JOHN WAIHEE
GOVERNOR OF HAWAII

KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P. KEPPELER, II
DONA L. HANAIKE

RECEIVED '93 SEP 2 OFC. OF QUALITY

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

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

September 28, 1993

Ref:LM-DU

Mr. Brian J.J. Choy, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

SUBJECT: NOTICE OF DETERMINATION ON ENVIRONMENTAL ASSESSMENT
Lease of State Lands for Diversified Agriculture Hamakua, Hamakua Coast, Island of Hawaii

The Department of Land and Natural Resources, Division of Land Management has reviewed the comments received during the 30-day public comment period which began on **August 8, 1993.** The agency has determined that this project will not have significant environmental effect and has issued a negative declaration. Please publish this notice in the **October 8, 1993** OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four (4) copies of the final EA.

Should you have any questions regarding this matter, please feel free to contact Mr. Dean Uchida at 587-0414.

Very truly yours,

John P. Keppeler II
for Keith W. Ahue

cc: Mr. Yuen
Honorable Yukio Kitagawa, DOA W/EA
Honorable Mufi Hannemann, DBEDT W/EA
Mr. Harold Masumoto, OSP W/EA
Mayor Steven Yamashiro, County of Hawaii W/EA
Representative Dwight Takamine W/EA

1993-10-08-HI-FEA-Hamakua Lease of State Lands for Diversified Agriculture

FINAL
ENVIRONMENTAL ASSESSMENT

Lease of State Lands for Diversified Agriculture
Hamakua, Island of Hawaii

September 1993

FINAL
ENVIRONMENTAL ASSESSMENT

Lease of State Lands for Diversified Agriculture
Hamakua, Island of Hawaii

This document was prepared pursuant to Chapter 343, Hawaii Revised Statutes, because State lands will be utilized. It is determined that the proposed use of such lands will have negligent impacts and therefore no environmental impact statement is needed.

Determined By:

Honorable Keith W. Ahue
Chairperson
Board of Land and Natural Resources

SEP 28 1993
Date

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SUMMARY SHEET

Project Proponent:	State of Hawaii Dept. of Land & Natural Resources
Property Location:	Hamakua Region Island of Hawaii
Parcel Identification:	See Section 3.0 and Exhibits 1, 2, and 3
Area:	Approx. 6560 acres
Existing Use:	Sugar Cane Cultivation Leased to Hamakua Sugar Co. Unencumbered
Proposed Use:	Diversified Agricultural Crops
State Land Use District:	Agriculture
County Zoning:	Agriculture
EIS Required:	No

1.0 IDENTIFICATION OF PROPOSING AND APPROVING AGENCY:

Department of Land and Natural Resources
Division of Land Management
1151 Punchbowl Street, Room 220
Honolulu, Hawaii 96813

2.0 SUMMARY DESCRIPTION OF THE AFFECTED ENVIRONMENT, INCLUDING SUITABLE AND ADEQUATE LOCATION AND SITE MAPS.

2.1 Description of the Proposed Action

The proposed action which triggered this Environmental Assessment (EA) is the use of State lands. The State of Hawaii, by its Board of Land and Natural Resources, hereinafter referred to as the "State", is proposing to lease approximately 6560 acres of public lands to various private vendors for the development of diversified agriculture to include tree planting, nurseries, agricultural crops, etc. in the Hamakua Region, Island of Hawaii. The subject parcel was previously leased and used by Hamakua Sugar Company (HSC) for sugar cane cultivation. Due to financial hardship, however, HSC went bankrupt and will be ceasing its sugar cultivation and operations. One final harvest of sugarcane is scheduled in the near future.

The subject EA will address the following uses:

	Site		Proposed Use
1.	2.25	Acres (Former School Site)	Vegetable/Truck Farming
2.	160	Acres	Vegetable/Horticulture
3.	1,100	Acres	Horticulture/Taro Farming
4.	10.7	Acres	Vegetable/Papaya
5.	32.1	Acres	Horticulture/Papaya
6.	118	Acres	Taro/Macadamia/Pasture
7.	5,136	Acres	Plantation Forestry

6,559.05 Acres Total (Approx.)

2.25 ACRES (FORMER SCHOOL LOT)--PAAUHAU COMMUNITY GARDEN

The Hamakua coast of Hawaii is populated by people with a long history of self sufficiency and community service. Located in the center of Hamakua is Paauhau cane camp. The land making up this small community, created to house plantation workers, is owned and

surrounded by other lands owned by the now bankrupt Hamakua Sugar Company. Community members are employed for completing the final harvest, working part time, unemployed, or transitioning from secure union employment to often less secure jobs in different sectors of the economy. The immediate effect of this community upset is economic and social hardship. A community garden will create a living example of sustaining products produced by the people of Paauhau. The people living in Paauhau created the Paauhau Community Association to act in their behalf for community projects.

The idea of a community garden is an obvious offshoot of the work the people of the community have undertaken since the company's bankruptcy. They have considered those elements necessary to begin the garden and have community members ready to proceed as soon as the land and water are available.

The basic objective of the Community Garden will be to:

(1) Provide supplemental food to members of Paauhau Community.
(2) Provide home gardening examples, education and training.

The community garden provides an example to all ages of the potential to produce their own food on a small parcel of land. It provides a show place where out of work parents can demonstrate their farming skills and experienced gardeners can train interested parties. It can provide food for a financially stressed community.

Project Coordinator:
Paauhau Community Association
Tony Ancheta (President)
P. O. Box 1277, Honokaa, Hawaii 96727
(808) 755-9425

Major Participants:
Honokaa Farmers Cooperative
Robert Tamaye (President)
P. O. Box 1363, Honokaa, Hawaii 96727
(808) 766-1602

Cooperators:
Honokaa Young Farmers

160 ACRES--VEGETABLE/HORTICULTURE

The 160 acre parcel (General Lease S-3946) is located below 500' elevation, with deep soil and an extensive irrigation system. The Soil Conservation Service (SCS) map indicates suitability for a multitude of crops and our farmers agree. The cooperative surveys returned to date indicate interest in farming over 1,000 Hamakua acres.

Crops planned by the Honokaa Farmers Cooperative (HFC) are:

Crop	Acres	Farmers
● Pasture	100	3
● Tropical fruit	10	2
● Taro	10	2
● Vegetable	2	2
● Other	28	2

The 1,100 acre parcel (General Lease S-4285 & Revocable Permit S-6092) is a property with diverse elevations, a variety of slopes, varied access to irrigation and roads, differences in rainfall and sunshine.

1,100 ACRES--HORTICULTURE/TARO FARMING

Crops planned by the Honokaa Farmers Cooperative for (General Lease S-4285, Revocable Permit S-6092) the 1,100 Honokaia parcel are:

Crop	Acres	Farmers
● Pasture	200	6
● Macadamia	200	4
● Tropical fruit	220	6
● Taro	166	4
● Vegetable	15	2
● Other	145	3

These designations reflect member's intent. Specific members for specific properties are not yet established. The soil, water, slope, farm size, road access, and a dozen other details for each property are being worked out.

10.7 ACRES--VEGETABLE/PAPAYA

The 10.7 acre parcel for General Lease S-4002 is well drained at a low elevation and can be part of the acreage used in the Department of Defense Hamakua Papaya study demonstrating potential for Hamakua papaya production.

HFC use planned for General Lease S-4002 - TMK: 4-3-05:01; [10.7 acres] Paauilo is:

Crop	Acres	Farmers
• Papaya (DOD grant study)	10.7	1

32.1 ACRES--HORTICULTURE/PAPAYA

The 32.1 acre parcel for General Lease S-3587 is well drained at a low elevation and can be part of the acreage used in the Department of Defense (DOD) Hamakua Papaya study to demonstrate the potential for papaya production in Hamakua. HFC also has experienced farmers interested in flower production on this site.

HFC use planned for General Lease S-3587 - TMK: 4-4-01:01; [32.1 acres] Paauilo is:

Crop	Acres	Farmers
• Papaya (DOD grant study)	27.1	4
• Flowers	5	2

118 ACRES--TARO/MACADAMIA/PASTURE

The 118 acre parcel, General Lease S-4107, consists of diverse soil and slope. The access to the Hamakua ditch water is a prime factor for interest in this parcel. The Department of Defense Taro Project hopes to use 10 acres of this land for the study of wet land taro production on land previously in sugar cane.

HFC use planned for General Lease S-4107 - TMK: 4-6-01:07, 08, 18; [118 acres] Honokaa is:

	Crop	Acres	Farmers
●	Pasture	70	2
●	Tropical fruit	20	4
●	Taro (DOD grant study)	10	4
●	Other	18	4

5,136 ACRES--PLANTATION FORESTRY

The Department of Land and Natural Resources is proposing to utilize 5,136 acres for sustainable forest plantations. These plantations would establish a core production area to support a stable forest product industry based on high value tropical hardwoods and other unique Hawaiian forest products.

Sustainable forest plantations are recommended as a desirable land use for this area for four major reasons:

1. The potential for growing forest products is excellent.

Simply stated, the Hamakua coast contains some of the best land for growing forests in the State of Hawaii. In 1981, the State Division of Forestry and Wildlife conducted a prime forest land study on the Island of Hawaii, identifying the best potential forest land, regardless of the current land use. The Prime 1 designation is the best of the State's forest lands and was primarily found on the Hamakua Coast. These lands can produce high quality wood in both long (25-40 years) and short (6-12 years) rotation periods.

A forestry scoping was completed in August with results presented in two public workshops, discussing the economics, marketing, and preferred strategies for development of a forest products industry in Hawaii. Findings of the session, which are available upon request, reinforced the value of Hawaii's land asset for forestry. Hawaii's major advantages for forest investment are its political stability, ideal growing conditions, skilled workers with relatively easy transition of skills and machinery from the sugar industry, and easy

access to both US and Pacific/Asian markets. A huge market demand will exist for solid wood products by the year 2000 fueled by the cessation of logging in primary tropical hardwood rainforests in the Pacific/Asian Region and the old-growth soft-wood forests in the Pacific Northwest. The Pacific/Asian Region will also have rapid population growth and increased standards of living with subsequent higher demands for wood products. Hawaii is ideally suited and geographically situated to fill a portion of the world's demand for tropical hardwoods.

A forest investment prospectus is now being prepared. The investment strategy is to leverage Hawaii's land asset and existing forest resource to attract high quality forest investment and technology to create a value added industry that supports a skilled labor force and is compatible with the tourist industry. Discussions to consolidate public and private lands for forestry with an appropriate regulatory climate at both the County and State levels are ongoing.

2. <u>There is a wide variety of forest product options which can be enhanced by value added processing.</u>

The report from the scoping session recommended a mix of a short rotation crop to recoup initial investments and help carry a longer rotation crop of higher value hardwoods. One of the short term product recommended was laminated veneer lumber plywood made from eucalyptus trees (e.g. <u>Eucalyptus grandis/saligna/deglupta</u>). The plywood is made of veneer sheets of wood laminated together and used for form wood to build concrete structures. This has been the primary use of the wood harvested from the Asian rainforests. Medium density fiber board is another value-added short rotation product being considered.

The long term product would be higher value hardwoods such as mahogany, tropical maples and cedars, and our Acacia Koa which could support many value added opportunities in Hawaii such as fine furniture and assorted craftwood products. Potential species include Koa (<u>Acacia koa</u>), Queensland Maple (<u>Flindersia brayleyana</u>), Australian Toon (<u>Toona ciliata</u>), Narra (<u>Pterocarpus indica</u>), Pheasantwood (<u>Cassia siamea</u>), Mahogany

(Sweitenia spp.), Camphor (Cinnamomum camphora), Monkeypod (Samanea saman), 2 Spanish Cedar (Cedrela spp.), True Kamani (Calophyllum inophyllum), Kou (Cordia subcordata), Milo (Thespesia populnea) and Blue Marble (Elaeocarpus grandis). These species are recommended for their proven growth and available seed sources within the State. There are also existing forest plantations that could be harvested while the planted crop is maturing.

