BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

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

RECEIVED
96 AUG 12 P12:22
OFC. OF ENVIRONMENTAL QUALITY CONTROL

AUG -8 1996

Ref: LM-GM

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

Dear Mr. Gill:

Subject: Negative Declaration for Proposed Dairy Operation on State-Owned Land Situate at Honuapo, Kau, Hawaii, Tax Map Key:9-5-15:3

The Department of Land and Natural Resources and the applicant, Waiubata Dairy, Inc.,has not received any comments during the 30-day public comment period. We have determined that this project will not have a significant environmental effect, and therefore, we are issuing a negative declaration. Please publish this notice in the next available OEQC Bulletin.

Enclosed, are a completed OEQC Bulletin Publication Form and four (4) copies of the final environmental assessment.

Please contact Gary Martin at 587-0421 if you have any questions.

Thank you for your attention to this matter.

Very truly yours,

DEAN Y. UCHIDA, Administrator
Land Division

Enclosures

cc: Hawaii Land Board Member
Hawaii District Land Office

101

1996-08-23-HI-FEA - Dairy Operation on State Land

FINAL ENVIRONMENTAL ASSESSMENT

May 31, 1996

Applicant: Alfred Galimba
Waiubata Diary, Inc.
P. O. Box 379
Na'alehu, HI 96772

Approving Agency: Department of Land & Natural Resources
Division of Land Management
P.O. Box 936
Hilo, HI 96721

Land Parcel Location Requested:

Ka'u District, Hawaii Island
Hawaii County
TMK 9-5-15-3
2,197.29 acres
55 year lease

Table of Contents

Agencies consulted

County of Hawaii:

- Department of Public Works
- Department of Water Supply
- Fire Department
- Planning Department

State of Hawaii:

- Health Department
- DLNR - Division of Historic Preservation
- Office of Hawaiian Affairs

Others:

- Huliau O Ka'u
- Rick Warschauer

Executive summary

Consumer demand for milk on Oahu far outstrips the local milk industry's ability to supply. Population growth has increased demand but has not led to an increased supply from Hawaii's dairies. The shortfall is particularly acute during the school year when the school lunch program is in effect. At present the deficit is made up by milk importation. About 30% of the milk consumed in Hawaii is imported from the mainland. This represents a major drain of revenue and job opportunities from the local economy.

The high cost of operation, much less expansion, for Oahu dairies makes it nearly impossible for them to address the supply shortage. Real estate prices and population pressure have severely limited the possibilities for growth for these dairies, and in fact present conditions adversely affect the quality and quantity of the milk produced as the cows are subjected to crowded conditions and heat stress. Issues of water supply and waste-water disposal have also discouraged growth for Oahu dairies. The dairies must compete for scarce water resources with an ever-growing urban population.

Even more troubling, however, is the extreme proximity of these dairies to residential areas and to the shore-line, making waste management a critical concern. The dairies must operate in areas that are environmentally sensitive, but where the shortage of land and the already high cost of operation make it economically un-feasible to institute optimum waste management measures. Suburban residents also have become intolerant of agriculture in their vicinity and hostile to the idea of agricultural expansion. All of these factors not only discourage growth for the dairy industry on Oahu, but have made maintaining operation more and more difficult.

The situation on Oahu has not only inhibited growth in the dairy industry, but it has also made it increasingly clear over the past few years that milk production for the Oahu market must be gradually shifted to the outer islands. Scarce land and water resources, environmental and social conflicts, and the astronomical costs of operation and production on Oahu have led the milk industry to examine off-island alternatives to the present situation. Although the industry agrees that production must eventually be transferred to the outer islands it represents an arduous process that most of Oahu's dairymen, caught up in the daily struggle to keep their dairies operating, are unwilling to undertake. Processing facilities adequate to handle an increased volume of milk already exist both on the Big Island and on Oahu. It is common knowledge in the industry that processing facilities throughout the state run at as little as half of full capacity at the present time.

The problems besetting dairies on Oahu coincide with an even more critical situation on the Big Island. With the end of sugar operations in Ka'u, the area and its communities face a difficult juncture. Increased unemployment and other social problems for the area are certain, if new business activities do not arise to fill the gap. The development of agricultural industry in Ka'u district is crucial for the social and economic health of the area and to offset the detrimental effects that the end of sugar-cane operations may bring.

We would like to build a large-scale dairy in the district of Ka'u, which will generate much needed employment and revenues for the district, the island, and the state as a whole. It will also begin the process of re-locating milk production for the Oahu market to more appropriate environments. We will be aiming for an initial herd of 500 head, with incremental growth to a herd of 1000 head or even larger depending on market demand.

The dairy facility will be situated on approximately 2000 acres of former sugar-cane land, on long-term lease. At full capacity it will produce 70,000 pounds of milk a day, and contribute approximately $5.6 million annually to the local economy. It will be an intensive, automated facility that will not only bring the transitional cane-land to maximum productivity, but will also make responsible, environmentally-committed use of the natural and human resources of the district of Ka'u.

The district of Ka'u has certain features which make it a highly favorable location for milk production. These are: 1) an abundance of rich pasture land, supplementing the cow's diet of pre-mixed grains and silage, 2) a generally dry climate, essential to the health and soundness of dairy-cows, 3) a good supply of water from mountain springs and wells, 4) appropriateness to the existing community, which has deep roots in the cattle industry.

After examining several alternative sites, some of them privately owned and some state-owned lands, we have come to the conclusion that the piece we are presently requesting to lease best fits the specific needs of the proposed agricultural operation.

General description of proposed action

Pasture usage and construction of a dairy on (TMK 9-5-15:3), a 2,197.29 acre parcel in the district of Ka'u.

This will involve developing all of the land for pasturage with the installation of fences and water systems. Adequate roads, water supply and electrical supply must be developed. On the site chosen for the installation of the dairy facilities dry lot pens and a milking barn and office building will be constructed.

Waiubata Dairy will pass through a series of start-up phases before it will be ready for production. In the initial phase, we will be fencing and improving pasture-lands. The second phase will see the construction of the necessary infrastructure for producing, handling, and transporting milk, purchasing the dairy-heifers and pasturing them on the parcel. The third phase will see the construction of the remaining facilities necessary for putting into place a milk-production schedule.

Phase I will include

~perimeter and internal fencing of the parcel with a combination of barbed wire and electrical fencing
~installation of water troughs and pasture water supply systems
~improvement of existing roads
~construction and restoration of drainage flumes in pastures

Phase II will include

~construction of milking barn and adjoining office building
~extension of electrical supply to parcel and installation to buildings

Phase III will include

~construction of dry-lot pens with stanchions
~construction of calf pens and sheds
~construction of waste management system for dairy operation

The services of dairy-construction consultants will be employed to ensure that the facility will meet all the relevant health and safety requirements, as well as be as efficient as possible. Experts in pasture development as well as Soil and Water Conservation agents will be consulted throughout the process of developing the parcel

Project Cost

This project will require approximately $2.5 million in start-up costs. Most of this cost is taken up by the construction of facilities, with the remainder dedicated to purchasing farm machinery and cattle herd. See business plan for investment summary.

Building Descriptions

Milking Barn - Approximately 12,500 square feet (250'x50') of covered area. This will include a wash pen area with floor-mounted sprinklers to wash the cows udders, a drip pen, and a milking area fitted with individual stalls, automatic milking equipment and feed delivery system. The building will also include a breezeway, office space, storage rooms, a milk room for storing milk, and service area for loading of milk into the tankers. Bulk milk tanks will straddle the milk room and service area. See figures 8 and 9 for cross-section and floor plans of a milking barn of the general type proposed.

Office Building - This will be connected to the milking barn and will be approximately 2,000 sq. ft. It will provide space for record-keeping and other business-management activities. It will also include a space for an employee lounge.

Feed Storage Barn - This will be an open shed of 7,500 sq. ft.(150' x 50'). It wil be used to store dry feed and hay.

Other Constructions

Dry-lot Pens - This will occupy a space of approximately 12 acres surrounding the milking barn. The area will be graded for drainage and fenced with pipe and cable fencing. They pens will be equipped with 24' x 200' shade areas. There will be feed truck access on the perimeter of the dry-lots.

Calf pens and shelters - The calf area will consist of an area for individual, raised, covered stalls for new-born calves, and 2-3 small open pens,

fenced with hog-wire and containing shelter areas for the older calves. It will also contain a small shed for storing feed and preparing milk for the calves. The calf area will comprise approximately 1 acre (43,560 sq. ft.)

Waste management system - This will treat the waste-water produced by washing down the milking barn and waiting areas. It will consist of concrete sluices and pipe-line leading to two concrete settling tanks to be used alternately, which will separate out the suspended solids. The fluid will then be drained off and used for pasture irrigation, and the solids will be disposed of by composting and soil application.

Water reservoir - A lined reservoir of approximately 10 million gallon capacity will be constructed on the upper east corner of the parcel to store back-up supplies of agricultural water. The guidance of the Soil Conservation Service will be requested in planning and executing this reservoir.

Construction Schedule

The entire process of constructing the dairy will take 12-18 months, distributed as follows:

Phase I	2-4 months
Phase II	8-11 months
Phase III	2-3 months

Personnel Involved

In the construction phases, there will be a fluctuating number of persons working at the site, depending on the element under construction. In the beginning of the construction process only 5-6 persons will be involved, while at the peak of construction activity this number will increase to approximately 10 persons.

Personnel will increase with the growth of the herd and increase in productivity. Initial employment will be approximately 12 persons. Among the occupations that will be created at the dairy will be: milkers, truck drivers,

maintenance workers, herdsmen, office staff, and management. At full capacity the dairy will employ approximately 24 persons.

Economic and Social Effects of the Project

The dairy will have little negative effect on the closest community of Na'alehu, as it is located more than three miles away. Also, the dairy is culturally consonant with the surrounding area and its communities, and will not create any changes in the area's cultural condition. Furthermore, the dairy will use land that is unsuitable for agricultural usages other than pasturage and therefore will not impact the availability of crop-land in the district. A dairy on this site represents optimization of the land's agricultural potential, with a minimum of negative physical and social impact.

The dairy will have a significant positive impact upon the economic and social health of the area by providing well-paid, permanent employment for agricultural workers. This comes at a critical juncture in the economic and social development of the area. The dairy will help to revitalize the economy of the area following the closure of sugar-cane operations, and to create job opportunities for agricultural workers. The dairy will place the highest emphasis on employee development and involvement in the business: agricultural and technical skills used on the sugar plantation will be valued and furthered wherever possible, and a system of profit-sharing will be instituted. Also, the dairy will work together with the community to encourage further entepreneurial development related to the dairy, such as haylage, grass-fed beef, and animal-waste disposal and re-use operations.

Summary description of the affected environment

Former cane-land at an elevation of approximately 2000 feet, between Na'alehu and Pahala. The site is presently undeveloped and unused. There is a air-strip used by Ka'u Agribusiness for fertilizer planes on the parcel, as well as an abandoned quarry site.

Physical Description

Climate - Median annual rainfall for the parcel is approximately 50 inches per year. Winds are generally trade-winds between 10 and 20 miles per hour, with occasional Kona winds. Temperature are typical for the area, with relatively cool night temperatures due to the site's elevation. Air quality on the parcel is typical for the Big Island, subject to vog to a greater or lesser degree depending on wind direction and velocity.

Soils - According to Soil Conservation Service surveys of the site, the most common types of soil are rKYD (Kona extremely stony muck), rPXE (Punalu'u extremely rocky peat), and rKXD(Kiloa extremely stony muck). These soils are considered most suitable for pasture usage. They are highly permeable and erosion hazards are slight. (see attached soil map). There are also substantial areas of AlC,D, E soils (Alapai silty clay loam), MoC,D,E soils (Moaula silty clay loam), with small pockets of HiC (Hilea silty clay loam) and NaD (Na'alehu silty clay loam). These soils are considered suitable for pasture usage. Permeability is rapid to moderately rapid for all these soils, with erosion hazard slight for C soils (0-10 percent slopes) , moderate for D soils (10-20 percent slopes), and severe for E soils(20-35 percent slopes). See figure 3 .

Water - The site has potential water supply a number of springs and tunnels in the area. The most important of these for this project is the Mountain House Tunnel system, which produces a minimum of 250,000 gpd, with an average of 1.172 mgd. See figure 7.

Flora and Fauna- Vegetation is predominantly mixed grasses and shrubs. In some areas of the parcel there are mixed stands of introduced and native trees such as ohia, wililaiki, kukui, and guava. As most of the parcel has been used for sugar-cane production in the past, most of the vegetation is composed of typical re-growth, i.e. molasses grass, guinea grass, bamboo orchid,

etc. See comments of Rick Warschauer for a further description of the natural communities on the parcel.

Wildfire Hazard - There is some danger of wildfire at the present time due to thick groundcover of grasses, especially during periods of drought when there is a high percentage of dry material in the groundcover. Wildfires occur occasionally in area during dry periods. This danger will be mitigated, however, by the elimination of excessive vegetative cover that results from pasture usage.

Noise - The parcel is subject to minimal noise impact due to its distance from major roads and communities.

Social and Economic Description

Archeological/Historical Sites - No indication of sites of archeological or historical interest are evident on the site. Due to the site's previous usage as sugar-cane cropland, any signs of historical usage will have most likely been destroyed by planting and harvesting. See comments of DLNR - Historic Preservation Department in appendix.

Land Usage - The site is zoned for agriculture. It is presently unused. Adjacent parcels are being used for sugar-cane production, ranch pasturage, citrus production, macadamia-nut production, and grass-hay production.

Summary of the major impacts

Short term (Construction phase)

Erosion A small increase in possible erosion will occur during construction due to the necessity of clearing fenceline and drainage ditches and the construction site for the dairy buildings. The area cleared and/or graded will not exceed 2% of the total acreage, however, and wherever possible will be immediately replanted with grass seed.

Soil There will be little to no effect on the soil. The siting of buildings and other dry-lots will aim to minimize alteration of the existing landscape. Land clearing on the minimal area mentioned above will be of vegetation for the most part, with little to no disturbance of the soil.

Traffic Construction will create a very slight increase in traffic to the site. Existing roads are generally adequate to handle this traffic. Roads will also be improved as a part of the construction process.

Long term

Erosion Little to no alteration in the potential for erosion will exist in the long run as most of the site will be in covered in pasture.

Soil A beneficial impact on soil quality and quantity will occur due to the imput of organic matter by pasturage, application of amending materials, and the process of pasture management.

Air No effect on air quality is foreseen.

