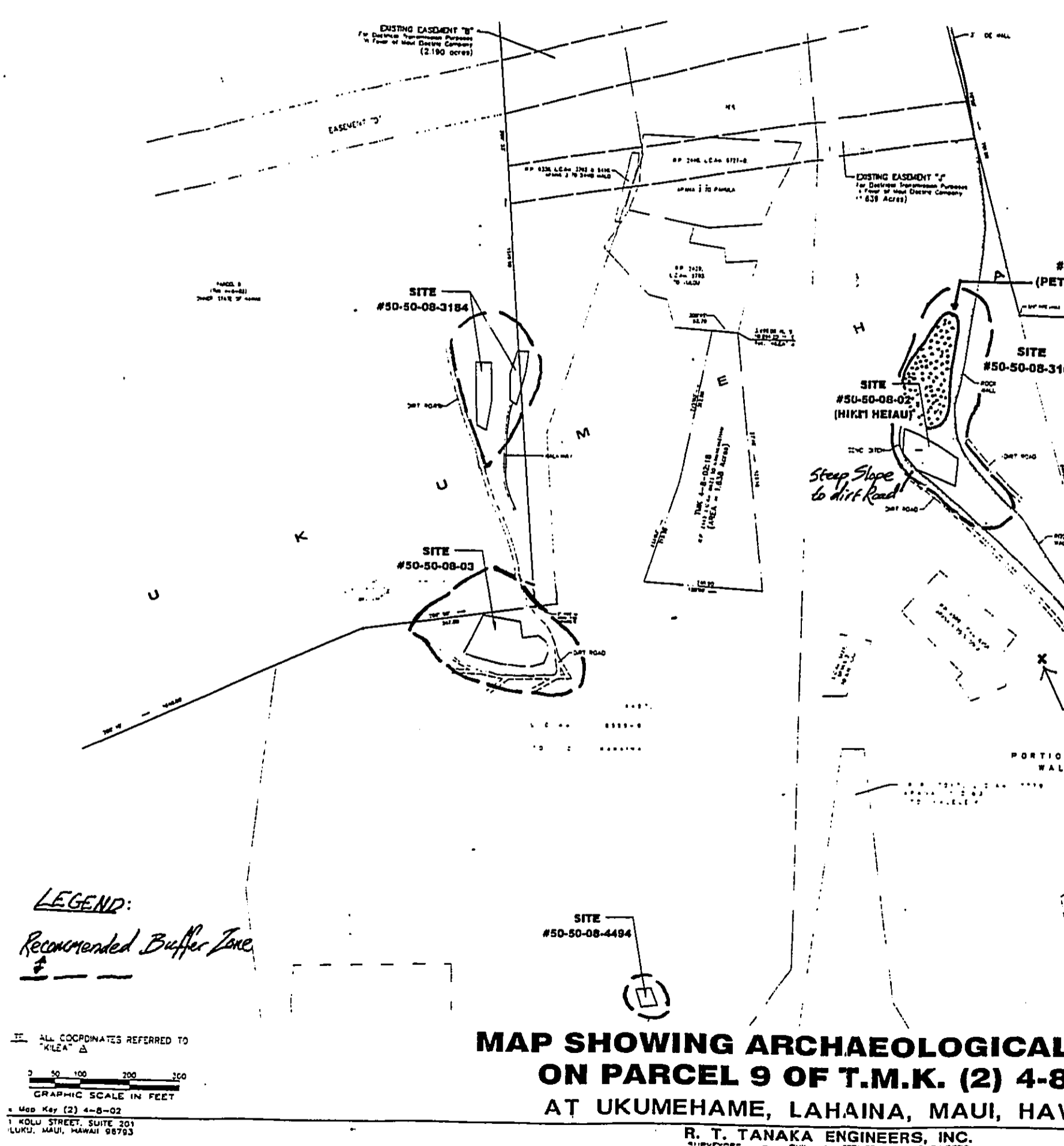
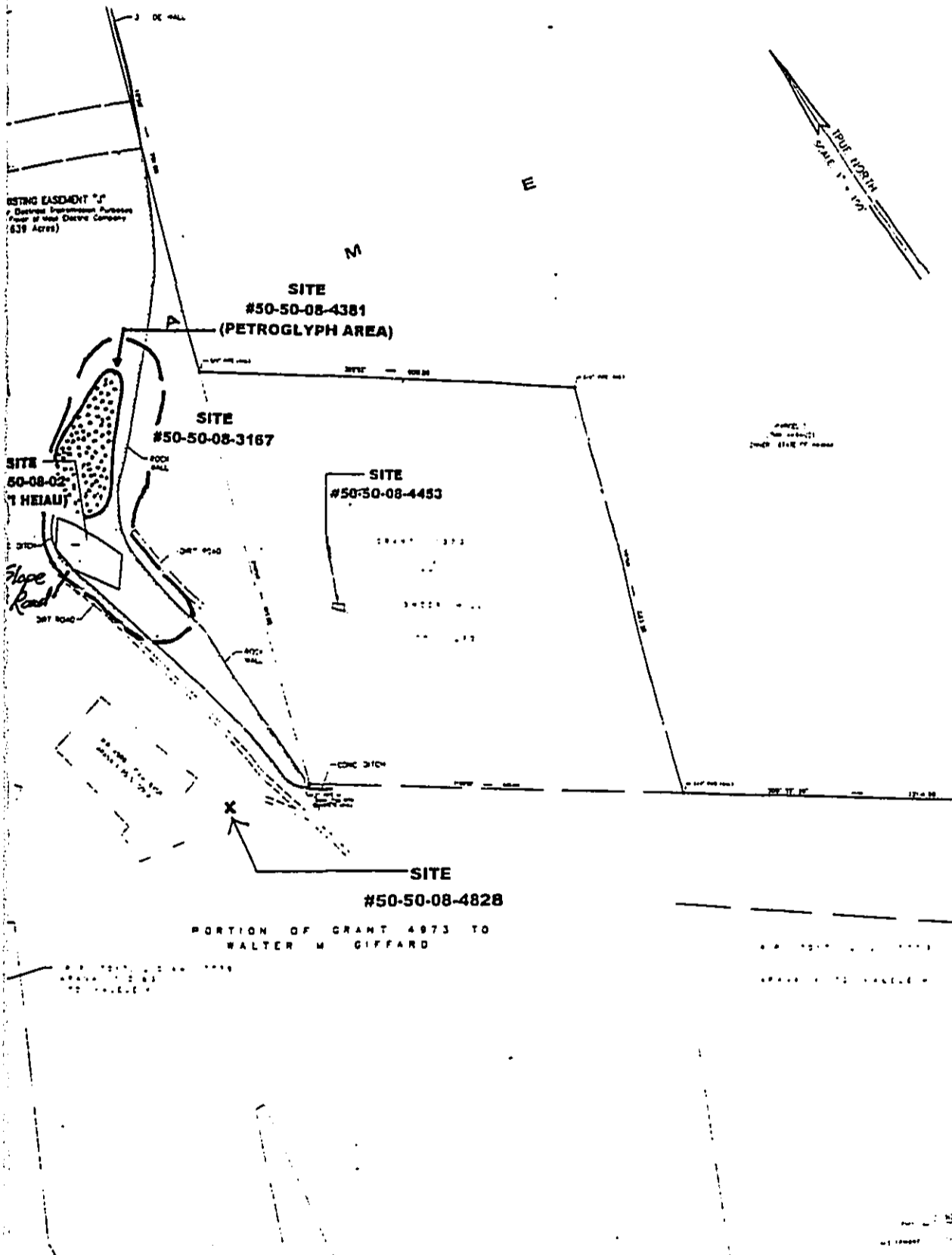


Figure 4 Portion of Project Map Showing LCA Claims and Location of Archaeological Sites in That Portion; Recommended Buffer Zones are Placed Around Both the Confirmed and Probable Burial Sites For Visual Representation of the Buffer Zones.



ARCHEOLOGICAL SITES
M.K. (2) 4-8-02
MAUI, MAUI, HAWAII

ENGINEERS, INC.
 STRUCTURAL ENGINEERS



THIS WORK WAS PREPARED BY ME
 OR UNDER MY DIRECT SUPERVISION

Kirk T. Tanaka 10/20
 KIRK T. TANAKA DATE
 License Professional Land Surveyor
 Certificate No. 7223

with a possible burial component, specifically a mound designated Feature D; and three sites have confirmed burial components, including the two *heiau* sites (50-50-08-02 & 50-50-08-03), and a cemetery plot (50-50-08-4494) reported by the Lindsey Family. This cemetery is delineated by a single stone platform. The latter site is located west of Ukumehame Stream and *mauka* of Honoapiʻilani Highway in the actively cultivated Pioneer Mill cane fields. There is a chain supported on posts surrounding the platform. The site is described as a burial platform with the primary function of being a family cemetery. According to local testimony the burials were interred in the 1930's, making this platform a historic-era site.

Further testing on January 15, 1999 at site -4453, once considered a possible burial, revealed an absence of human remains there; no further work was deemed necessary so the site is not included in the following Burial Treatment Plan. Ukumehame and Hikiʻi *heiau* (-02 and -03), the possible burial component (Feature D) in site -3184, and the cemetery plot (-4494) are addressed below in regards to mitigation and preservation.

II. SITE DESCRIPTIONS

State Site #:	50-50-08-02	CSH Site #: 8
Site Type:	<i>Heiau</i> (Hiki`i <i>Heiau</i>)	
Function:	Religious	
Probable Age:	Prehistoric-early historic	
Condition:	Fair to good	
Dimension:	734.8 m. ² (7,935.8 ft. ²)	
Elevation:	160 ft. a.m.s.l.	

Description: Site 50-50-08-02 is a *heiau* located on the east side of Ukumehame Gulch (Figures 5, 6 and 7). The *heiau* is known as Hiki`i *Heiau* and was apparently named after a chief for whom it was built. A historic ditch crosses the *heiau*'s northwest corner. Vegetation consists primarily of overgrown grasses, *koa haole* and *kiawe*. The *heiau* is currently being cleared of vegetation and religious offerings have been placed in coffee cans on the site's surface.

The site is a complex of platforms, enclosures and paved areas integrated within a roughly rectangular enclosure. The outer enclosure wall is absent on the *heiau*'s northeast side and in a section of its northwest side. Portions of the wall are bi-faced, but most of the wall retains the interior floor of the *heiau* and upslope ground surface. Several internal features are present inside the *heiau* (see below). The *heiau* complex measures 33.4 m. (109.5 ft.) N/S by 22.0 m. (72.2 ft.) E/W (on file at the State Historic Preservation Division).

Hiki`i *Heiau* was originally recorded by John F.G. Stokes in 1916 and subsequently described by Thomas G. Thrum in the Hawaiian Annual (Thrum 1918:128):

Hiki`i *heiau* at Ukumehame; on knoll east side of stream about a mile from the sea and 200 feet elevation. Northwest and northeast walls changed and interior used for graveyard. Two remaining walls would indicate a size of 55 feet square. Named after chief Hiki`i (Kaahui, informant aet.[sic?] 93).

In the 1930's Winslow Metcalf Walker recorded and mapped the site (Figure 5). Walker mentions in his description of the site that "graves of recent date" were present inside the *heiau* enclosure. He also observed a modern wall built on top of an older wall of the *heiau* (Walker 1931:60-61).

Department of Land and Natural Resources State Parks Division archaeologists recorded Hiki`i *Heiau* in 1973 (on file at the State Historic Preservation Division). Nine platforms and two enclosures were documented inside the *heiau*. Three of the platforms and a mound inside the *heiau* were believed to have been the "modern graves" recorded by Thrum and Walker. Interestingly, the possible burial mound, constructed on top of a platform is composed of a red soil different from the soil inside the *heiau*.

Since the time of this original site recording (executed during the inventory survey for this project) reconstruction measures have occurred as part of the permanent mitigation efforts

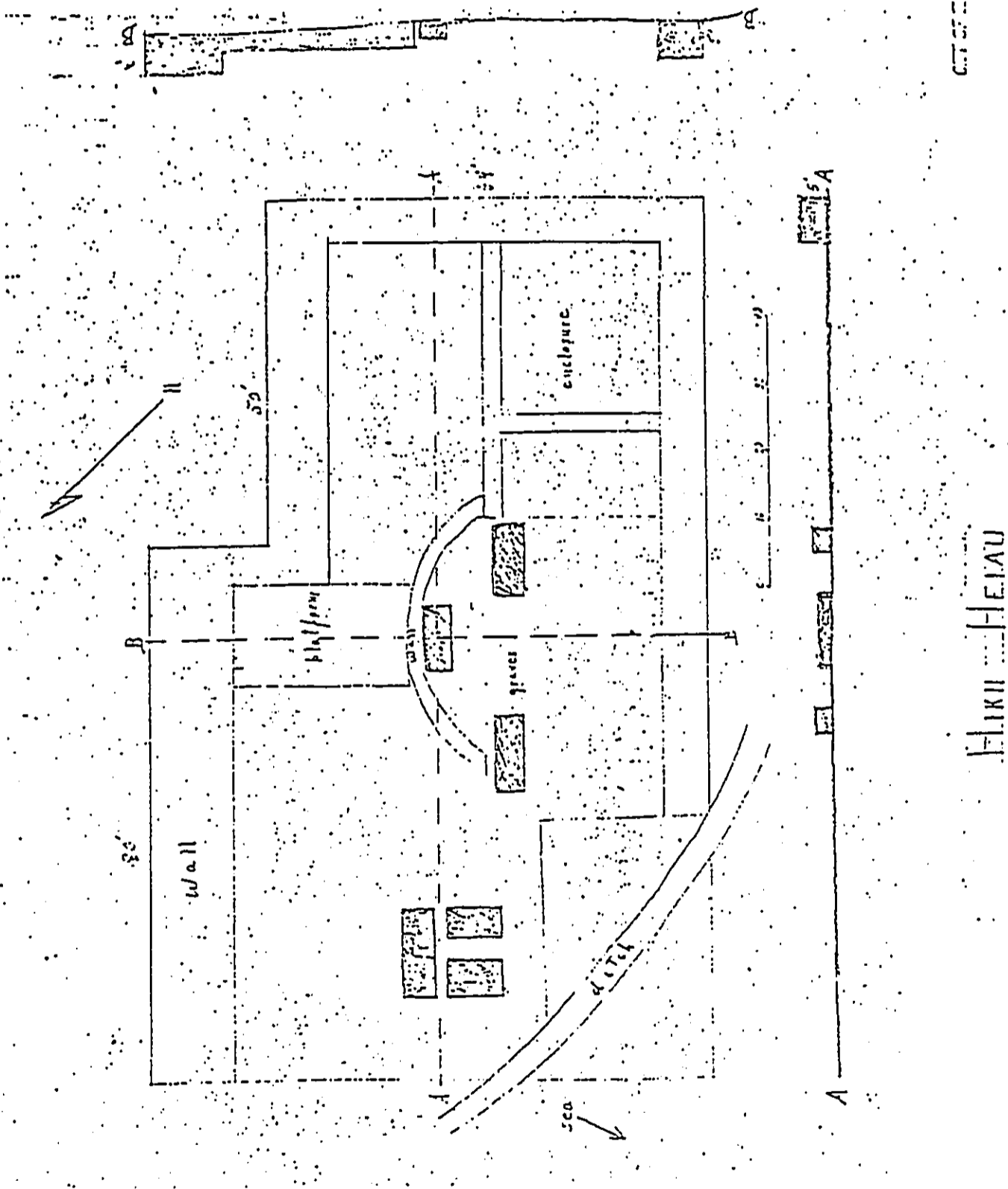


Figure 5 State Site 50-50-08-02, Plan View of Hiki'i Heiau (Walker 1931)

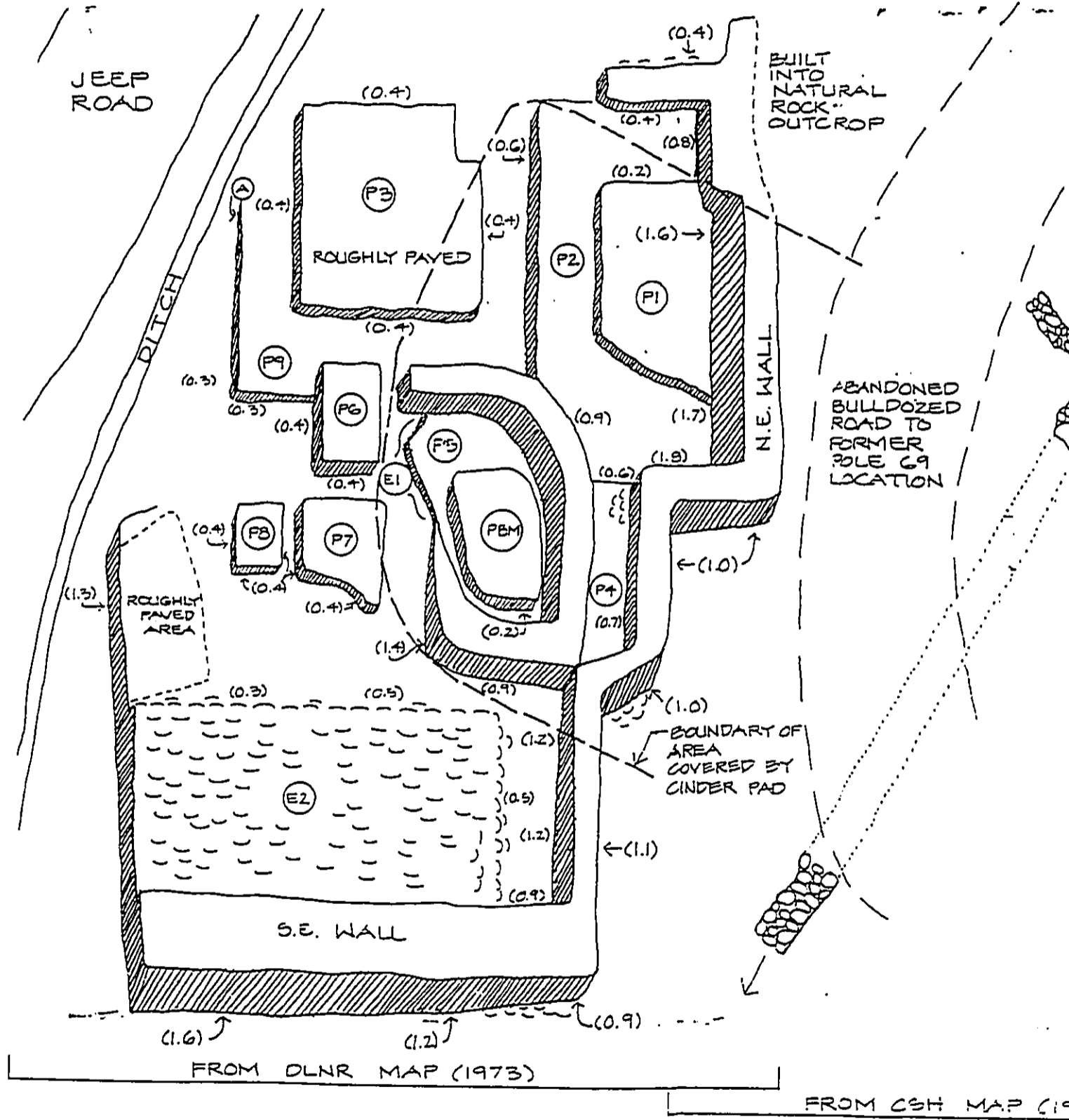
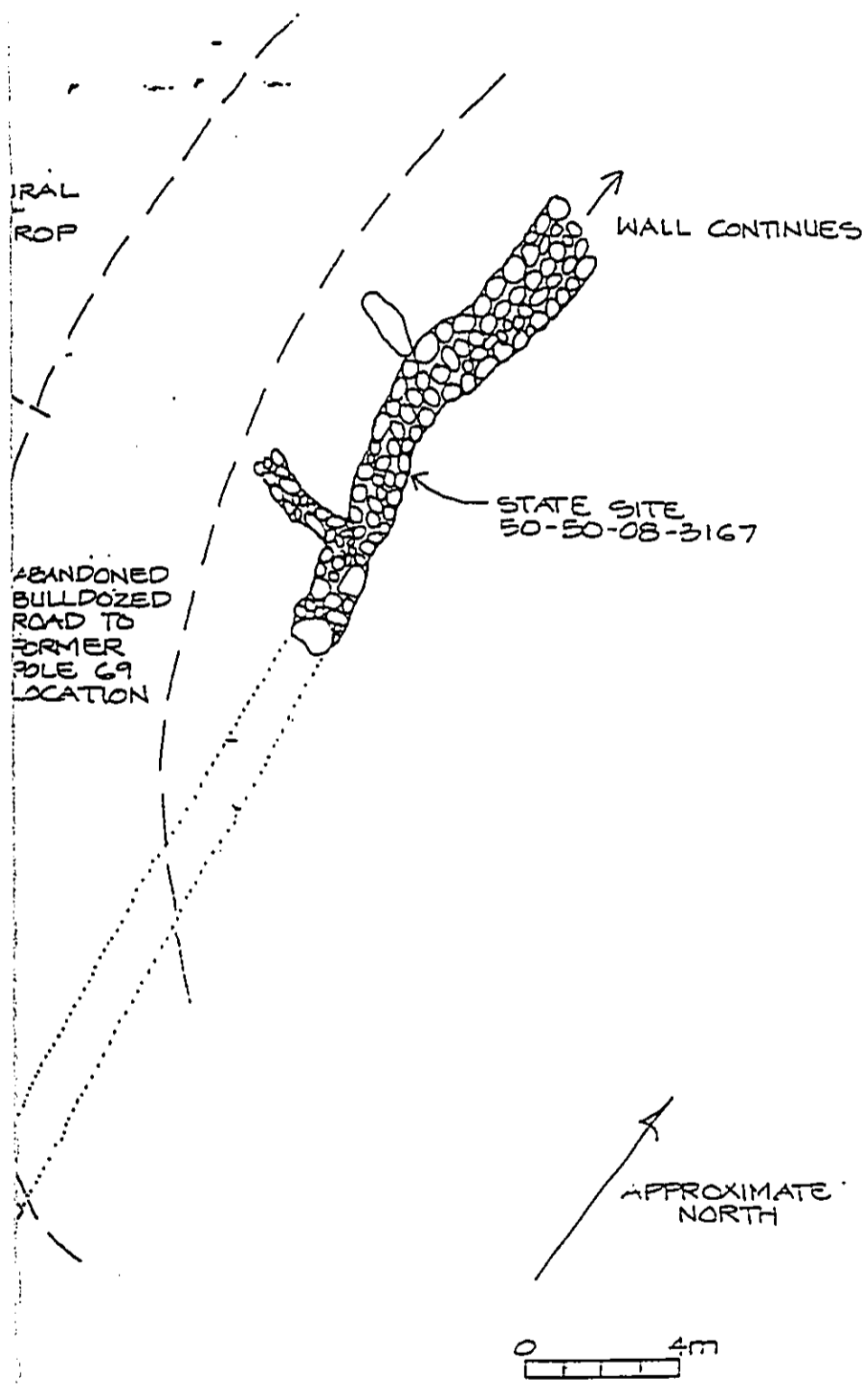


Figure 6 State Site 50-50-08-02, Plan View of Hiki'i Heiau (CSH 1997; pre-reconstruction)



FROM CSH MAP (1996)

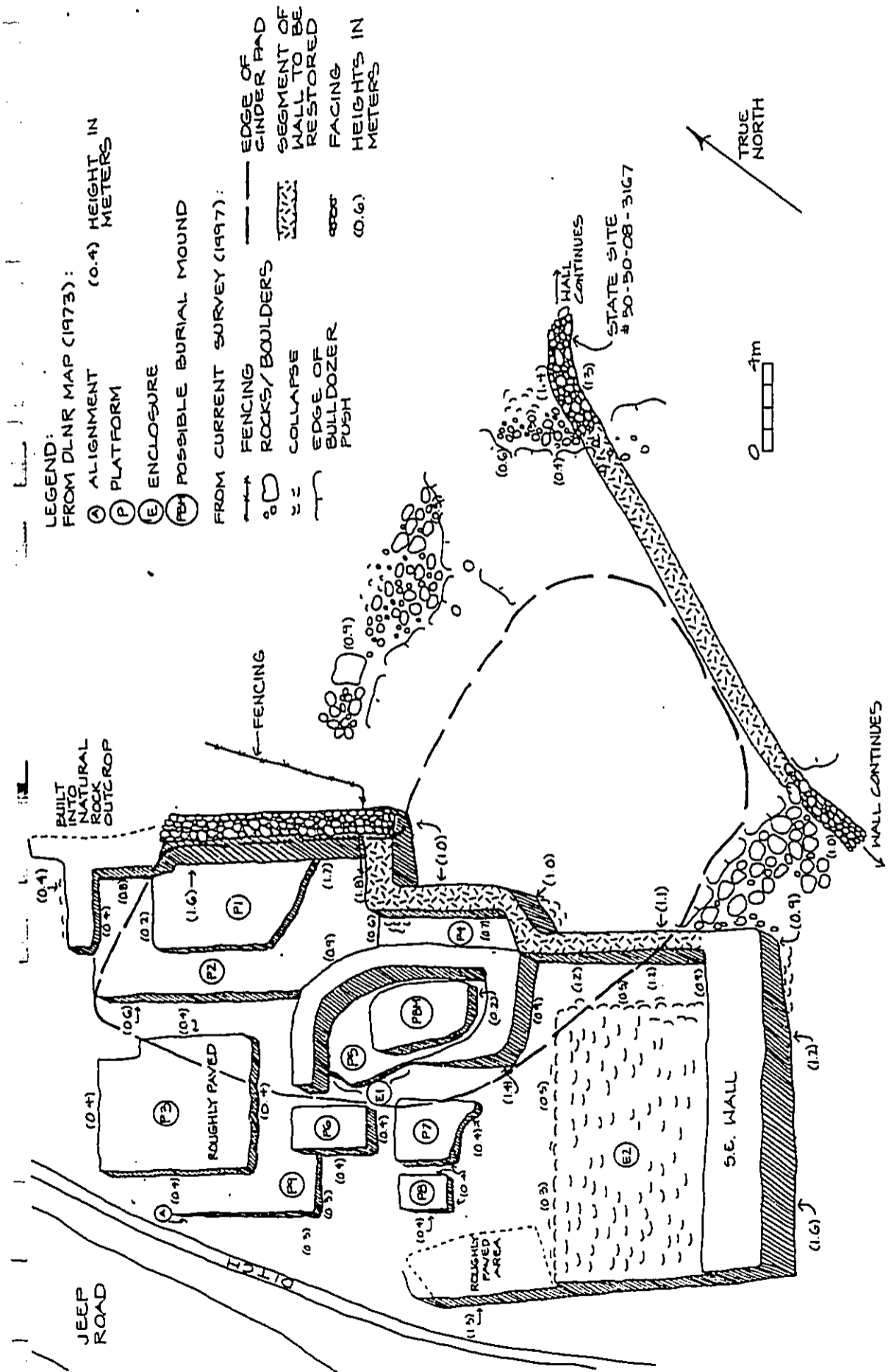


Figure 7 State Site 50-50-08-02, Plan View of Hiki'i Heiau (CSH 1998; post-reconstruction)

made to preserve site -02. Figure 7 shows the reconstruction measures which were completed at the site, measures which include rebuilding the northeast *heiau* wall, strengthening the south corner of the platform where a collapse had occurred, and rebuilding the adjacent cattle wall, site -3167. These reconstruction measures help ensure the ultimate safety of the site while repairing damage previously inflicted upon the known family burial plot and religious site.

State Site #: 50-50-08-03
Site Type: *Heiau* (Ukumehame *Heiau*)
Function: Religious
Probable Age: Prehistoric-early historic
Condition: Good-remnant
Dimensions: 874.0 m.² (9,439.2 ft.²)
Elevation: 160 ft. a.m.s.l.

CSH Site #: 4

Description: Site -03 is a previously recorded *heiau* located on the west side of Ukumehame Gulch, immediately north of Pioneer Mill cane fields (Figures 8, 9 and 10). A historic ditch and cane-ranch access roads have destroyed the southern portion of the site. Vegetation on the site consists primarily of overgrown grasses and *kiawe*. The site was named Ukumehame *Heiau* in 1973 by the DLNR Historic Preservation Division archaeologists.

Ukumehame *Heiau* was originally inspected by John F.G. Stokes in 1916. Based on Stokes' field records, Thomas G. Thrum provided the following site description in the Hawaiian Annual (Thrum 1918:128):

A reputed *heiau*, located on west side of the stream [Ukumehame], opposite Hiki'i; also used as a grave-yard. Kaahui [informant] denies that it was a *heiau*.

In 1931 Winslow Metcalf Walker recorded and mapped (Figure 8) Ukumehame *heiau* in detail. Walker describes the *heiau* as being an irregular-shaped enclosure with walls present only on the west and north sides; a rectangular enclosure was incorporated into the northwest corner of the *heiau* and, according to Walker's map, six platforms (possible graves?) were observed inside the *heiau*. Walker comments that the *heiau* was "partially destroyed" and that new walls were built atop older walls for use as a cattle pen. He also mentions the presence of terraces and platforms inside the *heiau* walls which had been impacted by the modern graves.

In 1973, approximately 42 years after Walker's site inspection, the Department of Land and Natural Resources Historic Preservation Division archaeologists recorded Ukumehame *Heiau* and observed that about half of the site that Walker documented had been destroyed by construction of cane roads (on file at the Historic Preservation Division office).

At present the *heiau* is an irregular-shaped enclosure which, due to the site destruction mentioned above, is open to the south (Figure 9). This site remnant measures

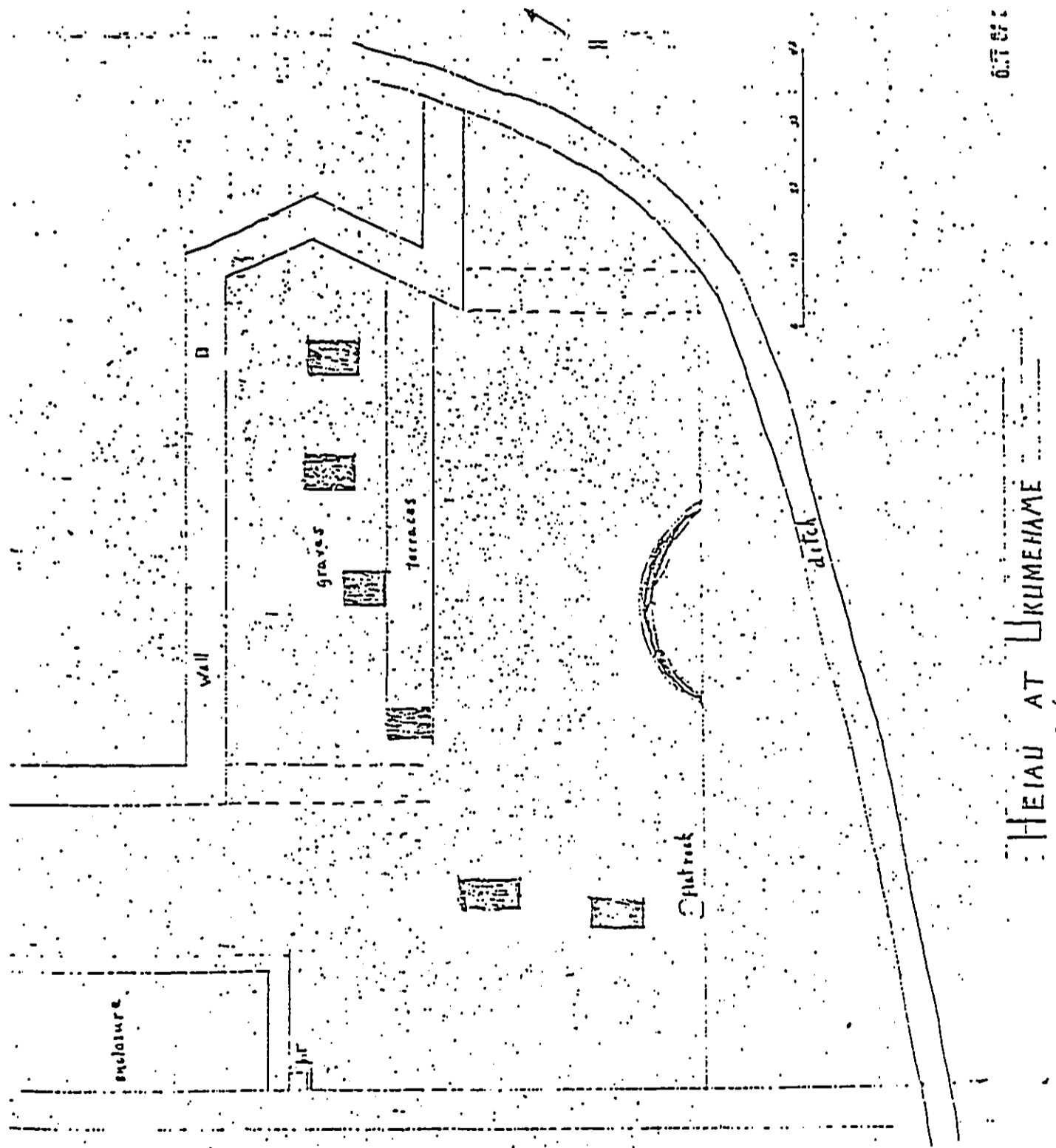


Figure 8 State Site 50-50-08-03, Plan View of Ukumehame Heiau (Walker 1931)

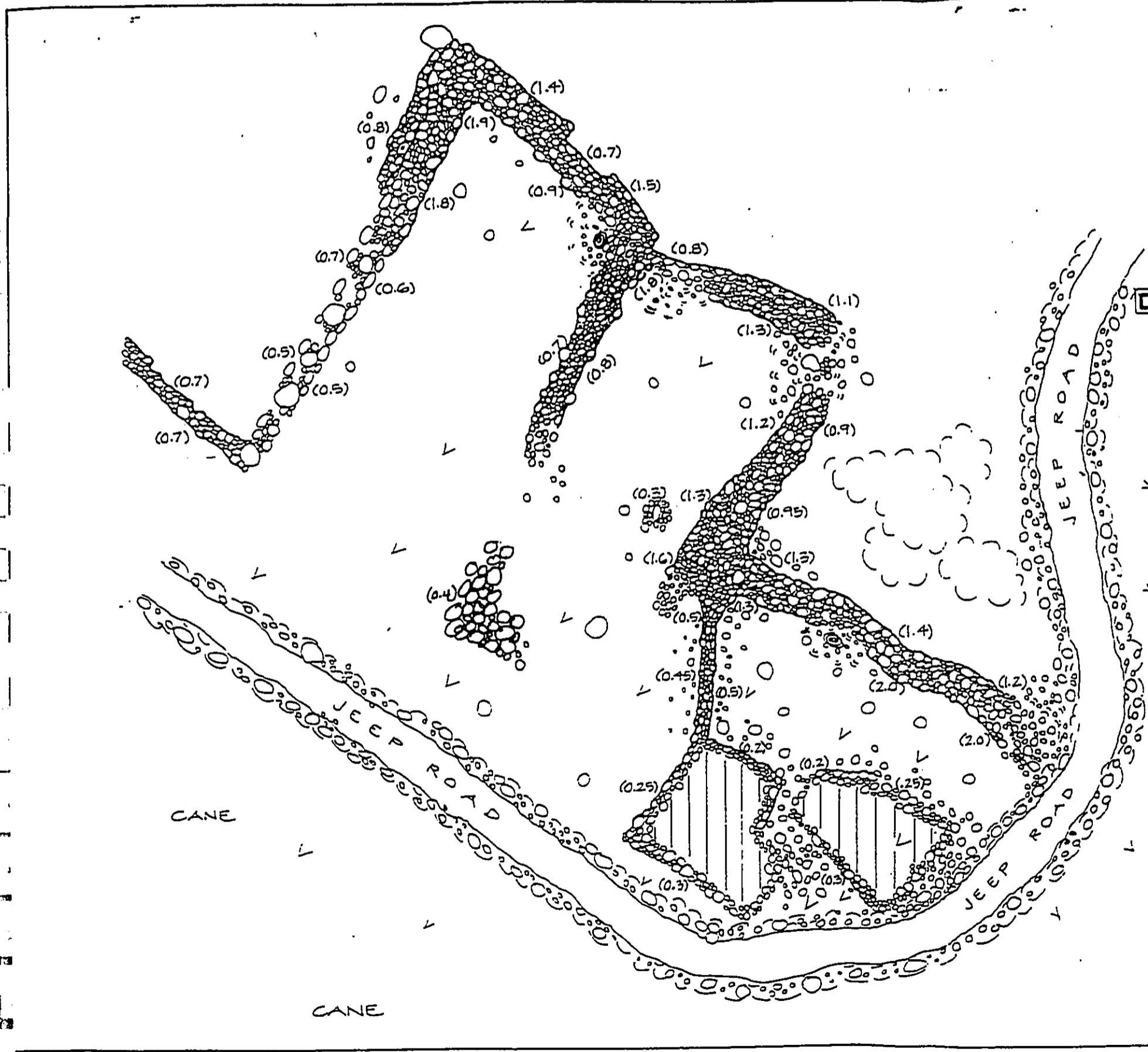
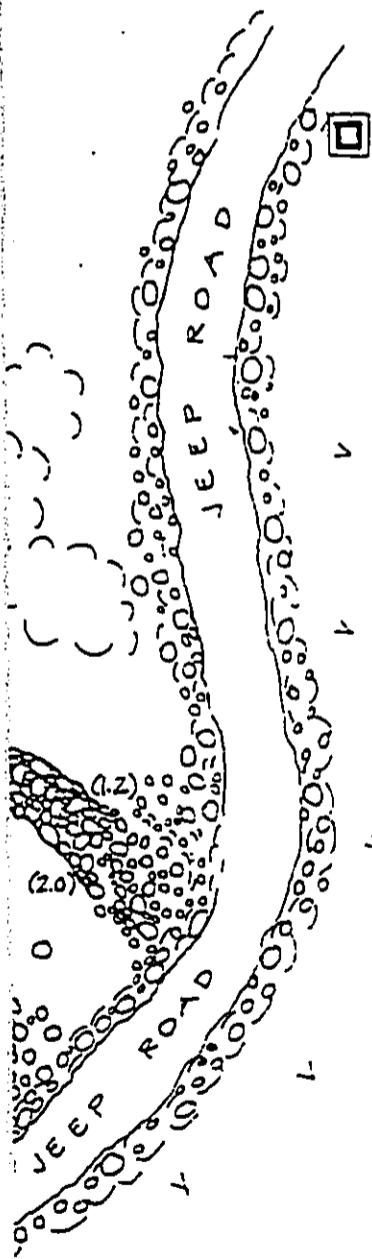


Figure 9 State Site 50-50-08-03, Plan View of Ukumehame Heiau (CSH 1997)

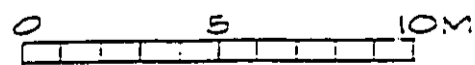
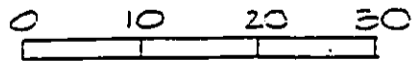
LEGEND

- ⊙ ROCKS/BOULDERS
- ∞ FACING
- = = COLLAPSE
- (0.5) HEIGHT IN METERS
- ∨ DIRECTION OF SLOPE
- () BULLDOZER PUSH
- (⊙) BERM CREATED BY FORMATION OF JEEP ROAD
- ||| RAISED PAVING
- SURVEY STAKE MONUMENT
- ⊙ KEAWE TREE



→ UKUMEHAME GULCH →

TRUE NORTH ↑



1" = 5M

approximately 38.0 m. (124.6 ft.) E/W by 23.0 m. (75.4 ft.) N/S and consists of three primary connecting walls, forming the original northern side of the *heiau* (based on Walker's site records). Three wall segments also extend to the south, but are in dilapidated condition and difficult to discern due to dense grass cover on the site. The walls are constructed of weathered basalt boulders stacked and faced 6 to 11 courses to a maximum height of 2.0 m. (6.6 ft.). The walls are cobble core filled and average 1.5 m. (4.9 ft.) wide. The exterior of the remaining intact walls are steeply sloped, engineered for added wall strength due to its size. Two terraces (presently mounded) were observed in the eastern portion of the site remnant. The terraces correlate with a grave monument recorded by Walker, but the site is presently bisected by the existing jeep road. Coral was observed on the terrace surface. Marine midden, basalt manuports, and basalt flake debitage were observed throughout the interior of the *heiau*. In comparing the 1973 DLNR-SHPD site map to the present survey site map, it appears that the east side of the site - especially the possible grave feature - has been and continues to be impacted by road maintenance.

State Site #:	50-50-08-3184	CSH Site #: 15
Site Type:	Complex	
Function:	Permanent habitation; Possible burial	
Features (#):	8	
Probable Age:	Prehistoric	
Condition:	Fair	
Dimension:	900.0 m. ² (9720.0 ft. ²)	
Elevation:	160 ft. a.m.s.l.	

Description: Site -3184 is a complex of eight features (Figure 10) located on the west side of Ukumehame Gulch. The site is situated on a moderately sloped terrain descending to the southeast. Site vegetation consists of a dense grass cover and scattered *koa haole* and *kiawe*. Only one feature (Feature A) lies within the project boundary. Only Feature D, lying approximately 25 m. south or outside of the project boundary is regard as a possible burial. We discuss this entire site here as part of it lies within the project area.

Feature A is an L-shaped enclosure located on the north perimeter of the site complex. The L-shape is open to the west and is composed of southeast and northeast wall sections. The northeast wall is constructed of three rows of piled small boulders. It measures 3.0 m. (9.8 ft.) SE/NW by 0.5 m. (1.6 ft.) wide and rises a maximum 0.85 m. (2.8 ft.) high. The southeast wall of the L-shape is constructed of medium boulders stacked on outcrop with a few collapsed boulders present in the south. This wall measures 4.5 m. (14.8 ft.) NE/SW by 0.8 m. (2.6 ft.) wide and rises a maximum height of 1.3 m. (4.4 ft.). The L-shape surrounds a level soil area measuring 12.0 m² (130.0 ft.²).

Feature B is an irregular enclosure located 4.0 m. (13.1 ft.) southwest of Feature A. A gap, measuring 4.0 m. (13.1 ft.) wide, occurs in the southeast corner of the enclosure wall. The feature encloses a level surface measuring 9.0 m. (29.5 ft.) NE/SW by 4.0 m. (13.1 ft.) NE/SE. The northwest enclosure wall is curved and is constructed of stacked cobbles and small boulders. It has a maximum width of 0.6 m. (2.0 ft.) and is faced along its interior side at a maximum height of 1.0 m. (3.3 ft.). The northeast end of this wall section is

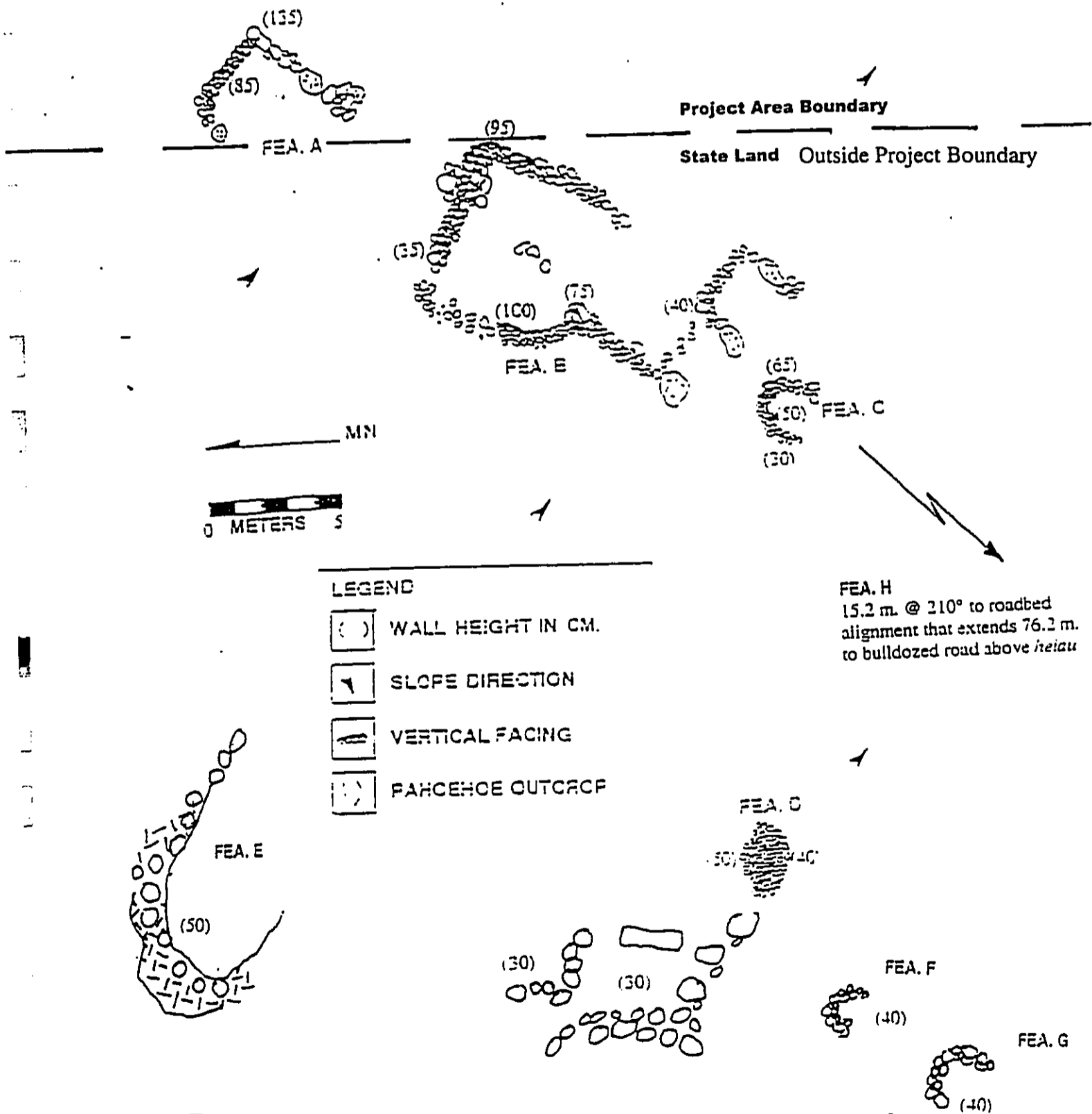


Figure 10 State Site 50-50-08-3184, Plan View Showing Project Area Boundary: All features except for Feature A Lie Outside the Present Project Area.

collapsed and may represent a second opening into the enclosure. The northeast and southwest walls of the enclosure are similar in size and construction but the interior side of the southeast wall is flush with the ground surface. A 3-sided enclosure is incorporated into the enclosure's southwest wall and is open to the southwest.

Feature C is a C-shaped enclosure located 2.0 m. (6.6 ft.) southwest of Feature B. Its wall is constructed of piled large cobbles and small boulders and measures 0.5 m. (1.6 ft.) wide by a maximum of 0.6 m. (2.0 ft.) high. The feature partially encloses an area measuring 1.5 m. (4.9 ft.) in diameter and is open to the southwest.

Feature D is a mound located 14.0 m. (46.0 ft.) west of Feature C. It is constructed of a mix of loosely piled small and medium boulders. Its surface is roughly level and contains a depression at its center. The mound measures 3.0 m. (9.8 ft.) E/W by 2.0 m. (6.6 ft.) N/S. Two alignments are associated with the mound. The first alignment is an L-shape that extends northwest from the west edge of the mound, it measures 6.0 m. (19.7 ft.) NW/SE by 6.0 m. (19.7 ft.) N/S. The second alignment is an L-shape within the first, it measures 2.5 m. (8.2 ft.) N/S by 3.0 m. (9.8 ft.) E/W. Both alignments are approximately 0.3 m. (1.0 ft.) in height and are constructed of boulders and cobbles. A large pahoehoe slab is also present at the east end of and between the two alignments.

Feature E is a cobble and small boulder alignment modifying the edge of a pahoehoe outcrop. Feature E is situated 17.0 m. (55.8 ft.) northwest of Feature B. The alignment roughly forms a U-shaped enclosure open to the southeast, measuring 8.0 m. (26.2 ft.) E/W by 4.0 m. (13.1 ft.) N/S. The alignment is one course high and measures 0.5 m. (1.6 ft.) high from the rocky soil interior to the top of the alignment.

Feature F is a small C-shaped enclosure situated 4.0 m. (13.1 ft.) south of Feature D. It measures 1.5 m. (4.9 ft.) N/S by 2.0 m. (6.6 ft.) E/W and is open to the south/southwest. The enclosure measures 0.4 m. (1.3 ft.) in height and is constructed of cobbles and small boulders.

Feature G is a second C-shaped enclosure situated 3.0 m. (9.8 ft.) southeast of Feature F. It measures 2.5 m. (8.2 ft.) NW/SE by 2.0 m. (6.6 ft.) NE/SW and is open to the southwest. The enclosure measures 0.4 m. (1.3 ft.) in height and is constructed of cobbles and small boulders.

Feature H is a roadbed alignment located 15.2 m. (49.8 ft.) southwest of Feature C. The alignment measures 76.2 m. (249.9 ft.) in length, extending *makai* (southwest) to the bulldozed access road above Ukumehame *heiau* site 50-50-08-03. The alignment is not more than 0.4 m. (1.3 ft.) in height and is stacked one to two courses high.

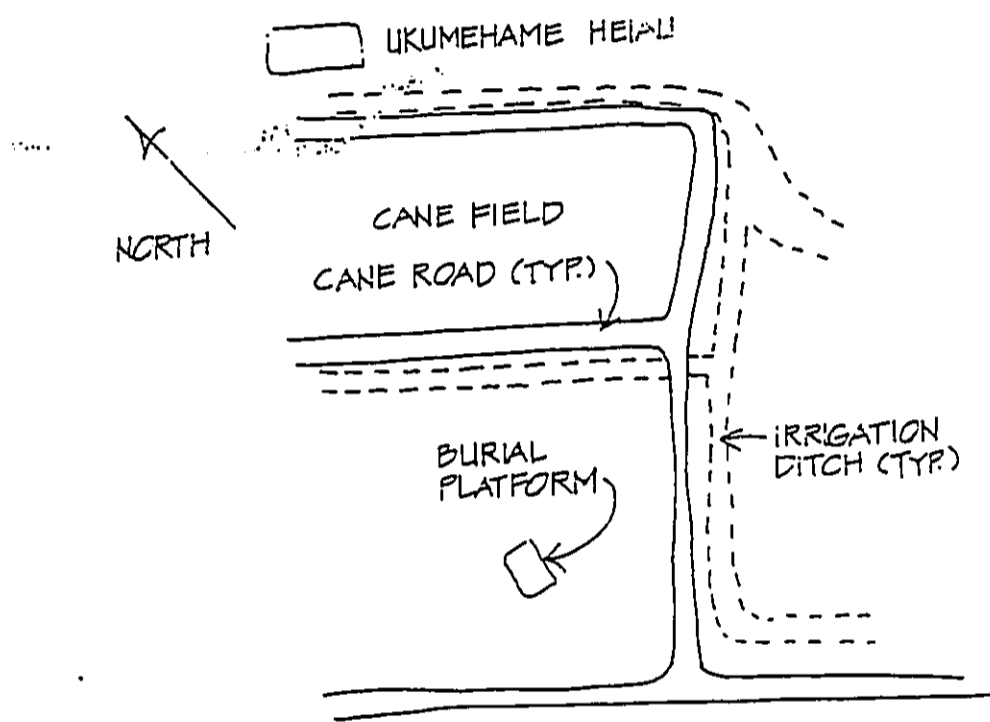
No artifacts or midden were observed at the site. Features A through C are likely permanent habitation structures, while Feature D may represent a burial monument. Features E, F, and G are likely agricultural features related to the habitation complex. Feature F is probably the original access road alignment constructed most likely in historic times and relating to early industrial agricultural endeavors (ie. sugarcane production).

State Site #: 50-50-08-4494
Site Type: Platform
Function: Burial
Features (#): 1
Probable Age: Historic
Condition: Good
Dimension: 86.9 m.² (875.0 ft.²)
Elevation: 150 ft. a.m.s.l.

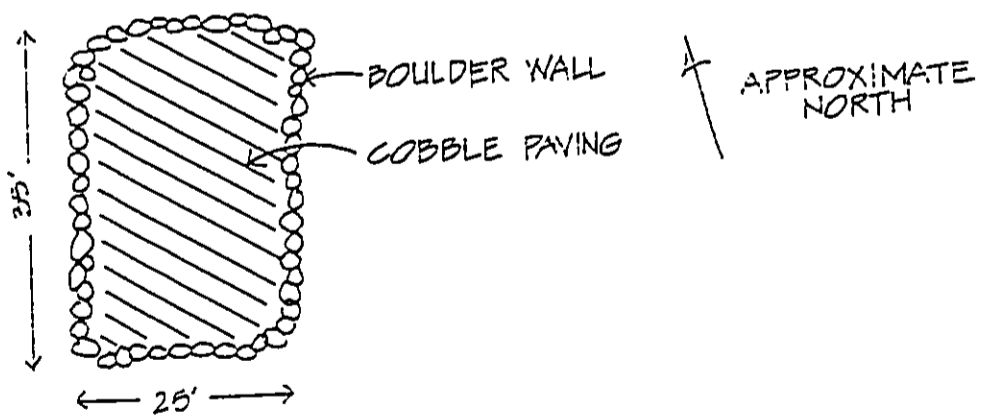
CSH Site #: none

Description: Site 50-50-08-4494 is a cemetery plot reported by the Lindsey Family which has been delineated by a stone platform (Figure 12). The site is located west of Ukumehame Stream and *mauka* of Honoapi'ilani Highway in the actively cultivated Pioneer Mill cane fields, approximately 45.7 m. (150.0 ft.) at 355 TN from a prominent, east bearing, right angle turn in the cane irrigation ditch (where the ditch enters the siphon) designated Site -4438. The platform is constructed of small to medium boulders and cobbles. It measures 10.7 m. (35.0 ft.) N/S by 7.6 m. (25.0 ft.) E/W with a maximum height of 1.0 m. (3.3 ft) on the *makai* side. Three uprights are present on the platform surface as well as offerings recently made. A length of chain is strung from metal posts surrounding the site.

The chain represents efforts to protect the grave site, as evidenced by a sign stating that the site is "KAPU" under protection of the "Native American Grave Protection and Repatriation Act". The site is considered a burial platform with a primary function of being a burial ground. According to local testimony the burials were interred in the 1930's, making this platform a historic-era site.



PLAN VIEW SCHEMATIC - NOT TO SCALE



SKETCH OF BURIAL PLATFORM

Figure 11 State Site 50-50-08-4494, Plan View

CSH Site #: none

State Site #: 50-50-08-4828
Site Type: Crypt?
Function: Burial
Features (#): 1
Probable Age: Historic
Condition: Buried and probably damaged
Dimension: unknown
Elevation: 150 ft. a.m.s.l.

Description: Site 50-50-08-4828 is a probable burial crypt reported by Mr. William Waiohu during a field trip to the project area on January 18, 2000. Mr. Waiohu (in his 50s), who was born and raised in Ukumehame, has clear memory of a stone and mortar burial crypt, which was present during his childhood and was located *makai* of Hiki`i *heiau*. He reports that this crypt was covered with rocks and rubble during Pioneer Mill improvement of the road in the 1960s. Mr. Waiohu's recollection of this crypt is quite clear. He has clear memory of it being covered and an examination of the specific area that he pointed out contains a rubble pile that could easily have buried a structure of this size.

III. PROPOSED BURIAL TREATMENT

Based on the recommendations given in the Inventory Survey Report for this project the following steps concerning mitigation and recommended treatment of confirmed and probable human burial sites within the present project area (totaling four) are presented below.

A. Permanent Buffer Zones

Preservation of each site will include a permanent buffer zone wherein no further construction or land alterations of any kind can occur (see Figure 4). The permanent buffer zone for site -03, Ukumehame *Heiau*, includes a boundary set at 100 feet around the north and northwest sides of the site and 50 feet around the east and southeast and south sides of the site. The existing access roads will fall within this boundary, as will a water pipeline. These roads (and pipeline) will be maintained but not improved. Normal access for Maui Electric, State of Hawaii and other authorized vehicles will be allowed.

In the case of Hiki'i *Heiau*, site -02, the site is protected by the wall designated site -3167. The protective mitigation for Hiki'i *heiau* demands a 50-foot buffer zone for a length of the wall (-3167) from 100 feet *makai* (southwest) of the *heiau* to the survey marker (2" pipe in rock pad with concrete) which is located approximately 115 m. (350 ft.) northeast of the *mauka* edge of the *heiau* (-02). Again, the boundaries are adjusted at the south end of the site extend to the edge of the steep cliff and include the existing dirt access road. The access road will remain and be maintained but not improved. These extensive mitigation efforts protect two sites, Hiki'i *heiau* (-02) and neighboring petroglyph site 50-50-08-4381, both situated between the edge of Ukumehame Valley cliff and the wall site (-3167). Preservation efforts for site -4381 are detailed in the Preservation Plan (in progress) for the present project area. Most of the aforementioned preservation area (for -02 and -4381) lies outside of the present project area on State of Hawaii property.

The permanent buffer zone for Site -3184, Feature A should be appropriate for a non-burial feature inasmuch as the only (possible) burial feature (Feature D) lies 25 m. outside the project area

At present, a chain with post supports surrounds the cemetery, site -4494, providing sufficient protection for the site itself. However, an additional buffer zone of 50 feet surrounding the chain where no planting is to occur (*i.e.* of sugar cane) is recommended due to the difficulty in visibility when the cane is fully grown and ready for harvest.

The buried burial crypt, *makai* of Hiki'i *heiau*, Site 50-50-08-4828, should have a buffer zone of 30 feet around the site, except where it is bounded by the road. The inside edge of the road will form the buffer zone on the north and west sides.

B. Temporary/Construction Mitigation

If at any time temporary mitigation efforts are necessary to ensure the enforcement of each buffer zone, the placement of a poly-rope or plastic event fence erected with stakes or rebar around the perimeter of each buffer zone is recommended. Temporary mitigation efforts are necessary if any construction, land alterations, or access road clearing is to occur in the vicinity of any of the aforementioned sites slated for preservation.

C. Further Testing

The updated project area map (October 20, 1998) reveals that Feature D (possible burial) of site -3184 lies outside the present project area, deeming further testing irrelevant to this ongoing project.

Therefore no further work will occur at site -3184 until such time that the site is included in a project area slated for future development, thus requiring further research in regards to determining the presence or absence of human remains at the site, as set forth by the State Historic Preservation Division, Department of Land and Natural Resources. At that time the developer/land owner for that project will be responsible for the mitigation of that site (-3184).

D. Legal Notices

Legal Advertising is necessary (as indicated by Mr. Kai Markell, the administrator of the Burial Program at SHPD, in a telephone conversation with Dr. Hammatt) to identify additional lineal descendant claims, even though some lineal descendants are already identified (such as the Lindsey family and Paul Fujishiro). Legal notices will be published with the Hawaii Newspaper Association and with Ka Wai Ola (an OHA publication) upon acceptance of this burial plan in order to facilitate proper public notice whereby lineal claims can be made.

IV. SUMMARY

An Archaeological Inventory Survey and Subsurface Testing for the proposed reconfiguration of lots in a 440-acre parcel in Ukumehame *ahupua'a* revealed the presence of at least three confirmed burial sites (50-50-08-02, -03, and -4494) and one probable burial site (50-50-08-3184). In addition, there is a burial crypt identified through oral testimony of Mr. William Waiohu. All sites within the project area containing or likely to contain human remains are to be preserved in place. The above-recommended mitigation and treatment for both the confirmed and probable burial sites include a permanent buffer zone of 100 feet around site -03 except at the south end of the site where the boundary is 50 ft. The buffer zone around site 50-50-08-4828 is 30 feet except where the site is adjacent to existing roads. Buffer zones will be temporarily delineated by poly-rope or plastic barricade fencing if any future construction is planned in the vicinity of these sites.

In the case of Hiki'i *heiau* site 50-50-08-02, the site is already protected by the wall site 50-50-08-3167. Additional preservation efforts include a buffer zone in effect for an area 50-foot east of the portion of the wall adjacent to the sites (from 100 ft. south of the *heiau* to the survey marker 320 m. *mauka* of the *heiau*), except where the boundary has been adjusted to exclude the existing access roads. These preservation measures protect both the *heiau* and the petroglyph site -4381. Temporary mitigation efforts should be put in place if construction is to occur in the vicinity. The wall is sufficient to protect these two sites as long as the applied buffer (no construction) zone is respected.

Site 50-50-08-4494 presently has a chain surrounding it; a boundary of 25 feet without sugarcane growth surrounding the chain is recommended for site visibility.

Legal notices will be placed in order to identify lineal descendants. Other recommendations for permanent mitigation to be addressed when future construction is to occur in the vicinity of any of these sites includes the placing of signs describing each site for better public understanding, and the involvement of lineal descendants and or community groups in the general upkeep of each site (ie. clearing vegetative overgrowth by hand), a responsibility that otherwise falls on the land owner. Finally, a traditional Hawaiian blessing should occur at the completion of all construction activities within the project area.

These same measures for temporary and permanent mitigation of burial sites within the project area applies to any inadvertent burial finds which may occur during the course of future construction. In such a case, construction in the vicinity should cease immediately and Cultural Surveys Hawaii, the Maui County State Historic Preservation Division, and the Maui Island Burial Council should be informed before resuming work in the area.

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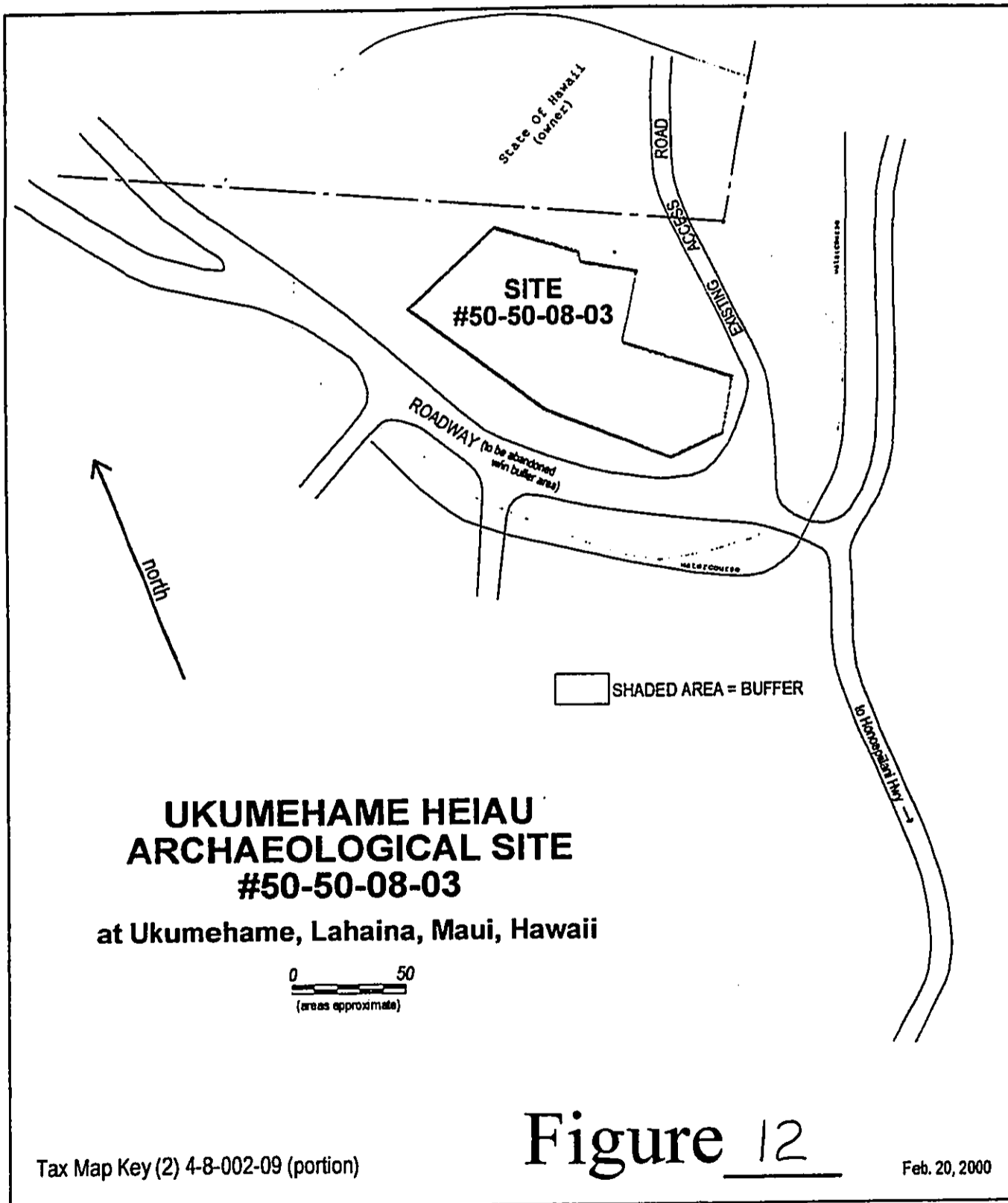


Figure 12 Buffer Zone for State Site 50-50-08-93, (Ukumehame Heiau)

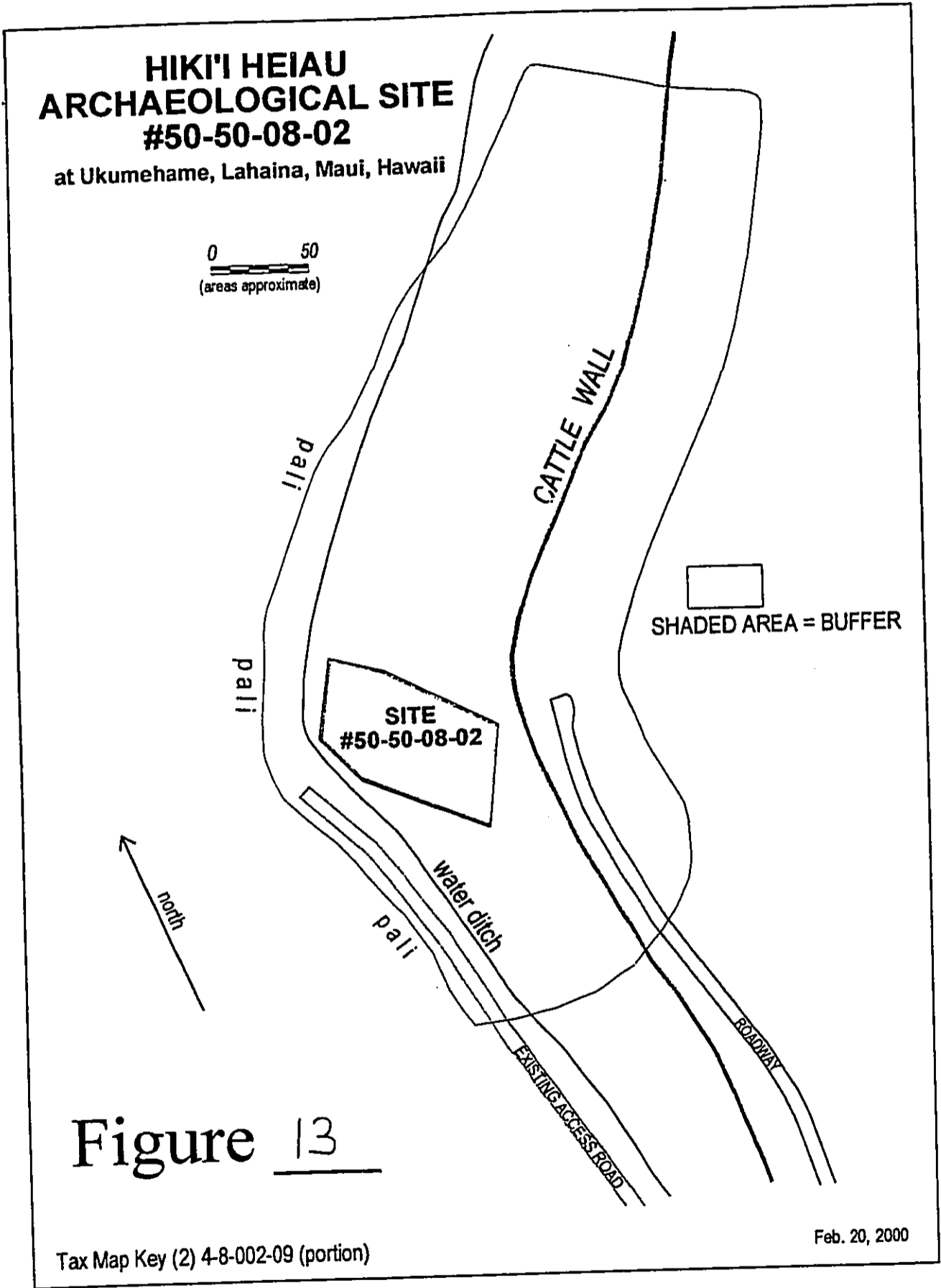


Figure 13 State Site 50-50-08-02 (Hiki'i Heiau)

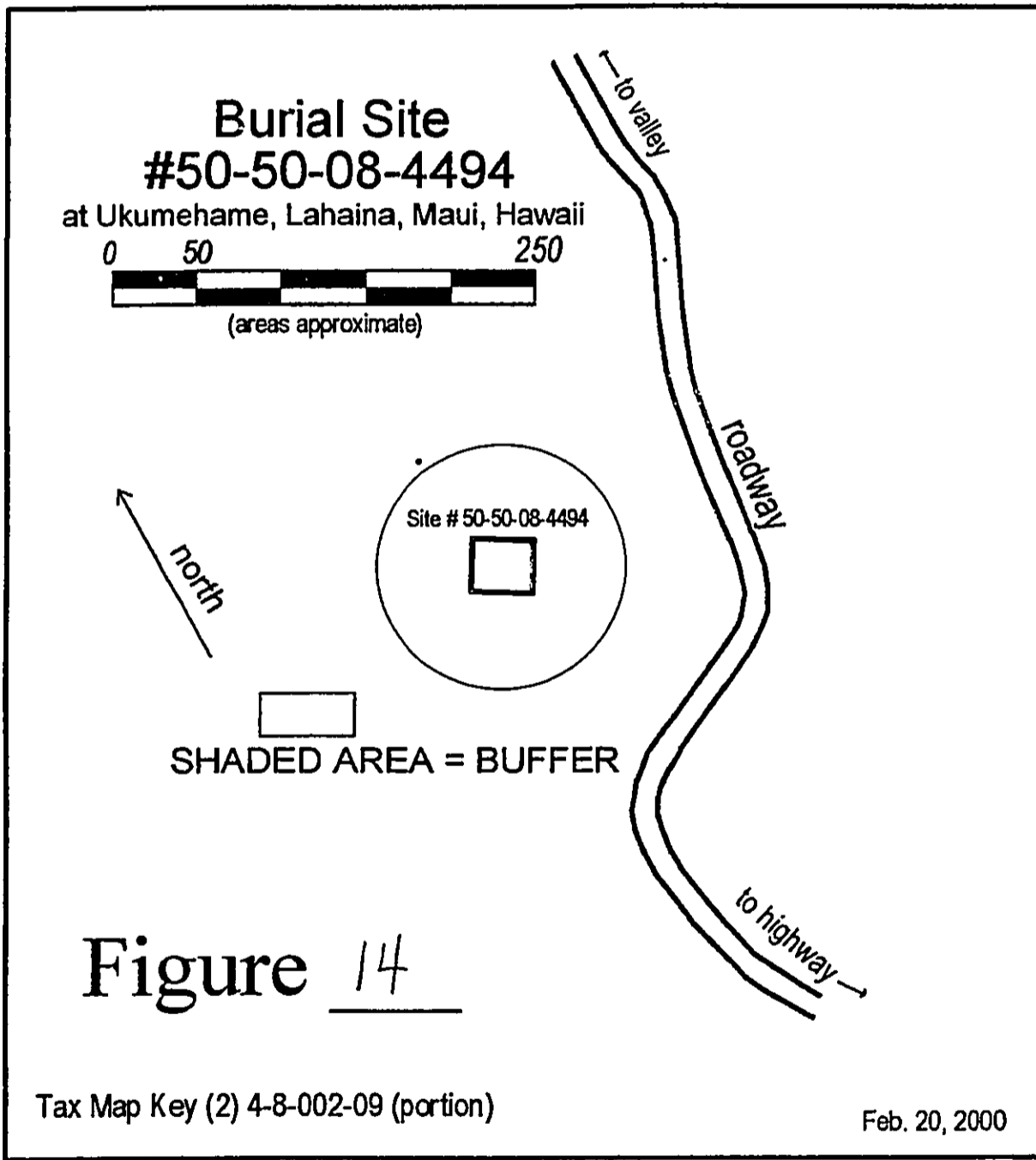


Figure 14 State Site 50-50-08-4494 (Cemetery)

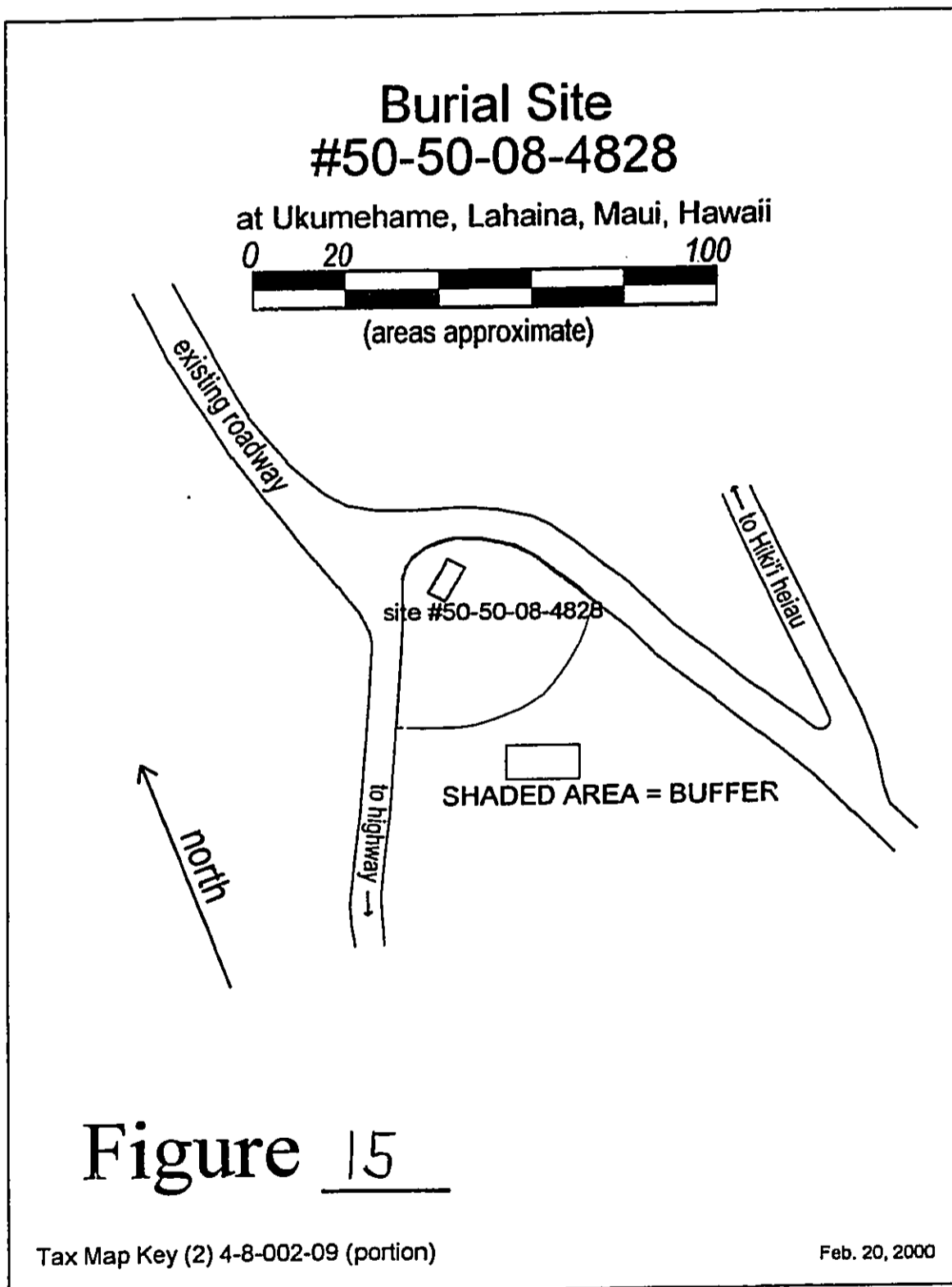


Figure 15 State Site 50-50-08-4494, (Burial Crypt)

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
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LAND
STATE PARKS

January 15, 2003

Hallett H. Hammatt, Ph.D.
Cultural Surveys Hawai'i
733 North Kalāheo Avenue
Kailua, Hawai'i 96734

LOG NO: 31511
DOC NO: 0301KK01

Dear Dr. Hammatt:

Subject: Maui / Lāna'i Islands Burial Council approval of "Burial Treatment Plan for the Archaeological Inventory Survey and Subsurface Testing of a 440 Acre Parcel, 'Ahupua'a of Ukumehame, District of Lāhaina, Island of Maui" (TMK: 4-8-002:009)

At its regular meeting held on February 24, 2000, the Maui / Lāna'i Islands Burial Council (MLIBC) voted unanimously to approve the above-mentioned burial treatment plan as amended through council discussion.