3. Forestry can provide both short and long term employment opportunities.

At full production, a sustainable forest industry could employ a wide range of people, including tree planters, nursery workers, heavy equipment operators, harvesters, sawmill workers, supervisors, retail personnel, tour guides, and forest managers. The amount of employed people would be determined by the scale of the operation and the expansion of forestry activities on adjacent private lands. Immediate short-term employment opportunities could include nursery activities, site preparation and tree planting. There are also employment opportunities with existing tropical hardwood plantations that could be harvested. Many of the jobs created will not be dissimilar with those associated with sugar cane (e.g. harvesting, transportation, processing, and marketing).

4. Sustainable forest management is environmentally beneficial, preserves Hamakua's rural lifestyle, and is compatible with Hawaii's visitor industry.

Sustainable forestry is management that uses and enhances the productive capacity of the land and its resources while conserving the integrity of the forest's ecological processes. In regard to forest plantations, it means the production of wood commodity that does not reduce the capacity of the lands to support successive or continuous yields with no long-term degradation of water quality and soil fertility. It should produce, over time, stable or increasing quantities and qualities of both commodity and non-commodity forest outputs, with recognition of the fluctuations of the market cycles. The public needs to be informed and involved in forest management and policy issues.

Forest Management Plan

A specific forest management plan that documents the establishment, growth and harvesting activities for sustainable forest plantations will be written and approved by the Board of Land and Natural Resources. It will include:

- Species and provenance selection.
- Planting area design and site preparation.
- Drainage design and identification of graded contours and runoff control systems for water management.
- Riparian protection guidelines.
- Road system, firebreaks, and maintenance schedules.
- Weed control management, materials, techniques, and equipment.
- Forest management operations (e.g. timber stand improvement, insect and disease management).
- Harvesting operations.

The following emphasis will be stressed to the lessee in preparing the plan: 1) utilization of existing road network whenever possible, 2) contour planting, 3) encouragement of understory vegetation (e.g. early thinning and planting if needed), 4) protection and enhancement of riparian areas along streambanks, 5) encouragement of public access with appropriate recreational facilities where feasible, 6) visual buffer strips along major roadways, 7) decentralized hauling activities on public roads, 8) no conversion of native forests to non-native species, and 9) encouragement of native species where economically feasible.

Marketing

Environmental interests are much more in tune with industry interests where secondary manufacturing and higher-value crops are concerned. Tropical hardwood sold from Hawaii should be marketed with a "green seal of approval" stressing their origin from managed and sustainable forest ares, not from removal of tropical rainforests. Current efforts to develop "green seal" criteria for Hawaii are ongoing led by the Hawaii Chapter of the Society of America Foresters. A wood products show was held on September 8-12 on Oahu to highlight tropical hardwoods grown and currently available in Hawaii and to develop material for Hawaiian tropical hardwood marketing campaign. The wood show will also travel to Hawaii and Maui.

Community Involvement

It should be noted that local community concerns and interests pertinent to forest products and forest management need to be determined in greater detail. There will be a facilitated forest symposium for the Island of Hawaii in Hilo on November 9-11 to develop criteria for a "green seal" for sustainable production of Hawaiian wood products, seek community support and input for a forest products industry for the Hamakua Coast, and disseminate information and materials on current forest management activities. Three demonstration tree planting areas in the Ookala area will be established as soon as the last sugar field is harvested and/or trustee permission is received.

Value-Added Processing

A natural resource-industrial park with an emphasis on the vertical integration of many wood-related small business, with both primary and secondary manufacturing may be considered within the proposed area. The park could support:

(1) A baseyard for forest management vehicles and equipment;
(2) Landing site for delivery and storage for primary logs;
(3) Facilities (sawmill, kiln) for primary wood processing (available at a cost basis for trees coming from smaller private forest areas);
(4) Processing facilities for other forest products;
(5) A retail outlet for purchasing sawn lumber and other forest products;
(6) Working space for wood artisans and craftsmen to include public viewing of works in progress and classrooms for furniture making and bowl turning training; and
(7) A Forestry Center describing facilities, resources, and activities.

Research and Development

Research and development for forest establishment, growth, harvesting, and processing will be needed to support a forest industry. These valuable work should be supported by existing organizations such as the U.S. Forest Service, University of Hawaii, and the Hawaiian Sugar Planters' Association. Cooperative agreements may be sought with other international tropical forest

research agencies to assure the most relevant and up to date information is being used in Hawaii.

The passage of the Federal Hawaiian Tropical Forest Recovery Act is a timely legislation that could bring much needed federal forest research and development resources funds from the United States Forest Service to Hawaii. Research facilities, which are called for in the Recovery Act, could be placed at the University of Hawaii at Hilo, providing a critical mass of trained forest management expertise and promoting interchange with professors and students at the University of Hawaii. The development of experimental forests, also called for in the Recovery Act, could be placed within this area.

2.2 Purpose of the State Action

The purpose of the proposed action is two-fold: 1) Provide opportunities to enhance and diversify Hawaii's agricultural base; 2) To provide for alternative means of employment for the Hamakua Region resulting from the HSC shutdown.

The proposal to lease State lands was prompted by Hamakua Sugar Company's decision to cease its entire sugar operation. Prior to bankruptcy, HSC cultivated approximately 35,000 acres of sugar lands on the Big Island, was Hawaii's second largest producer of sugar, and generated approximately twelve percent of the energy needs on the island. The plantation has long been a major influence in the land use and social fabric of the Hamakua coastline.

Loss of jobs and plantation supported housing are major concerns of the State. Workers laid off because of the shutdown will not be limited to plantation personnel. Businesses providing goods and services both statewide and within the community would also be affected since the need for their services will be drastically reduced. According to the Department of Business and Economic Development, approximately 1,700 jobs both directly and indirectly related to the plantation would be lost at a cost of about $9.9 million in unemployment benefits.

Leasing public lands previously used for HSC's sugar cultivation, would provide opportunities for other types of agricultural products to be developed, and provide for employment benefits for members in the community.

An environmental assessment is required when State funds or State lands are used. This EA was prepared pursuant to Chapter 343 of the Hawaii Revised Statutes.

Disposition of state lands identified in this EA will be done in accordance with the applicable section of Chapter 171 HRS. Immediate short term occupancy of selected parcel will be allowed through a revocable permit. Long-term tenure, as currently provided in Chapter 171 HRS, will be disposed of through the sale of leases at public auctions.

2.3 Project Location

The subject parcels, consisting of approximately 6560 acres, are situated in the Hamakua Region, Island of Hawaii. The lands are situated on the northeastern coast of the Island of Hawaii and are identified as contained within seventy-nine tax map parcels. (See Exhibit 1)

2.4 Ownership and Brief History of Existing Land Use

The subject parcels were part of approximately 35,000 acres of land used by Hamakua Sugar Company for sugar cultivation. Stretching over 30 miles from the Kaiaakea in the south, to the rim of Waipio Valley at its northern most point, the plantation accounted for about 50% of the total cane acreage on the island and 18.8% of the total state sugar cane acreage. Financial hardship, however, caused the Hamakua Sugar Company to file bankruptcy and cease its sugar operations.

The subject lands were leased to Hamakua Sugar Company as part of twenty-nine individuals leases and revocable permits issued by the Department of Land and Natural Resources. On most of the leases, land use was restricted primarily for agricultural or sugar cultivation.

3.0 GENERAL DESCRIPTION OF THE ACTION'S TECHNICAL, ECONOMIC, SOCIAL AND ENVIRONMENTAL CHARACTERISTICS

3.1 Physical Environment

Diversified agricultural uses are proposed for the subject lands. Having similar characteristics with the existing sugar cultivation, the proposed use of subject lands for other agricultural products would have no new impacts on the physical environment.

The State leased about 6,560 acres of land to Hamakua Sugar Company (HSC) which will become available for other agricultural uses after the sugarcane is harvested. The land is located between Waipio Valley and Hilo along the coast and from sea level to over the 2,000 foot elevation. This elevation gradient makes possible a great number of crop species with different temperature ranges. The rainfall variation ranges from about 100 to 160 inches or more annually which is high compared to most agricultural areas which is detrimental to some crops such as coffee and pineapple. The following soil series described by the USDA Soil Conservation Service consists of:

Hilo (HoD)
Honokaa (HsC, HsD, HsE)
Kaiwiki (KaD)
Kukaiau (KuC, KuD, KuE)
Ookala (OoC, OoD, OoE)
Paauhau (PaC, PaD, PaE)
Rough, broken land (RB)

Hilo and **Kaiwiki** soils are found between Hilo and Papaaloa. Hilo series is found from sea level to 800 foot elevation with an annual rainfall of 120 inches and greater. Kaiwiki series from 800-1,500 feet and 150 inches of rainfall and greater. (Generally, the higher the elevation, the cooler and wetter the growing conditions.)

Honokaa and **Ookala** soils are found between Papaaloa to Paauilo. Ookala series is from sea level to 1,000 foot elevation and about 100 to 120 inches rainfall. Honokaa series from 1,000 to over 2,000 feet and 100 to 150 inches rainfall.

Kukaiau and **Paauhau** soils are found between Paauilo and Waipio Valley. Paauhau series is from sea level to 1,000 foot elevation and less than 100 inches rainfall. Kukaiau series is from 500 to 1,500 feet and up to 100 inches rainfall.

DLNR's Strategic Land Management System's computerized crop suitability program identified a variety of crops suitable for the growing conditions on much of these lands. The Crop Suitability computer forms (Exhibit 2) included with this document show several potential crops for some of the soil map units found on the TMK's for the State lands leased to HSC. The better soils consisting of **HsC, KuC, OoC and PaC** soil map units

have "suitable" scores for most of the crops including the orchard crops (except coffee). The soils with lower rated map units (**HoD, HsD, HsE, KaD, KuD, KuE, OoD, OoE, PaD, PaE and RB**) had "Flaws" (primarily steeper slopes) which made them potentially "unsuitable" or poorly suited except for pasture.

Orchard crops have similar requirements to forestry tree species and based on the Crop Suitability rating for orchard crops, forestry would be suitable for much of the sugarcane lands that are identified as with the following soil types **HsC, KuC, OoC and PaC**.

The soil map unit lettering system indicates relative slope ranges which relate to erosion hazard. The "C" soils have moderately sloping land (HsC, KuC, OoC and PaC).

The soils with lower rated map units (**HoD, HsD, HsE, KaD, KuD, KuE, OoD, OoE, PaD, PaE and RB**) usually had a critical slope of 15% or greater which is an erosion hazard and limits machinery operation. This slope "land factor" also is the cause of the crop suitability score of "0" on most of the analysis forms, although some soil map units have a slope range that includes areas with less than 15%. See attached maps (Exhibit 1) showing generalize soils ("C", "D" and "E") on state lands.

Water to these sites will be provided from the existing Lower Hamakua Ditch System, which presently services much of the lands involved.

The following tables contain a list of HSC's general leases, revocable permits, TMK's and corresponding soil types. The attached Crop Suitability forms in the back of this document (Exhibit 2) indicate the potential crops and their scores on all of these soils found on the sugarcane lands.

1. 2.25 acres former school site for proposed vegetable/truck farming.

SCHOOL	TMK	SCS MAP UNITS
Comm. garden	4-4-05:02	PaC, PaD

2. 160 acres for pasture, tropical fruit, taro, vegetable and other crops by the Hamakua Farmers Cooperative.

LEASE	TMK	SCS MAP UNITS
GL S-3948	4-3-03:02	RB
	4-3-03:03	PaC, PaD
	4-3-03:04	PaC, PaD
	4-3-03:05	RB
	4-3-03:06	RB
	4-3-03:07	PaC, PaD

3. 1,100 acres for use by the Hamakua Farmers Cooperative.