Water Minimal impact on water sources, supply or quality is foreseen. The facility will use water that is in excess of munincipal needs. Waste-water will be disposed of in compliance with environmental regulations.

Flora & Fauna Little impact on flora and fauna is foreseen. The site is already primarily grassland, therefore its use as pasturage will require minimal alteration. Some exotic "weed" trees and shrubs, such as wililaiki and guava, will be removed. No effect upon wildlife in the area is foreseen.

Wildfire The dairy will have a positive impact upon the danger of wildfire, due to the elimination of excessive masses of dead grass in the groundcover by grazing, and by the irrigation of the pastures.

Noise The dairy will create very little increase in noise for the site. Furthermore, the isolation of the site obviates noise problems.

Archeological /Historical Sites No sites of historical or archeological significance are known to exist on the site.

Aesthetic The dairy facility will be located at some distance from any other business site, residence, or public road. The dairy will have a positive aesthetic impact upon the site in the improvement of the pasture land and elimination of noxious weeds. The few structures required for the dairy wil also be planned and maintained to make a positive aesthetic impact.

Economic The dairy will have a positive economic impact on the area, providing jobs and revenue that will benefit the entire community. The employment created will be well-paid and permenant. By increasing the production of milk locally, the dairy will also increase revenues and job availability for the island and the state as a whole, in the businesses involved in processing, transporting, and otherwise handling milk in the state. The dairy will also increase tax revenues for the state government.

Social The dairy will have a positive social impact upon the area by providing employment and training in agriculture to local people. This will mitigate some of the social effects of the transition from a plantation-dependent economy to the more diversified economy that will replace it.

Alternatives considered

Several alternative sites have been considered. The criteria used to in site consideration were as follows:

Size and configuration of parcel(s) - Optimal size of parcel between 2000 and 3000 acres, configured so as to allow fencing into several large pastures, with ease of access for cattle to the different pasture areas from the central milking facility. It is important for the health of the animals that they not have to make long trips between the barn and pasture.

Distance from residential and visitor industry areas - So as to prevent negative impacts of agricultural operations, such as noise, smell, insect pest, or aesthetic impacts, upon quality of life or visitor experience, as well as to minimize vandalism, theft and public safety problems and maximize the tranquility and security of the dairy cow's regime.

Water supply - A water supply of 70,000 gpd must be viable at the site. As a supplement and backup for the daily water supply, the ability to construct a 15-30 million gallon resevoir is also an important consideration.

Availability of long-term lease - The substantial investments required to build the dairy necessitate the availability of long-term lease critical. Thirty years is the minimum, with a longer term of 55 years desirable. The longer term will give the dairy the security to develop further, as the dairy industry in the state shifts towards the neighbor islands.

Vegetation/ Suitability for pasturage - A site already grass-land is preferable as it will require the least alteration in environmental conditions, demonstrates the sites suitability as pasturage and minimizes the costs of developing the site as pasturage. The presence of preferred grass species such as kikuyu, pangola, or guinea are also strong determinants of the suitablity.

Annual rainfall - Optimal rainfall will be enough to allow for pasture regrowth, but not so much as to endanger dry-lot operation and cause erosion problems.

Temperature - Temperature slightly cooler than average is optimal, as cooler temperatures stimulate dairy production and prevent heat stress, thereby making for healthier animals. Cooler temperatures also help to prevent insect pest problems.

Topography - Even terrain and limited gradient are important in minimizing the risk of injury to the animals and to prevent soil and water problems.

Soil - Although pasture usage does not require deep soil, a minimum of soil cover is necessary.

Use history - Although former cane-land is suitable, and in fact desirable as cane usage will have required even terrain and drainage ditch construction, the optimal site will have had a long interval since last being used for cane. This will minimize the timespan required to develop strong pasture.

The following sites were considered:

Moaula-Makaka, Ka'u, Hawaii, TMK 3rd/9-6-02:05, 10, 11 (2,376 acres)

This site is of sufficient size, and the conditions of temperature, rainfall, soil and vegetation,though not ideal, are within acceptable parameters. However, this site has serious drawbacks in its proximity to a visitor site, Punalu'u black sand beach, and its lack of water supply.

Hiona, Hokukano and Kaala iki, Ka'u, Hawaii, TMK 9-5-15:3 (2197.79 acres)

The site is of optimal size and configuration. It is removed from all present and potential residential and visitor areas. It has the potential for an adequate water supply. Vegetation is already predominantly grass species, so that the transition to pasture use will be facilitated. The climate is also highly suitable for the intended purposes, with adequate but not excessive rainfall and cooler conditions than any other of the sites considered. The topography of the parcel is even, without excessive gradients on most of the area. Also, the land has been out of sugar-cane production for an extended period so that the soil has fully recovered.

Mitigation measures proposed

Erosion control measures

Ground-cover maintenance - A ground cover of pasture grasses will be maintained at all times, thereby strongly inhibiting run-off and erosion. In addition, erosion hazard will be addressed by a combination of pasture management techniques. Native trees will be retained wherever possible to further aid in erosion control.

Planting and soil building -- The planting of desirable pasture grasses, and nitrogen-fixing legumes will augment the existent groundcover. Soil building will occur as a result of pasture usage, as well as application of compost to the pasture areas at intervals.

Windbreaks - Windbreak trees will be planted throughout the site so as to minimize wind-generated damage. Native species of trees will be used as much as possible.

Pasture layout -- The configuration of pastures will be designed to minimize livestock traffic on areas with the greatest degree of erosion hazard.

Rotational grazing -- Pastures will be extensively cross-fenced so that livestock can be rotated between numerous relatively small paddocks at frequent intervals so that each paddock is exposed to livestock for only a few days each month, thus maximizing the time each pasture may rest from use, and minimizing the effects of livestock traffic.

Drainage ditch maintenance - Erosion and run-off will also be limited by repairing and maintaning such drainage ditches as were created during the site's usage as sugar-cane cropland. Further drainage ditches will be created and maintained according to the recommendations of the Soil Conservation Service engineers.

Siting - The dairy facilities will be sited so as to minimize erosion hazard. The facility will also be serviced by drainage ditches and settling ponds designed to control run-off generated by heavy rain-fall.

Road maintenance

Roads on and leading to the parcel will be maintained and improved to handle the increase in use. Drainage will be ensured for roadways so as to

minimize run-off damage, and roads will be regularly maintained by grading, repaving, or other necessary repairs.

Improved soil fertility and productivity

Increased demand placed upon the soil at the site by pasture usage will be counter-balanced by increased soil fertility due to soil-building measures. Increased productivity will occur through the availability of pasture irrigation and the gradual improvement of grass and legume species present.

Water systems

The water supply that we would like to secure for the dairy facility and pastures will take advantage of excess water supplied by the Mountain House Tunnel water system. We will be laying pipeline to the Mountain House holding tank to bring this water down to the parcel.

Water reservoir and storage tank system

A water storage reservoir of approximately 10 million gallon capacity will be constructed, in order to store water to cover periods when excess water from the water-system is not available. Storage tanks will also be deployed on various sites at the facility to regulate the flow of water to the pastures.

Waste management systems

Because the dairy herd will be pastured as much as possible, the need for animal waste disposal will be less than for a herd confined in dry-lots throughout the year. Waste disposal will be required for the dairy facility and the dry-lots.

Waste-water generated by the washing down the dairy facility will be disposed of on the site by processing in settling tanks. The liquid portion will be drawn off the settling tanks and used as pasture irrigation. The remaining solid wastes will be composted and either applied to the pastures or sold.

The dry-lots will be periodically scraped to remove build-up of excess manure. This solid waste will be disposed of in the same manner as the waste-water solids.

References

[1].*The Feasibility of Expanding Dairies on the Neighbor Islands for Milk Supply to O'ahu (draft)*. Prepared by M&E Pacific, Inc. for the State Department of Agriculture, Novermber 1993.

Business Plan

Waiubata Dairy, Inc.
P.O. Box 379
Naalehu, HI 96772

Mission Statement

Waiubata Dairy will produce high quality, pure raw milk for Big Island and Oahu markets by using a combination of pasturage and dry-lot feeding that makes the best use of the natural resources of Ka'u district. It will also offer for sale replacement dairy heifers and dairy bull calves to dairies and ranches, as well as cull cows to Big Island slaughter-houses. The dairy will place the highest emphasis on employee development and involvement in the business: agricultural and technical skills used on the sugar plantation will be valued and furthered wherever possible, and a system of profit-sharing will be instituted. The dairy will work together with the community to encourage further entepreneurial development related to the dairy, such as haylage, grass-fed beef, and animal-waste disposal operations.

Industry Analysis

Consumer demand for milk on Oahu far outstrips the local industry's ability to supply. Population growth has increased demand but has not led to an increased supply from local dairies. The shortfall is particularly acute during the school year when the school lunch program is in effect. At present the deficit is made up by milk importation. About 30% of the milk consumed in Hawaii is imported from the mainland. This represents a major drain of revenue and job opportunities from the local economy.

The high cost of operation, much less expansion, for Oahu dairies makes it nearly impossible for them to address the supply shortage. Real estate prices and population pressure have severely limited the possibilities for growth for these dairies, and in fact present conditions adversely affect the quality and quantity of the milk produced as the cows are subjected to crowded conditions and heat stress. Issues of water supply and waste-water disposal have also discouraged growth for Oahu dairies. The dairies must compete for scarce water resources with an ever-growing urban population.

Even more troubling, however, is the extreme proximity of these dairies to residential areas and to the shore-line, making waste management a critical concern. The dairies must operate in areas that are environmentally sensitive, but where the shortage of land and the already high cost of operation make it economically un-feasible to institute optimum waste management measures. Suburban residents also have become intolerant of agriculture in their vicinity and hostile to the idea of agricultural expansion. All of these factors not only discourage growth for the dairy industry on Oahu, but have made maintaining operation more and more difficult.

The situation on Oahu has not only inhibited growth in the dairy industry, but it has also made it increasingly clear over the past few years that milk production for the Oahu market must be gradually shifted to the outer islands. Scarce land and water resources, environmental and social conflicts, and the astronomical costs of operation and production on Oahu have led the milk industry to examine off-island alternatives to

the present situation. Although the industry agrees that production must eventually be transferred to the outer islands it represents an arduous process that most of Oahu's dairymen, caught up in the daily struggle to keep their dairies operating, are unwilling to undertake. Processing facilities adequate to handle an increased volume of milk already exist both on the Big Island and on Oahu. It is common knowledge in the industry that processing facilities throughout the state run at as little as half of full capacity at the present time.

Waiubata Dairy will address the inter-related issues of milk importation and the need to develop an outer-island milk supply for the Oahu market at a particularly timely juncture. It will show that the vast tracts of land made available by the end of sugar operation represent an opportunity to generate new revenue for the state. At the same time, Waiubata Dairy will demonstrate the advantages that shifting milk production to the outer islands presents to the dairy industry; by making use of the specific natural and social resources of the Big Island a better product can be delivered at a lower cost.

A large-scale dairy on the Big Island will bring the revenues lost by milk importation back to support local communities. This will be possible because conditions on the Big Island allow milk to be produced at a lower cost than on Oahu. Waiubata Dairy will be able to go after market share that the Oahu dairies are unable to produce for due to environmental limitations. In this way the milk that Waiubata Dairy produces will not compete for market share with local dairies, but only with the markets presently supplied by imported milk. The dairy will not alter the present market structure of the local milk industry or take revenues away from local businesses. Rather, the increased production of milk will create much-needed revenues for the plantation communities of Ka'u, and for the Big Island in general, and will promote the self-sufficiency and economic health of the state as a whole.

The single greatest expense for island dairies is feed, often consuming substantially more than half their income. The high cost of shipping feed from the mainland and the lack of land available as pasturage keeps the cost of producing milk for Oahu dairies extremely high. By pursuing a coordinated strategy of forage and feed resource development, it will be possible to decrease the percentage of the animal's diet that must be supplied by imported materials and thereby produce milk at lower cost per pound. Ka'u district has proven its ability to produce high-quality pasturage, and this resource will be at the core of our strategy for lowering production costs. At the same time we will be developing sources of grass hay, haylage, corn silage and potentially even grains for animal consumption to replace high-cost feed imports. This will not only decrease cost of production but also generate further revenues in local communities.

"Cost of milk production in Hawai'i is the highest in the nation. Productivity is among the lowest. To remain competitive, the dairy industry must get more milk per cow to increase income. Raising the price of milk at this point in time would be industrial suicide." This assessment of the local milk industry in a feasibility study commissioned by the state Department of Agriculture underscores the endemic problems which the milk industry must come to grips with if it is to survive in the long run. Waiubata Dairy is part of the solution to the problem.

The dairy will demonstrate a specific paradigm for shifting Oahu milk production to the outer islands. Operational methods such as dry-lot feeding that are adapted to the situation on Oahu will not make full use of the resources available on the Big Island , while the pasturage methods of feeding used by Big Island dairy-men at present are not adequate for the level of production necessary to supply the Oahu market. Waiubata Dairy will combine the best of both methods of feeding, and introduce some new methods drawn from the New Zealand and mainland industries, to take full advantage of the land and feed resources of the Big Island. It will also demonstrate the usefulness of creating alliances with other businesses in the community, such as hay and other forage suppliers, ranchers, and farmers, so as to maximize opportunity and the efficient use of resources, as well as the over-all health of the local economy.

Market Dimensions

The demand for milk exceeds what is currently being produced in the state. At present, the deficit in the milk supply is filled by milk importation, with over 15,000 gallons per day being imported from the mainland. Combining the cost of milk and shipping, this represents approximately $10 million per year that is being lost from local industry. Mainland milk is priced competitively, even after substantial shipping costs are included, but locally produced milk can match these prices if the more efficient methods of production that are feasible on the Big Island are used. Also, with growing consumer awareness of the need to support the island economy, locally-produced milk has the market advantage of being "island-fresh".

Milk production is led by a stable, high-volume market that expands at a steady rate, with predictable seasonal flux reflecting school-lunch programs, military deployments, and visitor industry variation. As a high-volume producer of raw milk, the dairy will be planned to address the dairy-industry conundrum of demand flux, a problem that cannot be provided for by the herd-management techniques presently in use by local dairies. Waiubata Dairy will be developing a herd and production management system that takes advantage of the market opportunities created by demand flux.