The landowner's burial treatment plan proposed "preservation-in-place" for four identified burial areas which include: Hiki'i Heiau (Site 50-50-08-02), Ukumehame Heiau (Site 50-50-08-03), a cemetery site (Site 50-50-08-4494), and a burial site (Site 50-50-08-4828). In agreement with this proposed burial treatment and the wishes of identified lineal descendants, the MLIBC voted unanimously to preserve these sites in place.

The Department of Land and Natural Resources concurs with and supports the Council in its position.

If you have any questions, please call Kana'i Kapeliela, Burial Sites Program Acting Director, at (808) 692-8037.

Sincerely,

A handwritten signature in cursive script that reads "P. Holly McElDowney".

P. HOLLY MCELLOWNEY, Acting Administrator
State Historic Preservation Division

KK

APPENDIX F
Burial Treatment Plan
Approval Letter

NDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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If you have any questions, please call Kana'i Kapeliela, Burial Sites Program Acting Director, at (808) 692-8037.

Sincerely,

P. Holly McEldowney

P. HOLLY MCELDOWNEY, Acting Administrator
State Historic Preservation Division

KK

APPENDIX G
Archaeological
Monitoring Plan
Approval Letter

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
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PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

December 24, 2003

Robert Spear, Ph.D.
Scientific Consultant Services, Inc.
711 Kaplani Boulevard, Suite 975
Honolulu, Hawaii 96813

LOG NO: 2003.2638
DOC NO: 0312MK16

Dear Dr. Spear,

SUBJECT: Chapter 6E-42 Historic Preservation Review of an Archaeological Monitoring Plan Preliminary Plat Review for the Proposed Ukumehame Subdivision Phase II Construction of a 450 Acre parcel of Land (File No.: 4.876)[County/DSA] Ukumehame Ahupua'a, Lahaina District, Maui
TMK (2) 4-8-02:09

Thank you for the opportunity to review this plan which was sent to our office on October 8, 2003 (Chaffee and Dega 2003, *An Archaeological Monitoring Plan for Subdivision Construction of a 450 Acre parcel of Land, Ahupua'a of Ukumehame, Lahaina District, Island of Maui, Hawaii [TMK 4-8-02:09].SCS ms*). We have previously commented on this parcel (Log 20613/Doc 9711BD57; Log 23587/Doc 9906BR03; Log 24021/Doc 9908RC71; Log 26200/Doc 0008MK12; Log 28550/Doc 0111CD07; Log 29844/Doc 0205CD05; Log 31376/Doc0212CD42; Log 2003.0527/doc 0305CD22; and 2003.2074/Doc 0310CD37). The parcel has been subjected to an archaeological inventory survey during which 17 historic properties were identified. This report was reviewed and accepted (Log 24021/Doc 9908RC71). A preservation plan for the 10 sites to be preserved has also been reviewed and accepted (Log 26200/Doc 0008MK12).

In our most recent correspondence (Log 2003.2074/Doc 0310CD37) reviewing the preliminary plat for Phase II (File No.:4.876)[County/DSA], we requested a detailed map with established buffer zones, and with all of the preserved sites plotted clearly on the submitted plans by a licensed surveyor. We have now received that map. In addition, at a meeting with Ms. Becky Collins, Ms. Donna Clayton, and Dr. Melissa Kirkendall on September 17, 2003, the proposed subdivision was discussed. In this meeting, it was agreed that monitoring was recommended during construction activities, especially on lots adjacent to site buffer areas and LCAs, as artifactual material and cultural deposits have been identified in other agricultural subdivisions. This submitted monitoring plan accommodates that recommendation.

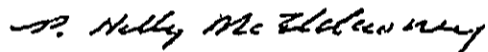
Robert Spear, Ph.D.
Page 2

The plan conforms with DLNR/SHPD guidelines governing standards for monitoring and includes the following provisions. An archaeologist will be on site on a full-time basis and will have the authority to halt excavation in the event that cultural materials are identified. Consultation with Maui SHPD will occur in this event, to determine acceptable course of action. If human burials are identified, work will cease, the SHPD Burial Sites Program, MLIBC, O'ahu SHPD and the Maui SHPD will be notified, and compliance with procedures outlined in HRS 8E-43 will be followed. Coordination meetings with the construction crew will be held prior to project initiation. An acceptable report will be submitted to this office within 180 days of project completion.

Please notify our Maui and O'ahu offices, via facsimile, at onset and completion of the project and monitoring program.

The plan is acceptable. If you have any questions, please contact Dr. Melissa Kirkendall at 243-5169.

Aloha,



P. Holly McEldowney, Administrator
State Historic Preservation Division

MK:jen

- c: Michael Foley, Director, Department of Planning, County of Maui, FAX 270-7634
- Bert Ratte, County of Maui, Land Use and Codes, FAX 270-7972
- Glen Ueno, County of Maui, Land Use and Codes, FAX 270-7972
- Cultural Resources Commission, Planning Dept, 250 S. High Street, Walluku, HI 96793
- Chair, Maui/Lana'i Islands Burial Council
- Kana'i Kapeliela, Burial Sites Program

APPENDIX H
Cultural Impact
Assessment

SCS Project Number 485-CIA

**A CULTURAL IMPACT ASSESSMENT
ON APPROXIMATELY 439-ACRES OF LAND IN
UKUMEHAME AHUPUA`A, LAHAINA DISTRICT,
ISLAND OF MAUI, HAWAII
[TMK: 4-08-002-09, 48, 52-56, 60, 61, 65, 66, 68, 70]**

Prepared by:
Leann McGerty, B.A.
and
Robert L. Spear, Ph.D.
February 2005

Prepared for:
Pacific Rim Land, Inc.
381 Huku Li`i Place, Suite 202
P.O.Box 220
Kihei, HI 96753

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INTRODUCTION

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land to conduct a Cultural Impact Assessment on approximately 439 acres of land in Ukumehame Ahupua`a, Lahaina District, Maui TMK: 4-08-002:09, 48, 52-56, 60, 61, 65, 66, 68, 70 (Figure 1). Plans for the parcel include development of 45 individual farm lots encompassing between 3 to 25 acres each, an approximately 77 acre river corridor lot (Ukumehame Stream), which will be kept as open space and a natural greenway, and approximately 100 acres of land for a future County park and future State highway right-of-way.

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). Beginning in 1850 with establishment of Hawai`i Revised Statutes (HRS) 7-1, native Hawaiians were given access rights to undeveloped private property and waterways in order to gather specific natural resources for customary uses. 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). It’s purpose has broadened, “to promote and protect cultural beliefs, practices and resources of native Hawaiians [and] other

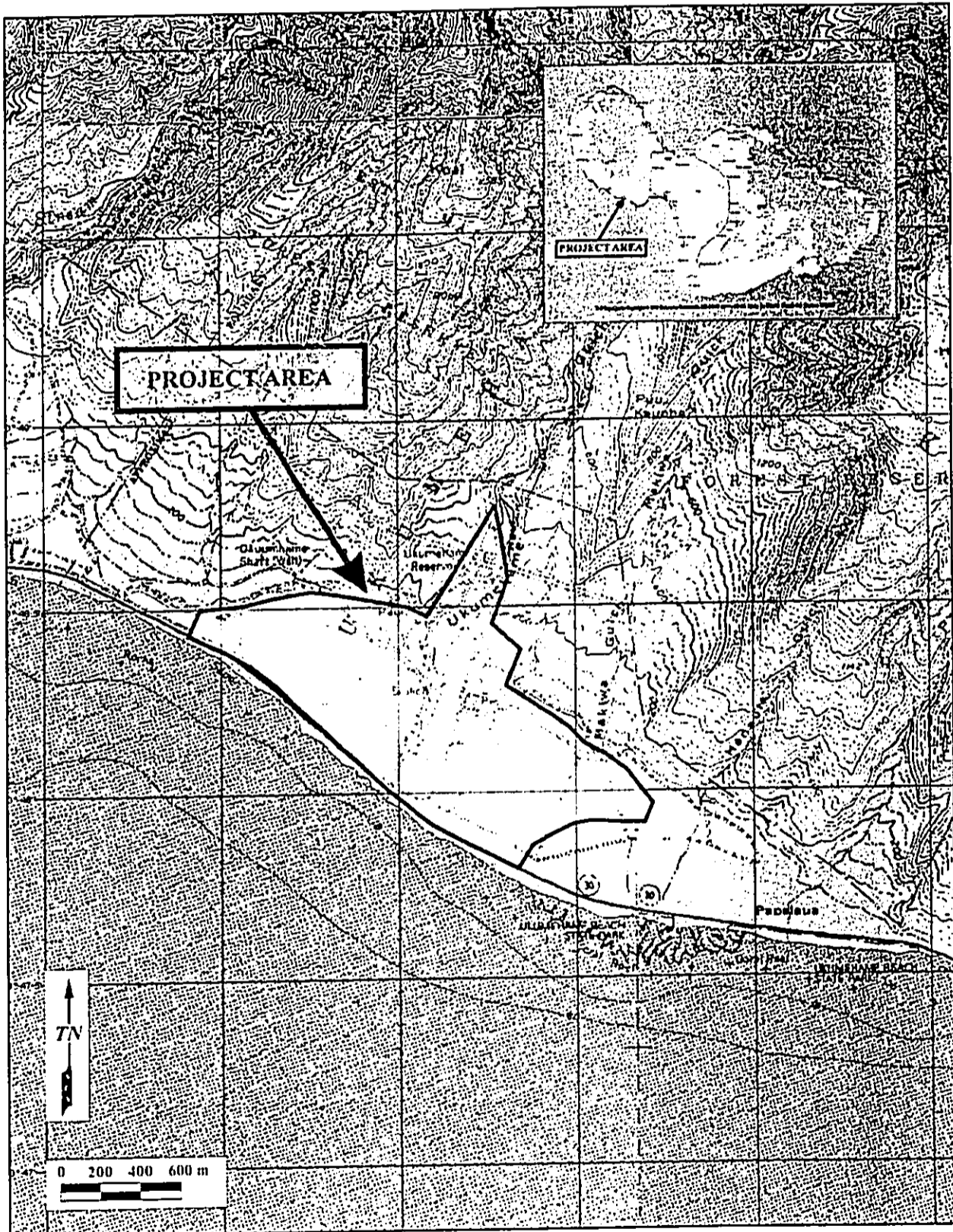


Figure 1: USGS Map of Project Area.

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 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 negative 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). This report contains archival and documentary research, as well as consultation with individuals or organizations with knowledge of the project area, its cultural resources, and its practices and beliefs. Based on this research, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps and land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological project reports.

INTERVIEW METHODOLOGY

Interviews were 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.

Many of the participants in this Cultural Impact Assessment have genealogical or residential ties to the Ukumehame Ahupua`a. During each interview, maps of the study area were referenced and Ukumehame Valley was visited by Leann McGerty, the Project Director. Interviews were conducted between October and December of 2004. Each interview was taped and then transcribed (Appendix A). These draft transcripts were returned to each of the participants for their review and comments. After corrections were made, each individual signed a release form, making the information available for this study (Appendix B). Key topics discussed with the interviewees included: personal association to *ahupua`a*, land use in the project's vicinity; 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. Initial contact was made with several members of families who are descended from the original LCA owners, who still live in the area, and whose ancestors lived in the valley for generations untold.

PROJECT AREA AND VICINITY

The project area is comprised of approximately 439 acres of land situated within the lower Ukumehame Stream valley and flood plain in the *ahupua`a* of Ukumehame, on the slopes of Pu`u Kukui, West Maui (Figure 2). Ukumehame is bounded on the west by Olowalu Ahupua`a and on the east, by Waikapū Ahupua`a. The *makai* portion of the project area is bounded on the east by the Ukumehame Shooting Range, on the west by rocky, uncultivated State land, and to the south by Honoapi`ilani Highway. The project area extends into

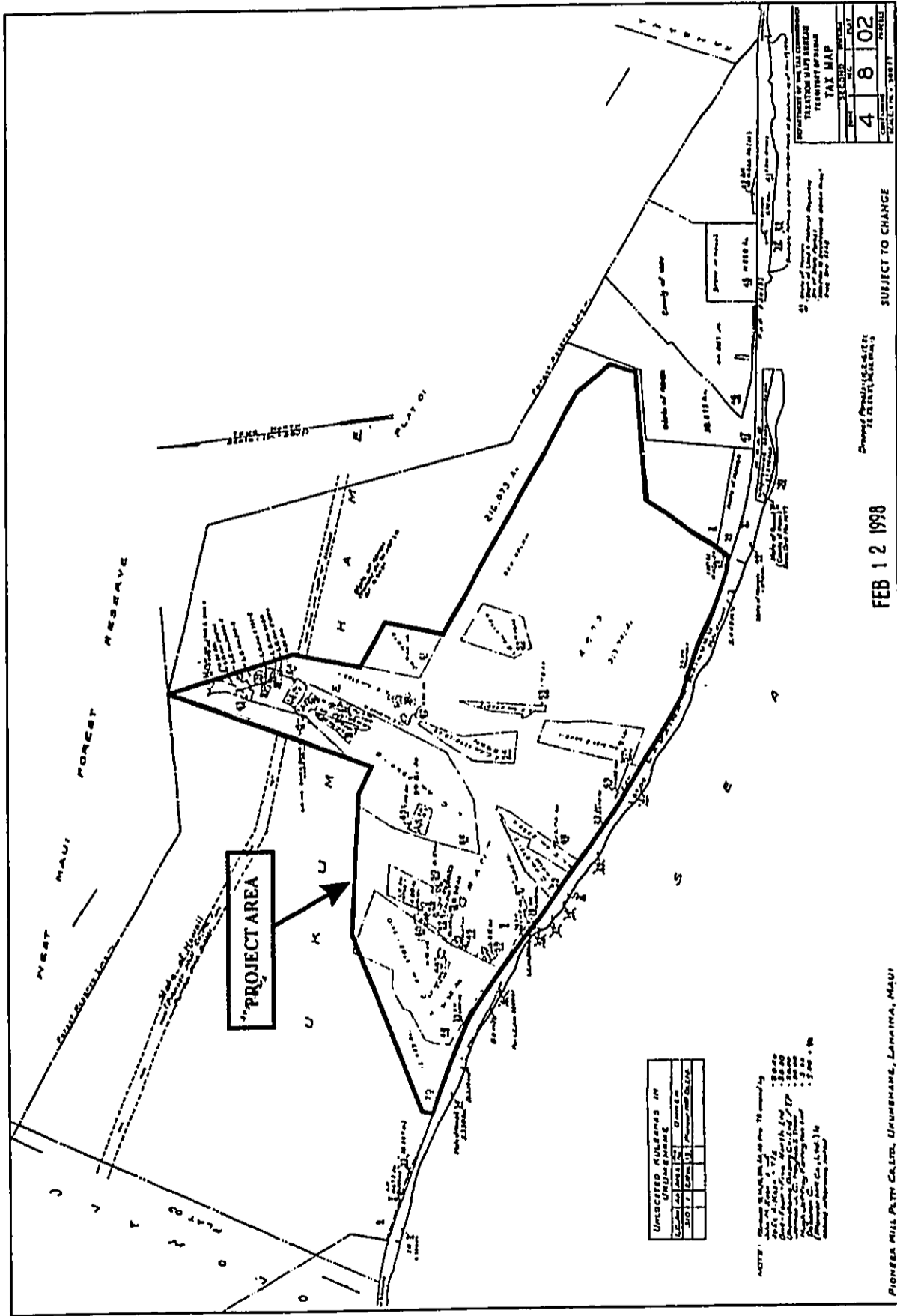


Figure 2: Tax Map Key [TMK] Showing Project Area Location.

Ukumehame Gulch with the steep sides of the gulch serving as the east and west boundaries and the forest reserve line forming the northern boundary at approximately 200 ft above mean sea level (amsl).

CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. Pu'u Kukui, forming the west end of the island (1,215m above mean sea level), is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The deep valleys of West Maui and their associated coastal regions have been witness to many battles in ancient times and were coveted productive landscapes. Waikapū was the most southwestern valley of the NaWai Eha (The Four Streams) a region that was famous as the largest continuous area of wet taro cultivation in the islands (Handy 1940:107).

PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui's lands into districts (*moku*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha'ōhia, during the time of the *ali'i* Kaka'alaneo (Beckwith 1940:383; Fornander places Kaka'alaneo at the end of the 15th century or the beginning of the 16th century [Fornander 1919-20, Vol. 6:248]). Land was considered the property of the king or *ali'i 'ai moku* (the *ali'i* who eats the island/district), which he held in trust for the gods. The title of *ali'i 'ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka'āinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupua'a*, *'ili* or *'ili'āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua'a*) which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua'a* were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua'a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *'ili'āina* or *'ili* were smaller land divisions next in importance to the *ahupua'a* and were administered by the chief who controlled the *ahupua'a* in which it was located (*ibid*:33; Lucas 1995:40). The *mo'o'āina* were narrow strips of land within an *'ili*. The land holding of a tenant or *hoa'āina* residing in a *ahupua'a* was called a *kuleana* (Lucas 1995:61). The project area is located in the *ahupua'a* of Ukumehame, which translated means literally "paid *mehame* wood" and most likely

referred to the prevalence of the *mehame* (*Antidesma Platyphyllum*) tree prized in ancient times for anvils on which to pound *olonā* (*Touchardia*) and for the red dye made from its fruits. (Pukui *et al.*:223, Rock 1974).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys, such as Ukumehame, provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai`a* (banana, *Musa sp.*), were also grown and, where appropriate, such crops as *u`ala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (AD 1200-1400, Kirch 1985).

WAHI PANI (LEGENDARY PLACES)

Scattered amongst the agricultural and habitation sites were other places of cultural significance to the *kama`āina* of the district. At least three *heiau* were recorded in Ukumehame Ahupua`a. Fishing *ko`a* (shrine) were present at Pā Ko`a beach (presently known as Ukumehame Beach Park) and petroglyphs were inscribed on mountain boulders, the meanings of which have yet to be fully understood (Thrum 1908, 1916, 1917; Walker 1930). In close proximity to Lāhainā, a favorite of the *ali`i* since the 10th century, and the fertile valleys of West Maui, the beach of Ukumehame provided a convenient canoe landing and staging place for the many battles between Maui and Hawai`i Island (Sterling 1998:45). It was recorded that the top most peak of Ukumehame "...is named Hoku`ula (aldebaran) [meaning "red star"] and below it the hill in the valley's center is Hoku Wa-iki, for the smaller stars in the constellation of Taurus" (Ashdown 1971:10).

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. A path along Kealaloe ridge leads to the summit of Pu`u Kukui, the head waters of the Pohakea and

Ukumehame streams, and beyond. The Lahaina Pali Trail, constructed in 1841, provided access to other parts of the island.

Most of the *ahupua`a* on the coast have been overshadowed by the famous roadstead and village of Lāhainā which served as the capitol of the Hawaiian Kingdom after the conquest of Kamehameha until 1855. The ethnographic and historic literature, often our only link to the past, reveal that the lands around Lāhainā were rich agricultural areas irrigated by aqueducts originating in well-watered valleys with permanent occupation predominately on the coast. Handy and Handy have stated the space cultivated by the natives of Lāhainā (district) at about "...three leagues [9 miles] in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation" (1972:593). Crops cultivated included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and gourds.

Menzies, the naturalist and surgeon on board HMS Discovery during Captain George Vancouver's 1793 tour, made these observations of the region:

[We]...soon entered the verge of the woods where we observed the rugged banks of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer...[Menzies 1928:105].

Little had changed twenty-six years later when J. Arago visited Hawai'i with Captain Louis de Freycinet in 1819. He recorded:

The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage...various sorts of vegetables and plants...amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees...[Arago cited in Handy and Handy 1972:493].

Rev. C.S. Stewart, a missionary in 1823 assigned to the Lāhainā station, also commented on the attractiveness of the district:

The settlement is far more beautiful than any place we have yet seen on the Islands. The entire district stretching nearly three miles along the seaside, is covered with luxuriant groves, not only of the cocoanut, the only tree we have before seen except on the tops of the mountains, but also of the breadfruit and the kou...while the banana plant, kappa and sugar-cane are abundant, and extend almost to the beach, on which a fine surf constantly rolls [Taylor 1928:42].

...The breadfruit trees stand as thickly as those of a regularly planted orchard, and beneath them are kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kappa trees, groves of banana, rows of the sugar cane, and bunches of the potato and melon...It scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting streams, which rush from the mountains, by artificial courses, on every plantation. Each farmer has a right, established by custom, to the water every fifth day [Taylor 1928:43].

Ukumehame, with its permanent stream was one of the valleys along with Olowalu, Launiupoko, and Kaua'ula, providing agricultural opportunities for the growing leeward population. Handy and Handy reported:

Southeastward along the coast from the *ali'i* settlement were a number of areas where dispersed populations grew taro, sweet potato, breadfruit and coconut on the slopes below and in the sides of valleys which had streams with constant flow. All this area, like that around and above Lahaina, is now sugar-cane land. Ukumehame had extensive terraces below its canyon, some of which were still planted with taro in 1934; these terrace systems used to extend well down below the canyon...

THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame'elehiwa 1992:169-70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I:145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and

private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). There were 44 claims for land in Ukumehame during the Māhele (Waihona `Aina Data base 2004). Seventeen *`ili* were also named and some of the *ahupua`a* became government land to sell as they saw fit.

HISTORIC LAND USE

Perusal of the LCA documents, incorporating the testimony given at the time of the claims, reconstructs the landscape and its use extending from traditional times into the mid-1800s (for LCA information in detail see Devereux *et al.* 1999). Land was claimed for *lo`i*, *kula*, and houses. Specific crops mentioned were *wauke*, potatoes, *olonā*, *lauhala*, and, of course, taro. Claimants for some parcels included several illustrious individuals who, although living in Lāhainā, claimed its resources (David Malo, Charles Kanaina, etc.). Unlike the typical settlement, reflecting patterns of upland agriculture and coastal house sites, Ukumehame appears to have no distinct activity zones. House lots are found throughout the *ahupua`a* and *lo`i* are not only found along the stream, but continue into the plains fed by *`auwai* that is still extant. Plots of *kula* land are also found throughout the *ahupua`a* and not concentrated on the flat lands above the gulch (Devereux *et al.* 1999).

Sugar was to be the economic future of Hawai`i and as early as 1849, Judge A.W. Parsons operated a sugar mill in Lāhainā. Kamehameha V (Lot Kapuaiwa) established Olowalu Sugar Company (originally West Maui Sugar Co.) in 1871 incorporating the lands of Olowalu and Ukumehame for \$300 a year. Olowalu Mill was located on the shoreline peninsula down slope from the cane fields distributed on the alluvial flats of Olowalu and Ukumehame streams and skirting the boundaries of various *kuleana*. The sugar company eventually prevented the flow of water to the coast, but conveniently, the traditional *`auwai* was adapted for their needs, bringing water down to the cane fields. In the 1930s, Olowalu Sugar Company became a part of the Pioneer Mill Company, which continued cultivation until the late 1990s. Portions of the upper valley of Ukumehame have been used for cattle grazing and, from the 1970s to the present time, there have been a number of activities occurring along the stream gulch. For example, LCA 310:1 and 2, granted to Pikanele, contains numerous terracing and other agricultural

features some of which have been reconstructed by the lineal descendents of the original awardee and, once again, produce wetland taro and other crops. The traditional Hawaiian *'auwai* has been repaired and is now utilized for *lo`i kalo* irrigation and, now that sugar is longer an issue, the stream has found its way to the coast, reviving the stream's ecosystem.

INTERVIEWS

Individuals that were contacted and interviewed by SCS in order to obtain information concerning their knowledge of Ukumehame at or in the vicinity of the project area, included Rose Marie and John Lindsey, Edwin Lindsey, John Ka'aea, Adeline Rodrigues, William Waiohu, and Paul Fujishiro. Transcripts of the interviews included in this report are found in Appendix A. Appendix B contains the signed information release forms. A summary of the information is provided below.

Rose Marie Duey was born in 1940 in the old Pioneer Mill plantation Hospital in Lahaina. Her husband, John, was born in 1939 in Indiana, and has lived in Hawai'i since 1961. The Dueys are presently living in 'Iao Valley, but Rose's ancestors on both parents side are from Ukumehame Valley and received LCA awards during the Māhele. The family line from her father is that of Hinau (LCA 05387) and her mother's is that of Ka'aea. In addition to the LCA awards, Rose's grandmother on her father's side bought several more parcels of land in the valley. An area was set aside for family burials which was respected by the plantation and is now fenced for protection (marked on plantation maps as the "Lindsey grave"). Internment at this spot may have occurred as early as the 1700s.

Rose remembers going into the valley to visit relatives when she was a child. The children would play and swim in the stream and she said *'o`opu* and *'ōpae* were present and taro patches were cultivated on both sides of a *punawai*, which were partially bulldozed by the plantation.

Information concerning special places was passed down through family members and included knowledge of an adze quarry, a location where navigators studied and learned to read the stars for navigation. Rose was told the large rocks at the site would hold the heat of the day keeping the navigators warm at night while they studied the stars. It was taught that the channel of Kealakahiki [the road to Kahiki] is aligned with the edge of Kaho`olawe and marks the way to *Kahiki*. Ukumehame and Hiki`i Heiau contain the burials of some family members along with a sea captain, Edmond Saffrey. Rose's father and Uncle told them to take offerings of

sweet potato or fish when they ventured up into the forest as well as other things they should and should not do. Their mother had taro patches up in the forest reserve area. The offerings were left in the same place every time.

Rose's grandmother's family had received lands in the back of Ukumehame Valley from Kahekili and Kalola, the ruling *ali'i* of Maui in the late 1700s. Years later, the tokens of her grandmother's royal connections [a feather cloak and a *nihou palaoa*] were taken to Moloka'i for safe keeping by a family member and ironically were lost in a tsunami.

Rose repeated a dramatic (and chicken skin) story concerning her grandmother being carried as a baby across the mountain pass in the back of 'Īao Valley, fleeing the warriors of Kamehameha during the war of *Ka pani wai* in 1790 [see Kamakau 1961]. When night fell, they hid in a cave, but then their *'aumakua*, the *pueo*, came and showed them the way to escape through the valley into Ukumehame where their relatives were waiting. As they came down into Ukumehame, a line of Maui warriors stood firm at the pass willing to sacrifice their lives so the other's could escape. Later, the families returned to find all their relatives dead, slaughtered by the army of Kamehameha. Because of the difficulty in burying them, the people incorporated the bodies of the warriors into a rock wall. Rose said they would sometimes find pieces of bone when they were working in the valley.

In the early 1990s, it was suggested by a cousin that they might want to work in some of the old taro *lo'i*. This had always been a desire of John's and so they began to clear out the badly over grown terraces, eventually restoring at least 14 terraces and the *'auwai* so it could again bring water to the fields and then return to the stream. The taro cultivation in the restored *lo'i* was successful producing an excess which they gave to family members and sold.

Adeline Rodrigues (Addie) was born in the Teacher's cottage at Olowalu in 1929. Both parents were born in Ukumehame, her father in 1895 and her mother in 1908, where their ancestors had lived for generations. Kamakakehau, the *kononhiki* of the valley under Kahekili, was Addie's great, great, great, grandfather. At that time, the land could not be owned and people would move into the valley and settle, building agricultural terraces along the stream. They would live there for generations, into modern times. People knew each other and even now, the knowledge of family connections is passed down.

At the time of her birth, Addie's grandparents were living at Pā Ko'a beach [Ukumehame Beach Park] where they would fish, then go into Ukumehame Valley to tend their taro, and

where they might also stay. Her grandmother on her mother's side was a healer and would gather the herbs she needed in Ukumehame Valley. Unfortunately, she did not pass on the herbal remedies as she was afraid the knowledge might be used for money. There was a special rock on their old land where she would pound the herbs. Addie was told by her mother that this piece of land was *kapu* and was not to be used for a living site, but only for taro. Addie's mother also had taro gardens that she would cultivate. Addie was raised in Kahului where her father worked for the railroad, but every weekend they would travel from Kahului on the old, winding *pali* road, to Ukumehame. A *hānai* grandfather lived on the property where Addie now lives, and this is where her family would stay. They would go into the valley, tend to their taro, and then bring some down for the grandparents at Pā Ko`a. Around 1939, her grandparents moved from Pā Ko`a to live on the land where Addie is now, but they were still growing taro in Ukumehame.

There were many special places in Ukumehame. Addie remembers several fishing *ko`a* along the beach when she was a child. The *heiau* called "Ukumehame Heiau," a name given to the structure in the 1970s, was called "Aweoweo" by Addie's grandmother, a name that was somehow connected to Kaho`olawe. (There are two separate *ili* in Ukumehame mentioned in the LCA records that might be also be associated. One is called Aweoweoluna and the other is Auweoweolalo.) Instructions were given to her by her parents not to play by Hiki`i Heiau where Addie's great, great grandfather on her mother's side, Frederick, Ka`aea Kekahuna, is buried. There were many *Mehame* trees in the valley and the wood was used for a variety of things.

When she was with her grandparents, traditional manners, where out right questions were discouraged as they were considered *nīele* and *maha`oi*, was the rule. Her grandmother would not allow the children in the taro patch (Addie does not know why) but part of their job was to pull the weeds from around the gardens. She remembers well the *o`opu* thriving in the stream which her grandmother would catch by reaching under the stream boulders. To get the *ōpae*, they had to go up farther into the valley. These disappeared when the plantation diverted water for cane, drying up the stream and interrupting their diadromous cycle. Addie said there is a waterfall at the back of the valley with paths veering to the right and left. The path to the left ends in beautiful *lo`i*. Her grandmother would take the children up here and they would stay over night and sleep on a rock ledge. She would wade into the stream, catch *o`opu*, and cook them for their dinner. Near by were some burial caves that the children were told not to go in because they might see a "light", follow it, and get lost. Addie said it was the custom at that time to bury in the caves or on the slope of a hill. This was done so no one could step on their heads,

which was considered sacred. Of course, in modern times this custom stopped and there were several modern cemeteries in Ukumehame the locations of which have been lost., Addie says.

Each area had its own name, such as Pāko`a for the beach and Kapae`iki where Addie now lives, and Olowalu village where the store is now situated. As to other place names in the vicinity, Addie said, "Hana`ula, Hana`iki...if you go up there on the right hand side of that valley, that area there it looks almost like a saddle, if you look at the mountain. That's called Hana`ula, because below Hana`ula is where our ancestors live also. And on the center, there's a small, little peak. It's called Hana`iki. ... there's on the left side of that mountain, ...that's where the owl nest. There's a name to that place" (Manawaipueo). She remembers there used to be a trail from Ma`alaea into Ukumehame.

When the plantation took over the valley and the water diminished, people left the valley. Addie's grandparents were the last to leave except for some people who worked for the plantation. Even though they were not living in the valley, they would go and tend to a few taro patches, but access was difficult as the plantation told them it was not their land anymore. After a while, the rules eased and they were allowed to go up into the valley. Addie would take her children hiking to show them where the family had once lived. Around 1994, she and her brother decided to grow some taro next to the stream on the old terraces that had been their family's land. Once the `auwai and *kalo lo`i* were functioning, and the plantation no longer diverted the water, the `o`opu and `ōpae appeared back in the taro patches. Now, the old `auwai brings water from the river, through the *lo`i*, then back to the river downstream, where it continues to the ocean in the traditional way. In time this will restore the balance and repair the stream's ecosystem. `Alae Ke`oke`o are now swimming in the reservoir next to the taro patches, `Auku`u are seen flying up the stream bed looking for food (among which are the `o`opu and `ōpae), and *Nēnē* have returned to the area.

Addie told the family's story of her grandmother on her father's side, Lily Kekahuna, from Olowalu who was born blind. Her father went to a *kahuna* from Olowalu who gave instructions of what he must do to bring about a cure. This included going up into Ukumehame Valley before sunrise gathering many different kinds of herbs and water from the spring. The father went into the valley before dawn and found what he had been told to gather in the dark. But, when he returned to the *kahuna*, the *kahuna* said his daughter would only see with one eye because, although he had all the proper herbs, the father had forgotten to get the spring water from the valley!

Addie mentioned her Uncle (John Ka'aea) on her mother's side who was raised in Ukumehame and is now in his 80s, moved from Ukumehame and now lives in Olowalu and suggested I might visit and interview him.

Addie's brother and cousin are still cultivating taro and other produce on their ancestors land and, except for a short period of time when the plantation would not allow access to the valley, members of the family have always been actively working at one place or another in Ukumehame.

CULTURAL ASSESSMEMNT

A total of seven individuals with genealogical ties and/or personal association with Ukumehame were contacted by SCS in order to obtain information concerning cultural activities occurring at or in the vicinity of the valley. During these interviews, several important pieces of information were revealed:

The interviewees are lineal descendents and can trace their genealogical history and family activities in Ukumehame from pre-Contact times up until the time their families had to leave the *ahupua`a* in the 20th century;

When access was again allowed, after the termination of sugar cane cultivation, they returned to the valley to hike, to gather, to teach the new generations family history and stories of Ukumehame's past, and finally, restoring the *lo`i*, and once again, growing taro;

Several lineal descendents are presently engaged in traditional agriculture along the stream bed. The *`auwai* has been restored to function as in the past by bringing water to the agricultural fields and returning the excess to the stream;

With the return of the water, the stream's natural ecosystem is reviving, allowing many of the stream's previously gathered native resources, such as *`o`opu*, *ōpae*, *hīhīwai*, and water birds to return;

Plants and herbs used in traditional medicine are growing in Ukumehame Valley; There are certain places that hold personal meaning as they are associated with family members, including historic sites where some family members are buried;

Some places containing burials are known, such as the "Lindsey graves" and caves in the back of the valley, however, there are other unmarked sites that are known to contain burials within the project area;

SUMMARY

In order to preserve the exercising of native Hawaiian rights related to access, gathering, and other customary activities (Hawai'i State Law, Article XII, Section 7; Act 50), it is recommended that communication continue between the developers, lineal descendants of the original *ahupua`a* residents, and Cultural Practitioners during the planning process. In this way, appropriate mitigation measures, if needed, can be put in place before development occurs.

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APPENDIX A TRANSCRIBED INTERVIEWS

Proj. 485 Ukumehame
Interview with Adeline Rodrigues
Place: Addie's home in Olowalu, Maui on October 13, 2004
Present: Adeline (AR) and Leann McGerty (LM) of SCS

LM: So we are..are we in Olowalu Ahupua'a or Ukumehame?

AR: Yes, Olowalu.

LM: And I'm talking with Adeline Rodrigues, and her family is from Ukumehame...

AR: Yes, my ancestors come from Ukumehame.

LM: And she's going to tell us about ...

AR: ...And my mom and dad were born there, also..

LM: In the *ahupua'a*?

AR: Yes, yes.

LM: So, you obviously have very strong connections. You were born and raised in Maui?

AR: I was born in Olowalu.

LM: In Olowalu. May I ask when...

AD: December 21, 1929.

LM: O.K. And so, now you say your mother and father are buried in...[Makawao Veterans Cemetery]

AD: No, they were born in Ukumehame.

LM: So we're talking about...

AR: My dad was born in Ukumehame in 1895.

LM: Do you know how big a community was there?

AR: At that time when my dad was born there...uh, one hundred and fifty.

LM: Really? Families or people?

AR: Families, everybody was related.

LM: Yea. And this went in at the front of the valley all the way to the back? Where did most people live, do you know?

AR: Did you see the reservoir? [making reference to my brief visit to Ukumehame Valley earlier that day]

LM: I did.

AR: That's where most of the people lived. That's where the water came down to, at the taro, that's why they were living there, [indistinguishable].

LM: Right. So your dad was born in 1895, what about your mom?

AR: My mom, 1908. She was born in Ukumehame also.

LM: 1908. So, obviously their parents were living there and it goes all the way back till when? Till forever?

AR: Till forever.

LM: Yeah?

AR: Yeah. Could be into the 1400s on the other side of the, it's in, on the other side of Ukumehame on the east end. There were people living in that valley before. You can come in from Ma'alaea.

LM: So, in other words there's a trail that goes from the back of Ma'alaea?

AR: Somewhere, into Ukumehame. If you were to hike from McGregor's Point, you can see the valley below. You won't be able to get into Hana'ula except from Ma'alaea.

LM: Yeah?

AR: If you reach the top from McGregor's Point, you'd look in the valley, that's where people used to live before. It's called "Hana'ula".

LM: Hana'ula. And that's in the back of the...back of Ukumehame or Ma'alaea?

AR: It's in the back of that, the *pali* highway.

LM: The *pali*? I see. And people lived there?

AR: Oh, people lived in that valley before.

LM: Yeah, yeah, plenty, yeah? Did you live there at all?

AR: No. No.

LM: So what brought you back to Ukumehame?

AR: To Olowalu, to Ukumehame?

LM: Yeah.

AR: We'll we've... When I was born, I was born here in Olowalu in the teacher's cottage. There was a school here before in 1929 and, even at that time my grandparents were living in Ukumehame and on the beach area right where Ukumehame Park is. They had a, like, you know when you go to fish? Then you go to plant the taro, so you had more like a two home, like, I don't know what you call that. You know, summer home or winter home.

LM: So, they moved back and forth, sure.

AR: Yes. And my grandparents were still planting taro in Ukumehame Even at the time when I was born 'cause my mom planted taro too.

LM: And you, of course, knew that so you...

AR: And when I went there... I was born here, but raised in Kahului. My dad worked for the Kahului Railroad. But we used to come here every weekend. We came every weekend.

LM: Just you, or the whole...

AR: The family, my mom and dad, because there was a home here. And, of course, we still went... there was a *hānai* grandfather living on this property that I'm living on and my mom's parents lived on that property called Pā Ko'a and it's now called Ukumehame Park.

LM: And it was called Pā Ko'a? Because there was a *ko'a* there?

AR: Yes! There is! There's another *ko'a* out here too.

LM: Ahhuh. So, then you guys would come from Kahului, uhmmm, not on the trail?

AR: No. They had that, ah, that ah...

LM: The old road?

AR: The old road. That *pali*..

LM: That you can still see?

AR: Yeah! I don't know how many turns.

LM: Plenty!

AR: Yeah

LM: So, you would come on that and then you guys would just stay the whole weekend?

AR: Come here and then we would go to Ukumehame.

LM: Now...so, you still had family up there growing taro?

AR: Yes, yes.

LM: And so you guys would come over here, and you would go up and get taro and you would go fishing, and...uhmmm I'm interested in traditional, anything traditional that went on while you were, like for instance, when you were going up, the stories you might have heard from your family when you were at Ukumehame. I know that there were several *heiau*, Hiki'i is one?

AR: Hiki'i Heiau, yes. And there was another one on the opposite end of that *heiau*, on the west end, which was cal...they called it the "Ukumehame Heiau", but, at that time, when my grandmother talked about, about Ukumehame, she called it "Āweoweo".

LM: 'Āweoweo. 'Āweoweo, that's a fish, yeah?

AR: Yeah, that's a fish, yeah..

LM: So she didn't call it Ukumehame, she called it 'Āweoweo.

AR: Right. 'Āweoweo. But yet in the *Sites of Maui* it's called "Ukumehame", but we, my grandmother, always said it was 'Āweoweo Heiau.

LM: And did you understand that the "Āweoweo" was in reference to a fish?

AR: No, but I know that 'Āweoweo, that word, that name "Āweoweo" is somehow connected to Kaho'olawe.

LM: Oh, that's interesting.

AR: I have no idea why. You know, when we were growing up, we were told not to be *nīele* and *maha'oi*. That word comes in our....we grew up with that word, not to be *nīele* and to be *maha'oi*. We've carried that traditional, that's a part of our culture, not to be inquisitive.

LM: Or, not to at least ask.

AR: Yes, inquisitive, already.

LM: Were you told like, you know, "Don't go over in that area and play"?

AR: Oh, yes, we couldn't go near the *heiau*. We were told to stay away from it. But, I have a, a great grandfather, who's buried in that Heki'i Heiau.

LM: You do? And his name was?

AR: His name was Frederick Ka'aea Kekahuna.

LM: Kekahuna! And is that significant? Kahuna? Was he the *kahu* of the *heiau*.

AR: [laughing] I suppose so, but I don't know. They didn't say too much.

LM: Was he contemporary with your parents or your grandparents?

AR: That's my mom's grandfather.

LM: What about when uhmmm, what kinds of activities did you do when you were up in Ukumehame as kids.

AR: We just played. But of course, part of our job was to pull weeds out around the taro patch. We couldn't go into the taro patch, but pulled weeds.

LM: Why couldn't you go inside?

AR: Because, my grandmother said that you have to be clean. Taro patches, you look at the dirt, it's dirty but there's something about it. I don't know what it is, but she said, "You stay out of that!" "Children don't belong in the taro patch." She said.

LM: That's interesting.

AR: Yeah.

LM: So the adults would go inside the taro patch to pull weeds, and you guys stayed out on the edges. And after you did that, what did you guys do?

AR: We'd go home. Bring the taro down.

LM: Home, beach side or over here?

AR: All the way here. Yeah, well it went first to the beach, because that's where my grandparents lived and later in the years, I think it was about 1939, they moved here. [referring to the house that Adeline is presently living in] They moved to where I'm living.

LM: Were there things in the stream? Were there *'o'opu* and *'ōpae*?

AR: Oh, yes!

LM: And did you guys gather that?

AR: Oh, yes we did. My grandmother was, was a...the champion! [laughs]

LM: How did she do it? What did she do?

AR: Just with her hand. She would put her hand underneath the rock and then, she would...but she didn't eat it! I don't know why, but she didn't eat it.

LM: Maybe it was her *`aumakua*?

AR: *`Aumakua*? Maybe, but she didn't talk about it. But the shrimps, you had to go further into the valley. Maybe, from, from the a...where the a...watchacall that...water, where my brother is? Where we planted our taro? You have to go in, maybe about quarter mile get the *`ōpae*. But there's no *`ōpae* now, because the water had, the river had dried up when the Plantation were planting cane? So, the river dried up! So, the *`o`opu* and the shrimps couldn't go to the ocean. But then, when we were planting taro, we started to plant taro again, the *`o`opu* came into out taro patch!

LM: Really!

AR: Yes. Because there was no water going down to the ocean, but we had water coming from the river into our ditch! So, we had the *`o`opu* in our ditch. [Later, Addie mentioned that when the *`o`opu* came into their taro patch, they noticed a 12-inch long white *`o`opu*. They had never seen one that color].

LM: And now, and your *`auwai* rejoins the river now, so maybe it will go again and come back!

AR: Yeah, I think, I think it's going down (the *`o`opu*). But now that...did you see the water going?

LM: Uhuh. Now it is in the stream. So it could come back.

AR: Yes, it is in the stream. Yeah, it goes all the down

LM: I wondered about that.

AR: I'm so happy to see, to see the water going all the way down now, because there's no sugar can, so the water is going into the ocean again! And that's where you find all the *`o`opu*, at the mouth of the river.

LM: That's right, exactly! And that could make, could re-establish that whole system and I saw, I heard from Hugh [Starr] that the *`auku`u* are still flying up, they're going up the stream?

AR: Oh, yes! It's where we are! You can see the *`auku`u*! [Their home is by the second reservoir].

LM: And, what is that, the Hawaiian coot? What is that with the white [*`Alae Ke`oke`o*], with the white [upper bill]. It's not *`Alae* [*`ula*]. What are those birds, the native birds with the white. Shoot I can't think of their names! But anyway, they're there too!

AR: Yes! And they're [indistinguishable], the *`auku`u*. It's in our church yard, also.

LM: Oh, really?

AR: Yeah! They were laying eggs in the back!

LM: Oh, for heaven's sake, really?

AR: Yeah, yeah, the *'auku`u*. And there's another one.

L<: They usually put nests up in the tree, big nests, though, up high, but...

AR: Well, it's somewhere in the back of our church yard, because there are a lot of trees there. What was the name of that bird that, uh, was in the newspaper recently, that they're trying...

LM: *Kōlea*? No.

AR: That they're trying to put back into the ...

LM: *Nēnē*!

AR: The *nēnē*! The *nēnē* comes to our church yard too.

LM: Really!

AR: I don't think they know. We have never called the Wild....what do you call, the Wild Life Service, or the Department of Land. We haven't said anything, because we don't, we just want the birds there.

LM: That is really, you might tell them, 'cause they might be really surprised. They wouldn't do anything . I don't think they would. That is really interesting.

AR: Yeah the *nēnē* birds is all the way down here! But we don't want to say anything, 'cause once you say something, goes into the newspaper and then everybody, everybody is here, *nīele*.

LM: Oh, that's true. That's true. As long as they're happy and not in danger.

AR: 'Cause, You know it's, that's and endangered species, too.

LM: Yeah, oh, yeah. So, can you remember any stories that was told to you by your...about places, special places in Ukumehame?

AR: Stories? Well, my grandmother was an herbal healer. So all the herbs came from Ukumehame Valley. But she never taught us how to do the herbs because she said that she doesn't like what she see today, and that if she teaches us to do this herb healing, we might use it for money. So, she said she'd rather die with it. And that's, that's something real sad about her, she was real good. And in, where you go into to interview Paul Fujishiro? That's our family estate. Well, in that, where he's staying there is a petroglyph rock. And on that rock, I think, there's a platform where they used to pound the herbs. They hit it. So, maybe you can ask him, he might come out and tell you. But I think he doesn't want people to just go inside and do things, so...

LM: It's special to your family?

AR: Well, because, because that is our area where he's staying now. That's the family estate.

LM: Paul is a cousin?

AR: First cousin. His dad and my mom are brother and sister.

LM: His dad is no longer, your uncle is no longer alive?

AR: No. He's dead. The only one alive now in our family is a auntie and a uncle who lives in Honolulu. I have another uncle. My mom's brother. He's eighty something. He lives in Olowalu Valley.

LM: Ahhh, in the Valley?

AR: Maybe you would like to go talk to him because he would know a little bit more, but what I want to tell you is he always goes off the subject. You have to keep him on that subject. You know when they eighty-something years old, they...but maybe you should go talk to him also.

LM: Yeah! So, this is your uncle?

AR: That's my uncle.

LM: Your mom's brother?

AR: Brother. He's name is John Ka`aea. He's supposed to be John Fuji...[spells "Ka`aea" for Leann] But he has changed his pronunciation to "Ka`a`ea".

LM: Yeah, o.k. But it's really "Ka`aea".

AR: Because, the meaning of "Ka`aea" means "wanderer", "vagabond"? Is that the same thing?

LM: Yeah.

AR: Yeah. Well that's the meaning of that name. When you change this, the pronunciation, it comes "Ka`a`ea...the breath, the breath *ea, ea*. Hawaiian *ea*. So, it's not the right, I mean, it's not supposed to be like that, though. That's up to them to, if they don't want to be called "vagabonds" [laughs].

LM: Yeah, right. But "wanderers" is better.

AR: Yeah, yeah. You go and, yeah, you should go ask him.

LM: Yeah, 'cause of course he would have ...

AR: Yeah, he knows a lot, but he does go off the subject 'cause he's old, yeah?

LM: Sure, sure, yeah. But he's how old. eight-seven you said, about eighty-seven or so?

AR: Oh, he was born 19...1917. Eighty-four, eighty-four? [Eighty-seven]

LM: Oh, wow! Something like that.

AR: See if he still remembers. He would know more than me, because he lived there. He was born there and, uh, he lived with my mom and her *hānai* mom further up where we are. Where we are now, is where my mom used to live.

LM: By the reservoir?

AD: Above the reservoir.

LM: Where you're doing your taro now?

AR: Yes. Her parents used to live below the reservoir. But when my mom was born, her aunt took her and they called it *hānai*. All the way up there. So, my uncle would know a little bit more, but there...

LM: Is he by himself in Olowalu?

AR: In Olowalu Valley?

LM: In Olowalu Valley, he's by himself?

AR: No. His wife. And the daughter visits. She's a nurse. She visits.

LM: And are they farming? Are they farming like, do they do taro there, or...

AR: No. Ah, no, he used to raise uhm, pigs. There's a piggery there.

LM: Yeah. He would probably remember...

AR: Yeah, he knows more stories about Ukumehame than I know. 'Cause by the time we were born, we know a lot about a little bit about Ukumehame, but my dad didn't like to tell stories about Ukumehame and I don't know why. But he would know. I don't what he knows about Ukumehame but, a, he used to live there.

LM: Do you recall any resources, besides the taro that was grown up there? And you guys would get 'o'opu and 'ōpae? What other resources did ...and your, and your grandmother would get her medicinal plants there.

AR: [nods yes] She used to do a lot of healing for the people there. And she was also a mid-wife. And her mother was hat maker. She did a lot of hat making in Ukumehame before. And then we had some, the *mehame* wood?

LM: Yes.

AR: The *mehame*, or whatever you call that wood.

LM: So there must have been a lot of that around ...

AR: Oh, yes. The trees grew...it was more taro.

LM: Were there places that you knew, for instance, that maybe, I'm trying to think...were there any....

AR: There were camps there.

LM: Camps?

AR: Yeah, the Plantation camps.

LM: O.K. That's right, I've heard about the Plantation camps, they were up there. Any traditional, any traditional areas that were know specifically for, "Oh, this is where they came and they did such-an-such." Or this is where they made offering before they went into the forest, or anything along those lines.

AR: I think the laying of offerings were where Paul is living now 'Cause, I don't know if...well, he's not living there, but he goes there and do whatever he does. It's in there. Because that area that my grandmother inherited, it was *kapu* land. You couldn't build a house on it. You could only plant taro in it, and everything, but you couldn't live, stay on that. And I don't know why. I don't know. All what my mom said, it was *kapu*.

LM: Had to be for taro, nothing...

AR: Well, taro and that's where my grandmother did her herbs.

LM: O.K.

AR: There's a rock there. You can ask Paul, yeah ask him that.

LM: Ask Paul. Now, that's not who I'm going to se next. Is that who I'm going to see later on?

AR: Yes, yes, yes. This afternoon.

LM: what about any place names. Like, like for instance *Pāko`a* for the beach park. You know, you knew that name...

AR: Oh, every area, every area has a name, but I gotta go ...well, actual!y where I'm living, it's called "Kapae'iki".

LM: Where?

AR: Right here. This is called Kapae'iki. Olowalu is where the village is. Where the store is, Kapa'iki. This place is called Kapa'iki.

LM: And what about...can you think of, can you remember another names that were Ukumehame?

AR: Hana`ula, Hana`iki, that's a, if you go up there on the right hand side of that valley, that area there it looks almost like a saddle, if you look at the mountain. That's called Hana`ula, because below Hana`ula is where our ancestors live also. And on the center, there's a small, little peak. It's called Hana`iki. But Inez Ashdown kinda changed those name around, but I only know, my grandmother told me that and she's older than Inez, so it's Hana`ula, Hana`iki, and there's on the left side of that mountain, that's, let see...that's where the owl nest. There's a name to that place. Oh, shucks...
[possibly Manawaipueo Gulch] {Later, Addie added, "Hana`ula: facing mountain-right of valley; Hanaiki: facing mountain - middle peak; Hale Pohaku: facing mountain-left of valley-the Hawaiian eagles made their home"}

LM: It'll come back.

AD: I should, I should have bring out all those papers to look at again, I would know, really know.

LM: It'll come back to you.

AR: I can call you what name it is.

LM: Yeah, yeah.

LM: Did I give you my card? I did didn't I?

AR: No.

LM: Oh, I didn't. I started...didn't I start to do that...[gives Adeline my card]

AR: There's a owls nest there.

LM: And that became important.

AR: An also, an Eagle...

LM: It'll come back to you.

AR: Yeah.

LM: So, how far back in the valley have you gone?

AR: To the end.

LM: To the very end.

AR: To the very end.

LM: And what's back there?

AR: There's a, there's two huge trees. There so huge, on a ledge.

LM: Really!

AR: Yes, you should go. You should go there.

LM: Do you know what they are?

AR: I don't know. I don't anything about plants and trees, but, I thought it was banyan, but can not be banyan. I don't know what kind of tree.

LM: But really big.

AR: Yeah. You should...and at the end of, when you go in, there's a waterfall like this, two paths, right to the left. Go to the left 'cause the right is where they used to plant *pakalōlō*. You don't want to go in there because they might have traps, whatever. So you go to the left. When you get to the end, you can see this beautiful taro plants.

LM: That are wild? The feral taro. So they were growing taro all the way up.

AR: Yes, it's there. If you go, if you pass where we are, on the left hand side the lot of terrace taro patches my grandparents used to plant taro in there before, a long time ago. But then, the plantation took over. They kinda discouraged the people...yeah, they closed the water and so everybody left the a ...

LM: That's when everybody left?

AR: Yeah, everybody left. My grandparents were the last to leave. But before them, had some people working for the plantation, so they were in there too.

LM: When did you grandparents leave?

AR: My grandparents left there during the war. Not really left, but they went every so often. We had to get up four o'clock in the morning to go with them! We walked all the way into the valley for them to harvest their taro. [Addie adds: where we are today, the area is named Kaulu. That name has a longer version].

LM: What about paths. Paths coming down from the mountain, from the ridges. When you get back there to the very back, were there paths of any kind of a...access to on the cliffs. [Addie adds: "We were warned not to talk about those paths into the mountain].

AR: There were, but people have been going in there, so they kinda destroyed some of the paths.

LM: So, there not usable or anything.

AR: No, no, yeah.

LM: But they were there, huh?

AR: Yeah, there were paths. Used to have caves in there, but I wouldn't...I don't know where the caves are now. But we used to go in, my grandma used to take us in the valley and we used to stay overnight. What she would do is catch the 'o'opu, cook and feed us 'o'opu when we reached the end of where we're going and we used to sit on ledge and there was caves. The caves were used for burial. It's still there. I don't know where it is, with all the growth, it's kind of ...

LM: But she wouldn't let you go in the caves?

AR: Oh, no! No! We were told never to go into the caves because she said that if you go into the cave, you might see a light. And that light, you might follow the light and then get lost in the cave. So we were told NEVER to go into any caves. But that's where they buried their dead. And then, in later years, the people just buried their dead on the hillside. 'Cause there are some graves on the hillside there.

LM: Sure.

AR: But then maybe, by the time it came into the 1900s, people buried their family in their *kuleana*. So, that whole, this whole area, people all buried here.

LM: Of course, of course.

AR: Yeah, but that was only into the 1900s, but anytime before 1900s, Hawaiian's did not bury their family in the yard, like everybody said. No. It's not in their yard, because...in caves or hillside because they didn't want anybody to step on their head. Their head was very important to them. The head.

LM: Sometimes the beach too, yeah? [used for burial] They would bury in the sand?

AR: No.

LM: No?

AR: No. If you find any burials in the sand on the beach that's because they...maybe they fought against each other.

LM: Oh, could be.

AR: Yeah, the Hawai'i people would come, all battles. Yeah, it's all battle field.

LM: And when they arrived...

AR: Yeah. Yeah. So, no, we did not bury our family in the sand. Not in the sand. That's one of our [indistinguishable] Anybody tell me that, I wouldn't! I would say, "Oh, no. We did not bury.." Because we don't want anybody to step on our head. So, they were all buried in the caves or on the side of the mountain. And then when Christianity came, well they buried in the church yard.

LM: Right. I'm wondering about that Catholic church that was up there. Did it have also a graveyard there?

AR: Oh, oh, they had several graves!

LM: So, those have all been identified and everything?

AR: They were taken out!

LM: So the graveyards are still there? [Addie adds: "Some are". [She adds: "Look at the rock piles. There are bones there".]

AR: Well, you can't see it because it's where sugar cane was grown on that.

LM: So nobody knows where they were? Boy, some house buyers are going to be for a surprise [laughs] aren't they? [Addie adds: "Some of our families worked for the plantation operating tractors. When they saw bones, they would push them in a pile".]

AR: That's why we laughing, I laugh, laugh. If you come from the mainland, you wouldn't, you not going believe it, 'cause you don't know about that, but locals going, "No!". Oh yeah, there gonna have somebody walking through their house. [laughs]

LM: Not only that, but they...once uncover some stuff, they might lose most of their lot, 'cause you know, you have to have a big buffer around it and everything! Oh, by! Well, that's the way it goes!

AR: [laughs] You know, if you look at our hillside now, it's more like this, yeah? Ukumehame and Olowalu. It used to be like this! What they did was they, they, well as the years went by, they had tractors and everything, they made it like this, terraced so that the water, they needed the water to plant the sugar cane. It was the flat, you can't water the sugar cane.

LM: And then there was the old, traditional 'auwai that came. It's still there!

AR: It's still there!

LM: Yes, Hugh should it to me. And that went all ...and he showed me where it came around and went down to Malo's land on the...

AR: Where is Malo's land?

LM: Well, there was...

AR: Oh, Malo's land is on this area [refers to map]. Where the spring water is.

LM: Oh, o.k., yes...

End of Tape side 1.

AR: ...Charles Kanaina.

LM: Charles Kanaina, now who is he?

AR: Charles Kanaina was the chief. He was the chief of Ukumehame.

LM: ...He was the, he was the *konohiki*?

AR: Yes. *Konohiki*, chief is the same. Well, today they say *konohiki* is the one who takes care of the water, but it was...

LM: Well, apparently the, what Hugh said was that the *'auwai*, that the old, traditional *'auwai* came around the hill and went down onto Charles Kana'ina...Kanaina, Kanaina's *'ili* land and then Malo's land I think was next to that. And some of Malo's land was in, was using the ground water, because there's so much ground water.

AR: Yes, the spring water. It still have it! Sometimes when you go to the ocean? And when we were little children, we were, we would be thirsty? We would dig the rocks and then drink the water.

LM: The nice clean...

AR: Cool. That's why, when you go swimming, the place where it's cold, that's the spring water coming down from Ukumehame.

LM: Amazing.

AR: But it's on this end of a...I think the highway is going to right, going right through that spring water area. The highway. Oh, yes the spring water's on this side.

LM: Oh, but the won't...Oh, Yeah, I think you're probably right.

AR: If there was a map, it would be easier for me to show you a [indistinguishable]

LM: Well, I, you know, this is one map that I have. Let me get this out for you [USGS]. And that shows...and then actually I was given these maps, 'cause these show the 16 LCAs that were awarded.

AR: Awarded to who?

LM: To various people. I don't know, I think that has the name, the name here, or it says the "Aloi"...

AR: "Aloi", that's my great, great grandfather!

LM: My great grand...great great, great great grandfather...

LM: ...and "Pahula" and "Halele". Great great?

AR: Alohi is my great, great.

LM: And that says *kula* land. And so it has the names here...Kolia, S. Kolia, and Kiawe and ...

AR: Kolia is...we used to own that. Kolia we used own. Yeah, so my dad exchanged Kolia with the property in the back of [indistinguishable].

LM: Oh, o.k.

AR: Where we are is here [on map in Ukumehame] Pikahele.

LM; O.K., Now that's where I saw your brother today? O.K., yeah.

AR: Oh, Kana`ina, Kana`ina, o.k. He had an `ili, they call that a `ili.

LM: But that's Charles Kanaina, yeah, o.k., and he had the entire `ili .

AR: Right. But he also had some up here somewhere, but we called that *lele*.

LM: Right, yeah. Now show me where Paul is on this? 'Cause Paul is on your grandmother's land.

AR: He's not on anybody's la...a *kulena*, because we have our own *kuleana*. I don't know.

LM: O.K. [Lean and Adeline trying to locate area on map]

AR: There's no other name for where Paul is except it 's...Oh!, O.K. Kamakakehau.

LM: Kamakakehau?

AR: That's right. I forgot! I kept think of my grandma [Lily], great grandma [Haehae, granddaughter of Kamakakehau].

LM: And that is name of..?

AR: He used to be the chief with Kamehameha. When Kamehameha came to Maui, here. That Kamakakehau was there [Ukumehame]. That's our great, great, great grandfather. He was the *konohiki* there.

LM: So he was under Kahekili?

AR: Yeah, three times. Yes, Kahekili.

LM: Ahh, that's very interesting.

AR: That's the one that Paul is on. [Addie adds: "that's what he tells us".]

LM: O.K. Wow. Quite a history. Quite a history in there.

AR: Our ancestors used to own the land, all the land. All the way from the mountain to the ocean, before. But then families come in, they all, they really didn't own. The king owned the land, they used it. There was no ownership.

LM: Yes, that's right. But after you've been there generation after generation, after generation, it's, you know, it's.

AR: You could work the land and move on if you didn't want to work the land. You could go to the next, next *ahupua`a* to work. There was no ownership.

LM: Any places that you went for special things? In the valley.

AR: By the time I was born, the family had [indistinguishable] taro.

LM: Yeah, taro and play in the stream and everything. And place names, you're telling me the ones that you remember.

AR: Oh, more or less, I know all, everybody's, all these places. I know what it is. This man owned here and by the reservoir on the east end. He had a lot. Because in order to own lots like this, five acres or more, you have to have been some kind of chief or lesser chief, or whatever. And this Kamakakehau, this man up here, my great, great, great grandfather, this man was his son-in-law, Atoi.

LM: So, you know the family connections, as well.

AR: I know our genealogy.

LM: Yeah. It makes them almost like friends, yeah? When you know that this is the son-in-law of this man and ...

AR: And we were related to this people here. We were related to him, also. We were related to everybody in there. And they married among themselves, because that's the *ahupua`a*. So some of them instead of marrying the family here, they would move to the next *ahupua`a* and marry somebody in Olowalu, like my grandfather went to get a wife from Olowalu. So, my paternal grandma is from Olowalu and my grandfather from Ukumehame.

LM: Your grandmother that was the healer? [Kaulu] [Addie adds: "My mom and dad are 3rd cousins. The had the same great-grandfather. Our family here (has) very strong ties to Ukumehame to the time of Hua, king of Maui.

AR: My grandmother that was a healer was born there [Ukumehame]. She always lived there. This other grandmother on my dad's side is from Olowalu.

LM: On your dad's side, she was from Olowalu?

AR: Uhuh. And there's a story, I want to tell you this story, because. This story is about my grandmother. Her name was Lily, Lily Kekahuna. When she was born, she was born blind. So, her dad went to find a *kahuna*, a *kahuna* who came from Olowalu, if he could make my grandmother see again. So, he told...this *kahuna* told my grandfather that he would have to go into Ukumehame Valley, pick up all this herbs that he's supposed to pick up. Everything has to be from Ukumehame Valley. You go there before the sun come up. Maybe early morning, but, "be sure to come down from that valley before the sun come up and do not forget anything that I'm telling to bring down so that...for your daughter". So he brought whatever he was told, but when he reached down and the *kahuna* saw that he didn't bring whatever he was told to bring, the *kahuna* told my great grandfather that his daughter would see only with one eye. And you know what he forgot? The spring water! He forgot to bring the spring water down from the valley.

LM: He had all the herbs, but not...

AR: Everything that he's supposed to bring down, but he forgot the spring water. So, when he healed my grandma, she could see only with one eye. It's a miracle!

LM: I'll be darned! Yeah, really.

AE: I mean, I don't know what kind of miracle you have, but, people used to do that before.

LM: It seems that way, doesn't it? that is really something! So, he had to go up there and gather the herbs in the dark, get down before the sun came up...

AR: And the *kahuna* was waiting for him, but when he's looked at what great grandfather brought down, he forgot the spring water. So my grandma saw with one eye.

LM: That's amazing, just amazing. That really is! Do you miss not living in the valley, I mean, of course, you didn't actually live in there before. But you go in there...

AR: I love going...Yeah we've always gone in there. Not like we used to. Because, even to go to the gate before, the plantation told you, "You can not go through this gate. This is our property! This is our..."

LM: They had the access.

AR: Yeah! We couldn't go in. But gradually, you know, as the years go by you have better bosses and so happened this boss was nice to us and then, of course, now we telling him we have the rights to go up, so he gave us a key to the locks, so we used to go up and go to the land. We used to go there, we used to go camping, hiking where my brother is now, working today.

LM: So, have you always, always been growing up there.

AR: No, we stopped growing taro.

LM: O.k. So, when your grandparents came out, that was it for awhile.

AR: That's it. We didn't go back till about 1994.

LM: O.k., o.k. So, then you went back 1994.

AR: Ninety-four, ninety-five, I forgot. I think it was '94. Cause my cousin was there already. He was raising pigs.

LM: O.k., you cousin is?

AR: Paul.

LM: I see, so then you went back...

AR: So we thought, "Well..." we wanted to plant taro again. But we always went there camping, going to the...we used to do a lot of hiking before. That's all we did before. My children did that also. I took them into the valley, 'cause I wanted them to see where there grandparents grew up.

LM: So, they've hiked all around there and then you decided, "Well, we might as well grow some taro too!" and, and...

AR: Yeah, yeah. We had time, was ready to retire, that's why. I love it! I cannot believe that I'm back in Ukumehame again after all the years I was busy raising my children.

LM: Yes. But you were living here this whole time?

AR: Since '66.

LM: Oh, since '66, well that's along time.

AR: We built this home here. But I live in Wailuku when I got married. And this was more like a summer home for us and then we went back and forth. Then in 1970, we moved back.

LM: I appreciate the time you've given me and sharing all these things with me too. It kinda makes me wanna go back in time, yeah?

AR: [laughs]

LM: I mean, things were a little bit simpler, and a little bit healthier, and a little bit, I don't know...I'm going to turn this off [now]... End of Tape Side 2

Proj. 485 Ukumehame

Interview with Ed Lindsey (EL), a retired teacher and cultural practitioner, concerning Ukumehame Valley and cultural considerations held at the offices of Chris Hart and Associates in Wailuku Maui on December 7, 2004.

Present are Ed Lindsey (EL) and Leann McGerty (LM) from Scientific Consultant Services, Inc.

LM: This is Dec 7, 2004 and we're in Kahului, no9 we're in Wailuku, Christ Harts office with Mr. Ed Lindsey. You are on the Burial Council is that correct?

ED: No, I'm not on the Burial Council.

LM: Oh, o.k., I thought you were, for some reason.

ED: No, I'm not on it, ah. William, William is on the Burial Council.

LM: Oh, o.k., alright. You are...?

EL: I'm a cultural practitioner. And I am a cousin to Rose, first cousins to Rose Duey.

LM: Yeah, o.k., that's the connection. And your family has been in Ukumehame forever?

EL: That's right. Through my grandmother's side, the maternal side.

LM: O.K. and what is that name, what would that name be?

EL: "Pelio".

LM: Oh! I saw that..[no that name]

Ed: See a lot of the records for my grandmother have been mysteriously misplaced or burned.

LM: Why would that be?

EL: Good question. Primarily because of land. Yeah. We've been left a legacy of.....not too much disinherited, but misuse of power, land power. During the time when word was good, to the point where you needed the paper. Under the Hawaiian cultural practices, a handshake and a word was sufficient. It's just that, when Western culture started to move in, after the Māhele and everything else, you know, that a paper became more important than the person's word. But still, then you had a transition of time where the word was still important where, if the plantation wanted to use something, you just said, "Yeah, go ahead and use it!". That was the nature of the people. Land was not a commodity. Land was a sacred right of passage, so to speak. So, and everybody worked the lands for survival.