LEASE/PERMIT	TMK	SCS MAP UNITS
GL S-4285	4-6-03:01	PaD, PaE, RB
	4-6-03:02	KuD, KuE, PaD
	4-6-03:20	PaD, PaE, RB
	4-6-04:01	KuC, KuD, KuE, RB
	4-6-04:03	KuD
	4-6-04:08	Reservoir
RP S-6092	4-6-04:02	HsD, HsE, KuC, KuD, KuE, RB
	4-6-04:05	KuD, RB
	4-6-04:06	KuC, KuD, RB

4. GL S-4002, 10.7 acres for vegetable/papaya.

LEASE	TMK	SCS MAP UNITS
GL S-4002	4-3-05:01	OoD, OoE, RB

5. GL S-3587, 32.1 acres for horticulture/papaya.

LEASE	TMK	SCS MAP UNITS
GL S-3587	4-4-01:01	PaC, RB

6. GL S-4107, 118 acres for taro/macadamia/pasture.

LEASE	TMK	SCS MAP UNITS
GL S-4107	4-6-01:07	KuD, PaC, PaD, PaE, RB
	4-6-01:08	PaC, KuD, RB
	4-6-01:18	RB

7. 5,136 acres for proposed plantation forestry.

LEASE	TMK	SCS MAP UNITS
S-3354	4-6-05:10	KuD, KuE
S-3472	4-8-02:06	HsD, HsE, KuD
	4-8-03:09	HsD, HsE
S-3612	4-2-01:06	RB
	4-2-01:05	KuC, RB
	4-2-01:13	KuD
	4-2-07:02	HsC, HsD, HsE, KuC, KuD, OoC, RB
S-3613	3-9-01:01	AkD, KaC, KaD, KaE, RB
	3-9-01:13	OoD, OoE, RB
	3-9-01:18	RB
	3-9-02:01	HsD, RB
	3-9-02:07	HsC, HsD, HsE, KaD, KaE, RB
S-3614	4-1-02:01	RB
	4-1-02:04	HsE, OoC, OoD, RB
	4-1-02:05	OoD, HsE
	4-1-02:06	OoD, OoE
	4-1-03:19	OoD, RB
	4-1-03:26	OoC
	4-1-04:01	HsD, HsE
	4-1-04:31	HsD, HsE, OoD, OoE, RB
	4-1-04:33	HsD, OoD, OoE, RB
S-3615	3-9-01:02	OoD, HsD, RB
	3-9-01:07	OoC, OoE, RB
	3-9-02:08	HsC, HsD, RB
	4-1-01:06	HsC, HsD, HsE, RB
	4-1-05:01	HsC, HsE, KaD, RB

LEASE	TMK	SCS MAP UNITS
S-3616	3-4-03:11	HoD, RB
	3-4-03:12	HoD
	3-4-03:13	HoD
	3-4-03:14	HoD
	3-4-03:16	HoD
	3-4-03:38	HoD, RB
	3-4-03:39	HoD, RB
S-3617	4-5-01:01	PaC, PaD, PaE, RB
	4-5-01:07	PaC, PaE, RB
	4-5-01:08	KuC, PaE
	4-5-01:13	PaC, PaD, PaE, RB
	4-5-01:16	KuC, PaD, PaE
S-3948	4-3-03:02	RB
	4-3-03:03	PaC, PaD
	4-3-03:04	PaC, PaD
	4-3-03:05	RB
	4-3-03:06	RB
	4-3-03:07	PaC, PaD
S-4002	4-3-04:04	RB
	4-3-06:01	OoD, RB
	4-3-06:04	HsD, RB
	4-3-06:08	KuC, RB
	4-3-06:10	KuC, RB
	4-3-06:12	HsD, RB
	4-3-07:02	HsD, RB
	4-3-08:02	HsC, HsD, HsE, RB
	4-3-11:04	HsD
S-4108	4-7-04:09	PaC, PaE, RB
	4-7-04:11	PaC, PaE

LEASE	TMK	SCS MAP UNITS
S-4109	4-6-02:01	PaC, PaD, PaE
	4-6-02:07	PaD, PaE, RB
S-4285	4-6-03:01	PaD, PaE, RB
	4-6-03:02	KuD, KuE, PaD
	4-6-03:20	PaD, PaE, RB
	4-6-04:01	KuC, KuD, KuE, RB
	4-6-04:03	KuD
	4-6-04:08	Reservoir

PERMIT	TMK	SCS MAP UNITS
S-6087	3-5-02:27	OoC
S-6088	3-5-02:27	RB
S-6089	3-5-01:07	KaD, RB
S-6090	4-1-03:17 & 18	RB
S-6091	4-7-02:18	PaD, KuD
S-6092	4-6-04:02	HsD, HsE, KuC, KuD, KuE, RB
	4-6-04:05	KuD, RB
	4-6-04:06	KuC, KuD, RB
S-6093	4-4-03:47	PaC, PaD
S-6094	3-5-02:06	RB
S-6095	3-5-01:46	RB
S-6096	4-4-03:24	Hamakua Ditch
	4-4-03:26	Hamakua Ditch
	4-5-01:02	Hamakua Ditch
	4-6-01:09	Hamakua Ditch
	4-6-03:17	Hamakua Ditch
	4-6-03:18	Hamakua Ditch
	4-6-03:19	Hamakua Ditch

PERMIT	TMK	SCS MAP UNITS
S-6097	4-3-03:32	KuC
S-6488	4-3-03:25	KuC

3.2 Social and Economic Characteristics

The lifestyle of the Hamakua Region is distinctly rural, where agriculture dominates. The general atmosphere is "small-town" with a warmth and friendliness that permeates the community. The informal lifestyle is important to the residents, and is reflected in the desire for preservation of open space, agriculture, architectural integrity, community activities and gathering places. The region contains approximately 6,800 persons, representing 8.3% of the island's population.

Replacement of sugar cultivation with an alternative agricultural use is consistent with the rural character of the region and would have no new impacts on the social environment.

3.3 Public Facilities

No new impacts on public facilities, traffic, flood and drainage are anticipated.

3.4 Relationship to Land Use Plans and Policies

The Hawaii State Plan serves as a guide to future development in Hawaii. The following sections in Chapter 226, Hawaii Revised Statutes are applicable and consistent with the proposed action to lease State lands for diversified agricultural uses:

Chapter 226-6: Objectives and policies for the economy-general.

(a)(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.

(a)(2) A growing and diversified economic base that is not overly dependent on a few industries.

Chapter 226-7: Objectives and policies for the economy-agriculture.

(a)(2) Continued growth and development of diversified agriculture throughout the State.

(b)(5) Enhance agricultural growth by providing public incentives and encouraging private initiatives.

(b)(10) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency.

3.5 State Land Use Law

There are four districts in which the State Land Use System classifies all lands in the State of Hawaii: Urban, Rural, Agricultural and Conservation. All lands in the subject area are within the Agricultural District. Because the proposed use is permitted within the Agricultural District, a district boundary amendment is not required.

3.6 County Development Plan and Zoning

The current county zoning of the subject area is Agriculture. Under current county zoning, no zone change for agricultural crop development which is similar to the existing use is needed.

3.7 Required Approvals

Use of the State lands will require approval from the Board of Land and Natural Resources.

4.0 IDENTIFICATION AND SUMMARY OF MAJOR IMPACTS AND ALTERNATIVES CONSIDERED

A. No Action: One of the alternatives is to take no action. If so, the subject lands would lay fallow, providing for no alternative, productive agricultural uses. As a result, potential employment opportunities that are desperately needed by former HSC workers may not be available.

B. Lease Lands for Non-Agricultural Uses: Another option is to utilize the subject lands for non-agricultural purposes, providing for its highest and best use.

Commercial, residential, resort and industrial uses are possible, subject to appropriate State and County land use approvals. Such uses, however, would not be consistent with the rural character of the Hamakua Region, and would have significant impacts in the local and surrounding community.

5.0 FINDINGS AND REASONS SUPPORTING THE DETERMINATION

Pursuant to Section 11-20-12, Administrative Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

- Involves a loss or destruction of any natural or cultural resource;
- Curtails the range of beneficial uses of the environment;
- Conflicts with the State's long-term goals or guidelines as expressed in Chapter 344, Hawaii Revised Statutes;
- Substantially affects the economic or social welfare of the community or state;
- Substantially affects public health;
- Involves substantial secondary effects, such as population changes or infrastructure demands;
- Involves a substantial degradation of environmental quality;
- Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment to larger actions;
- Substantially affects a rare, threatened or endangered species or its habitat;
- Detrimentally affects air or water quality or ambient noise levels; or
- Affects an environmentally sensitive area, such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, freshwater area, or coastal waters.

The proposed uses do not meet any of the aforementioned criteria and thus will have no significant environmental impacts.

6.0 PROPOSED MITIGATION MEASURES

NONE

7.0 DETERMINATION

The State's objective in leasing public lands in the Hamakua Region is to provide for alternative agricultural uses in the area. This action was prompted by Hamakua Sugar Plantation's decision to shutdown its operations. The impacts resulting from the transition between sugar cultivation and other forms of diversified agriculture is minimal, and will not have physical and socioeconomic impacts in the surrounding area.

It is therefore, determined that the proposed use of such lands will have no significant impacts (Negative Declaration) and therefore no environmental impact statement is needed.

8.0 IDENTIFICATION OF AGENCIES CONSULTED IN MAKING THE ASSESSMENT

1) Department of Land and Natural Resources
2) Department of Agriculture
3) Department of Business, Economic Development and Tourism
4) Department of Labor and Industrial Relations
5) County of Hawaii

COMMENTS ON

DRAFT

ENVIRONMENTAL

ASSESSMENT

JOHN WAIHEE
GOVERNOR OF HAWAII

KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P. KEPPELER, II
DONA L. HANAIKE

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

SEP 28 1993

REF.: LM-DYU

MEMORANDUM:

TO: HONORABLE YUKIO KITAGAWA, CHAIRPERSON
BOARD OF AGRICULTURE

FROM: for KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
Lease of State Lands for Diversified Agriculture Hamakua, Hamakua Coast, Island of Hawaii

Thank you for your letter of July 30, 1993 regarding the Draft Environmental Assessment for the Hamakua Sugar Company leases involving state owned lands.

Many of the relevant concerns you raised in your letter were incorporated into the Final Environmental Assessment (see attached). However, some of the concerns you raised cannot be addressed at this time and will probably be provided as we begin working with the individual users of the properties.

As you are aware, the task of preparing an Environmental Assessment for this project is very complex. The demise of Hamakua Sugar has left the state and other property owners with a real need to accelerate land use planning for this region. This Environmental Assessment is the state's proposal to move toward a "transition" from sugar to other agricultural crops. Towards this end, the state is working with the Hamakua Farmers Cooperative to insure a smooth and efficient economic/social transition in this region is accomplished.

With respect to the specific concerns you raised, the Environmental Assessment has been revised and now identifies seven (7) specific areas for transitional use. The uses are identified as followings:

	Site		Proposed Use
1.	2.25	Acres (Former School Site)	Vegetable/Truck Farming
2.	160	Acres	Vegetable/Horticulture
3.	1,100	Acres	Horticulture/Taro Farming
4.	10.7	Acres	Vegetable/Papaya
5.	32.1	Acres	Horticulture/Papaya
6.	118	Acres	Taro, Macadamia, Pasture
7.	5,136	Acres	Plantation Forestry

6,559.05 ACRES TOTAL

The Environmental Assessment explains in detail each of the areas (Physical, Economic, Social, etc.) and the proposed uses within each area. Furthermore, the fact that all of the lands involved were historically cultivated sugar lands would lead us to believe that a mere changing of crops, with proper attention given to infrastructure needs, would not have a significant impact on the subject or surrounding lands.