We will utilize a variation of the New Zealand system of production management. The dairy will maintain a basic herd of approximately 500 head to provide stable year-round production for the base market. However, it will also develop a supplementary herd that will be cycled to coincide increased production with the peak period of market demand, generally beginning around September 1 with the opening of the school year. Therefore, though we project an average daily production of 70,000 pounds, daily production will vary between approximately 50,000 pounds during the summer low-demand period, and as much as 120,000 pounds during periods of peak demand.

Our milk will be marketed flexibly between the Big Island and Oahu. It will initially be transported to Hilo where it will either be processed in the existing facilities, or be shipped in bulk to Honolulu to be processed to meet the needs of these markets. Though we foresee a market for our product here on the Big Island, especially during the school months when there is a recurrent shortage of fresh milk for the school milk program, we will be aiming to develop the Oahu market most aggressively. The milk we produce will also help to fulfill the demand for milk by the military communities on Oahu and the Big Island, which on occasion is not met by the existing supply.

We will be working closely with the dairy processors on the Big Island and Oahu, as well as with the Big Island and Oahu dairy producers co-operatives and the state's Milk Control Branch to co-ordinate production and marketing.

Competitive Analysis

Waiubata Dairy will focus on lowering the cost of high-quality roughage in the livestock diet as its competitive strategy. Although sources of protein in the diet will still need to be imported, the bulk of roughage requirements can be provided from local sources. In tandem with Ka'u Hay Enterprise, the dairy will be developing the capability to deliver sufficient quantities of grass-hay, haylage, and silage to replace the need for importing sources of roughage in the dairy cow's diet. This will significantly reduce costs in feed, the major operating expense of a dairy business, and provide increased revenues and employment for the local economy. Our system of combining pasturage and dry-lot feeding will in itself create better pasturage by the addition of organic matter to the soil. This will not only allow for increased yields of pasturage and dry forage, but will also restore the land and soil to health and fertility.

The dairy will also take an active role in promoting island-fresh milk. It will work closely with processors and retail merchants to develop marketing campaigns to promote public awareness of the dairy industry's commitment to produce high-quality island-fresh milk and to inform the public of the importance of supporting the local dairy industry as a major source of employment in rurul areas.

The trend in agriculture today is towards thoughtful and consistent management of agricultural materials and livestock to encourage maximum productivity. In the dairy business, productivity is directly related to the health and well-being of the dairy cows, therefore the success of a dairy business rides on the quality of care provided to the cattle and the responsiveness of the operation to their needs. The relationship between the dairy-workers and the livestock under their care is critical to the sucess of a dairy business. In line with the profit-sharing and employee-empowerment policies mentioned above, Waiubata Dairy will be training every employee to care for and be observant of the welfare of the livestock at all times. We will provide education in the relevant veterinary and health issues, and ensure that communication is facilitated between employees, so that problems and suggestions can be considered and acted upon efficiently.

Operations

The primary features of the dairy facility will consist of a milking barn with semi-attached office building. The milking barn will be flanked by four dry-lot pens, where the milking cows in the early stages of their milking cycle can be confined to monitor their diet and health. Also adjacent to the milking barn will be a hospital pen, where sick cows can be treated. The rest of the milking herd will be pastured in adjacent areas. A specific area will also be set aside as the calving pen, so that these animals can be carefully monitored and assisted if necessary. Dry cows and replacement heifers will be pastured in outlying areas.

Calves will be separated from their mothers a few days after birth. The cow then goes into the milking string, and the calf is taken to a separate area to be raised. The calf is fed fresh milk twice a day until it is old enough to be weaned to grain. The young bulls will then be sold to ranchers, and the heifers will be kept as replacements for the milking string.

The milking herd is brought in twice a day to be milked. The cows are put into a covered waiting pen where their udders are washed by floor sprinklers. They are then moved into a drip pen to allow excess water to drain and to wait for their turn in the milking parlor. In the milking parlor each cow is restrained in an automated stall, where they are given a ration of grain as they are milked. Milking is done by automatic milking machines, and the milk is fed by pipeline into chilling tanks to await shipment. The chilled milk will be transported by tanker to the processing point once to twice a day, depending on the production schedule.

Organization of the Company

Waiubata Dairy will be organized as a corporation. Key management will consist of the dairy manager, two to three herdsmen, the calf-pen manager, and the office manager. The dairy manager oversees the operation of the facility as a whole, coordinating the feeding schedules and formulas, milking schedules, herd management, facility maintenance, and milk transportaion and marketing. The herdsmen are responsible for the health and well-being of each animal in the herd, or portion of the herd under their care. The calf-pen manager is responsible for raising replacement dairy heifers and the bull-calves that will be sold. The office manager will oversee the various clerical operations involved in running the dairy.

Waiubata Dairy will pass through a series of start-up phases before it will be ready for production. In the initial phase, we will be fencing and improving pasture-lands, as

well as securing funding and negotiating long-term leases and water issues. The second phase will see the construction of the necessary infrastructure for producing, handling, and transporting milk, purchase of the dairy-heifers, and their pasturage at the site. The third phase will see the construction of the remaining facilities necessary for putting into place a milk-production schedule.

During the pre-production and later, the services of dairy-construction consultants and experts in pasture development will be employed to ensure that the facility will be as modern and efficient as possible. The advice of dairy-nutrition specialists will also be consulted throughout the operation of the dairy so as make efficient use of available resources and to tailor the feeding program to the specific needs of the production schedule.

The dairy can be projected to initially produce 12 full-time jobs plus part-time and seasonal work. As the dairy grows towards its target of 1000+ head, further jobs will become available in proportion to the dairy's growth. These jobs will be divided among the following occupations: milkers, maintenence workers, herdsmen, truck and tractor drivers, office staff, and management. They will be very appropriately filled from among the displaced sugar-workers and their families, and many of the skills acquired at the sugar plantation will be valuable in the dairy farm context.

Our management strategy will place particular value on the relationship between employee performance and the strength of the business. Our business philosophy will reflect the strong tradition of community and family values that is one of the true resources of the Ka'u district. The dairy will be a family-business, with every employee and his family considered part of the extended-family. The importance of good communication and working as a team to increase efficiency and productivity, and to provide the best possible care for the livestock will be the core of the management message. The dairy will support the education and training of its employees whenever possible, and invest in the future of the community and the business by actively promoting the education of young people interested in agricultural careers. We will also institute a system of profit-sharing from the beginning, with twenty percent of the net profit before taxes to be dedicated to employee bonuses. Employee salary will be tied to business performance, with five percent of the net to determine pay-raises or cuts for the subsequent year. We hope that this business will be a source of pride and involvement for all its employees.

Products

Waiubata Dairy will produce raw milk to be transported and sold to milk processing plants, either in Hilo or on Oahu, where it can be used to produce a variety of milk and dairy products. At full capacity, the dairy will produce about 70,000 pounds of milk per day. Most of the milk will be marketed as fresh milk, whether skim, 1%, 2%, or whole. Other milk products include flavored milks such as chocolate milk and egg-nog, cottage cheese, cream, sour cream, butter, etc.

The dairy will be selling weaned bull-calves to ranchers for them to raise for the beef market.

The dairy will also sell cull cows to local slaughter-houses.

Pricing

The raw milk produced by Waiubata Dairy will be sold to processors at a prices in accordance with regulations set by the Milk Control Branch. Presently, prices for Class I milk is in the vicinity of $23/cwt. As mentioned above, milk production will be carefully managed to conform to seasonal shifts in market requirements.

Bull calves will bring in $45-60/head, depending on the market and the animal's maturity.

Cull cows will be sold at the market rate.

Policy and Regulatory Environment

The primary policy issue for milk production is that posed by milk importation from the mainland. This represents a loss of jobs and revenue for the state as a whole, and particularly for rural areas. Our plan to establish a large-scale dairy on the Big Island addresses these issues, as it will be possible to produce for the Oahu market in a more cost-effective manner than is currently the case.

The dairy will positively engage with milk quality regulations. One of our primary goals will be to set and consistently meet purity and sanitation standards that exceed state regulation in stringency. We will be working together with the dairy processor and the Milk Control Branch to ensure that our product is of the highest quality.

Long-term Development

The dairy will begin with a 750 cow herd. This will create annual revenue of approximately $1,883,000. The herd will be increased to 1000 head within the first five years. This increase in herd size, combined with the refinement of feeding and herd management routines will increase annual revenue to approximately $5,584,000. This increase in size will mean that the number of employess will gradually increase from 12 to approximately 24. Growth of the dairy herd beyond 1000 head will depend upon market conditons and natural resource availability at that time, however we foresee the possibility of continued growth due to increased demand for milk in the state.

Our long-term goals are to lead the state's milk industry shift towards the outer islands and to increase the percentage of milk produced locally in the state. This will mean that an alleviation of the conflicts over natural resources and environmental impacts occurring due to increasing urbanization on Oahu. It will also mean an increase in revenues and employment in the rural areas of the outer islands, where the need for agricultural development is the greatest.

Pro Forma Financial Plan
Waiubata Dairy, Inc.

Year	First	Second	Third	Fouth	Goal
Projected Revenues					
Milk sales	1,863,000	2,140,356	2,384,640	2,823,000	5,544,000
Cull cows	8,750	9,625	10,500	12,250	17,500
Bull calves	11,250	12,500	13,750	15,000	22,500
Total	1,883,000	2,162,481	2,408,890	2,850,250	5,584,000
Projected Expenses					
Feed	809,690	929,867	1,035,823	1,225,607	2,401,120
Labor & Benefits	282,450	324,372	361,334	427,537	837,600
Lease Rent	41,426	47,574	52,995	62,705	62,705
Depreciation	58,373	67,036	74,675	88,357	173,104
Utilities	47,075	54,062	60,222	71,256	139,600
Maintenance	37,660	43,250	48,178	57,005	111,680
Veterinarian	56,490	64,874	72,267	85,507	167,520
Taxes	65,905	75,686	84,311	99,758	195,440
Fuel & Oil	14,122	16,218	18,066	21,376	41,880
Supplies	50,841	58,386	65,040	76,957	150,768
Insurance	18,830	21,624	24,089	28,502	55,840
Office & Accounting	75,320	86,499	96,356	114,010	223,360
Interest	207,130	237,872	264,978	313,527	614,240
Miscellaneous	42,367	48,655	54,200	64,130	125,640
Total	1,807,679	2,076,976	2,313,533	2,736,235	5,258,617
Profit or debit	75,321	85,505	95,357	114,015	283,503

Alfred Galimba
P.O. Box 379
Na'alehu, HI 96772
Tel: (808) 929 8217

EMPLOYMENT HISTORY

Self-employed, Kuahiwi Contractors, Inc., Na'alehu, HI, 1992-96
Oversee and develop the operations of Kuahiwi Contractors, a ranching business and ranch services contractor; projects include fencing and construction, cattle raising, and feral cattle control contracts.

Management Consultant, Toledo Twin Pine Dairy, Waianae, HI, 1991-92
In charge of streamlining operational procedures for the dairy as a whole, with the goal of increasing production and revenue.

General Manager, Excelsior Dairies, Ltd. Hilo, HI, 1986-91
Managed all aspects of the operation of a dairy processing plant, as well as the distribution and marketing of dairy products to stores and supermarkets on the Big Island.

Farm Manager, Meadow Gold Farms, Haleiwa, Oahu, and Waimea, Kaui, 1976-86
Oversaw all aspects a 1000+ head dairy farm, including planning, purchasing and operations.

Dairy Superintendant, Na'alehu Dairy, Na'alehu, HI, 1971-76
Managed the operation of a small dairy farm.

Field Supervintendant, Kona Property Management, Inc., Macadamia Nut Orchards, Honomalino, HI, 1967-71
Oversaw planting and management of macadamia nut orchards. Implementation of pest controls.

Field Supervisor, C. Brewer and Company, Ltd., Pahala, HI, 1964-67
In charge of planting and cultivation of macadamia nut orchards.

EDUCATION

California State Polytechnic College at San Luis Obispo, B.S., Animal Science, 1964

K'au High School, Pahala, HI, 1960

REFERENCES

Carl Bredhoff,
Ranch Manager
Kahuku Ranch, Ka'u
(808) 929 9696

Peter Simmons, Manager
Kamehameha Schools -
Bernice Pauhi Bishop Estates
(808) 776 1104