LM: Right. You said something to Glenn earlier that I found really important and that, you were referring to the preservation of these cultural practices, so that when people do by the land, they have to

become, because these things are preserved, they have to become aware that they are [indistinguishable]. Would you reiterate that, 'cause I thought that was very important.

EL: Yes. When people who are not committed to the land, purchase these lands, it is important that they understand what they're purchasing. It's not just a flat piece of soil and stone, but they're purchasing history of that area and within that history, you have clear self-sustainability where everybody...there was no stores where you could go down and buy things, you know? Everything you worked with had to be done by you, or the family, or within the community where you could exchange goods and there's this thing of sharing, *makana*. You shared with each other. And if you tie in what the land grows for you, and then what you can harvest from the sea, you have a full and complete self-sustainability...system of sustainability, rather. You have to be friends with the environment, with the land and the ocean, the air and the spirits around you to keep things in Harmony. And when these things are in harmony then everything produces. It's just that when the harmony is broken, then we have excesses and family [indistinguishable] be the side of the spectrum. So, this is kind of what I hope, that when people buy into these projects, that they understand that can not bring their Western mentality, but, even though it's there. Can not bring your Western mentality and reconstruct an alien philosophy that is not in harmony with what the land has already gone through.

LM: And that's what we see, isn't it? I mean, these big developments so often, it's not part Hawai'i anymore!

EL: No it's not, so, I call these things cultural DNA. You want to keep this DNA because this is the thing that is of value. It's high value. It's more valuable than, you know the cost, what they're spending on the land because it gives a sense of place, a sense of history and it makes sense of a...and if you can really tune into what has happened, you find out what the Hawaiian names. They had names for all different entities within that land mass. Whether it's the winds, the rains, the seasons, the oceans, the *pōhaku*s, all of these things...where the burials are and why they put it in certain places. And then you're talking about different kinds of life forces. People know that as *mana*, yeah? But there's life forces still active within this lands. In fact, many times we a...plantation workers. When they were harvesting cane and things under Pioneer Mill, would witness spirits and strange things that's occurring late at night, especially at the night shifts, where it will make people's hair stand up! And these are real entities. They're not figments of anybody's imagination, when one, or two, or three, or a whole group of people see things and feel these things. You cannot prove it and you cannot disprove it. They call it a hypothetical construct. And, these are the kinds of things that people when they buy into place in Hawai'i, have to understand. It's important that they understand that, because once they understand that, get the feeling of the rhythm of the land, then they can be proud of it instead of being a alien part of it. That point is really important, as far as I'm concerned.

LM: And one of the ways to do that is, perhaps to have those *lo'i*, or to have those historic sites along the river available for people to see and a...is that correct? Am I understanding correctly?

EL: Oh, yes. When we all leave this earth, we leave certain things behind,...what we said, what we did and some of our possessions and it gives the history of who we are and what we are, you know? And the people who lived in Ukumehame has done that in the form of [indistinguishable]. Whether it's graves or artifacts, or remnants of stone works or taro patches that are still intact yet, but just in dormancy. And so, when you find one artifact, you usually, you can hook things up to other points of

human activity. And when you hook it up to human activity, then you start thinking you can also hook up to the different spiritual ness of the...within that close confines.

LM: the thing that I find so amazing about Ukumehame is the descendents of these very individuals who built the *lo`i*, built the walls, built the *'auwai* are still there! And some are a...some have restored they're family's *lo`i* that go back, who knows how long. So, there's a continuous thread there, it's not like some people are moving into the valley and they say, "Oh, let's rebuild the *lo`i*." These are descendents of those who did and that makes it even, to me, more profound.

RL: Yeah, it's a continuation of our cultural DNA, and it's important to maintain the a integrity of these sites and things like that.

LM: Were you raised in the valley? Were you...

EL: No, no, I'm raised in Lahaina.

LM: But you are Rose's cousin, so, did you as a child go up into Ukumehame?

EL: Yeah. Oh, yes, going see my dad. During the time when we were children, we were lucky in that we got to see the tail end of many of the old folks that lived in the different valleys.

LM: May I ask when you were born?

EL: I was born in 1939. So back in the 40s, our dad used to take us hiking and camping top everyone of the valleys and took the neighborhood kids out in the ocean, to learn the ocean, too. We didn't know we were being taught at that time.

LM: No, that makes it even better, doesn't it?

EL: Yeah, yeah. So we were being taught unknowingly. So when were back up here, fast forward life to '65, and we look back, we say, "Yes, we were being taught!" So, we were being taught about this legacy that these *kupuna* and the families have left behind. And we got to see the taro patches, got to see their chicken's, their ducks...

LM: So, they were still growing taro up there in the 40s.

EL: Yeah, oh, yeah.

LM: How many families were...?

EL: I don't know, I was too young to really know all the families over there, because my dad was saying that, you know my grandmother had property up there...

LM: And give me your grandmother's name please?

EL: Annie "Ho`o`ululahui." [Ed spells name for Leann] [She] Was named by King Kalākaua. That was King Kalākaua's motto during his reign.

LM: Ahh! Ho`o`ulu...lāhui.

EL: That means to go out and propagate, to grow like the `ulu tree, the `ulu tree sends roots out, and from the roots you have more `ulu trees. So, ...and that has to do with the [Hawaiian] Nation, because during this period of time the population had been decimated by all the diseases and famine had occurred with the changes, you know. In fact many of the indigenous cultures have been decimated by all the diseases from Tonga...

LM: The Maori...

ED: The Maori all the way up the chain including the American Indians.

LM: Especially Hawai`i, it seems.

EL: Ninety-five of the people was killed died from these things whether it was venereal

LM: Measles...

ED: Yeah, small pox. And then when you have these changes in culture, where you're going from the spoken language to the written language, you know there's opportunities for scoundrels to move in and take things. And so, you know, it's just the same story where indigenous peoples have been plundered for whatever reasons. And most of it, when you scrape the reasons off, is money. So we are the remnants of that plunder. And even though, we're not pure Hawaiian blood, we're hybrids that have adjusted to what has happened. We still survived. And in surviving in this society, it's important to teach our younger people and other people who are interested, about what was. And it has to be primarily with one and working in harmony with them learning to be sustainable. So, hopefully this project would help do these kinds of stuff. Maybe using modern technology, like such as wind power. You know, they have [indistinguishable] in Ukumehame to use solar and wind energy. Those are all renewable energies.

LM: Well, I was very impressed to see the restoration of the stream. My understanding was once the sugar cane was in there, they diverted the water, but now, you cousin, has said that oh, when they were up in the taro patch, they now see `ōpae, they now see `o`ōpu. I saw myself, the *alae ke`oke`o*, the coot, a Hawaiian coot on the reservoir. `Auku`u, flying and even, I understand, *nēnē* are in the area. So this is coming back, this ...once the water is allowed to go down the `auwai, through the *lo`i* and then go back into the stream, like it was originally intended [traditionally].

EL: Yeah, the natural living organisms can replenish themselves because there're still bits and pieces around so that they can, when you put the environment back in again, they can revitalize and re-energize themselves. It's just that...

LM: That's very reassuring, isn't it?

EL: Yeah, yeah. Including those birds, but of course some of the...especially the 'Auku`u, they've adjusted to different kinds of fish. For example, you know, there's tilapia in the *punawai*, so they hunt tilapia. And if you had gold fish in there, they'd hunt the gold fish!

LM: But the 'ōpae and the 'o`opu, I understand, were not around after the sugar cane started...

EL: No. Well, the stream was dead, yeah?

LM: "Cause they couldn't get to the ocean. And they have to get back, right?

ED: They couldn't get in, the stream was dead. The water being completely blocked off. So, one of the...part of the changes, hopefully, that's coming because of the demise of industrial agriculture is that some of these natural sources can go back to where they're supposed to be and re-energize the plant life, like that animal life in streams.

LM: Do you have any *lo`i* that you're tending up in Ukumehame, or...?

EL: Yeah, yeah, we have some *lo`is* that we're working on. My cousin, John and Rose Marie had been working out ...

LM: I spoke with them. Yeah.

EL: Yeah, they worked on it and then they bought their parcel over in 'Īao Valley and so they wanted to put their energies up there. And, uh, since they left, they asked us if we would take it over. My brother and I, along with our wives, of course...yeah, so...

LM: Now, your brother...?

EL: My brother is Charles Lindsey.

LM: O.k., but I didn't meet him. I met...who did I meet in the valley? I met, a..., I met Addie's brother.

EL: Ah, Eddie Kaohui.

LM: Yes, that's who I met, o.k. 'Cause he was up there tending [taro] So, where are your *lo`i*, more *mauka* than that? Or where were they?

EL: We're right above the *punawai*, the reservoir.

LM: Oh, alright, alright, alright.

EL: I think you went to see it.

LM: I did, I did. That's where the um, that's where the *Alae ke`oke`o* were.

EL: We used to have nine of them in there. So they come and go. And we also have them...we've see the chicks. They build their nests on the branches, they're sticking over the water. And uh, we know when they're nesting, 'cause then they just start chasing each other, and start to go through this dance. And about a month or two later, then we hear the chirping of the chicks.

LM: The 'Auku 'u will each those too, you know.

EL: Yeah, I know. They had two, the *alae* that you saw, they had two babies and about four weeks later we saw only one.

LM: Oh, that could be mongoose, too.

EL: Yeah, mongoose, mongoose and rats.

LM: So, those..., when I saw those *lo`i* they were in beautiful shape, so you've been tending those?
EL: Oh, yeah.

LN: So tell me this, now. The land...the originally I guess are taken over by Pioneer, or the sugar cane, but they have allowed, ...they did allow you to go back up and to tend these *lo`i*, knowing that it was your family's *lo`i*? Or just because it was land that they weren't using?

EL: No, we weren't allowed to go up. If we did go up, we just went up on when [indistinguishable]. You know, the plantation was kind of funny, that they try to protect what they deem important. And if it's not going to make a big problem for them, you know, they over look, let things be as they are. Our dad took us way up into the valley and camping in the valley and talked about how our grandmother, she owned these taro patches up there, how she would allow other people from different national, Japanese, to work her taro patch. And return, when they harvest, they bring taro down to her. That was sort of back then payment and at least he was amenable, but the main thing was that taro was continuing. You know, one of the most profound questions ever asked me, was my four-year old grandson. He asked me, "Grandpa, why is this important?" "Why is the taro important?" Now, how would you answer that?

LM: Well, if you take care of the taro, the taro takes care of you. You take care of the land, the land gives back to you.

EL: My answer to him was that, "'Cause that's who we are. Hawaiian's came from the taro. That's why you are here on this earth. So, that's why it's important to take care, you see. 'Cause without that, we wouldn't be here. " [indistinguishable]

LM: Did your father take you often into the back of the valley, or just once in awhile?

EL: Oh, yeah, no, as children we all, we went up to everyone of those valleys. And then, as we became more independent, we would go up on our own, you know, to harvest, take the fruits of the land, whether it's watercress in Lanipoko, or taro, or *ōpae*, or *o`opu*, or whatever.

LM: But you would see all around you the remnants of your culture.

EL: Oh, yes, oh yeah. In Ka`ula, that's another valley above Lahaina, we got to see the old folks, got to hear the voices, got to hear their aches and their pains, and we got to see the fruits of their work. You know, that pomegranate trees, they had a grapes, they had papayas. You know, you didn't need too much money. If you have all your food, you have the taro and your fruits and you got chickens and pigs and things like that, you don't need...you only need money maybe to buy cream and sugar or gas to go up and down the hill, but mostly, that time, they were walking. We were walking, too. But that's the kind of , that's the kind of things that we were raised with. We didn't have, our mother never had to go fix lunch for us. We foraged! [laughs]

LM: Considering the energy put into this *lo`i* along the stream, what if the landowner who owns that land now says, "O.K. You guys have to get off!" And this is

EL: Well, that's why it's important to be involved in the process so that that doesn't happen. So, we want to head it off before, before that kind of things happening.

LM: Exactly.

EL We, are the living bones of our *kupunas*, and if a CCNR or an understanding or ...can be written into or taken care of by the landowners, the large owners...

LM: What's a CCN?

EL: Codes Requirements and restrictions.

LM: These can be written in at what time...when during the process?

EL: Before the lands go up for sale.

LM: And that would make allowances for that kind of a situation, family members, perhaps, ...

EL: Cultural, yeah, 'cause under HRS 6-E there's also access, yeah? They have to take care of access for cultural...

LM: HRS 6-E...

EL: Yeah, 6-E, for the Burial Council and access to the cultural rights.

LM: which, obviously you have in that *ahupua`a*, I mean it's...

EL: Yeah, yeah. Being lineal descendants.

LM: I am very frustrated, cause I would like to talk to you more, but I'm going to meet Ka`aea...

EL: Oh, John Ka`aea. Now he could give, you know, he's in his 80s, so he can give you good stories if his faculties are still intact.

LM: We'll find out. but, if there's another opportunity, I'm going to stop the tape now...

End of Taped Interview.

Proj. 485 Ukumehame
Interview of Rose Marie [RD] and John Duey [JD] concerning Ukumehame Valley held at the offices of Chris Hart and Associates in Wailuku Maui on October the 13, 2004.
Present are Rose Marie, John and Leann McGerty from Scientific Consultant Services, Inc.

LM: ...Here we are, and we are in Wailuku Maui and I have Rose Marie and John Duey...and they have a very close and long association with Ukumehame. So, first of all, let me just ask, were you both born and raised on Maui.

RD: I was born and raised in Lahaina.

JD: I was born in Indiana, been on Maui since 1961.

LM: And, when were you born, may I ask?

RD: 1940.

JD: '39.

RD: I was born in Pioneer Mill Hospital.

LM: Oh Yeah!

RD: During day light saving time...

LM: I know where that was too, 'cause I remember an old map of where that hospital was, yeah. So, [to the tape recorder] we've been looking at some beautiful old maps from the Pioneer Mill Company showing the different water in-takes that the sugar company had established, but in and amongst those are these beautiful *lo'i* and a section of which. Rose Marie and John cleared, re-dug, put walls back together, and planted with taro. And that was, what year was that?

JD: '96 thru 2000 what...? [to Rose Marie]

LM: How did you get involved with that land in the first place.

JD: An individual that we know, people by the name of Paul Fujishiro we've known for years. Our kids went to Kamehameha Schools together. He came out where we're sitting, but anyway, we're talking to him one day and he said, "Oh, I have some land in Ukumehame. Why don't you come up and we, WE will restore these taro patches". And I had always kinda wanted to do this and so we, Rose and I discussed it and said. "O.K., we'll go for it!" And so we went up there. We...He said "We'll run up the weed eater, so it'll cut a path, so we're gonna take care of this and my cousin will take care of the upper part. So, we went to work and we cleared one taro patch and nobody came to help, so we said, "Well, the water's here, we'll do something with the water." So, we cleared another taro patch and what are we gonna do with the water? Well, we'll make another taro patch so, we would up clearing 14 taro patches, up there and restoring them with very little help from the individual who is invited there.

RD: Let me just add to that. Paul Fujishiro and, this afternoon, Adeline, you'll be talking to her are relatives of mine.

LM: And how...[are you related] cousins?

RD: We're distant cousins. Um, Paul Fujishiro's grandmother was Kemano Ka'aea. She was my mother's grandfather's sister.

LM: "Ka'aea", isn't that the name of Kamehameha...? [thinking of name "Pai'ea"]

RD: One of his caretakers. But, anyway, ...did I say "Ka'aea"? Yeah, I did.

LM: Yeah, you did.

RD: Anyhow, Kemamo and...we're related on both sides of the family...and they did not acknowledge that until the very end when the Burial Council was going to say, "Yeah, it is Lindsey's grave." Then they came in and say, "Yeah, we're related, and these are so-and-so..." and what not". But, anyway, Kemamo Ka'aea was my mother's grandfather's sister. And she married a Fujishiro. O.K., now, that's why the Fujishiros' go by the name of "Fujishiro", but they're related to the Ka'eas, but one brother took the name "Ka'aea" and that's how Mr. John Ka'ea has the last name "Ke'aea". His father was actually a Fujishiro, but during the war years he decided to take his grandmother's name rather than the Fujishiro name. So, I hope all of this genealogy stuff won't go in to the report, but just to show you how we are connected to the land, actual land, because those people lived up there. They're weren't only Addie and Paul's *ohana*, it was also my own.

LM: Eddie and Paul?

RD: Adelaide and Paul.

JD: They're first cousins.

RD: They weren't only ...the Ka'eas weren't only related to them. They were also related to, on my mother's side. And on the Lindsey side, and I'm not sure whether Adelaide will agree to this, but on the Lindsey side, Ha'eha'e Hinau was married to John KeKahuna, which was a relative of Ho'oulu and Adeline. And Ha'eha'e Hinau is my grandmother's step-mother...

JD: We do genealogy besides.

RD: ...and Tūtū Lama Hinau, Ha'eha'e's father, owned and was awarded land in Ukumehame and that's how we're connected there. The other interests, how we are related to the families in there, that's how. And that's how we're related to the land. Ha'eha'e Hinau was married to John Kaleihoomio Pelio who was my grandmother's father.

LM: Can you say that name again?

RD: John Kaleihoomio Pelio

LM: Oh, o.k. Now, what I'm going to do is, because this helping me understand your connection, I probably will type this out, and then you look at it, and the parts that you don't want in, you tell me and I'll take it out.

RD: Right.

JD: Roses' grandmother, Annie Pelio Lindsey, owned land, too.

RD: I'm getting to that. I'm telling her the two ways that we are related to the people and the land at Ukumehame through the Ka'aea line and on my mother's side, and through the Hinau line on my father's side. And, then, also our grandmother, my father's mother, purchased land in Ukumehame because her grandfather, Tūtū Lama, had told her that she should buy the land next to his. And that's how...and not only that, she also had, she had two parcels, one above in the area of the taro patches. And then one below in the area where the graves are [indistinguishable].

JD: And Paul's grandfather leased that land from, Rose's grandmother, Annie Pelio Lindsey, to raise vegetables. We have the documents for that.

RD: So, that's our connection to the land.

LM: This truly your *kuleana*, this is your *ahupua`a*!

JD: Yeah, yeah.

RD: And, just furthering on that note, John said he, Paul, had approached us...he approached us as "family". He said, you know, "Come back on the land". That's how he said it. "Come back on the land, the family land". And he said, "You know, I have these taro patches I want to open in Ukumehame." He said, "You know, your family, your Tūtū have land up above that, too." So we're already aware that the graves was there, in Ukumehame was our family graves. And for years even Pioneer Mill was aware of it that, you know, that was the Lindsey graves. It had it on their map As the "Lindsey grave". So, when he said, you know, "Come back, cousin, open the taro patches as our family", we truly felt that he had control of the taro patches and so we went up there to open them up. And in going up there to open them up, then we found out that they were not his.

LM: Oh, I see. At that point in time you still thought they were his. How many graves, how many burials are there, do you know?

RD: It's a multiple burial site according to the Burial Council.

LM: Starting at what point in time, 1800s? Maybe even before?

RD: Oh, they say that even before, 1700s, maybe even before that. Yeah.

LM: So, from your father's side you have the Hinau connection, from your mother's Ka'aea connection?

RD: And that's the connection they're [Adeline, Ed, and Paul] coming from, is the Ka'aea connection.

JD: So, we're not interlopers.

LM: Right. Exactly. Yeah.. So you guys went up there and you started clearing and you started planting taro, and...but this was not...initially, you weren't living off the, you were using the taro for your family? And then you started selling the extra to the, uh...

JD: Yeah. We had way too much.

RD: As we had way too much. Then we started re-doing walls, but we also, from our youth, had some knowledge of the valley itself, you know, and...

LM: You had gone there as a child?

RD: Oh, yeah. We had gone there as a child. In fact, I can remember going to Paul Fujishio's father's house and getting gold fish. You know, he was surprised to hear that.

LM: There were houses up there then?

RD: Oh, yeah. There was even a plantation camp up there at one time. Not way back in the valley, almost above the grave sight, you know? And a, I forget the name of the camp, but it had a name and I can't remember what the name of that camp was.

LM: But, Paul's dad didn't live in the plantation camp, or he did?

JD: Didn't.

RD: No.

JD: He had in a house up there...

RD: Yeah, yeah. They had a house up there, but it was during the time they were farming for grandma.

JD: Yeah, o.k. This is her dad, J. Lindsey [showing Leann a picture].

RD: 'Cause they were on grandma's land at that time.

JD: See, we had this long before we ever went there. We've always been interested in this stuff, you know, from day one. [John is referring to the photos and family history he has comprised through the years].

RD: So that's my father that did that map of how things were in Ukumehame. As he could remember it.

LM: Is he buried there?

RD: No, he's buried at Veteran's Cemetery. But his Tūtū, his Tūtū is the one that's in the grave there at Ukumehame that we have chained off.

JD: We decided that...when they had cane around there, we decided that we better put a fence, so we..I instigated it.

RD: And our son pressured us, he was so sick and tired of hearing about it!

JD: So, the family went and bought some posts and then we put a chain around it, we had sign made, they burnt across it later. 'Cause they used to put the tubing right across for the drip, put it right across the grave site, so, they burnt the sign, the two sign that said "Keola grave, contact Lindsey's in Lahaina. Since then, after they stopped burning cane, then this was taken...

RD: I think the sign's still there...

JD: The signs still there. This is overgrown now just in the five years that...they're not harvesting, farming anymore [looking at photo of grave site] And this is the grave site I just showed you on that map.

RD: You kina would be able to say that its multiple grave site because there's like these rock that kinda, you know, sits in there.

LM: Also, they'll have to put a buffer...

JD: Oh, we have.

RD: It's a fifty-foot buffer. A lot larger one than normal and that was because, the Burial Council when they visited, then Charlie Maxwell said, "Rose, what do you think?" I said, "I think it was a larger grave site'. But, you know, this is what protected after Pioneer Mill had been through it and everything, so they put a fifty-foot buffer in it.

JD: Yeah. This came from Hugh done this, but what I done after that, I drew up a different little plan. We were gonna build a stone wall, like this [shows plans]. This is the shape of the gravesite, but you can see the rocks and this and that. We were going to make a...when they said fifty-feet, we were going out fifty feet from every place and build a stone wall around it. This before Adaline...

RD: Adeline...right through the whole Burial Council hearing, kept say "We're not related to them. That's not our 'ohana in that grave. That's not even a grave, that's a Catholic, foundation for the Catholic Church." When Hugh went and done the research, he said, "It is a grave." He said, "The Catholic Church was way over here and then they moved it down to Camp Pecusa area. And she was like, "Oh, my goodness!" And then she came back and said, "Yeah, we are related. This is my Uncle John Ka'aea, and he can tell you how we related to the person".

JD: Because of that, we had lost interest in building the stone wall.

RD: Because, you know, you get them involved, Addie and Paul, we put the rock up, they'll take it down, so if it's not the way they want it.

LM: Well I'm kind of interested in...when you used to go up there as a kid, you just went to visit family, or what did you do?

RD: Well, actually, you know, uh, your mind gotta get jogged every now and then. Somebody would say something and Mom would say, "Oh, no you used to go up there", and you remember, "Yeah there was this nice guy used to give us this little bottle with gold fish inside." And then you said, "Oh, who was that guy?" And then your father says, "Oh, that was Mr. Fujishiro and he used to farm grandma's land", his mother's land. So, you know, then you go like "Oh!" But, you know, they now lived up there, in part of the camp, and he's a ...I don't recall what all, but at that point he was not farming out grandma's land, but he used to my father said.

LM: Farming it for what?

JD: Vegetables, taro and vegetables.

RD: Yeah, he used to sell for his family living. Oh, and taro, 'cause he used to bring taro in to my grandmother, was part of the payment to bring the taro for my grandmother to make her *poi*.

LM: So, where the gold fish from?

RD: The *luas*.

JD: ...taro and vegetables, over four acres...4.25 acres, or something.

LM: I see. Where are the burials in relation to...

JD: It's real close. It's probably on this same land, although there was some, some place that they showed us more this way [referring to a map], but this map shows it right there and that's where the grave is, but here's the ditch, the ditch is just right...there's the ditch, there's the road, and the grave is in the field just a ways. Well, it's real close there.

LM: Yeah. So, you would go up there and you remember the gold fish, what else do you remember about being up there? Did you guys play in the stream...?

RD: Oh, yeah, we played in the stream, and went swimming, and...

LM: `o`opu?

RD: Yeah, there were `o`opus in the stream...

LM: ...and you gathered it and [did you gather] `opae and stuff, did you guys collect..., you know, get them for eat?

RD: Actually, you know, my parents probably did that, but we as kids, we just played, yeah? But what I do remember is that there was at one time some taro patches up there on both sides of the stream, not the stream itself, but on both sides of that road you go up? There were some taro patches in there, but they're not there, I mean, they've been bulldozed.

LM: But they were planted with taro?

RD: No, not in that area, I'm talking about further up into the valley where the chain is, you know? [to John] Right below the *pūnāwai*, there was taro patches on both sides at one time and they're...the patches are there, but they're not maintained anymore, you know. And Pioneer Mill did go in there with a bulldozer and bulldoze some of that.

JD: They made the road, plus they made the small reservoir when they went to drip, so that destroyed some more stuff.

RD: My knowledge of the area is more since we went back up there. And Ed Lindsey will probably talk about his mother and father going up there to work in the taro patches and such, and but for us it's mainly after we've come to work in the taro patches that we become more aware of what was up there. And then you kinda flash-back on your youth, yeah? And, what we do know that's there is, Not only the taro patches but, you know, the [undistinguishable] area the adze...adze you say [to John]?

JD: Adze, the adze quarry, yeah. But I think its outside, though.

RD: And the Hiki'i Heiau, the edge of the *heiau* having the Ka'aea's family in there with the Saffrey family burial there...

LM: Saffrey, Saffrey, that's connected with Waialua. Reverend, we had a Reverend Saffrey out in Waialua, I mean Haleiwa.

RD: Well, there was one here. He was a sea Captain?

LM: Oh, no. Sorry, I'm thinking...this must be a descendent...

RD: But, anyway, so, there is a lot of the cultural sites we're aware that's there and we...some of them when we were kids, and some of them before we went up there farming that we were aware of these other cultural sites.

LM: How were you aware? Who told you?

RD: Family members. You know, like my father, Uncle them, uhmm, they told us.

LM: Would you go...would you say, would you ask what this was, or would they just tell you?

RD: They would just tell you, "Oh, there is the adze quarry and that's the old...",. But they never mentioned peoples' names. They would just say, "Over there is a *heiau* and up here where the stargazers would learn how to..."

LM: They said that?

RD: Yeah.

LM: About what area?

RD: But it's out of their...

JD: It's not their property, it's on over...it's on over from the grave, *heiau*.

LM: But it didn't have a name? They didn't give you the name?

RD: There's a name now, but I don't think...

LM: It's on the east, west, side of the valley? I mean...

RD: West.

JD: Yeah, west.

LM: And what was it, was it an actual structure or was it just an area?

JD: Rocks

RD: It's rocks. The rocks are shaped like the...and according to my dad and Uncle Ned said, is the rocks are shaped like that because the rocks get heated during the day, the men sit in them at night, it keeps them warm as they gaze at the star, and this is the point to Kealahiki, the edge of Kaho'olawe, you know. And so...and it does have a marking now on it from, what, the Bishop Museum [to John]?

JD: No. Dr. Hammett put it in there. I've seen it once, but it's gone. They put these disc or something?

LM: Yeah, it's a site marker.

JD: Yeah. There was one there and there was one at the house site but you gotta find it.

RD: And then, of course the house site over there that's real prominent, the history of that house site, what happen there. You know, we're aware of that from my dad and Uncle Ned and even...we pulled up the, went down and looked for the newspaper clipping.

LM: So, this house site is definitely in the project area. Right before we go to the house site, tell me what your family told you about those rocks? They said, "And over there is where the star gazers...", what did they say?

RD: That's where they would learn how to sail and how to read the stars, so that they could navigate. Actually, that's what they used, a navigational site. The word "navigational site." And that's where they learned how to navigate by studying the stars. And someone would be trained as, you know, when they were real young, to go there and learn the stars, the skies, the different time of the year, the different skies. And that the reason it sits there is that there is the point to Tahiti, Kealahiki, right off of Kaho'olawe, 'cause they would travel back and forth.

LM: That is out of the project?

RD: That is out of the project.

LM: O.k. Now tell me about the house site.

JD: O.k., when you go up there...

RD: What time you have, John? [Rose needs to leave by 12:00 PM]

LM: Is there anything else you can remember that they told you about when you were up there as a child? Sites like that. Did they say anything about the *heiau*? Did they say don't play around the *heiau* or anything like that, or...

RD: I think it's more like there's two *heiaus* in this *ahupua`a* that they could remember...isn't there two *heiaus*, John?

JD: The other thing, this thing says "graves." I think the Burial Council, they said the one on the *heiau* has graves, too.

RD: But, I thought above there was like the, a *heiau* called the Ukumehame Heiau.

LM: There is. There is. There is supposed to be three *heiau* that were pointed up in Thrum's time and in Walker's [time].

RD: That's what I was told too, that at least two Hiki'i and Ukumehame.

JD: Is that, Walker's book, is that available anyplace?

LM: It's never been printed. They have is notes, I have a copy of the notes in my office, but it's never come out as a publication. Cause Walker...

RD: Before I leave, before I leave, can I just say that the Ukumehame Heiau, remember when we were discussing the grave site, we were sitting on the grave site? And I said "There's supposed to be a Ukumehame Heiau", and I kinda turned around and pointed up to that [site on map] and somebody in the group said, and I think it was Adeline, said "Ah, that's just one of Moia's monuments." And then, I kinda looked and I said, "O.k., maybe that is". But when we were kids, that's what my father and Uncle said, above of the grave was the Ukumehame Heiau.

LM: Yeah, I believe it was there. Now, you said something about, real fast, I know you need to go, but you something about someone buried at uhm, Hiki'i, or Keki'i Heiau?

RD: Yeah, Adelaide will tell you that's her *'ohana*.

LM: O.k.

RD: And Saffreys's will tell that's there `ohana, too. But Saffrey' s...

LM: Saffreys, you said that was a sea captain?

RD: Yeah. That Saffrey, Edmond Saffrey was sea captain.

LM: One last thing. Do you recall any protocol or anything you were told to do when you guys were kids up there in the valley. Were you told anything like, "If you go into forest, and you pick"....

RD: Oh, yeah. Oh, yeah. We were told to [indistinguishable]. Certain things you can and can not do and certain things...and we definitely, we weren't told to wrap a rock in a ti leaf. I mean, we would take foods, sweet potato, or we would take, you know, fish, if my Uncle had fish, but never a rock wrapped in a ti leaf.

LM: I know! So, you would take that up [the food] and leave that as an offering where?

RD: Oh, but it's further, it's out of the project. It's behind the, where, [to John] you know where we scattered Uncle...?

LM: Is it like up, is it a forest area?

JD: Yeah, it's a forest reserve....

LM: But you would do that, not because your auntie was, and uncle ashes was scattered there.

JD: They're just buried there recently.

RD: Oh, no, we just buried them. We just scattered their ashes there recently.

LM: Oh, I see, I see. So this is something you would do when you went into the forest.

RD: Whenever you...we went up there, that was father's protocol and my Uncle's protocol. And my Uncle's protocol is that something be taken with you and be put up there in the forest. Because, my Uncle and my dad said that their mother had taro patches further up past, into the forest reserve area. Inside of that valley, and we have been there, yeah John? Uncle Ned has taken us there to show where the patches were and that's where the, you know, as we were kids I remember us taking our gifts and offerings there.

LM: And where would you leave them?

RD: We'd just leave them there on the... in a certain rock area, on a wall there, you know...

LM: The same one every time, or just, you know, when you...

RD: The same one every time.

LM: But it wasn't an *ahu* of anything [formal], it wasn't like a little alter, it was a wall?

RD: No. It was, I think uh, protocol because our whole...you know it's hard to go all the way back to get documents to prove that your *'ohana* was there, but one of the things that [indistinguishable], that comes down to our family, and you've heard this story and it's about Kalola [grandmother of Keopuolani, Kamehameha's most sacred wife] and Kamehameha's inheritance. Yeah, war right here in 'Iao Valley?

LM: Yes, yes.

RD: Our grandma had roots...in 'Iao Valley and Ukumehame Valley and those...and Kaua'ula Valley, and those families had to flee Kamehameha and they went out through, some people say Olowalu, our family was Ukumehame, is where they came out of. And part of...that's why her family has land, had land up there, way back in the forest reserve.

LM: Kalola? No, your grandmother.

RD: My grandmother. Was because of her relationship to Kahekili and Kalola. In fact, our family history says that she was of Royal blood, you know, like all the Hawaiians, but my Uncle, Bob Lindsey, had taken her *palaoa* and her feather cloak with him to Moloka'i and it was lost in a Tsunami. Yea, on Moloka'i, yea. He was the eldest and he had taken it for safe keeping.

LM: The *nihopalaoa* and the feather cloak!

RD: Yea, and it was taken in a tsunami. And so, the history of that is that our grandmother was a little girl, a little baby. It seemed like she probably was a year old or a little less, carried on her family's back through that valley!

LM: Through, up...oh, chicken skin! You mean, up 'Iao, over the mountains, down into Ukumehame?

RD: Yes, trying to escape the soldiers of Kamehameha who...and they hid in a cave, and uh, when night fell, they...actually the *'aumakua* was an owl and it showed them how to come out through the valley, to Ukumehame where their relatives were waiting for them. And, it goes even further. Like I told John, I don't know if this true, but the family history, stories say, as they came out and they were fleeing Kamehameha, there was a line of defense that stopped right there in Ukumehame. And, to give them ample time to escape, the warriors sacrificed their lives. And, Kamehameha came through, killed that line of defense and after Kamehameha's troops went...canoes went on to Moloka'i, knowing that she was fleeing, Kalola, was fleeing to Moloka'i, that the people that was left that hadn't been massacred, came through Ukumehame and found all their loved ones, that line of defense, dead and they put their bodies in a wall of rocks. They actually built a wall, 'cause Ukumehame is rocks! You can't dig and bury, so what they did was took these bodies and supposedly put rocks around them, like a wall of rocks. I heard that story from my family. I have never...I don't know whether Pioneer Mill when they went in and farmed cane, had just literally gone through all that stuff, and therefore is no longer there, but I have never seen a wall of rocks. But we find pieces of bones here and there when we working, yeah? So...but that's the story.

LM: It could be way, way, way back, Way, way back. I mean, Pioneer didn't go all the way back?

JD: No.

RD: Yeah, it could be way, way back, you're right about that. But the grieving people following to see what happened to their loved ones who were warriors came up upon this scene where the last line of defense was completely annihilated and they buried them in rock walls. So...and it's a story, a lot of older Hawaiian people here in Maui will tell the same story.

LM: So, obviously it's one that was a famous story and it told over and over, yep.

RD: And it would make sense, when you think the battle was in Īao and these people...you know, that's how she escaped, it's in history books. That's how she escaped through there...and a...you never know, but I got to go.

LM: Oh, I really enjoyed...I wish you had more time. I really did, I enjoyed that very much. Thank you, thank you. If you think of anything else...you have my card?

RD: Thank you. [Rose leaves. John has many excellent maps and photos that he shows Leann, pinpointing where their taro patches had been located. John also points out several sites on the map that we have been speaking about and those identified during the inventory survey, orienting me to the sites association. John tells me about murder of Noah Ka'a`a at house site in 1917. Neighbor was found guilty.

LM: When you guys were up there tending the *lo`i* did people ever come up to do any gathering, plant gathering for either medicinal reasons, or any other reasons there? People weren't in the habit of going back into the valley through that land?

JD: No. Actually, if anybody came up, the people above us would chase them off.

LM: Even then?

JD: Yeah. "This is our property, get out of here!" They put "No Trespassing" signs up and everything. In fact one time Sierra Club members, the guy from the plantation had made...asked me if they could come up there, and I said, "It's not my property, but they can park by our place if they want. So, they come up by our taro patches and the guys above us, they got so mad they was going to come down, they railed at me their gonna put a fence up so nobody could go between our place. They just walked the *'auwai*, past their property. There is another way to go on over by the intake there's another little trail to go up, but very seldom,

LM: Oh, I see, but does the Sierra Club or any hiking clubs go up the other way? Very rarely?

JD: Very rarely. Because the whole place is all chained off and there's no real access unless you know somebody.

LM: Where is the...wasn't there a trail, a ridge trail? Does that come down into Ukumehame? An old, old traditional trail.

JD: No. We done it. We came down Olowalu. We went through Īao when I was a little younger. In 1978, my son and actually Charlie Lindsey and two other fellows. We went through Īao and came out Olowalu.

LM: Did you really?

JD: Yep.

LM: How was that?

JD: Terrible. Something I wanted to do and was very proud of it.

LM: Yeah, yeah. I always wanted to do it to, but uh....

JD: That and went Pu'u Kukui, went to the top of there [indistinguishable]

LM: Did you really?

JD: Yeah, and went down Kaupo Gap. That was the three things I wanted to do, so that...

LM: So, how long did it take you to do the down to Olowalu.

JD: We done an over-niter.

LM: So, you slept up on the top?

JD: Yeah. On the other side of the ridge, about 2500 feet. Slept overnight and went down the next day.

LM: But really rough, huh?

JD: Yeah, rough.

End of interview

LM: I had always understood that the trail that had been there at the time of Kamehameha had been maybe gone, or there had been mud slides or something?

JD: Yeah, in 1933, the DAR, the Daughters of American Revolution, hired James and Jim Mahi who used to live in the valley, they're long gone, to go back and work on the trail so people go through. But, they worked for a little while, and I don't know how far back they got. We'd seen portions of the trail maybe, but we weren't on the trail, by no means.

LM: But you did see portions of a trail?

JD: Yeah, on this side, yeah. On this side. But after that on the ridge, on the other side we went down the stream bed. We fell down and got the hell out of there.

Why, spooky?

JD: No, just tired. You know, from 6:45 one morning till 10:00 the next night is a long way. Anyway the other things I'd sure like to see maintained or kept over here, there's monuments up here [shows spots on map] This map doesn't show it very well.

LM: Well, actually I was looking at this and this is the Preservation Plan and on this Preservation Plan are Ukumehame Monument and there are a whole bunch of sites here, I don't know what each one is, but it looks like they will be preserved.

JD: Yeah, there's a monument there, there's a monument here, there's one there [showing locations on maps, discussion as to which monument is which. John would like to see the taro patches above the reservoir that are in several sections, some near the house site, saved.]

There is some discussion of known sites in the valley, correlating maps with archaeological reports. John has done a tremendous amount of research and has gathered historical maps. Land court Awards, and newspaper articles, as well as information concerning Hawaiian sites in Ukumehame.

LM: A lot of my concern has to do with access, people being prevented from, you know, getting up into the mountains and that sort of thing for traditional purposes. For their plants or whether they are going up there to, perhaps to Hiki'i Heiau once a month, or once every couple of months, you know. That those are the kinds of things we need to protect. And archaeologically, it looks like those sites have been protected, for the archaeological things, but, uh, a lot of times we over look the cultural, that are still alive! And still, you know...

[John shows Leann more historic maps (1881) showing old church site and Lindsey land. The rest of the interview is a discussion of the Valley in general.]

Proj. 485 Ukumehame

Interview with John Ka'aea (JK), born in Ukumehame ma halonui and former resident of Ukumehame Valley. The interview was held at his home in Olowalu Valley, Lahaina, Maui on December 7, 2004. Present were John Ka'aea (JK) and Leann McGerty (LM) from Scientific Consultant Services, Inc. Hugh Starr was present in the beginning of the interview.

The interview is in progress and we are looking at a map and discussing trails from the mountains into Ukumehame.

JK: ...how the earlier Hawaiians commute to the west from the east, to the west to 'Iao. I just showed you Ukumehame, uh? There's no way you can come down. see? So, anyway, they told me, when he came to me, "John, did you have [indistinguishable] hear from a Mr. Siemer- and son?" Oh, yes I did. So much ridge, see? The difference is, if you once in coon's age, once in twenty years, you know what's gonna happen.

LM: Right. All over grown.

JK: The early Hawaiians, they maintained them. See? They maintain 'um. So they maintain they get a [indistinguishable]. "But do you have any...?" "Oh, yes I did! So funny, there's a drop, so I stopping. I was a little fortunate" "What do mean? "Well, I saw one little ridge where someone went camp there, not too long." "That's alright. How many hours took you?" "Eight hours", he's saying. Stayed on the summit overnight and come [down]...that's the reason why the petroglyph area is called the "rest area". According to his story. It's the rest area here for the native Hawaiians. When they go back home to the east, they rest for awhile, and then [go]. That's how, it's [indistinguishable] lot of ways, you see?

LM: Yep. Now, let me take your picture so I have a record.

[tape off during picture taking, then back on]

JK: ...Olowalu Christian Church. It's called Olowalu Lanikila. Well, originally it's from Boston, Massachusetts. [Indistinguishable]....Well, anyway the cemetery there at Olowalu, the original church is a seminary and church. Probably that's originally the first English teaching in Olowalu at that time. Probably that's where my grandmother, I don't know if my grandmother became Christian or educated...my mother didn't.

LM: What was your grandmother's name?

JK: My mother's name was Lilian Kemamo Ka'aea Fujishiro. Married name, Fujishiro. Well, anyway, just the three of them. She's the eldest. Number two is my aunt, Auntie Ka'a'e. I think you're aware that where, where the property is now, right below the reservoir [indistinguishable] that's where my nephew used to raise taro, Paul Fujishiro.

LM: Yes, o.k.

JK: Actually, that is my mother's estate. The other, two probably you are the owner now, at that time, you see. You know what I mean, that's a three puzzle there. But only original is my mother. My aunt, my uncle is deaf and mute, see? They probably sold it to the sugar plantation at the time. [indistinguishable] Well, then come below, that is where the estate of that Ke Ola, is where the grave, they used to have the grave there.

LM : That was Ke Ola?

HS: That's the grave on the side of the road with the native plants around it?

JK: You know where the stream is, right by the cane now. Beautiful place! That's my birth place, that. And my dad leased, well, he came here as a contract worker why he has obligation to fulfill his three years, sugar contract. So, he opened the sugar contract, Olowalu Sugar Company now, C. Brewer's the agency, see? And then, he leased the property, it's that family of Ke Ola that is pushing the grave of their family, that's all their relatives now. Then for 15 years, WWI, 1917 to 1932, well, with the understanding that it belongs to the family estate...[indistinguishable] Well, out of the blue sky, C. Brewer and Company, I really don't know, only God knows what kind of transaction took place. But the lease is a lease, see? WWI, 1917 to 1932. But that's why he's been a independent farmer, that's why when you gave me the watermelon it remind me of Ukumehame!
[discussion of the sugar business before statehood and how they controlled the economy]

JK: Any way, well, that's my life. I've been a sugar worker since 19..after we lost their lease in Ukumehame, was expired in 1932. At that time, fortunately, Sugar Company in those days, Hawai'i industry was all manual labor. One hundred percent, no mechanization. Manual labor. They need every [indistinguishable] they have, see? First immigrant came, well, the Chinese came somewhere about 1852, then the Japanese, 1860. [indistinguishable] Well, so, anyway, we lost the lease, there, but fortunately, they hired us to work ...they need laborers, so we left the lease expired so we left.

LM: Were you living on that property at the time?

JK: Yes, that particular property.

HS: You know the one he's referring to? The one that we met Ed Ka'ahue on? Up above. The *lo`i* above, right?

JK: Correct.

HS: Above the intake? On the other side of the stream.

JK: No. You see, the location is, probably you know that there's a irrigation ditch along side the boundary of , well there's a small little forest there. On the Lahaina side now.

HS: Yes.

JK: Lahaina side [indistinguishable] All the way, this one, at least a higher elevation get, below is the lower elevation, but we call that Field 20. Private area, you know there. [indistinguishable]. Well, anyway, when the lease expired, well we work for the sugar company. But I worked from 1933, I left by 1967 is when I left [indistinguishable] Independent, so I've been in self employment for 37 years now. And so my daughter graduated from nursing college... This is my daughter [referring to a photograph on table] Well, after she graduated in 1970, well, I had enough of the sugar company. I'd been a farmer from Ukumehame... pigs, poultry and so forth. In those days, transportation in the area was all horse and buggy. [indistinguishable] at that time. But the means of transportation to transport all there produce from Lahaina. But, my dad grew them, see? Anyway, where you are right in ah, Ukumehame. I forgot, actually how many acres of complete...

HS: It's about 435 acres, yeah.

JK: So, anyway, I shall give you all the information.

[Hugh Starr excuses himself from the interview]

JK: I was gonna ask you, if you don't mind, if either of you have one map of Ukumehame?

LM: I have a small map. It's not a large map.

[Leann and High arrange to meet later. John tells us about the return of his grandchildren to Hawai'i in the near future]

LM: So, um, it's very nice of you to give me your time and I hope you don't mind, I'm going to tape the things that you say... [Leann explains Release Form]

JK: Are you interested more about the knowledge of all the Ukumehame archaeological area?

LM: Well, it's that, but it's more like I would really love to hear about your life growing up in Ukumehame.

JK: archaeological area... You see, the reason why I was called to testify to the State Commission. The Burial Commission. Because I'm one of the last elderly here. So, Mr. Charles Maxwell, called me one day. I think, Tim did attend that meeting there, see?

LM: Well, I think that I saw a friend of yours today. I visited with Ed Lindsey and his brother is a...

JK: That's why, when he called me, so I gave him the information. As far for all the archaeological area, the State and Burial Commission was interested in what, but it's law now. It's law. Well, since the building of the [Ritz] Carlton Hotel. Well, [indistinguishable] grave, right in the property had one, that's expected.

LM: I'm not particularly interested in the archaeology. What I want to know about is your growing up, your small kid time in Ukumehame.

JK: My small kid time?

LM: Yeah, the things that you did and the way the valley was, and the families that were there, those kinds of things.

JK: That's why, when I did testify were my mother ... You see, just only three. She's [John's mother] the only one produced 12 in the family.

LM: She had 12 children?! Your mother.

JK: My mother. We three more survived....even put that, 12 children [referring to Leann writing information down]

LM: [laughs] I will put that down! That deserves to be written down! Twelve children! And may I ask when you were born?

JK: Eight boys and four girls. Deceased is nine, just three more survived. Myself, I have a sister in Honolulu, she's ninety-one now. And she's still Miss Fujishiro. Living by her self.

LM: Never married?

JK: And my younger brother, he's eighty-two years, he's the baby of the family. I'm the last survivor on Maui.

LM: And when were you born?

JK: Yeah, all born in Ukumehame.

LM: When was that? What year was that?

JK: Well, I was born...for me I was born 19...WWI, 1917, March 13. I'm the last survivor here.

LM: And your brother and sister live away, and you're the only one on Maui.

JK: The eldest born year, my eldest is my sister and she born about 1901. Then my other brother, 1903, and so on.

LM: So, you were raised in Ukumehame with all your brothers and sisters?

JK: Yeah, all Ukumehame born. Everyone.

LM: On that piece of property that was leased?

JK: On that particular property. Well, you see, that's our livelihood. That's the reason why my granddaughter was so interested, I call her the historian.

LM: Good for her!

JK: You see, what was great grandpa's wages at the time, 48 cents a day! That's starvation now.

LM: This is with the plantation?

JK: Don't jump to conclusion. Forty-eight cents...Today millions no worth nothing!

LM: Yeah, yeah, yeah, that's true. Forty-eight cents was worth plenty then.

JK: It's big bucks...[indistinguishable] That's the reason [indistinguishable] a living at the time.

LM: Those were his wages from the plantation? Oh, no, those were his wages from the vegetables he sold.

JK: [indistinguishable]... when he finished his three years obligation of a contract, that's immigration contract, so that's the reason why he lease the property. He was farming on the land part time. That particular land. At the Keola's estate, see. And then, when he was farming there, and in the mean time, he leased the property from 1917 to 1932. So, out of the blue sky, C. Brewer and Company claimed they bought it. What ever transaction made, is only known to God at that time. To the best of my knowledge, to my experience, most land in the island, to the best of knowledge I understand, is to move adverse position at that time. Well, anyway it's no big deal. Well, number two, I agree with the sugar industry, cause the land, thousands of acres idle. And the water went in the ocean. But now the water is very wistful [indistinguishable]. Well, anyway...

LM: Where did your family move to after C. Brewer said "Oh, your lease is up and we own the property". So where did you go?

JK: When the lease end in 1932, well, the management, we had close time together, and at this time my father was a sugar worker too, at C. Brewer Company. Then in 1930, Olowalu Sugar Company went out of business. Pioneer Mill subsidiary of Amfac bought Brewer that's when they got land, Olowalu and Ukumehame, where they are now, see, by the property. So, They built a railroad, everything was railroad and I'm the last railroad engineer for the sugar company.

LM: You were?

JK: I was.

LM: Oh, my goodness!

JK: I'm the last engineer. My partner now, Mr. Kazu Okimoto is 101 year old, he still living!

LM: Is he?

JK: I show you his picture. [looks through album for picture of Mr. Okimoto. John tells me about Mr. Okimoto who outlived three wives and was in charge of the yard, switching tracks. The railroad went to Kapalua until 1952]

LM: So, where did your family go then when the lease was up? Where did they move to, they moved away from Ukumehame?

JK: So, when the lease expired in 1932, right to that expiration date, sugar management were very nice. The late Mr. [Keith] Tester... offered my dad, I was a teenager at that time, work. They need [indistinguishable]

LM: They offered your dad work and you work?

JK: First one, there was an option. Ah, "Mr. Fujishiro, if you and your son is willing to take up an irrigation contract, or irrigate the field" right below our property. Where is our property. They would let us to remain there.

LM: Oh!

JK: Option, first option. Only you and your sons agree to take a contract, irrigation contract to irrigate the field there, it's called Field 20. It's all a flat now. Where I lived, it is a little higher elevation, where I was born, see? So, I guess at that time, my dad he thought of all the hard work, well, he was kind of disappointed. So number two, otherwise they would offer us a home. Every sugar industry in the State of Hawai'i, they have sugar workers home.

LM: Yeah, plantation homes.

JK: That's a law in the Territory of Hawai'i, at that time. So, well, the reason why at that time, our living was more sort of ah, primitive, I should say, because no public facilities, and electricity. So, option number two was, [they] were willing to offer us, at that time they called it "free home". And all was free and that's when we moved to Lahaina .

LM: Ah, so then you moved to Lahaina.

JK: So, from there, I worked for the sugar company continually until I left in 1937.

LM: So, did you go back then to Ukumehame at all? Once you had moved to Lahaina?

JK: No. After we left there, well, it's kind of bitter-sad, you know because it's something you couldn't forget in there.

LM: Yes.

JK: This particular property [referring to the land he now lives on], I bought this property in 1955. They are [indistinguishable] the distance, predominately the family I bought from, probably they own the whole Olowalu. This [indistinguishable] called Olowalu Petroglyph. You know where the petroglyph?

LM: Yes, ah yes, oh, yes.

JK: Why that's all their family buried up there. All the family family's buried there. That the descendents is call Naho'okaika family of Olowalu.

LM: Naho'okaika of Olowalu. And this was their *ahupua`a*.

JK: Anyway, how do you say, well, I didn't expect anything. My first home I bought this Olowalu down in the flat. You know there's a little village down there...you know....

LM: Yeah, where the store is?

JK: The first one, I owned one acre, the first home I bought in 1948. I was working for the sugar company, I was a railroad engineer yet. Working for the sugar company, so I bought that piece of property. Originally, that's a school yard, that's where I was educated! From K to five, fifth grade.

LM: And where was that school, Olowalu school?

JK: I think I have the patience I really don't know had one. That school was established, prior to that I just mention too, a Christian seminary. Well, the church is still there. Old road...

LM: Where is that, is that in valley?

JK: Where the small little village there and across, there's the church there.

LM: On the *makai* side?

JK: No.

LM: No, no *mauka*?

JK: Well, the Highway, Naho'opi'inani, it's all *mauka*. It's all *mauka* side. That's where they are. That's where my father is buried, all the 'ohana, the family there, is all there.

LM: So the cemetery is still there, too. What about your mother?

JK: So, he's the only Japanese buried there...[laughs]

LM: Everyone else is Hawaiian?

JK: He doesn't know any difference, see! [laughing]

LM: And your mother too is buried there?

JK: Yeah. So, anyway, that school closed when the Great Depression, 1930, sugar company closed, by then they not open anyway...

LM: Closed during the Depression?

JK: Yes. So, we left Ukumehame. So, we worked for the sugar company at the time and then I left the sugar company in 1967 and went into my own business. Well, you see, "...by the way do they having any difficulty with your estate?" It's something like Olowalu now, because Olowalu is, I think, is more heavily archaeological area. So that's the reason the owners have to surrender 100 acres.

LM: Well, right up the river are a lot of the archaeological *lo`i* and things of that sort and that, and some of those have to be preserved.

JK: Because, where I now, well here they kinda of develops from here. But I underneath the old grandfather clause, see? And I can build one more, not *`ohana* now, I can build later on, a single family home. It was when I builded my home in 19...when I sold my other property, I had no choice, you see. I was in the piggery business but only, well, I would say most *`ohana*, family, at that time, most family [indistinguishable].

LM: So where was your land before?

JK: That place there is called Kapaiki. It means "suitcase".

LM: [laughs] And where was that?

JK: Well, the small little village, there. the property I bought was a school ground, public school. After the Seminary closed, then it used to be a public school, the first public school in Olowalu. Then from Olowalu, I stay K to 5th grade. Two class rooms at that time. And that's where I was, my first education. In Olowalu. And that old home still remained, the Teacher's Cottage there, so I sold that property in 1947 and I move here, see? I bought this property in 1955....

[discussion of rock piles made by sugar company and the subsequent call from the Burial Council concerning his knowledge of these sugar features.]

LM: Well, when you were growing up, though, you grew up in Ukumehame Valley until the lease was up, is that correct?

[John tells about the building of the Ritz Carlton Hotel and the remains that were uncovered and because there were no laws protecting burials at that time, they were allowed to continue building.]

LM: I am hoping that you will tell me about special places in Ukumehame. When you were growing up, were there special places that you went to in the valley, maybe for hiking, or for playing...

JK: ...Well, anyway, that's the reason why I'm very good friend our council woman, Joann Johnson. A very good friend. She like to know information too, because she was with the County park, in charge for the County of State Park and they decide to purchase Olowalu where Camp Pecusa is. So, she like to get some information from me, so she called me one day, "Mr. Ka'aea", "Yeah?" "Can you please give me some..." "Yeah, what kind of information?" "About where Camp Pecusa is." "Oh, yes." I told her. I told her where that home is now on the highway, you know where that beautiful home on that highway?

LM: Oh, I just saw it, now, yeah, new.

JK: *Makai* side of the rode?

LM: Yes, yes.

JK: Well, that's where I was baptized in 1917, I was baptized at that church. That's the Catholic Church over there. And the cemetery is there yet! Yet! And disturbed Camp Pecusa. All that flat area there, get [human] remains, you know. So, I don't know how your develop there, or they cannot develop there, that's a question now.

LM: Yes. Do they know where the cemetery is?

JK: So, the cemetery, it still remain, but, you see, what happened is [indistinguishable] after, [brief discussion about relatives and *hānai* family.] Anyway, people advise me, "Why is it that Hawaiians, they don't have any marker." Well, my grandfather is...

LM: They don't have any [grave] marker?

JK: Yeah. My grandfather, my mother's father, Ka'aea, is originally not Ukumehame. He married, her mother, my grandmother, Ukumehame. He comes from Kaupō. This a outsider branch.

LM: From Kaupō...

JK: Yeah. He's [indistinguishable]..

LM: And he married...

JK: ...from Kaupō. My mother maiden name is "Kalalo'i". That's her maiden name and she married Ka'aea and she's buried in the Christian cemetery there. My dad there, and why, us all the *ʻohanas* [buried there} Anyway, as far as Ukumehame is concerned, there's several burial

places, but very unlikely in the field, to the best of my knowledge, see? So, probably you can find me something about the property Ukumehame they intend to sell to the park, at 300 acres.

LM: Yeah, down on the *makai* side.

JK: That's going to be nearly, nearly half of the road when they sell to the County. So that's on the city side.

LM: What about the valley side? When you were a little boy...

JK: Then there's hardly any house [indistinguishable] left there.

LM: No, that's right, but there are people up there working in the *lo`i* and some people working the *lo`i* still and... I don't think anyone is still living inside, but there are some, and people who are from that *ahupua`a*, from Ukumehame, m us have the right. if they want too, to go back up into the valley and gather and enjoy their *ahupua`a*.

[Brief discussion on the new road to be built]

JK: Actually, we wouldn't have this problem if our Army engineers didn't break the Ukumehame reef. It's a wonderful reef, Ukumehame. You know the flat there? Ukumehame flat? Ocean never come, because the reef is what I been fishing there with my grand-folk, we been fishing there lifelong! It was crystal clear, the beaches there. But when the Army [indistinguishable] crystal clear, all reef, about ¼ an acre out, you know! Well, the only problem since WWII is the invasion force, see? So they put all sorts of obstacles in the ocean, block, tear the reef, and blow all the reef out, see? So, that's why you get the high sea today, see?

LM: Ahh, so they broke the reef, then, yeah...

JK: Yeah and that flat, that Ukumehame flat, they called it then, name of the place is called, and all of them is called "Alalia". Alalia, in Hawaiian definition means "flat". Alalia is a flat, see? But over there is over swamp, you know. This is what the State Department of Transportation has in mind, you see. That's why the problem with a big of a development...[more discussion of traffic problems caused by a new development.].

LM: May I ask you about the fishing that you did? You said you did a lot of fishing off the beach, what did you fish for? What kinds of fish did you catch?

JK: You mean Olowalu? Well, they have all this coral fish, is called goat fish, they called um, *moi*, it's very expensive, and they have mullet. They had *uku manini*, that's all the coral fish. But *moi* and mullet is not coral fish, see? Well, anyway, that reef there, but you don't have anymore, because [indistinguishable] break on those reef there, see? And that's where their feeding ground there. That's the reason why I couldn't believe these deaths there. I've been a fisherman from the Pali [Ka'anapali] all the way till Lanipoko, I been doing fishing. Most in my young days. And Lanipoko is infested with sharks, over there, Ukumehame, and Olowalu. Never in my life I ever seen they attacked! If I have a certain feeling in the morning driving over

to do my shopping and appointments and I see the surfers, you know. And, in spite when the Marine Biologists warning them, "Do not go early in the morning and late in the evening, [indistinguishable]". But, so far, nothing has happened, but the attack in Olowalu, I was surprised. I fish in the night! I caught several sharks couple of times, see? So, why it is happening today, I really don't [know], you know the last attack, Manager's wife, probably you heard about it in Olowalu, she was attacked.

LM: Yes, yes I did. But that was like sunset, yeah?

JK: Very strange.

LM: Wasn't she out during sunset time?

JK: Well, you see, anyway, historically, Hawaiians call it "tabu" for the women folk, you know what I mean? Because, shark, their nose is very sensitive. Hr partner, I think she's a Canadian, they didn't bother her. But bump into her, she was attacked [indistinguishable]. Oh, what a sad thing.

LM: Yeah, very sad.

JK: And that's the reason Hawaiians, I believe the Hawaiian culture, of course I don't believe...I am a Christian, so I don't believe I any superstitions, but once there are tabu on the women folk when they have term, "Do not go into the water!"

LM: That makes sense, doesn't it?

JK: [indistinguishable]...so, that's why I'm talking about my family, the ones in Ukumehame, the Keola, where the Cemetery is. And I ran into Mr. Lindsey of Lahaina. Mr. Lindsey of Lahaina, the family is staying there. Grandchildren, great grandchildren. Parents gone, but they all alone, unfortunately. The dad, grandchildren [indistinguishable]. He was the sheriff and judge in Lahaina and he married, the one I told you the grave in Ukumehame? [indistinguishable] Well, anyway, when my grand uncle, he was a police officer Olowalu, her uncle, that's Ka'ae...

LM: Your mother's uncle?

JK: Yeah, uncle. That's my grand uncle. He's a great fisherman, see? So he invite his boss, Mr. Lindsey, with the Sheriff to go fishing with him, see? He do all deep sea fishing and he knows all their depth, the area ...Mr. Lindsey has know knowledge about the [indistinguishable] of the Hawaiian culture. Police officer, he speak no English only Hawaiian at the time ...[indistinguishable] therefore, he goes fishing in the deep sea, he know all the coral area, namely certain n particular fish, the red bass, the pig one, all kind of them, he know that area. Before he goes, he goes net fishing, coral fish, coral bass, see? Get all the fish for bait . Keep all the remains in one bag. So, he invite his boss to go fishing. By Ukumehame, when you go on

the highway, you see the lone pine tree, he stay in there. A lone pine tree, you know the one on the highway?

LM: I know the one you mean.

JK: Well, that's where he used to live, when he was police officer. The fishing ground, he invite his boss. Before they would go fishing, they stopped right by that shark. So, Mr. Lindsey was wondering "What we doing here?" Well, he say he's going to feed his pet, his word "pet", shark! That shark is so aged, he even get rock barnacle! How old, I don't know...what the lifespan of a shark. I really don't have no idea,..two, three hundred years. He feed first! Oh, Mr. Lindsey was so excited and afraid! It's a normal thing for the family, you know, a pet, though! This is why he said, "So, are you praying brother?" My uncle might be really ignorant, but they worship, no! They don't worship! They say you feed the shark first, then when you go to the fishing ground, your particular fishing ground here, the shark won't disturb. Japanese goes out in fishing, only the head come out.

LM: Cause the shark got the rest?

JK: Feed first! Feed first! Ah, that's something really amazing! ...That's what I told to Mrs. Joan Johnson when she was County in charge for the County of Park. I mentioned Olowalu, "That's where my deaf and mute uncle lived." "Wow, that's very interesting!" You know, I get high respect for my uncle. I love him, that's why my initial is "Manu". "M". John Manu Ka'aea Fujishiro. Deaf and mute, you know what's his livelihood? He never did work in his life, he's a self employed man. Deaf and mute! All his life.

LM: Did he marry?

JK: No, he died at the age of 49 in a car accident. Well, sometime I think Almighty God take him, because due to his condition. Never did work.

LM: Because he could fish?

JK: [brief discussion about homeless] That's what he did, he lived primitive life. His method of fishing, the old Hawaiian [indistinguishable] He don't dive, you know. He get the *kukui* nut, my auntie,...her sister, my aunt, a great fisherwoman, too. They take the *kukui*, you know what a *kukui* nut looks like?

LM: Yes.

JK: But they make necklace too, you know./ They collect all, and then they roast'um. And when you roast'um, they pop the shell. So they found that, the Hawaiian culture.....they probably know their signs, the tides the sea. When they hungry, they go out, they chew the *kukui* nut, they just throw them in the water and then crystal clear. Something I learned from my auntie....[John tells me how to catch octopus and story about John Andrade who was deaf and drove an engine at sugar mill.]

LM: Well I wanted to know about the back of the valley. Did you ever go up to the back of Ukumehame?

JK: Yes, I did.

LM: And what was up there?

JK: Ukumehame Valley way up....anyplace in particular you looking?

LM: Well, I just meant towards the back. Like I know there used to be old trails...

JK: Well, to tell you the truth...you know the petroglyph there?

LM: In Olowalu? [discussion of Olowalu petroglyph showing donkey] Are there petroglyphs in Ukumehame?

JK: This Ukumehame one. I went into the valley, I climbed every [indistinguishable] here [looking at map].

LM: Are there trails, were there old trails up there?

JK: The top one in here is called Ni`ihau [referring to mountain peak]. That's Olowalu mountain, now. That's Olowalu, this.

[We go into other room to look at painting of mountains in back of Ukumehame and Olowalu]

JK: This is called "Halepohaku". ...This is Haleokoau. This is the highest...I did go hunting from here all the way till here is called "Kekeannui". If you look on the top these trees [on painting] ...is called Keke`ennui, the highest. And right here, right in the center...over here is going to Ma`alaea. As for you to see, when Mr., ah he been on to the Sierra Club, Mr. John Seymore, he's a veteran hiker. You can see, there is no access from the east to the west, to here when you have to come Olowalu. Olowalu is a one, and that's the reason we have the physical [indistinguishable].

LM: I see. Cause there was a trail there.

JK: Yeah. This here at the end, but when I do mountain fishery with my auntie, I go through in here. This is a dead end. You can't go here, there's a gorge here and this goes dead end here, but this go way in here. That's why I noticed the Hawaiian fishing, shrimp fishing.

LM: Ahh, that's what I was wondering. You said mountain fishing, was `ōpae.

JK: That's why, I say my auntie, she knows all the method of how to get them. First of all she telling me, call my name, to go shut the water [make a damn], but you see, our water resources all drip, you know. Drip, drip, and then come to the, come the river. That's how our water resources. This picture here was drawn by a good friend of mine, Mrs. Coon. You know that

[indistinguishable] liner that owned catamaran that takes, transport to Lānaʻi? Perry? Well, the mother drew this and when she drew this, oh, I thank her, I say, “No, no, no, you have to take some donation. This is my birthplace!” You see the sugar cane? Well, I live here[shows on the picture]. Right here. That’s the reason why all this of [indistinguishable] canyon.

LM: What were some of the methods that your auntie used to catch the *ʻōpae*?

JK: Ukumehame, can. But that’s why, my auntie used to go in with [indistinguishable] potato we live over there and get all the mountain shrimp...

LM: And how did she get them, how did she... with net?

JK: Oh, you’d be surprised the techniques she had. First of all, she go feel’um...

LM: Under the rocks...

JK: Ahh, when she get so much, tell me, “John you go shut the water.’ The stream, I shut. All she’d do, she just picked by hand and put in the pocket! Oh, technique, yet! Well, she’d preserve, you know and after two or three, I’d let the water go .

LM: Yeah, after she had gathered them...

JK: She cannot pay for’um, We sleep in the mountains,

LM: Where would you sleep?

JK: She’d take rock salt, we’d cook the shrimp in the mountains. And that, you can...but in those days, maybe that’s why people get high blood pressure! [laughs]

LM: Too many salt!

JK: that what happen in those days!. She’s a great fisherman, you know. I mean the culture [indistinguishable] on fishing. She and her brother.

LM: What other things did she gather when she was back there besides the *ʻōpae*.

JK: Well, you see, that’s the reason why she has no children. That’s the reason why she adopted my sister, Louise, and Adeline’s mother...Adeline’s mother. My niece, Adeline Rodriguez. She raised her because she had no children. At the time, education and so forth.

LM: Right, right. Well I appreciated all the information that you are giving me...
[brief discussion]

End of Tape Side 2.

APPENDIX B RELEASE FORMS

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on December 7 of the year 2004. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai'i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukumehame Valley (TMK: 4-08-002:09), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview 12/7/04

Print Name: Edwin R. N. LINDSEY JR

Signature: Edwin R. N. Lindsey Jr

Release Dated: 1/31/05

NOTE: Typos found, etc.
but does not change
intent. Ed

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on December 7 of the year 2004. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai'i.

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I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview Dec 7 2004

Print Name: John M. Kaaea

Signature: John M. Kaaea

Release Dated: Jan-14-05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on Oct 13 of the year 2004. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai'i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukumehame Valley (TMK: 4-08-002:09), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview Oct 13, 2004

Print Name: Adeline K. Rodrigues

Signature: Adeline K. Rodrigues

Release Dated: 1-28-05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on October 13 of the year 2004. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the Island of Maui, State of Hawai'i.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukumehame Valley (TMK: 4-08-002:09), on the Island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview 13. Oct. 04

Print Name: J. DITTEL V. DUKES

Signature: [Handwritten Signature]

Release Dated: 1-4-05

INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on October 12 of the year 2004. Scientific Consultant Services, Inc., Senior Archaeologist, Leann McGerty conducted the interview on the island of Maui, State of Hawaii.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as a part of a Cultural Impact Assessment report on a development project in Ukuunchama Valley (TMK: 4-08-002:09), on the island of Maui.

I have read the transcript of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc. For the purpose outlined above.

Date of recorded interview 13 Oct 04

Print Name: ROSE MARIE HADNEY

Signature: Rose Marie Hadney

Release Dated: 01/04/05

APPENDIX I
Wetland Survey



Consultants, Inc.

WETLAND SURVEY

Subject Site:

LANDS SITUATED AT UKUMEHAME, MAUI
Lahaina, Hawaii 96761
T.M.K. (2) 4-8-002:009, 048, 052-056, 060,
061, 065, 066, 068, and 070



Prepared for:

PACIFIC RIM LAND, INC.
PO Box 220
Kihei, Hawaii 96753
Attn: Ms. Donna Clayton

Conducted and Compiled by:

Vuich Environmental Consultants, Inc.
VEC Project Number #0410-902
February 4, 2005

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LANDS SITUATED AT UKUMEHAME - WETLAND DETERMINATION SUMMARY

Prepared by
Vuich Environmental Consultants, Inc (VEC)
February 3, 2005
VEC Project # 0410-902

On November 29, December 8 & 10, 2004, VEC conducted a wetland-determination field survey on the subject property (vacant land) located mauka of the Honoapiilani Highway. The site is situated on the alluvial plain of the Ukumehame Stream, on the west side of the West Maui Mountains. The land parcel consists predominantly of former agricultural land (sugar cane) covering an area of 439 acres. The makai property boundary lies approximately 250 feet from the Pacific Ocean. The TMK Number is II-4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070. See Figure 1, Appendix A for the regional setting of the subject property. The purpose of the survey was to determine if areas with wetland conditions, as defined by the Army Corps of Engineers' criteria, were located on-site.

SITE HISTORY

Prior to conducting the field survey, aerial photographs were analyzed to determine the historical uses of the site and if wetland conditions (ponding water, etc.) were visible. VEC reviewed aerial photographs dated 1949, 1960, 1975, 1988 and 1997. Photos of both the west and east side of Ukumehame Stream were examined and will be identified in this report as the Western Area and the Eastern Area. Several ditches are located throughout the property. The uses of these ditches are for irrigation, drainage, stormwater diversion, etc., and will be referred to as irrigation/drainage ditches in this report and will not be identified as to their exact use. The following descriptions were noted in each photograph:

1949 - Western Area - The entire lowland area of the property is disturbed by agricultural use except for an area adjacent to Ukumehame Stream and an area near the southwestern lowland edge of the property. See Figure 2A, Appendix A. The latter area is marked on Figure 2A as "suspect wetland #1" and was a focus of this study. Access roads and irrigation ditches were noted in the disturbed areas. Eastern Area - The entire lowland area of the property is involved in intensive agriculture except for an area adjacent to Ukumehame Stream and an area near the southeastern lowland edge of the property. See Figure 2B, Appendix A. The latter area is marked on Figure 2B as "suspect wetland #2" and was a focus of this study. The majority of suspect area #2 is, however, located outside of the subject property. Access roads and irrigation/drainage ditches are also noted.

Three (3) surface water reservoirs are visible in the upper reaches of Ukumehame Gulch and a third one is located just east of the gulch.

1960 - Western Area - No significant changes noted except for increased agricultural activity in the area adjacent to Ukumehame Gulch. Suspect wetland #1 noted above in 1949 remains out of agricultural use but is surrounded by irrigation/drainage ditches. Eastern Area - No significant changes noted except for increased agricultural activity in

the area adjacent to Ukumehame Gulch. Only the immediate stream channel of Ukumehame Gulch is not developed agricultural land. Suspect wetland #2 noted above in 1949 remains out of agricultural use but is surrounded by irrigation/drainage ditches. The former Honoapiilani Highway route in this area has been relocated slightly southward, nearer to the shoreline.

1975 – Western Area – Suspect wetland #1 has been placed into agricultural activity. A new cross-gradient irrigation/drainage ditch divides the area. Therefore, this area was further drained and placed into agriculture some time between 1960 and 1975. Eastern Area – The upgradient portion of suspect wetland #2 has been placed into agricultural activity. New irrigation/drainage ditches are evident. The lower portion of suspect wetland #2 has been cleared of shrub-like vegetation.

1988 – Western Area – No significant changes noted. Eastern Area – No significant changes noted.