Finally, we contemplate that the immediate disposition will be through revocable permits with conditions attached requiring individual farmers to submit detailed "business plans" before we would consider any type of long term disposition. We believe that this will give the individual farmers adequate assurance of the state's commitment to assist them in the transition, and equally provide some assurance to the state that farming operations are legitimate business ventures.

We appreciate your comments on this matter. Should you have any further questions, please feel free to contact Mr. Dean Uchida at 587-0414.

cc: Mr. Yuen
Honorable Mufi Hannemann, DBEDT
Mr. Harold Masumoto, OSP
Mayor Steven Yamashiro, County of Hawaii

3766

JOHN WAIHEE
Governor

YUKIO KITAGAWA
Chairperson, Board of Agriculture

ILIMA A. PIIANAIA
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814-2512

FAX: (808) 973-9613

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96823-2159

July 30, 1993

TO: Keith W. Ahue, Chairperson
Board of Land and Natural Resources

ATTN: John Keppeler, II

FROM: Yukio Kitagawa, Chairperson
Board of Agriculture

SUBJECT: Draft Environmental Assessment (EA)
Lease of State Lands for Diversified Agriculture
Hamakua, Island of Hawaii
TMK: (various)
Area: 6,566.802 acres (total)

We have obtained a copy of the subject document, in response to the notice in the July 23, 1993, OEQC Bulletin, and have the following comments to offer.

The Department of Agriculture (DOA) is in total support of the leasing of State lands for diversified agriculture in the Hamakua region. In the aftermath of the bankruptcy of the Hamakua Sugar Company, the action of offering these lands to the public will be a major stimulus to the regeneration of the region's economy. Our comments are purposely constructive, and are intended to expedite the proposed land disposition by encouraging full disclosure of the impacts resulting from this action.

§1.1 This section should describe the proposed action in sufficient detail to indicate: (a) the intended uses by TMK parcel; (b) the proposed method of lease disposition (public auction, drawing of lot, or direct negotiation); (c) the anticipated lease rentals by TMK parcel (appraisal or upset values); and (d) the proposed term(s) of the leases. The Department of Land and Natural Resources (DLNR) has developed a Strategic Land Management System which may have the answers. Further, individuals may have already applied for lease disposition of specific parcels in advance of this Draft EA.

In section 1.1, will orchards, intensive livestock, pasture, and forestry be included among the diversified agricultural uses? Also, will agricultural parks (under set aside order to the DOA) be considered for the State Hamakua lands? Our Department has been working for many months to identify suitable sites and

projects as "agricultural options" for the region, but this information is not reflected in the Draft EA.

Section 1.1 should also describe the schedule of the final sugarcane harvest under the settlement agreement among the major creditors of Hamakua Sugar Company, and the relationship of this harvest schedule to the dates of termination of the State leases and revocable permits under default proceedings, on a parcel by parcel basis.

§1.3 This section should include a series of maps showing the location of each of the tax map parcels listed in Attachments 1 and 2. In addition, Attachments 1 and 2 should indicate the acreage of each individual parcel, rather than lumping it together under the general lease or revocable permit number.

§2.1 This section should describe the physical environment of the subject lands (including adequate location and site maps) in terms of soil characteristics, elevation, slope, rainfall, and other parameters related to the proposed agricultural uses. Also, the OEQC "Guidelines for Preparing Environmental Assessments" specify that descriptions of flora, fauna, significant habitats, and historical/archaeological and cultural sites be included.

If the proposed uses are described in sufficient detail in section 1.1, it is apparent that they will have impacts which differ from those of sugarcane cultivation and vary by location. For example, alternative crops may require greater applications of pesticides and herbicides than sugar; livestock or pasture uses may generate sources of ground and surface water contamination which did not previously exist. Appropriate mitigation measures should be described in general terms (as "best management practices") related to the proposed uses at various physical types of sites.

§2.2 This section should describe the social and economic characteristics of the affected population in sufficient detail that the impact of the replacement of sugarcane cultivation with alternative agricultural uses can be assessed. For example, what adjustments will former plantation workers have to make in terms of acquiring new job and management skills, and in possibly accepting greater personal responsibilities at lower wages than what they were accustomed to? If the subject parcels are leased to the highest bidder rather than at fair market rentals in agricultural use, what will be the impact on the disposition of these lands to qualified members of the community versus "outsiders"?

§2.3 This section should describe in general terms the impact of the shutdown of the plantation on the availability of public facilities such as maintained roadways, drainage/flood control improvements, and irrigation water and electrical power at the affected State parcels. Will the leasing of these parcels to a variety of separate individuals generate demands for public sector provision of infrastructure and services formerly operated by Hamakua Sugar Company as private systems for the entire region? In particular, who will own, maintain in good condition, and provide water from the Lower Hamakua Ditch system to the subject parcels?

§3.3 Not all of the tax map parcels listed in Attachments 1 and 2 are zoned A40-A (40-acre minimum lot size in agricultural use). The County zoning should be given on a parcel by parcel basis for greater accuracy.

§4.0 Depending on the proposed use(s) and the physical characteristics of the subject parcels, subdivision and infrastructure improvements may be required for County permits and approvals in certain cases. For example, is public road access available to each parcel? These circumstances should be anticipated and described in the Draft EA.

§5.0 The impacts resulting from the transition from sugarcane cultivation to other forms of agriculture at the subject parcels may not be significant, so as to warrant a determination of negative declaration. However, this conclusion will be better supported if the assessment is expanded as suggested above.

In accordance with the OEQC "Guidelines" cited above, the Draft EA should also specify the approving agency, and identify the agencies consulted in preparation of the document, as required by §11-200-9, HAR. For example, the Department of Agriculture was not consulted, but could have provided a significant amount of the information for a more complete Draft EA. Contact Dr. Paul J. Schwind, Planning Program Administrator, at 973-9469 for assistance in this regard. Similarly, the Office of State Planning and Department of Business, Economic Development and Tourism are preparing their own plans for the transition of the Hamakua region, which could affect and be affected by the proposed land disposition.

c: Office of Environmental Quality Control
Office of State Planning
Dept. of Business, Economic Development & Tourism