Calvin Louis,
Field Supervisor
Ka'u Agribusiness
(808) 928 6139

CAPITAL INVESTMENTS SUMMARY

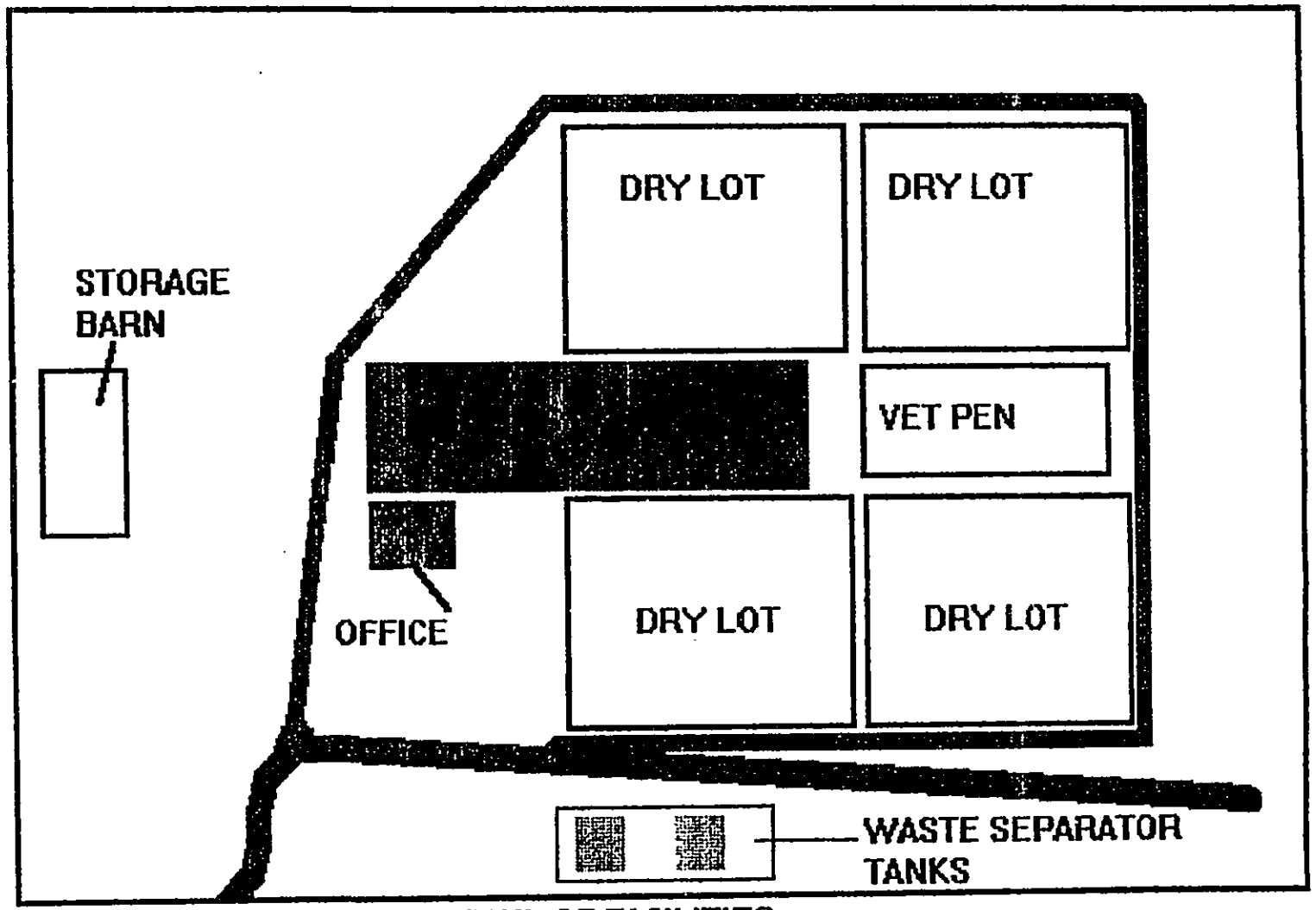
FACILITIES

	Materials	Labor	Equip.	Contr.	TOTAL
Barn and Equipment	500,000	250,000	50,000	50,000	850,000
Fencing	60,000	30,000	10,000		100,000
Roads		10,000	40,000		50,000
Electrical	45,000	30,000		75,000	150,000
Water Supply	60,000	40,000	50,000		150,000
Stanchion & Chute	25,000	5,000			30,000
Dry lot	45,000	5,000			50,000
Calf Pen	8,000	2,000			10,000
Office Building	40,000				40,000
Office Equipment			20,000		20,000
Waste management	80,000	20,000			100,000
TOTAL	863,000	392,000	170,000	125,000	1,550,000

TRUCK & TRAILER			
Feed truck	used	60,000	
Truck tractor	used	60,000	
Tanker		40,000	
Flat 40"	used	5,000	
End Dump	used	10,000	
Backhoe	used	25,000	
Loader		50,000	
TRACTORS			
D-8	used	65,000	
Farm tractor	used	30,000	
Compressor		5,000	
TOTAL			350,000
HERD			750,000

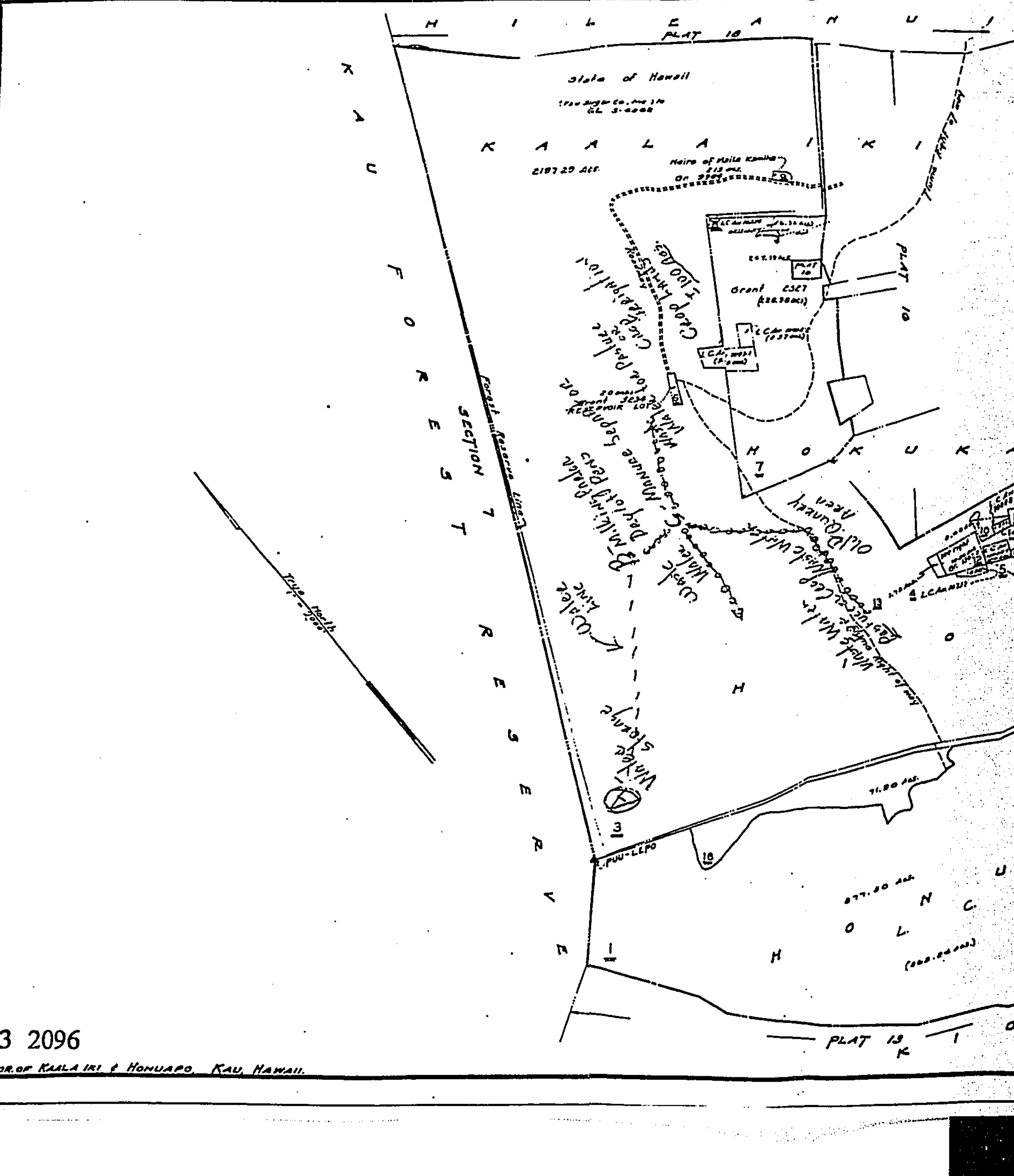
Appendix

List of Figures



SITE MAP - DETAIL OF FACILITIES

Figure 5



Drwg No: 2573
Source: Tax Maps Bureau & Survey Dept
By: PK & MH Dec 1955

3 2096

POR. OF KAALA IKI & HONUAPO, KAU, HAWAII.

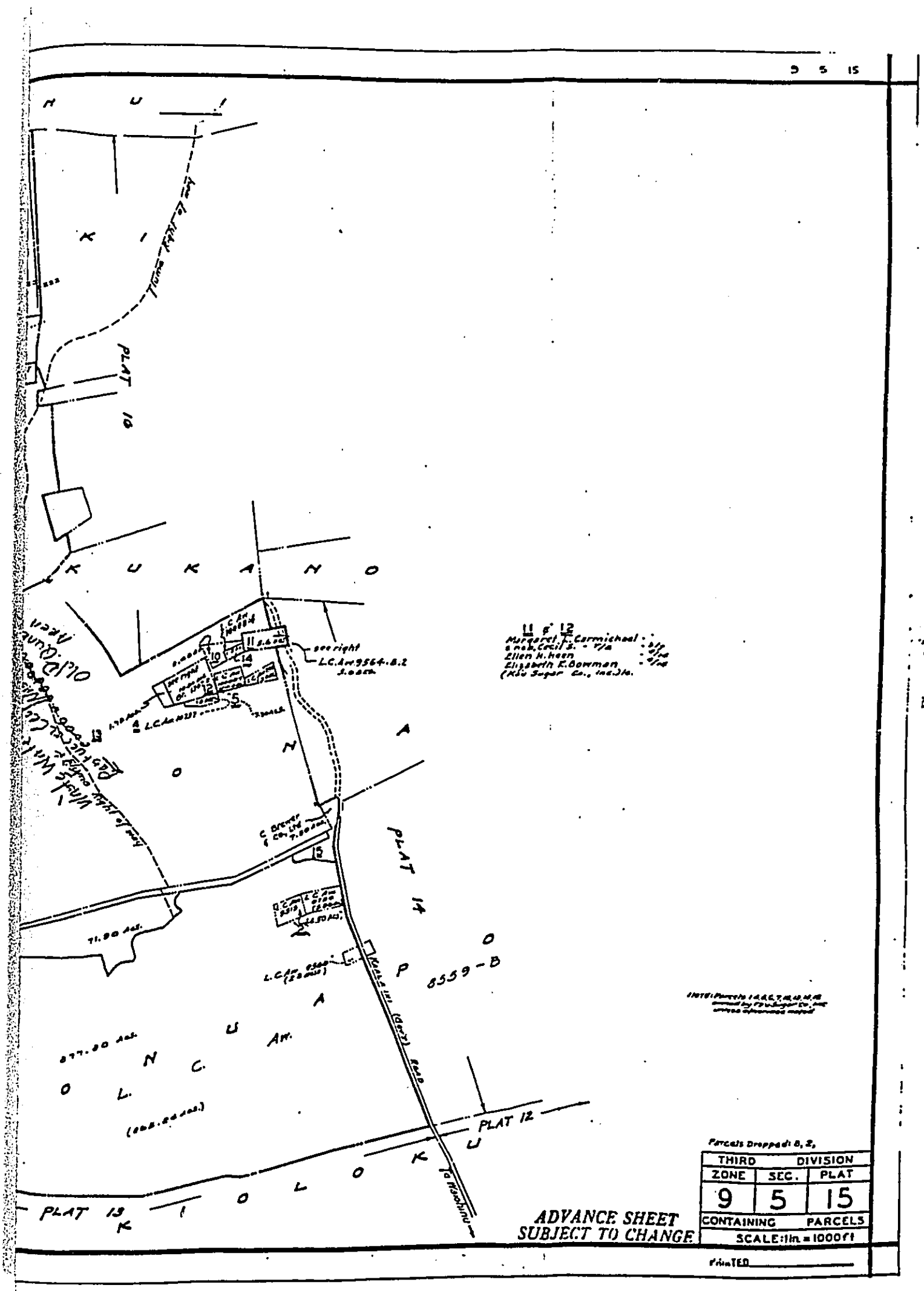
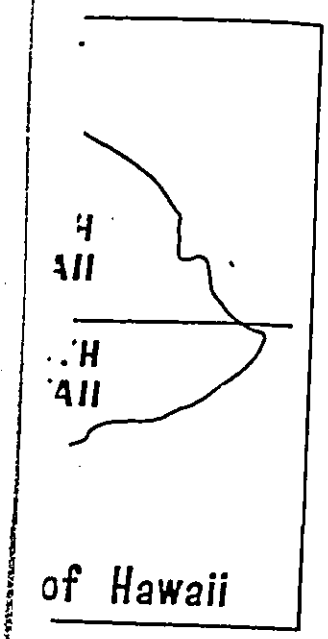
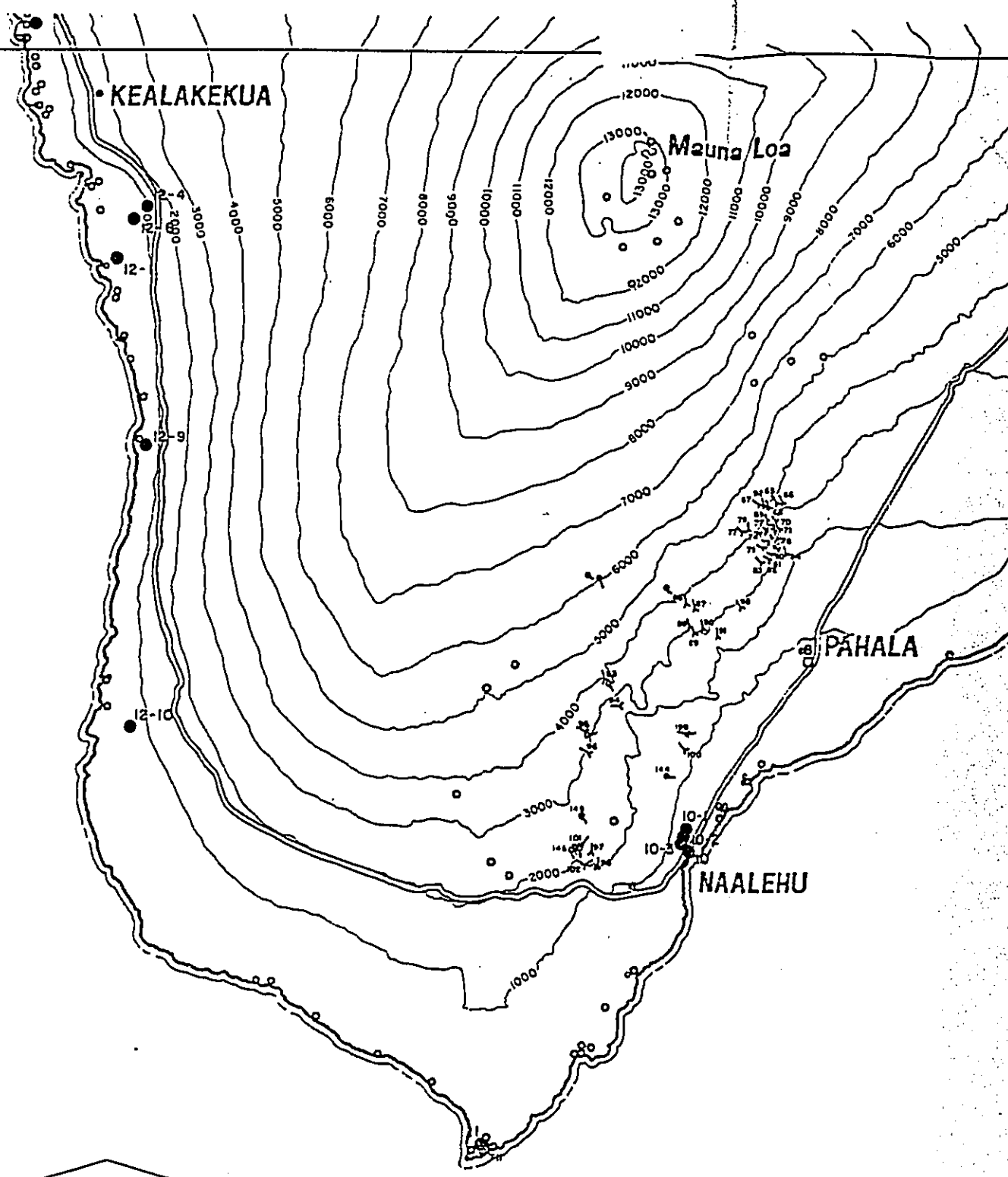
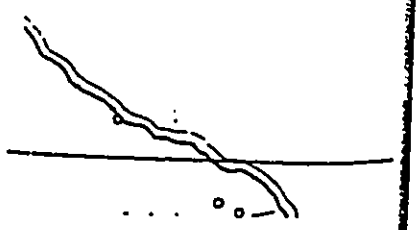

PLAT 10
PLAT 14
PLAT 12
PLAT 13
KUKANOO
OLOKU
Parcels Dropped: 8, 2,
THIRD DIVISION
ZONE 9
SEC. 5
PLAT 15
CONTAINING PARCELS
SCALE: 1in. = 1000ft
PRINTED
ADVANCE SHEET
SUBJECT TO CHANGE

Figure 6.