1997 – Western Area – No significant changes. Eastern Area – No significant changes noted. Figure 3A and 3B utilize the 1997 aerial photos.

No surface-water ponding was noted on any of the examined aerial photographs of the subject site other than the noted reservoirs.

In summary, the areas that displayed or were conducive to possible wetland characteristics (historical aerial photos and the USDA Soil Survey) were for the most part significantly altered (drained and tilled) at some time between 1960 and 1975. These alterations appear to have resulted in the removal of wetland indicators, most notably hydrology. For this reason one Army Corps of Engineers' Atypical Situation Data Form 3 has been completed to address this situation. However, VEC has concluded that Data Form 3 may not be required because the study areas are likely exempt since the draining of these lands were conducted (1960 to 1975) prior to current wetland definitions. Therefore, the Department of Army (COE) Routine Wetland Determination Data Forms, located in Appendix B, are used in this report.

Most of the irrigation/drainage ditches located on-site were constructed prior to the 1950's. The more recent ones were constructed prior to 1975. Based on information obtained from the Army Corps of Engineers' Wetland Delineation Manual (Part IV, Section F, Subsection 4 – Man-Induced Wetlands), VEC concluded that the presence of this vegetation is being maintained only because of man-induced wetland hydrology and that this vegetation may not exist if the activity (intercepted drainage) were to be terminated. Therefore, VEC did not include these irrigation/drainage ditches in this survey. These ditches will likely be scrutinized by the Army Corps of Engineers who will ultimately make the final decision as to whether they are to be exempt or not.

FIELD SURVEY

Six (6) separate boreholes were hand-excavated in suspect areas located both on and just off the property. Their use was to determine the underlying soil conditions and hydrology. These areas were chosen due to their depressed elevations, wetland plant indicators and/or from information obtained from aerial photographs and soil mapping. These borehole excavation sites contained areas of facultative and/or obligate vegetation and non-wetland sugarcane crops.

See Appendix A for a Regional Setting Map (Figure 1); a Historic Aerial Photo, 1949 (Figure 2A and 2B); a Site Plan showing the above-noted six (6) boreholes (Figure 3A and 3B); and Figure 4, a TMK map with the six (6) borehole locations accurately plotted. Site photographs are also located in Appendix A.

The Department of Army (COE) Routine Wetland Determination Data Forms that were used for this project are located in Appendix B.

SOIL SURVEY

Almost the entire surveyed area has been significantly altered by historic agricultural activities. The majority of the areas that were noted as suspect wetland locations in the 1949 photograph have subsequently been drained and had their soils tilled.

The United States Department of Agriculture, Soil Conservation Service, has mapped this property location in the Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.

The majority of the upland property was mapped as:

Pulehu cobbly clay loam, (0 to 3% slope) (PtA) and Pulehu cobbly clay loam, (3 to 7% slope) (PtB) – consists of well drained soils on alluvial fans and stream terraces and in basins. These areas did not exhibit wetland characteristics and were heavily tilled for several decades.

The gulch areas were mapped as:

Stony alluvial land (rSM) which consists of stones, boulders and soil deposited by streams in gulch bottoms and on alluvial fans.

The suspect wetland areas were mapped as:

Kealia silt loam (KMW) – this soil is poorly drained and has a high content of salt. Ponding occurs in low areas after rain. When the soil dries, salt crystals accumulate on the surface. The soil has a brackish water table that fluctuates with the tides; the water table is nearer the surface along the shoreline than in inland areas. The slope ranges from 0 to 1%.

Only Borehole #5 (located off-site) met the requirement for a wetland soil parameter and these soils were marginal. Borehole #2 showed possible historical signs of wetland indicators, however, the soils had been disturbed by agricultural tilling. The soils of other borehole locations did not have wetland indicators, primarily from the historical intrusive tilling that had taken place.

Attached are notes (COE Data Forms) on the six (6) borehole logs excavated on the subject property. (See Appendix B). Also included is one Atypical Situation Data Form 3 for Corps of Engineers' review.

WETLAND HYDROLOGY

No areas of the property were inundated at the time of the wetland survey.

The lands of the subject property have had significant hydrological changes over the past several decades. The two main suspect areas (noted above) of this property that had

historical evidence of possible wetland characteristics have had their groundwater levels lowered with the construction of several irrigation/drainage ditches. This lowering of the groundwater levels, along with agricultural tilling, has resulted in most of these areas having no remaining wetland parameters. This will likely remain as long as these irrigation/drainage ditches remain operational.

Groundwater was encountered in three (3) of the six (6) borehole excavations. Where encountered (Boreholes #2, #5 and #6), groundwater depths were between 19" and 22". Only Borehole #5 was located immediately adjacent to the subject property. Boreholes #2 and #6 were located well away from the property boundary. (See Figure 4, Appendix A). Attached are hydrology notes (COE Data Forms) on the six borehole logs excavated on or adjacent to the subject property. (See Appendix B).

Other hydrological notes of importance that should be noted are as follows:

1. Ukumehame Gulch (Stream) divides the subject property in half. The stream is well entrenched into the alluvial fan and is confined to the gulch. This stream area is considered a riparian zone.
2. Two large and one small active, man-made reservoirs are located at the top parcel of the subject property. A small area of cultivated wetlands (taro) is located at these reservoirs. This investigation did not involve delineating these sites. See Figure 4 and Photo #20 and #21, Appendix A.
3. There are numerous irrigation/drainage ditches located throughout the subject property that were constructed several decades ago. Some of these ditches have slow moving or stagnant flows and have wetland plants along the banks or within the water. These ditches were not included in the survey. See discussion in Site History section above.

VEGETATION

Attached are notes (COE Data Forms) on the six survey areas on the subject property. (See Appendix B).

The only area determined to have all three wetland parameters (Borehole 5) was dominated by the obligate herb, *Batis maritima*, also known locally as akulikuli-kai. This borehole, however, was located off-site. Other areas where *Batis maritima* was prevalent were also located off-site. The main wetland-type plant (FAC**)* that was located on the subject property was *Pluchea indica*. This was noted mainly along the unpaved southern property boundary road and along the banks of the drainage/irrigation ditches located on-site.

Other species of wetland-type plants were also associated with the drainage/irrigation ditches located on-site. These types of plants were more often located where the water within the irrigation ditches was slow moving or stagnant. These ditches were often lined by nearly impenetrable thickets of *Pluchea indica*. These ditches were not included in the survey. See discussion in Site History section above.

Other herbs/shrubs/trees were noted at each survey site and are documented on the COE data forms.

* (FAC***) = tentative assignment; FAC not regionally defined.

CONCLUSIONS

Based on the borehole excavations and vegetation survey, VEC has concluded that no areas on the subject property have the necessary triple combination of the following wetland indicators (hydric soils, hydrophytic vegetation and wetland hydrology). Marginal wetland areas were noted slightly southeast of the subject site on the adjoining land parcel.

Historically, the two main areas identified and studied in this survey (suspect wetland #1 and #2) may have had all three wetland parameters. However, due to the extensive agricultural-related activities that have occurred (tilling and water-drainage control) on-site, the required wetland parameters have disappeared. These conditions may not reappear unless the hydrological conditions are changed.

VEC concludes that these areas are exempt from Corps of Engineer's jurisdiction since the land was altered prior to the enactment of Section 404 of the Clean Water Act that authorized the Secretary of the Army to issue permits for the discharge of dredged or fill material into the waters of the United States, including wetlands.

VEC recommends that proper development planning be undertaken to ensure that any future development does not negatively impact any *adjacent* wetland areas located off-site.

If the Army Corps of Engineers is in agreement with the above-noted findings, the property owner will not be subject to Section 404 of the Clean Water Act.

In regards to the lower-lying irrigation/drainage ditches containing hydrophytic vegetation, the Army Corps of Engineers will ultimately make the final decision whether to accept VEC's decision to not include them in this wetland survey as discussed in the Site History section above.

APPENDICES (ATTACHED)

- Appendix A includes: a regional setting map; historic and recent aerial photographs with suspect wetland areas and borehole sites noted; a site survey plan with borehole (sample points) accurately plotted; and site photographs.
- Appendix B includes the COE Routine Wetland Determination Forms.
- Appendix C includes Statement of Qualifications.

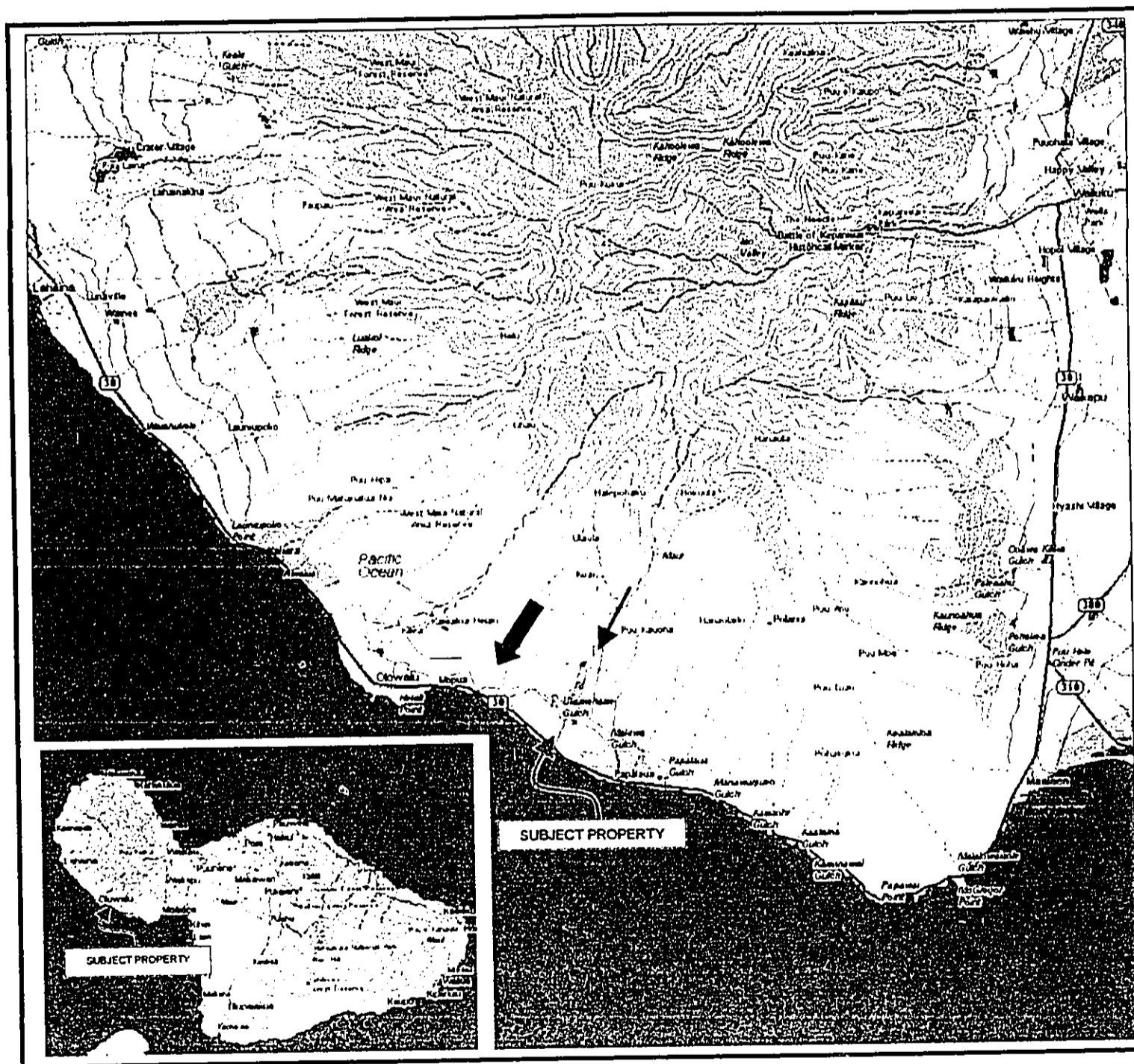
VEC FIELD INVESTIGATORS

- Mr. John Vuich, Geologist
- Mr. Jeffrey Kermod, Environmental Scientist
- R.T. Tanaka Engineers, Inc. (Land Surveyors)

APPENDIX A

- Figure 1 – Regional Setting Map
- Figure 2A/B – Historic Aerial Photographs (1949) with Suspect Wetland Areas Noted
- Figure 3A/B – Site Plan with Suspect Wetland Areas and Borehole Locations Noted
- Figure 4 – TMK Map with Surveyed Borehole Locations
- Figure 5 – Site Map indicating Former Historic Suspect Wetland Locations
- Site Photographs

FIGURE 1: REGIONAL SETTING MAP



**FIGURE 2A: HISTORIC AERIAL PHOTO OF WESTERN AREA
SHOWING SUSPECT WETLAND #1 (1949)**



Confidential and Privileged

VEC Project # 0410-902

**FIGURE 2B: HISTORIC AERIAL PHOTO OF EASTERN AREA
SHOWING SUSPECT WETLAND #2 (1949)**



Confidential and Privileged

VEC Project # 0410-902

FIGURE 3A: SITE PLAN OF WESTERN AREA SHOWING SUSPECT WETLAND #1 AND BOREHOLE LOCATION

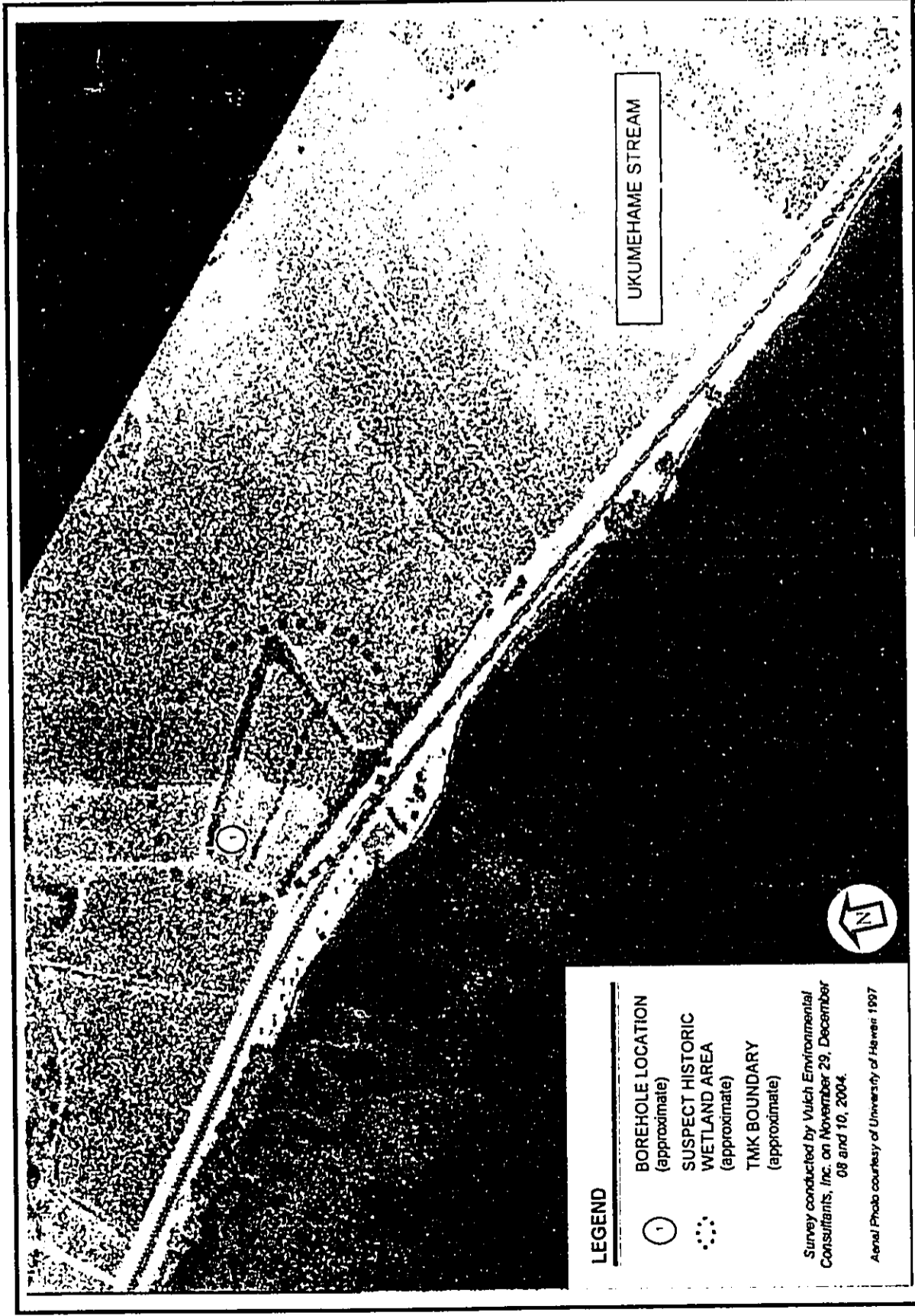
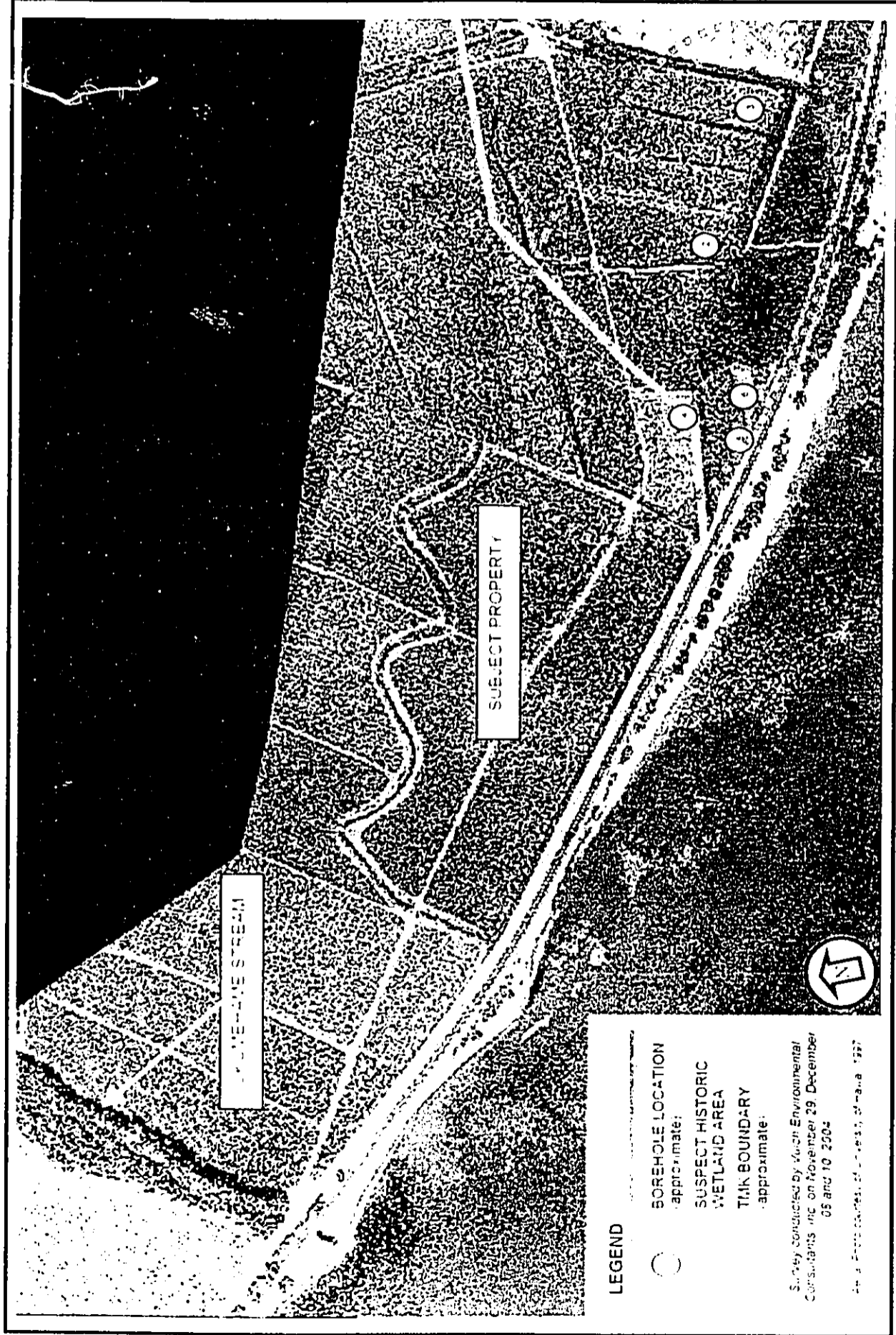
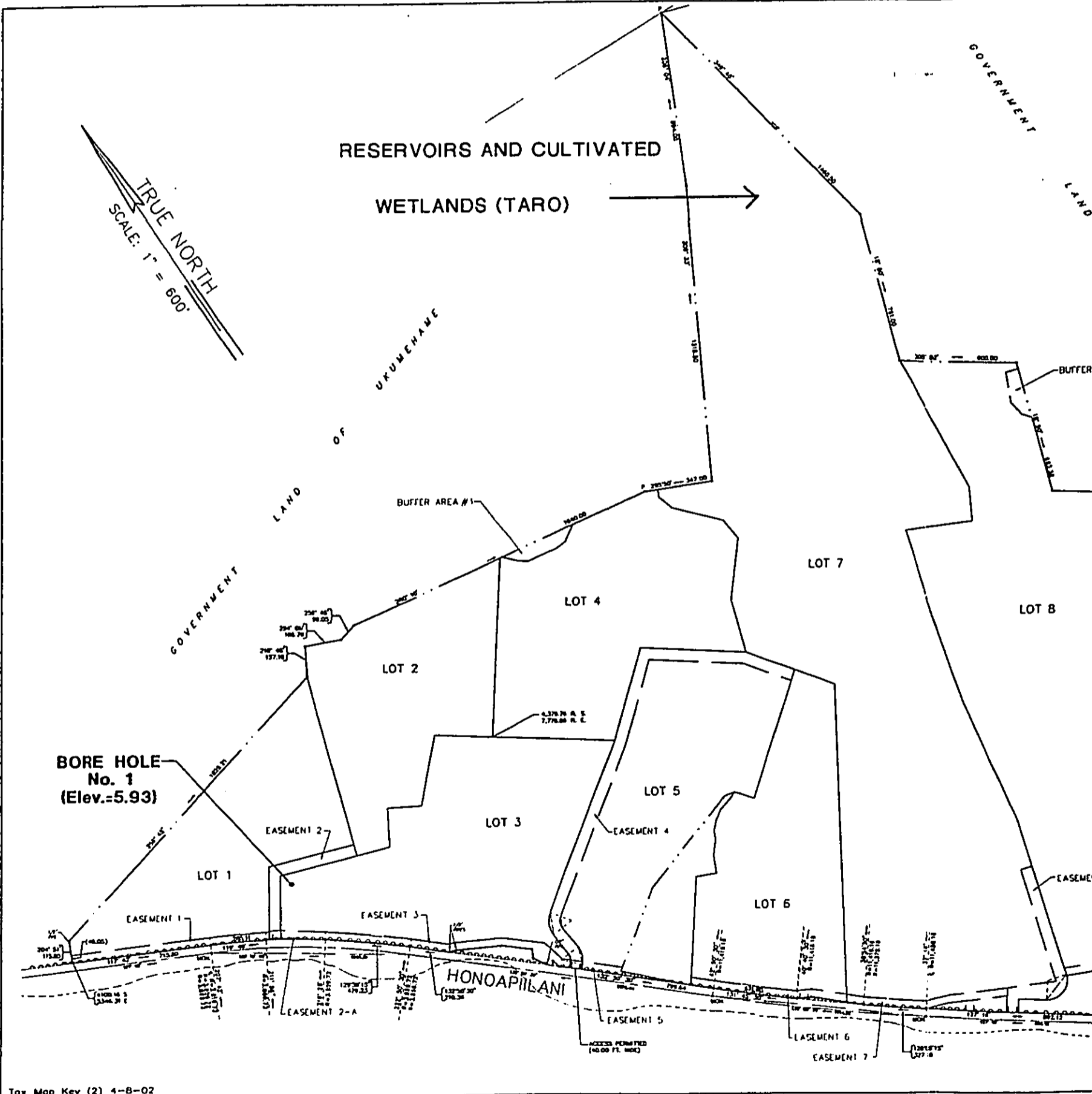


FIGURE 3B: SITE PLAN OF EASTERN AREA SHOWING SUSPECT WETLAND #2 AND BOREHOLE LOCATIONS



Confidential and Privileged

VEC Project #: 0410-902



D:\1995\95-07\UKUMEHAME SUBD_BORE_LOCATION_MAP.dwg File: JANUFS.crd

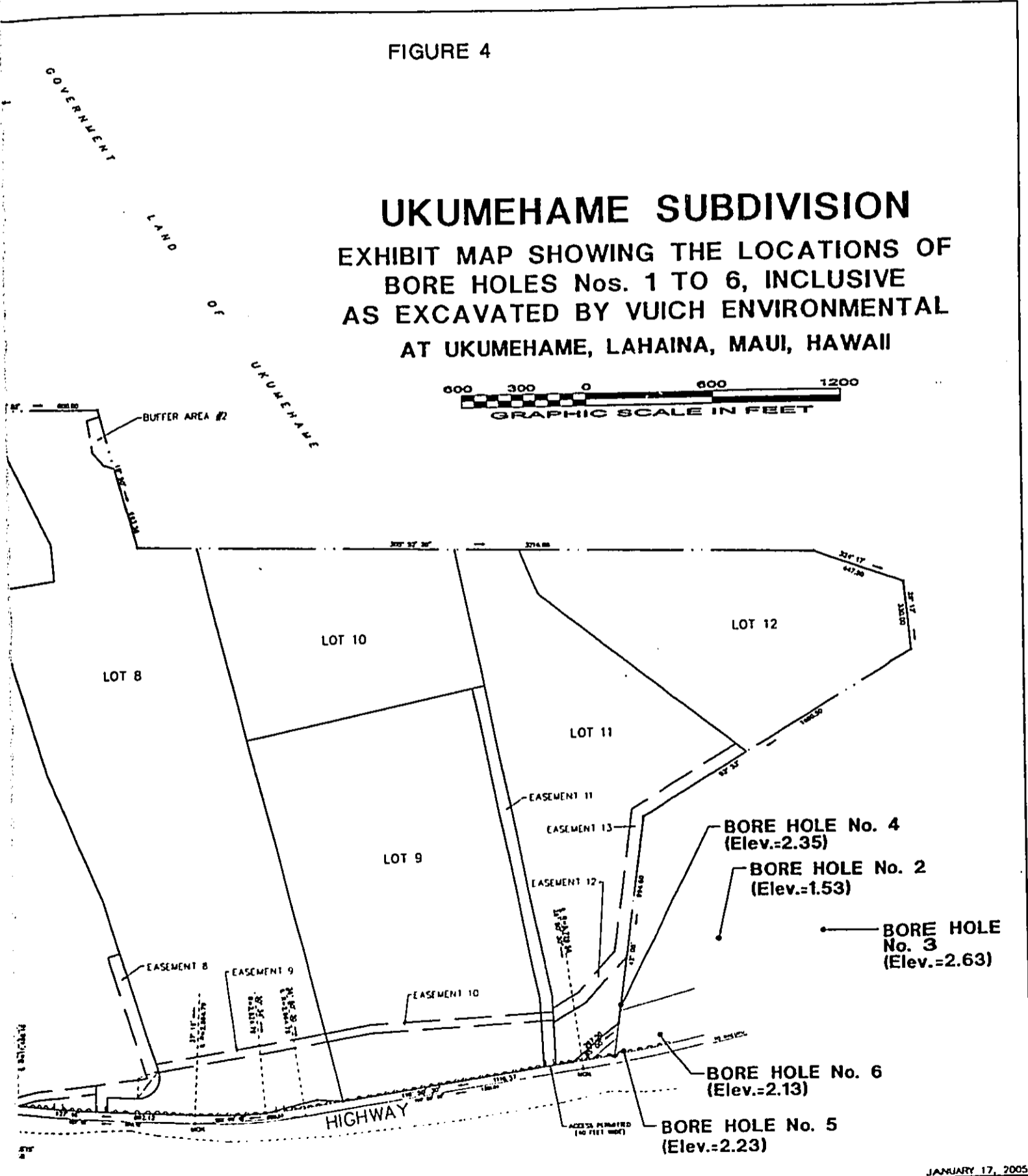
Tax Map Key (2) 4-8-02
 871 KOLU STREET, SUITE 201
 WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS,
 LAND SURVEYORS - CIVIL & STRUCTURAL E

FIGURE 4

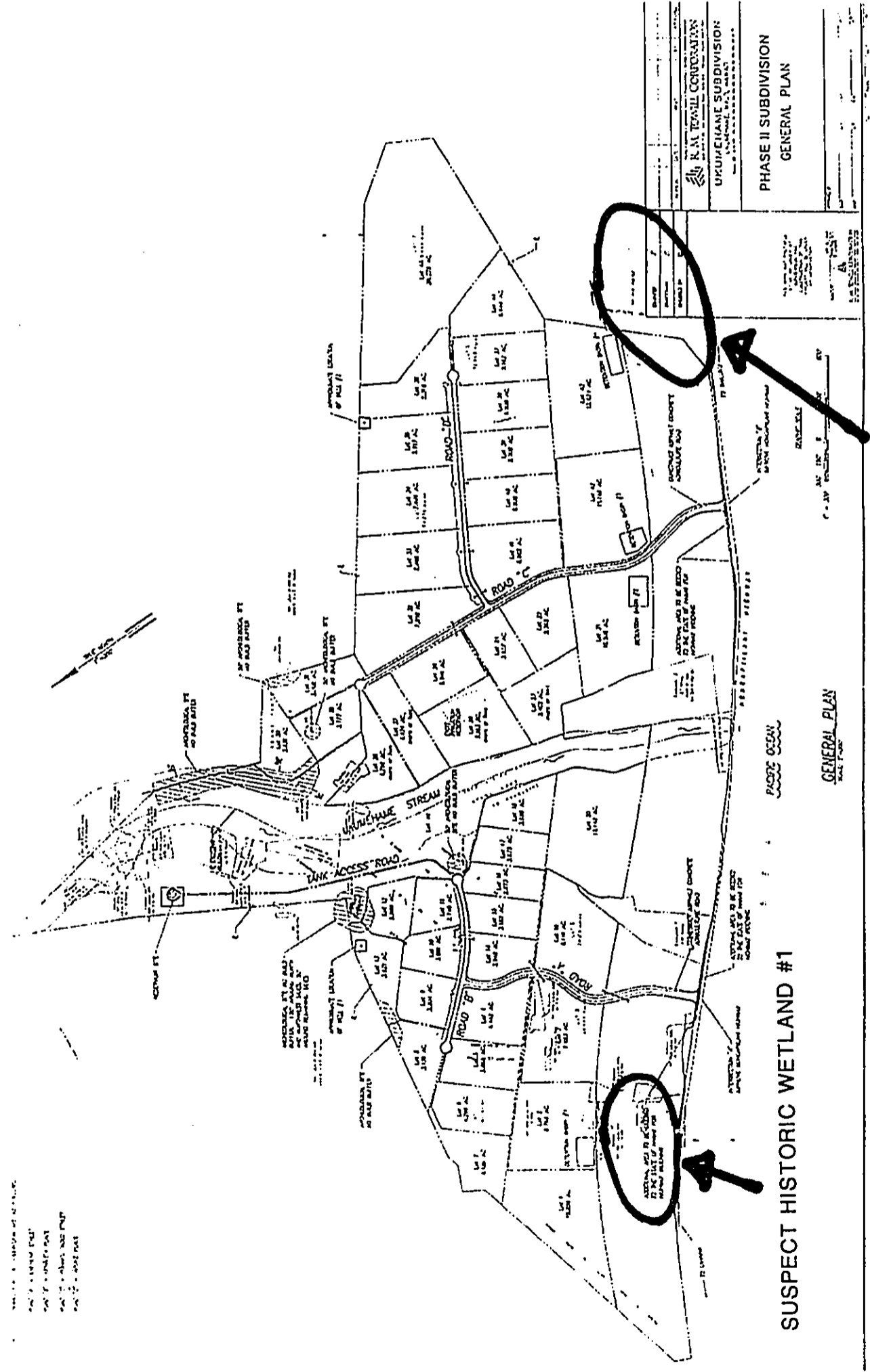
UKUMEHAME SUBDIVISION

EXHIBIT MAP SHOWING THE LOCATIONS OF
BORE HOLES Nos. 1 TO 6, INCLUSIVE
AS EXCAVATED BY VUICH ENVIRONMENTAL
AT UKUMEHAME, LAHAINA, MAUI, HAWAII



JANUARY 17, 2005
JOB NO. 95-07

100' = 1" (Horizontal Scale)
 100' = 1" (Vertical Scale)
 1" = 100' (Graphic Scale)
 1" = 100' (Graphic Scale)



SUSPECT HISTORIC WETLAND #2

SUSPECT HISTORIC WETLAND #1

PHASE II SUBDIVISION
GENERAL PLAN

UKUMENANE SUBDIVISION

FIGURE 5

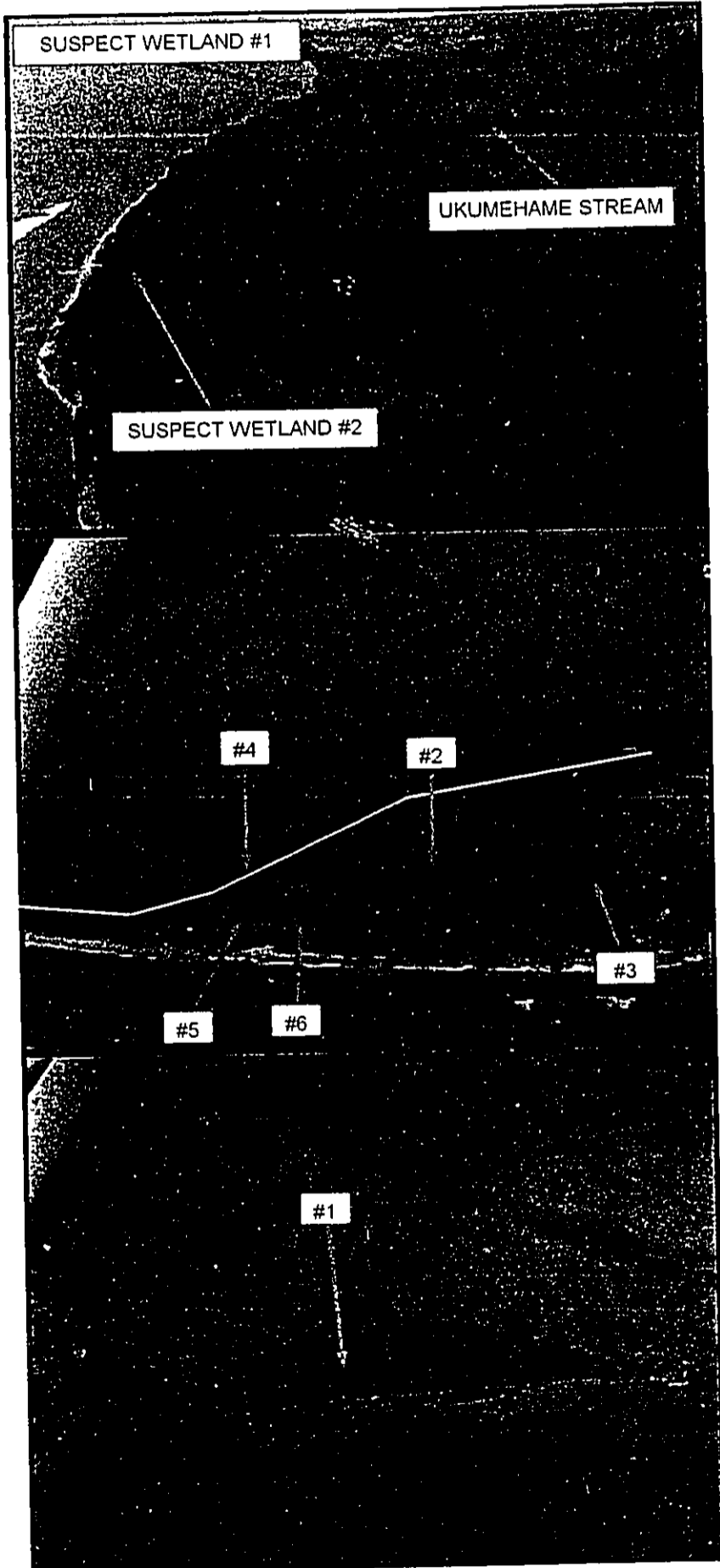


PHOTO 1

Oblique aerial photo of the subject property. The two main areas where boreholes were excavated and Ukumehame Stream are noted.

PHOTO 2

Eastern area of the property in the vicinity of Boreholes #2 thru #6. The property is located on the upper left side of the yellow line.

PHOTO 3

Western area of the property in the vicinity of suspect wetland #1 and Borehole #1.

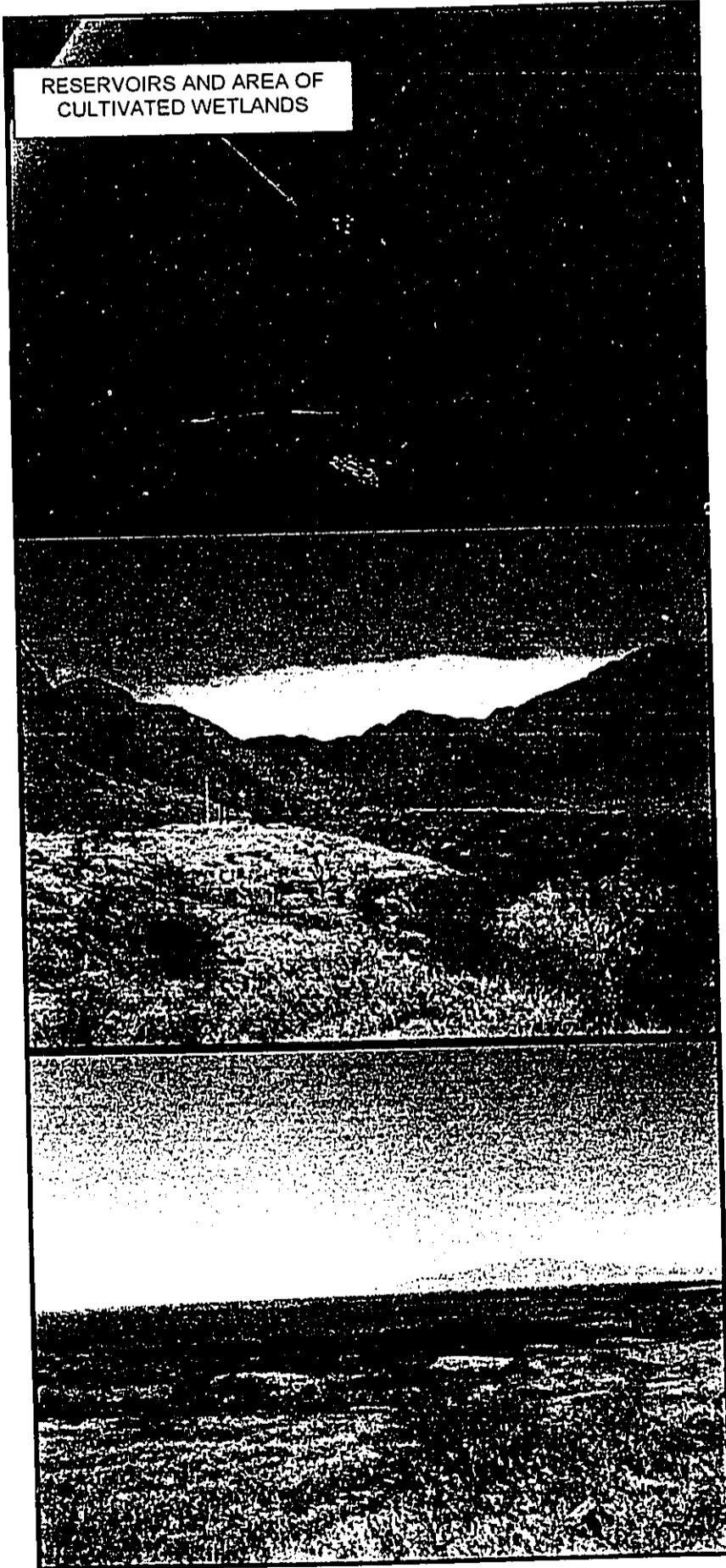


PHOTO 4

Central portion of the property showing Ukumehame Gulch. Three active, man-made reservoirs and an area of cultivated wetlands (taro patches) are located in this area.

PHOTO 5

Northerly view of the headwaters of Ukumehame Gulch. This stream and other smaller streams feed the lowland areas of the alluvial fan.

PHOTO 6

Southwesterly view of the low-lying areas of the subject property.



PHOTO 7

Borehole #1 was located in a former sugar cane crop area. This location may have historically been in an area with wetland conditions, however, currently shows no wetland indicators. This area was drained several decades ago and was actively tilled.

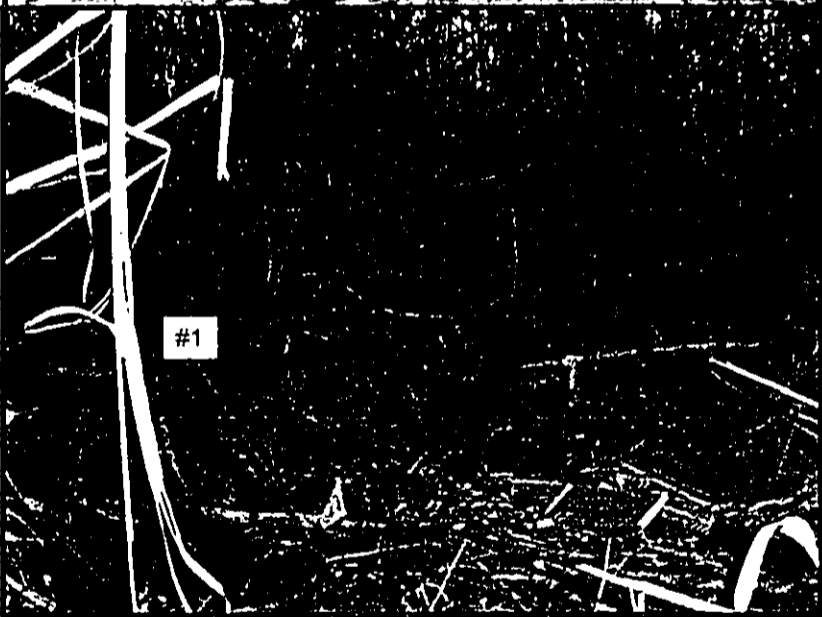


PHOTO 8

Borehole #1 (see Photo #7) was located in a thicket of sugar cane.



PHOTO 9

Borehole #2, located just off the southeast portion of the property. This borehole had marginal soil and vegetation indicators, however, the hydrology parameter was absent. This area's hydrology has been altered by adjacent irrigation ditch construction.



PHOTO 10

Borehole #2, located off-site, had marginal soil, vegetation and hydrology indicators. This area may also have been recently subjected to surface water ponding from upgradient ditch or stream overflows.

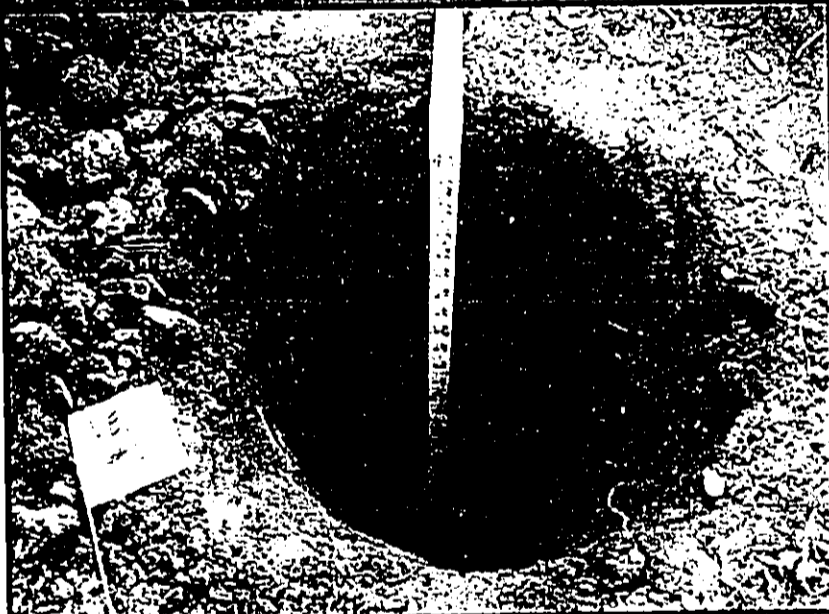


PHOTO 11

Borehole #3, located off-site, had no wetland hydrology or hydric soil parameters present. Wetland vegetation is also marginal in this area.

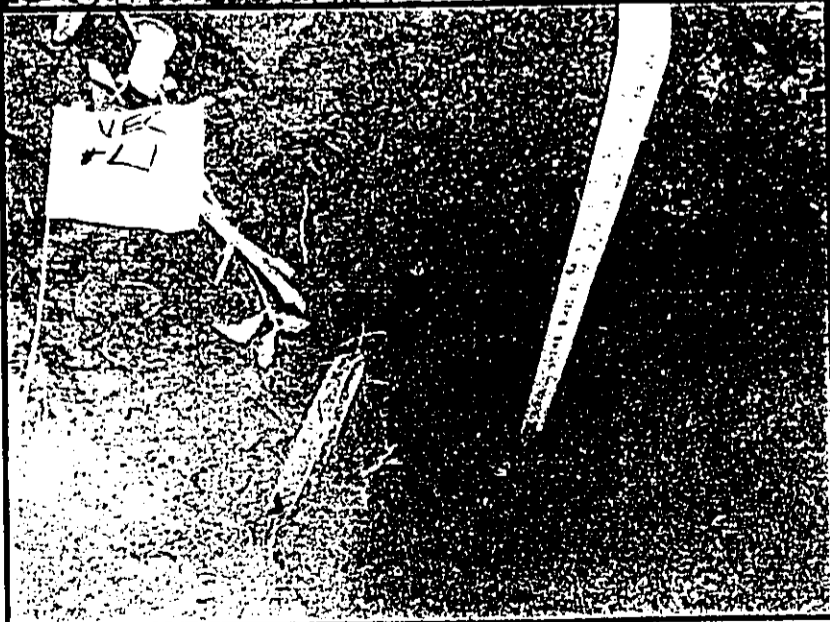


PHOTO 12

Borehole #4 is located on the southeast property boundary. This borehole is located in a thicket of *Pluchea indica*. The soils in this area were historically tilled, eliminating any significant wetland soil profile. Groundwater was not encountered.

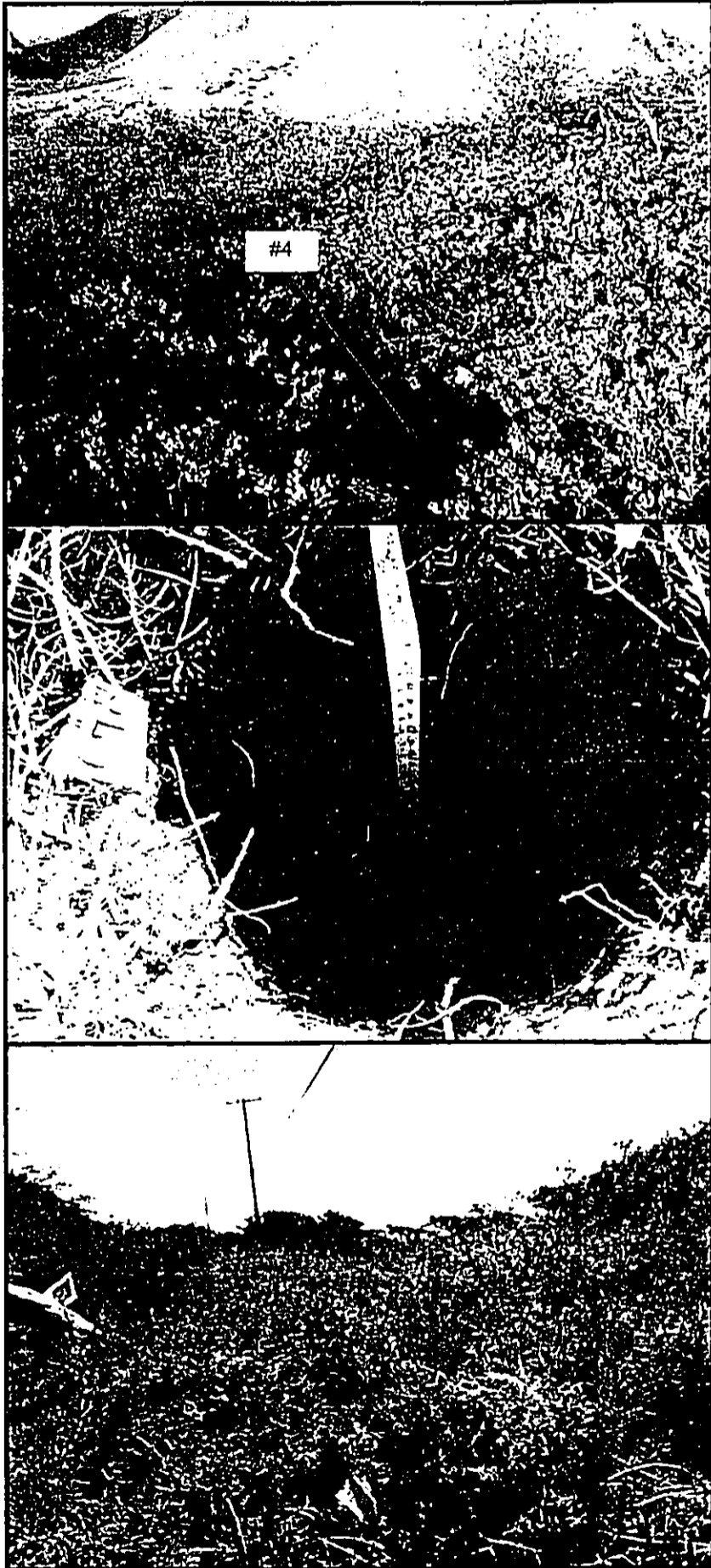


PHOTO 13

Vicinity of Borehole #4. See Photo #12.

PHOTO 14

Borehole # 5 is located immediately adjacent to the subject property. This was the only borehole of the study that had all three wetland parameters. This area did not encroach onto the subject property.

Groundwater in this area fluctuates due to tidal influences.

PHOTO 15

Borehole #5 is located within the ground-cover akulikuli-kai. See also Photo #14.

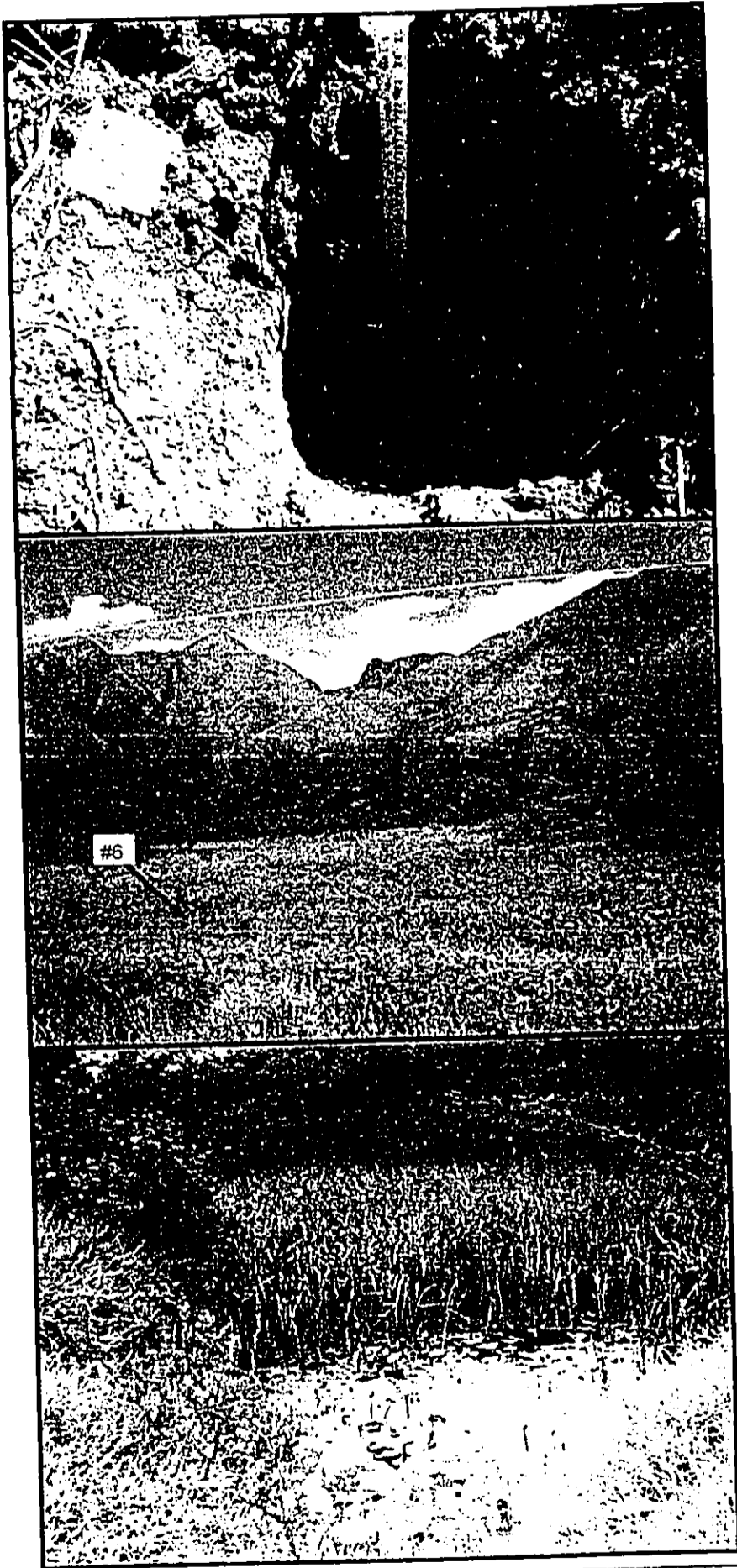


PHOTO 16

Borehole #6, located off-site, had both vegetation and hydrological parameters, however, hydric soils were not evident.

Groundwater in this area fluctuates due to tidal influences.

PHOTO 17

Borehole #6 is located within the ground-cover akulikuli-kai. See also Photo #16.

PHOTO 18

Irrigation/drainage ditches are located throughout the property. Areas where water is slow-moving or stagnant have wetland vegetation present. Wetland soils are not present due to the recent (geologically speaking) construction dates of these ditches. These areas are considered man-induced wetlands, however, are likely exempt from Corp of Engineers' regulations based on the fact that these conditions would not exist if these ditches were removed.



PHOTO 19

Irrigation/drainage ditches are located throughout the property. Areas where water is slow-moving or stagnant have wetland vegetation present. Wetland soils are not present due to the recent (geologically speaking) construction dates of these ditches.

See Photo #18.



PHOTO 20

One of three active man-made reservoirs located in the upper portion of the subject property within Ukumehame Gulch.

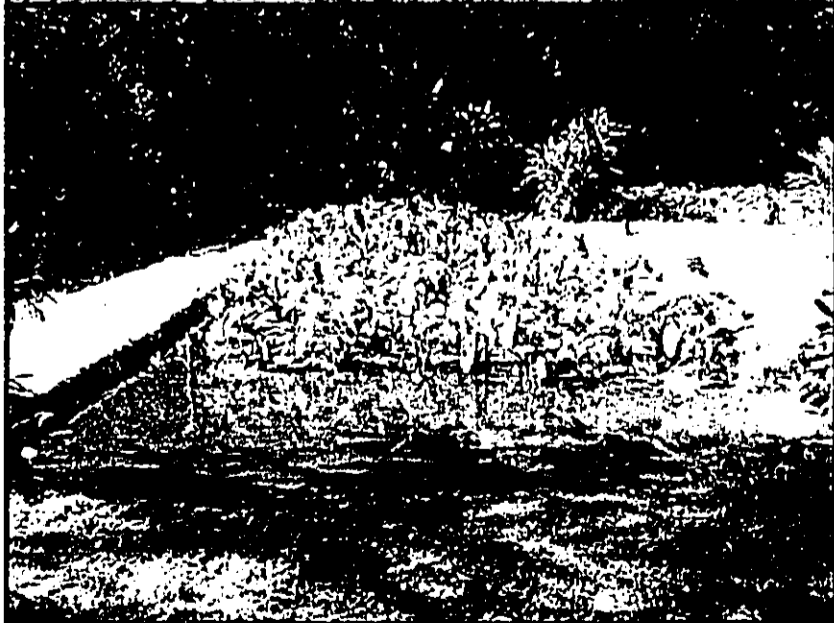


PHOTO 21

A limited area of cultivated wetlands (taro patches) are located in the upper portion of the subject property within Ukumehame Gulch, adjacent to the reservoirs.

APPENDIX B

COE Wetland Determination Data Forms

Army Corps of Engineers' Atypical Situation
Data Form 3

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>UKUMEHAME SUBDIVISION</u>	Date: <u>11/29/04</u>
Applicant/Owner: <u>PACIFIC RIM LAND, INC.</u>	County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUICH</u>	State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site? Yes <input type="radio"/> No <input checked="" type="radio"/>	Community ID : <u>CANE</u> Transect ID: _____ Plot ID: <u>BH 1</u>
Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. Various Trees	Tree Canopy FACU or UPL	50%
2. Sugarcane	Shrub	50 %
3. <i>Pluchea indica</i> Indian fleabane	Woody Shrub	FAC?*
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)		
Remarks: Drained sugarcane plot 1960+ in potential historic wetland environment. See Form #3 Atypical. <i>Pluchea indica</i> located adjacent to nearby drainage ditches.		

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>none</u> (in.) Depth to Saturated Soil: <u>none</u> (in.)</p>	
<p>Remarks: Water in upgradient cut-off ditch is approximately 7.5 feet below grade level (50' north) and approximately 7 feet in downgradient ditch (100' south).</p>	

SOILS

USDA Unit Name (Series and Phase): <u>USDA and Stearns Geology 1942</u>		Drainage Class: _____			
Taxonomy (Subgroup): <u>USDA, Kealia Silt Loam (KMW)</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 3"		Plant Debris with Canopy Leaves and Cane Debris			
3" - 6"	O	7.5YR - 3/2	Dark Brown	Tilled Cane Field	Silty Sand & Clay & Organic Debris
6" - 16"	A	10YR - 3/2	Very Dark Grayish Brown		Silty Sand & Clay with Minor Pebbles
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions		<input type="checkbox"/> High Organic Content in Surface Layer	
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> Organic Streaking in Sandy Soils		<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Listed on National Hydric Soils List		<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Aquic Moisture Regime					
<input type="checkbox"/> Reducing Conditions					
<input type="checkbox"/> Gleyed or Low-Chroma Colors					
Remarks:					
Soil has been tilled; total depth for hole = 16 inches					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? Yes <input checked="" type="radio"/> No (Circle)
Welland Hydrology Present? Yes <input checked="" type="radio"/> No (Circle)	
Hydric Soils Present? Yes <input checked="" type="radio"/> No (Circle)	
Remarks:	
Possibly a wetland area prior to 1960; series of drainage (cross-gradient and parallel) ditches > 7 feet deep and soil tilling obliterated most indicators. Peripheral <i>Pluchea Indica</i> brush suggest potential wetland areas closer to highway. 1949 aerial photographs suggest ponding and drainage patterns in area of herbal plant cover.	

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>UKUMEHAME SUBDIVISION</u>	Date: <u>11/29/04</u>	County: <u>MAUI</u>
Applicant/Owner: <u>PACIFIC RIM LAND, INC.</u>	State: <u>HAWAII</u>	
Investigator: <u>J. KERMODE, J. VUICH</u>	Community ID: <u>HERB</u>	
Do Normal Circumstances Exist on the site? Yes <input type="radio"/> No <input checked="" type="radio"/>	Transect ID: _____	
Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No <input type="radio"/>	Plot ID: <u>BH 2</u>	
Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/>	(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <i>Heliotropium curassavicum</i>	Herb	60%
2. <i>Pluchea indica</i> Indian fleabane	Woody Shrub	5%
3. Grasses	Herb	<5%
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). FACW/OBL 60%		
Remarks: Bare ground 30%. This area is surrounded by drainages and plant regrowth is partially being covered with FACW or FAC??. See Form #3 Atypical.		

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs ___ Other ___ No Recorded Data Available</p>	<p>Wetland hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines <input checked="" type="checkbox"/> Sediment Deposits ___ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ FAC-Neutral Test ___ Other (Explain in Remarks)</p>
<p>Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>22</u> (in.) Depth to Saturated Soil: <u>18</u> (in.)</p>	
<p>Remarks: Soil has salt crustation in dry barren patches. Drainage pattern influenced by ditches and grading. This area may have been recently flooded by upgradient ditch overflows (blowouts).</p>	

SOILS

USDA Unit Name (Series and Phase): <u>USDA and Stearns Geology 1942</u>		Drainage Class: _____			
Taxonomy (Subgroup): <u>USDA, Kealia Silt Loam (KMW)</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 2"	B	2.5 YR 3/2	Dark Reddish Brown		Clay
2" - 12"	BC	7.5YR - 3/2	Dark Brown		Clay, Silt & Minor Sand & Organic Debris
12" - 22"	C	GLE Y 1 3/10 GY	Very Dark Greenish Gray		Coarse Beach Sand with Shell Fragments and Plant Roots
22+	R		Light Grayish White		Coral
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions		<input type="checkbox"/> High Organic Content in Surface Layer	
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer		<input type="checkbox"/> Organic Streaking in Sandy Soils	
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils		<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List		<input type="checkbox"/> Listed on National Hydric Soils List	
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List		<input type="checkbox"/> Other (Explain in Remarks)	
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors below 12"					
Remarks:					
Atypical: Sugarcane field with examples of recent ponding on soils. Original surface soils are mixed due to soil tilling but suggest organic material by color and tilled-in-organics. Irrigation plastic noted at 4" below surface.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle) Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> marginal	
Hydric Soils Present? Yes <input type="radio"/> No <input checked="" type="radio"/> marginal	
Remarks:	
By aerial photos and USDA Data and water level at 22" within diversion/drainages surrounding sample point it was likely pre-1960 a wetland. See Form #3 Atypical. Also saw two (pair) of nene (geese) in flight.	

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>UKUMEHAME SUBDIVISION</u>	Date: <u>11/29/04</u>
Applicant/Owner: <u>PACIFIC RIM LAND, INC.</u>	County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUICH</u>	State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site? Yes <input type="radio"/> No <input checked="" type="radio"/>	Community ID : <u>Pluchea indica</u> Transect ID: _____ Plot ID: <u>BH 3</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes No <input type="radio"/>	
Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Pluchea indica</i> Indian fleabane	Woody Shrub	90%
2. <i>Prosopis pallida</i> kiawe	Tree Canopy	3%
3. <i>Koa Haole</i>	Tree Canopy	3%
4. <i>Grass</i>	Herb	4%
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 90% FAC*?		
Remarks: 100 feet from drainage ditches, downgradient and on two sides. Previously used as a cane field.		

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs ___ Other ___ No Recorded Data Available</p>	<p>Wetland hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ FAC-Neutral Test ___ Other (Explain in Remarks)</p>
<p>Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>none</u> (in.) Depth to Saturated Soil: <u>none</u> (in.)</p>	
<p>Remarks: Drainage ditches likely control (reduce) water level deeper. Total depth 24".</p>	

SOILS

USDA Unit Name (Series and Phase): <u>USDA and Stearns Geology 1942</u>		Drainage Class: _____			
Taxonomy (Subgroup): <u>USDA, Kealia Silt Loam (KMW)</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 1"	A	7.5 YR 3/3	Dark Brown		Silt & Clay (Sedimentation Cap?)
1" - 9"	AB	7.5YR - 2.5/2	Very Dark Brown		Till Mix Clay, Sand-Silt & Organic Debris
9" - 19"	B	7YR 3/4	Dark Brown		Clay & Minor Silt
19" - 24"	C2	2.5Y 4/1	Dark Gray		Beach Sand & Silt & Clay
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors <i>below 12"</i>			<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)		
Remarks: Previous Agricultural use and mixed (tilled) soils. Dark brown colors suggest organic top soil to 8" or 9" in depth.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle) Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Hydric Soils Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Soils and hydrology influenced by agricultural land use and upgradient and paralleled drainage ditches. Vegetation consists of FAC*?. See Atypical Form #3.	

Approved by HQUSACE 3/92

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>UKUMEHAME SUBDIVISION</u>	Date: <u>12/08/04</u>
Applicant/Owner: <u>PACIFIC RIM LAND, INC.</u>	County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUICH</u>	State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site? Yes <input type="radio"/> No <input checked="" type="radio"/>	Community ID : <u>Pluchea indica</u> Transect ID: _____ Plot ID: <u>BH 4</u>
Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Pluchea indica</i> Indian fleabane	Woody Shrub	90% FAC*?
2. <i>Koa Haole</i>	Tree Canopy	10%
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 90% FAC*?		
Remarks: Re-growth over old cane field located on outside fringe of drainage ditch. (50 feet mauka of ditch).		

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs ___ Other ___ No Recorded Data Available</p>	<p>Wetland hydrology indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ FAC-Neutral Test ___ Other (Explain in Remarks)</p>
<p>Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>none</u> (in.) Depth to Saturated Soil: <u>none</u> (in.)</p>	
Remarks: Dewatering drainage ditch parallels old state highway 50 feet makai (south).	

SOILS

USDA Unit Name (Series and Phase): <u>USDA and Stearns Geology 1942</u>		Drainage Class: _____			
Taxonomy (Subgroup): <u>USDA, Kealia Silt Loam (KMW)</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 1/2"	X				Organic Surface Litter
1/2" - 2"	BA	10YR - 4/4	Dark Yellowish Brown		Clay-Silt & Organic Debris
2" - 14"	B	10YR 4/2	Dark Grayish Brown		Sandy Clay & Silt & Minor Organics
14" - 17"	BC	2.5Y 4/2	Dark Grayish Brown		Sand, Silt & Clay, Minor Gray Mottle
17" TD	C	GLEY 1 3/5 GY	Very Dark Greenish Gray		Sand & Silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input checked="" type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer			
<input checked="" type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					
Minor sulfidic odor at 19 inches. Gleyed colors at a 18-20 inches.					
Tilled soils for cane mixture to ~ 12"-14" depth. Pebbles and cobble-size gray-white coral @ 20 inches indicating beach environment.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle) Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Hydric Soils Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:	
Vegetation is re-growth No hydrology likely due to dewatering ditches. Critical soil-surface ~ 12 inches modified by field-tilling for cane crop of 30+ years. See Atypical Form #3.	

Approved by HQUSACE 3/92

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>UKUMEHAME SUBDIVISION</u>		Date: <u>12/10/04</u>
Applicant/Owner: <u>PACIFIC RIM LAND, INC.</u>		County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUICH</u>		State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Community ID : _____ Transect ID: _____ Plot ID: <u>BH 5</u>
Is the site significantly disturbed (Atypical Situation)?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes <input type="radio"/> No <input checked="" type="radio"/>	

VEGETATION

<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1. <i>Akuli-kuli kai</i> Indian fleabane	Herb	50%
2. <i>Pluchea indica</i> Indian fleabane	Woody Shrub	30%
3. <i>Prosopis pallida</i> kiawe	Tree	20%
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <u>50% OBL; 30% FAC*</u>		
Remarks: Aerial photos 1949-1997 indicate this area was never under cultivation. This is a triangular land parcel wedged between the new beach highway and the old Lahaina highway.		

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs ___ Other ___ No Recorded Data Available</p>	<p>Wetland hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ FAC-Neutral Test ___ Other (Explain in Remarks)</p>
<p>Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>20</u> (in.) Depth to Saturated Soil: <u>16</u> (in.)</p>	
<p>Remarks: Upgradient area cut (transversed) by dewatering ditch may have impacted historically and now the depth to free water. Borehole excavated 1.25 hours after low tide. Soils may be saturated at 12 inches during high tides.</p>	

SOILS

USDA Unit Name (Series and Phase): <u>USDA and Stearns Geology 1942</u>		Drainage Class: _____			
Taxonomy (Subgroup): <u>USDA, Kealia Silt Loam (KMV)</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 1/2"	O	10 YR 2/2	Very Dark Brown		Organic Clay-Sand-Silt Mix Sand & Organic Debris with Clay Silt
1/2" - 5 1/2"	A	7.5YR - 3/3	Dark Brown		
5 1/2" - 10"	E	10YR 5/6	Yellowish Brown		Coarse Sand & Silt & Clay Clay, Sand & Silt & Minor Organic Pebbles at last 2"
10" - 20"	B	7.5Y 3/2	Dark Brown		Coarse Beach Sand with Clay Layers
20" - 22"	C/B	5Y 5/1	Gray		
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input checked="" type="checkbox"/> High Organic Content in Surface Layer			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors (20 inches)		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					
Most likely little to no soil disturbance = natural. Coral pebbles and small branches in clay layers of bottom 2" of beach sand.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No marginal	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks:	
Upgradient dewatering ditch may have lowered water table.	

Approved by HQUSACE 3/92

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>UKUMEHAME SUBDIVISION</u>	Date: <u>12/10/04</u>
Applicant/Owner: <u>PACIFIC RIM LAND, INC.</u>	County: <u>MAUI</u>
Investigator: <u>J. KERMODE, J. VUICH</u>	State: <u>HAWAII</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No	Community ID : _____ Transect ID: _____ Plot ID: <u>BH 6</u>
Is the site significantly disturbed (Atypical Situation)? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. <i>Akuli-kuli kai</i> Indian fleabane	Herb	90%
2. <i>Prosopis pallida</i> kiawe	Tree Canopy	10%
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <u>80% OBL</u>		
Remarks: Highway culvert (2 feet diameter) may impact water supply favorably for plant growth.		

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs ___ Other ___ No Recorded Data Available</p>	<p>Wetland hydrology Indicators: Primary Indicators: ___ Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12" ___ Water-Stained Leaves ___ FAC-Neutral Test ___ Other (Explain in Remarks)</p>
<p>Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>19</u> (in.) Depth to Saturated Soil: <u>15.5</u> (in.)</p>	
<p>Remarks: Cut-off drainage 200+ upgradient may reduce water table (lower) in sample area. Soils may be saturated at 12 inches during high tides.</p>	

SOILS

USDA Unit Name (Series and Phase): <u>USDA and Stearns Geology 1942</u>		Drainage Class: _____			
Taxonomy (Subgroup): <u>USDA, Kealia Silt Loam (KMW)</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0" - 1/2"	BA	5 YR 4/6	Yellowish Red		Clay (ponding sediment), Organic Debris
1/2" - 4"	BA	5YR - 3/3	Dark Reddish Brown		Clay, Wood Organic, Sand & Silt
4" - 9"	B	7.5YR 3/3	Dark Brown		Clay, Coarse Sand
9" - 22"	C	10Y 5/6	Yellowish Brown		Beach Sand Coarse, Silt
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions		<input type="checkbox"/> High Organic Content in Surface Layer	
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> Organic Streaking in Sandy Soils		<input type="checkbox"/> Listed on Local Hydric Soils List	
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Listed on National Hydric Soils List		<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Aquic Moisture Regime					
<input type="checkbox"/> Reducing Conditions					
<input type="checkbox"/> Gleyed or Low-Chroma Colors 20"					
Remarks:					
Soils appear undisturbed in field and aerial photos.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> marginal (Circle)	
Hydric Soils Present? Yes <input type="radio"/> No <input checked="" type="radio"/> marginal	
Remarks:	
Location is outside of subject property but visually represents closest area having wetland characteristics (similar to borehole 5 yet undeveloped soils).	