P18:hamadlnr.ca

EXHIBIT 1

soil code ending: C 1235 acres

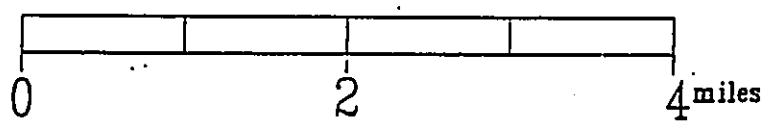
soil code ending: D 5905 acres

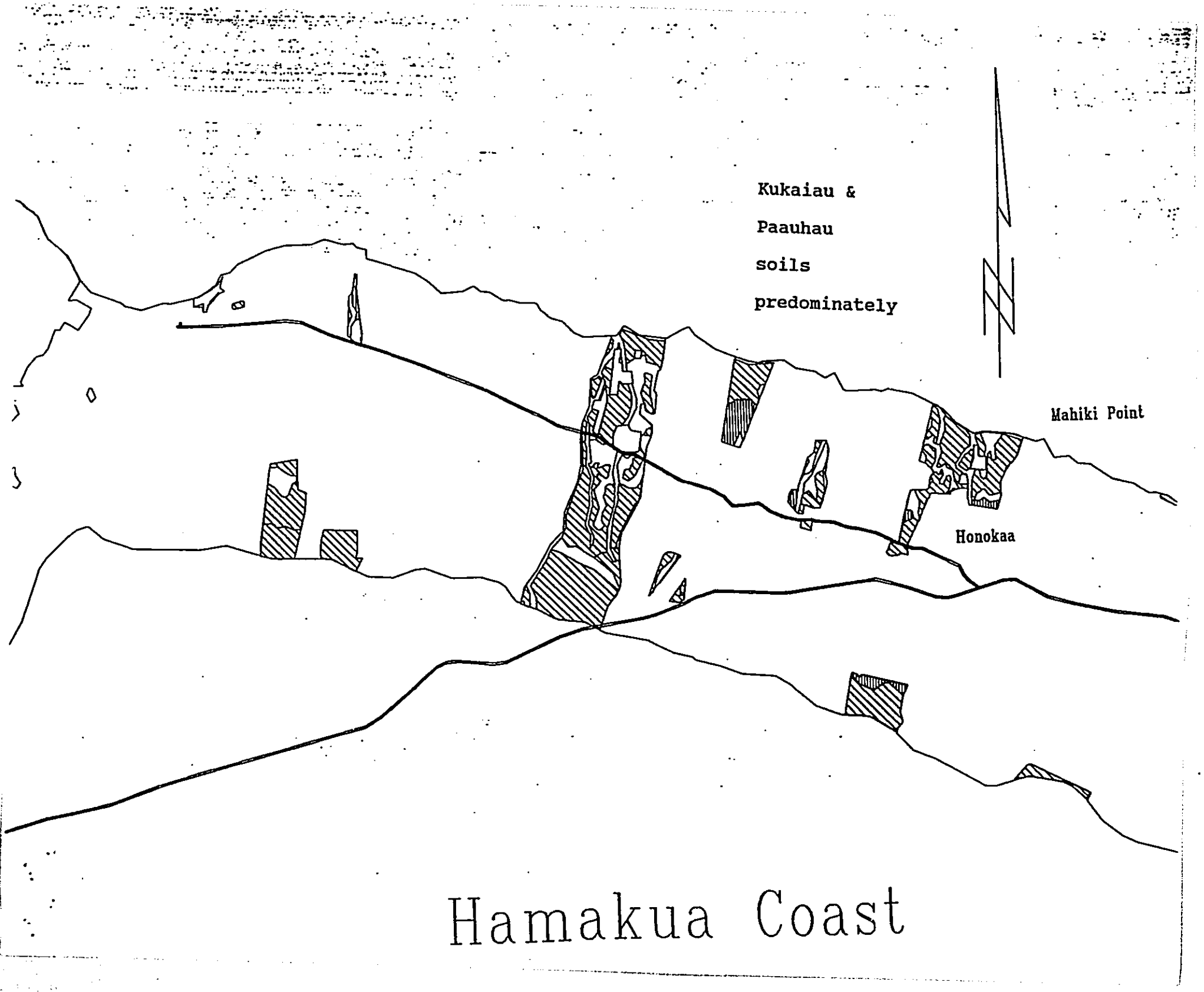
soil code ending: E 1429 acres

State land

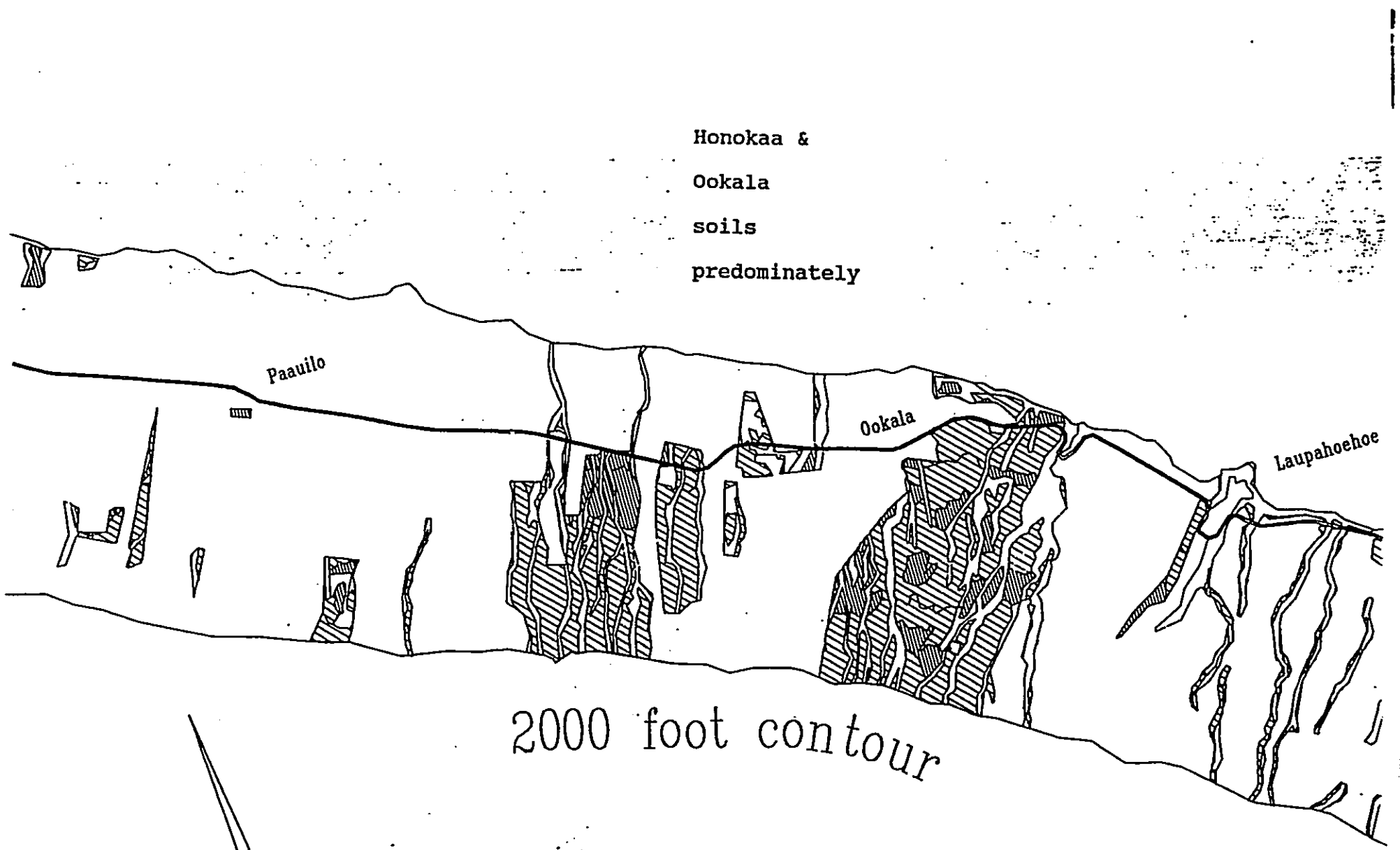
Major Highway

Produced by the Office of State Planning
in conjunction with the Bureau of Land
Management on the Statewide GIS.
Data Sources – State Land: USGS Giras data,
1976; Soil: Soil Conservation Service;
Roads: USGS Digital Line Graph, 1983.
Map for display purposes only.





Hamakua Coast


Honokaa &
Ookala
soils
predominately
Paauilo
Ookala
Laupahoehoe
2000 foot contour

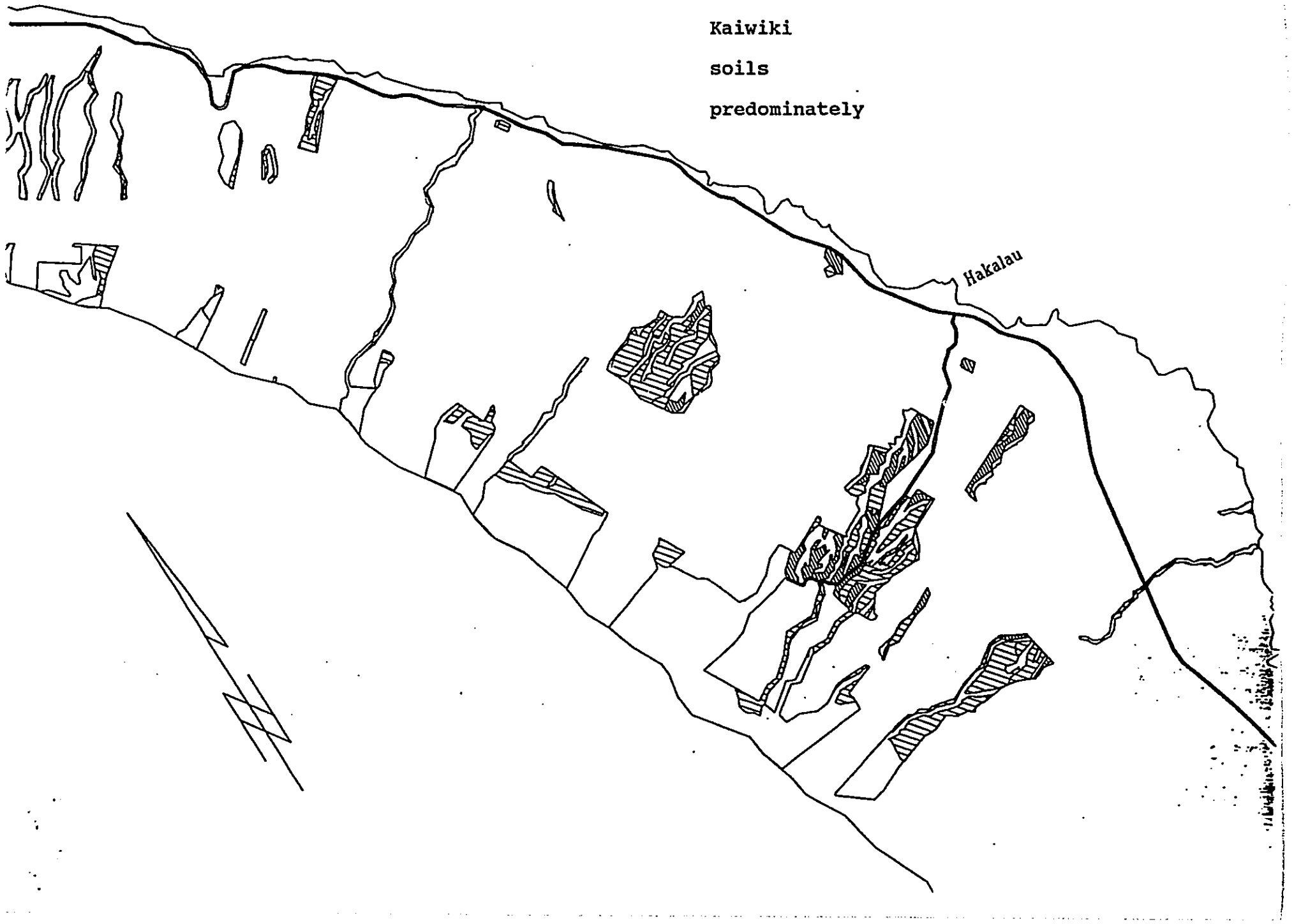

Hilo &
Kaiwiki
soils
predominately
Hakalau

EXHIBIT 2

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		HoD	E	<25 MPH	

Land Factors		
Elevation:	0 -	800
Slope:	10 -	20
k Value:		0.050
Depth to Bedrock:	-	60
Depth to Pan:	-	
Coarse Fragments:	-	0
Drainage:		well
Temperature:	72 -	74
Rainfall:	120 -	180
pH:	4.5 -	6
Series:		HILO

Crop	Suitability	Score	Flaw
Avocado	U	0 /16	SL
Banana	S	15 /18	
Coffee	U	0 /18	SL
Forage Crops	SWI	12 /16	
Guava	U	0 /18	SL
Macadamia	U	0 /18	SL
Papaya	U	0 /18	SL
Pasture	S	/16	
Pineapple	U	0 /20	SL, RF
Root Crops	U	0 /16	SL
Sugar Cane	SWI	13 /16	
Truck Crops	U	0 /16	SL

U = UNSUITABLE
SL = SLOPE
S = SUITABLE
SWI = SUITABLE WITH IRRIGATION

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 27, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		HsC	E	<25 MPH	

Land Factors		
Elevation:	1000 -	3000
Slope:	0 -	10
k Value:		0.050
Depth to Bedrock:	-	60
Depth to Pan:	-	
Coarse Fragments:	-	0
Drainage:		well
Temperature:	66 -	69
Rainfall:	100 -	150
pH:	5.6 -	7
Series:	HONOKAA	

Crop	Suitability	Score	Flaw
Avocado	SWI	15 /16	
Banana	S	15 /18	
Coffee	PS	0 /18	RF
Forage Crops	S	13 /16	
Guava	PS	0 /18	TE
Macadamia	S	16 /18	
Papaya	S	16 /18	
Pasture	S	15 /16	
Pineapple	PS	0 /20	TE RF
Root Crops	PS	0 /16	TE
Sugar Cane	SWI	12 /16	
Truck Crops	S	15 /16	

PS = PARTIAL SUITABLE
RF = RAINFALL (excessive)
TE = TEMPERATURE

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 27, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		HsD	E	<25 MPH	

Land Factors		
Elevation:	1000 -	3000
Slope:	10 -	20
k Value:		0.050
Depth to Bedrock:	-	60
Depth to Pan:	-	
Coarse Fragments:	-	0
Drainage:		well
Temperature:	66 -	69
Rainfall:	100 -	150
pH:	5.6 -	7
Series:	HONOKAA	

Crop	Suitability	Score	Flaw
Avocado	PSWI	0 /16	SL
Banana	S	14 /18	
Coffee	PS	0 /18	SL RF
Forage Crops	S	12 /16	
Guava	PS	0 /18	SL TE
Macadamia	PS	0 /18	SL
Papaya	PS	0 /18	SL
Pasture	S	14 /16	
Pineapple	PS	0 /20	SL TE RF
Root Crops	PS	0 /16	SL TE
Sugar Cane	SWI	11 /16	
Truck Crops	PS	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date:
August 27, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		HsE	E	<25 MPH	

Land Factors			
Elevation:	1000	-	3000
Slope:	20	-	35
k Value:			0.050
Depth to Bedrock:		-	60
Depth to Pan:		-	
Coarse Fragments:		-	0
Drainage:			well
Temperature:	66	-	69
Rainfall:	100	-	150
pH:	5.6	-	7
Series:	HONOKAA		

Crop	Suitability	Score	Flaw
Avocado	PSWI	0 /16	SL
Banana	S	14 /18	
Coffee	PS	0 /18	SL RF
Forage Crops	PS	0 /16	SL
Guava	PS	0 /18	SL TE
Macadamia	PS	0 /18	SL
Papaya	PS	0 /18	SL
Pasture	S	13 /16	
Pineapple	PS	0 /20	SL TE RF
Root Crops	PS	0 /16	SL TE
Sugar Cane	SWI	10 /16	
Truck Crops	PS	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		KaD	E	<25 MPH	

Land Factors		
Elevation:	800 -	1500
Slope:	10 -	20
k Value:		0.050
Depth to Bedrock:	-	60
Depth to Pan:	-	
Coarse Fragments:	-	0
Drainage:		well
Temperature:	70 -	70
Rainfall:	150 -	200
pH:	4.5 -	6
Series:		KAIWIKI

Crop	Suitability	Score	Flaw
Avocado	U	0 /16	SL
Banana	S	15 /18	
Coffee	U	0 /18	SL
Forage Crops	SWI	12 /16	
Guava	U	0 /18	SL
Macadamia	U	0 /18	SL
Papaya	U	0 /18	SL
Pasture	S	/16	
Pineapple	U	0 /20	SL
Root Crops	PSWI	0 /16	SL
Sugar Cane	U	0 /16	SL
Truck Crops	PSWI	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 27, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		KuC	E	<25 MPH	