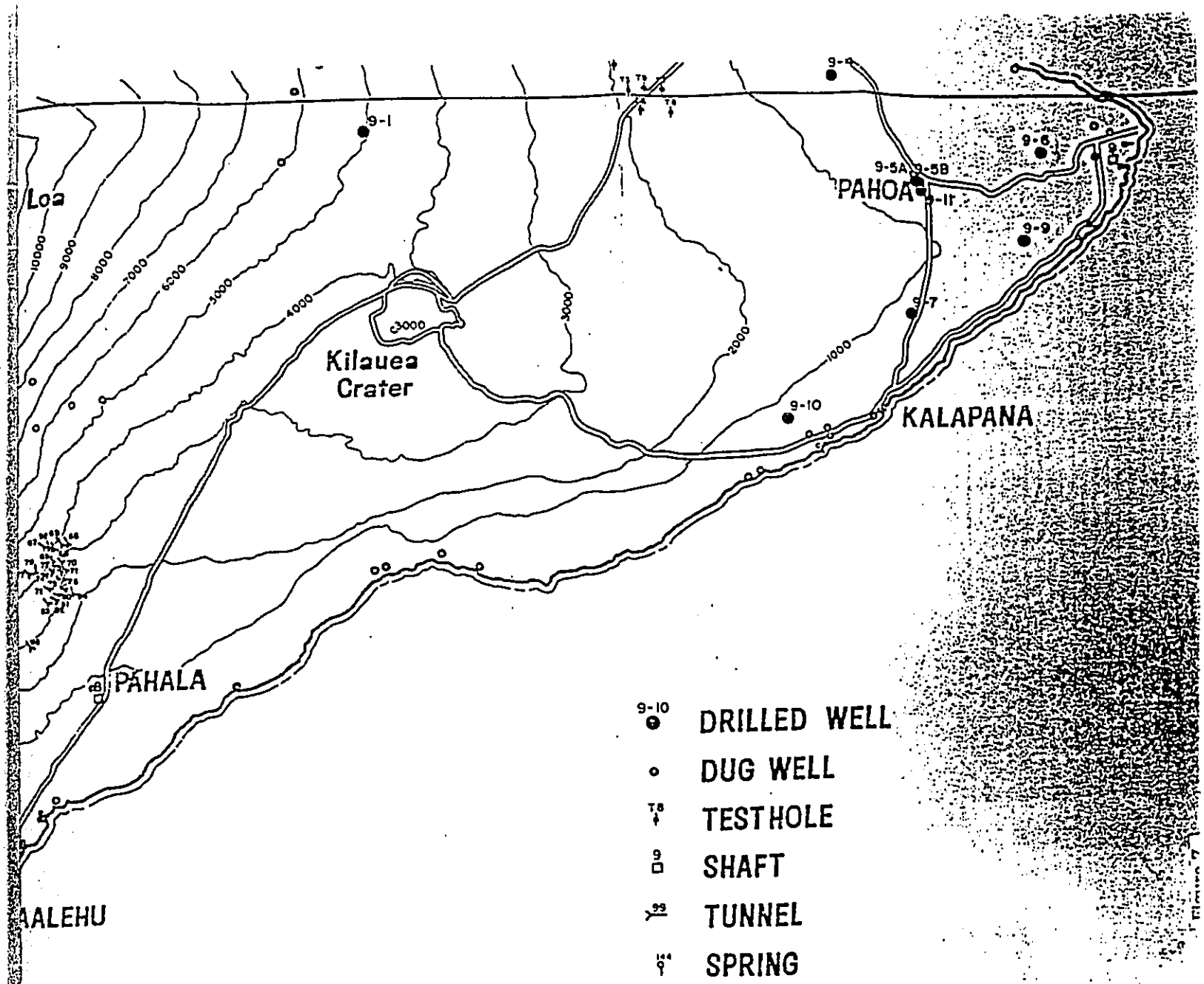




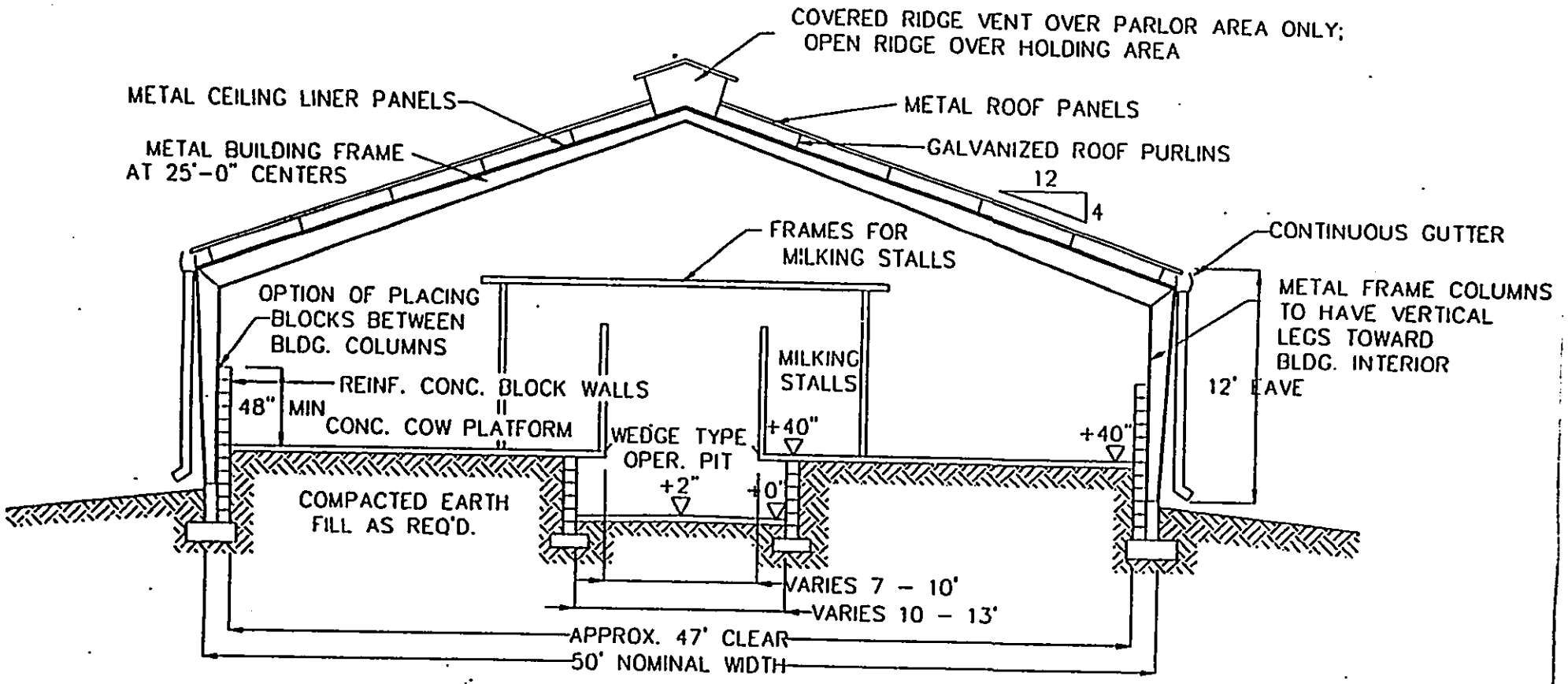


WATER SUPPLY

Ground Water



WELLS, SHAFTS, TUNNELS, SPRINGS, TESTHOLES

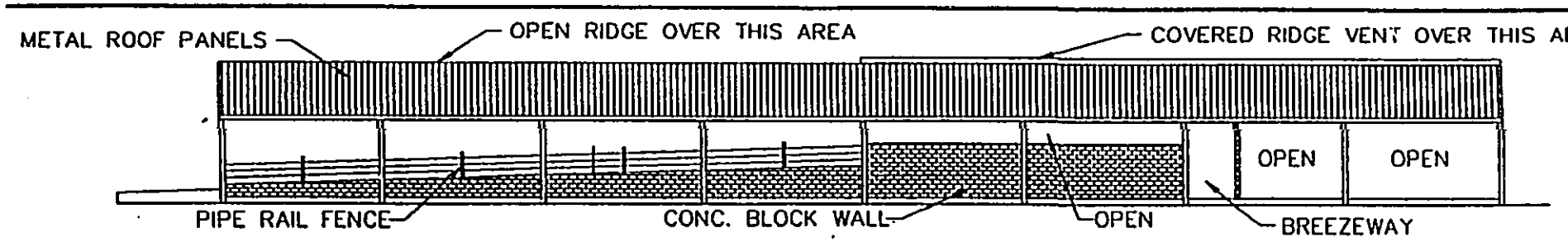


TYPICAL MILKING PARLOR CROSS SECTION (A/1)

SCALE: 1" = 8'-0"

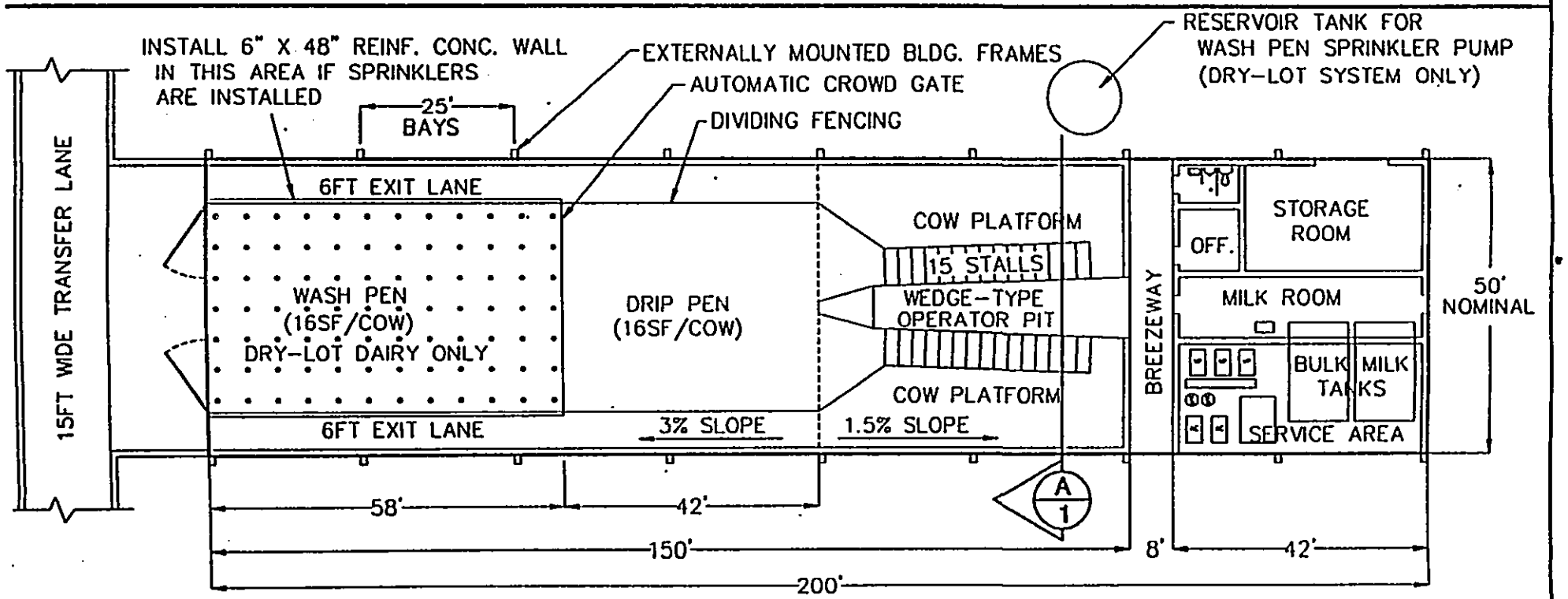
PRELIMINARY DRAWING:
NOT FOR CONSTRUCTION

Figure 8



DOUBLE-15 PARALLEL STALL MILKING CENTER SIDE ELEVATION

SCALE: 1" = 25'-0"



DOUBLE-15 PARALLEL STALL MILKING CENTER FLOOR PLAN

SCALE: 1" = 25'-0"

NOTE:
IT IS INTENDED THAT THE SPRINKLER COW WASH SYSTEM ONLY BE USED WHEN CONSTRUCTING A DRY-LOT DAIRY MGT. SYSTEM. PARLORS UTILIZED IN CONJUNCTION WITH TOTAL CONFINEMENT FREESTALL SYSTEMS SHOULD NOT REQUIRE SPRINKLER SYSTEMS.

PRELIMINARY DRAWING: NOT FOR CONSTRUCTION

Figure 9

W. T. "Ted" Welchert, P.E. oseph G. "Jake" Martin III, P.E. Agricultural Engineers	POSSIBLE DAIRY FACILITY LAYOUT M AND E PACIFIC, INC. HONOLULU, HAWAII	DATE: APR. 29, 1993	FILE NO.: PARLOR1
		DRAWN BY: JGMartin	PAGE: OF

Comments received on proposed action

Stephen K. Yamashiro
Mayor

Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 969-7138

November 1, 1995

MR ALFRED GALIMBA
P O BOX 55
PAPAIKOU HAWAII 96781-0055

SUBJECT : DRAFT ENVIRONMENTAL ASSESSMENT
Kaala Iki - Hiona, Kau, Hawaii
TMK: 9-5-15: 03

We acknowledge receipt of your letter concerning the subject matter, and provide you with our comments as follows:

1. Any building construction shall conform to all requirements of code and statutes of the County of Hawaii.

2. All development generated runoff shall be disposed on site and shall not be directed toward any adjacent properties.

3. All earthwork and grading shall be in conformance with Chapter 10, Erosion and Sediment Control, of the Hawaii County Code.