Approved by HQUSACE 3/92

**WETLAND DETERMINATIONS
ATYPICAL SITUATIONS
DATA FORM 3**

Applicant Name: Pacific Rim Land, Inc. Appl. No. _____
 Project Name: Ukumehame Wetlands Location: _____
 Island Maui Plot/Hole No: BH #1, 2, 3, & 4 Date 11-29-04

A. VEGETATION:

1. Type of alteration : Grubbing activity and land clearing in preparation for agricultural use.
2. Effect on vegetation: Total removal of natural plants and replanting with sugarcane crops.
3. Previous vegetation : Possible *Pluchea indica*, *Batis maritima*, *Prosopis pallida*, *Sesuvium portulacastrum*
4. Wetland (hydrophytic) Vegetation previously? Yes Likely No _____

B. SOILS:

1. Type of alteration : Soil tilling for 30+ years on sugarcane crops and irrigation water soaking.
2. Effect on soils : Churning and mixing of first 8" to 16" of top soil.
3. Previous soils : Kealia silt loam (KMW) as per USDA soil survey
4. Wetland (hydric) Soils previously? Yes Possible No _____

C. HYDROLOGY:

1. Type of alteration : Construction of cut-off drainage trenches upgradient with connecting drainage control trenches perpendicular and downgradient from fields.
2. Effect on hydrology :
 - Diversion of stormwater runoff.
 - Reducing groundwater level.
3. Previous hydrology : Poor drainage and likely frequent surface water ponding
4. Wetland Hydrology Previously? Yes Likely No _____

ATTACH DOCUMENTS TO SUPPORT DATA ABOVE

Characterized By : Jeffrey Kermod Title: Field Scientist
John Vuich Field Geologist

APPENDIX C

Statement of Qualifications



STATEMENT OF QUALIFICATIONS

for
Jeffrey E. Kermode, B.A., B. Tech.

Company Position Vice President / Environmental Projects Manager

**Responsibilities
and Duties:**

- Phase I & II Environmental Site Assessments/Investigations
- Phase III Remediation Projects
- Underground Storage Tank (UST) Closures
- Asbestos Inspections, Air Monitoring and Supervision of Removal
- Lead-Based Paint Inspections, Risk Assessments and Supervision of Removal
- Indoor Air Quality Investigations and Mold Remediation Project Management
- Erosion Control Plan (BMP) Development
- Site Safety Officer for Sampling/Remediation Projects

Experience:

- Soil and Groundwater Investigations/Remediation
- UST Removal and Closure
- Hazardous Materials Management
- Asbestos and Lead-Based Paint Projects (Inspections, Monitoring, Removal)
- Air Quality Sampling for Particulate and Microbiological Contaminants
- Wetland Delineation
- Erosion Control and Pollution Prevention Planning and Implementation for Large Scale Construction Projects
- Underground Injection Control (UIC) Permitting
- Environmental Report Writing and Compilation
- Conducted On-Site Oil Spill Response Training Courses, Assessed Clients' Response Preparedness, and Assisted in the Development of Oil Spill Contingency Plans
- Oil Spill Clean-Up Operations
- Pelagic and Coastal Fisheries Research as a Scientific Observer

**Training &
Education**

- Bachelor of Technology, Environmental Engineering, B.C.I.T. Burnaby, B.C., 1999
- Bachelor of Arts, Geography, University of B.C., Vancouver, Canada, 1989
- AHERA (Asbestos Hazard Emergency Response Act) Inspector for Asbestos, US EPA Certified
- AHERA Asbestos Contractor Supervisor, US EPA Certified
- AHERA Project Monitor for Asbestos, US EPA Certified
- OSHA HAZWOPER Certification (40 Hr)
- On-Scene Incident Commander Certification (24 Hr), US EPA Certified
- Lead-Based Paint Inspector, US EPA Certified
- Lead-Based Paint Risk Assessor, US EPA Certified
- Lead-Based Paint Contractor Supervisor, US EPA Certified

Rev. 6-03

Maui Office: 1498 Lower Main Street, Suite C, Wailuku, Maui, Hawaii 96793 • (808) 249-2777 Phone (808) 249-2778 Fax
Oahu Office: Hanua Industrial Complex, 91-110 Hanua Street, Unit 317, Kapolei, Oahu, Hawaii 96707
(808) 682-1611 Phone • (808) 682-1616 Fax • Inter-Island: (800) 572-1165 • www.vuichenvironmental.com



JOHN S. VUICH
President & CEO

STATEMENT OF QUALIFICATIONS:

M. S. Geological Engineering, University of Arizona
B. S. Geological Engineering, University of Arizona
Registered Geologist (California)
Registered Environmental Assessor (California)
Certified Environmental Manager (Nevada)

AREAS OF EXPERTISE

- | | |
|----------------------|---|
| ENVIRONMENTAL | <ul style="list-style-type: none">▼ Site Assessments, Phase I, II, III Investigations▼ Underground Storage Tank Closure▼ Asbestos Inspection and Monitoring, Management Planning, and Abatement Project Design and Removal▼ Lead-Containing Paint Surveys and Inspections, and Disturbance Design and Removal▼ Site Characterization for Remedial Investigations▼ Facility Operation Compliance Audits-ISO 14000 Audits▼ Soils/Groundwater Remediation▼ Hazardous Waste Management▼ Risk Assessment Investigations▼ RCRA Compliance and Closure Projects▼ Expert Witness/Litigation Support▼ Industrial Hygiene Qualified/Competent Person▼ Mold/Fungi Sampling, Remediation and Abatement Design and Removal |
| GEOLOGICAL | <ul style="list-style-type: none">▼ Hydrogeology▼ Geologic Hazards Analysis▼ Landuse Planning▼ Subsurface Excavations and Drilling Investigations and Sampling |
| MANAGEMENT | <ul style="list-style-type: none">▼ Program Director - Project Management▼ Client - Agency Liaison▼ Field Supervision - Administrative Supervisor |

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(808) 682-1611 Phone • (808) 682-1616 Fax • Inter-Island: (800) 572-1165 • www.vuichenvironmental.com

RELEVANT EXPERIENCE

**Owner-President • Vuich Environmental Consultants, Inc.
Wailuku, Maui, and Honolulu, Oahu • (March, 1994 - Present)**

Consulting services and project management for Abatement / Remediation Projects property transfers, sampling and site characterization plans, hazardous and toxic waste management, underground storage tanks, regulatory compliance, landfill sites, site remediation and closure plans, permit applications, litigation support, feasibility planning and contingency and emergency response plans.

**Director • CEO Haztech Enviro-Systems
Tucson, AZ • July 1988 - February 1994)**

Founder of professional environmental engineering and geological consulting firm. Services included site assessments, site contamination characterizations, facility audits, RCRA closure investigations and hazardous/regulated waste management, remediation projects, and asbestos surveys. Prepared regulatory documentation and permitting for Federal, State and local regulatory agencies on all projects. Supervised professional, technical, sales and administrative/clerical staff.

**Project Engineer • Hazchem Environmental Services
Tucson, AZ • March 1987 - June 1988**

Performed and supervised RCRA remedial projects and waste management projects.

**Independent Consultant Geologist
Laguna Hills, CA and Tucson, AZ • 1982 - 1987**

Conducted geological investigations in western United States and Mexico. Performed geochemical sampling and geologic mapping. Prepared technical reports for clients and regulatory agencies.

**Environmental/Geotechnical Section Supervisor • TRW: Systems Engineering
Redondo Beach, CA • 1978 - 1981**

Directed environmental project management for Department of Defense and Department of Energy related projects in Western U.S. Project, including site selection, planning and environmental impact statements. Supervised staff consisting of geologists and environmental scientists.

**Assistant Geologist • Arizona Geological Survey
Tucson, AZ • 1972-1978**

Participated in environmental impact studies, geologic hazards analysis, landuse planning. Author of several landuse planning technical publications.

**Project Geologist and Staff Geologist • Various Geological Consulting & Mining Companies
Southwestern United States • 1968-1972**

Performed geochemical sampling, subsurface investigations including drilling, mineral property valuation and geologic mapping. Prepared geologic reports and maps.

John S. Vuich
Continued

OTHER CERTIFICATIONS, TRAINING AND SECURITY CLEARANCES

- ▼ Asbestos & Demolition Contractor (C-19, C-24) HI LIC #21212
- ▼ Certified Hazardous Materials First Responder, FEMA and Arizona Division of Emergency Services.
- ▼ OSHA Hazmat Worker and Supervisor
- ▼ Accredited Asbestos Building Inspector, Asbestos Contractor/Supervisor, Project Monitor, and Asbestos Abatement Project Designer.
- ▼ Accredited Lead Inspector and Lead Contractor Supervisor
- ▼ Continuing Education in Hazardous Materials Management, Environmental Studies and Environmental Regulations: 628 Classroom Hours since 1987 - Arizona State University, Tempe, AZ, Pima Community College, Tucson, AZ., & The Environmental Training Center Tucson, AZ.
- ▼ Security Clearance: Department of Defense, TOP SECRET (1980)
- ▼ Licensed Private Pilot - 1400 Hours, Single Engine, Land

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APPENDIX J
**Department of Parks
and Recreation**
Letter

NOV-03-2004 WED 03:55 PM PACIFIC RIM LAND INC.

FAX NO. 8088792557

P. 02

ALAN M. ARAKAWA
Mayor



GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

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

October 4, 2004

RECEIVED

OCT 07 2004

Ms. Donna Clayton
Pacific Rim Land, Inc.
PO Box 220
Kihei, Hawaii 96753

PACIFIC RIM LAND, INC.
MAUI - MAIN

Dear Ms. Clayton:

SUBJECT: UKUMEHAME SUBDIVISION, PHASE II
TMK 4-8-002:009, 048, 052 - 056, 060, 061, 065, 066, 068, AND 070
SUBD. FILE NO. 4.876, LAHAINA

This letter is in response to your request regarding the current parks and playgrounds assessment fee requirements for the subject forty six (46) lot subdivision.

As discussed in the February 12, 2004 meeting with our department, the parks and playgrounds assessment fee for the Ukumehame Subdivision, Phase II, would be based on the highest square foot value of the subject lots. This amount, as indicated on the attached 2004 certified real property tax assessment, is \$1.61/square foot. Therefore, utilizing the 3-lot exemption, the parks and playgrounds assessment fees for the subject forty six (46) lot subdivision is **\$34,615.00** [$\$1.61/s.f. \times 500 \text{ s.f./lot} \times (46-3) \text{ lot}$].

Be advised, the aforementioned rate and fees, are valid until April 20, 2005 and are subject to change. Also, the applicant is required to satisfy the applicable parks and playgrounds requirements at the time of final subdivision approval.

Should you have any questions or concerns, please feel free to call me, or Patrick Matsui, Chief of Parks Planning and Development, at 270-7387.

Sincerely,


GLENN T. CORREA
Director

c: Patrick Matsui, Chief of Planning and Development Division

APPENDIX K
**Preliminary Drainage and
Erosion Control Report**

Drainage and Erosion Control Report

for

Ukumehame Subdivision, Phase II

Subdivision File No. 4.876
Ukumehame, Maui, Hawaii

April 22, 2005

Prepared for:
Pacific Rim Land

Prepared by:



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SECTION 1
INTRODUCTION

1.1 PROJECT DESCRIPTION

The Ukumehame Subdivision project site is located in Ukumehame, Maui along Honoapiilani Highway (Route 30), centered on the Ukumehame Bridge. Forty-five total lots are being considered for the subdivision project totaling approximately 262 acres. The project intent is to construct roads, a water system (including a well, various pumps, and a reservoir), and various drainage improvements to service the future agricultural lots. Subdivision roads will connect to Honoapiilani Highway at two points, before and after the bridge.

1.2 PURPOSE AND SCOPE

The purpose of this report is to design a drainage system to accommodate the proposed Ukumehame Subdivision runoff, including the increase in flow due to the addition of impervious surfaces and discuss the erosion control measures that must be taken to ensure that the surrounding environment is not adversely affected during construction.

SECTION 2

CRITERIA AND METHODOLOGY

2.1 HYDROLOGIC CRITERIA

The hydrologic criteria used in this study was from the County of Maui *Rules for the Design of Storm Drainage Facilities in the County of Maui*.

The increase in runoff was calculated by the rational method with a recurrence interval of 50-years and rainfall duration of 1-hour for drainage areas less than 100 acres. For drainage areas greater than 100 acres, The National Resources Conservation Service (NRCS) TR-20 method was used for a recurrence interval of 100-years and rainfall duration of 24-hours.

Roadway culverts with drainage areas less than 100 acres were designed to have the capacity for a storm with a recurrence interval of 50-years and rainfall duration of 1-hour. For culverts with drainage areas greater than 100 acres, The NRCS TR-20 method was used for a recurrence interval of 100-years and rainfall duration of 24-hours.

Shallow grassed retention basins were used to intercept the increase in runoff from onsite improvements. The retention basins were designed to hold the increase in runoff due to additional impervious areas. A storm with a recurrence interval of 50-years and rainfall duration of 1-hour was used.

2.2 HYDRAULIC CRITERIA

The hydraulic criteria used in this study was from the County of Maui *Rules for the Design of Storm Drainage Facilities in the County of Maui*.

SECTION 3

EXISTING DRAINAGE CONDITIONS

3.1 STUDY AREA LOCATION

The Ukumehame Subdivision project site is located in Ukumehame, Maui along Honoapiilani Highway (Route 30), centered on the Ukumehame Bridge. Various historical sites are located throughout the project site along with privately-owned Exclusion areas. Easement areas also exist at the upper end of the site.

3.2 TOPOGRAPHY

The Ukumehame Subdivision project site consists basically of medium to high grassy areas with trees and brush close to Honoapiilani Highway and also higher up the mountain-side. The existing slopes near Honoapiilani Highway to the middle of the site are relatively flat (1.5%-5%) then increase sharply toward the upper end of the site (10%-18%).

Ukumehame Stream is well entrenched into an alluvial fan and is confined to the gulch. The stream is located between two berms that extend north to the central part of the project site.

3.3 EXISTING DRAINAGE PATTERNS

The existing drainage system consists mainly of the Ukumehame Gulch which runs down the middle of the project site and splits the subdivision into two areas. The Ukumehame Bridge allows the gulch runoff to exit under Honoapiilani Highway and into the Pacific Ocean. Also running throughout the site are small, unnamed, natural drainageways that collect flow. The remaining runoff sheet flows across the site.

SECTION 4

PROPOSED DRAINAGE PLAN

4.1 DRAINAGE PLAN CONCEPT

The proposed drainage plan utilizes roadway culverts to allow runoff to cross roads and retention basins to hold the increase in runoff from the addition of impervious areas. Grassed swales are used to convey runoff to the roadway culverts. Existing drainage patterns shall be preserved. Erosion control measures will be taken to ensure that runoff will not negatively affect the surrounding environment during construction.

4.2 PROPOSED DRAINAGE SYSTEM

To protect the proposed subdivision Roads B and D in cut conditions from offsite runoff, grassed triangular swales will be constructed on the upper sides of the roads to intercept flow. Runoff from these interceptor swales are channeled to headwalls and reinforced concrete pipe culverts that allow the flow to pass under the subdivision roads and down the project site.

Grass triangular roadside swales will be constructed to catch runoff from the subdivision Roads A and C. These swales will outflow through reinforced concrete pipe culverts at natural low points.

Detention basins will also be constructed along the lower areas of the project site. The purpose of these basins is to intercept the extra runoff created by the addition of impervious areas from subdivision roads and homes.

4.3 EROSION CONTROL PLAN

To protect the surrounding environment, best management practices will be used. Temporary erosion controls shall be installed prior to clearing and grubbing. These temporary erosion controls shall not be removed before permanent erosion controls are in-place and established. All control measures shall be checked and repaired as necessary, e.g., weekly, in dry periods and within 24 hours after any rainfall event of 0.5 inches or greater within a 24-hour period. During prolonged rainfall, daily inspection will be required.

Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as PVC sheets, geotextile filter fabric, berms or sediment basins, or vegetative controls such as grass seeding and/or hydromulch. All slopes and exposed areas shall be grassed as soon as final grades have been established.

See Appendix J for Best Management Practices Plan.

SECTION 5

SUMMARY AND CONCLUSIONS

5.1 SUMMARY

Ukumehame Subdivision is a 45 lot agricultural subdivision located at Ukumehame on the island of Maui. The drainage improvements for this project consist of roadway culverts and retention basins. The existing drainage patterns will be preserved as much as possible. The retention basins are sized to hold the increase in runoff resulting from the construction of roads and homes. Erosion control measures will be taken to protect the surrounding areas from runoff created by construction.

5.2 CONCLUSIONS

The proposed drainage improvements will adequately serve the developed subdivision. No additional runoff will flow into downstream properties due to the storage in the retention basins. There will be minimal adverse affects to the surrounding areas during construction due to the use of best management practices.

LIST OF REFERENCES

FlowMaster Hydraulic Calculation Program.

Rainfall-Frequency Atlas of the Hawaiian Islands, U.S. Department of Commerce
Weather Bureau, 1962.

Rules for the Design of Storm Drainage Facilities in the County of Maui, Department of
Public Works and Waste Management, County of Maui, July 1995.

Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, U.S.
Soil Conservation Service, August 1972.

Appendix A
Existing Conditions Hydraulic Calculations 50-Yr 1-Hr Storm

Drainage Area	Area (sf)	Area (ac.)	Method	Storm Frequency	C	1 hr rain/fall	L (ft)	H (ft)	slope	K	Tc (min)	I	Q (cfs)
1	3697973	84.894	rational	50 YR, 1HR	0.250	2.5	4800.0	1275.0	26.6%	9313.4	15.5	4.5	95.51
2	2751738	63.171	rational	50 YR, 1HR	0.250	2.5	5700.0	1635.0	28.7%	10642.7	17.2	4.3	67.91
3	1398147	32.097	rational	50 YR, 1HR	0.250	2.5	3225.0	935.0	29.0%	5989.5	11.0	5.0	40.12
4	797554	18.309	rational	50 YR, 1HR	0.250	2.5	2940.0	435.0	14.8%	7643.2	13.3	4.8	21.97
5	1831891	42.054	rational	50 YR, 1HR	0.250	2.5	4220.0	715.0	16.9%	10252.2	16.7	4.4	46.26
6	1631734	37.459	rational	50 YR, 1HR	0.250	2.5	2980.0	195.0	6.5%	11649.5	18.4	4.3	40.27
7	1741193	39.972	rational	50 YR, 1HR	0.250	2.5	2400.0	153.0	6.4%	9505.4	15.7	4.5	44.97
8	731565	16.794	rational	50 YR, 1HR	0.250	2.5	1700.0	57.0	3.4%	9284.0	15.4	4.5	18.89
9	1791383	41.124	rational	50 YR, 1HR	0.250	2.5	4900.0	360.0	7.3%	18077.7	25.8	3.7	38.04
10	2858903	65.631	rational	50 YR, 1HR	0.250	2.5	6830.0	595.0	8.7%	23140.5	31.2	3.4	55.79
11	5667975	130.119	NRCS TR-20	100 YR, 24 HR			SEE TR-20 CALCULATIONS						244.60
12	3065253	70.369	rational	50 YR, 1HR	0.250	2.5	5600.0	755.0	13.5%	15251.4	22.6	3.9	68.61
13	2209739	50.729	rational	50 YR, 1HR	0.250	2.5	4350.0	290.0	6.7%	16847.5	24.4	3.8	48.19
14	812096	18.643	rational	50 YR, 1HR	0.250	2.5	3300.0	155.0	4.7%	15226.7	22.6	3.9	18.18
15	807850	18.546	rational	50 YR, 1HR	0.250	2.5	3130.0	155.0	5.0%	14065.4	21.3	4.0	18.55
16	1201227	27.576	rational	50 YR, 1HR	0.250	2.5	3000.0	115.0	3.8%	15322.6	22.7	3.9	26.89
17	27341367	627.671	NRCS TR-20	100 YR, 24 HR			SEE TR-20 CALCULATIONS						1258.20
18	2940040	67.494	rational	50 YR, 1HR	0.250	2.5	3400.0	923.0	27.1%	6525.6	11.8	4.8	80.99

Appendix B
 Developed Conditions Hydraulic Calculations (50-Yr 1-Hr Storm)

Drainage Area	Method	Storm Frequency	Imperm. Area (sf)	% imperm.	1 hr rainfall (in.)	L (ft)	H (ft)	slope	K	Tc (min)
1	Rational	50 YR, 1HR	3000	0.08%	2.5	4800	1275	26.6%	9313.4	15.5
2	Rational	50 YR, 1HR	4500	0.16%	2.5	5700	1635	28.7%	10642.7	17.2
3	Rational	50 YR, 1HR	4500	0.32%	2.5	3225	935	29.0%	5989.5	11.0
4	Rational	50 YR, 1HR	5271	0.66%	2.5	2940	435	14.8%	7643.2	13.3
5	Rational	50 YR, 1HR	52096	2.84%	2.5	4220	715	16.9%	10252.2	16.7
6	Rational	50 YR, 1HR	63375	3.88%	2.5	2980	195	6.5%	11649.5	18.4
7	Rational	50 YR, 1HR	9000	0.52%	2.5	2400	153	6.4%	9505.4	15.7
8	Rational	50 YR, 1HR	0	0.00%	2.5	1700	57	3.4%	9284.0	15.4
9	Rational	50 YR, 1HR	6000	0.33%	2.5	4900	360	7.3%	18077.7	25.8
10	Rational	50 YR, 1HR	73803	2.58%	2.5	6830	595	8.7%	23140.5	31.2
11	TR-20	100 YR, 24 HR	25335	0.45%	SEE TR-20 CALCULATIONS					
12	Rational	50 YR, 1HR	34100	1.11%	2.5	5600	755	13.5%	15251.4	22.6
13	Rational	50 YR, 1HR	29241	1.32%	2.5	4350	290	6.7%	16847.5	24.4
14	Rational	50 YR, 1HR	7251	0.89%	2.5	3300	155	4.7%	15226.7	22.6
15	Rational	50 YR, 1HR	14895	1.84%	2.5	3130	155	5.0%	14065.4	21.3
16	Rational	50 YR, 1HR	4500	0.37%	2.5	3000	115	3.8%	15322.6	22.7
17	TR-20	100 YR, 24 HR	0	0.00%	SEE TR-20 CALCULATIONS					
18	Rational	50 YR, 1HR	3000	0.10%	2.5	3400	923	27.1%	6525.6	11.8

Drainage Area	Composite C	I (in/hr)	Area (sf)	Area (ac.)	Q(dev) (cfs)	Q(exist) (cfs)	Q (increase) (cfs)
1	0.251	4.5	3697973	84.894	95.72	95.51	0.21
2	0.251	4.3	2751738	63.171	68.22	67.91	0.31
3	0.252	5.0	1398147	32.097	40.48	40.12	0.36
4	0.255	4.8	797554	18.309	22.38	21.97	0.41
5	0.270	4.4	1831891	42.054	49.94	46.26	3.68
6	0.277	4.3	1631734	37.459	44.65	40.27	4.38
7	0.254	4.5	1741193	39.972	45.62	44.97	0.65
8	0.250	4.5	731565	16.794	18.89	18.89	0.00
9	0.252	3.7	1791383	41.124	38.40	38.04	0.36
10	0.268	3.4	2858903	65.631	59.82	55.79	4.03
11	SEE TR-20 CALCS		5667975	130.119	246.00	244.60	1.40
12	0.258	3.9	3065253	70.369	70.75	68.61	2.14
13	0.259	3.8	2209739	50.729	49.98	48.19	1.79
14	0.256	3.9	812096	18.643	18.63	18.18	0.45
15	0.263	4.0	807850	18.546	19.50	18.55	0.95
16	0.253	3.9	1201227	27.576	27.17	26.89	0.28
17	SEE TR-20 CALCS		27341367	627.671	1258.20	1258.20	0.00
18	0.251	4.8	2940040	67.494	81.22	80.99	0.23
TOTAL					2255.57	2233.94	21.63

Appendix C
Hydraulic Calculations for Culverts (50-Yr 1-Hr Storm)

Culvert	Area (sf)	Area (ac.)	Method	Storm Frequency	Imper. Area (sf)	% imper.	Composite C	1 hr rainfall	L (ft)	H (ft)	slope	K	Tc (min)	I (in/hr)	Q(dev) (cfs)
A1	225318	5.173	Rational	50 YR, 1HR	14911.6	6.62%	0.296	2.5	1290.0	64.0	5.0%	5791.5	10.7	5.1	7.82
A2	612233	14.055	Rational	50 YR, 1HR	47694.6	7.79%	0.305	2.5	3120.0	684.0	21.9%	6663.5	12.0	4.8	20.54
B1	1119319	25.696	Rational	50 YR, 1HR	18875.0	1.69%	0.262	2.5	2460.0	840.0	34.1%	4209.8	8.4	5.3	35.65
B2	434167	9.967	Rational	50 YR, 1HR	13272.1	3.06%	0.271	2.5	1020.0	122.0	12.0%	2949.3	6.4	6.0	16.23
C1	218956	5.027	Rational	50 YR, 1HR	17866.4	8.16%	0.307	2.5	1730.0	170.0	9.8%	5518.8	10.3	5.1	7.87
SEE TR-20 CALCULATIONS															
D1	689901	158.400	TR-20	100 YR, 24 HR				2.5	3740.0	730.0	19.5%	8465.4	14.4	4.6	62.22
D2	2333159	53.562	Rational	50 YR, 1HR	8482.3	0.36%	0.253	2.5	2460.0	270.0	11.0%	7425.4	13.0	4.7	28.02
D3	1004122	23.051	Rational	50 YR, 1HR	12369.4	1.23%	0.259	2.5	1240.0	96.0	7.7%	4456.5	8.8	5.4	14.88
D4	449197	10.312	Rational	50 YR, 1HR	11068.6	2.46%	0.267	2.5	800.0	10.0	1.3%	7155.4	12.6	3.8	3.62
WTR	137978	3.168	rational	50 YR, 1HR	9989.3	7.24%	0.301	2.0							

APPENDIX D - FLOWMASTER CULVERT CALCS.

Culvert	Mannings Coefficient	Channel Slope (%)	Depth (in)	Diameter (in)	Velocity (ft/s)	Discharge (cfs)	Flow Area (ft ²)	Wetted Perimeter (ft)	Critical Depth (ft)	Percent Full (%)	Critical Slope (%)	Maximum Discharge (cfs)	Discharge Full (cfs)	Flow Type
Culvert A1	0.013	1.50	10.1	18.0	7.63	7.82	1.0	2.55	1.08	56.3	0.73	13.84	12.86	Supercritical
Culvert A2	0.013	1.00	17.9	24.0	8.16	20.54	2.5	4.18	1.63	74.7	0.84	24.33	22.62	Supercritical
Culvert B1	0.013	0.50	23.4	36.0	7.33	35.65	4.9	5.62	1.94	65.0	0.51	50.73	47.16	Subcritical
Culvert B2	0.013	2.00	12.1	24.0	10.22	16.23	1.6	3.16	1.45	50.4	0.87	34.41	31.89	Supercritical
Culvert C1	0.013	1.00	9.8	24.0	6.55	7.87	1.2	2.77	1.00	40.7	0.49	24.33	22.62	Supercritical
Culvert D1a	0.013	0.50	41.1	54.0	9.93	128.87	13.0	9.54	3.34	76.1	0.53	149.57	139.04	Subcritical
Culvert D1b	0.013	0.50	41.1	54.0	9.93	128.87	13.0	9.54	3.34	76.1	0.53	149.57	139.04	Subcritical
Culvert D1c	0.013	0.50	41.1	54.0	9.93	128.87	13.0	9.54	3.34	76.1	0.53	149.57	139.04	Subcritical
Culvert D2a	0.013	0.50	18.8	30.0	6.42	20.74	3.2	4.56	1.55	62.5	0.52	31.20	29.00	Subcritical
Culvert D2b	0.013	0.50	18.8	30.0	6.42	20.74	3.2	4.56	1.55	62.5	0.52	31.20	29.00	Subcritical
Culvert D2c	0.013	0.50	18.8	30.0	6.42	20.74	3.2	4.56	1.55	62.5	0.52	31.20	29.00	Subcritical
Culvert D3a	0.013	0.50	17.4	24.0	5.74	14.01	2.4	4.08	1.35	72.5	0.61	17.21	16.00	Subcritical
Culvert D3b	0.013	0.50	17.4	24.0	5.74	14.01	2.4	4.08	1.35	72.5	0.61	17.21	16.00	Subcritical
Culvert D4	0.013	0.50	18.3	24.0	5.78	14.88	2.6	4.25	1.39	76.3	0.63	17.21	16.00	Subcritical
Culvert WTR	0.013	2.50	5.7	18.0	7.52	3.62	0.5	1.79	0.73	31.7	0.53	17.87	16.61	Supercritical

Appendix E
Hydraulic Calculations for Interceptor Swales (50-Yr 1-Hr Storm)

Swale Section	Area (sf)	Area (ac.)	Method	Storm Frequency	Imper. Area (sf)	% imper.	Composite C	1 hr rainfall	L (ft)	H (ft)	slope	K	Tc (min)	I (in/hr)	Q(dev) (cfs)
B1	162680	3.735	rational	50 YR, 1HR	7761.8	4.78%	0.283	2.0	705.0	70.0	9.9%	2237.4	5.2	5.1	5.40
B2	23196	0.533	rational	51 YR, 1HR	3827.5	16.50%	0.366	2.0	300.0	30.0	10.0%	948.7	2.7	5.2	1.01
B3	27326	0.627	rational	52 YR, 1HR	3427.0	12.54%	0.338	2.0	300.0	34.0	11.3%	891.1	2.5	5.2	1.10
B4	149322	3.428	rational	53 YR, 1HR	9989.3	6.69%	0.297	2.0	800.0	10.0	1.3%	7155.4	12.6	3.8	3.87
D1	270511	6.210	rational	50 YR, 1HR	4790.2	1.77%	0.262	2.0	1115.0	88.0	7.9%	3968.9	8.0	4.5	7.33
D2	86754	1.992	rational	50 YR, 1HR	3692.2	4.26%	0.280	2.0	690.0	52.0	7.5%	2513.5	5.6	5.0	2.79
D3	105317	2.418	rational	50 YR, 1HR	6687.8	6.35%	0.294	2.0	855.0	70.0	8.2%	2988.1	6.5	4.9	3.49
D4	9834	0.226	rational	50 YR, 1HR	1320.0	13.42%	0.344	2.0	160.0	8.0	5.0%	715.5	2.1	5.2	0.40
D5	474547	10.894	rational	50 YR, 1HR	11700.0	2.47%	0.267	2.0	1430.0	132.0	9.2%	4706.7	9.2	4.2	12.23
D6	20579	0.472	rational	50 YR, 1HR	2230.2	10.84%	0.326	2.0	280.0	12.0	4.3%	1352.5	3.5	5.2	0.80

Freeboard

Required Freeboard in feet = $2.0 + 0.025v^3 \sqrt{d}$

v = velocity (ft/s)

d = flow depth (ft)

Road B

From Flowmaster Calculations:

v = 2.21 ft/s

d = 9.38 in = 0.782 ft

Required Freeboard = 2.239 ft

Total Depth of Swale = 3.021 ft

Road D

From Flowmaster Calculations:

v = 2.48 ft/s

d = 10.88 in = 0.907 ft

Required Freeboard = 2.405 ft

Total Depth of Swale = 3.312 ft

APPENDIX F - FLOWMASTER INT. SWALE CALC.

Road	Mannings Coefficient	Channel Slope (%)	Depth (in)	Left Side Slope (H : V)	Right Side Slope (H : V)	Discharge (cfs)	Flow Area (ft ²)	Wetted Perimeter (ft)	Top Width (ft)	Critical Depth (ft)	Critical Slope (%)	Velocity (ft/s)	Flow Type
ROAD B	0.035	1.00	9.38	2.00	6.00	5.40	2.4	6.50	6.25	0.65	2.74	2.21	Subcritical
ROAD D	0.035	1.00	10.88	6.00	6.00	12.23	4.9	11.03	10.88	0.76	2.51	2.48	Subcritical

Appendix G
Retention Basin Sizing

TOTAL VOLUME

Q(increase) = 21.65 CFS Retain 1-hour of runoff

$$\text{Volume} = 21.63 \frac{\text{cf}}{\text{sec}} \times \frac{3600 \text{ sec}}{1 \text{ hr}} = 77,868 \frac{\text{cf}}{\text{hr}}$$

77,868 cf of runoff needs to be contained within the basins

BASIN SIZING

Basin 1

Rectangular basin with 2H:1V side slopes, bottom area of 22,040 sf, & water surface area of 23,280 sf.

$$\text{Volume} = \frac{22,491 \text{ sf} + 21,275 \text{ sf}}{2} \times 1 \text{ ft deep} = 21,883 \text{ cf}$$

Basin 2

Rectangular basin with 2H:1V side slopes, bottom area of 25,100 sf, & water surface area of 26,420 sf.

$$\text{Volume} = \frac{27,336 \text{ sf} + 26,000 \text{ sf}}{2} \times 1 \text{ ft deep} = 26,668 \text{ cf}$$

Basin 3

Polygonal basin with 2H:1V side slopes, bottom area of 21,230 sf, & water surface area of 22,400 sf.

$$\text{Volume} = \frac{23,493 \text{ sf} + 22,301 \text{ sf}}{2} \times 1 \text{ ft deep} = 22,897 \text{ cf}$$

Basin 4

Rectangular basin with 2H:1V side slopes, bottom area of 20,750 sf, & water surface area of 22,140 sf.

$$\text{Volume} = \frac{23,016 \text{ sf} + 21,600 \text{ sf}}{2} \times 1 \text{ ft deep} = 22,308 \text{ cf}$$

Total Basin Volume = 93,756 cf > 77,868 cf needed

Note: All basins are designed with 2-feet of freeboard

Appendix H
NRCS TR-20 Input Values

Drainage area 11

EXIST

segment	Flow Type	L	H	Slope	V(ft/s)			Tt
1	SF, dense grass	300	180	0.6000		4.25	0.24	0.127
2	SCF, unpaved	985	400	0.4061	10.28			0.027
3	SCF, unpaved	5605	720	0.1285	5.78			0.269
4	SCF, unpaved	710	65	0.0915	4.88			0.040
5	SCF, unpaved	920	35	0.0380	3.15			0.081
6	SCF, unpaved	630	10	0.0159	2.03			0.086
7	SCF, unpaved	870	5	0.0057	1.22			0.198
								0.829

CN Calculations

soil type	area	% area	CN	Weighted CN
rRO	1446879	0.255273	77	19.66
rSM	3757164	0.662876	60	39.77
WyC	123611	0.021809	56	1.22
PtA	292582	0.05162	56	2.89
PsA	20540	0.003624	56	0.20
KMW	27199	0.004799	77	0.37
Total	5667975	1		64.11

DEVELOPED

segment		L	H	Slope	V(ft/s)			Tt
1	SF, dense grass	300	180	0.6000		4.25	0.24	0.127
2	SCF, unpaved	985	400	0.4061	10.28			0.027
3	SCF, unpaved	5605	720	0.1285	5.78			0.269
4	SCF, unpaved	710	65	0.0915	4.88			0.040
5	SCF, unpaved	920	35	0.0380	3.15			0.081
6	SCF, unpaved	630	10	0.0159	2.03			0.086
7	SCF, unpaved	870	5	0.0057	1.22			0.198
								0.829

*paved areas are negligible

CN Calculations

soil type	area	% area	CN	Weighted CN
rRO	1446879	0.255273	77	19.66
rSM	3757164	0.662876	60	39.77
WyC	119815	0.021139	56	1.18
PtA	271043	0.04782	56	2.68
PsA	20540	0.003624	56	0.20
KMW	27199	0.004799	77	0.37
Paved	20835	0.003676	98	0.36
House	4500	0.000794	98	0.08
Total	5667975	1		64.30

**Drainage area 17
EXIST & DEVELOPED**

segment		L	H	Slope	V(ft/s)			Tt
1	SF, dense grass	300	60	0.2000		4.25	0.24	0.198
2	SCF, unpaved	1125	340	0.3022	8.87			0.035
3	SCF, unpaved	2830	1720	0.6078	12.58			0.062
4	SCF, unpaved	1705	360	0.2111	7.41			0.064
5	SCF, unpaved	2600	360	0.1385	6.00			0.120
6	SCF, unpaved	2830	315	0.1113	5.38			0.146
7	SCF, unpaved	1530	35	0.0229	2.44			0.174
8	SCF, unpaved	1120	5	0.0045	1.08			0.289
								1.089

CN Calculations

soil type	area	% area	CN	Weighted CN
rRK	27985	0.001035	77	0.08
rRO	19298008	0.713992	77	54.98
rSM	7380073	0.27305	60	16.38
WyC	3774	0.00014	56	0.01
OFC	39027	0.001444	56	0.08
PsA	71436	0.002643	56	0.15
KMW	208013	0.007696	77	0.59
Total	27028316	1		72.27

**Culvert D1
DEVELOPED**

segment		L	H	Slope	V(ft/s)			Tt
1	SF, dense grass	300	180	0.6000		4.25	0.24	0.127
2	SCF, unpaved	940	400	0.4255	10.52			0.025
3	SCF, unpaved	1740	260	0.1494	6.24			0.077
4	SCF, unpaved	3990	460	0.1153	5.48			0.202
5	SCF, unpaved	390	32	0.0821	4.62			0.023
6	SCF, unpaved	270	24	0.0889	4.81			0.016
7	SCF, unpaved	650	29	0.0446	3.41			0.053
								0.524

*paved areas are negligible

CN Calculations

soil type	area	% area	CN	Weighted CN
rRO	1977676.68	0.286624	77	22.07
rSM	4401241.09	0.63787	60	38.27
WyC	421541.09	0.061094	56	3.42
PIA	56889.9	0.008245	56	0.46
Paved	30552.21	0.004428	98	0.43
House	12000	0.001739	98	0.17
Total	6899900.97	1		64.83

Appendix I - NRCS TR-20 Calculations

DRAINAGE AREA 11 (EXISTING)

*****80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****

```

JOB TR-20          FULLPRINT          SUMMARY
TITLE 001 FN:UKUDAlle.DAT
TITLE 002 SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Existing
6 RUNOFF 1 001          1 0.203          64.1          0.829          1          1          1
  ENDATA
7 INCREM 6
7 COMPUT 7 001    001    0.0          10.00          1.0          1 2 01 01
  ENDCMP 1
  ENDJOB 2
    
```

*****END OF 80-80 LIST*****
 0

```

TR20 ----- SCS -
          FN:UKUDAlle.DAT          VERSION
01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Existing 2.04TEST
16:26:04          PASS 1  JOB NO. 1          PAGE 1
    
```

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .050 HOURS

```

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1
  STARTING TIME = .00          RAIN DEPTH = 10.00          RAIN DURATION = 1.00
  ANT. RUNOFF COND. = 2          MAIN TIME INCREMENT = .050 HOURS
  ALTERNATE NO. = 1          STORM NO. = 1          RAIN TABLE NO. = 1
    
```

```

OPERATION RUNOFF XSECTION 1
  OUTPUT HYDROGRAPH = 1          AREA = .20 SQ MI
  INPUT RUNOFF CURVE = 64.          TIME OF CONCENTRATION = .83 HOURS
  COMPUTED INTERNAL TIME INCREMENT = .0524 HOURS
    
```

PEAK TIME(HRS)			PEAK DISCHARGE(CFS)			PEAK ELEVATION(FEET)		
10.40			244.6			(RUNOFF)		
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)								
5.44 WATERSHED INCHES;		713 CFS-HRS;		58.9 ACRE-FEET.				
DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	66	43	33	29	26	22	18	11
DURATION(HRS)	18	19						
FLOW(CFS)	3	1 TRUNCATED						

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1
 0

```

TR20 ----- SCS -
          FN:UKUDAlle.DAT          VERSION
01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Existing 2.04TEST
16:26:04          SUMMARY, JOB NO. 1          PAGE 2
    
```

Appendix I - NRCS TR-20 Calculations

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 10.00 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .050 HOURS							
ALTERNATE 1 STORM 1							
XSECTION	1	RUNOFF	.20	5.44	---	10.40	245 1225.0

TR20 ----- SCS -
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Existing 2.04TEST
 16:26:04 FN:UKUDAlle.DAT SUMMARY, JOB NO. 1 PAGE 3

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
XSECTION	1	.20
ALTERNATE	1	245

TR20 ----- SCS -
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Existing 2.04TEST
 FN:UKUDAlle.DAT

END OF 1 JOBS IN THIS RUN

*** WARNING - UNEXPECTED RECORD(S) ENCOUNTERED WHEN LOOKING FOR "JOB" RECORD.
 IMAGES OF FIRST 10 RECORDS IGNORED FOLLOW: ***

Appendix I - NRCS TR-20 Calculations
FILES

INPUT = UKUDA11E.DAT , GIVEN DATA FILE
OUTPUT = UKUDA11E.OUT , DATED 01/06/**,16:26:04

FILES GENERATED - DATED 01/06/**,16:26:04

NONE!

TOTAL NUMBER OF WARNINGS = 1, MESSAGES = 0

JOB ENDED AT 16:26:04
*** TR-20 RUN COMPLETED ***

Appendix I - NRCS TR-20 Calculations

DRAINAGE AREA 11 (DEVELOPED)

*****80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****

```

JOB TR-20
TITLE 001 FN:UKUDA11d.DAT
TITLE 002 SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Developed
6 RUNOFF 1 001 1 0.203 64.3 0.829 1 1 1
  ENDDATA
7 INCREM 6 0.05
7 COMPUT 7 001 001 0.0 10.00 1.0 1 2 01 01
  ENDCMP 1
  ENDJOB 2
    
```

*****END OF 80-80 LIST*****

```

TR20 ----- SCS -
              FN:UKUDA11d.DAT                          VERSION
01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Developed 2.04TEST
16:25:52          PASS 1 JOB NO. 1                          PAGE 1
    
```

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .050 HOURS

```

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1
  STARTING TIME = .00      RAIN DEPTH = 10.00      RAIN DURATION = 1.00
  ANT. RUNOFF COND. = 2    MAIN TIME INCREMENT = .050 HOURS
  ALTERNATE NO. = 1        STORM NO. = 1          RAIN TABLE NO. = 1
    
```

```

OPERATION RUNOFF XSECTION 1
  OUTPUT HYDROGRAPH = 1    AREA = .20 SQ MI
  INPUT RUNOFF CURVE = 64. TIME OF CONCENTRATION = .83 HOURS
  COMPUTED INTERNAL TIME INCREMENT = .0524 HOURS
    
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.40	246.0	(RUNOFF)
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		
5.47 WATERSHED INCHES; 717 CFS-HRS; 59.2 ACRE-FEET.		
DURATION(HRS)	2 4 6 8 10 12 14 16	
FLOW(CFS)	67 43 33 30 26 22 18 12	
DURATION(HRS)	18 19	
FLOW(CFS)	3 1 TRUNCATED	

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

```

TR20 ----- SCS -
              FN:UKUDA11d.DAT                          VERSION
01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Developed 2.04TEST
16:25:52          SUMMARY, JOB NO. 1                          PAGE 2
    
```

Appendix I - NRCS TR-20 Calculations

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE			
				ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 10.00 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .050 HOURS							
ALTERNATE 1 STORM 1							
XSECTION	1	RUNOFF	.20	5.47	---	10.40	246 1230.0

TR20 ----- SCS -
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Developed 2.04TEST
 16:25:52 FN:UKUDA11d.DAT SUMMARY, JOB NO. 1 VERSION PAGE 3

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
XSECTION	1	.20
ALTERNATE	1	246

TR20 ----- SCS -
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 11, Developed 2.04TEST
 FN:UKUDA11d.DAT SUMMARY, JOB NO. 1 VERSION PAGE 3

END OF 1 JOBS IN THIS RUN

*** WARNING - UNEXPECTED RECORD(S) ENCOUNTERED WHEN LOOKING FOR "JOB" RECORD.
 IMAGES OF FIRST 10 RECORDS IGNORED FOLLOW: ***

Appendix I - NRCS TR-20 Calculations
FILES

INPUT = UKUDA11D.DAT ; GIVEN DATA FILE
OUTPUT = UKUDA11D.OUT ; DATED 01/06/**,16:25:52

FILES GENERATED - DATED 01/06/**,16:25:52

NONE!

TOTAL NUMBER OF WARNINGS = 1, MESSAGES = 0

JOB ENDED AT 16:25:52
*** TR-20 RUN COMPLETED ***

Appendix I - NRCS TR-20 Calculations

DRAINAGE AREA 17 (EXISTING AND DEVELOPED)

*****80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****

```

JOB TR-20                FULLPRINT                SUMMARY
TITLE 001 FN:UKUDA17.DAT
TITLE 002 SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 17, Existing & Develop
6 RUNOFF 1 001          1 0.981          72.3          1.089          1          1          1
  ENDATA
7 INCREM 6
7 COMPUT 7 001          001          0.0          10.00          1.0          1 2 01 01
  ENDCMP 1
  ENDJOB 2
  
```

*****END OF 80-80 LIST*****

0

```

TR20 ----- SCS -
                                FN:UKUDA17.DAT                                VERSION
01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 17, Existing &2.04TEST
16:26:21 PASS 1 JOB NO. 1                                PAGE 1
  
```

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .050 HOURS

```

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1
STARTING TIME = .00 RAIN DEPTH = 10.00 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. = 1 RAIN TABLE NO. = 1
  
```

```

OPERATION RUNOFF XSECTION 1
OUTPUT HYDROGRAPH = 1 AREA = .98 SQ MI
INPUT RUNOFF CURVE = 72. TIME OF CONCENTRATION = 1.09 HOURS
COMPUTED INTERNAL TIME INCREMENT = .0484 HOURS
  
```

PEAK TIME(HRS)	10.56	PEAK DISCHARGE(CFS)	1258.2	PEAK ELEVATION(FEET)	(RUNOFF)			
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)		6.40 WATERSHED INCHES; 4053 CFS-HRS;		334.9 ACRE-FEET.				
DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	412	246	181	159	140	120	101	86 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

0