Land Factors			
Elevation:	500	-	1500
Slope:	6	-	12
k Value:			0.100
Depth to Bedrock:		-	72
Depth to Pan:		-	
Coarse Fragments:		-	5
Drainage:			well
Temperature:	67	-	69
Rainfall:	70	-	100
pH:	4.5	-	7
Series:	KUKAIAU		

Crop	Suitability	Score	Flaw
Avocado	SWI	15 /16	
Banana	S	15 /18	
Coffee	S	14 /18	
Forage Crops	S	11 /16	
Guava	PS	0 /18	TE
Macadamia	S	15 /18	
Papaya	S	16 /18	
Pasture	S	15 /16	
Pineapple	PS	0 /20	RF
Root Crops	PS	0 /16	TE
Sugar Cane	SWI	12 /16	
Truck Crops	S	13 /16	

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 27, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		KuD	E	<25 MPH	

Land Factors			
Elevation:	500	-	1500
Slope:	12	-	20
k Value:			0.100
Depth to Bedrock:		-	72
Depth to Pan:		-	
Coarse Fragments:		-	5
Drainage:			well
Temperature:	67	-	69
Rainfall:	70	-	100
pH:	4.5	-	7
Series:	KUKAIAU		

Crop	Suitability	Score	Flaw
Avocado	PSWI	0 /16	SL
Banana	S	13 /18	
Coffee	PS	0 /18	SL
Forage Crops	S	10 /16	
Guava	PS	0 /18	SL TE
Macadamia	PS	0 /18	SL
Papaya	PS	0 /18	SL
Pasture	S	13 /16	
Pineapple	PS	0 /20	SL RF
Root Crops	PS	0 /16	SL TE
Sugar Cane	SWI	11 /16	
Truck Crops	PS	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date:
August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		KuE	E	<25 MPH	0.00

Land Factors			
Elevation:	500	-	1500
Slope:	20	-	35
k Value:			0.100
Depth to Bedrock:		-	72
Depth to Pan:		-	
Coarse Fragments:		-	5
Drainage:			well
Temperature:	67	-	69
Rainfall:	70	-	100
pH:	4.5	-	7
Series:	KUKAIAU		

Crop	Suitability	Score	Flaw
Avocado	U	0 /16	SL
Banana	U	0 /18	SL
Coffee	U	0 /18	SL
Forage Crops	U	0 /16	SL
Guava	U	0 /18	SL
Macadamia	U	0 /18	SL
Papaya	U	0 /18	SL
Pasture	S	11 /16	
Pineapple	U	0 /20	SL
Root Crops	U	0 /16	SL
Sugar Cane	U	0 /16	SL
Truck Crops	U	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		OoC	E	<25 MPH	

Land Factors		
Elevation:	0 -	1000
Slope:	6 -	12
k Value:		0.100
Depth to Bedrock:	-	60
Depth to Pan:	-	
Coarse Fragments:	-	0
Drainage:		well
Temperature:	72 -	74
Rainfall:	90 -	120
pH:	5.1 -	7
Series:		OOKALA

Crop	Suitability	Score	Flaw
Avocado	SWI	15 /16	
Banana	S	15 /18	
Coffee	PSWI	0 /18	RF
Forage Crops	SWI	12 /16	
Guava	SWI	16 /18	
Macadamia	SWI	15 /18	
Papaya	SWI	16 /18	
Pasture	S	15 /16	
Pineapple	PSWI	0 /20	RF
Root Crops	SWI	13 /16	
Sugar Cane	SWI	13 /16	
Truck Crops	SWI	14 /16	

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date:
August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		OoD	E	<25 MPH	

Land Factors	
Elevation:	0 - 1000
Slope:	12 - 20
k Value:	0.100
Depth to Bedrock:	- 60
Depth to Pan:	-
Coarse Fragments:	- 0
Drainage:	well
Temperature:	72 - 74
Rainfall:	90 - 120
pH:	5.1 - 7
Series:	OOKALA

Crop	Suitability	Score	Flaw
Avocado	U	0 /16	SL
Banana	S	13 /18	
Coffee	U	0 /18	SL
Forage Crops	SWI	11 /16	
Guava	U	0 /18	SL
Macadamia	U	0 /18	SL
Papaya	U	0 /18	SL
Pasture	S	/16	
Pineapple	U	0 /20	SL
Root Crops	PSWI	0 /16	SL
Sugar Cane	U	0 /16	SL
Truck Crops	PSWI	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		OoE	E	<25 MPH	

Land Factors	
Elevation:	0 - 1000
Slope:	20 - 35
k Value:	0.100
Depth to Bedrock:	- 60
Depth to Pan:	-
Coarse Fragments:	- 0
Drainage:	well
Temperature:	72 - 74
Rainfall:	90 - 120
pH:	5.1 - 7
Series:	OOKALA

Crop	Suitability	Score	Flaw
Avocado	U	0/16	SL
Banana	U	0/18	SL
Coffee	U	0/18	SL
Forage Crops	U	0/16	SL
Guava	U	0/18	SL
Macadamia	U	0/18	SL
Papaya	U	0/18	SL
Pasture	S	/16	
Pineapple	U	0/20	SL
Root Crops	U	0/16	SL
Sugar Cane	U	0/16	SL
Truck Crops	U	0/16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		PaC	E	<25 MPH	

Land Factors		
Elevation:	0 -	1000
Slope:	6 -	12
k Value:		0.100
Depth to Bedrock:	-	60
Depth to Pan:	-	
Coarse Fragments:	-	5
Drainage:		well
Temperature:	72 -	74
Rainfall:	60 -	80
pH:	5.1 -	7
Series:	PAAUHAU	

Crop	Suitability	Score	Flaw
Avocado	SWI	15 /16	
Banana	S	15 /18	
Coffee	SWI	14 /18	
Forage Crops	S	11 /16	
Guava	SWI	16 /18	
Macadamia	S	15 /18	
Papaya	SWI	16 /18	
Pasture	S	15 /16	
Pineapple	PSWI	0 /20	RF
Root Crops	SWI	14 /16	
Sugar Cane	SWI	14 /16	
Truck Crops	SWI	15 /16	

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		PaD	E	<25 MPH	

Land Factors	
Elevation:	0 - 1000
Slope:	12 - 20
k Value:	0.100
Depth to Bedrock:	- 60
Depth to Pan:	-
Coarse Fragments:	- 5
Drainage:	well
Temperature:	72 - 74
Rainfall:	60 - 80
pH:	5.1 - 7
Series:	PAAUHAU

Crop	Suitability	Score	Flaw
Avocado	U	0 /16	SL
Banana	S	13 /18	
Coffee	U	0 /18	SL
Forage Crops	SWI	10 /16	
Guava	U	0 /18	SL
Macadamia	U	0 /18	SL
Papaya	U	0 /18	SL
Pasture		/16	
Pineapple	U	0 /20	SL
Root Crops	U	0 /16	SL
Sugar Cane	SWI	13 /16	
Truck Crops	U	0 /16	SL

Lease Number:

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Date: August 26, 1993

CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		PaE	E	<25 MPH	

Land Factors	
Elevation:	0 - 1000
Slope:	20 - 35
k Value:	0.100
Depth to Bedrock:	- 60
Depth to Pan:	-
Coarse Fragments:	- 5
Drainage:	well
Temperature:	72 - 74
Rainfall:	60 - 80
pH:	5.1 - 7
Series:	PAAUHAU

Crop	Suitability	Score	Flaw
Avocado	U	0/16	SL
Banana	U	0/18	SL
Coffee	U	0/18	SL
Forage Crops	U	0/16	SL
Guava	U	0/18	SL
Macadamia	U	0/18	SL
Papaya	U	0/18	SL
Pasture	S	/16	
Pineapple	U	0/20	SL
Root Crops	U	0/16	SL
Sugar Cane	U	0/16	SL
Truck Crops	U	0/16	SL

State of Hawaii
Department of Land and Natural Resources
Division of Land Management

Lease Number:

Date: August 26, 1993

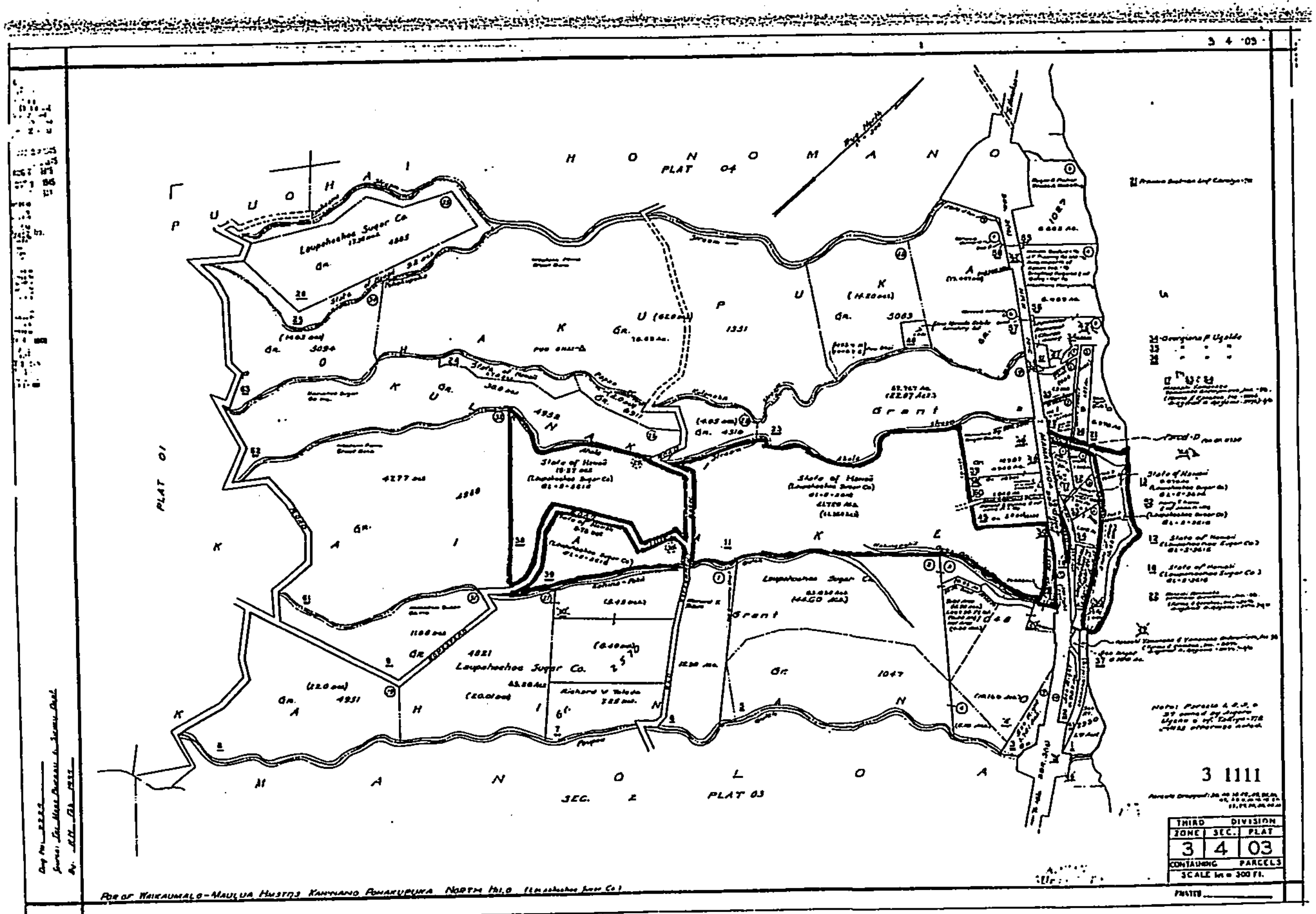
CROP SUITABILITY ANALYSIS

Land ID					
Lease Number	Tax Map Key	Map Unit	Exposure	Wind Speed	Area (Acre)
		RB	E	<25 MPH	