4. Any construction within known watercourses shall be in conformance with Chapter 27, Flood Control, of the Hawaii County Code.

5. The County does not own nor maintain any roads within the vicinity of the subject property.

Should there be any questions concerning this matter, please feel free to contact Mr. Casey Yanagihara in our Engineering Division at (808)961-8327.

Galen M. Kuba, Division Chief
Engineering Division

CKY

cc : Planning Department

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 969-1421 • FAX (808) 969-6996

January 4, 1996

Mr. Alfred Galimba
P.O. Box 55
Papaikou, HI 96781-0058

DRAFT ENVIRONMENTAL ASSESSMENT FOR A DAIRY FARM
TAX MAP KEY 9-5-15:03

This is in response to your letter of November 1, 1995.

We want to thank you for letting us comment prior to submittal of the formal Draft Environmental Assessment.

The subject property is not within the service limits of the Department of Water Supply's existing water system facilities. However, please be informed that the Department obtains the majority of its water from the Mountain House Tunnel and the Haao and Alili Springs for the Pahala and Naalehu water systems. On occasions there is water in excess of our needs at the Mountain House Tunnel. Therefore, we request that you identify the spring sources you will be using before we submit our formal comments.

Should you have any questions, please call our Water Resources and Planning Section at 969-1421.

Milton D. Pavao, P.E.
Manager

WA

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Norman Olesen
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-9615

December 5, 1995

Mr. Alfred Galimba
P.O. Box 55
Papaikou, HI 96781-0055

Dear Mr. Galimba:

Inquiry
Tax Map Key: 9-5-15:3

This is in response to your letter requesting information on establishing a dairy on the subject tax map key property.

The 2197.29 acres parcel is zoned Agricultural - 20 acres (A-20a) by the County and designated Agricultural by the State Land Use Commission.

According to your letter, your intention is to build a dairy on the subject parcel which involves fencing the area for pasturage and the construction of a milking barn and office building.

The Hawaii County Code, Chapter 25, Zoning, Section 25-152, Permitted uses. (a)(2), (9), (14), and (21) states the following:

(a) The permitted uses in A districts shall be as follows:

(2) All forms of agriculture; the growing and gathering of crops, fruits, vegetables, flowers, trees, and other plants; the raising and keeping of animals and fowls except as limited in paragraph (9) of this section.

(9) Piggeries, apiaries, and pen feeding of livestock when not closer than one thousand feet to any major public road or to any district other than a U district on sites approved by the department of health and the director.

(14) Processing of agricultural products, which are raised or produced by an agriculturist, who shall substantiate such agricultural activity by the submittal of a general excise tax license to the planning department for acceptance. The processing facility(ies), which may include activities of milling, pulping, drying, roasting, hulling, storing, packing, shipping and selling, shall secure final plan approval from the planning department. The setback requirements for the processing facility may be increased at the time of plan approval review to minimize potential noise, lighting, odor, vector, and air quality impacts. Additional mitigation measures, such as landscaping, may be imposed to reduce impacts to surrounding properties.

In addition, Section 25-156(b) states the following:

> In A districts accessory buildings and enclosures (other than fences under eight feet high) for the shelter and confinement of any livestock shall be at least one hundred feet from the front property line.

In reference to the foregoing, the construction of a milking barn and fencing the area for pasturage are permitted uses in the County's A and State Land Use Agricultural district provided that conditions stipulated by the Zoning Code are met. An office for the proposed uses is also permitted as it is considered accessory to the agricultural uses.

All proposed structures and their siting on the subject parcel will be considered under plan approval review pursuant to Section 25-241 through 25-244 of the Zoning Code at which time additional requirements may be imposed by the director. Again, the submittal of a copy of the general excise tax license to substantiate the agricultural activity is required during the plan approval review process.

Should you have any further questions, please feel free to contact our office at 961-8288.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

ETI:mjs:dmo
galimba.inq

BENJAMIN J. CAYETANO
GOVERNOR

LAWRENCE MIIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 916
HILO, HAWAII 96721-0916

October 25, 1995

Mr. Alfred Galimba
P. O. Box 55
Papaikou, HI 96781-0055

Dear Mr. Galimba:

Thank you for allowing the Department of Health to make preliminary comments to the proposed dairy operation. The following concerns are shared with you:

1) The proposed milking dairy and office would need to meet the requirements of Milk Rules, Title 11, Chapter 15, and Sanitation Rules, Title 11, Chapter 11.

2) Domestic and animal waste removal systems would need to be reviewed and approved by the Department of Health, Wastewater Branch in Honolulu (586-4294).

3) Recommends the siting of the milking barn to establish a functional buffer zone between any residence.

4) To work in partnership with the Department of Health, Vector Control Branch, to control and mitigate any vector nuisances that may arise.

If you have any questions regarding this letter, please feel free to call me at 933-4371.

Sincerely,

AARON UENO
Chief Sanitarian, Hawaii District

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

December 12, 1995

Mr. Alfred Galimba
P.O. Box 55
Papaikou, Hawaii 96781-0055

LOG NO: 16093
DOC NO: 9512ms01

Dear Mr. Galimba:

SUBJECT: Application to lease state land for dairy pasture, milking barn and office building
Hiona, Hokukano and Kaala iki, Ka'u, Hawaii Island
TMK: 9-5-15:3

A site inspection was made by Historic Preservation Division staff archaeologists Pat McCoy and Marc Smith on November 29, 1995.

The subject parcel has been used as sugarcane cropland in the past. Because of this past use, it is very unlikely that any significant historic sites would remain. Therefore, we believe that the proposed action of using the area for pasture, and constructing a milking barn and office building will have "no effect" on significant historic sites.

If you should have any further questions, please contact Patrick McCoy at 587-0006 (Honolulu), or Marc Smith at 933-4346 (Hilo).

Sincerely,

DON HIBBARD, Administrator
State Historic Preservation Division

MS:jk

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

December 26, 1995

Mr. Alfred Galimba
P.O. Box 555
Papaikou, Hawai'i 96791- 0055

Re: TMK: 9-5-15:3; Ka'u, Island of Hawai'i

Dear Mr. Galimba:

Thank you for the opportunity to offer our concerns about the above-referenced state property and your proposal to lease the area for dairy production.

We suggest that your Environmental Assessment (EA) contain a detailed discussion of the area flora and include a survey by a recognized botanical expert. We believe that a study of the flora of the project area is needed for two reasons. First the number of acres involved in the project is large and therefore increases the possibility of finding rare or endangered species. Second, the project will include the pasturage of large numbers of foraging livestock. The large number of animals increases the likelihood of damage to any endangered species found in the area. However, if the plants can be located early, precautions can be taken to prevent damage.

In addition, we suggest that an archaeological survey be completed to identify archaeological and culutral resources within the project area, again so that these may be protected.

Finally, we sugget that you discuss the possibility of burial sites in the project area with the island burial council to determine the likelihood of finding burials and the method to proceed if burials are discovered.

If you have any question or need any additional information, please contact Linda Delaney, Land and Natural Resources Officer or Lynn Lee, EIS Planner at 594-1888.

Sincerely,

Linda M. Colburn,
Administrator

cc: Clayton H.W. Hee, Chairperson
Board of Trustees

Kina'u Boyd Kamali'i, Chairperson
Land and Sovereignty Committee

BOTANICAL SURVEY

By Rick Warshauer
PO Box 192, Volcano, 96785

6 February 1996

A cursory botanical evaluation of an approximately 2000-acre section of abandoned sugar cane land was performed on 20 January 1996 for the Al Galimba family. The subject site includes parts of Kaalaiki, Hokukano and Hionaa ahupua'a, 3-4 miles north of Naalehu, Ka'u. The maximum elevational range is between about 1400 and 2200 feet.

The area consists mostly of abandoned cane fields, some of which were cleared only 30-35 years ago. Within or next to the cane fields are found planted Eucalyptus stands, overgrown abandoned quarry sites, and a few small relict patches of native forest. Immediately above the former cane fields is native forest makai of and contiguous with the Ka'u Forest Reserve.

The different areas of vegetation were driven or walked through in order to determine if there were any rare or endangered plant species and to gain a general characterization of the vegetation on site. The only areas observed to have a possibility of containing rare plants are the relict patches of native forest and the forest edge mauka of the fields. Representative native and alien plants seen in the native forest areas are listed following the text.

Relict patches of native forest. Several of these patches are left on steep, rocky areas surrounded by abandoned cane fields at about 1600 feet elevation. Kukui trees may dominate the canopy. Ranging in size from a few thousand square feet to an acre or two, the small number of remaining species is not unexpected. The only uncommon plant found is one of the two species of papala kepau (*Pisonia umbellifera*). While this lowland tree is rarely seen on this island, it is encountered more frequently on other islands and is not considered endangered. These tiny relicts are of lowland mesic forest, which has mostly been converted to agriculture or overrun by alien plants such as Christmas berry trees.

Native forest edge above cane fields. This is a little higher and wetter than the previous native forest. At least along the edge of the fields, the forest here has a greater component of alien species. All the native species seen are common.

Abandoned sugar cane fields. The dominant plant in the former cane fields, by far, is now Guinea grass. This tall grass presently excludes many of the alien weeds one might expect in the area. The few tall weeds present tend to concentrate along the roads. They include sourbush, comb hyptis, butterfly bush, and Florida beggarweed. Scientific names of the alien weeds mentioned can be seen in the listings for the native forest areas below. Some areas have a regrowth of ti, presumably remnant of old Hawaiian agricultural use of the area. The abandoned quarry areas also have ti included with the mixture of weeds and Guinea grass

which has colonized the disturbed, rocky sites.

Alien plants in the area. While the number of alien plant species present in the 2000-acre area evaluated is greater than those mentioned in this report, it is still relatively small compared with other comparable disturbed areas. The presence of potentially invasive large weeds is quite limited. A silk oak (*Grevillea robusta*) was observed along the upper forest edge. A few castor bean plants (*Ricinis communis*) were seen near the lower boundary of the subject area. Christmasberry was seen mostly around the periphery of the site, and only a few within the area of former fields.

RELICT PATCHES OF NATIVE FOREST

Native Trees

Gouldia terminalis
E manono

Metrosideros polymorpha
E 'ohi'a

Pipturus albidus
E mamaki

Pisonia brunoniana
I papala kepau

Pisonia umbellifera
I papala kepau

Psychotria hawaiiensis
E kopiko

Native Vines and Shrubs

Cocculus trilobus
I huehue

Freycinetia arborea
I 'ie'ie

Smilax melastomifolia
E hoi kuahiwi

Native Ferns

Cibotium glaucum
E hapu'u

Macrothelypteris torresiana
I

Microlepia strigosa
I palapalai

Sadleria cyatheoides
E 'ama'uma'u

Selaginella arbuscula
E lepelepe a moa

Introduced Plants

Aleurites moluccana
P kukui

Buddleia asiatica
butterfly bush

Christella dentata
woodfern

Cordyline fruticosa
P ti, ki

Desmodium tortuosum
Florida beggarweed

Hyptis pectinata
comb hyptis

Nephrolepis multiflora
swordfern

Oplismenus hirtellus
honohono kukui

Oxalis corniculata
P 'ihi

Paspalum conjugatum
Hilo grass

Passiflora edulis
liliko'i

Physalis peruviana
poha

Psidium cattleianum
strawberry guava

Rubus rosifolius
thimbleberry

Schinus terebinthifolius
Christmasberry

FOREST EDGE ABOVE CANE

Native Trees

Metrosideros polymorpha
E 'ohi'a

Myrsine lessertiana
E kolea

Pipturus albidus
E mamaki

Psychotria hawaiiensis
E kopiko

Native Vines and Shrubs

Cocculus trilobus
I huehue

Dodonaea viscosa
I 'a'ali'i

Freycinetia arborea
I 'ie'ie

Ipomoea indica
I koali 'awa

Native Ferns and Herbs

Cibotium glaucum
E hapu'u

Dicranopteris emarginata
E uluhe

Machaerina mariscoides
ssp *meyenii*
E 'uki

Pycreus polystachyos
I (a sedge)