```

TR20 ----- SCS -
                                FN:UKUDA17.DAT                                VERSION
01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 17, Existing &2.04TEST
16:26:21 SUMMARY, JOB NO. 1                                PAGE 2
  
```

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:

Appendix I - NRCS TR-20 Calculations

F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
					TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 10.00 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .050 HOURS							

ALTERNATE	1	STORM	1				
XSECTION	1	RUNOFF	.98	6.40	---	10.56	1258 1283.7

TR20 ----- SCS -
 FN:UKUDA17.DAT VERSION
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 17, Existing & 2.04TEST
 16:26:21 SUMMARY, JOB NO. 1 PAGE 3

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
XSECTION	1	.98
ALTERNATE	1	1258

TR20 ----- SCS -
 FN:UKUDA17.DAT VERSION
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, Watershed 17, Existing & 2.04TEST

END OF 1 JOBS IN THIS RUN

*** WARNING - UNEXPECTED RECORD(S) ENCOUNTERED WHEN LOOKING FOR "JOB" RECORD. ***
 IMAGES OF FIRST 10 RECORDS IGNORED FOLLOW:

SCS TR-20, VERSION 2.04TEST
 FILES

INPUT = UKUDA17.DAT

, GIVEN DATA FILE

Appendix I - NRCS TR-20 calculations
OUTPUT = UKUDA17.OUT , DATED 01/06/**,16:26:21
FILES GENERATED - DATED 01/06/**,16:26:21
NONE!

TOTAL NUMBER OF WARNINGS = 1, MESSAGES = 0

JOB ENDED AT 16:26:21
*** TR-20 RUN COMPLETED ***

Appendix I - NRCS TR-20 Calculations

CULVERT D1

*****80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****

	FULLPRINT	SUMMARY
JOB TR-20		
TITLE 001	FN:UKUCULD1.DAT	
TITLE 002	SCS (100-YR, 24-HR STORM), Ukumehame, CULVERT D1, Developed	
6 RUNOFF 1 001	1 0.247 64.8	0.524 1 1 1
ENDATA		
7 INCREM 6	0.05	
7 COMPUT 7 001 001	10.00	1.0 1 2 01 01
ENDCMP 1		
ENDJOB 2		

*****END OF 80-80 LIST*****

TR20 ----- SCS -
 01/06/** FN:UKUCUL6.DAT VERSION
 16:25:37 SCS (100-YR, 24-HR STORM), Ukumehame, CULVERT 6, Developed 2.04TEST
 PASS 1 JOB NO. 1 PAGE 1

EXECUTIVE CONTROL INCREM MAIN TIME INCREMENT = .050 HOURS

EXECUTIVE CONTROL COMPUT FROM XSECTION 1 TO XSECTION 1
 STARTING TIME = .00 RAIN DEPTH = 10.00 RAIN DURATION = 1.00
 ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
 ALTERNATE NO. = 1 STORM NO. = 1 RAIN TABLE NO. = 1

OPERATION RUNOFF XSECTION 1
 OUTPUT HYDROGRAPH = 1 AREA = .25 SQ MI
 INPUT RUNOFF CURVE = 65. TIME OF CONCENTRATION = .52 HOURS
 COMPUTED INTERNAL TIME INCREMENT = .0484 HOURS

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET) (RUNOFF)
10.20	386.6	
RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)	882 CFS-HRS;	72.9 ACRE-FEET.
5.53 WATERSHED INCHES;		
DURATION(HRS) 2 4 6 8 10 12 14 16		
FLOW(CFS) 76 53 40 36 32 27 22 15		
DURATION(HRS) 18 19		
FLOW(CFS) 3 0		

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

TR20 ----- SCS -
 01/06/** FN:UKUCUL6.DAT VERSION
 16:25:37 SCS (100-YR, 24-HR STORM), Ukumehame, CULVERT 6, Developed 2.04TEST
 SUMMARY, JOB NO. 1 PAGE 2

Appendix I - NRCS TR-20 calculations

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
 A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	PEAK DISCHARGE		
					TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 10.00 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .050 HOURS							
ALTERNATE 1 STORM 1							
XSECTION	1	RUNOFF	.25	5.53	---	10.20	387 1548.0

TR20 ----- SCS -
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, FN:UKUCUL6.DAT CULVERT 6, Developed VERSION
 16:25:37 SUMMARY, JOB NO. 1 2.04TEST
 PAGE 3

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
 QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
XSECTION	1	.25
ALTERNATE	1	387

TR20 ----- SCS -
 01/06/** SCS (100-YR, 24-HR STORM), Ukumehame, FN:UKUCUL6.DAT CULVERT 6, Developed VERSION
 2.04TEST

END OF 1 JOBS IN THIS RUN

*** WARNING - UNEXPECTED RECORD(S) ENCOUNTERED WHEN LOOKING FOR "JOB" RECORD. ***
 IMAGES OF FIRST 10 RECORDS IGNORED FOLLOW:

Appendix I - NRCS TR-20 Calculations
FILES

INPUT = UKUCUL6.DAT , GIVEN DATA FILE
OUTPUT = UKUCUL6.OUT ; DATED 01/06/**,16:25:37

FILES GENERATED - DATED 01/06/**,16:25:37

NONE!

TOTAL NUMBER OF WARNINGS = 1, MESSAGES = 0

JOB ENDED AT 16:25:38
*** TR-20 RUN COMPLETED ***

APPENDIX J

GENERAL BEST MANAGEMENT PRACTICES PLAN

**Construction Storm Water
General Best Management Practices (BMPs) Plan**

**Ukumehame Subdivision
Ukumehame, Maui, Hawaii**

January 2005

INTRODUCTION

This General BMPs Plan addresses handling of storm water runoff associated with construction activities for the planned Ukumehame Subdivision. Information contained in this document addresses requirements of the Clean Water Branch, CWB-Individual NPDES Form C, Items 13.b. and 14.

**CWB-Individual NPDES FORM C - Application Item No. 13.b.
Construction Best Management Practices (BMPs) Plan**

i. Construction Activity - Describe the nature of the construction activity

(1) What is to be constructed and the construction sequence?
Work will include the following:

1. Install erosion control devices.
2. Clearing and grubbing.
3. Site grading.
4. Install utilities.
5. Pave roadway.
6. Remove erosion control devices.

Construction is scheduled to begin in Spring 2006 and last for approximately twelve (12) months after the initial site disturbance.

(2) If the project is a multi-phase construction project, include a list of each phase.

The project will be completed in 1 phase.

(3) What type of materials and heavy equipment will be used for the construction activity?

Materials will include water for dust control, soils for fill, and asphaltic concrete for the roadway. Equipment may include, but not be limited to bulldozers, excavators, graders, dump trucks, concrete mixer trucks and/or trucks delivering asphaltic cold patch, pneumatic hand-operated tools and related construction equipment.

ii. Quality of Discharge - Describe the nature of the fill material to be used and existing data describing the soil or the quality of any discharge from the project site.

Fill material will be comprised of excess excavated soils and/or clean imported fill. All materials used will be in accordance with specifications for construction of such facilities by the State and County of Maui. No materials containing contaminated soils or other hazardous wastes will be permitted for use.

No pre-existing conditions are believed to be present which would result in potential for adverse impacts due to construction storm water runoff.

Construction materials will be covered with PVC sheet plastic or similar material to prevent inadvertent contact and mixing with storm water. As required, berms or other controls shall be placed to divert storm water flows around material storage locations.

iii. Potential Pollutant(s) - Identify all the potential pollutant(s) that will be generated by the proposed construction activities and the proposed control measures or treatment, as applicable.

Potential for pollutants in non-storm water discharges are expected to include: 1) construction vehicle wash water, 2) hydrotesting effluent, 3) use of petroleum, oils, and lubricant-associated products, and 4) leaking fluids from vehicles and construction machinery.

Vehicle wash water will not be permitted to be discharged into State waters. Vehicle washing may only be permitted in designated areas with control measures designed to contain wash water and capture pollutants (sediments). Control measures will include, but not be limited to use of berms and/or detention basin(s). Wash water will be allowed to infiltrate/evaporate. Sediments resulting from vehicle washing will be disposed of in compliance with State and County regulations governing disposal of construction waste.

Treated hydrotesting water will be reused on-site for irrigation and dust control. The land surrounding the project area which will receive the treated hydrotest effluent is owned by the applicant.

All petroleum, oils, and lubricant-associated products stored on-site shall be kept in a neat, orderly manner in their appropriate containers and as required, under a roof or other enclosure with control measures designed to contain potential pollutants in the event of an accidental spill. The contractor shall maintain a record of the materials stored on-site (a list and the associated material safety data sheets (MSDS)).

In the event of a spill, cleanup/sorbent materials will be stored in a conspicuous location to facilitate immediate use as required. Selection of spill cleanup materials

shall be based on the type and quantity of materials stored at the site. Disposal of cleanup and spilled materials shall be at a State or County of Maui refuse facility designated or licensed by the State Department of Health to accept such waste.

To prevent the potential for leakage of petroleum-based fluids, all on-site vehicles shall be monitored for leaks and receive preventive maintenance to reduce the chance of leakage. Any asphalt substances used on-site shall be applied according to the manufacturer's recommendation.

In addition to the management controls above, the following practices will be adopted to minimize erosion and prevent sediments from leaving the project site:

1. Clearing shall be held to the minimum necessary for equipment operation.
2. Construction shall be sequenced to minimize the exposure time of cleared surface areas.
3. Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as PVC sheets, geotextile filter fabric, berms or sediment basins, or vegetative controls such as grass seedling and/or hydromulch.
4. All slopes and exposed areas shall be grassed as soon as final grades have been established. Grading to final grade shall be continuous, and any area in which work has been interrupted, delayed or exposed for more than 15 days shall be grassed in order to prevent dust, erosion and silt runoff. Areas with imported soils shall be grassed not more than 5 working days after final grades have been established.
5. Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.
6. All control measures shall be checked and repaired as necessary, e.g., weekly, in dry periods and within 24 hours after any rainfall event of 0.5 inches or greater within a 24-hour period. During prolonged rainfall, daily inspection will be required. The permittee shall maintain records of checks and repairs to structural and vegetative controls.
7. A stabilized construction entrance with a required 50-foot minimum length shall be provided to reduce vehicle tracking of sediments.
8. Paved roadways adjacent to the project site entrances shall be cleaned daily or as needed to remove excess mud, excavated material or rock tracked from the site.
9. Dump trucks hauling material from the project site shall be covered with tarpaulin.
10. Fugitive dust shall be minimized by the use of dust fences and frequent wetting of exposed surfaces.

Further detail or modifications to the methods, measures, or controls identified above shall be submitted by the contractor as part of the Site-Specific Construction Best Management Practices (BMPs) Plan.

iv. Controls for Land Disturbances

Conditions as identified in Hawaii Administrative Rules, Chapter 11-55, Appendix C, Special Conditions for Land Disturbances, shall be adhered to. Measures designated for specific sites will be provided by the contractor in the Site-Specific Construction BMPs Plan.

v. Erosion and Sediment Control Requirements

As required, a County of Maui-approved erosion and sediment control plan shall be provided to DOH, upon approval.

vi. Construction Schedule

- (1) The date when the general contractor will begin and end the site disturbance
- (2) Date when erosion control measures will be implemented and removed
- (3) The dates when major construction activities will begin and end

Construction is scheduled to begin in Spring 2006 and last for approximately twelve months after the initial site disturbance. The detailed construction schedule and erosion control plan will be provided to DOH, Clean Water Branch, at phone number (808) 586-4309 and fax at (808) 586-4352, not less than 30 days prior to start of construction by the contractor.

**CWB-Individual NPDES FORM C - Application Item No. 14.
Post-Construction Pollutant Control Measures**

1. Following construction, all equipment no longer necessary to the site will be removed. Remnant construction debris and refuse will be disposed of at a State or County of Maui-approved facility by the contractor.
2. Areas of disturbance will be handled with hydro-mulch with grass seeding to stabilize soil surfaces as required.
3. No further measures beyond inspection of the completed work are anticipated to be required.

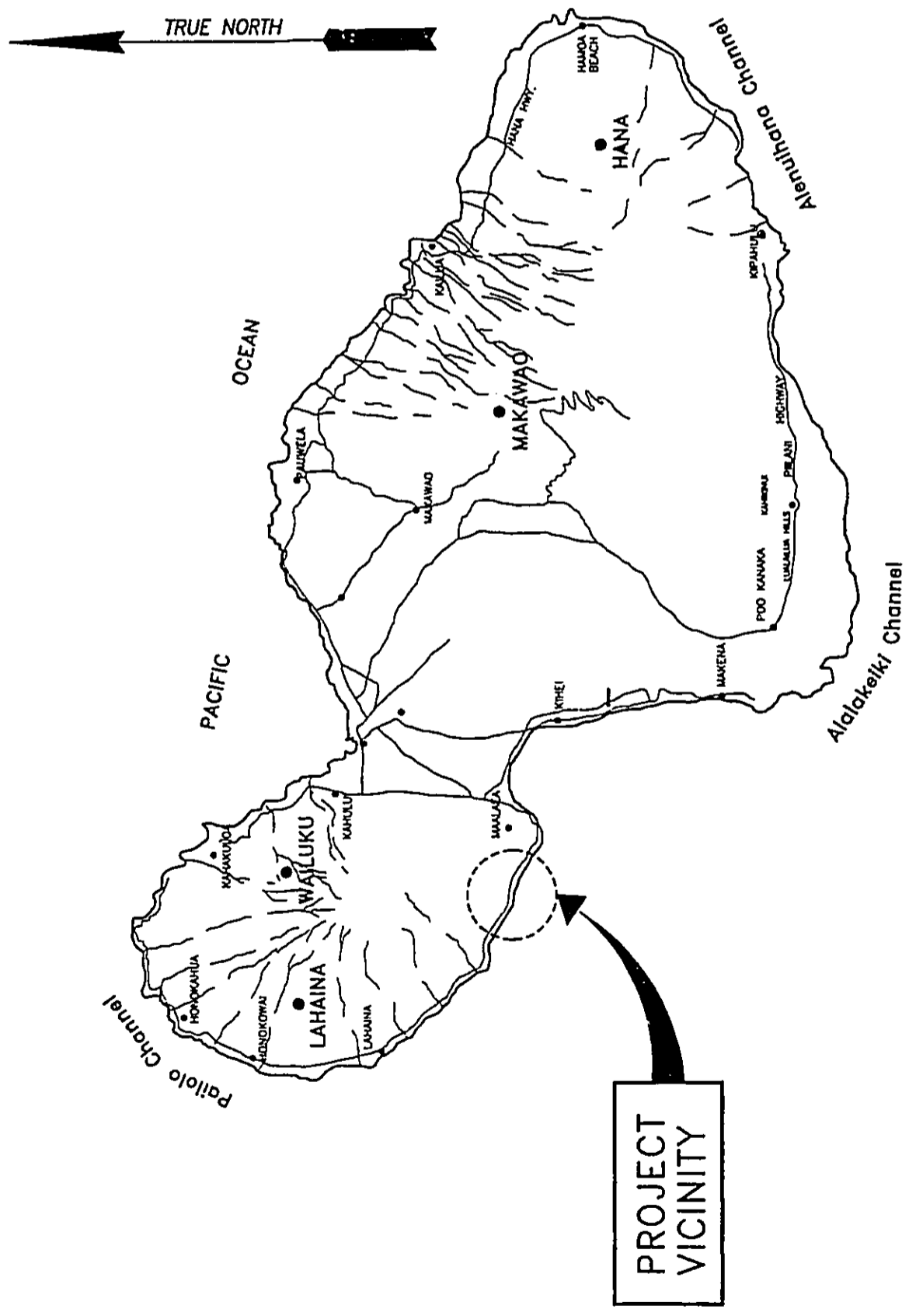


FIGURE 1-1: VICINITY MAP

NOT TO SCALE



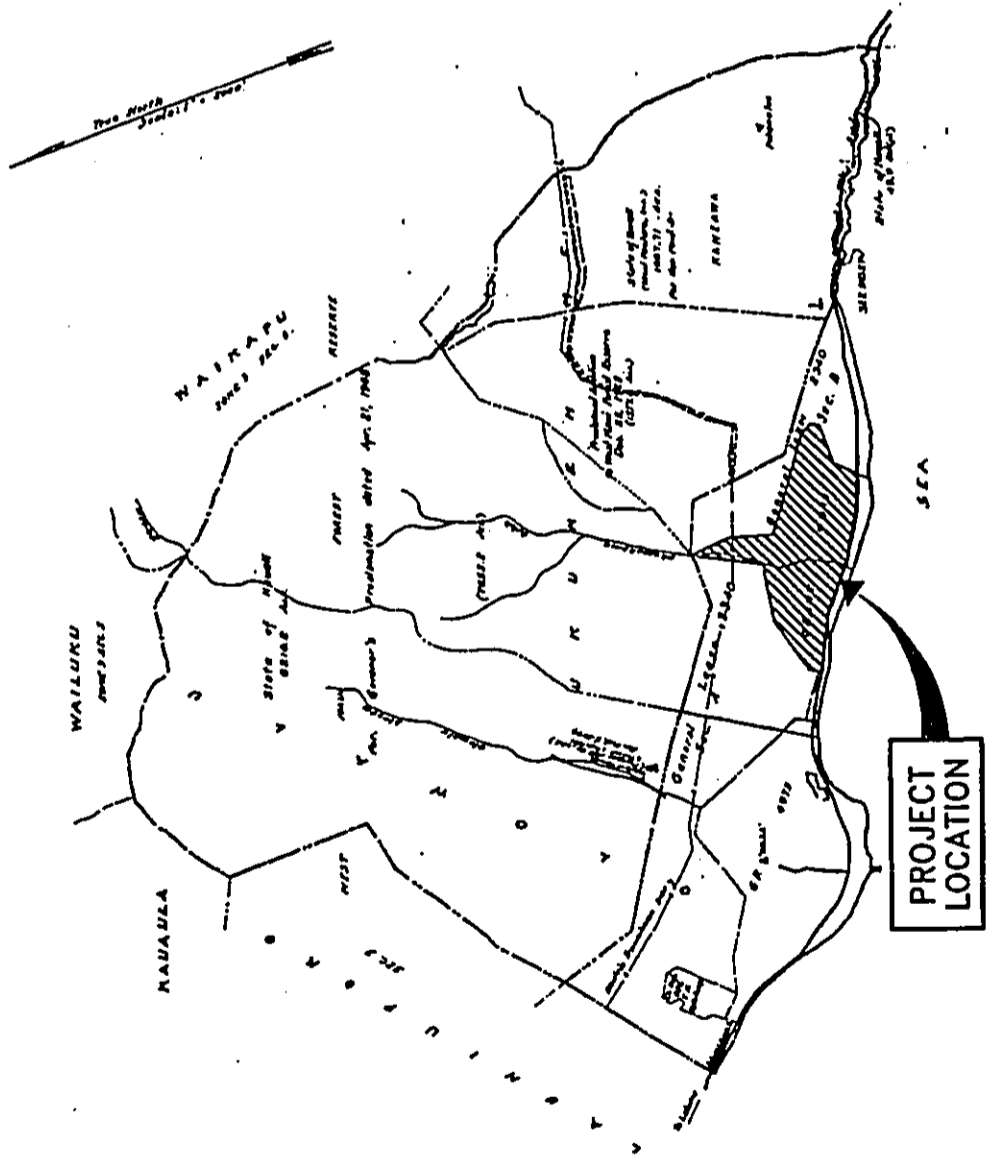


FIGURE 1-2: LOCATION MAP

NOT TO SCALE

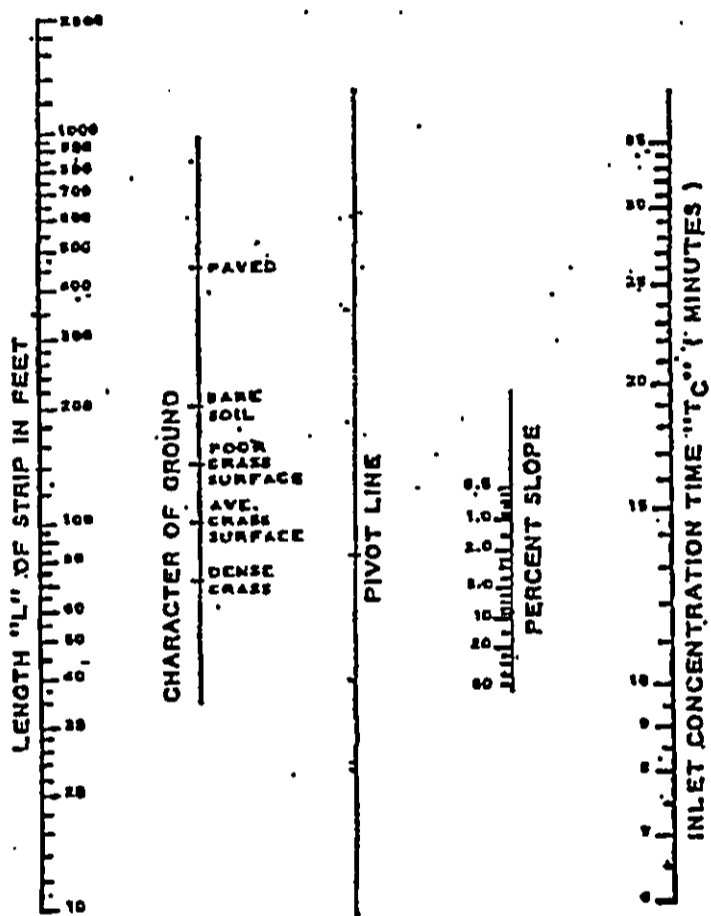
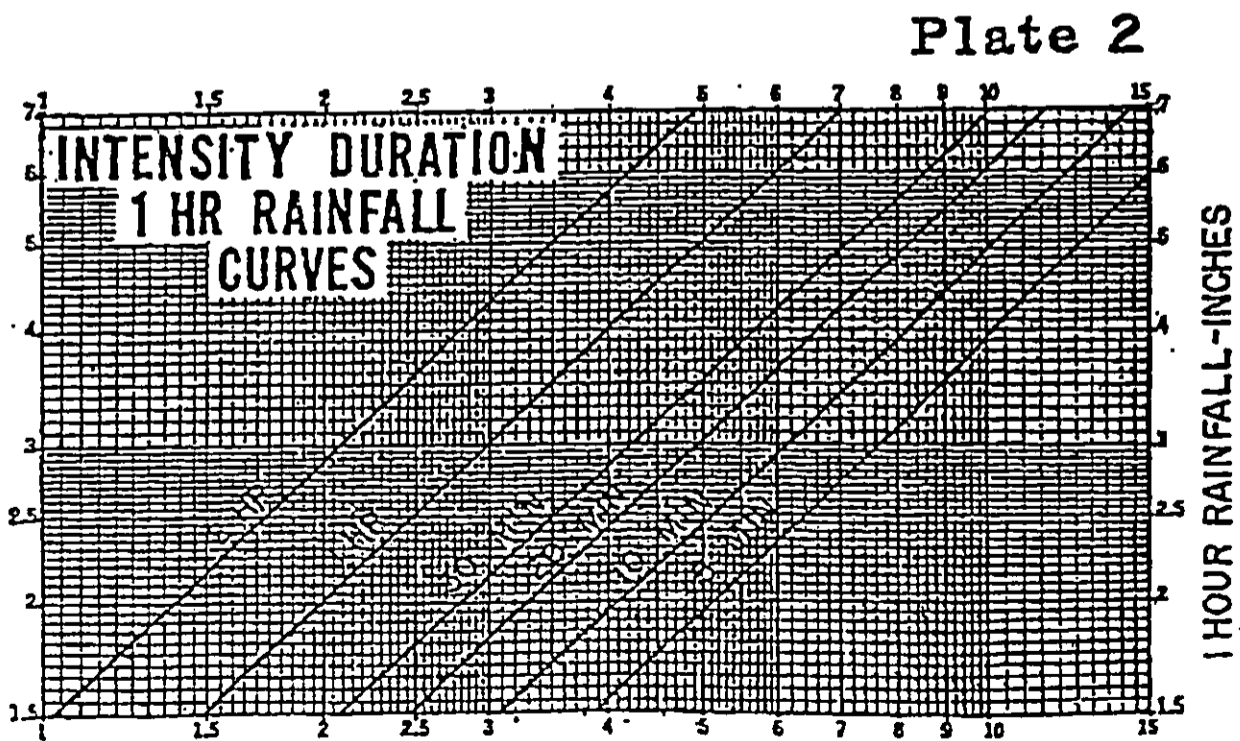
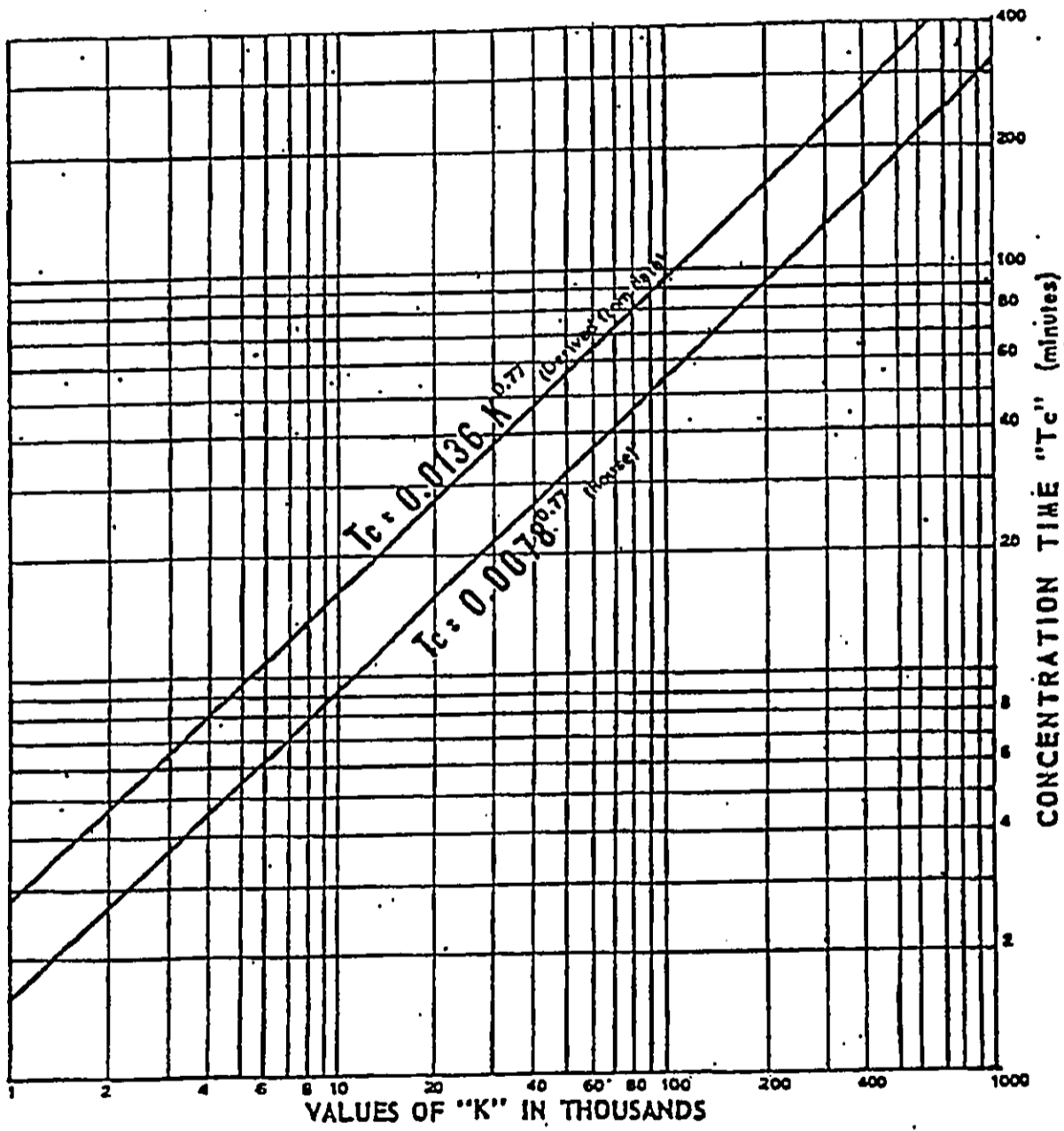


Plate 1
Overland
Flow
Chart



RAINFALL INTENSITY (IN/HR.) FOR INDICATED DURATIONS

FIGURE 2-1



L = Maximum length of travel in feet
 H = Difference in elevation between most remote point and outlet in feet.
 S = Slope H/L

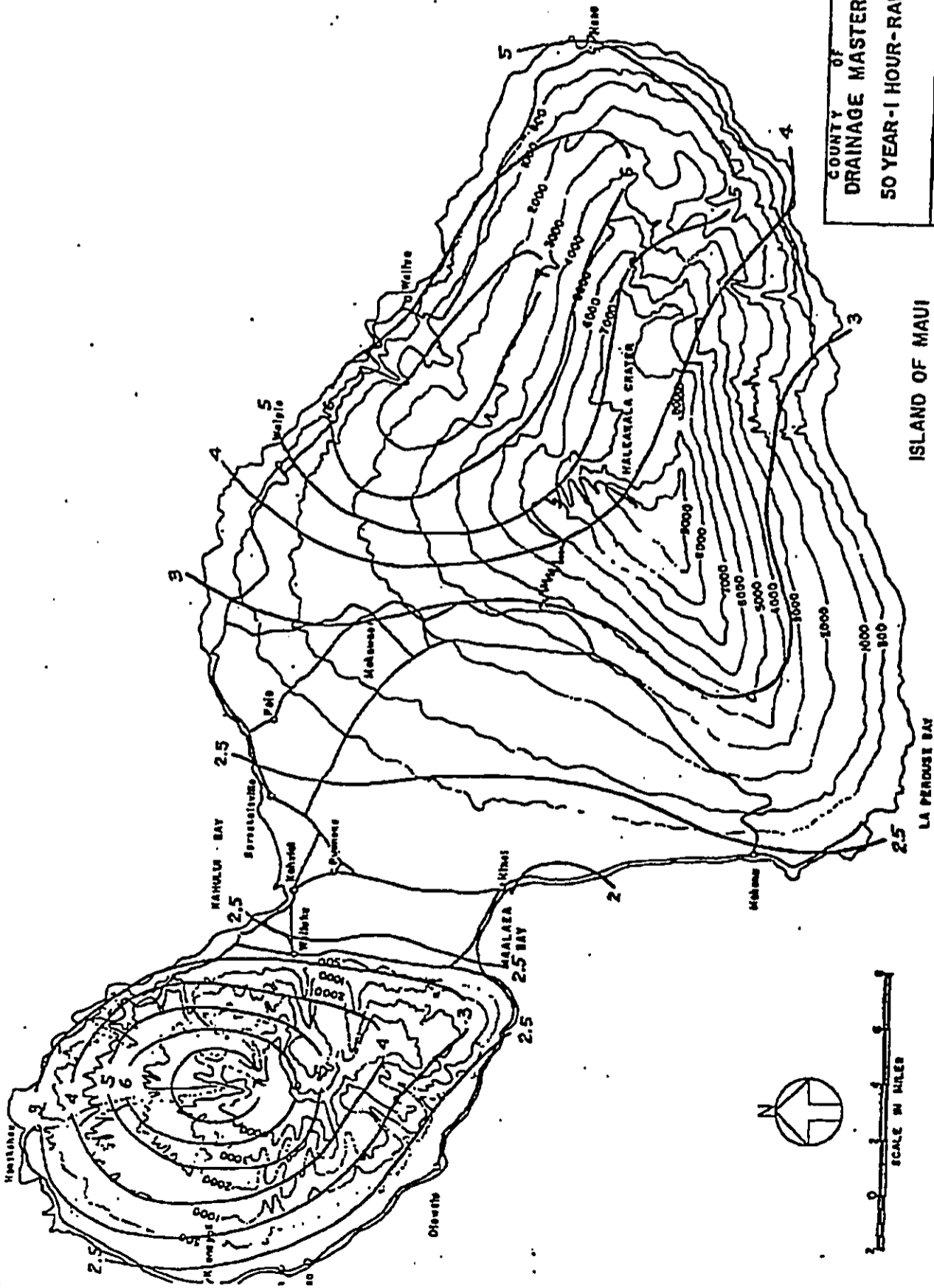
$$K = \frac{L}{\sqrt{S}} = \sqrt{\frac{L^3}{H}}$$
 Use upper curve for well forested areas
 Use lower curve for areas with little or no cover.

Plate 3

Time of Concentration (OF SMALL AGRICULTURAL DRAINAGE BASIN)

Graph from Hunter Rouse "Engineering Hydraulics."

FIGURE 2-2



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

ISLAND OF MAUI

FIGURE 2-3

D I A T T

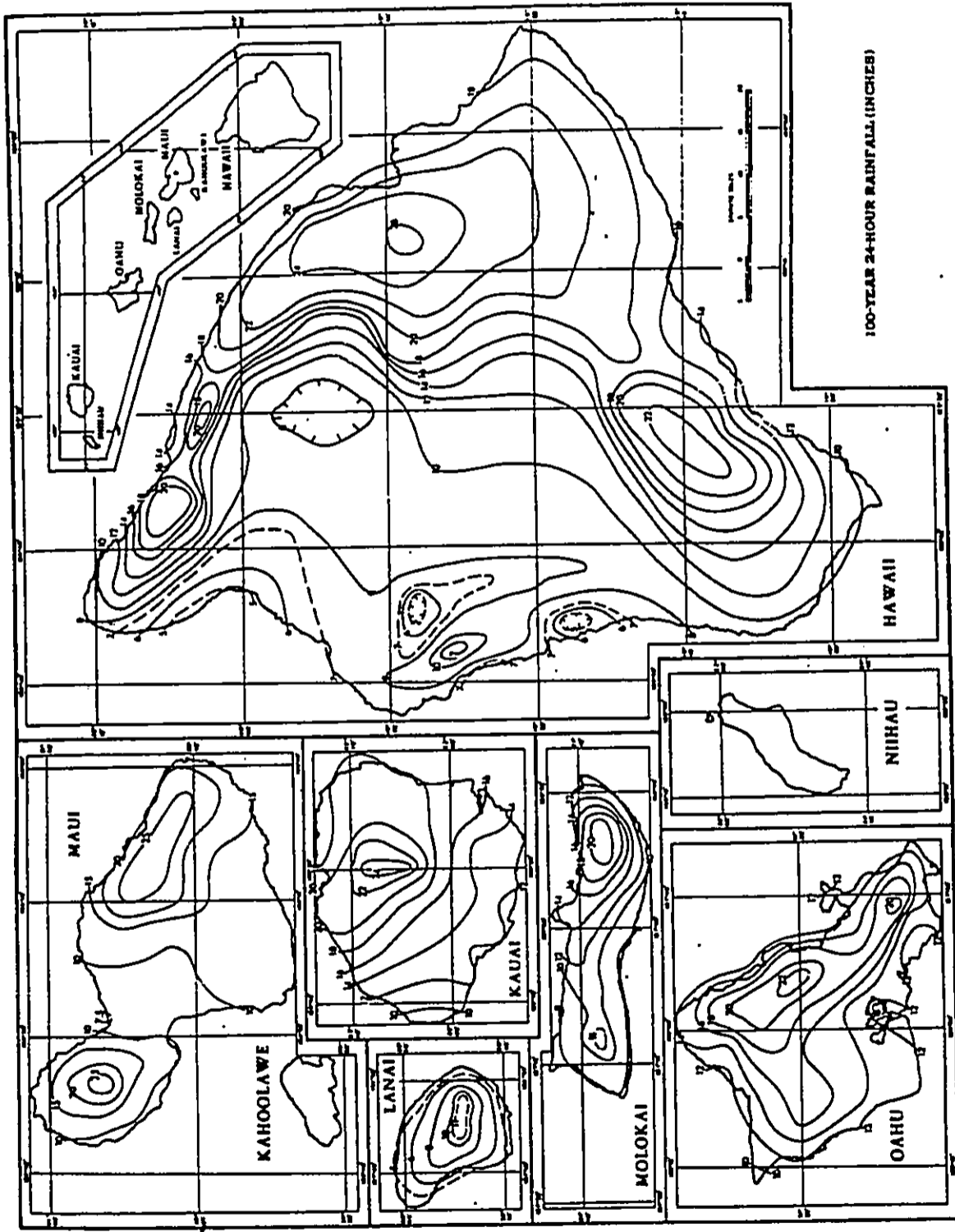


FIGURE 56.—100-yr. 24-hr. rainfall (in.)

FIGURE 2-4

NOMOGRAPH FOR PIPE CULVERTS WITH ENTRANCE CONTROL
Plate 19

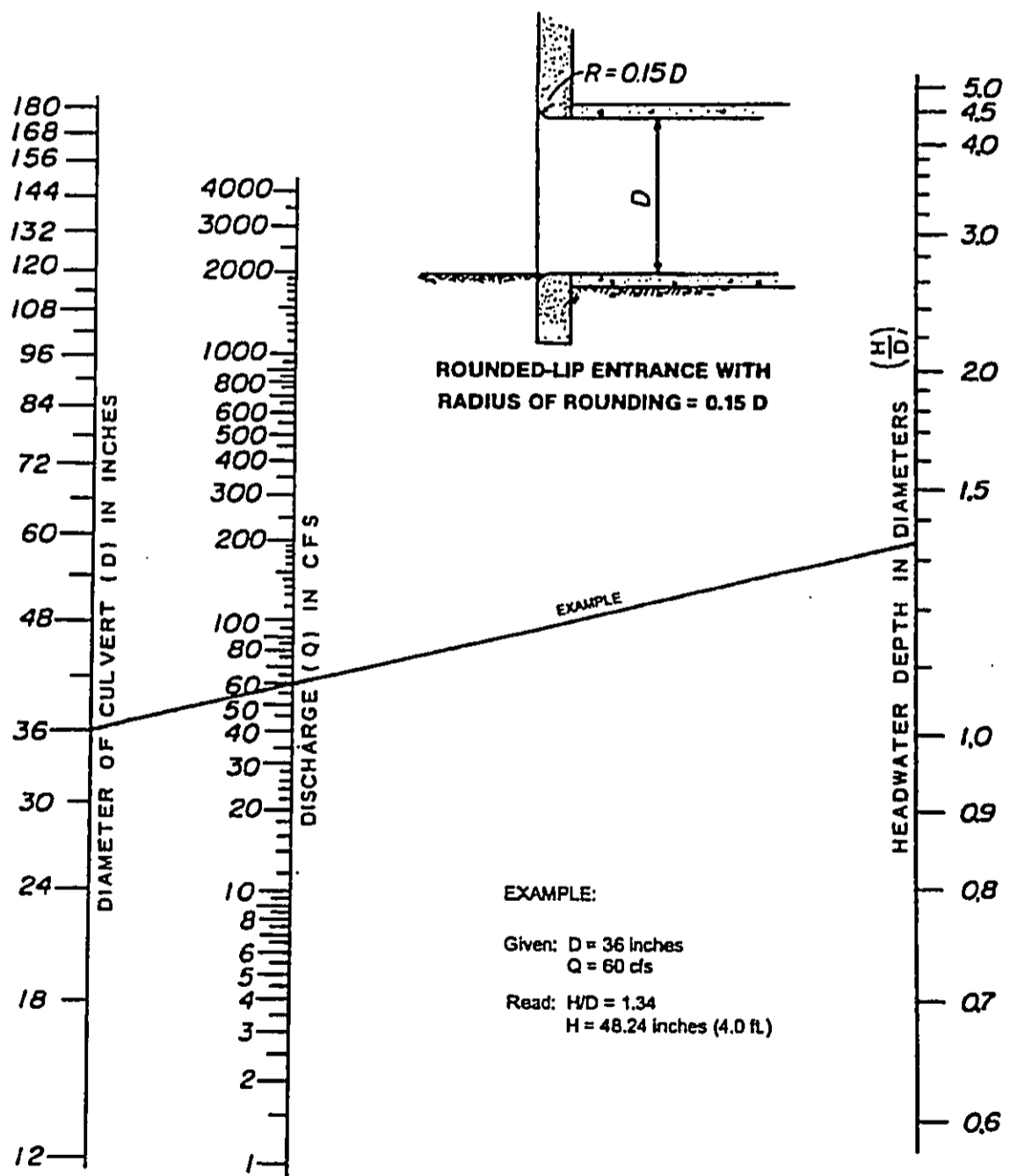
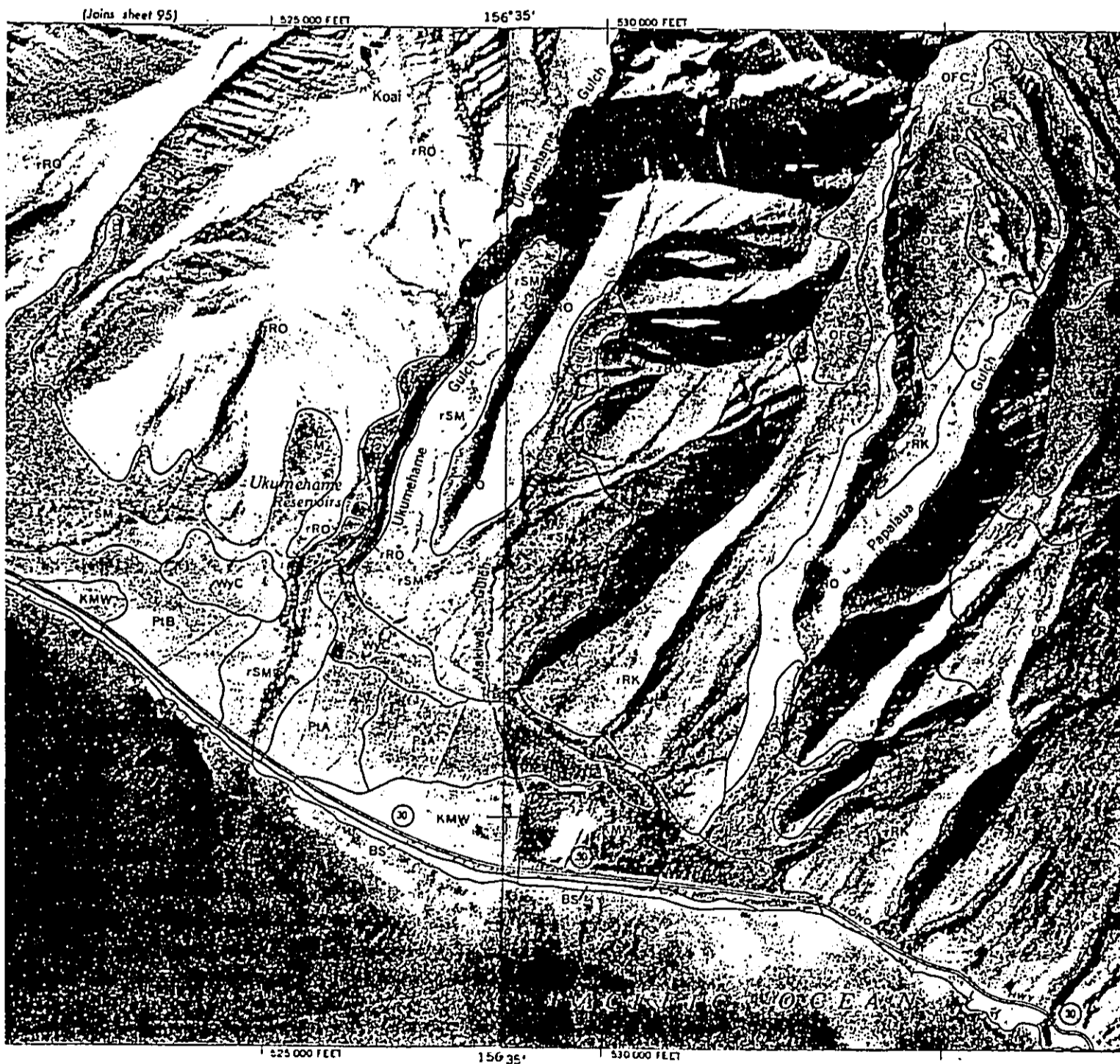


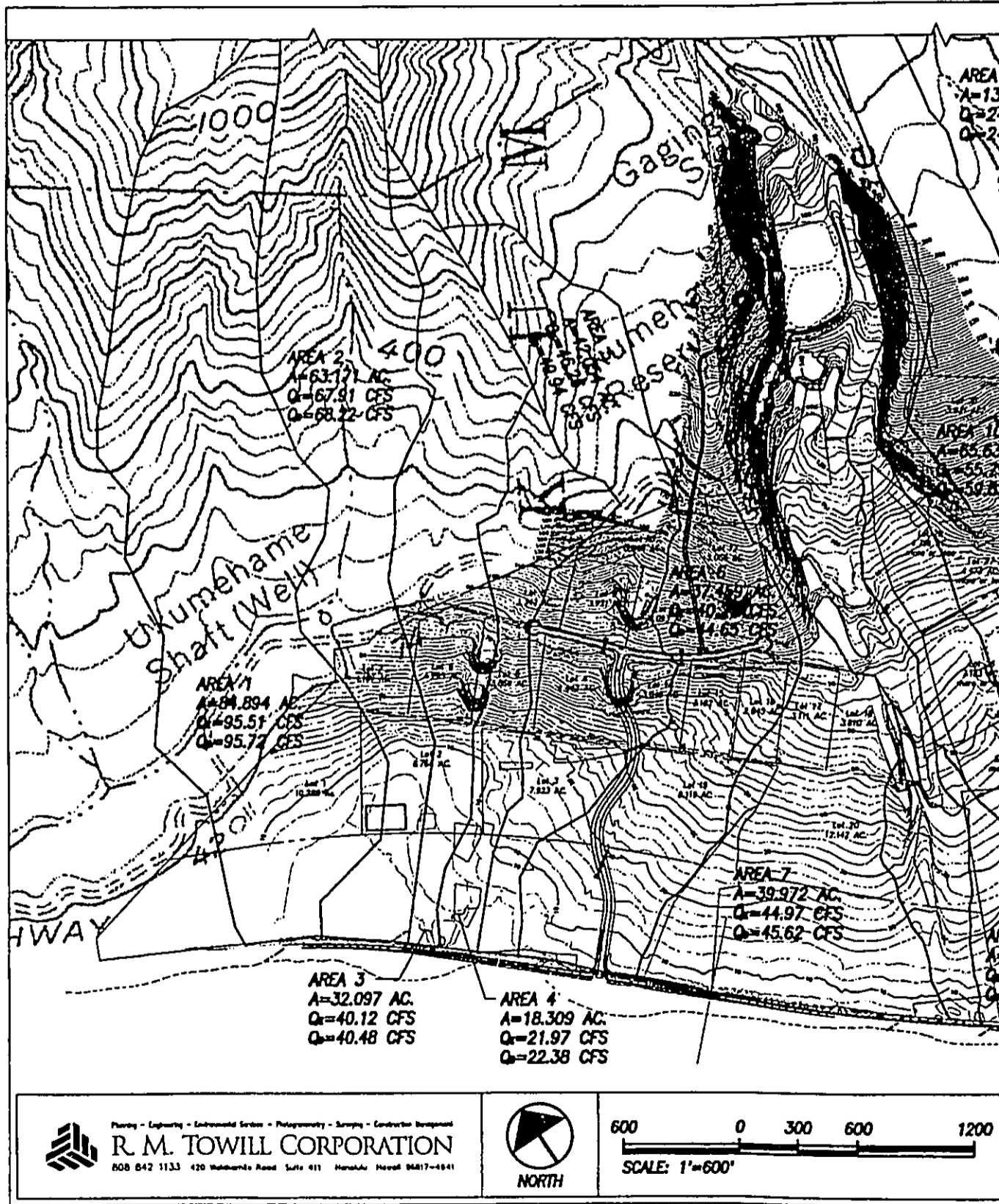
FIGURE 2-5

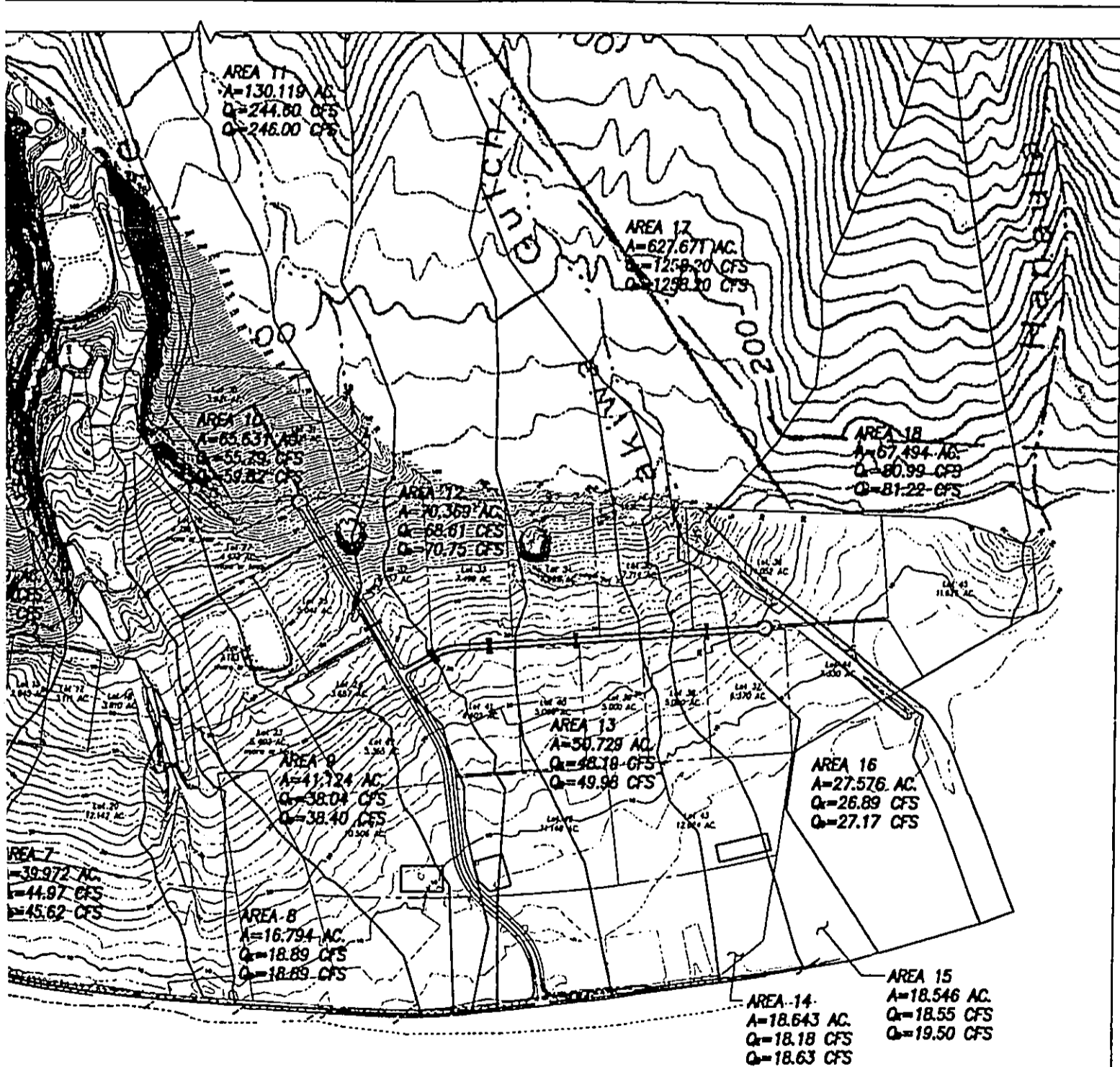


Photobase from 1965 aerial photographs 5,000-foot grid ticks based on Hawaiian plane coordinate system, zone 2 Old Hawaiian datum

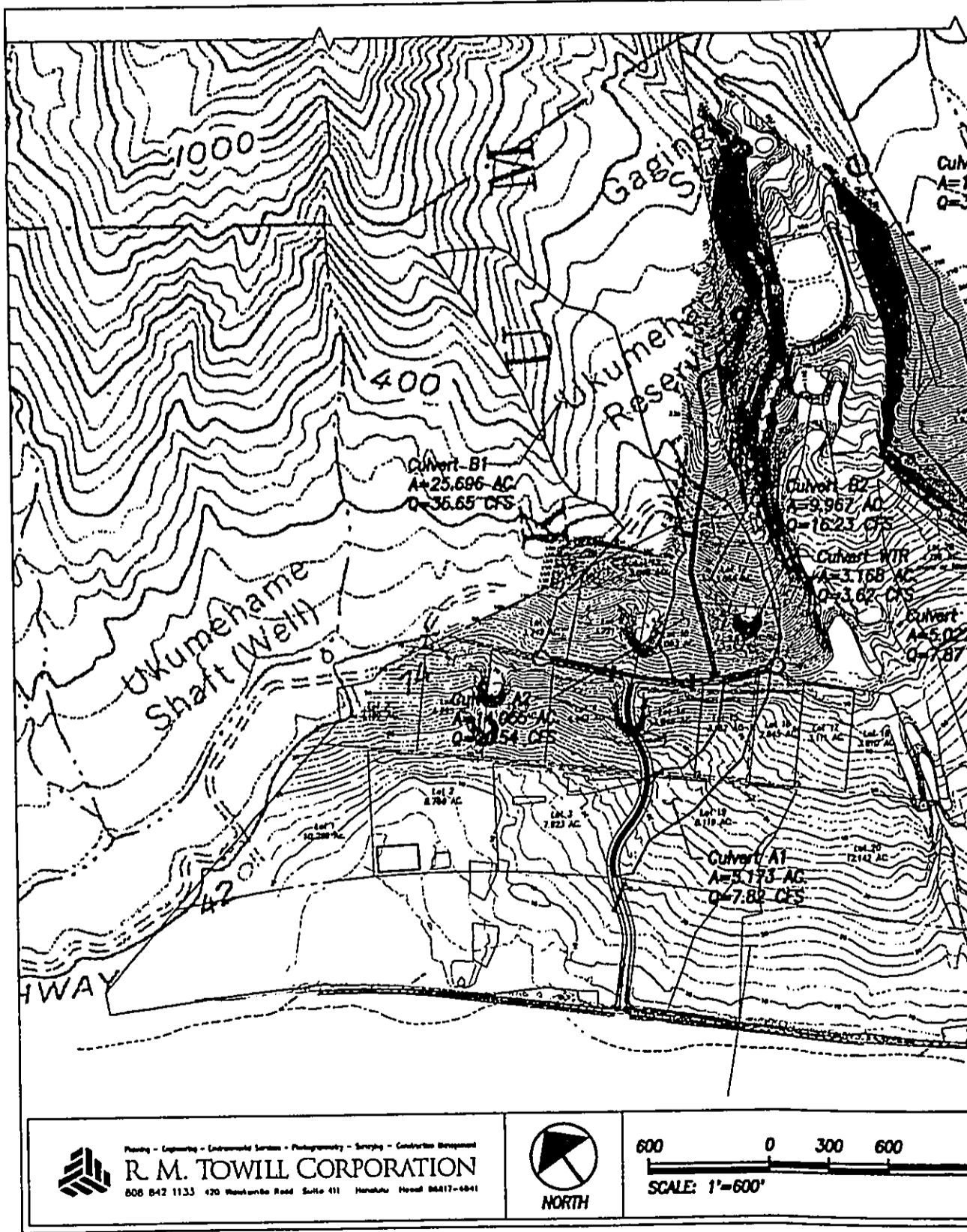
Photobase from 1965 aerial photographs 5,000-foot grid ticks based on Hawaiian plane coordinate system, zone 2 Old Hawaiian datum

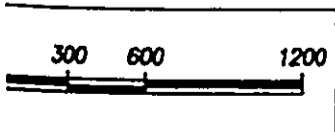
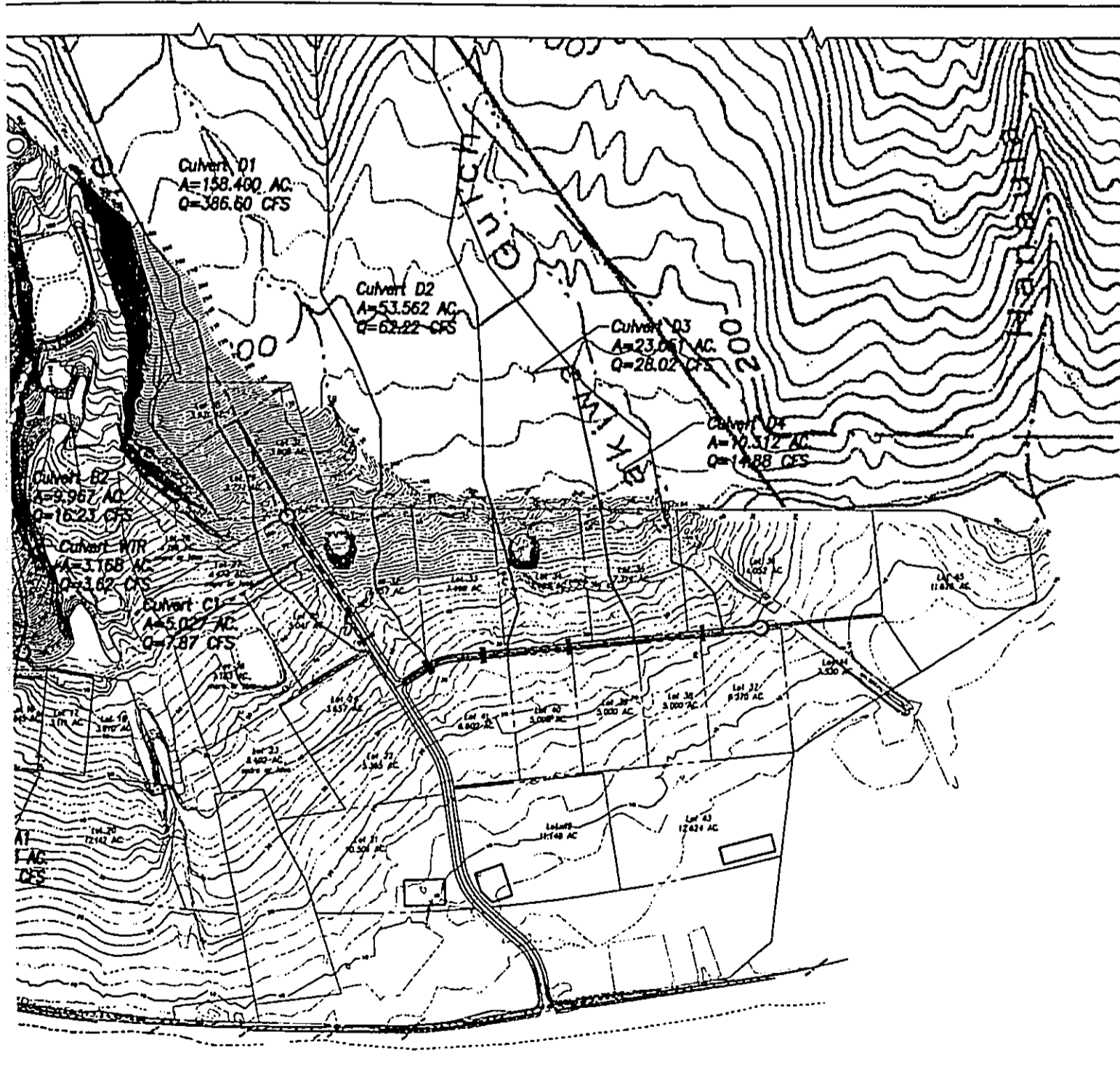
FIGURE 2-6





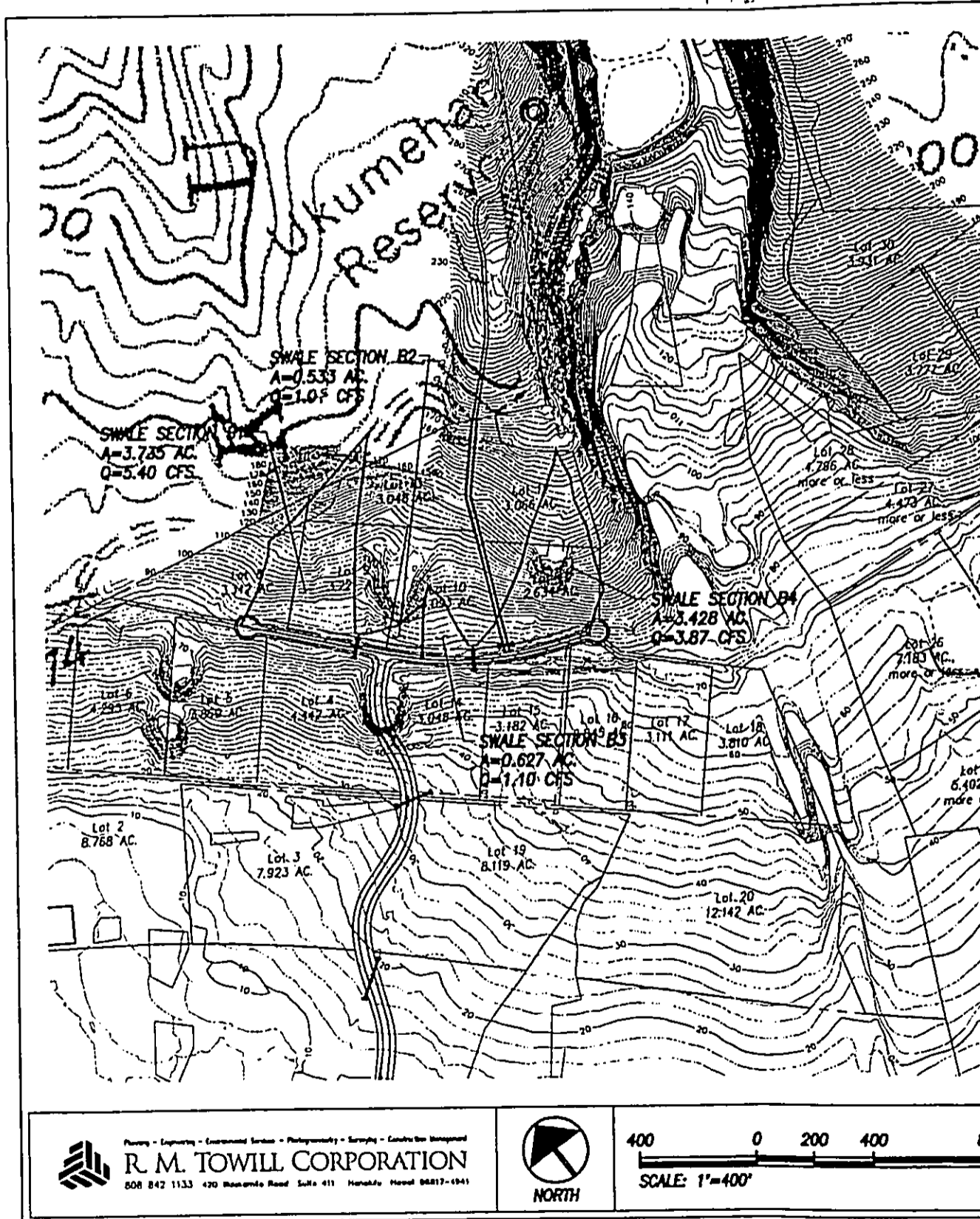
	<p>UKUMEHAME DRAINAGE AND EROSION CONTROL REPORT</p> <p>DRAINAGE AREAS MAP</p>	<p>Figure 3-1</p>
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UKUMEHAME DRAINAGE AND EROSION CONTROL REPORT
 ROADWAY CULVERT DRAINAGE AREAS MAP

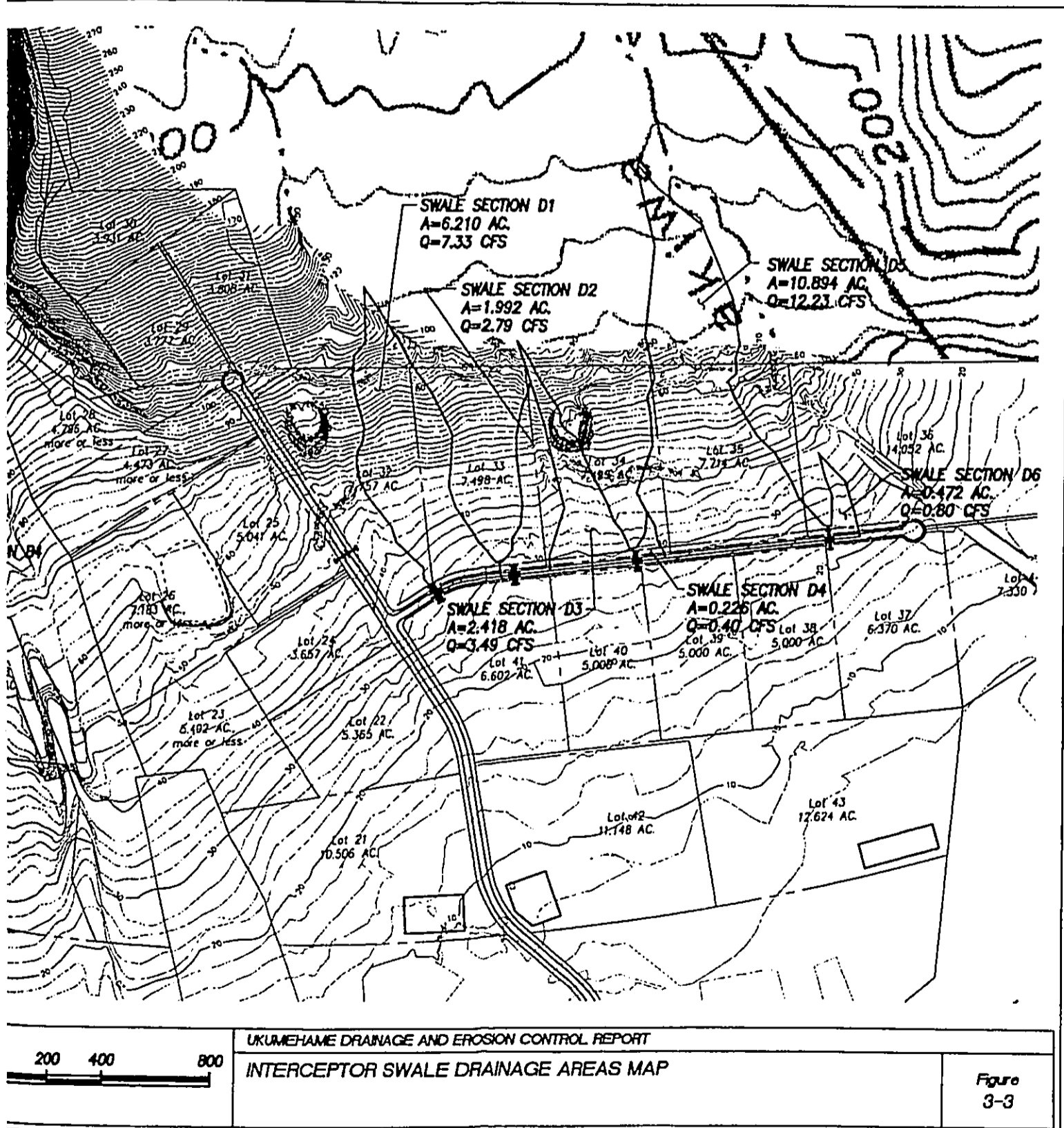
Figure
3-2



Planning - Engineering - Environmental Services - Performance - Surveying - Construction Management
R. M. TOWILL CORPORATION
 508 842 1133 470 Manawatu Road Suite 411 Hanalei Hawaii 96717-1941



400 0 200 400
 SCALE: 1"=400'





APPENDIX L
Traffic Assessment

**Traffic Assessment
Ukumehame Subdivision
November, 2003**

The proposed subdivision will be accessed through two new intersections with Honoapiilani Highway. The project is estimated to have a maximum traffic impact of 58 vehicles per hour in the peak direction during the peak hour, which is less than the 100 vehicles per hour that has been suggested by the Institute of Transportation Engineers as the threshold for conducting a traffic impact or site access study. The project will not have a significant impact to traffic.

However, in response to a request from the State Highways Division for a traffic assessment, an evaluation of traffic conditions at the intersections along with recommendations for improvements was conducted.

Traffic Estimates

The proposed project will create an agricultural subdivision with vehicular access provided by two roadways intersecting with Honoapiilani Highway. The western roadway will serve 20 lots and the eastern roadway will serve 25 lots. Under County zoning, a maximum of two dwellings can be placed on each lot. The worst case in terms of traffic impact would be for two dwellings on each lot with the dwellings occupied as typical suburban homes, where residents commute to school or work. Traffic estimates for the project under this condition at full build-out are shown in Table 1.

Table 1 – Project Traffic Generation

	Weekday	AM Peak Hour		PM Peak Hour	
	Per DU	Per DU	%entering	Per DU	%entering
Trip factors from ITE, <i>Trip Generation 6th ed.</i>	9.57	0.75	25%	1.01	64%
Traffic Generated	total	entering	exiting	entering	exiting
West: 40 DUs (20 lots)	380	8	22	26	14
East: 50 DUs (25 lots)	480	9	29	32	19
Maximum for project	860	17	51	58	33

DU = dwelling unit. Factors for single family detached dwellings

Data from recent traffic counts on the highway are shown in Table 2.

Table 2 – Honoapiilani Highway Traffic (counts taken in May, 2001)

1.07 miles west of tunnel	24-hour	AM Peak Hour	PM Peak Hour
Westbound	12,488	1,096	842
Eastbound	12,216	543	1,139

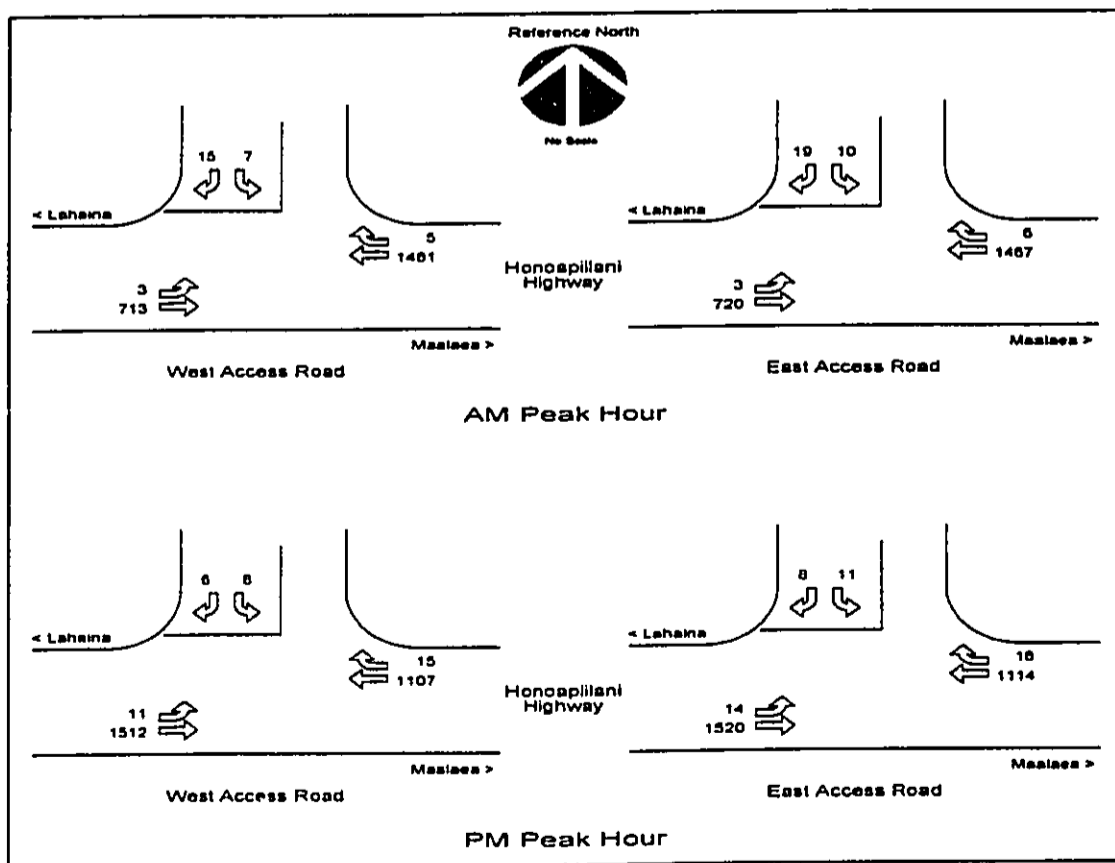
Source: State of Hawaii, Department of Transportation, Highways Division.
Traffic Survey Data, Island of Maui 2001 (Station 11-B)

The State Highways Division will be improving the highway by adding a passing lane or other widening within five years. The addition of the project roadways will introduce new intersections that should be considered in the design of any improvements to the highway; a passing lane through the intersections is not recommended.

The State Highways Division prepares estimates of average daily traffic on the highway. In 1993, average daily traffic on Honoapiilani Highway between Maalaea and Launiupoko was estimated to be 19,232 vehicles per day; the estimate for 2001 daily traffic is 25,010 vehicles per day. The increase over the eight years averaged 3.34% per year; if this rate of increase were to continue, traffic volume would increase by 34.4% in nine years. For the purpose of evaluating conditions at the intersections formed by the project roadways and the highway, the counts taken in 2001 were increased by 34.4% to develop future (year 2010) highway traffic volumes.

Project traffic can be expected to leave the site in both the Lahaina (west) and Maalaea (east) directions. Project attractions (traffic entering) would similarly arrive from both directions. The directions of travel to and from the project were estimated using the highway traffic volumes. Figure 1 shows traffic estimates for the intersections for year 2010, assuming full development (2 dwellings per lot) of the project.

Figure 1 – Future (2010) Traffic Assignments with Project



Each intersection was analyzed as an unsignalized intersection using the procedure described in the *Highway Capacity Manual*. In this procedure, average delays are computed and a "Level of Service" (LOS) identified for each controlled movement. Levels of service range from "A" for minimal delay to "F" for very long delays; LOS C is considered acceptable for rural conditions.

Traffic analyses of the unsignalized intersections with the future peak hour volumes show poor levels of service for traffic wishing to turn onto the highway. The addition of a median refuge lane so that left turns onto the highway can be made in two steps improves conditions, but levels of service will still be poor; adequate capacity for the movement, however, will be available. Table 3 shows the results of the capacity analyses.

Table 3 – Unsignalized intersection Levels of Service

	West Access Road			East Access Road		
	V/C	ADPV	LOS	V/C	ADPV	LOS
AM Peak Hour						
Right turns onto highway	0.15	42.8	E	0.18	43.6	E
Left turns onto highway	0.07	38.3	E	0.09	38.9	E
Left turns from highway	0.01	15.0	B	0.01	14.8	B
PM Peak Hour						
Right turns onto highway	0.03	23.4	C	0.05	23.9	C
Left turns onto highway	0.10	48.9	E	0.13	51.7	F
Left turns from highway	0.02	12.0	B	0.03	12.1	B

V/C = volume/capacity ratio ADPV = average delay per vehicle, in seconds
LOS = Level of Service

The analyses indicate that highway traffic will be minimally affected. Traffic on the project roadways wishing to enter the highway, however, would have poor levels of service in the AM Peak Hour. Left turns onto the highway in the PM Peak Hour would also have poor levels of service. Acceleration lanes could reduce the delays to traffic turning onto the highway, as a merge would replace the need to find an acceptable gap in highway traffic; however, peak hourly volumes for each acceleration lane would be less than 20 vehicles per hour. Traffic volume on the project roadways, even under a worst case situation of all left turns, would be less than half of the volume needed to meet the peak hour warrant (minimum requirement) for traffic signals. Despite the poor levels of service, volumes are at most one-fifth of capacities and further improvements do not appear justified.

Design Guidelines

Design guidelines are provided to assist the designer in laying out the intersection. These guidelines do not account for specific site conditions, including but not limited to roadway alignment (horizontal and vertical), sight distances, and drainage structures or

other physical constraints. These design guidelines are provided to provide initial design requirements and to identify any constraints and facilitate discussion of alternatives.

Separate turn lanes for traffic leaving the highway would minimize the interruption of through traffic. The lanes should be designed for the speed of highway traffic with adequate length and width to accommodate the turning volumes.

Design parameters for each intersection are based on a number of factors. A left turn lane on a two-lane highway would require that one or both of the through lanes be offset laterally to provide the needed width. A twelve-foot wide turn lane is standard, and for high-speed (greater than 45 miles per hour) facilities, a six-foot wide painted median is used to separate the turn lane from opposing traffic. In the vicinity of the project, existing posted speed limit on the highway is 55 miles per hour. Due to the location of the highway near the shoreline, offsetting the eastbound lanes would not be feasible; therefore, the westbound lane would need to be offset 18 feet to the north.

The relocation of the through lane should be laid out with tapers of 1 foot laterally for every mile per hour of the highway speed, i.e. length = speed times offset. For a 60 mile per hour design speed, the eighteen-foot offset will require a lane taper of 1,080 feet.

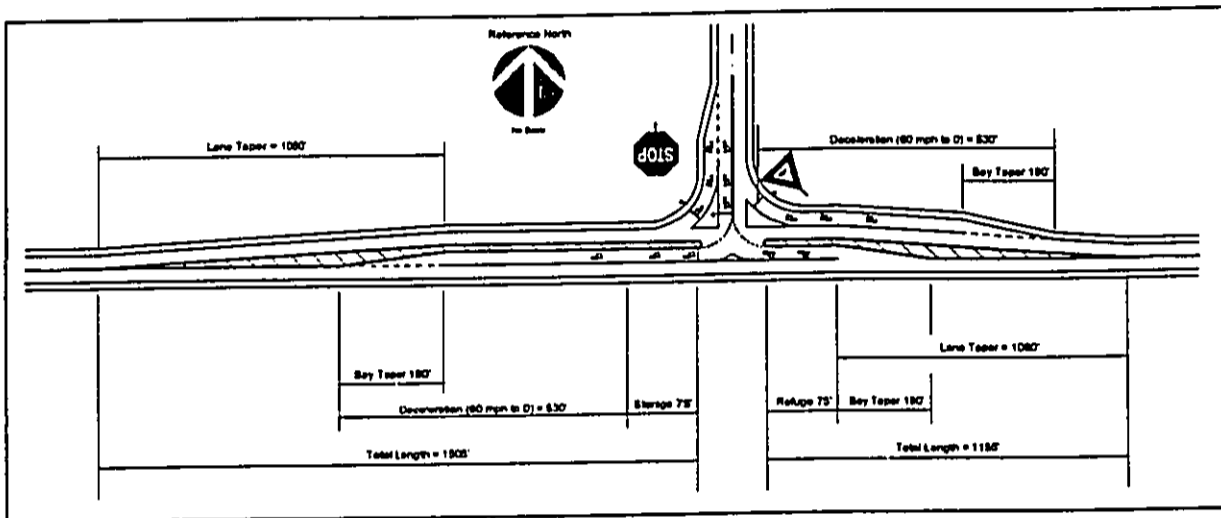
A bay taper is used to open or close a turn lane. A 15:1 taper is commonly used; for a twelve-foot wide lane, the length of the bay taper would be 180 feet.

Deceleration distance is based on the design speed of the highway. Deceleration lengths to a stop should be used since turning traffic yields to oncoming or other conflicting traffic and may need to stop. The deceleration distance for level conditions (2% or less grade) are provided in the AASHTO "green book".

A moderate amount of deceleration within the through lane is normally acceptable. Common practice includes the bay taper within the deceleration length. For rural conditions, storage is provided in addition to the deceleration length. The amount of storage is dependent on the projected traffic volume making the turn, and for left turns at unsignalized intersections, is the number of vehicles expected to arrive in an average two-minute period during the peak hour. The minimum requirement is storage for two vehicles; for one car and one truck, a storage length of 75 feet is recommended (25 feet plus 50 feet). The minimum storage will support a peak hour turning volume of up to 60 vehicles per hour, which greatly exceeds the estimated maximum volume of 14 vehicles in the peak hour at the proposed intersections. Storage for right turns is usually not provided since queues rarely form as these movements typically flow freely.

Figure 2 shows a layout applicable for both intersections for the existing highway speed limit of 55 miles per hour. The side street approach should have sufficient distance to store two vehicles waiting to turn left onto the highway without blocking access to the right turn lane.

Figure 2 – Turn Lanes for Level Condition, 60 MPH Design Speed



The total lengths would decrease if the posted speed limit was reduced and a lower design speed is used. The bay tapers, storage, and refuge lengths would not change, but the lane tapers and deceleration lengths would be reduced. Table 4 shows the changes in the parameters for several alternative reductions in the highway speed.

Table 4 – Effect of Lower Highway Speed on Length of Improvements

Speed Limit (miles per hour)	55	50	45	40	35
Design Speed (miles per hour)	60	55	50	45	40
Lane Taper (feet)	1,080	990	900	810	720
Bay Taper (feet)	180	180	180	180	180
Deceleration Length (feet)	530	480	435	385	320
Storage Length (feet)	75	75	75	75	75
Refuge Length (feet)	75	75	75	75	75
Total Length to west (feet)	1,505	1,365	1,230	1,090	935
Total Length to east (feet)	1,155	1,065	975	885	795

Other considerations could reduce the length requirements further for speed limits of 45, 40, or 35 miles per hour. For speed limits of 45 miles per hour or less, the six-foot painted median may not be necessary; elimination of this median would reduce the length of lane tapers, as the offset of the through lane is reduced from 18 feet to 12 feet. For a speed limit of 35 miles per hour, the length of the lane taper could be based on the equation $L = WS^2/60$ (for offset, $W = 18$ and speed, $S = 40$, the length would be reduced from 720 feet to 480 feet by using this equation).

The designer should consult with the Highways Division and consider these factors in selecting the appropriate design for the intersection.

* * *

APPENDIX M
Pre-Consultation Letters



September 23, 2004

Mr. Michael W. Foley, Director
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

RE: Environmental Assessment Pre-Consultation
Consolidation and Re-subdivision of Lands Situated at Ukumehame, Maui
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

On behalf of Pacific Rim Land, Inc., the agent (Applicant) for the landowners, the Ukumehame Co-Tenants, Chris Hart & Partners, Inc. is preparing an Environmental Assessment (EA) and an application for a Special Management Area (SMA) Use Permit for the above-referenced project in accordance with the conditions of the Purchase and Sale Agreement between the Ukumehame Co-Tenants and the County of Maui for the transfer of 100 acres of land to the County for a future park and future highway right-of-way.

As part of the EA pre-consultation process, we are requesting comments from government agencies and interested parties on topics they wish to be considered in the assessment and would appreciate receiving any written comments you may have no later than October 15, 2004.

The following is a brief description of the proposed action and a listing of topics to be addressed by the EA.

Project Description

The proposed action involves the consolidation and re-subdivision of 439 acres of vacant land situated in the Ukumehame area of West Maui. See Exhibits A and B. The project site is situated on the *mauka* side of Honoapiilani Highway and is identified by the above-referenced TMK parcels. The site is located within the State Agricultural District and is designated for Agricultural land use by both the West Maui Community Plan and Maui County zoning. Portions of the makai extent of the subject property are

Mr. Michael W. Fole
September 23, 2004
Page 2

located within the limits of the SMA for the Island of Maui. The lands underlying the subject property are owned in fee simple, co-tenancy by a group of individuals and entities collectively referred to as the Ukumehame Co-Tenants.

The subject property was formerly cultivated with sugar cane until 1999. Since then, the site has been fallow and is primarily occupied by kiawe and buffel grass. Cane haul roads, rock piles, and irrigation ditches and reservoirs associated with the former agricultural use of the property are located on the site, as well as two (2) test wells and recorded archaeological features, including burial sites. Lands surrounding the subject property were also utilized for sugar cane cultivation in the past and with the exception of the Ukumehame Firing Range, are currently fallow and undeveloped.

The proposed action will involve the consolidation of 12 existing lots and the re-subdivision of these parcels to create three (3) large lots. Two (2) of these large lots, with a total area of 100 acres, will be sold to the County of Maui for future park use and for a future public highway right-of-way, while the remaining large lot consisting of 339 acres will be concurrently subdivided for an agricultural subdivision consisting of one (1) lot for a river corridor (Ukumehame Stream) and 45 farm lots ranging in size from approximately 3 to 13 acres. The proposed action will also involve site work and the provision of landscaping and infrastructure to serve the agricultural subdivision. Access to the agricultural subdivision will be provided by two (2) proposed roadways connecting to Honoapiilani Highway.

Development of the agricultural subdivision is anticipated to commence after the receipt of all applicable regulatory permits and approvals, while the development of the lands comprising the future park and future highway right-of-way is uncertain and will be the responsibility of the County of Maui and the State of Hawaii.

Mr. Michael W. Fole;
September 23, 2004
Page 3

Topics to be addressed by the Environmental Assessment include:

Physical Environment, including:

- Land Use
- Topography / Landforms / Soils
- Air Quality
- Noise Characteristics
- Biological Resources
- Flood and Tsunami Hazards
- Archaeological / Cultural Resources
- Visual Resources

Public Services, including:

- Solid Waste Disposal
- Police and Fire Protection
- Educational and Recreational Resources
- Medical Services

Social/Economic Environment, including:

- Population and Economy

Local Infrastructure, including:

- Water
- Drainage
- Wastewater
- Electrical and Telephone Systems
- Transportation

State and County Land Use Laws and Policies, including:

- HRS, Chapter 205A
- HRS, Chapter 343
- West Maui Community Plan
- Title 19, Maui County Code (Zoning)

The EA will also contain information about the following subjects, as well as specific impact assessments prepared by qualified professionals:

- Engineering
- Drainage
- Traffic
- Archaeological
- Cultural

Thank you for your cooperation. Should you have any additional issues that you would like to see addressed in the EA or have any comments or concerns, please contact me or Mr. Glenn Tadaki, Staff Planner.

Sincerely,



Rory Frampton

Chris Hart & Partners, Inc.

Encl.

Cc: Ms. Donna Clayton, Pacific Rim Land, Inc.

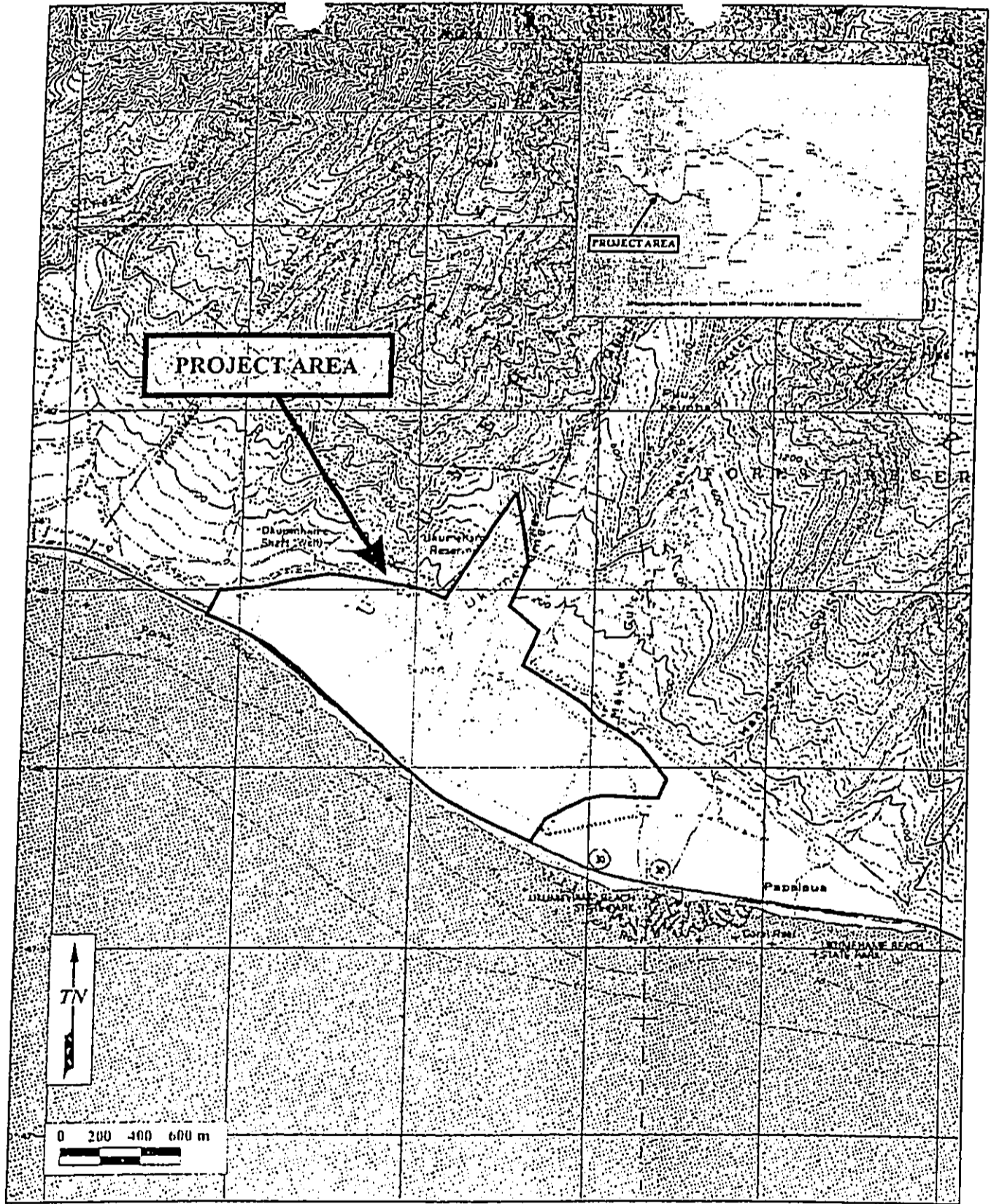


Exhibit "A"



UKUMEHAME
PROJECT AREA

Lahana •

MAUI

• Hama

Exhibit "B"

**Substantive Agency
Comments and Applicant
Responses**

Division of Forestry & Wildlife

1151 Punchbowl Street, Rm. 325 • Honolulu, HI 96813 • (808) 587-0166 • Fax: (808) 587-0160

May 25, 2004

MEMORANDUM

TO: Nick Vaccaro, Land Agent
Land Division

THRU: Dierdre S. Mamiya, Administrator
Land Division

FROM: Michael G. Buck, Administrator
Division of Forestry and Wildlife

SUBJECT: SMA Application by Pacific Rim Land, Inc. For Ukumehame
Subdivision TMK: 4-8-002:009 through County of Maui Planning
Department.

DOFAW has reviewed this subject document and we provide the following comments for your consideration. We request that the applicant consider:

- allowing DLNR agencies vehicular and public hunting access to the West Maui Forest Reserve area.
- allowing utility companies to access the power line corridor for maintenance and public safety.
- provide resident awareness of potential rock-fall hazards on the mauka flanks of the subdivision.
- provide resident awareness of potential crop losses from intrusive wildlife activities i.e. by nene which is a protected endangered species.
- construct a fire or fuel break around the perimeter of the subdivision as this area is prone to wildland fire starts.
- provide resident awareness of endangered water birds and endangered nene which are attracted to the reservoir and proposed detention basins that will be located near the proposed subdivision. These wildlife birds are federal and state protected.

We appreciate the opportunity to comment on the Ukumehame Subdivision SMA.

Copy: Maui DOFAW Branch

RECEIVED
LAND DIVISION
2004 JUN -2 P 3:32
DEPT. OF FORESTRY &
NATURAL RESOURCES
STATE OF HAWAII



January 13, 2005

Mr. Michael S. Buck, Administrator
Division of Forestry and Wildlife
Department of Land and
Natural Resources
1151 Punchbowl Street, Room 325
Honolulu, Hawaii 96813

Dear Mr. Buck:

RE: Consolidation and Re-subdivision of Lands Situated at Ukumehame, Maui
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

On January 4, 2005, Donna Clayton and I met with Meyer Ueoka, John Medeiros, and Glenn Shishido of your Maui office to discuss the comments they provided on the above-referenced project via your memorandum dated May 25, 2004. As a result of this meeting, we would like to note the following.

It is our understanding that the Department of Land and Natural Resources (DLNR) desires vehicular access from the proposed agricultural subdivision to the State lands in the West Maui Forest Reserve in order to conduct wildlife surveys and to combat brush fires when necessary. Preliminarily, DLNR vehicular access from the subdivision to the forest reserve area on the east side of Ukumehame Stream will be provided by a 20-ft. wide gravel road, which will be located between Lot Nos. 31 and 32. A similarly built road, which may branch off from the new water tank access road, will provide access to the forest reserve area on the west side of the stream. The specific location of this access road will be determined through further consultation with the DLNR.

Two (2) recorded easements in favor of Maui Electric Company (MECO) for electrical transmission purposes currently exist on the subject property. Should additional access be needed from the subdivision to these existing easements, the Applicant is more than willing to discuss with MECO any new easements it may need for maintenance and fire suppression purposes. However, should access to the West Maui Forest Reserve lands be desired for this purpose, provisions for MECO's co-shared use of the DLNR access roads could be incorporated in the easement documents.

Mr. Michael S. Buck
January 13, 2005
Page 2

Information regarding potential rock fall hazards on the *mauka* flanks of the subdivision, potential crop losses from intrusive wildlife, and resident awareness of endangered wildlife species, such as *nene* and water birds (e.g., Hawaiian stilt), will be included all sales and disclosure documents, as well as in the Conditions, Covenants, and Restrictions (CC&Rs) governing the agricultural subdivision.

As the agricultural subdivision is located in an area that has experienced brush fires in the past, lot owners along the perimeter of the subdivision will be advised to maintain a fire break along the outer boundaries of their lots. The width of the fire break will be determined after an evaluation of site conditions of each perimeter lot. In addition to perimeter fire breaks, provisions that address Section 11.201(a) of the Uniform Fire Code (1988 Edition) regarding a property owner's responsibility to maintain and remove combustible vegetation (weeds, grass, vines or other growth) from a vacant lot, will be included in the CC&Rs for the agricultural subdivision.

As part of the environmental review process, a copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to contact me at 242-1955 should you have any questions or concerns about the proposed project.

Sincerely,


Rory Erampton
Chris Hart & Partners, Inc.

Cc: Ms. Donna Clayton, Pacific Rim Land, Inc.

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

'04 SEP 27 P1:10

September 23, 2004

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1386

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: Ukumehame Subdivision
Special Management Area Assessment Application (SMX 2004/0243)
TMK: (2) 4-8-002: 009

Thank you for requesting our review of the subject application involving consolidation of 12 agricultural lots consisting of approximately 439 acres and subdividing the land into three (3) lots. The three (3) lots will consist of the following: Two lots totaling approximately one hundred (100) acres are to be conveyed to the County of Maui for use as a neighborhood park and bypass highway; one lot of approximately three hundred thirty nine (339) acres, will be subdivided into 45 agricultural lots. The existing accesses will be replaced with two roadway accesses.

The proposed action will add traffic to the already busy Honoapiilani Highway. Based on the information we received, our initial comments are as follows:

1. The applicant will be limited to two direct accesses to Honoapiilani Highway, one on each side of Ukumehame Gulch (Easements B and D), all other accesses (existing or proposed) will be closed.
2. The applicant will be responsible to plan, design and construct, at no cost to the State, roadway and intersection improvements for the accesses to Honoapiilani Highway, including dedication or reservation of land, as may be determined by our Highways Division. Improvements may include, but are not limited to:
 - a. A northbound deceleration lane for right turns into the subdivision.
 - b. A southbound deceleration/left turn storage lane for left turns into the subdivision.
 - c. A southbound shelter/acceleration lane for left turns out of the subdivision.
 - d. A northbound right turn acceleration lane to accommodate right turns out of the subdivision.

3. Our Highways Division Right-of-Way Branch may require the payment of consideration and administrative costs for the two accesses. Additionally:
 - a. The value of the relocated/widened access will be appraised by the Highways Division's appraiser.
 - b. The applicant/developer must execute an "Exchange of Vehicle Access Rights" document within a two-year time frame.
 - c. The applicant must submit a metes and bounds description of the boundary along the Honoapiilani Highway to show permitted and restricted accesses which will be used as an exhibit to the Exchange of Vehicle Access Rights document.
4. A Traffic Impact Analysis Report (TIAR) should be prepared and submitted for our review and approval. The TIAR should address the cumulative impact of the subdivision and the other subdivisions in the area on the capacity, safety, and regional efficiency of Honoapiilani Highway. The TIAR should also include a full build-out scenario of the subdivision.
5. A regional circulation study with the project and with other proposed developments in the area should be included in the TIAR. The study should also cover a thorough review of the existing and planned roadways, including lateral connections paralleling Honoapiilani Highway. Development of the subdivision must be coordinated with the following Highways Division projects:
 - a. Corridor study on realignment for Honoapiilani Highway from Maalaea to Lauhiupoko.
 - b. Statewide Highway Shoreline Protection, Project Number HWY-08098.
6. Storm water runoff created by the development must be mitigated on site.
7. Copies of any periodic or event-initiated drainage inspection reports and any actions taken or needed shall be routinely provided to our Highways Maui District Office.
8. The drainage study for the proposed subdivision should be sent to the Highways Division Design Branch for review and approval and must include the existing and proposed conditions at each crossing at Honoapiilani Highway, including headwater elevation, flow (Q), and impacts of adjacent properties at each crossing, and how it impacts capacity at the crossing.
9. Plans for construction work within/or adjoining the right-of-way of Honoapiilani Highway must be submitted for our review and prior approval. This shall also include obtaining all appropriate permits, including any applicable permits from our Highways Division.

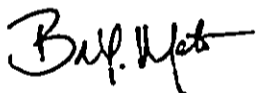
Mr. Michael W. Foley
Page 3
September 23, 2004

STP 8.1386

10. The applicant should be required to comply with the National Pollutant Discharge Elimination System (NPDES) permit requirements for construction activity disturbing one (1) or more acres of total land area. This shall include obtaining an NPDES permit from the Department of Health or a negative letter of determination.
11. The applicant/developer should agree to participate in and contribute to its fair share of regional and local transportation improvements as determined by our department and/or the county.

We reserve the right to make additional comments and recommendations based on our review of the required or requested materials and documents described above.

Very truly yours,



RODNEY K. HARAGA
Director of Transportation



PACIFIC RIM LAND, INC.

November 2, 2004

Mr. Rodney H. Haraga, PE
Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Dear Mr. Haraga:

Subject: Ukumehame Subdivision, Phase II, File No. 4.876

Charlie Jencks, Craig Luke and I thank you for the opportunity to review and discuss the Ukumehame Subdivision Phase II with you, Glenn Yasui and Bruce Matsui last week.

Our general understanding of the discussion is as follows:

1. On the issue of whether or not a north-bound acceleration lane should be required since there is good site distance at this location, we understand that R.M. Towill should present the intersection design to the SDOT-Highways Division for review. We understand that the intersections need to be designed to standard intersection design standards.
2. On the issue of coordination with the Shoreline Erosion Control Study and the Honoapiilani Highway Corridor Study, we understand that the shoreline protection study and corridor study are still preliminary and behind our subdivision development. We are proceeding with our design and if the shoreline erosion study and/or the Honoapiilani Corridor study are ready prior to January 2005 we will coordinate our design with them. However, it is our understanding that this requirement will not hold up our subdivision. If the studies are not complete by January of 2005 we will not be expected to coordinate our design with them.
3. On the issue of coordination with the Passing Lanes Project, we understand that a passing lane will not be planned along the highway fronting Ukumehame and no further coordination is required.
4. On the issue of whether a regional traffic study is necessary for this project, we understand that this comment is a generic comment and does not apply to this project because of the maximum traffic impact of 58 vehicles per hour in the peak direction during the peak hour (less than the 100 vehicles per hour suggested by the Institute of Transportation Engineers as the threshold for conducting a traffic impact or site access study). A Traffic Assessment study done by Julian Ng, Inc. in November of 2003, which is the basis of the 58 vehicles per hour in the peak direction, has been submitted to SDOT-Maui District; however, another copy will be submitted to the SDOT-Traffic Section.

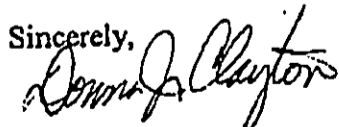
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Mr. Rodney H. Haraga, PE
November 2, 2004
Page 2

5. On the issue of the requirement for payment of consideration of administrative costs for the two accesses and fair market value for the two designated access openings, tentative agreement was reached that the value of the four (4) accesses the landowners are giving up in exchange for the two (2) accesses (one that was relocated) both widened to 60 ft. balance with the proposed assessments and no amount would be charged. I would very much appreciate your providing some direction as to whether this solution to this issue will be acceptable to your department.
6. On the issue of landowner payment of their fair share of regional and local transportation requirements as determined by DOT and/or the county, we reached agreement that this was a vague request and difficult for landowners to plan for. Bruce Matsui spoke highly of the Makena Resort-Wailea 670 resolution reached in south Maui and all agreed that might be a good model for working out solutions and sharing expenses in the future, given the reality that the State of Hawaii does not have in place at this time legislation to determine an appropriate fee nor an account to accept payments. Charlie offered to get a copy to you of the current proposal before the County Council on traffic impact fee assessments for Maui County. It was also suggested that the landowners meet with Ferdinand Cajigal to discuss mitigation, if appropriate.
7. The SMA Assessment Application (SMX 2004/0243) has been closed as the County of Maui recently required an SMA Major for the Ukumehame Subdivision Phase II. The DOT comments on the SMA are expected to be the same as those for the subdivision.

Again, thank you for your time. We look forward to your revised comments on the Ukumehame Subdivision Phase II.

Sincerely,



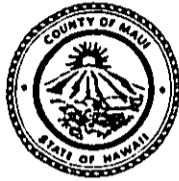
Donna J. Clayton
Project Coordinator

C: Glenn Yasui
Bruce Matsui
Charlie Jencks
Craig Luke

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

October 8, 2004

RECEIVED
OCT 13 2004

CHRIS HART & PARTNERS
Landscape Architecture & Planning

Mr. Rory Frampton
Chris Hart & Partners
1955 Main Street, Suite 200
Wailuku, HI 96793-1766

Dear Mr. Frampton:

RE: Pre-consultation Comments in Preparation of a Draft Environmental Assessment for the Consolidation and Reconsolidation of Approximately 439 Acres of Land Located at TMK: 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068 and 070, Ukumehame, Island of Maui, Hawaii (EA 2004/0016) (SM1 2004/0033)

The Maui Planning Department (Department) is in receipt of your letter dated September 23, 2004, requesting pre-consultation comments in preparation of a Draft Environmental Assessment (EA). The Department provides the following comments:

1. Discuss the impacts of converting agricultural lands and creating a pseudo-community in which there is no existing infrastructure. Discuss the impacts on infrastructure and public services.
2. Discuss the loss of productive agricultural lands, the potential impact of increasing pressure for more urban development in the area and conflicts with the existing agricultural operations in the area.

Discuss how the project complies with the Agricultural District Ordinance recommendation of maintaining lands that should be kept in agriculture (e.g., ALISH classification, 75% contiguous to agricultural lands, etc.).
3. The Department is aware that potential wetlands may be located within the area. Identify those areas and address any potential impacts.

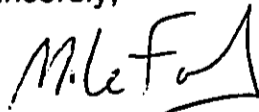
Mr. Rory Frampton
October 8, 2004
Page 2

4. The Department is aware that traditional farming practices occur in the area. Identify those areas and address any impacts.
5. *Include a Cultural Impact Assessment.*
6. Identify the location of the Ukumehame Firing Range and discuss potential noise impacts in relation to the 45-lot subdivision.
7. Discuss traffic impacts from the 45-lot subdivision and proposed mitigative measures. Further, discuss mitigative measures implemented during the construction of roadway improvements as required by the Department of Transportation.
8. Provide a drainage analysis. Discuss potential impacts and mitigative measures from non-point source pollution into nearshore coastal waters. Discuss the alternative of incorporating a filtration device for petroleum contaminants into the proposed drainage system for the 45-lot subdivision and roadway improvements.

The Department was processing a Special Management Area assessment application for the proposed action. As part of that process, agencies comments were requested for the analysis. Enclosed are copies of those letters. Please address the comments and attach as part of the Draft Environmental Assessment.

Thank you for the opportunity to comment. Should you require additional clarification, please contact Ms. Kivette A. Caigoy, Environmental Planner, at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:do

Enclosure

c: Wayne A. Boteilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
Project File
General File
K:\WP_DOCS\PLANNING\EA\2004\16_Ukumehame\preconsultation.wpd



November 3, 2004

Mr. Michael W. Foley, Director
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

RE: Environmental Assessment Pre-Consultation
Consolidation and Re-subdivision of Lands Situated at Ukumehame, Maui
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Thank you for your October 8, 2004 letter responding to our request for pre-consultation comments on the above-referenced project. On behalf of the Applicant, and in response to your letter, we would like to note the following.

- The Draft Environmental Assessment (EA) will include a discussion of agricultural land uses, potential impacts, and compliance with the County's Agricultural District Ordinance.
- A wetland delineation survey of the subject property is being conducted. Should wetlands exist, the Draft EA will identify these areas and discuss potential impacts and mitigation.
- Present farming activities in the project area will be discussed in the Draft EA and potential impacts addressed.
- A Cultural Impact Assessment will be included in the Draft EA.
- The Draft EA will identify the location of the Ukumehame Firing Range and include a discussion of ambient noise conditions and potential effects.
- A discussion of existing traffic and drainage conditions, potential impacts and mitigative measures will be included in the Draft EA.
- The Draft EA will address all substantive agency comments that were received by the department in connection with its processing of the previous SMA Assessment application for the proposed action.

Mr. Michael W. Foley
November 3, 2004
Page 2

After completion, the Draft EA will be provided to the department for environmental review processing. During the interim, please feel free to contact me or Glenn Tadaki at 242-1955 should you have any questions or concerns about the proposed project.

Sincerely,


Rory Frampton
Chris Hart & Partners, Inc.

Cc: Ms. Donna Clayton, Pacific Rim Land, Inc.

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955



COUNTY OF MAUI
**DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT**
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

October 14, 2004

RECEIVED
OCT 19 2004

CHRIS HART & PARTNERS
Landscape Architecture & Planning

Mr. Rory Frampton
Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, Maui, Hawaii 96793

Dear Mr. Frampton:

**SUBJECT: ENVIRONMENTAL ASSESSMENT PRE-CONSULTATION
CONSOLIDATION AND RE-SUBDIVISION OF LANDS
SITUATED AT UKUMEHAME, MAUI
TMK: 4-8-002:009, 048, 052-056, 060, 061, 065, 066, 068,
AND 070**

We reviewed the subject pre-consultation Environmental Assessment (EA) and have the following comments at this time:

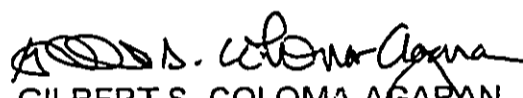
1. Please identify any improvements that are proposed for dedication to the County of Maui. We are especially interested as to whether any roadways or drainage facilities are to be dedicated or are to be retained as private property.
2. Subdivision File No. 4.875 - Ukumehame Subdivision, Phase I. Preliminary approval was granted on October 10, 2003.
3. Subdivision File No. 4.876 - Ukumehame Subdivision Phase II. Preliminary approval was granted on October 10, 2003.

The Department may have additional comments after it has an opportunity to review the Draft Environmental Assessment.

Mr. Rory Frampton
October 14, 2004
Page 2

If you have any questions regarding this letter, please call Milton Arakawa at 270-7845.

Sincerely,


GILBERT S. COLOMA-AGARAN
Director

GSCA:da
S:\LUCA\ICZM\Ukumehame_ea_pre-consultation_48002009_da.wpd



November 3, 2004

Mr. Gilbert S. Coloma-Agaran, Director
Department of Public Works
and Environmental Management
200 South High Street
Wailuku, Hawaii 96793

Dear Mr. Coloma-Agaran:

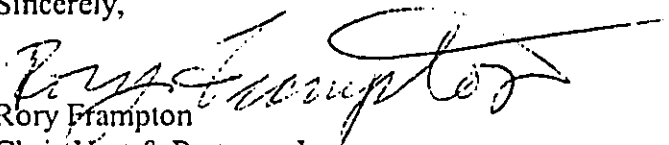
RE: Environmental Assessment Pre-Consultation
Consolidation and Re-subdivision of Lands Situated at Ukumehame, Maui
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Thank you for your October 14, 2004 letter responding to our request for pre-consultation comments on the above-referenced project. On behalf of the Applicant, and as a follow-up to your letter, we would like to note the following.

Aside from dedicating the portions of the two (2) subdivision access roads that pass through the land to be transferred to the County of Maui, the Applicant does not intend to dedicate any other subdivision improvements to the County. The maintenance of the subdivision's interior roads and drainage system will be responsibility of the homeowners association.

As part of the environmental review process, a copy of the Draft EA will be provided to you for review and comment. During the interim, please feel free to contact me or Glenn Tadaki at 242-1955 should you have any questions or concerns about the proposed project.

Sincerely,


Rory Frampton
Chris Hart & Partners, Inc.

Cc: Ms. Donna Clayton, Pacific Rim Land, Inc.



PACIFIC RIM LAND, INC.

January 14, 2005

Ms. Alice L. Lee, Director
Department of Housing
and Human Concerns
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Ukumehame Subdivision – Phase I and II
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Ms. Lee:

Glenn Tadaki and I appreciate the opportunity to meet with you on December 21st to discuss the County's affordable housing policy requirements and the above-referenced project.

As you may recall, the proposed action is unique in that it involves the subdivision of land for the future County park and future State highway right-of-way, as well as a river corridor lot and 45 agricultural lots and related improvements. More specifically, it involves the consolidation of 12 existing lots and the re-subdivision of this land to create three (3) large lots (Phase I Subdivision). In addition, two (2) of these large lots, totaling approximately 100 acres, will be transferred to the County of Maui for a future County park and a future State highway right-of-way. Furthermore, the remaining large lot will be concurrently subdivided for a river corridor lot (Ukumehame Stream) and 45 agricultural lots and related improvements (Phase II Subdivision). The river corridor lot will be undeveloped and kept as a natural greenway and open space. A copy of a preliminary site plan is attached for your reference.

In our meeting, you mentioned that you would be requesting that the developer of this project comply with the County's affordable housing policy and that a monetary contribution of \$150,000.00, which would be applied toward the cost of constructing affordable housing units on the island of Maui, would be suggested. This assessment is based upon 10% of the total number of proposed units multiplied by the County's current contribution rate of \$30,000.00 per unit (10% of 45 units = 5 units (rounded) X 30,000.00 per unit = \$150,000.00).

Ms. Alice L. Lee
January 14, 2005
Page 2

It is our understanding that the scope of the affordable housing policy was originally intended to apply to zoning changes that establish land use designations under which a residential housing project (i.e., 10 or more long-term residential housing units or lots) is redeveloped and that the policy has recently been broadened to encompass other land use-related requests. We also understand that the County has not imposed affordable housing policy requirements for agricultural subdivisions.

With regard to the affordable housing policy requirements, it is important to understand that the proposed action does not constitute a residential housing project. The development of the future County park and future State highway right-of-way does not trigger any affordable housing policy requirements nor does the proposed agricultural subdivision since it will provide lot owners with the opportunity to pursue agricultural activities, as well as an opportunity to contribute new housing units to the island's overall housing inventory.

It should be noted that the developer and County officials have worked closely together to prepare the Purchase and Sale Agreement for the transfer of the land (from the landowner to the County) for the future County park and future State highway right-of-way. The acquisition of this land is the County's first step toward creating an eight-mile long coastal recreation area that would extend from the Pali to Puamana that would result from realigning Honoapiilani Highway away from the shoreline in order to eliminate road closures due to high surf and shoreline erosion. It is important to note that the purchase of this land has garnered the widespread support of the public and government sectors, including the Maui County Council, which unanimously recommended its approval for the purchase of this land at its meeting on November 5, 2004.

We would also like to note that the Purchase and Sale Agreement stipulates that the landowners obtain a Special Management Area (SMA) Use Permit and submit an Environmental Assessment for the proposed Ukumehame Subdivision - Phase I and II. It should be noted that the proposed Phase II Subdivision is not located within the limits of the SMA; however, a narrow strip of land along the *mauka* side of Honoapiilani Highway, which lies within the approximately 100 acres to be transferred to the County of Maui (for the future County park and future State highway right-of-way), is situated within the SMA.

The subject property is designated for agricultural uses by the State Land Use Commission, West Maui Community Plan, and Maui County zoning. Were it not for the Purchase and Sale Agreement, the proposed Phase II Subdivision would not require an SMA Use Permit or any other land use approvals as it has the appropriate land use designations for development and would only require subdivision and construction-


Ms. Alice L. Lee
January 14, 2005
Page 3

related permits and approvals. Furthermore, if it were not for the Purchase and Sale Agreement and the use of County funds for the acquisition of the land for the future County park and future State highway-right-of-way, the preparation of an Environmental Assessment would not be triggered.

It should also be noted that an April 2004 appraisal of the land for the future County park and future State highway-right-of-way revealed an "as is" market valuation of \$5.43 million, which exceeds (by \$1.43 million) the \$4.0 million that the County will be paying for this land. The cost differential realized by the County as a result of this lower price would more than offset any affordable housing policy contribution that would otherwise be required if the proposed action were a residential housing project.

In closing, while we respect your attempts to broaden the applicability of the County's affordable housing policy, we feel that given the unique circumstances of this situation, the provisions of the affordable housing policy do not apply. Thank you again for taking the time to meet with us and please feel free to call me at 874-5263 should you have any questions.

Sincerely,


Donna J. Clayton
Project Coordinator

Encl.


Cc: Mayor Alan Arakawa
Mr. Rory Frampton and Mr. Glenn Tadaki, Chris Hart & Partners



Other Agency Comments

United States Department of Agriculture

USDA

 NRCS Natural Resources
Conservation Service

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

Our People...Our Islands...In Harmony

May 17, 2004

Ms Kivette A. Caigoy, Staff Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, Hawaii 96793

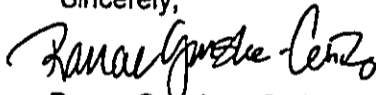
DEPT OF I. & N.
COUNTY OF MAUI
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04 MAY 18 P 1:21

Subject: I.D.: SMX 2004/0243
TMK: (2) 4-8-002:009
Project Name: Ukumehame Subdivision
Applicant Pacific Rim Land, Inc.

Dear Ms Caigoy,

The Special Management Assessment Application Form does not provide adequate information or maps on proposed drainage or erosion control to comment.

Sincerely,



Ranae Ganske - Cerizo
Acting District Conservationist

PHONE (808) 594-1888



FAX (808) 594-1865

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

'04 MAY 19 P12:22

DEPT OF PLANNING
COUNTY OF MAUI

HRD04-1393

May 18, 2004

Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

Subject: Request to Review Special Management Assessment Application Form and Subdivision Map for Pacific Rim Land, Inc.'s Ukumehame Subdivision, SMX 2004/0243, TMK: (2) 4-8-02:09

Dear Mr. Foley:

Thank for your letter dated May 10, 2004 regarding Special Management Assessment Application Form and Subdivision Map for Pacific Rim Land, Inc.'s Ukumehame Subdivision, SMX 2004/0243, TMK: (2) 4-8-02:09. Your letter requests that the Office of Hawaiian Affairs (OHA) review and comment on the proposed project.

The project description, Access Roadways for the Ukumehame Agricultural Subdivision, notes,

"The subdivision described below is outside of the SMA, except for the most makai portions of the two proposed access roadway connections to Honoapiilani Highway. The proposed roadway improvements in the SMA are valued at less than \$125,000. They will consist of two roadways, one of 104 ft. and one of 290 ft. Both will be a minimum of twenty feet wide and constructed of base and asphalt."

The subdivision (L.U.C.A #4.738) that is scheduled for consolidation and re-subdivided (into twelve lots) consists of twelve (12) subdivided Agricultural lots and will include the following:

1. "Two (2) lots consisting of a total of approximately one hundred (100) acres, which are to be conveyed to the County of Maui for use as a neighborhood park and by-pass highway.
2. One (1) lot outside of the SMA, consisting of approximately three hundred thirty-nine (339) acres, which will be concurrently subdivided into 45 lots.
3. The existing accesses will be replaced with two roadway accesses across the two parcels to be conveyed to the County of Maui and the large parcel above. A small portion of the highway end of these two parcels falls within the SMA."

Affordable Housing Recommendations

OHA staff recommends that should any lots of the potential subdivision (as proposed to be consolidated and re-subdivided, which appear to be located outside of the Special Management Area (SMA)) include residential housing developments, the project developer should incorporate affordable housing measures into its plans, in accordance with U.S. Department of Housing and Urban Development guidelines.

An April 11, 2004 Honolulu Advertiser article notes the following: 30,000 affordable housing units are needed to meet demand in Hawai'i, but as of 1992 only 2,000 affordable housing units have been constructed. As a consequence, clearly there is a need to address the issue of affordable housing for this and other proposed projects.

Archaeological Sites

It is unclear whether or not the proposed roadway improvements (within the SMA) or the subdivision in general (which appears to be outside of the SMA), impact any burials or archaeological sites, because Title Guaranty of Hawaii, Inc.'s Preliminary Report, Schedule B, Exceptions, to the titleholder indicates the following:

"(D) Various archaeological sites as shown on the map prepared by Kirk T. Tanaka, Land Surveyor, with R.T. Tanaka Engineers, Inc., dated June 22, 2001, last revised May 20, 2002, approved by the Department of Public Works and Waste Management, County of Maui, on October 1, 2002, and as recommended for preservation in Archaeological Inventory Survey and Subsurface Testing of a 440 acre parcel, Ahupuaa of Ukumehame, District of Lahaina, Island of Maui (TMK: 4-8-02:09), prepared by Cultural Surveys Hawaii, February 1999."

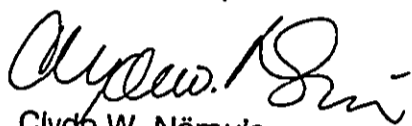
As a consequence, it is unclear whether or not the proposed project would impact any of the sites (noted above by Title Guaranty of Hawaii, Inc.). Please provide OHA with additional information regarding the proposed project's impact on any archaeological or cultural sites.

In the interim, as the project proceeds, in accordance with Hawaii Revised Statutes (HRS), §6E-43.6 and Hawaii Administrative Rules (HAR), Title 13, Subtitle 13, Chapter 300, Rules of Practice and Procedure Relating to Burial Sites and Human Remains, if any significant cultural deposits or human burials are encountered on the

site¹, work will cease in this particular area and the State Historic Preservation Division will be contacted.

If you have questions or concerns please contact Matthew Myers, Policy Advocate at 594-1945 or matthewm@oha.org.

'O wau iho nō,



Clyde W. Nāmu'o
Administrator

¹OHA staff notes that during the grading, grubbing for the proposed project burials or archaeological sites could be found on portions of the parcel.

LINDA LINGLE
GOVERNOR OF HAWAII



04 MAY 21 12:04



DEPT. OF LAND & NATURAL RESOURCES
00

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

May 18, 2004

Mr. Glen Ueno
Department of Public Works and Environmental Management
Development Services Administration
250 South High Street
Wailuku, Hawaii 96793

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LOG NO: 2004.1560
DOC NO: 0405CD28

Dear Mr. Ueno,

SUBJECT: Chapter 6E-42 Historic Preservation Review -Construction Plan Review for the Proposed Ukumehame Subdivision, Phase II (File No.: 4.876) [County/DSA] Ukumehame Ahupua`a, Lahaina District, Island of Maui
TMK: (2) 4-8-002:009, 048, 052-056, 060, 061, 065, 066, 068, & 070

Thank you for the opportunity to review and comment on the Construction Plan Review for the proposed Ukumehame Subdivision, Phase II, which was received by our staff April 24, 2004. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject property.

We have previously provided comments for the Preliminary Plat Review for the proposed Ukumehame Subdivision, Phase II (SHPD DOC NO.: 0310CD37/LOG NO.: 2003.2074). As these comments still apply they are paraphrased below.

In 1997 Cultural Surveys Hawaii (CSH) conducted an archaeological inventory survey of the proposed project area. During the survey seventeen historic sites were identified. We have reviewed the report (*Archaeological Inventory Survey and Subsurface Testing of a 440 Acre Parcel, Ahupua`a of Ukumehame, District of Lahaina, Island of Maui* [TMK: 4-8-002:9]. Devereux 1999) documenting the findings and concurred with the recommendation of preservation of 10 of the sites (SHPD DOC NO.: 9908RC71/LOG NO.: 24021). In 2000, CSH submitted a preservation plan for these sites (*Archaeological Preservation Plan for 10 Sites Within a 440-Acre Parcel, Ahupua`a of Ukumehame, District of Lahaina, Island of Maui* [TMK: 4-8-02:09] Hammatt 2000). We have reviewed and accepted this plan (SHPD DOC NO.: 0008MK12/LOG NO.: 26200).

In reviewing the subject plat, we note that neither the established buffer zones nor all of the sites recommended for preservation have been plotted on the submitted plans. Thus, we recommend that no action be taken on the subject subdivision until we have received a corrected site plan with the site locations and buffers zones clearly plotted by a licensed surveyor. We shall complete our review once we receive an amended plat showing the significant historic sites to be preserved.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,

P. Holly McEldowney
P. Holly McEldowney, Administrator
State Historic Preservation Division

CD:jen

c: Michael Foley, Director, Dept of Planning, 250 South High Street, Wailuku, HI 96793
Cultural Resources Commission, Planning Dept, 250 S. High Street, Wailuku, HI 96793