Land Factors	
Elevation:	0-3,000
Slope:	35 70
K Value:	
Depth to Bedrock:	
Depth to Pan:	
Coarse Fragments:	
Drainage:	
Temperature:	
Rainfall:	
pH:	
Series:	Rough broken

Crop	Suitability	Score	Flaw
Avocado	U	0/16	SL, K
Banana	U	0/18	SL, K
Coffee	U	0/18	SL, K
Forage Crops	U	0/16	SL, K
Guava	U	0/18	SL, K
Macadamia	U	0/18	SL, K
Papaya	U	0/18	SL, K
Pasture	S	/16	
Pineapple	U	0/20	SL, K
Root Crops	S	0/16	SL, K
Sugar Cane	U	0/16	SL, K
Truck Crops	U	0/16	SL, K

EXHIBIT 3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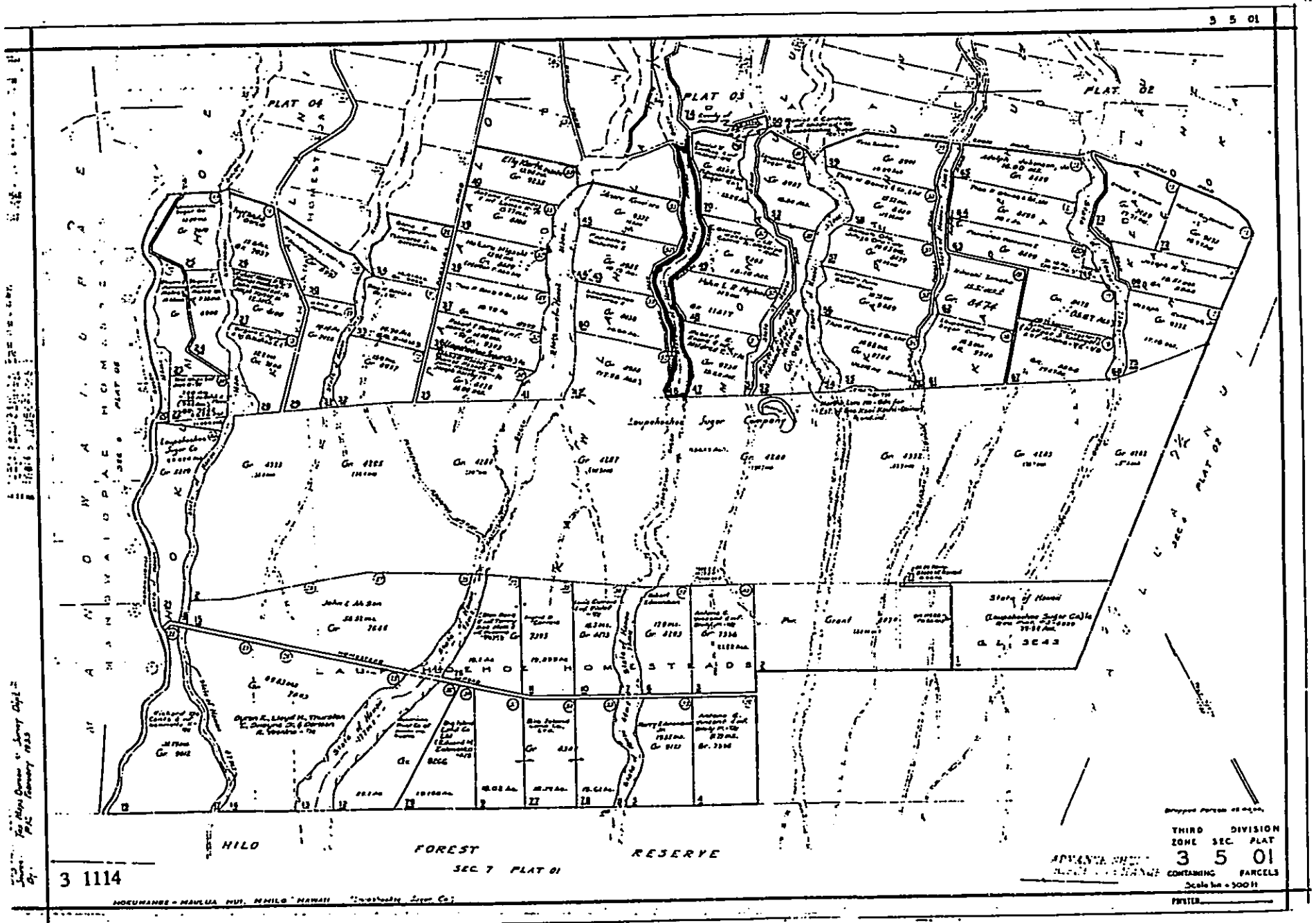
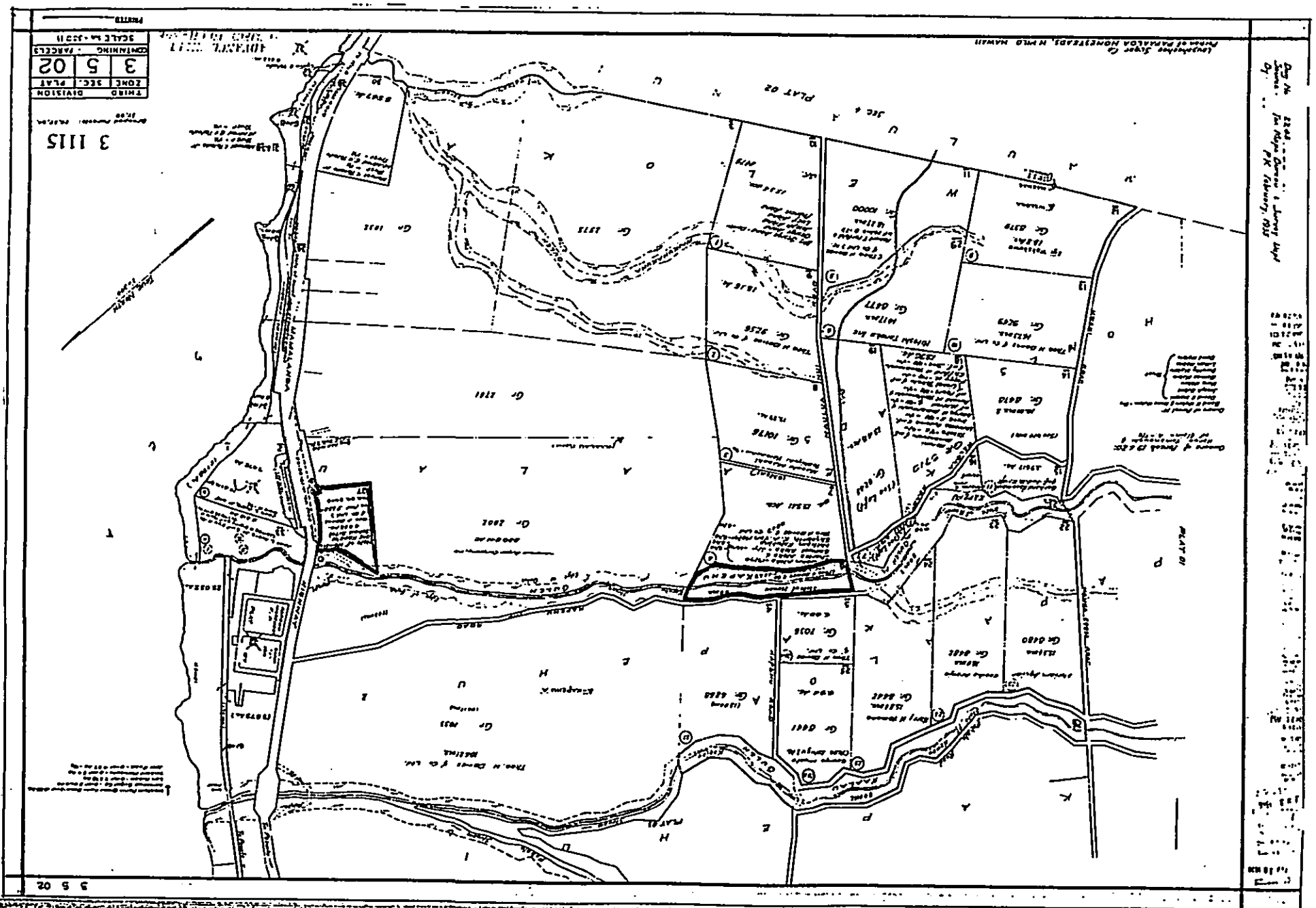
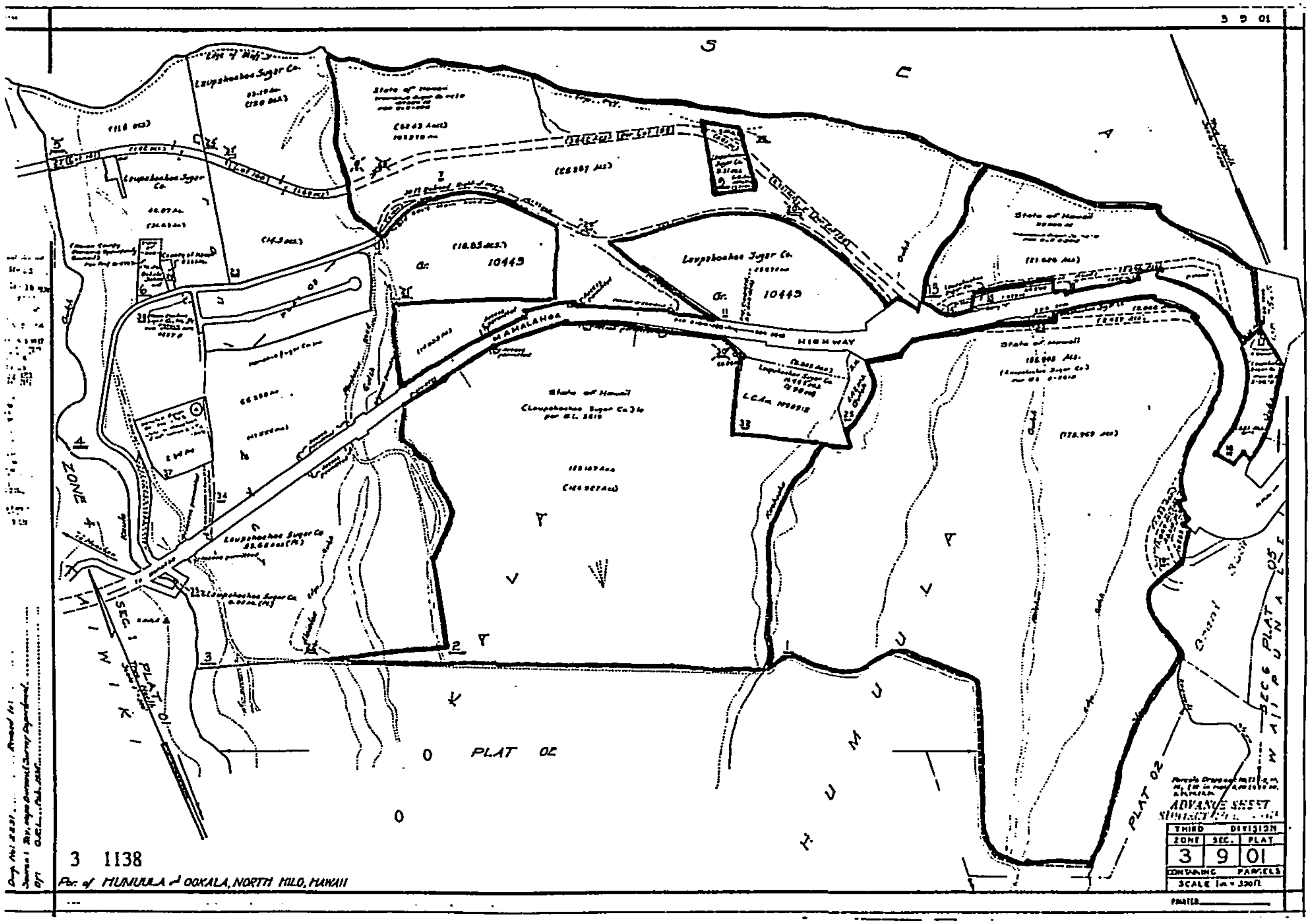
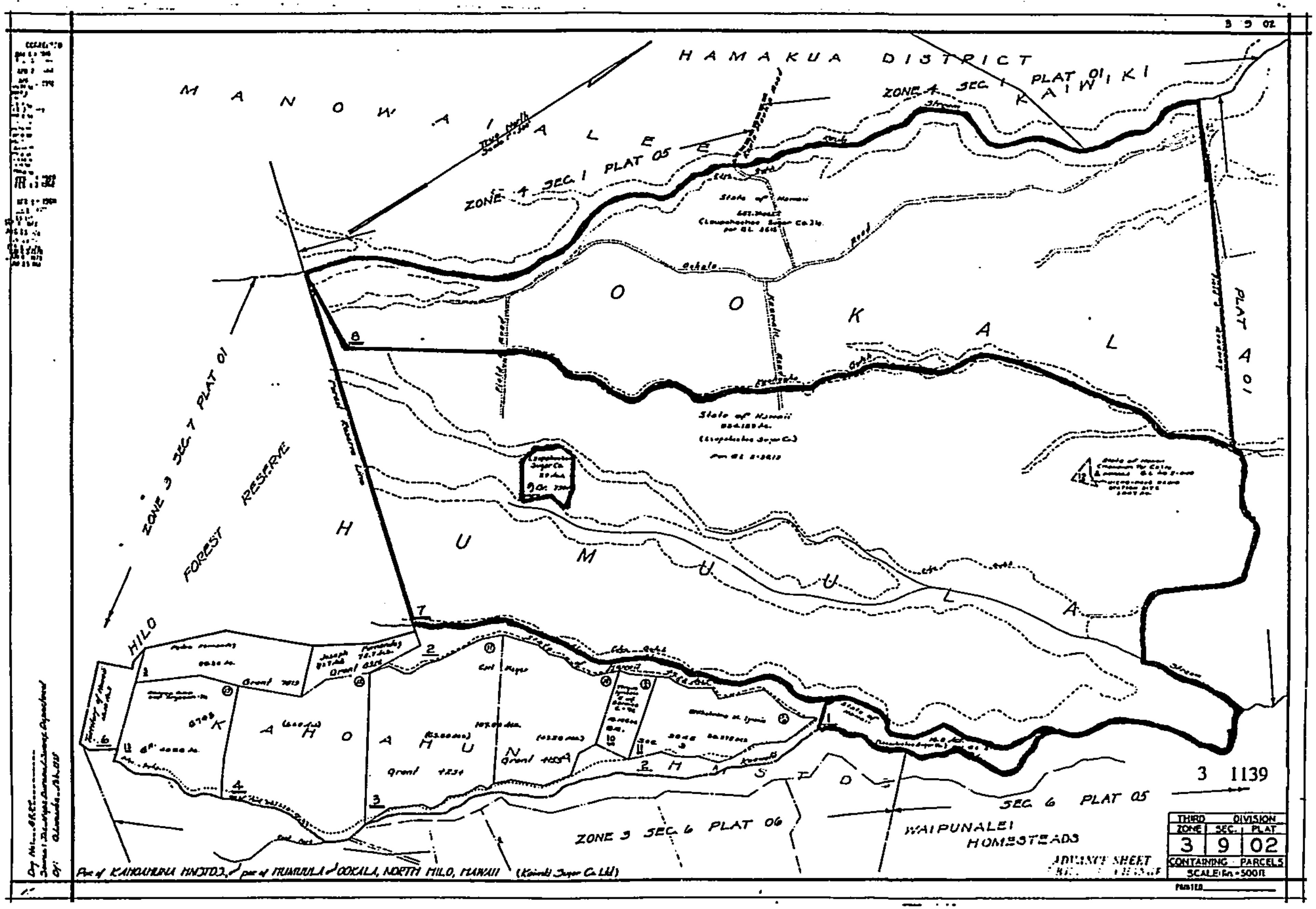
HONOMANO
PLAT 04
PUUOHAI
PLAT 01
KAIKUKANOHAI
MANOLOA
SEC. 2 PLAT 03
Laupahoehoe Sugar Co.
State of Hawaii
Grant
Richard V. Toledo
3 1111
THIRD DIVISION
ZONE SEC. PLAT
3 4 03
CONTAINING PARCELS
SCALE 1in = 300 Ft.
Por of Waikaumalo-Maulua Hustns Kaiwiano Pohakupuka North Hilo (Laupahoehoe Sugar Co.)