Introduced Plants

Buddleia asiatica
butterfly bush

Christella dentata
woodfern

Cordyline fruticosa
P ti, ki

Desmodium tortuosum
Florida beggarweed

Hedychium coronarium
white ginger

Hyptis pectinata
comb hyptis

Melinus minutiflora
molasses grass

Nephrolepis multiflora
swordfern

Oplismenis hirtellus
honohono kukui

Oxalis corniculata
P 'ihi

Panicum maximum
Guinea grass

Paspalum conjugatum
Hilo grass

Phaius tankarvilleae
Chinese ground orchid

Pluchea symphytifolia
sourbush

Psidium cattleianum
strawberry guava

Psidium guajava
guava

Rubus rosifolius
thimbleberry

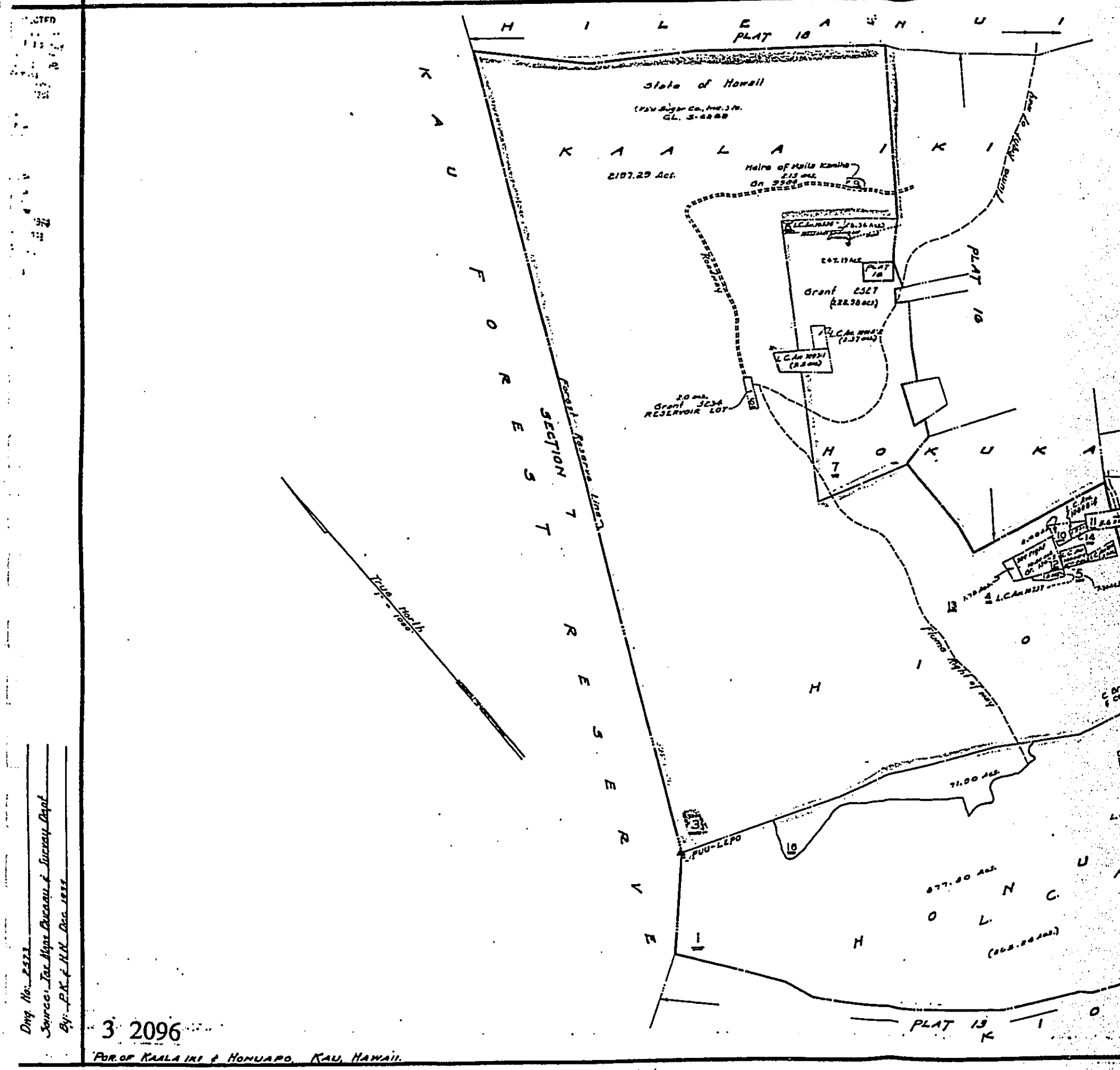
Saccharum officinarum
sugar cane, ko

Schinus terebinthifolius
Christmasberry

Schizachyrium condensatum
beardgrass

Syzygium jambos
rose apple

E = endemic, naturally only found in Hawaii
I = indigenous, naturally found in Hawaii and elsewhere
P = introduced by early Hawaiian settlers


H I L E A N U I
PLAT 18
State of Hawaii
(Pahu Sugar Co. Ind. 3 fn.
GL. S-4888
K A A L A I K I
2187.29 Acs.
Heirs of Hulu Kamiha
P.13 and
On 3304
L.C.Award
Grant 2527
(22.98 acs)
L.C.Aw. 8998:2
(3.37 acs)
L.C.Aw. 10931
(3.5 acs)
2.0 acs.
Grant 3234
RESERVOIR LOT
Forest Reserve Line
SECTION 7 RESERVE
True North
1955
Pipe Line
PLAT 16
H O K U K A
L.C.Aw. 8998:4
L.C.Aw. 8998:1
Flume
PUU-LEPO
71.00 Acs.
H O N U A P O
877.00 Acs.
(848.00 Acs.)
PLAT 13
Dwg. No. 2513
Source: Tax Maps Bureau & Survey Dept.
By: P.K. & H.K. Dec. 1955
3 2096
POR. OF KAALA IKI & HONUAPO, KAU, HAWAII.

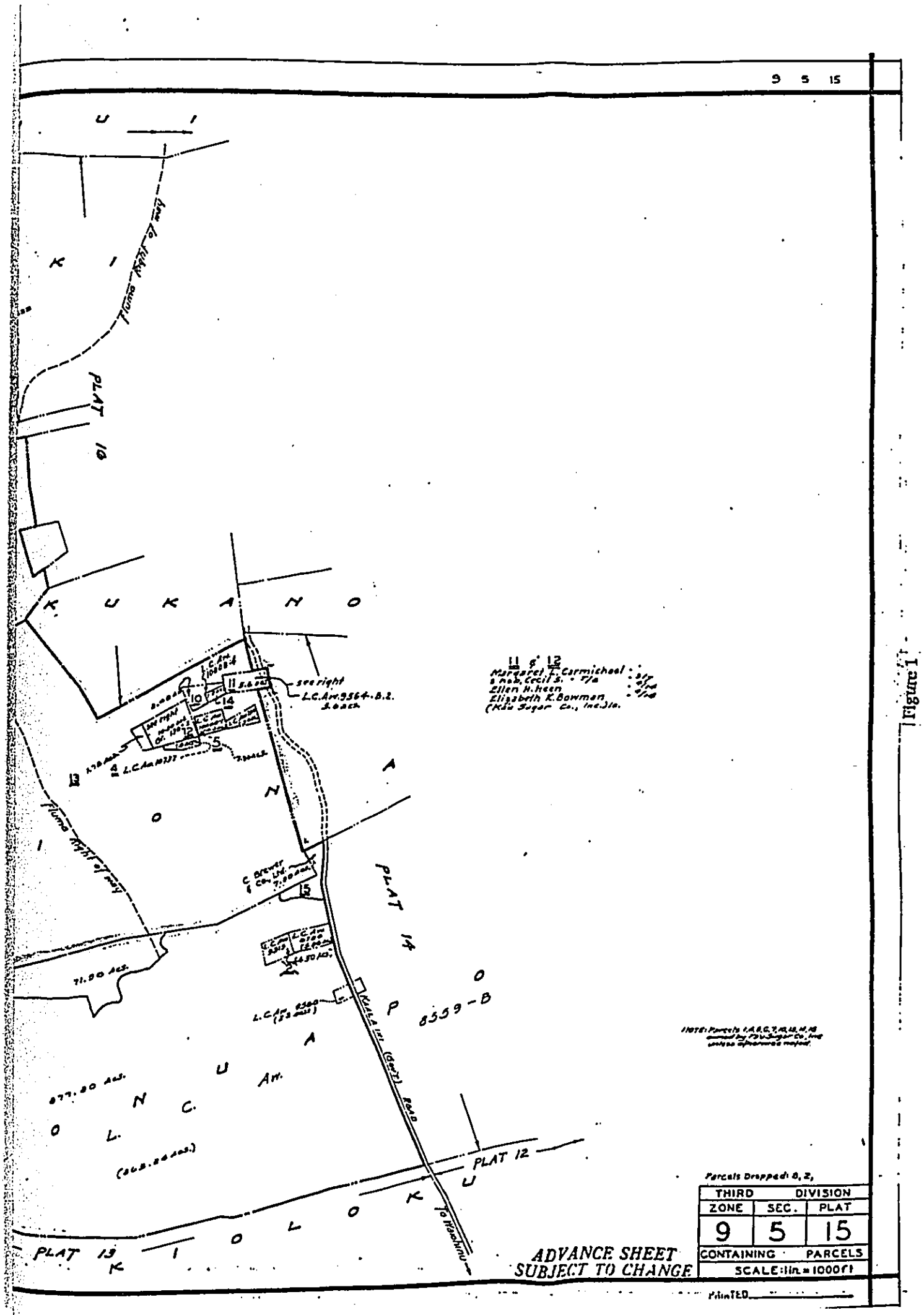
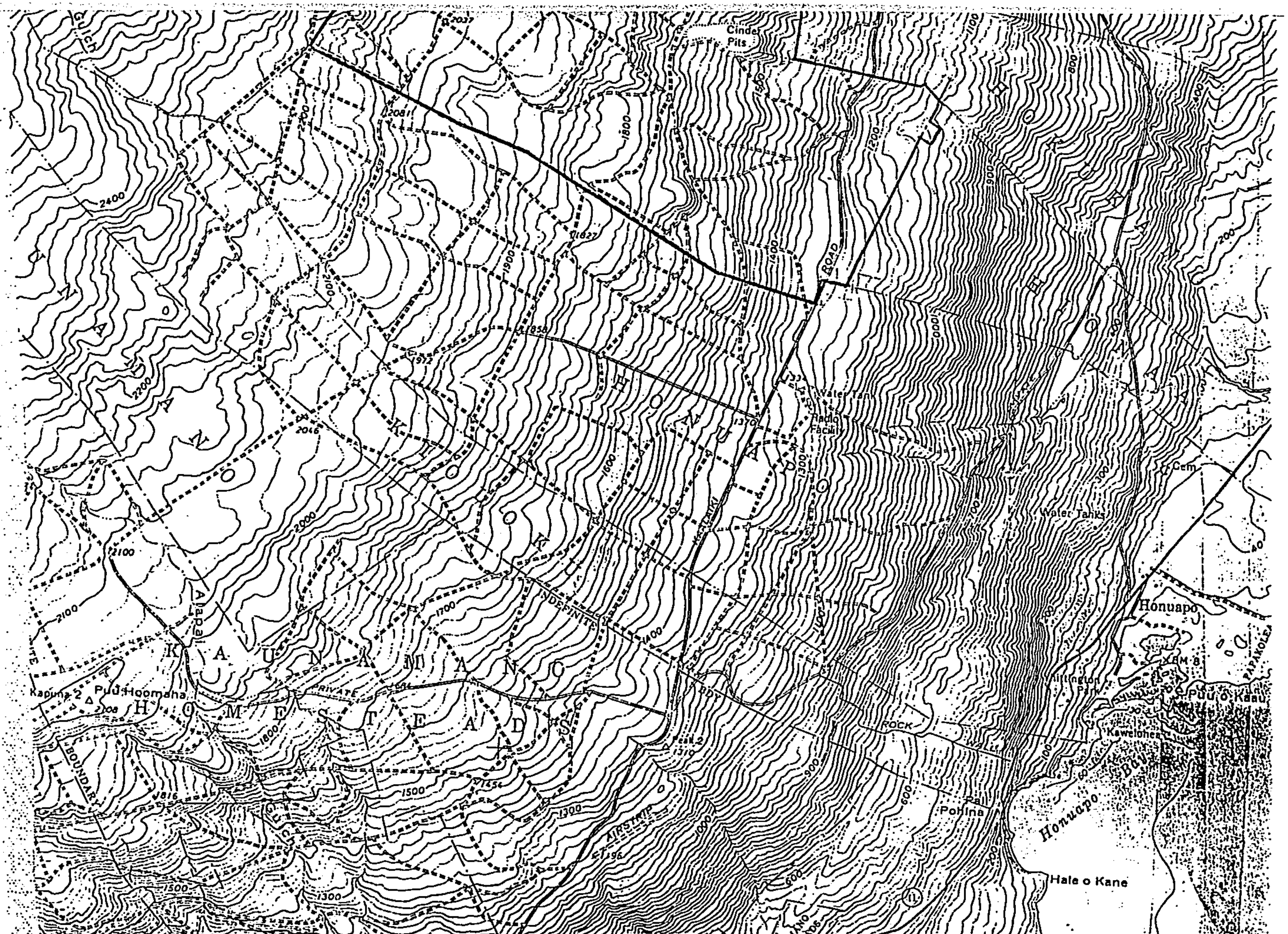
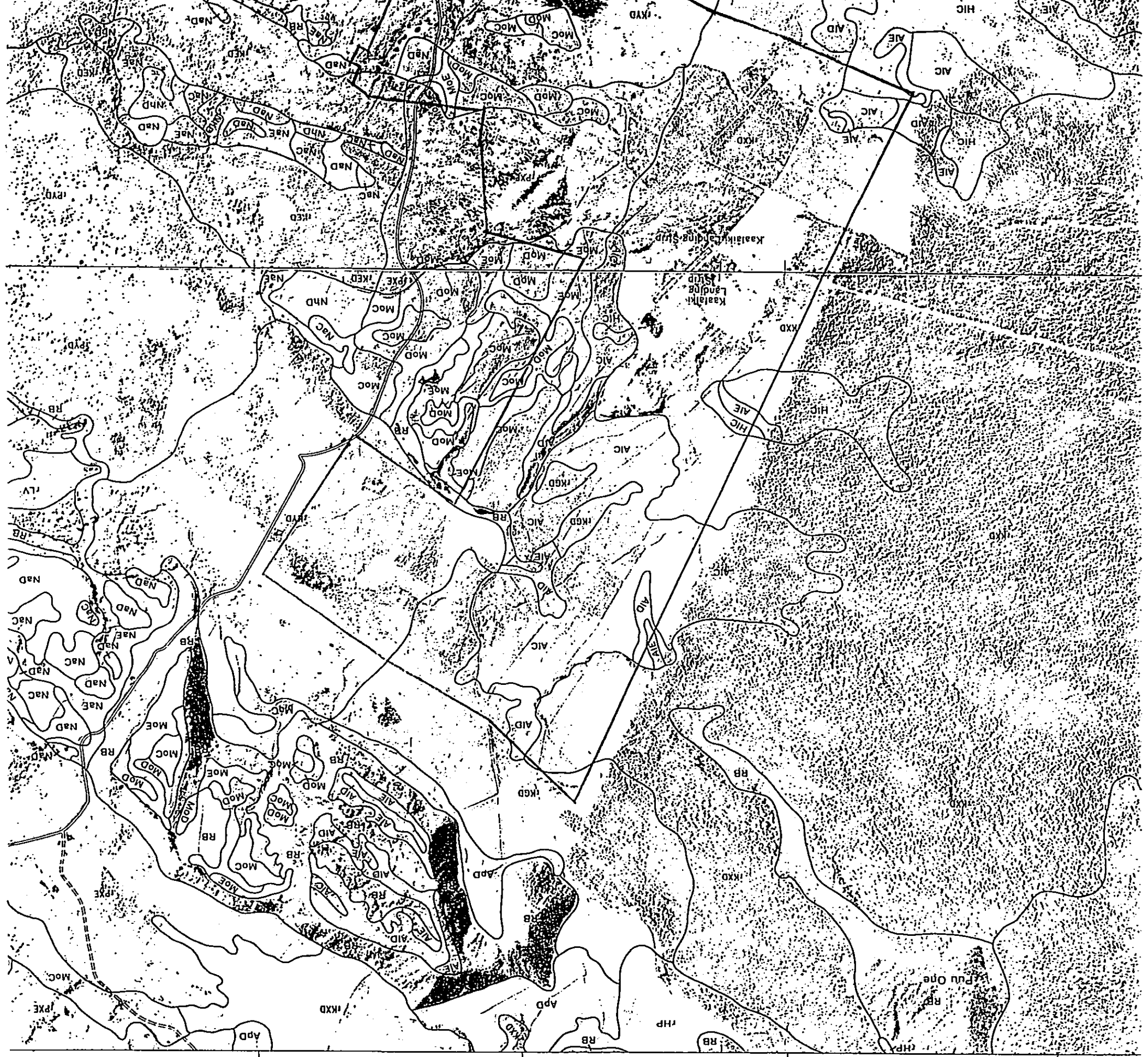
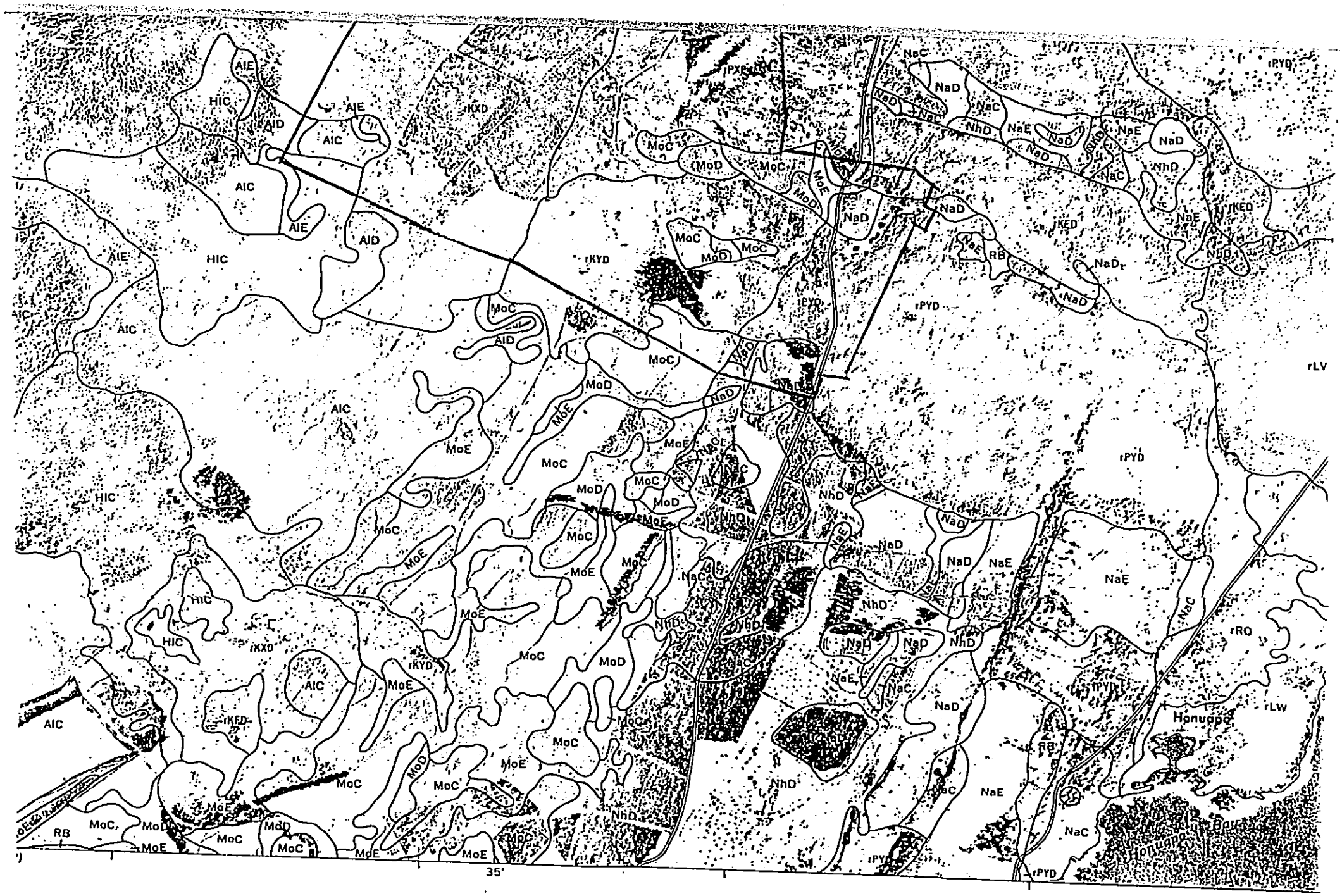