REPLY TO
ATTENTION OF: CEPOH-EC-T

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

May 20, 2004

'04 MAY 21 P12:06

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

Civil Works Technical Branch

Mr. Kivette A. Caigoy, Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku, Maui 96793

Dear Mr. Caigoy:

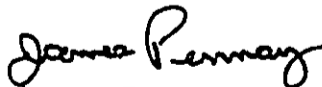
Thank you for the opportunity to review and comment on the Special Management Area Permit Application for the Ukumehame Subdivision Project, Maui (TMK 4-8-2: 9). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Ukumehame Stream is a jurisdictional water of the U.S.; however, there is not enough information in the document to determine if a DA permit will be required for the project. Once construction plans are developed, the applicant should contact Mr. William Lennan of our Regulatory Branch at (808) 438-6986 to determine permit requirements.

b. The flood hazard information provided on page 8 of the SMA is correct.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,


James Pennaz, P.E.
Chief, Civil Works
Technical Branch

07/21/35

RECEIVED
LINDA LINGLE
GOVERNOR
2004 JUN 2 PM 4:14
OFFICE OF THE MAYOR



04 JUN 17 A9:35
EXECUTIVE CHAMBERS
DEPT. OF PLANNING
COUNTY OF MAUI
RECEIVED
HONOLULU

To: Mike Foley 57.
fyi

MAYOR/MGMT OFFICE	FYI	Handle	Comment	See Mr	Draft Copy for Mayor's sig	FALCOG
MAYOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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ADELE R	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DAVE C.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DON C.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JAN B.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MELE C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MERCY N.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WILLY A.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DENNY S.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
KEN T	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OFC MGR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date _____ Div _____
By _____

May 24, 2004

The Honorable Alan M. Arakawa
Mayor, County of Maui
200 South High Street
Wailuku, Hawaii 96793-2155

Dear Mayor Arakawa: *Alan*

Thank you for your letter that requests the expeditious processing and approval of the proposed access points from Honoapiilani Highway to the new Ukumehame mauka subdivision.

Our Department of Transportation, Highways Division, Right-of-Way Branch, will review and respond directly to the Project Coordinator (Donna J. Clayton, Pacific Rim Land, Inc.) by June 15, 2004. A copy of our response will be provided to you.

Please contact Rodney Haraga, Director of the Department of Transportation, at (808) 587-2150 if further assistance is necessary.

Sincerely,
Linda Lingle
LINDA LINGLE

c: Ms. Donna J. Clayton

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461



May 25, 2004

Ms. Kivette A. Caigoy, Staff Planner
County of Maui-Department of Planning
250 S. High Street
Wailuku, HI 96793

Dear Ms. Caigoy:

Subject: Ukumehame Subdivision
TMK: (2) 4-8-002:009
I.D.: SMX 2004/0243

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. For roads A and C in the SMA area, MECO poles will have to be installed. Therefore, the developer should have MECO included as part of this SMA to avoid any delays in electrical service. Please have the developer contact us.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

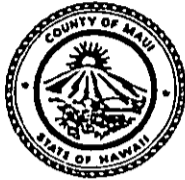
Sincerely,

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

Neal Shinyama
Manager, Engineering

NS/dt:ikh

ALAN M. ARAKAWA
MAYOR



CARL M. KAUPALOLO
CHIEF

NEAL A. BAL
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY

200 DAIRY ROAD
KAHULUI, MAUI, HAWAII 96732
(808) 270-7561
FAX (808) 270-7919

June 15, 2004

Mr. Michael Foley, Director of Planning
Department of Planning
250 South High Street
Wailuku, HI 96793

Subject: SMX 2004/0243, Ukumehame Subdivision, TMK 2-4-8-002:009

Dear Michael Foley,

I have had the opportunity to review the above subject. I have no comment at this time. A thorough review will be conducted during the permit process concerning water for fire protection and emergency roadways.

Sincerely,

A handwritten signature in black ink, appearing to read "Valeriano F. Martin".

Valeriano F. Martin
Captain
Fire Prevention Bureau

DEPT OF PLANNING
COUNTY OF MAUI
'04 JUN 15 P2:32

04/2781

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

'04 JUL 29 P12:08

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

In reply, please refer to:
File:

July 27, 2004

04-674A CAB

TO: Michael W. Foley, Director
Department of Planning
County of Maui

FROM: Thomas E. Arizumi, P.E., Chief *TE Arizumi*
Environmental Management Division

SUBJECT: Special Management Area Permit Application for the Proposed
Ukumehame Subdivision

This memo is to transmit the following comments on the subject document:

Control of Fugitive Dust:

There is a significant potential for fugitive dust emissions during all phases of construction. Proposed construction activities will occur in proximity to existing public areas and thoroughfares, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

- a) Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;

Mr. Michael W. Foley
July 27, 2004
Page 2

- b) Provide an adequate water source at the site prior to start-up of construction activities;
- c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d) Minimize dust from shoulders and access roads;
- e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f) Control dust from debris being hauled away from the project site.

If you have any questions, please contact Mr. Barry Ching of the Clean Air Branch at 586-4200.

BC:jhm

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 1, 2004

SMX 2004-0243
UKUMEHAME

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD-NAV

Honorable Michael W. Foley
Planning Director
County of Maui
Planning Department
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: I.D. Nos.: SMX 2004/0243
Applicant: Pacific Rim Land, Inc.
Project: Ukumehame Subdivision
Authority: County of Maui Department of Planning
TMK: (2) 4-8-002: 009

Thank you for the opportunity to review and comment on the subject matter.

The Department of Land and Natural Resources' (DLNR) Land Division made available or distributed a copy of the document pertaining to the subject matter to the following DLNR Divisions for their review and comment:


- Division of Forestry and Wildlife
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Maui District Land Office

Enclosed please find a copy of the Commission on Water Resource Management and Engineering Division comment.

The Department of Land and Natural Resources has no other comment to offer on the subject matter.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,


DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

TER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
CLAYTON W. DELA CRUZ
JAMES A. FRAZIER
CHIYOME L. FUKINO, M.D.
STEPHANIE A. WHALEN

EDWIN T. SAKODA
ACTING DEPUTY DIRECTOR

May 19, 2004

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Edwin T. Sakoda, Acting Deputy Director ^R
Commission on Water Resource Management (CWRM)

SUBJECT: Ukumehame 45+lot Subdivision SMA Assessment

FILE NO.: SMX 2004-0243

RECEIVED
LAND DIVISION
2004 MAY 20 11:19:07

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- OTHER:

The applicant has two permitted and drilled wells of fairly small capacity, one brackish, a second low in chlorides, and an application for a third in the vicinity of the second. No other potable source is known. Use of stream flow for irrigation may require additional permits and an amendment to the interim instream flow standard.

If there are any questions, please contact Charley Ice at 587-0251.

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 13, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD/NAV
Ukumehame

SMX 2004-0243.CMT
Suspense Date: 5/27/04

MEMORANDUM:

TO: Division of Aquatic Resources
XXX Division of Forestry & Wildlife
Na Ala Hele Trails
XXX Engineering Division
Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Maui District Land Office
Land-Planning and Development

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: SMA Assessment Application
I. D. No.: SMX 2004-0243
Applicant: Pacific Rim Land, Inc.
Project: Ukumehame Subdivision
TMK: 2nd/ 4-8-002: 009
Authority: County of Maui Department of Planning

RECEIVED
LAND DIVISION
2004 MAY 26 P 3:09
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

Please review the document pertaining to the subject matter and submit your comment (if any) on Division letterhead signed and dated by the suspense date.

Should you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Comments attached.

Division: Engineering
Date: 5/26/04

Signed: Eric T. Hirano
ERIC T. HIRANO, CHIEF ENGINEER
Print Name: _____

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: UKUMEHAME

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- () Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in ____.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- (X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- (X) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.
- () Additional Comments: _____

- (X) Other: Please correct information reflected on page 8 of 8, County of Maui Department of Planning Zoning and Flood Confirmation Request Form. Majority of the project site is in Zone C and small portion is in V8.

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: _____

ERIC T. HIRANO, CHIEF ENGINEER

Date: _____

5/26/04

LINDA LINGLE
GOVERNOR OF HAWAII



'04 JUN 14 P1:29

DEPT. OF PLANNING STATE OF HAWAII
COUNTY OF MAUI DEPARTMENT OF LAND AND NATURAL RESOURCES
RECEIVED LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 9, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

LD-NAV

SMX 2004-0243.RCM2
UKUMEHAME

Honorable Michael W. Foley
Planning Director
County of Maui
Planning Department
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: I.D. Nos.: SMX 2004/0243
Applicant: Pacific Rim Land, Inc.
Project: Ukumehame Subdivision
Authority: County of Maui Department of Planning
TMK: (2) 4-8-002: 009

This is a follow-up to our letter to you dated June 1, 2004 pertaining to the subject matter.

Enclosed please find a copy of the Division of Forestry and Wildlife comment.

The Department of Land and Natural Resources has no other comment to offer on the subject matter.

If you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 1-808-587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: MDLO

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

June 17, 2004

'04 JUN 18 P2:40

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH
LORRIN W. PANG, M. D., M. P. I
DISTRICT HEALTH OFFICER

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawai'i 96793

Attention: Kivette A. Caigoy

Dear Mr. Foley:

Subject: Ukumehame Subdivision
TMK: (2) 4-8-002:009
SMX 2004/0243

Thank you for the opportunity to comment on the Special Management Area Permit application for the Ukumehame Subdivision. The following comments are offered:

1. All wastewater plans must conform to applicable provisions of Hawaii Administrative Rules (HAR) Chapter 11-62, "Wastewater Systems".
2. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.
3. The Army Corps of Engineers (COE) should be contacted to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. A Section 401, Water Quality Certification is required when a federal permit is required.
4. A private water system will be developed for this subdivision. This system is considered a "Public Water System" as defined in HAR, Chapter 11-20. A "Public Water System" is a system that provides water for human consumption through pipe or other constructed conveyance and has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. All public water systems are regulated by the Department of Health and shall be in compliance with HAR, Chapter 11-20.

Mr. Michael W. Foley
June 17, 2004
Page 2

5. All lands formerly in the production of sugarcane should be characterized for arsenic contamination. If arsenic is detected above the US EPA Region preliminary remediation goal for non-cancer effects, then a removal and or remedial plan must be submitted to the Hazard Evaluation and Emergency Response Office of the Department of Health for approval. The plan must comply with Chapter 128D, Environmental Response Law, Hawaii Revised Statutes (HRS), and Title 11, Chapter 11-451, HAR, State Contingency Plan.

Should you have any questions, please call me at 984-8230.

Sincerely,



Herbert S. Matsubayashi
District Environmental Health Program Chief

c: HEER
SDWB
Roland Asakura
Gordon Muraoka
Roland Tejano

LINDA LINGLE
GOVERNOR OF HAWAII



'04 JUN 29 P12:12



DEPT OF PLANNING
COUNTY OF MAUI
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

June 21, 2004

Mr. Michael Foley, Planning Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

LOG NO: 2004.1849
DOC NO: 0406CD38

Dear Mr. Foley,

**SUBJECT: Chapter 6E-42 Historic Preservation Review – Special Management Area
Assessment Permit Application for the Proposed Ukumehame Subdivision (Subject
I.D.: SMX 2004/0243) [County/Planning]
Ukumehame Ahupua`a, Lahaina District, Island of Maui
TMK: (2) 4-8-002:009**

Thank you for the opportunity to review and comment on the Special Management Area Assessment Permit Application (SMX) for the proposed Ukumehame Subdivision, which was received by our staff 12 May 2004. Based on the submitted SMX, we understand the following:

- 1) The subdivision is located outside of the SMA area, except for the most makai portion of the two proposed roadway connections to Honoapi`ilani Highway. Both of these roadways will be a minimum of twenty feet wide.
- 2) The subdivision has been previously subdivided (LUCA File No. 4.738) and presently consists of twelve subdivided agricultural lots.
- 3) Two lots consisting of a total of approximately one hundred acres are to be conveyed to the County of Maui for use as a neighborhood park and a bypass highway.
- 4) One lot (approximately 339 acres) located outside of the SMA will be concurrently subdivided into 45 lots.
- 5) The existing accesses will be replaced with two roadway accesses across two parcels to be conveyed to the County of Maui to serve both the parcels to be conveyed to the County of Maui and the large parcel above. A small portion of the highway end of these two roadway parcels falls within the SMA.

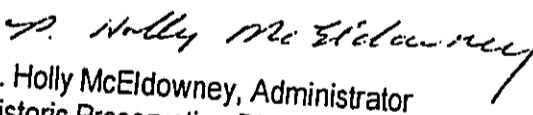
Mr. Michael Foley, Planning Director
Page 2

In 1997, Cultural Surveys Hawaii conducted an archaeological inventory survey on a 440-acre property which includes the proposed locations of the two well sites. During the survey eighteen historic sites were identified (50-50-08-02, -03, -3165, -3184, -4367, -4381, -4438, -4451, and -4456- 4454, 4455, 4456, 4494, 4828, 3167, 4439, 4440, and 4453). In our review of the archaeological report documenting the findings of the survey (SHPD DOC NO.: 9908RC71), we agreed with the mitigation proposals that no further archaeological work is necessary at three sites (cattle wall, -3167, and two sugar cane irrigation ditches, -4439, and -4440). After further testing at site -4453, it was determined that this site did not require any additional archaeological work (Hammatt 2000). Based on the findings of the inventory survey, it was determined that fourteen of the sites be preserved. Five of the fourteen sites include burial components. Mitigation measures for these sites are discussed in a Burial Treatment Plan. Cultural Surveys Hawaii has prepared a Burial Treatment Plan for the remaining sites which has been reviewed and accepted by our Burials Program and the Maui/Lana'i Islands Burial Council (24 February 2000). Mitigation measures for the remaining 10 historic sites to be preserved are discussed in a Preservation Plan. We have reviewed and accepted the Preservation Plan for the ten historic sites (SHPD DOC NO.: 0008MK12/LOG NO.: 26200).

In reviewing the subject SMX, we note that neither the established buffer zones nor all of the sites recommended for preservation have been plotted on the submitted plans. Thus, we are unable to provide comments at this time. Please re-submit the subject SMX with a corrected plat map clearly indicating the location of the historic sites discussed in the approved preservation plan and burial treatment plan, identified by the appropriate State Inventory of Historic Property (SIHP) designation, and plotted by a licensed surveyor. We shall complete our review once we receive an amended plat showing the significant historic sites to be preserved.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,


P. Holly McEldowney, Administrator
Historic Preservation Division

CD: sky

c: Maui Cultural Resources Commission, Dept of Planning, 250 S. High Street, Wailuku, HI 96793
Chair, Maui/Lana'i Islands Burial Council
Kana'i Kapeliela, Burial Sites Program

SEP-22-2004 WED 03:54 PM PACIFIC RIM LAND INC.

FAX NO. 8088792557

P. 02

LINDA LINGLE
GOVERNOR



RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

HIGHWAY DESIGN BRANCH, ROOM 688A
BRIDGE DESIGN SECTION, ROOM 611
CADASTRAL DESIGN SECTION, ROOM 600
HIGHWAY DESIGN SECTION, ROOM 609
HYDRAULIC DESIGN SECTION, ROOM 636
TECHNICAL DESIGN SERVICE, ROOM 688

RIGHT-OF-WAY BRANCH, ROOM 691

TRAFFIC BRANCH, ROOM 602

MOTOR VEHICLE SAFETY OFFICE, ROOM 611

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION AT KAPOLEI
601 KAMOKILA BOULEVARD, ROOM 891
KAPOLEI, HAWAII 96707

IN REPLY REFER TO:

HWY-RM 3.81987

July 16, 2004

RECEIVED

JUL 20 2004

PACIFIC RIM LAND, INC.
MAUI - MAIN

Ms. Donna J. Clayton
Pacific Rim Land, Inc.
P.O. Box 220
Kihei, Hawaii 96753

Dear Ms. Clayton:

SUBJECT: LAHAINA-WAILUKU ROAD, FAP NO. F-30 (3)
LOWALU-PALI SECTION, LOWALU AND UKUMEHAME
TMK: (2) 4-8-02-09, UKUMEHAME SUBDIVISION
REQUEST TO RELOCATE/WIDEN TWO ACCESS OPENINGS

We have completed our review and will continue to process your request subject to the following conditions:

1. The landowners/developer must comply with all applicable statutes, ordinances, rules, and regulations of the Federal, State and County governments.
2. The landowners/developer must defend, hold harmless and indemnify the State, from and against all claims or demands from damages, resulting from said two designated sixty feet wide access openings.
- ✓ 3. The landowners must enter into an "Exchange of Vehicle Access Rights" document whereby the existing accesses are deleted and the two designated access openings permitted. The two designated access openings onto Lahaina-Wailuku Road must be limited to the subject subdivision. In the future, if there is any additional subdivision or changes in land use, the applicant must request in writing to the Department of Transportation (DOT) for review and approval before the final subdivision or land use approval is obtained. In such instance, applicant may be required to pay to DOT additional compensation and provide any additional improvements, such as extensions of the turning lands and traffic signal for any additional impact to Lahaina-Wailuku Road.

Ms. Donna Clayton
Page 2
July 16, 2004

HWY-RM
3.81987

- ✓ 4. The two designated access openings must be appraised for their fair market value by our appraiser. The landowners must agree to pay for any consideration as determined by our appraiser for the two designated access openings.
- ✓ 5. The landowners/developer must submit two (2) copies of a metes and bounds description of the boundary along the Lahaina-Wailuku Road to show existing access openings deleted and the new two designated access openings permitted, together with the abutter's rights of vehicle access restriction, which will be used as an exhibit to the Exchange of Vehicle Access Rights document, and approved by our Cadastral Engineer.
6. The landowners/developer must submit a current search for TMK: (2) 4-8-02:09 to show evidence of their status of title.
- ✓ 7. The landowners/developer must design and construct to AASHTO standards and current State standards at no cost to the State for the following auxiliary lanes for safety:
 - a. A northbound deceleration lane for right turns into the subdivision,
 - b. A southbound deceleration/left turn storage lane for left turns into the subdivision,
 - c. A southbound shelter/acceleration lane to accommodate left turns out of the subdivision, and
 - d. A northbound right turn acceleration lane to accommodate right turns out of the subdivision.
8. The development of the subdivision must be coordinated with the following Highway Division Project and respective project engineers:
 - ✓ a. Corridor study on realignment for Honoapiilani Highway from Maalaea to Launiupoko, Wayne Kawahara, Planning Branch, 587-6257.
 - ✓ b. Statewide Highway Shoreline Protection, Project Number HWY-08-98, Karen Chun, Design Branch, 692-7552.
9. The landowners must reserve land to accommodate the future improvements in the two plans/study above and to dedicate any additional right-of-way to the State at the request of DOT.
10. The exclusions cannot be land locked and must be allowed to use the two permitted access openings.
11. State Highways design standards must be used for all improvements installed by the landowners/developer inside DOT's right-of-way.

Ms. Donna Clayton
Page 3
July 16, 2004

HWY-RM
3.81987

12. Once the construction plans are approved, the landowners/developer must obtain a permit from our Maui District Office at 650 Palapala Drive, Kahului, Hawaii 96732 to begin construction.
13. The landowners/developer must be responsible for all administrative costs, documentation costs and recording fees incurred for the proposed action, in addition to the fair market consideration for the two designated permitted access openings.

If the above conditions are acceptable, please have the landowners/developer sign the Acceptance portion of this letter and return it to this office with the requested information and a check for \$1,000.00 made payable to the STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, to defray administrative costs. The \$1,000.00 is for services rendered and is non-refundable should your clients decided not to proceed with the proposed action. Please be advised that landowners will be required to pay the difference should the cost be more than the remittance, otherwise any overage will be refunded.

If we don't hear from you within thirty days from the date of this letter, we will assume the landowners/developer are no longer interested in the proposed action and we will consider this matter closed.

If you have any questions, please call me at (808) 692-7338.

Very truly yours,

Angela C. Naito
ANGELA C. NAITO
Right-of-Way Agent
Property Management Section

c: The Honorable Alan M. Arakawa
Mayor, County of Maui

Ms. Donna Clayton
Page 4
July 16, 2004

HWY-RM
3.81987

ACCEPTANCE:

The undersigned hereby accepts the above conditions for the two designated access openings as determined by the State of Hawaii, Department of Transportation over Lahaina-Wailuku Road, FAP NO. F-30 (3), Olowalu - Pali Section. It is agreed that the conveyance shall be made through an "Exchange of Vehicle Access Rights" document.

Signature Title/Capacity Date

Signature Title/Capacity Date

PLEASE PRINT IN DATE BELOW FOR "EXCHANGE OF VEHICLE ACCESS RIGHTS" DOCUMENT.

NAME TITLE/CAPACITY

ADDRESS CITY/STATE ZIPCODE

NAME TITLE/CAPACITY

ADDRESS CITY/STATE ZIPCODE

NAME TITLE/CAPACITY

ADDRESS CITY/STATE ZIPCODE

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

'04 JUL 27 AM 11:46
DEPT OF PLANNING
COUNTY OF MAUI
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In reply, please refer to:
EMO / CWB

07090PKP.04

July 23, 2004

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Ms. Kivitte A. Caigoy
Staff Planner

Dear Mr. Foley:

**Subject: Ukumehame Subdivision
SMX 2004/0243**

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."
2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:
 - a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).
 - b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the commencement of the construction activities.
 - c. Discharges of treated effluent from leaking underground storage tank remedial activities.
 - d. Discharges of once through cooling water less than one (1) million gallons per day.

Mr. Michael W. Foley
July 23, 2004
Page 2

- e. Discharges of hydrotesting water.
- f. Discharges of construction dewatering effluent.
- g. Discharges of treated effluent from petroleum bulk stations and terminals.
- h. Discharges of treated effluent from well drilling activities.
- i. Discharges of treated effluent from recycled water distribution systems.
- j. Discharges of storm water from a small municipal separate storm sewer system.
- k. Discharges of circulation water from decorative ponds or tanks.

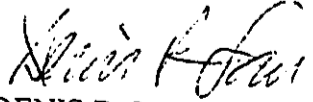
The CWB requires that a Notice of Intent (NOI) to be covered by an NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at:

<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>

3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. NPDES general permits do not cover discharges into Class 1 or Class AA State waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>
4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact Ms. Kris Poentis, of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,


DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII '04 JUL 30 AM 11:59
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
July 28, 2004

In reply, please refer to:
EMD/SDWB

Mr. Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Ms. Kivitte A. Caigoy
Staff Planner

Dear Mr. Foley:

SUBJECT: UKUMEHAME SUBDIVISION
SMX 2004/0243

The Safe Drinking Water Branch of the Hawaii Department of Health offers the following comments on the subject document. We administer programs in the areas of: 1) public water systems; 2) underground injection control; and 3) groundwater protection. Our general comments on project are as follows.

Public Water Systems

- Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems.
- All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.
- Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of Chapter 20. This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

Mr. Michael W. Foley
July 28, 2004
Page 2

- The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.
- All sources of public water system sources must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.
- Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification. These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.
- All public water systems must be operated by certified distribution system and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 11-25 titled; Rules Pertaining to Certification of Public Water System Operators.
- All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water system to meet irrigation or other needs must be carefully design and operate these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled; Cross-Connection and Backflow Control is also required.

Mr. Michael W. Foley
July 28, 2004
Page 3

- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai'i Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

Underground Injection Control (UIC)

- Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawai'i Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.
- Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.
- A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

For further information about the UIC permit and the Underground Injection Control Program, please contact the UIC staff of the Safe Drinking Water Branch at 586-4258.

Groundwater Protection Program

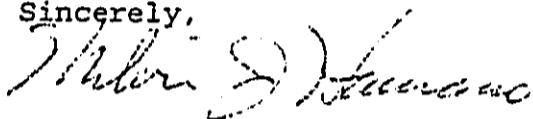
- Projects that propose to develop a golf course are asked to use the Guidelines Applicable to Golf Courses in Hawai'i (Version 6) in order to address certain groundwater protection concerns, as well as other environmental concerns.

Mr. Michael W. Foley
July 28, 2004
Page 4

Further information concerning the Groundwater Protection Program can be obtained by calling the Groundwater Protection Program of the Safe Drinking Water Branch at 586-4258.

Thank you for the opportunity to submit these comments.

Sincerely,



MELVIN J. HAMANO
Environmental Engineer
Safe Drinking Water Branch
Environmental Management Division

MJH:slm

LINDA LINGLE
GOVERNOR OF HAWAII



K.S.
CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

'04 AUG 16 P12:44
DEPT OF PLANNING
COUNTY OF MAUI
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STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD/SHWB

August 10, 2004

The Honorable Michael W. Foley, Director
Department of Planning
County of Maui
250 SouthHigh Street
Wailuku, Hawaii 96793

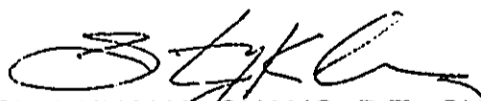
Dear Mr. Foley:

SUBJECT: Ukumehame Subdivision
Special Management Area Permit Application
TMK: (2) 4-8-002:009

Thank you for the opportunity to offer comments on the above document. Your request has been reviewed by the Solid Waste, Underground Storage Tank, and Hazardous Waste programs within the Solid and Hazardous Waste Branch.

We have no comments to offer at this time.

Sincerely,


STEVEN Y.K. CHANG, P.E., CHIEF
Solid and Hazardous Waste Branch

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

'04 AUG 16 P12:42

DEPT OF PLANNING
COUNTY OF MAUI
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STATE OF HAWAII
DEPARTMENT OF HEALTH

P.O. BOX 3378
HONOLULU, HAWAII 96801

August 11, 2004

In reply, please refer to:
EMD / WB

M4 8 002 009.wpd
w11 wb040709

Mr. Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Foley:

Subject: **Special Management Area Assessment Application Form**
Ukumehame Subdivision, Maui, Hawaii
TMK: (2) 4-8-002: 009 439 acres

We have reviewed the subject document proposes to consolidate and re-subdivide approximately 439 acres into Lots A, B & C. Information in the application does not thoroughly address wastewater generation, treatment or disposal. Therefore, we can only offer our tentative approval of said project as long as wastewater treatment and disposal conforms to provisions of our wastewater rules.

Should connection to the public sewer system not be available, wastewater generation and treatment should be via construction and use of on site wastewater systems. No new cesspools can be utilized in this area as the area is designated as a critical wastewater disposal area.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at telephone (808)586-4294.

Sincerely,

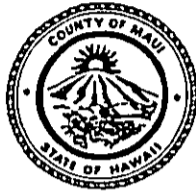
HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

c: June Harrigan-Lum, EPO

ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RALPH M. NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

JOHN D. HARDER
Solid Waste Division

August 13, 2004

MEMO TO: MICHAEL W. FOLEY, DIRECTOR OF PLANNING

FROM: *for* GILBERT S. COLOMA-AGARAN, DIRECTOR OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT *Milton Coloma*

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT APPLICATION
UKUMEHAME SUBDIVISION
TMK: (2) 4-8-002:009
SMX 2004/0243

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
04 AUG 24 08:08

We reviewed the subject application and have the following comments:

1. The architect and owner are advised that the project is subject to possible tsunami and flood inundation. As such, said project must conform to Ordinance No. 1145, pertaining to flood hazard districts.
2. A 30' radius shall be provided at the intersection of proposed Subdivision road/driveway and the adjoining subdivision roads and State roads.
3. A detailed and final drainage report and a Best Management Practices Plan (BMP) shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydro logic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the

Memo to Michael W. Foley, Planning Director
August 13, 2003
Page 2

maximum extent practicable.

4. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc. shall be shown on the project plat plan.
5. A site plan and a sight distance report to determine required sight distance and available sight distance at existing and proposed street intersections shall be provided for our review and approval.
6. No County sewer in this area. The proposed sewer improvements shall be privately owned and maintained.
7. If access roadways are to be dedicated to the County of Maui, they are to be built to County standards.
8. The "Tank Access Road" shall be kept under private ownership and maintenance, unless such is to be dedicated to the County Department of Water Supply.
9. Preliminary subdivision approval was granted to both Ukumehame Subdivision - Phases I and II - Subdivision File Nos. 4.875 and 4.876 on October 10, 2003.
10. In addition to affecting TMK:(2) 4-8-002:009, the subject subdivisions also encompass TMK:(2) 4-8-002:048, 052-056, 060, 061, 065, 066, 068, & 070.

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

da

S:\LUCAICZMIUkumehame_Subd_smx_48002009_da.wpd

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

'04 AUG 23 P1:22

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

In reply, please refer to:
File: EHA/HEER Office

2004-334 KHS

August 18, 2004

Mr. Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, HI 96793

Attention: Ms. Kivitte A. Caigoy
Staff Planner

Subject: UKUMEHAME SUBDIVISION
SMX 2004 / 0243

Thank you for allowing us to review the subject application. We provide the following comments:

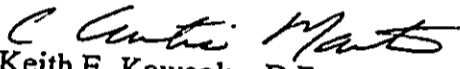
1. A Phase I Environmental Site Assessment (ESA) should be conducted for developments or redevelopments. If the investigation shows that a release of petroleum, hazardous substance, pollutants or contaminants occurred at the site, the site should be properly characterized through an approved Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response Office (HEER) soil and or groundwater sampling plan. If the site is found to be contaminated, then all removal and remedial actions to clean up hazardous substance or oil releases by past and present owners/tenants must comply with Chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.
2. All lands formerly in the production of sugarcane should be characterized for arsenic contamination. If arsenic is detected above the US EPA Region 9 preliminary remediation goal (PRG) for non-cancer effects, then a removal and or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. The plan must comply with Chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan.

Mr. Michael W. Foley
August 18, 2004
Page 2

3. If the land has a history of previous releases of petroleum, hazardous substances, pollutants, or contaminants, we recommend that the applicant request a "no further action" (NFA) letter from the Hawaii State Department of Health (DOH)/Hazard Evaluation and Emergency Response (HEER) Office prior to the approval of the land use change or permit approval.

If you have any questions, please contact Clarence A. Callahan, Ph.D., of my staff at 586-4249.

Sincerely,


for Keith E. Kawaoka, D.Env., Program Manager
Hazard Evaluation and Emergency Response Office

c: Clarence A. Callahan, Acting Supervisor
Site Discovery, Assessment and Remediation Section (DOH/HEER)



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF: CEPOH-EC-T

September 27, 2004

Civil Works Technical Branch

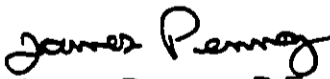
Mr. Rory Frampton
Chris Hart & Partners
1955 Main Street, Suite 200
Wailuku, Maui, Hawaii 96793

Dear Mr. Frampton:

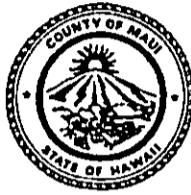
Thank you for the opportunity to review and comment on the Pre-Consultation for Consolidating and Re-Subdividing Lands located at Ukumehame, Maui. Due to the non-specific project information provided, a thorough evaluation could not be completed at this time. However, any work performed within the 100-year floodplain will have to adhere to the requirements of the Federal Emergency Management Agency (FEMA). Additionally, the need for a Department of the Army permit could not be determined based on the information submitted to us. We look forward to reviewing the Environmental Assessment when it becomes available so that site specific information can be provided to you.

If you require additional information, please feel free to contact Ms. Jessie Dobinchick of our Civil Works Technical Branch staff at (808) 438-8876.

Sincerely,


James Pennaz, P.E.
Chief, Civil Works
Technical Branch

ALAN M. ARAKAWA
Mayor



GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

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

September 28, 2004

Mr. Rory Frampton
Chris Hart & Partners, Inc.
1955 Main Street, Suite 200
Wailuku, Maui, Hawaii 96793-1706

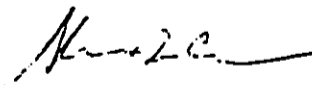
Dear Mr. Frampton:

SUBJECT: ENVIRONMENTAL ASSESSMENT PRE-CONSULTATION
CONSOLIDATION AND RE-SUBDIVISION OF LANDS SITUATED AT
UKUMEHAME, MAUI
TMK 4-8-002:009, 048, 052-056, 060, 061, 065, 066, 068, and 070

We have reviewed the subject application and have no comments or objections to the proposed action.

Thank you for the opportunity to review and comment. Please contact me or Mr. Patrick Matsui, Chief of Planning and Development, at 270-7387 if there are any questions.

Sincerely,


GLENN T. CORREA
Director

c: Patrick Matsui, Chief of Planning and Development

RECEIVED
OCT - 5 2004

CHRIS HART & PARTNERS
Landscape Architecture & Planning

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

November 26, 2004

Mr. Rory Frampton
Chris Hart and Partners, Inc.
1955 Main Street, Suite 200
Wailuku, Hawaii 96707

LOG NO: 2004.3437
DOC NO: 0411CD44

Dear Mr. Frampton,

**SUBJECT: Chapter 6E-42 Historic Preservation Review -Request for Determination/Environmental Assessment Pre-Consultation for The Proposed Consolidation and Re-Subdivision of Lands Situated at Ukumehame, Maui
Ukumehame Ahupua`a, Lahaina District, Island of Maui
TMK: (2) 4-8-002:009, 048, 052-056, 060, 061, 065, 066, 068, & 070**

Thank you for the opportunity to review and comment on the Request for Determination/Environmental Assessment Pre-Consultation for the Proposed Consolidation and Re-Subdivision of Lands Situated at Ukumehame, Maui, which was received by our staff on September 27, 2004. Our review is based on reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was conducted of the subject properties.

Based on the submitted document, we understand the proposed undertaking consists of the consolidation and re-subdivision of 439 acres of vacant land situated in the Ukumehame area of West Maui. Twelve of the lots will be consolidated and re-subdivided into three large lots. Two of the large lots (total of 100 acres) will be sold to the County of Maui for future park use and for a future public highway right-of-way, while the remaining large lot (339 acres) will be subdivided for an agriculture subdivision, with one lot for a river corridor and 45 farm lots. The proposed undertaking will also involve landscaping and infrastructure. Access to the subdivision will be provided by two proposed roadways connecting to Honoapi`ilani Highway.

In 1997 Cultural Surveys Hawaii (CSH) conducted an archaeological inventory survey of the proposed project area. During the survey 17 historic sites were identified. We have reviewed the report documenting the findings and concurred with the recommendation of preservation of 10 of the sites (*Archaeological Inventory Survey and Subsurface Testing of a 440 Acre Parcel, Ahupua`a of Ukumehame, District of Lahaina, Island of Maui* [TMK: 4-8-002:9]. Devereux 1999) (SHPD DOC NO.: 9908RC71/LOG NO.: 24021).

Mr. Rory Frampton
Page 2

In 2000, CSH submitted a preservation plan for these sites (*Archaeological Preservation Plan for 10 Sites Within a 440-Acre Parcel, Ahupua`a of Ukumehame, District of Lahaina, Island of Maui [TMK: 4-8-02:09] Hammatt 2000*). We have reviewed and accepted this plan (SHPD DOC NO.: 0008MK12/LOG NO.: 26200) and it is currently in place.

Given the above information, we believe that any effect the proposed undertaking may have on the significant historic sites known to be present will be mitigated provided the specified conditions of the accepted preservation plan are followed.

If you have any questions, please call Cathleen A. Dagher at 692-8023.

Aloha,


Melanie Chinen, Administrator
State Historic Preservation Division

CD:jen

c: Michael Foley, Director, Dept of Planning, 250 South High St, Wailuku, HI 96793
Cultural Resources Commission, Plng Dept, 250 S. High St., Wailuku, HI 96793

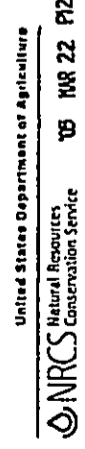
APPENDIX N
Draft EA Comments
and Responses

LETTERS RECEIVED DURING THE DRAFT EA COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

The Draft Environmental Assessment (EA) was published in the March 23, 2005 edition of the Environmental Notice. Copies of the Draft EA were distributed for review and comment to various government agencies, community organizations, and other groups on March 15, 2005 by the Maui County Planning Department in connection with the processing of the Special Management Area (SMA) application for the proposed project. The 30-day public comment period for the Draft EA expired on April 21, 2005, which was the same date as the deadline for comments on the SMA application.

This section contains copies of letters that were received during the Draft EA/SMA comment period, as well as copies of letters responding to substantive comments.

Agency/Organization	Date of Comments	Date of Response
1. Natural Resources Conservation Service	3/18/05	NRR*
2. Dept. of Housing & Human Concerns	3/18/05	NRR*
3. Dept. of Hawaiian Home Lands	3/28/05	NRR*
4. Dept. of Parks & Recreation	3/28/05	NRR*
5. Dept. of Education	4/1/05	NRR*
6. Dept. of Accounting & General Services	4/5/05	NRR*
7. U.S. Army Corps of Engineers	4/6/05	NRR*
8. Maui Electric Company	3/24/05	4/12/05
9. Dept. of Health (Maui)	3/31/05	4/12/05
10. Dept. of Water Supply	3/31/05	4/12/05
11. Office of Hawaiian Affairs	4/12/05	4/22/05
12. Dept. of Public Works & Environ. Mgmt.	4/15/05	4/25/05
13. Maui Planning Commission	3/14/05	4/27/05
14. Na Kupuna O Maui	4/13/05	4/27/05
15. Cultural Resources Commission	4/15/05	4/27/05
16. Commission on Water Resource Mgmt.	4/20/05	4/27/05
17. Maui Police Department	4/21/05	4/27/05
*NRR — No Response Required		



NRCS MAR 22 02 21

210 Ima Kala Street, Suite 200, Wailuku, HI 96793-2100

DEPT OF PLANNING, COUNTY OF MAUI RECEIVED

March 18, 2005

Ms. Kivette Caigoy, Staff Planner
Department of Planning
County of Maui, Hawaii
250 South High Street
Wailuku, Hawaii 96793

Regarding: Application for Special Management Area Use Permit for the
Ukumehame Subdivision - Phase I and II
TMK (2) 4-8-002: 009, 048, 052-056, 060, 061, 068

Dear Ms. Caigoy,

I have received a copy of the Application for Special Management Area Use Permit for the Ukumehame Subdivision - Phase I and II. I have no comments on this project at this time.

Sincerely,

Diana L. Perry
Diana L. Perry
Civil Engineer

Cc: Ranae Ganske-Cerizo, NRCS

The Natural Resources Conservation Service works in partnership with the American people to conserve and sustain natural resources on private lands.

An Equal Opportunity Employer



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

201 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE: (808) 270-7800 FAX: (808) 270-7800

MAR 21 06 29

March 18, 2005

DEPT OF PLANNING,
COUNTY OF MAUI
RECEIVED

TO: KIVETTE CAIGOY, Staff Planner
Department of Planning

FROM: ALICE L. LEE, Director
Department of Housing and Human Concerns

SUBJECT: I.D.: SA 2004/0016 and SM1 2004/0033
TMK: (2) 4-8-02:9, 48, 52-56, 60, 61, 65, 66, 68 & 70
PROJECT NAME: UKUMEHAME CONSOLIDATION, RE-SUBDIVISION
(46-LOT AGRICULTURE SUBDIVISION)

APPLICANT: PACIFIC RIM LAND C/O CHRIS HART & PARTNERS

We have reviewed the Special Management Area (SMA) Use Permit application for Ukumehame Subdivision-Phase I and II and wish to convey our support of the application as the proposed consolidation and re-subdivision of the affected lands will result in two parcels totalling approximately 100 acres to be transferred to the County of Maui for a future County park and a future State highway right-of-way.

Thank you for the opportunity to comment. We are returning the SMA Use Permit application for your use.

ETO:hs

Enclosure

c: Housing Administrator

TO SUPPORT AND ENHANCE THE SOCIAL WELL-BEING OF THE CITIZENS OF MAUI COUNTY

1-317 P 65/12 F-300

1-317 P 65/12 F-300

1-317 P 65/12 F-300

1-317 P 65/12 F-300

1-317 P 65/12 F-300

1-317 P 65/12 F-300

GLENN T. CORREA
Director
JOHN L. BUCK III
Deputy Director
(808) 270-7230
Fax: (808) 270-7234



DEPARTMENT OF PARKS & RECREATION
700 Hali'a Naha'a Street, Unit 2, Waihala, Hawaii 96793

ALAN M. ADAKAWA
Mayor

DEPARTMENT OF PLANNING
COUNTY OF MAUI
100 SOUTH HIGH STREET
MAUI, HAWAII 96703



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
70, 904 IFFY
HONOLULU, HAWAII 96815

MEMORANDUM

March 28, 2005

TO: Michael W. Foley, Planning Director

FROM: Patrick T. Correa, Director

SUBJECT: Environmental Assessment EA 2004/0015 and
Special Management Area Permit Application SM1 2004/0033
Ukumehame Consolidation, Re-subdivision (File No. 4.876)
(2) 4-8-002:009, 048, 052-056, 060, 061, 068

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
MAR 31 09:40

Mr. Michael W. Foley, Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Mr. Foley:

Subject: ID No. EA 2004/0016 and SM1 2004/0033
TMK No. 2-4-8-002: 009, 48, 52-56, 60, 61, 68
Ukumehame Consolidation, Resubdivision

Thank you for the opportunity to review the SMAUP application report for the Ukumehame Subdivision, Phase I and II project. At this time, we anticipate no direct adverse impacts of this project on Hawaiian home lands and have no comments to offer.

If you have any questions, please call me at (808) 586-3801 or call our Planning Office at 586-3836.

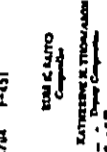
Aloha and mahalo,

Patrick T. Correa
Patrick T. Correa, Chairman
Hawaiian Homes Commission

We have reviewed the subject application and at this time have no comments or objections to the proposed action.

Thank you for the opportunity to review and comment on this matter. Should have any questions or need of additional information, please call me or Patrick Maisui, Chief of Parks Planning & Development at extension 7387.

c: Patrick Maisui, Chief of Parks Planning & Development



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2798
HONOLULU, HAWAII 96828

APR -1 P1:41

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

OFFICE OF BUSINESS SERVICES

April 1, 2005

Mr. Michael W. Foley, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

Attention: Ms. Kivette A. Caigoy, Staff Planner

Dear Mr. Foley:

Subject: Application for Special Management Area Permit for
Ukumehame Subdivision, Phase I and II, Ukumehame, Maui, Hawaii
TMK: 4-8-2-9-4B, 52-56, 60, 61, 65, 66, 68, and 70 (SM1 2005/0033)

The Department of Education (DOE) has reviewed the application for a Special Management Area (SMA) permit for an agricultural subdivision in West Maui. The DOE does not request a school fair-share contribution condition on applications for SMA permits only.

The DOE does note that based on information in the application, the maximum number of residential units in the project is 90 single-family dwellings. The application estimates that based on national standards, the estimated maximum number of students residing in the subdivision is 65. The DOE estimates that the maximum number would be 52 students.

The DOE has no further comment on the application but appreciates the opportunity to review the plans. If you have any questions, please call me at 586-3444 or Heidi Mecker of the Facilities and Support Services Branch at 733-4862.

Sincerely,

Rae M. Loui
Assistant Superintendent

RML:mp

cc. Ken Nomura, CAS, Baldwin/Kekaulike/Maui Complex Area

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
SURVEY DIVISION
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

April 5, 2005

MEMORANDUM

TO: Michael W. Foley, Planning Director
Maui County Planning Department

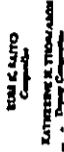
ATTN: Kivette A. Caigoy, Staff Planner

FROM: Reid K. Silarot, Acting State Land Surveyor
DAGS, Survey Division

SUBJECT: LD.: EA 2004/0016 and SM1 2004/0033
TMK: 4-8-002-009, 048, 052-056, 060, 061, 068
Project Name: Ukumehame Consolidation, Resubdivision
(46-lot Agriculture Subdivision)
Applicant: Pacific Rim Land c/o Chris Hart & Partners

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations or Benchmarks are affected. Survey has no objections to the proposed project.

APR -7 P1:40
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED





DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 225
FORT SHAFTER, HAWAII 96838-5448

SENT TO
ATTENTION ON CEPOHECT

15 APR -7 11:37
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

April 6, 2005

Civil Works Technical Branch

Mr. Kivette A. Caigoy, Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Caigoy:

Thank you for the opportunity to review and comment on the Special Management Area (SMA) Use Permit and Draft Environmental Assessment (DEA) for the Ukumehame Consolidation and Re-Subdivision Project, Maui (TMK: 4-8-2: 9, 48, 52-56, 60, 61, and 68). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. A review of the information submitted indicates that a site inspection will be necessary to determine the presence and extent of jurisdictional waters of the U.S. (please see enclosed letter to Chris Hart & Partners, Inc. provided under separate cover by our Regulatory Branch). Ms. Connie Ramsey is the point of contact for this project and may be reached at (808) 438-2039. File number POH-2005-213 has been assigned to this project for future inquiries.

b. The flood hazard information provided on page 23 of the DEA is correct.

Should you require additional information, please call Ms. Jessie Dobinich of my staff at (808) 438-8876.

Sincerely,

James Pentz, P.E.
James Pentz, P.E.
Chief, Civil Works
Technical Branch

Enclosure

Post-Op Fax Note	7071	Date	4/13	Page	4
To	POH-FRAMPTON	From	K. O'NEILY		
Call/Text		On			
Phone #		Phone #			
Fax #		Fax #			



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96838-5448

SENT TO
ATTENTION OF

Regulatory Branch

April 5, 2005

Chris Hart & Partners
c/o Rory Frampton
1955 Main Street, Suite 200
Wailuku, HI 96793

Subject: Jurisdictional determination (and wetland survey) for the Ukumehame Subdivision (Phase I and II), Ukumehame, Maui (TMK: 4-8-02: 09, 48, 52-56, 60, 61, 65, 66, 68 and 70).

Dear Mr. Frampton:

This office has reviewed the materials you submitted in support of the Special Management Area (SMA) use permit application for the above-referenced agricultural subdivision in the Ukumehame region of west Maui, including the wetland survey by Vuich Environmental Consultants, Inc. The project was reviewed pursuant to Section 10 of the Rivers and Harbors Act (RHA) and Section 404 of the Clean Water Act (CWA). Section 10 of the RHA requires that a Department of the Army (DA) permit be obtained for certain structures or work in or affecting navigable waters of the United States (33 U.S.C. 403). Section 404 of the CWA requires that a DA permit be obtained prior to the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands (33 U.S.C. 1344).

Our review of the SMA materials indicated three general areas of potential jurisdiction. These are addressed as follows:

Wetlands: Concerning the two possible wetland areas located within and near the southeast and southwest (makai) portions of the subject project, this office needs to conduct an on-site inspection to verify the wetland determination provided by Vuich Environmental Consultants, Inc., dated February 4, 2005.

Ukumehame Stream: Previous correspondence from the Corps on May 20, 2004 indicated that Ukumehame Stream is a jurisdictional water of the U.S. The SMA indicates that Phase II improvements do not include any construction within the stream. Although specific plans are not available regarding future proposed work (outside of Phase II improvements) within or in the vicinity of the stream, please be advised that any discharge (placement) of dredged or fill material below the ordinary high water mark (OHWM) of the stream would be subject to Corps jurisdiction pursuant to Section 404 of the CWA. Further, because of its proximity to the ocean, improvements to and/or re-alignment of Honoapiilani Highway over the stream may be subject to jurisdiction under Section 10. It is the Corps' understanding that the improvements to Honoapiilani Highway will be the responsibility of the State of Hawaii's Department of Transportation, and that all applicable federal, state and local permits will be obtained prior to initiation of any work associated with this highway.

Waters associated with former agricultural irrigation system: The SMA application references an operational irrigation system consisting of ditches, flumes and four reservoirs. The Phase II plans indicate that the present irrigation system will be "augmented to serve the agricultural lots for future irrigation purposes." Although active sugar cane cultivation has ceased at the site, should any of the features associated with the former irrigation system have retained characteristics of a water of the United States, they would be subject to regulation, particularly if any work involving the discharge of dredged or fill material below the OHWM is proposed. The SMA indicates that "some of the existing irrigation/drainage ditches have wetland plants growing along their banks or in the water." A site inspection may be necessary to verify whether any of these features would be defined as waters of the U.S.

This office recognizes that the project involves predominantly re-subdivision of lands with the commitment of basic infrastructure, with lands being dedicated to others for public benefit (including the county park, highway right-of-way and river corridor) and the remaining lots to be sold to individual private entities, whose responsibility it is to obtain all necessary federal, state and local permits for subsequent site improvements. This correspondence attempts to address your immediate need for a jurisdictional determination for the work proposed under the SMA application, as well as provide general information on the presence of regulated waters for future site improvements. As stated above, a site inspection will be necessary in order to provide a final determination on the jurisdictional status of the wetland areas and irrigation system.

If you need further assistance, please contact Ms. Connie Ramsey by phone at 808-438-2039, by facsimile at 808-438-1060, or by electronic mail at Connie.L.Ramsey@ussace.army.mil. Please refer to file number FOH-2005-213 for further inquiries regarding this project. Thank you for your cooperation with our regulatory program.

Sincerely,



George P. Young, P.E.
Chief, Regulatory Branch

Copy furnished:

Ms. Donna Clayton, Pacific Rim Land, Inc., P.O. Box 220, Kihei, Maui 96753
 Director, Dept. of Public Works, County of Maui, 200 S. High Street, Wailuku, HI 96793
 Administrator, Dept. of Planning, County of Maui, 200 S. High Street, Wailuku, HI 96793
 Administrator, Highways Division, Department of Transportation, State of Hawaii,
 869 Punchbowl Street, Honolulu, HI 96813

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008-242819

YING COUNTY OF MAUI

FRONT-REPT OF



TO MR 28 P12 27
DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

March 24, 2005
Ms. Kivette A. Caigoy
Staff Planner
County of Maui
Department of Planning
250 S. High Street
Wailuku, HI 96793

Dear Ms Caigoy:

Subject: Ukumehame Consolidation, Resubdivision (48-lot Agriculture Subdivision)
TMK: (2) 4-8-002:009, 048, 052-056, 060, 061 & 068
I.D.: EA 2004/0016 and SM1 2004/0033

Thank you for allowing us to comment on the subject project.

Please refer to our letter dated May 25, 2004 to the County of Maui - Department of Planning for our comments about the subject project included in the Draft Environmental Assessment and Application for Special Management Area Use Permit. If you have any questions or concerns, please call Dan Takahala at 871-2385.

Sincerely,

Neal Shinyama
Neal Shinyama
Manager, Engineering

NS/dt:th



May 25, 2004

Ms. Kivette A. Caigoy, Staff Planner
County of Maui-Department of Planning
250 S. High Street
Wailuku, HI 96793

Dear Ms. Caigoy:

Subject: Ukumehame Subdivision
TMK: (2) 4-8-002:009
I.D.: SMX 2004/0243

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. For roads A and C in the SMA area, MECO poles will have to be installed. Therefore, the developer should have MECO included as part of this SMA to avoid any delays in electrical service. Please have the developer contact us.

If you have any questions or concerns, please call Dan Takahala at 871-2385.

Sincerely,

Neal Shinyama
Neal Shinyama
Manager, Engineering

NS/dt:ikh



LOREN W. FAUO, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
250 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
March 31, 2005

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED
APR -4 8B:47

Mr. Michael W. Foley
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Kvetta A. Caigoy
Dear Mr. Foley:

Subject: Ukumehame Consolidation, Resubdivision (46-Lot Agriculture Subdivision)
TMK: (2)4-8-002: 009, 048, 052-056, 060, 061, 068
EA 2004/0016 and SM1 2004/0033

Thank you for the opportunity to comment on the Ukumehame Consolidation, Resubdivision project. The following comments are offered:

1. Plan approval for all new wastewater disposal systems will be required prior to construction of the systems. The wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems".
2. National Pollutant Discharge Elimination System (NPDES) permit coverage is required for this project. The Clean Water Branch should be contacted at 808 586-4309.
3. The Army Corps of Engineers (COE) should be contacted to identify whether a Federal license or permit including a Department of Army permit is required for this project. A Section 401, Water Quality Certification is required when a federal permit is required.

Mr. Michael W. Foley
March 31, 2005
Pago 2

4. A private water system will be developed for this subdivision. This system is considered a "Public Water System" as defined in Hawaii Administrative Rules (HAR), Chapter 11-20. A "Public Water System" is a system that provides water for human consumption through pipe or other constructed conveyance and has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year. All public water systems are regulated by the Department of Health and shall be in compliance with HAR, Chapter 11-20. Approval of the water system by the Safe Drinking Water Branch of the Department of Health is required.

5. All lands formerly in the production of sugarcane should be characterized for arsenic contamination. If arsenic is detected above the US EPA Region preliminary remediation goal for non-carcinogenic effects, then a removal and/or remedial plan must be submitted to the Hazard Evaluation and Emergency Response Office of the Department of Health for approval. The plan must comply with Chapter 128D, Environmental Response Law, Hawaii Revised Statutes, and Title 11, Chapter 11-451, HAR, State Contingency Plan.

Should you have any questions, please call me at 864-8230.

Sincerely,



Herbert S. Maisubayasthi
District Environmental Health Program Chief

c: HEER
SDWB
Roland Tejano
Gordon Muraoka
Roland Asakura

ALAN M. ARAKAWA Mayor

GEORGE Y. TENOJANI Director
JEFFREY T. PEARSON, JR Deputy Director



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

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

APR -1 P1:40

March 31, 2005

Mr. Michael W. Foley, Planning Director
Planning Department
250 South High Street
Wailuku, Hawaii 96793

RE: Subject I.D.: EA 2004/0016 and SN41 2004/0033
TRMK: (2) 4-8-002: 009, 048, 052-056, 060, 061, 068, 070
Project Name: Ukumehame Consolidation, Resubdivision(46-lot Agriculture Subdivision)

Dear Mr. Foley:

Thank you for the opportunity to comment on this Draft Environmental Assessment(EA) and Special Management Area application.

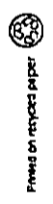
The project site is served by a private system. Based on State Water System Standards per acre guidelines the anticipated consumption would be approximately 1,480,000 gallons per day for 45 agricultural lots and a park. However, empirical use may be much higher than system standards in this typically hot, dry area.

Three test wells on the project site were drilled to provide potable water for domestic use. One of the wells cannot be used as a potable source. Based on preliminary results the water quality for the other two wells is good but they must be evaluated and certified by the DOH for public use and consumption. If required by DOH, a certified water treatment system will be installed. The two wells are only 200 feet apart and no pump sizes, capacities or specific test results were made available.

For irrigation purposes, the applicant states that 1,700,000 gpd of non-potable water will be diverted from the Ukumehame Stream. The project site will be served by separate 10-inch water lines for potable and non-potable irrigation water. Potable storage will be provided by a 2 MGD above-ground reservoir.

We recommend that the applicant be required to meet standards for domestic, irrigation and fire

"By Water All Things Find Life"



Mr. Michael W. Foley
Page 2
March 31, 2005

flow calculations to determine water meter capacity and adequate fire protection. Actual fire demand is determined by using fire flow calculations prepared, signed and stamped by a certified engineer or architect. The approved fire flow calculation methods for use include Guidance for Determination of Fire Flow-Insurance Service Office, 1974 and Fire Flow-Hawaii Bureau, 1991. Because the project site is located in an area susceptible to brush fires we also recommend that single family fire flow requirements be utilized. Required fire flow requirements for single family dwellings is 1000 gallons per minute at 350 feet spacing for a 2 hour duration.

Pollution

The project site overlies the Ukumehame Aquifer which has a sustainable yield of 3 million gallons per day. The Department strives to protect the integrity of surface and groundwater resources by encouraging the applicant to adopt Best Management Practices(BMPs) designed to minimize infiltration and runoff from construction and future agricultural practices. We have attached sample BMPs for construction and farming.

Conservation

We recommend the following water conservation measures:
Eliminate Single-Pass Cooling: Single-pass, water cooled systems should be eliminated per Maui County Code Subsection 14.21.20. Although prohibited by code, single-pass water cooling is still manufactured into some models of air conditioners, freezers and commercial refrigerators.

Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.

Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. Refer to the attached handout "The Costly Drop".

Use Climate-Adapted Plants: The project is located in the "Maui County Planting Plan"-Plant Zone 3. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. Please refer to the attached brochure: "Saving Water in the Yard - What and How to Plant in Your Area".

Prevent Over-Watering By Automated Systems: Provide rain-sensors on all automated irrigation controllers in common areas. Check and reset controllers at least once a month to reflect the monthly changes in evapo-transpiration rates at the site. As an alternative, provide the more automated, soil moisture sensors on controllers.



Mr. Michael W. Foley
Page 3
March 31, 2005

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

Sincerely,

George Y. Tengan/Director

- Enclosures: BMP for Construction
- BMP for Farms
- Ordinance 2108-A Bill for an Ordinance Amending Chapter 16.20 of the County Planning Code, Pertaining to the Plumbing Code
- The Costly Drip
- Maui County Planning Plan-Plant Zone 3-“Saving Water in the Yard-What and How to Plant in Your Area
- Engineering Division
- Kivette Cagoy, Environmental Planner
- Roy Frampton, Chns Hart & Partners
- Commission on Water Resource Management

April 12, 2005

Mr. George Y. Tengan, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, HI 96793

SUBJECT: Ukumehame Subdivision – Phase I and II
EA 2004/0016; SM1 2004/0033
TNK 4-8-002; 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Tengan,

On behalf of the Applicant, we acknowledge the receipt of your letter dated March 31, 2005 and are responding to your comments.

The manufacturer’s rated pump capacity for Well No. 2 (State Well No. 4835-03) is 40 gallons per minute (gpm), which is also the safe yield of the well. While the pump installation for Well No. 3 (State Well No. 4835-04) is currently pending, it is anticipated that this well would provide a safe yield, which surpasses that of Well No. 2.

The private water systems for the Phase II Subdivision will be designed to fulfill the domestic, irrigation, and fire flow demands of the subdivision and will comply with Department of Health (DOH) start-up requirements for “New Community and New Non-transient Non-Community Water Systems.” The proposed private (potable) water system for the subdivision, which has been defined as a “public water system” by the Department of Health (DOH), will comply with Chapter 11-20, HAR pertaining to “Potable Water Systems.”

To conserve water and minimize runoff from construction and future agricultural activities, appropriate water conservation measures and Best Management Practices (like those provided with your letter) will be considered and appropriate measures implemented.



Mr. George Y. Tengan
April 12, 2005
Page 2

Thank you for providing us with your comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,


Rory Prampion
Senior Planner

Encl.
Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

PHONE (808) 594-1803

FAX (808) 594-1665



APR 14 12:41

DEPT OF PLANNING
STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPITOLANI BOULEVARD, SUITE 508
HONOLULU, HAWAII 96813

HRD05/1393B

April 12, 2005

Kivette A. Caigoy
Staff Planner
Department of Planning
County of Maui
250 South High Street
Wailuku, HI 96793

Re: Ukumehame Consolidation, Resubdivision (46-lot Agricultural Subdivision)
Ukumehame, Island of Maui TMK: 4-8-002:009, 0-48, 052-056, 060, 061, 068

Dear Ms. Caigoy:

The Office of Hawaiian Affairs (OHA) is in receipt of your transmittal regarding the application for a special management permit, submitted by Chris Hart & Partners, Inc. on behalf of Pacific Rim Land, Inc., for the aforementioned project which includes consolidating and resubdividing the identified lots into 45 agricultural lots, related improvements, a river corridor, a future County park and a future State highway right-of-way.

After reviewing the submitted application and materials, OHA has concerns in the area of historical and cultural sites.

Historical and Cultural Sites

We note from the correspondence included in the submittal, that an archaeological inventory survey with sub-surface testing occurred in the project area and that the Maui/Lana'i Islands Burial Council voted to preserve in place four identified burial areas to include the Hiko'i Heiau site (Site 50-50-08-02), Ukumehame Heiau (Site 50-50-08-03), a cemetery (Site 50-50-08-4494) and another burial site (Site 50-50-08-4828). There were also lineal descendants recognized by the burial council who were consulted on the burial treatment plan.

Post-It Fax Note	7671	Date	4/15	Page	2
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On/Off		Ct			
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Fax #		Fax #			