9 5 15
PLAT 10
PLAT 14
PLAT 12
PLAT 13
KUKANO
KILOLOU
Flume Right of Way
Flume Right of Way
11 & 12
Margaret T. Carmichael
& Hob. Cecil S. T/a
Ellen H. Keen
Elizabeth K. Bowman
(Kau Sugar Co., Inc.)a.
C. Brewer & Co. Ltd.
L.C.Aw. 9564-B.2.
71.00 Acs.
877.80 Acs.
(868.80 Acs.)
P 8359-B
To Waiohinu
ADVANCE SHEET
SUBJECT TO CHANGE
Parcels Dropped: 8, 2,
THIRD DIVISION
ZONE 9
SEC. 5
PLAT 15
CONTAINING PARCELS
SCALE: 1in. = 1000ft
PRINTED

Figure 1


Hilea
Water Tank
Kaalaiki
Kaalaiki Landing Strip
Cinder Pits
Cinder Pits
1400
1600
1700
1800
2000
2200
2400
2600
Gulch


Cinder Pits
ROAD
Water Tank
Radio Facility
Water Tanks
Cem
Honuapo
XBM 8
Puu o Kaau
Kawelohea
Honuapo Bay
Hale o Kane
Pohina
ROCK
INDEFINITE
AIRSTRIP
PRIVATE
Alapai
Kapuna 2
Puu Hoomaha
BOUNDARY
Gulch
HONUAPO
KAUNAMANO HOMESTEADS
Figure 2


Kaalaiki Landing Strip
Puu One
35'

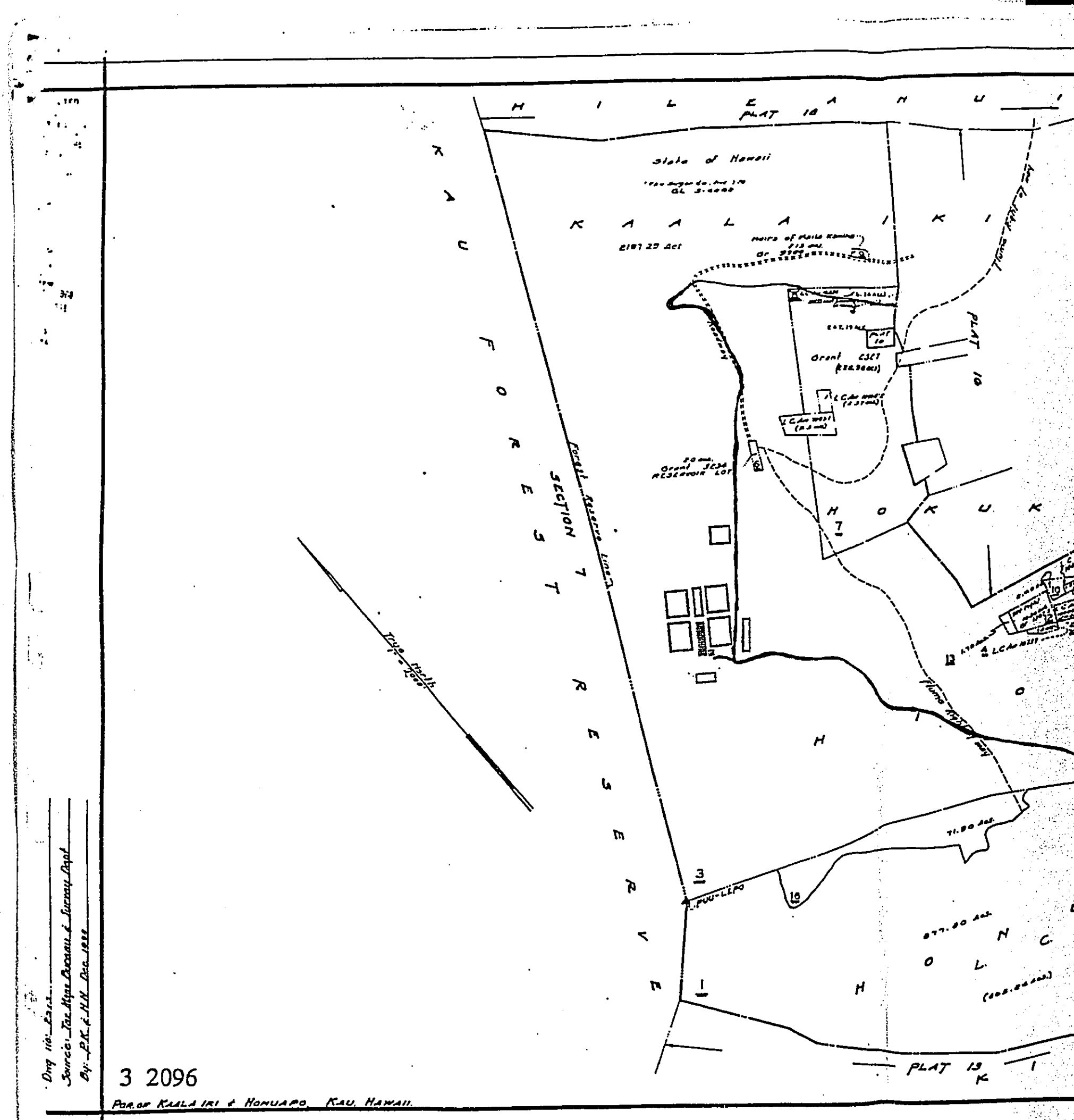


Scale 1:24 000

1 ¾ ½ ¼ 0 1

5000 4000 3000 2000 1000 0 5000

Figure 3



Orng 116: 2312

Source: Tax Map Account & Survey Dept

By: P.K. & H.N. Dec. 1952

3 2096

POR. OF KAALAIKI & HONUAPO, KAU, HAWAII.

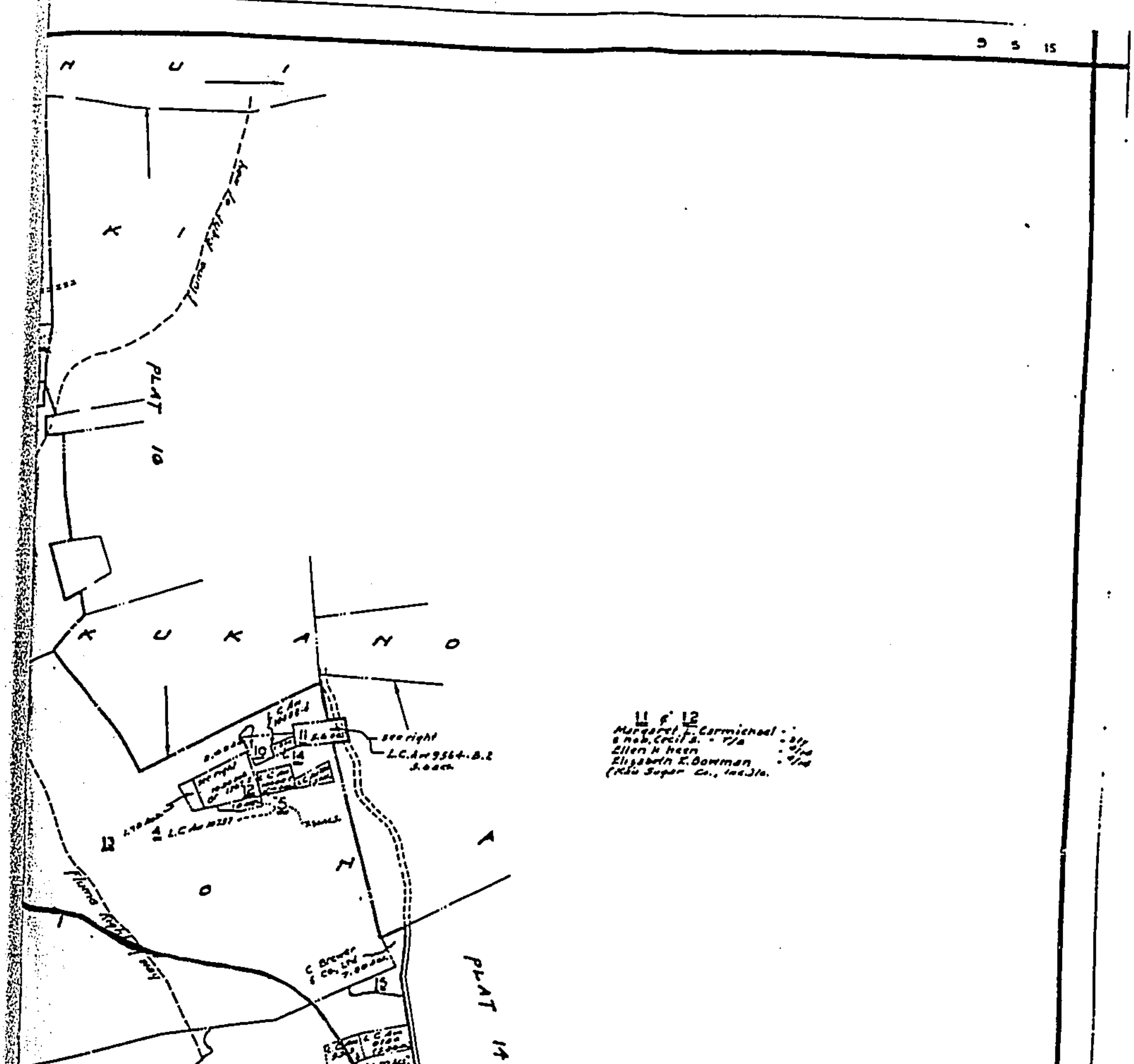

9 5 15
PLAT 10
K U K A N O
PLAT 14
8559-B
PLAT 12
PLAT 13
11 & 12
C. Brewer & Co. Ltd
71.80 Acs.
To Waiohinu
ADVANCE SHEET
SUBJECT TO CHANGE
Parcels Dropped: 8, 2,
THIRD DIVISION
ZONE SEC. PLAT
9 5 15
CONTAINING PARCELS
SCALE: 1 in = 1000 ft

Figure 4