Ms. Kivette Caigoy
April 12, 2005
Page 2

OHA would like to encourage the developer to continue consulting with the identified descendants to date, on all aspects of historic and cultural preservation efforts regarding the project. OHA also concurs with the State Historic Preservation Division's (SHPD) recommendations regarding full-time archaeological monitoring during ground disturbing activities in the project area. There is a high likelihood that other unmarked burial sites may exist in the project area and monitoring will help mitigate some of the adverse impacts to them if discovered during construction activities.

If you have any questions or concerns, please contact Kai Markell, Policy Advocate, at 594-1945 or kaim@oha.org. Once again, thank you for your patience during our review and assessment of this important matter.

O wau iho no,
Clyde W. Namu'o
Clyde W. Namu'o
Administrator



April 22, 2005

Mr. Clyde W. Namu 'o, Administrator
Office of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, HI 96813

SUBJECT: Ukumehame Subdivision - Phase I and II
EA 2004/0016; SM1 2004/0033
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Namu 'o,

On behalf of the Applicant, we acknowledge the receipt of your letter dated April 12, 2005 and are responding to your comments.

The Applicant will work with the lineal descendants and/or qualified community groups to upkeep and maintain each burial site (i.e., hand-clearing of vegetation growth), as well as involve these individuals and/or groups in other historic and cultural preservation efforts related to the project.

The Applicant affirms that archaeological monitoring will be conducted during all ground-altering activities in accordance with the provisions of the approved monitoring plan that was approved by the State Historic Preservation Plan.

Thank you for providing us with your comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,


Roby F. Thompson
Senior Planner

Encl.
Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

481-20-05 81-4138 From: DEPT OF PLANNING COUNTY OF MAUI 838-242818 7-484 P 02/03 F-335

ALAN M. ARAKAWA Mayor
 MILTON M. ARAKAWA, A.I.C.P. Director
 MICHAEL M. NEVAMOTO Deputy Director
 Telephone: (808) 270-7845 Fax: (808) 270-7844

1-184 P 01/03 F-335
 DALE M. HAGAN, L.S., P.E. Development Services Administration
 TRACY TAMMARE, P.E. Wastewater Recirculation Division
 CARY YAMASHITA, P.E. Engineering Division
 BRUSH HANSHIRO, P.E. Highways Division
 Solid Waste Division

DEPT OF PLANNING COUNTY OF MAUI
 RECEIVED
 APR 20 2005

COUNTY OF MAUI
 DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT
 200 SOUTH HIGH STREET, ROOM 322
 WAILUKU, MAUI, HAWAII 96793

Memo to Michael W. Foley, Planning Director
 April 15, 2005
 Page 2

Parks and Recreation should be consulted since they are responsible for tree maintenance within the road right-of-way.

6. The architect and owner are advised that the project is subject to possible tsunami and flood inundation. As such, said project must conform to Ordinance No. 1145, pertaining to flood hazard districts.
7. A 30 foot radius shall be provided at the intersection of the proposed subdivision road/driveway and the adjoining subdivision roads and State roads.
8. A verification shall be provided by a Registered Civil Engineer that the grading and runoff water generated by the project will not have an adverse effect on the adjacent and downstream properties.
9. A detailed and final drainage report and a Best Management Practices (BMP) Plan shall be submitted with the grading plans for review and approval prior to issuance of grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules and Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation to the maximum extent practicable.
10. A copy of the approved water quality report, including project mitigation measures (acceptable to the State Department of Health) which evaluates the quality of the storm water discharging into the ocean receiving waters shall be provided to the County of Maui, Department of Public Works and Environmental Management. The report should include a discussion on sediment and nutrient loadings at all drainage outlets.
11. All existing features such as structures, driveways, drainage ways, edge of the pavement, etc. shall be shown on the project plat plan.
12. A site plan and a sight distance report to determine required sight distance and available sight distance at existing and proposed street intersections shall be provided for our review and approval.

MEMO TO: MICHAEL W. FOLEY, PLANNING DIRECTOR
 FROM: MILTON M. ARAKAWA, A.I.C.P., DIRECTOR OF PUBLIC WORKS AND ENVIRONMENTAL MANAGEMENT
 SUBJECT: SPECIAL MANAGEMENT AREA USE PERMIT APPLICATION UKUMEHAME SUBDIVISION - PHASES I AND II
 TMK: (2) 4-8-002-009, 48, 52-56, 60, 61, 65, 66, 68 and 70
 SM1 2004/0033

We reviewed the subject application and have the following comments:

1. Given the location of this subdivision, County provided roadway maintenance will be limited.
2. All drainage improvements in private properties should remain under private maintenance.
3. The proposed grassed drainage swales adjacent to internal roadways will be high maintenance. Actual grass growth may be mitigated by the sparse rainfall in the area, however, any areas without grass growth will experience severe erosion during rain events.
4. Verification of the suspect wetlands should be done by the Corps of Engineers, hopefully prior to completion of this Environmental Assessment (EA)/Special Management Area (SMA) permit.
5. All trees shall have root barriers if planted within the road right-of-way. Irrigation must be provided to keep the trees watered as this area is quite arid with infrequent rainfall. The Department of

Post-It File No. 7871	Date 4/20/05	By [Signature]
To [Signature]	From [Signature]	
Project [Signature]	City [Signature]	
Page 1	Page 2	

Memo to Michael W. Foley, Planning Director
April 15, 2005
Page 3



April 25, 2005

13. The applicant shall obtain street name approvals from the Commission on Naming Streets, Parks and Facilities and show street names on the map.
14. The 100-year flood inundation limits shall be shown on the project site plans. Lot geometrics cannot be approved until such data is submitted and reviewed.
15. In accordance with Section 18.16.00 of the Maui County Code, the distance between intersections along a through street must be at least 150 feet. The geometrics of the proposed road intersections must be revised. Please review with the Department of Public Works and Environmental Management, Engineering Division.
16. A detailed, final Traffic Impact Assessment Report for the entire subdivision/development shall be submitted for our review and approval. Signal warrants on Honoapiʻiani Highway should be investigated. The report shall also address regional traffic impacts and include assessments from the local community police officer.
17. Preliminary construction plan submittal shall include a completed technical assistance review performed by the Disability and Communication Access Board (DCAB) for compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for all facilities. All technical and structural infeasible assessments shall be the responsibility of the developer and an agreement waiving the County of Maui of any future liability, including redesign and reconstruction, for said facility shall be recorded with the State's Bureau of Conveyances.
18. Subdivision File No. 4.875 - Ukumehame Subdivision, Phase I. Preliminary approval was granted on October 10, 2003.
19. Subdivision File No. 4.876 - Ukumehame Subdivision, Phase II. Preliminary approval was granted on October 10, 2003.

If you have any questions regarding this memorandum, please call Michael Miyamoto at 270-7845.

MMA:MMM:da
S:\UCAC\Ukumehame_Subd_I_II_03_01_1_1002003_da.wp4

Mr. Milton M. Arakawa, AICP, Director
Department of Public Works
and Environmental Management
County of Maui
200 South High Street
Wailuku, HI 96793

SUBJECT: Ukumehame Subdivision - Phase I and II
EA 2004/0016; SM1 2004/0033
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Arakawa,

On behalf of the Applicant, we acknowledge the receipt of your letter dated April 15, 2005 and are responding to your comments. We note that a number of these comments are the conditions for final subdivision approval for the Phase II Subdivision.

1. Due to the project's locale, the Applicant acknowledges that public roadway maintenance by the County will be limited. We note that the majority of the proposed roads will be privately owned and maintained. The portions of Roads A and C, which lie within the 100 acres to be purchased by the County will be publicly owned, however, the applicant intends on establishing an agreement whereby the landscaped portions of the publicly owned sections of roadway will also be privately maintained, initially by the developer and subsequently the future homeowners association.
2. All drainage improvements on private property will be privately owned and maintained.
3. A drought-tolerant species, such as Kikuya grass, will be utilized for the grassed roadside swales. In addition, these planted areas will be irrigated.
4. A field inspection of the suspect wetlands has been scheduled with the Corps of Engineers for April 29, 2005.

5. Based on discussions with the project's landscape architect, agricultural subdivisions have a greater setback between lot lines and the edge of pavement when compared to projects in urban areas. This distance precludes the need for root barriers since the risk of tree roots uplifting the pavement is significantly reduced. Street trees that are planted within the roadway right-of-way will be irrigated.

The project's street tree planting plan and a completed Maui County Arborist Committee Plans Review Form were recently submitted to the Maui County Planning Department for review and approval on April 4, 2005. In commenting on the Draft EA, the Maui County Department of Parks and Recreation (DPR) stated that it had "no comments or objections to the proposed action." As noted above, the road right of ways within the Phase II Subdivision will be privately owned and maintained with the exception of the portions of Road "A" and "C" that cross the future park and future highway right-of-way. Although these portions will be publicly owned, landscape maintenance will be by the developer and subsequently the future homeowners association.

6. The Applicant acknowledges that new construction or substantial improvements within areas that are subject to flood and tsunami inundation must comply with Chapter 19.62 of the Maui County Code (MCC) regarding Flood Hazard Areas.

7. New Intersections "A" and "B" lie within the Honoapiilani Highway right-of-way. As the highway is a State arterial, the intersections have been designed in accordance with Department of Transportation (DOT) highway design standards. The intersections formed by the Phase II Subdivision's interior streets have been designed in accordance with Maui County subdivision design standards.

8. The project's civil engineer will provide verification that grading and storm water runoff will not have an adverse effect on adjacent and downstream properties.

9. Due to modifications to the Phase II Subdivision's general plan, an updated drainage report, Best Management Practices (BMP) Plan, and grading plans, will be submitted to the department for review and approval. All site work will comply with Chapter 20.08, MCC regarding Soil Erosion and Sedimentation.

10. I recently spoke with engineering chief Cary Yamashita to clarify the department's comment regarding the submittal of an approved water quality report. Based on our April 22nd discussion, copies of the project's National Pollutant Discharge Elimination System (NPDES) Permit and Best Management Practices Plan (BMP) will be provided to the Department of Public Works and Environmental Management after review and approval by the State Department of Health (DOH). It is understood that the scope of the data to be covered in this submittal is limited to the information required by DOH for NPDES processing.

11. Any existing features will be shown on the Phase II Subdivision's construction plans and final plat map.

12. Sight distance reports and the updated site plan will be submitted to the department for review and approval.

13. The approved street names will be shown on the Phase II Subdivision's construction plans and final subdivision plat map.

14. The 100-year flood inundation limits will be shown on the Phase II Subdivision's construction plans and final subdivision plat map.

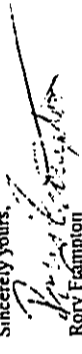
15. The distance between all intersections of the Phase II Subdivision is greater than 150 feet and complies with Chapter 18.16, MCC pertaining to Subdivision Design Standards. As previously indicated, new Intersections "A" and "B" have been designed in accordance with DOT highway design standards, while the intersections formed by the subdivision's interior streets have been designed in accordance with County subdivision design standards.

16. The traffic assessment report that was prepared for the project was included in the Draft EA as Appendix L and was submitted to your department. It has been submitted to the DOT and the Maui Police Department for their review and comment.

17. The preliminary construction plans for the Phase II Subdivision will be submitted to the Disability and Communication Access Board by the project's civil engineer for compliance with the Americans with Disabilities Act Accessibility Guidelines.

Thank you for providing us with your comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,


Rory Frampton
Senior Planner

Encl.
Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

ALAN ARAYAWA
Mayor
MICHAEL W. FOLEY
Deputy Mayor
WYNNE A. BOTCHKO
County Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 14, 2005

Mr. Rory Frampton
March 14, 2005
Page 2

Mr. Rory Frampton
Chris Hart & Partners
1955 Main Street, Suite 200
Wailuku, Hawaii 96733-1766

Dear Mr. Frampton:

RE: Draft Environmental Assessment for the Consolidation and Reconsolidation of Approximately 439 Acres of Land Located at T.M.K. 4-8-002: 009, 048, 052-055, 060, 061, 065, 066, 068 and 070, Ukumehame, Island of Maui, Hawaii (EA 2004/0016) (SM12004/0033)

At its regular meeting on March 8, 2005, the Maui Planning Commission (Commission) reviewed the above-referenced document and provides the following comments:

1. Discuss how the project provides for the proposed realignment of Honoapiʻiani Highway.
2. Discuss what is proposed for people currently residing in the project area. Do they have ownership? Provide a summary of meetings held with these owners regarding the proposed project.
3. Clarify the intent of establishing the river corridor lot.
 - a. Describe the topography and terrain.
 - b. Will the small-scale agricultural operations be included within the lot? Identify on site plans and/or aerial photos the location of these operations.
4. The Commission stressed the importance in preserving the exclusion lots.

5. Ukumehame Stream
 - a. Is surface water currently being diverted from the stream? How long have flows been restored?
 - b. How much surface water will be diverted upon completion of the proposed project?
 - c. Is permission from the Commission on Water Resource Management (CWRM) required to divert surface water for the proposed project?
 - d. Discuss impacts to stream life once the surface water is diverted to the proposed project.
 - e. Who will maintain the lot?
6. The Commission recommends fencing off the upper reaches of Ukumehame Stream from ungulates for restoration purposes.
7. Are traffic impact fees required for the 46-lot agricultural subdivision?
8. Drainage
 - a. Provide plans for the grass-lined swales and drainage improvements.
 - b. Consider and discuss additional erosion control measures (i.e., check dams) that can be incorporated into each individual lot.
 - c. Discuss an alternative drainage design that can accommodate more than the net increase in stormwater runoff.
 - d. Discuss the rationale for basing calculations on the 50-year storm versus the 100-year storm.

Further, the Department notes the following corrections:

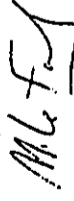
1. Page 10, 2nd Paragraph: The right-of-way for the proposed relocation of Honoapiʻiani Highway will not be dedicated to the State of Hawaii but rather traded for the right-of-way along the coastline.

Mr. Rory Frampton
March 14, 2005
Page 3

2. Page 66, 2nd Paragraph: During a meeting with County officials on March 4, 2005, Director Rodney Hiraga, State Department of Transportation (DOT), indicated that plans to add a passing lane to Honoapiilani Highway or other widening measure have been discontinued.

Thank you for the opportunity to comment. Should you require additional clarification, please contact Ms. Kivette A. Caigoy, Environmental Planner, at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar

- C: Wayne A. Boleilho, Deputy Planning Director
Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
Thorne Abbott, Staff Planner
EA Project File
General File

K:\WP_DOCS\PLANNING\EA\2004\16_Ukumehame\IPCCComments\DEA.wpd

Mr. Michael W. Foley
April 27, 2005
Page 2



Mr. Michael W. Foley, Director
Department of Planning
250 South High Street
Attention: Ms. Kivette Calgony
Waikuku, HI 96793

SUBJECT: Ukumehame Subdivision - Phase I and II
EA 2004/0016; SMI 2004/0033
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Foley,

On behalf of the Applicant, we acknowledge the receipt of the Maui Planning Commission's letter dated March 14, 2005 and are responding to the Commission's comments.

1. The proposed project will provide the County of Maui with approximately 100 acres of land for a future State highway right-of-way and a future County park. The area afforded by this acreage is approximately 600 feet in width and 1.4 mile in length. As part of this project, the County of Maui would trade the future highway right-of-way to the State Department of Transportation (DOT) in exchange for the existing highway right-of-way along the coastline. The DOT would then utilize this future right-of-way as part of its proposed plan to widen and/or realign Honoapiʻilani Highway between Maalaea and Launiupoko.
2. A dwelling in the river corridor lot, which has been used on an intermittent basis by Mr. Paul Fujishiro, is located on Exclusion 10 (TMK 4-8-002: 018). The Ukumehame Co-Tenants and Mr. Fujishiro have a percentage ownership of Exclusion 10. None of the other exclusion areas, including those that are used for small-scale farming activities, contain dwellings or are being utilized for residential purposes.

In connection with interviews for the Cultural Impact Assessment, informal meetings were held with several lineal descendants of Ukumehame Valley who are farming the exclusion areas within the river corridor lot. The purpose of these meetings was to provide these individuals with an overview of the project and

invite any comments they may have. On October 13, 2004, Glenn Tadaki and I met with John and Rose Marie Ducey at our office. Later that day, Glenn and I met with Addie Rodrigues at her home in Olowalu. That same afternoon, we met with Paul Fujishiro at our office. Subsequently, Glenn Tadaki met with Ed Lindsey at our office on December 7, 2004. None of the individuals we met with had any adverse or substantive comments about the project except for Paul Fujishiro who felt that the new highway would need to be elevated to keep it from being impacted by tsunami inundation. Mr. Fujishiro would like the landowners to provide water to the land that he is farming in the valley. This would allow him to gravity flow the water to a kuleana parcel that he purports to own along the *mokai* extent of the County's 100 acres. He also indicated that he would like the County to contribute the land next to this kuleana parcel for a Hawaiian language immersion school. In addition to stating that Ukumehame Stream is considered public trust land, Mr. Fujishiro indicated the subject property is Crown lands and that the landowners have no claim to this land.

3. The intent of creating river corridor lot is to provide passive protection - preservation for the Ukumehame Stream corridor. Depending on the activity, it is envisioned that management of the river corridor lot will rest with different entities instead of a single body. For example, activities relating to the operation and maintenance of the Phase II Subdivision's private water systems would fall under the jurisdiction of a private management company or private water association. Similarly, river corridor lot access for kuleana owners and cultural practitioners, and overseeing the maintenance of the burial sites would be the responsibility of the Phase II Subdivision's homeowners association. The Applicant is currently investigating a potential site for this one additional lot (an agricultural lot of not less than 5 acres) within the river corridor lot. Pursuant to your request, a copy of the Purchase and Sale Agreement is herewith enclosed.

- 3a. The subject property is basically comprised of a large alluvial fan. A narrow, triangular-shaped ridge around the center of the site gently rises inland and then climbs steeply to a high-backed ridge. Over time, Ukumehame Stream has cut through the alluvial fan and created a steep-sided gulch. Elevations on the subject property range from approximately 5 to 310 feet above mean sea level. From the area near Honoapiʻilani Highway to the middle of the site, the terrain is relatively flat (1.5 to 5 percent). The terrain then increases sharply toward the upper end of the site (10 to 18 percent).

- 3b. The exclusion areas within the subject property are excluded from the proposed project. As such, the small-scale farming activities on the exclusion areas within various locations of the river corridor lot will not be affected and will continue as they have been. A map showing the location of existing small-scale farming activities within the river corridor lot will be included in the Final EA.

4. As previously stated, the exclusion areas within the subject property are excluded from the proposed action since they are not part of the project. Access to the exclusion areas, including those used for small-scale farming, will continue to be provided. New Phase II Subdivision roads will provide a connection to the existing access roads within the river corridor lot, while an access easement (for the use of the existing agricultural roads in the valley) will provide for access within the lot.

5a. There is an existing stream water diversion system on the subject property (from the streambed into a ditch and reservoir system), which was constructed by sugar cane growers and has historically been used for sugar cane cultivation. This system, which is located above the former crop-growing area, is still functional and in fairly good condition. Stream water flows have been restored since the termination of sugar cane cultivation in the late 1990s.

5b. According to the project's irrigation engineer, Ukumehame Stream flows year round, with a sustainable flow of up to 3 million gallons per day (mgd). Based upon the meter capacity for each of the 45 agricultural lots, the maximum potential irrigation usage for the Phase II Subdivision would be approximately 1.7 mgd. If the maximum amount is utilized, the unused quantity of approximately 1.3 mgd will continue to flow in the stream to the ocean. It should be noted that it is unlikely that all lot owners would be utilizing their maximum irrigation flows at the same time, thus, the unused quantity would be greater than 1.3 mgd.

5c. In commenting on the Draft EA, the State Commission on Water Resource Management (CWRM) indicated that its records show the stream water diversion is owned by Pioneer Mill and requested that a transfer of diversion works ownership be submitted to the Commission for recordation. The Applicant will comply with the CWRM's request.

5d. On February 25, 2005, a meeting was held with biologist Skippy Hau of DLNR's Division of Aquatic Resources. The purpose of this meeting was to discuss Ukumehame Stream characteristics including stream flow and animals, as well as water use and quality, and the proposed irrigation system improvements. Key points that were brought up by Mr. Hau regarding the stream include:

- The existing vegetation and tree canopy helps keep the stream cooler in its upper reaches.
- Cooler stream water temperatures foster *raro* growth.
- Stream animals use runs, pools, and riffles to move upstream.
- In response to (the irrigation system) leaving at least 1.3 million gallons per day of water in the stream, Mr. Hau indicated that any amount of water left in the stream is good.

- Groundwater discharges and tidal influences help add to and raise stream flows and levels.
- Rainy seasons are no longer clearly defined.
- Stream animals have adapted to episodic rainfall.
- During heavy rainfall events, the temperature drops and the stream animals spawn.
- Opening up access to the public could result in an excessive removal of stream animals and a resulting decline in their population.
- The root systems of trees help to stabilize the stream.
- The developer needs to be attentive to the streams recharge sources (perched water table, rainfall) and keep water in the stream.
- Stream water quality is good.

In general, since a significant amount of stream flow would continue to occur, even during periods of maximum withdrawal, Mr. Hau felt that the diversion would not have a significant impact on stream biota.

5e. Depending on the activity, it is envisioned that management of the river corridor lot will rest with different entities instead of a single body. For example, activities relating to the operation and maintenance of the Phase II Subdivision's private water systems would fall under the jurisdiction of a private management company or private water association. Similarly, river corridor lot access for cultural practitioners and kuleana landowners, and overseeing the maintenance of the burial sites would be the responsibility of the Phase II Subdivision's homeowners association.

6. The upper reaches of Ukumehame Stream lie within the West Maui Forest Reserve, which is under the jurisdiction of the State Department of Land and Natural Resources (DLNR). As such, the Applicant has no control over the placement of fencing on these State Conservation District lands.

7. Presently, the State of Hawaii and the County of Maui do not have any statutory mechanisms and procedures in place for the assessment and collection of traffic impact fees. However, should enabling legislation which implements these measures be adopted prior to final subdivision approval, the Applicant will provide any requisite fair share, pro-rata contribution for traffic improvements. In addition to providing land for the future the widening and/or realignment of Honoapiʻilani Highway, the highway widening and intersection improvements that are proposed by the Applicant will benefit the community at large by helping to facilitate access to the future County park.

8a. The Preliminary Drainage and Erosion Control Report (Appendix K) included in the Draft EA contained a drainage areas map (Figure 3-1), a roadway culvert drainage areas map (Figure 3-2), and a interceptor swale drainage areas map

Mr. Michael W. Foley
April 27, 2005
Page 5

(Figure 3-3). Cross sections of the project's triangular, grassed roadside swales were also shown in the Draft EA on Figure 7, Phase II Subdivision Typical Roadway Sections. These items will be included in the Final EA.

- 8b. The Preliminary Drainage and Erosion Control Report has a section on Best Management Practices, which discusses additional erosion control measures. For example, soil stabilization measures include the use of structural controls such as PVC sheets, geotextile filter fabric, berms or sediment basins, and/or vegetative controls including grass seeding and/or hydromulch.
- 8c. The existing Honoapiilani Highway functions like a natural berm or dam. Surface runoff ponds in low lying areas on the *mauka* side of the highway and eventually evaporates or percolates into ground. During periods of heavy rainfall, excess runoff initially ponds and eventually flows through a few small culverts which conveys flows under the highway and towards the ocean. These culverts are approximately one foot above existing ground level, which thereby allows the runoff to collect and settle prior to any discharge into the ocean.
- The drainage system for the Phase II Subdivision will hold the additional flow from the full build out of the project. In addition, the existing backup erosion filtration system along Honoapiilani Highway will remain.
- 8d. The Rules for the Design of Storm Drainage Facilities in the County of Maui were used to design the drainage system for the Phase II Subdivision. For drainage areas less than 100 acres, the Rational Method, which employs a storm recurrence interval of 50 years and a rainfall duration of 1 hour, was used to calculate the increase in surface runoff. For drainage areas greater than 100 acres, the NRCS TR-20 method, which uses a 100-year, 24-hour rainfall event, was utilized to determine runoff quantities.

The department's comments regarding trading the future right-of-way for the existing highway right-of-way along the coastline and the DOT's cancellation of its Passing Lane Project are duly noted.

Mr. Michael W. Foley
April 27, 2005
Page 6

Thank you for providing us with the Commission's comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,


Kory Frimpton
Senior Planner

Encl.
Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

Na Kupuna O Maui
320 Kaeo Place
Lahaina, HI 96761

April 13, 2005

Mr. Michael Foley, Director
Department of Planning
County of Maui
250 South High Street
Waikuku, HI 96793

Re: Ukumehame Subdivision - Phase I and II
Draft Environmental Assessment

Dear Mr. Foley:

Na Kupuna O Maui has received and reviewed a copy of the Draft Environmental Assessment for the Ukumehame Subdivision Phase I and II. We have multiple concerns as expressed in this letter regarding the proposed development. As the DEA states that the Maui Planning Commission is the Chapter 343, HRS Accepting Agency, we request that you share our concerns with the Maui Planning Commission.

1. The DEA identifies the Landowner of the lands to be developed as the "Ukumehame Co-Tenants". Who are the Ukumehame Co-Tenants? We are concerned about the native tenants on the lands and the families who have owned the lands over time. Does "Ukumehame Co-Tenants" truly own the lands and, if so, how did they obtain the interests of the many kuleana residents of the lands. Do the Ukumehame Co-Tenants have clear title to all of the lands intended to be included in Subdivisions I and II, and how do they establish their claim of ownership?

2. The DEA, on page 10, provides that: "While the river corridor lot is to be retained as open space and a natural greenway, the Purchase and Sale Agreement gives the Applicant the right to create one (1) additional lot (of not less than 5 acres) out of the river corridor lot". We request specifics concerning the real plan for the use of this area and a description of who will have control over how the lands are eventually used. Also, please furnish us with a copy of the Purchase and Sale Agreement referred to in the quoted language from page 10 of the DEA.

3. The lands within the proposed project have a vast number of areas of cultural importance, some of which have been identified in the DEA and some of which

have not. What are the plans for identifying and protecting those sites at the present time and into the future?

4. The DEA does not contain information concerning whether traditional access and traditional access routes will be maintained and protected.

5. The DEA should provide for oversight by some independent committee or agency to see that cultural sites are protected and maintained and this should not be left up to the Applicant or purchasers of the lots.

6. There should be no development of the areas or approvals of the application until such time that Maui County has enacted understandable rules and regulations concerning permitted uses of agricultural lands and until Maui County has hired and trained a sufficient number of enforcement officers so that it is reasonable to expect that the lots will be used for truly agricultural uses and not for luxury homesites.

7. The Appendix H Cultural Impact Assessment is incomplete and does not comply with all of the guidelines enacted by the State of Hawaii Office of Environmental Quality Control regarding preparation of a cultural impact assessment.

8. The DEA does not reflect that the Applicant has contacted all of the surrounding neighbors and landowners in the area of the project and reported whether they support or oppose the project. The protocols established in the Guidebook for the Hawaii State Environmental Review Process requires that this be done and that all comments, whether positive or negative, be reported.

9. The final plan must provide protections which assure that sufficient water is left in the stream and available to all kuleana residents who are now in the area and who may return to the area in the future as well as sufficient water to sustain the flora and fauna in the streambed and surrounding areas.

Na Kupuna O Maui,

Patricia Nishiyama

Patricia Nishiyama
Lahaina District Representative

cc: Pacific Rim Land, Inc.
Chris Hart & Partners

Ms. Patricia Nishiyama
April 27, 2005
Page 2



April 27, 2005

Ms. Patricia Nishiyama
Lahaina District Representative
Na Kupuna O Maui
320 Kaco Place
Lahaina, HI 96761

SUBJECT: Ukumchame Subdivision – Phase I and II
EA 2004/0016; SM1 2004/0033
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Ms. Nishiyama,

On behalf of the Applicant, we acknowledge the receipt of your letter dated April 13, 2005 and are responding to your comments.

1. The Ukumchame Co-Tenants, the owners of the subject property, is a group of local residents and business entities that include: Sugar Way, Ltd., James J. C. Hayes, Hugh Farrington, John Kean, and the Ukumchame Quarry Company Limited Partnership. The landowners have clear, insurable title for all of the land in the Phase I and Phase II Subdivisions that is not specifically excluded from the respective Subdivisions. Title for the subject property was obtained by Deed from Pioneer Mill Company, Ltd., their predecessors in title.
2. The Applicant is currently investigating a potential site for this one additional lot (an agricultural lot of not less than 5 acres) within the river corridor lot. Depending on the activity, it is envisioned that management of the river corridor lot will rest with different entities instead of a single body. For example, activities relating to the operation and maintenance of the Phase II Subdivision's private water systems would fall under the jurisdiction of a private management company or private water association. Similarly, river corridor lot access for kuleana owners and cultural practitioners, and overseeing the maintenance of the burial sites would be the responsibility of the Phase II Subdivision's homeowners association. Pursuant to your request, a copy of the Purchase and Sale Agreement is herewith enclosed.

3. Interim and long-term protection measures for all known preservation and burial sites on the subject property have been approved by the State Historic Preservation Division (SHPD) and the Maui/Lana'i Islands Burial Council (MLIBC). Generally, these mitigation measures include permanent buffer zones, flagging sites with yellow caution tape prior to the start of construction, and preservation through avoidance and preservation in place. Similar temporary and long-term mitigation measures would also apply to any inadvertent finds located during ground-altering construction activities pursuant to consultation with the SHPD and/or MLIBC.
4. Kuleana landowners and cultural practitioners will be provided with access to and within the river corridor lot. Long-term access will also be provided to Maui Electric Company (MECO) for power line maintenance and the State Department of Land and Natural Resources (DLNR) for wildlife management and fire suppression. New Phase II Subdivision roads will provide a connection to existing access roads within the river corridor lot, while an access easement (for the use of the existing agricultural road in the valley) will provide for access within the lot.
5. The approved Burial Treatment Plan includes recommendations for the involvement of lineal descendants and/or community groups for the general upkeep of each burial site (i.e., clearing vegetative overgrowth by hand) and the placing of interpretive signage to provide public understanding of the sites. The Applicant plans to work with lineal descendants for the maintenance of the burial sites.
6. Buyers of agricultural lots in the Phase II Subdivision must comply with current statutes, ordinances, and policies in order to substantiate farm dwellings in the State Agricultural District and/or Maui County Agricultural Zoning District.
7. The Guidelines for Assessing Cultural Impacts (Environmental Council, 1997) provides "methodology and content protocol as guidance for any assessment of a project that may significantly affect cultural resources." This guidance is of an advisory nature and is not a strict requirement.

We feel that the Cultural Impact Assessment that was prepared for the project provided us with sufficient information for us to evaluate cultural resources, and include our analysis and mitigation recommendations in the Draft EA. By utilizing a cumulative and integrated evaluation process, we feel that the subject of cultural resources has been adequately assessed in the Draft EA via our examination of the Cultural Impact Assessment and our related discussion, analysis, and recommendations in the sections of the Draft EA pertaining to "Historical/Archaeological Resources" and "Cultural Resources."

8. In addition, we recently received letters commenting on the Draft EA from the Office of Hawaiian Affairs (OHA) and the Maui County Cultural Resources Commission (CRC), the State government agency and local advisory body with purview and expertise in matters relating to cultural resources. Neither OHA nor the CRC surfaced any comments regarding the Cultural Impact Assessment. Copies of these letters are attached hereto for your information.

9. Prior to their interviews with Leann McGerty (SCS) for the Cultural Impact Assessment, informal meetings involving Glenn Tadaki and/or me were held with several lineal descendants of Ukumehame Valley who are farming land in the river corridor lot and the surrounding area. The purpose of these meetings was to provide these individuals with an overview of the project and invite any comments they may have. On October 13, 2004, Glenn Tadaki and I met with John and Rose Marie Ducey at our office. Later that day, Glenn and I met with Addie Rodrigues at her home in Olowalu, and later that afternoon, we met with Paul "Pops" Fujishiro at our office. Subsequently, Glenn Tadaki met with Ed Lindsey at our office prior to his December 7, 2004 interview with Leann McGerty.

None of these individuals had any adverse or substantive comments about the project except for Paul Fujishiro who indicated that he wants the new highway elevated to keep it from being impacted by tsunami inundation. He would also like the landowners to provide water to the land that he is farming in the valley. This would allow him to gravity flow the water to a kuleana parcel that he purports to own along the *makai* extent of the County's 100 acres. He also indicated that he would like the County to contribute the land next to this kuleana parcel for a Hawaiian language immersion school. In addition, Mr. Fujishiro stated that the landowners have no claim on the property since it is Crown lands and that Ukumehame Stream is considered public trust land.

10. On February 25, 2005, I met with biologist Skippy Hau of DLNR's Division of Aquatic Resources, Bill Pyle, Hugh Starr, Donna Clayton, and Glenn Tadaki also attended this meeting. The purpose of this meeting was to discuss Ukumehame Stream characteristics including stream flow and animals, as well as water use and quality, and the proposed irrigation system improvements. Key points that were brought up by Mr. Hau regarding the stream include:

- The existing vegetation and tree canopy helps keep the stream cooler in its upper reaches.
- Cooler stream water temperatures foster *taro* growth.
- Stream animals use runs, pools, and riffles to move upstream.
- In response to (the irrigation system) leaving at least 1.3 million gallons per day of water in the stream, Mr. Hau indicated that any amount of water left in the stream is good.

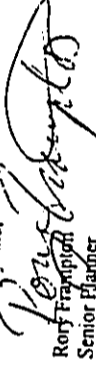
- Groundwater discharges and tidal influences help add to and raise stream flows and levels.
- Rainy seasons are no longer clearly defined.
- Stream animals have adapted to episodic rainfall.
- During heavy rainfall events, the temperature drops and the stream animals spawn.
- Opening up access to the public could result in an excessive removal of stream animals and a resulting decline in their population.
- The root systems of trees help to stabilize the stream.
- The developer needs to be attentive to the streams recharge sources (perched water table, rainfall) and keep water in the stream.
- Stream water quality is good.

According to the project's irrigation engineer, Ukumehame Stream flows year round, with a sustainable flow of up to 3 million gallons per day (mgd). Based upon the meter capacity for each of the 45 agricultural lots, the maximum potential irrigation usage for the Phase II Subdivision would be approximately 1.7 mgd. If the maximum amount is utilized, the unused quantity of approximately 1.3 mgd will continue to flow in the stream to the ocean. It should be noted that it is unlikely that all lot owners would be utilizing their maximum irrigation flows at the same time, thus, the unused quantity would be greater than 1.3 mgd.

In general, since a significant amount of stream flow would continue to occur, even during periods of maximum withdrawal, Mr. Hau felt that the diversion would not have a significant impact on stream biota.

Thank you for providing us with your comments and please feel free to call Glenn Tadaki or me at 242-1955 if you have any questions.

Sincerely yours,


Rory Frappioli
Senior Planner

Encl.
Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

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



COUNTY OF MAUI
DEPARTMENT OF PLANNING

April 15, 2005

Mr. Rory Frampton
Chris Hart & Partners
1955 Main Street, Suite 200
Waiuku, Hawaii 96793-1766

Dear Mr. Frampton:

RE: Draft Environmental Assessment for the SMA Use Permit Application
for the Ukumehame Subdivision Phase I and II, TMK: 4-8-002-009
048, 052-056, 060, 061, 065, 066, 068 and 070, Ukumehame, Island
of Maui, Hawaii (EA 2005/0016)

At its regular meeting on April 7, 2005, the Maui County Cultural Resources Commission (CRC) reviewed the above-referenced document and provided the following comments:

1. Discuss how traditional access rights will be observed. Commissioners felt this issue was not adequately addressed in the document.
2. Please clarify the intention of the proposed stream/valley parcel. Will this parcel remain undeveloped in the future? If there is to be a lot developed in the stream/valley parcel, the location of that lot should be determined.
3. Commissioners and the State Historic Preservation Division (SHPD) requested that the Archaeological Inventory Survey and the Draft Environmental Assessment be reviewed by SHPD again. SHPD should also be provided information about Maui County's purchase and sale agreement for this property.
4. CRC members requested that the new owners in the subdivision be educated about access rights and Hawaiian traditions, so that they may be sensitive to kuleana landowners. Kuleana landowners should be included in the decision-making process for this project.

250 SOUTH HIGH STREET, WAIUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

Mr. Rory Frampton
Chris Hart & Partners
April 15, 2005
Page 2

5. In general, Commissioners were satisfied with the proposed preservation and burial treatment plans.

Commissioners requested that a site visit of the project area be scheduled for the CRC's next regular meeting on May 5, 2005.

Thank you for the opportunity to comment. Should you require additional clarification, please contact Ms. Dawn E. Duensing, Cultural Resources Planner, at 270-7841.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:DED:jjp

c: Clayton I. Yoshida, AICP, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
Dawn E. Duensing, Cultural Resources Planner
Melissa Kirkendall, SHPD, Maui office
EA Project File
CRC file
General File
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April 27 2005

Mr. Michael W. Foley, Director
Department of Planning
250 South High Street
Attention: Ms. Dawn Duensing
Wailuku, HI 96793

SUBJECT: Ukumehame Subdivision - Phase I and II
EA 2004/0016; SMT 2004/0033
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Foley,

On behalf of the Applicant, we acknowledge the receipt of the Maui County Cultural Resources Commission's (CRC) letter dated April 15, 2005 and are responding to the Commission's comments.

1. Kuleana landowners and cultural practitioners will be provided with access to and within the river corridor lot. New roads in the Phase II Subdivision will provide a connection to existing access roads within the river corridor lot, while an access easement (for the use of the existing agricultural roads in the valley) will provide for access within the lot.
2. The intent of creating the river corridor lot is to provide passive protection - preservation for the Ukumehame Stream corridor. The Applicant is currently investigating a potential site for this additional lot. This future lot would not include any of the exclusion areas and would not terminate any of the accesses to the exclusion areas. In addition, any future use of the lot would be required to comply with the terms established in the Archaeological Preservation Plan as well as the Burial Treatment Plan. Based upon the nature of the activity, management of the river corridor lot is expected to be with different entities instead of a single body. To illustrate, the operation and maintenance of the Phase II Subdivision's private water systems would fall under the jurisdiction of a private management company or private water association. Similarly, river corridor lot access for kuleana owners and cultural practitioners, and overseeing the maintenance of the

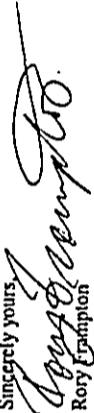
Mr. Michael W. Foley
April 27, 2005
Page 2

burial sites would be the responsibility of the Phase II Subdivision's homeowners association.

2. As clarified by our April 20, 2005 phone conversation, the intent of this comment is to request that the State Historic Preservation Division (SHPD) review the Draft EA and to make clear that the SHPD would not have to re-review the archaeological inventory survey. Information regarding the Purchase and Sale Agreement is included in the Draft EA, which was transmitted to the SHPD for review and comment by the Department of Planning on March 15, 2005. A copy of this Agreement can be provided to the SHPD upon their request.
3. Information about native Hawaiian access rights and cultural practices will be provided to all prospective and initial lot purchasers, as well as to all subsequent lot buyers.
5. We are pleased that the Commission was satisfied with the approved archaeological preservation plan and burial treatment plan

Thank you for providing us with the CRC's comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,


Roy Clayton
Senior Planner

Encl.
Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

SMI 2004-0003 CMT

8. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

9. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a stream channel.

10. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works, for the purpose of diverting water from a stream, is constructed or altered.

11. A Permit to Amend the Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

12. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or actions are required from our office, or whether there are potential impacts to water resources.

13. We recommend that the report identify feasible alternative non-potable water resources, including reclaimed wastewater.

SMI 2004-0003 CMT

1) The document correctly indicates that 2 drinking water wells have been completed under permit from the Commission. Without a system diagram, we believe the two wells in question are on the east side of Ukumehame Stream, which of three permitted wells yielded the most potable results. 2) The flow into the irrigation system is on Sana land, the project may require a water license. 3) Amounts specified for potable and irrigation use combined, seem a little high compared with County standards.

Current records indicate that the proposed diversion is owned by Pioneer MA. We request that a transfer of diversion works ownership be submitted for recordation by the Commission.

The current Instream Flow Standard for Ukumehame Stream was established as the amount of water flowing in the stream on the effective date of the standard, October 19, 1998. Our records indicate that the proposed diversion is below the amount of flow formerly deemed by Pioneer MA Streams, an amendment to the Instream Flow Standard would not be required. However, Instream Flow Standards are by their nature temporary and subject to change. Consequently, any reliance upon the Instream Standards shall be at the user's risk.

Other:

If there are any questions, please contact Ed Saloda at 587-3868.

Other:

If there are any questions, please contact Ed Saloda at 587-3868.

Post-It Fax Note	7871	APR 21 11:55 AM
To	Cheryl Tiedtke	Director, Division
From	DLNR-CLNRM	
Phone #	(808)242-1855	Ext # 587-0249
Fax #	(808)242-1856	Ext # 587-0219



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
1000 KALIHI AVENUE, SUITE 1000
HONOLULU, HAWAII 96813

APR 21 2005

TO: Harry M. Yada, Acting Administrator
Land Division

FROM: Dean A. Nishino, Acting Deputy Director
Commission on Water Resource Management

SUBJECT: Ukumehame Subdivision Phase I and II, Application for Special Management Area Permits
TMK 4 B 2, Various Parcels

FILE NO.: SMI 2004-0003 CMT

Thank you for the opportunity to review the subject documents. The Commission on Water Resource Management (CWARM) is the agency responsible for administering the State Water Code (SWC). Under the SWC, all waters of the State are held in trust for the benefit of the citizens of the State. Therefore, all water use is subject to legally protected water rights. CWARM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrm>

Our comments related to water resources are checked off below.

- 1 We recommend coordination with the county to incorporate the project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2 We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3 There may be the potential for ground or surface water degradation/contamination and recommend that approval for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- 4 The proposed water supply source for the project is located in a designated ground-water management area, and a Water Use Permit is required prior to use of ground water.
- 5 A Well Construction Permit(s) is (are) required before the commencement of any well construction work.
- 6 A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 7 There is (are) well(s) located on or adjacent to this project. If these wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.



April 27, 2005

Mr. Dean A. Nakano, Acting Deputy Director
Commission on Water Resource Management
Department of Land
and Natural Resources
Maui District Health Office
P.O. Box 621
Honolulu, HI 96809

SUBJECT: Ukumehame Subdivision - Phase I and II
EA 2004/0016; SM1 2004/0033
TMK 4-8-002: 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Nakano,

On behalf of the Applicant, we acknowledge the receipt of your letter dated April 20, 2005 and are responding to your comments.

1. The Applicant will work with the Maui County Planning Department or Department of Water Supply to incorporate the project into the County's Water Use and Development Plan.
2. As far as the Phase II Subdivision and alterations to Ukumehame Stream are concerned, there is no other work proposed aside from placing the new waterlines through the pre-existing concrete conduit, which is firmly anchored to the streambed. The State and the County would be responsible for obtaining all land use and construction permits for the development of the future County park and future State highway right-of-way. This would include a Stream Channel Alteration Permit (SCAP) if they perform any work that would affect the streambed and/or stream banks.

3a. The location of the two (2) drinking water wells will be shown of the Phase II Subdivision General Plan

3b. The Applicant is currently in the process of verifying the location of the intake for the Phase II Subdivision's irrigation system. If the intake is located on State land, the Applicant acknowledges that a water permit may be required.

Mr. Dean A. Nakano
April 27, 2005
Page 2

3c. The amounts shown for the Phase II Subdivision's potable and irrigation use are conservative estimates which reflect maximum daily demands. In addition to single-family consumption standards, the potable estimate is based upon two farm dwellings per lot and Maui County fire flow requirements. Actual potable use would be lower depending on the number of dwellings that are constructed in the subdivision.

Using modern drip irrigation methods, the proposed flow rate to each parcel is adequate for most crops that could be grown at Ukumehame. Actual irrigation use would depend on the type of agricultural crops or activity that occurs on each lot. When the maximum amount of irrigation water is not used, the un-used quantity will continue to flow into the stream.

3d. The Applicant will comply with the CWRM's request regarding the submittal of the transfer of diversion works ownership to the Commission for recordation.

3e. The Applicant acknowledges the department's comments regarding the instream flow standard for Ukumehame Stream.

Thank you for providing us with your comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,

Rory Frampton
Senior Planner

Encl.

Cc: Ms. Kivette Caigoy
Ms. Donna Clayton





ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-5400
FAX (808) 244-5411



THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKURAUPIO R. AKANA
DEPUTY CHIEF OF POLICE


April 21, 2005

MEMORANDUM

TO : MICHAEL W. FOLEY, PLANNING DIRECTOR
FROM : THOMAS M. PHILLIPS, CHIEF OF POLICE
SUBJECT : I.D. : EA 2004/0016 and SM1 2004/0033
TMK : (2) 4-8-002: 009, 048, 052 - 056, 060, 061, 068
Project Name : Ukumehame Consolidation, Resubdivision (46-lot Agriculture Subdivision)
Applicant : Pacific Rim Land c/o Chris Hart & Partners

No recommendation or comment to offer.
 Refer to enclosed comments and/or recommendations.

We are returning the Application Booklet which was submitted for our review. As always, thank you for giving us the opportunity to comment on this project.


Assistant Chief Sydney Kikuchi
For: THOMAS M. PHILLIPS
Chief of Police

Enclosures

TO : THOMAS M. PHILLIPS, CHIEF OF POLICE, MAUI POLICE DEPARTMENT
VIA : CHANNELS
FROM : SCOTT Y. NIGITA, POLICE OFFICER III, LAHAINA BICYCLE PATROL
SUBJECT : DRAFT ENVIRONMENTAL ASSESSMENT IN SUPPORT OF THE SMA USE PERMIT APPLICATION FOR THE UKUMEHAME SUBDIVISION-PHASE I AND II

Sir, this To/From is being submitted regarding the Draft Environmental Assessment Prepared in Support of the Special Management Area Use Permit Application for the Ukumehame Subdivision-Phase I and II (TMKs: 4-8-02: 9, 48, 52-56, 60, 61, 65, 66, 68 and 70).

According to the Traffic Assessment study dated November of 2003 within Appendix "L" in reference to "Table 3-1-Insignalized Intersection Levels of Service" analyses indicates that the "highway traffic will be minimally affected". It also mentions that accelerations lanes could reduce the delays to traffic turning onto the highway, where a merge would replace the need to find an acceptable gap in highway traffic. It further relates that however, peak hourly volumes for each acceleration lane would be less than twenty vehicles per hour. In addition, traffic volumes even under worst case situation of all left turns would be less than half of the volume needed to meet the peak hour minimum requirement for traffic signals.

A concern from a police standpoint regarding this traffic issue would be even without the volume of traffic impacting traffic flow, a single vehicle attempting to make a left turn from the subdivision onto Honopitani Highway (#30) would find it at times, extremely difficult and unsafe to conduct without an acceleration and merge lane or a traffic signal, especially during peak traffic hours.

As experienced with the initial implementation of the traffic signal at the Launitupoko subdivision off of Honopitani Highway, there was a tremendous backlog of traffic in both directions on the highway. Another traffic signal on this widely used highway in a remote area at Ukumehame will more than likely cause additional traffic buildup.

At minimum, separate turn lanes for traffic leaving the highway (figures mentioned on page 4 of "Appendix L") as well as acceleration and merge lanes would be necessary to ensure the safety of vehicles leaving and entering the highway.

One additional concern from a safety perspective would be the response time to this residential subdivision in an emergency which would increase with heavy traffic flow. This subdivision would be located within two miles of the Lahaina district beat boundary located at the Pali tunnel. Currently with five beat officers on patrol, logistical issues in having a minimum of two

officers respond to a criminal emergency in progress at Ukumehame and concurrently an additional two officers on the opposing end of the district in the Kapahua, Honolulu, or Honolulu area would increase the spread of officers, leaving only one officer centralized with backup officers miles away. Consideration for an increase in police manpower to accommodate the addition of calls for service with this development as well as other proposed projects should be addressed.

TO : THOMAS M. PHILLIPS, CHIEF OF POLICE, MAUI POLICE DEPARTMENT
VIA : CHANNELS *CPA - 03/21/05*
FROM : BARRY S. AOKI, SERGEANT, TRAFFIC SECTION
SUBJECT : DRAFT ENVIRONMENTAL ASSESSMENT FOR THE UKUMEHAME SUBDIVISION-PHASE I & II

This TO/FROM is being submitted in response to the Draft Environmental Assessment for the Ukumehame Subdivision - Phase I & II (TMKs: 4-8-02: 9, 48, 52-56, 60, 61, 65, 66, 68 & 70) prepared by Chris Hart & Partners.

I have met with some of the parties involved (Chris Hart & Partners and Pacific Rim Land, Inc.) regarding the Ukumehame Subdivision which is adjacent to the Ukumehame Firing Range.

There are some items in the draft environmental assessment that I would like to draw attention to on the following pages:

page 26 It is true the range is used primarily during daylight hours however, there are occasions where the Maui Police Department (MPD) will need to use the range after 10:00 p.m. such as training & ordinance disposal.

page 27 The HIARNG will be upgrading their range. Would the applicant be open to installing some type of buffer (i.e. tree line, berm) between the HIARNG range and their proposed development?

Would the other ranges be required to upgrade anything?

page 28 Does this shooting range fall under the jurisdiction of Community Noise Control Chapter 11-46 of the Department of Health Administrative Rules?

In other jurisdictions, shooting ranges have been closed due to litigation and subdivision encroachment. Some jurisdictions have enacted ordinances to protect the shooting ranges. I have attached articles regarding this concern. It is laudable that the applicant will inform the potential buyers of the noise however, that does not prevent the potential buyer from taking legal action to shut down the shooting range on the grounds of public nuisance/noise abatement.

Would the County Council be receptive to enacting a shooting range protection ordinance?

Respectfully submitted,

[Signature]

Scott Y. MIGHTA, E-1122
P.O. III, Laha'ina Bike Patrol
04/19/2005 at 1403 hours

CONCUR W/ COMMENTS CONCERNING TRAFFIC, ESP. SINCE HIGH SPEEDS ARE EXPERIENCED IN THIS AREA. STUDIES ADDRESS VOLUMES AND NOT THE SPEED OF VEHICLES. AS MANY PEOPLE IN THE DEPARTMENT CAN ATTEST, IT IS DIFFICULT TO EXIT FROM THE MAUIA SIDE TO HEAD IN THE WAIALA DIRECTION. EMERGENCY SERVICES FOR THIS AREA, THE EXTREME EDGE OF OUR DISTRICT, WILL BE AT BEST DIFFICULT.

SPEED ENFORCEMENT AT NIGHT HAS SEEN SPEEDS IN EXCESS OF 80 MPH. *[Signature]*
4/19/05

page 2 of 2

page 31 The applicant will inform the buyer of the inconveniences and consequences of firing range operations however, is this adequate protection to prevent the closure of the firing range?

Also, the traffic count was conducted in May 2001. Having to commute daily (twice a day) through this area, I believe the traffic count is much higher now in 2005. Vehicles exiting the proposed subdivision will find it difficult to turn left onto the highway. If a traffic signal is installed, it will have an adverse impact on the highway traffic.

During the construction phase, it is reasonable to assume that there will be large trucks with and without loads trying to get onto the highway. These trucks with trailers can be up to 60 feet long and might not be able to merge with traffic safely. There could be a need for traffic control during the construction phase (roadway paving, adding/removing material). The posted speed limit in this area is 55mph.

This TO/FROM is submitted for your perusal.


Sgt. Barry AOKI 1091
03/24/05 @ 1120 hours

attachments

Mr. Thomas M. Phillips
April 27, 2005
Page 2



April 27, 2005

Mr. Thomas M. Phillips, Chief
Maui Police Department
County of Maui
55 Mahalani Street
Wailuku, HI 96793

SUBJECT: Ukumehame Subdivision - Phase I and II
EA 2004/0016; SM1 2004/0033
TNK 4-R-002; 009, 048, 052-056, 060, 061, 065, 066, 068, and 070

Dear Mr. Phillips,

On behalf of the Applicant, we acknowledge the receipt of your letter dated April 21, 2005 and are responding to the comments submitted by Sergeant Barry Aoki and Officer Scott Migita.

Traffic

Separate turning lanes have been provided (at Intersections "A" and "B") for vehicles making left- and right-turn movements from the Phase II Subdivision onto Honoapiilani Highway. At both intersections, median shelter/acceleration lanes have been provided to allow left-turning vehicles to merge with southbound highway traffic, while median shelter/deceleration lanes have been provided to allow left-turning vehicles to enter the Subdivision. During peak traffic, these median lanes would enable motorists to execute turning movements in two steps by providing refuge (shelter) in the median lane until there is an opening for vehicles to safely merge with highway traffic or enter the Subdivision.

As indicated in the Traffic Assessment (Appendix L), the traffic volume on the Subdivision's roads, even under a worst-case scenario of all left-turns, would be less than half the volume needed to meet the peak hour warrant for (the installation of) a traffic signal.

Emergency Response Times

The Applicant acknowledges the department's concern regarding emergency response times within the Lahaina Patrol District given the large geographical area of coverage in relation to the current number of beat officers. In the context of overall growth and development in the West Maui region, opportunities for increasing the department's manpower are provided by the County's annual budget process and by the department's continuing efforts to recruit new candidates for unfilled positions.

Firing Range Noise

Based on our discussions with the State Department of Health, Noise, Radiation and Indoor Air Quality Branch, it is our understanding that Ukumehame Firing Range activities do not fall under Chapter 11-46, Hawaii Administrative Rules (HAR) pertaining to Community Noise Control. Chapter 11-46, HAR, regulates excessive noise sources, which means any stationary noise source and any equipment related to agricultural, construction, and industrial activities, which emits sound in excess of maximum permissible sound levels set forth by the State Department of Health (DOH). As defined by Chapter 11-46, a "stationary noise source" means any mechanical source of noise fixed in or on a station, course, or mode within any premises, including but not limited to mechanical air conditioning units, exhaust systems, generators, compressors, pumps, or other similar equipment."

The civilian firing ranges at the Ukumehame Firing Range fall under the control of the Maui County Department of Parks and Recreation (DPR), while the military ranges are under the jurisdiction of the Hawaii Army National Guard (HIARNG). Based on the advice of its legal counsel, the Applicant is not in the position to respond to any questions regarding a facility and land over which it does not exercise any control. The Applicant does not know if the Ukumehame Firing Range would be required to upgrade their facilities.

As stated in the Draft EA, the Applicant acknowledges that the Ukumehame Firing Range is a pre-existing use and that noise from firing range activities could affect lots in the eastern part of the Subdivision. For disclosure purposes, the Applicant will include language about firing range activities in all sales documents. Deeds for the agricultural lots will include language that runs-with-the-land to ensure that original lot buyers and any subsequent purchasers are aware of the proximity of the firing range and potential noise impacts.

Mr. Thomas M. Phillips
April 27, 2005
Page 2

Traffic Control

A traffic control plan will be implemented during construction of the Phase II Subdivision's traffic improvements in order to safely and effectively manage traffic traveling along Honoapiʻilani Highway.

The traffic control plan will be included in the construction plans for the subdivision, which will be submitted to the County and routed to appropriate government agencies for review and approval. Thank you for providing us with your comments and please feel free to call Glenn Tadaki or me at 242-1955 should you have any questions.

Sincerely yours,


Rory Frabington
Senior Planner

Encl.

Cc: Ms. Kivette Caigoy
Ms. Donna Clayton

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CERTIFICATION

I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF
FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.

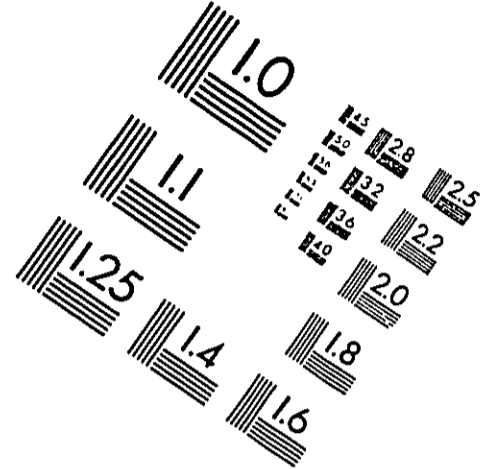
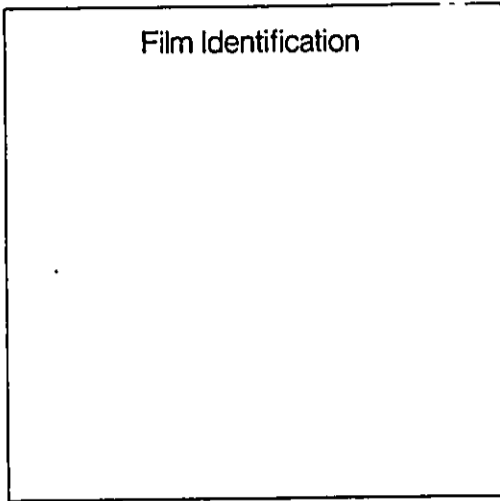
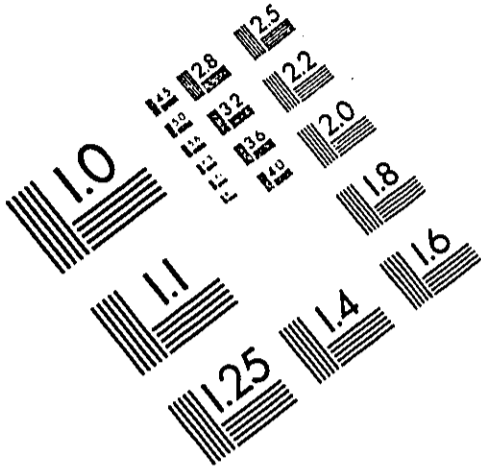
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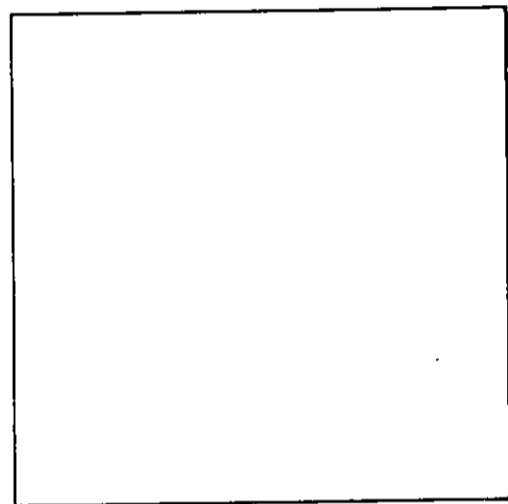
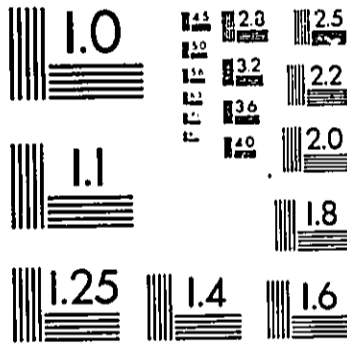
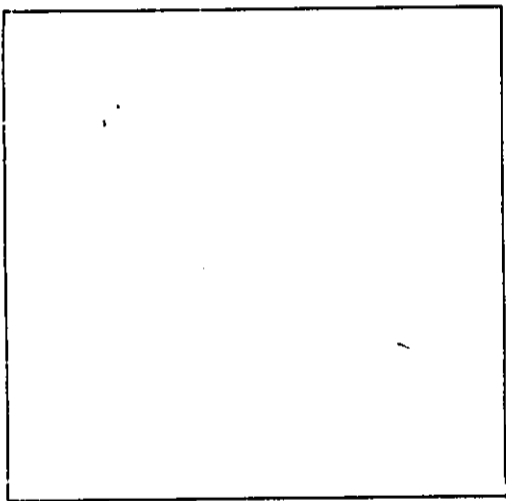
SIGNATURE OF OPERATOR

TOP



A & P International
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577 Locust Street • Prescott, WI 54021
Web Site <http://www.zimc.com/apintl>

PRECISIONSM RESOLUTION TARGETS

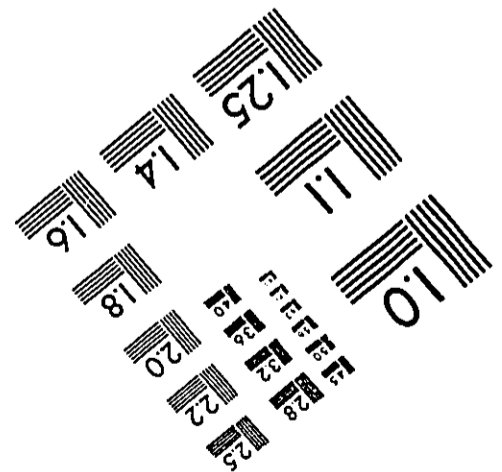
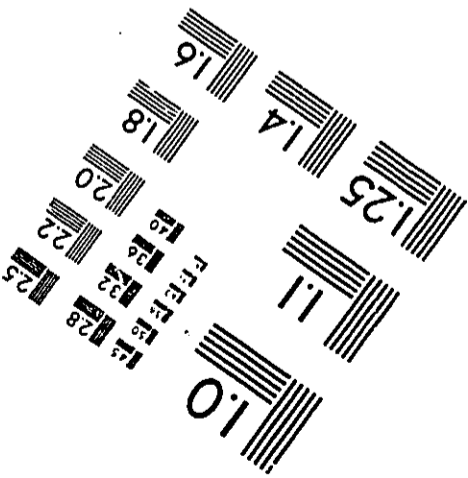


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