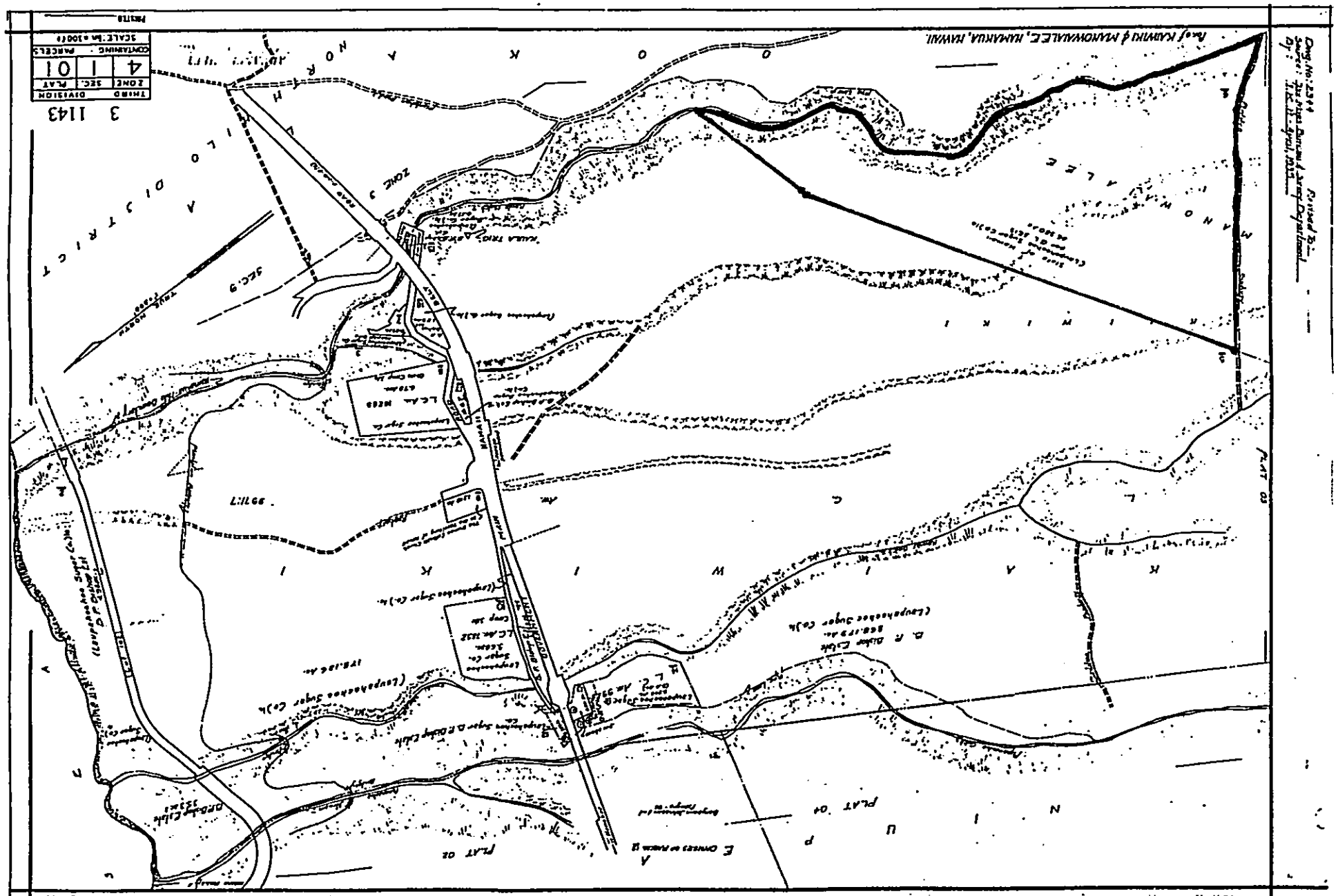

3 5 01
PLAT 04
PLAT 03
PLAT 02
Laupahoehoe Sugar Company
John E. Ah Sam
State of Hawaii
HOMESTEADS
HILO FOREST RESERVE
SEC 7 PLAT 01
THIRD DIVISION
ZONE SEC. PLAT
3 5 01
CONTAINING PARCELS
Scale 1in = 300 ft
PRINTED
3 1114
HOKUMAHEE - MAULUA NUI, N. HILO, HAWAII
Tax Maps Bureau
February 1933





3 9 01
SEC. 1
PLAT 01
ZONE 4
PLAT 02
HIGHWAY
MAMALAHOA
Laupahoehoe Sugar Co.
State of Hawaii
Gr. 10445
Gr. 10449
L.C.Aw. 8951B
ADVANCE SHEET
THIRD DIVISION
ZONE SEC. PLAT
3 9 01
CONTAINING PARCELS
SCALE 1 in. = 300 ft.
3 1138
Por. of HUMUULA & OOKALA, NORTH HILO, HAWAII


3 9 02
HAMAKUA DISTRICT
MANOWAI ALE
ZONE 4 SEC 1 PLAT 01
KAIWIKI
ZONE 4 SEC. 1 PLAT 05
O O K A L A
PLAT 4 01
ZONE 3 SEC. 7 PLAT 01
FOREST RESERVE
Forest Reserve Line
H U M U U L A
HILO
K A H O A H U N A
HOMESTEADS
ZONE 3 SEC. 6 PLAT 06
SEC. 6 PLAT 05
WAIPUNALEI HOMESTEADS
3 1139
ADVANCE SHEET
THIRD DIVISION
ZONE SEC. PLAT
3 9 02
CONTAINING PARCELS
SCALE: 1 in. = 500 ft.
Por. of KAHOAHUNA HMSTDS., por. of HUMUULA & OOKALA, NORTH HILO, HAWAII (Kaiwiki Sugar Co. Ltd.)


Map of Kawaihau & Makowiale C.C., Hamakua, Hawaii
Surveyed by:
Drawn by:
Traced by:
Approved by:
Hawaii Sugar Planters' Association
Experiment Station
Division of Agricultural Economics
Honolulu, T. H.
Scale: 1 inch = 100 feet
Date: April, 1933
Drawing No. 23944
Hamakua District
Section 9
Plat 01
Plat 02
Plat 03
Plat 04
Zone 3
Zone 4
Kawaihau Sugar Co., Ltd.
Makowiale Sugar Co., Ltd.
Hawaii
Hamakua
Kawaihau
Makowiale
Honokaa
Paauilo
Ookala
Hakalau
Kalopa
Kaiwiki
Kaiwiki Stream
Kalopa Stream
Hakalau Stream
Ookala Stream
Honokaa Stream
Paauilo Stream
Kawaihau Road
Mamane Road
Mamane Gulch
Kaiwiki Gulch
Kalopa Gulch
Hakalau Gulch
Ookala Gulch
Honokaa Gulch
Paauilo Gulch
Kawaihau Mill
Makowiale Mill
Kawaihau Camp
Makowiale Camp
Kawaihau Flume
Makowiale Flume
Kawaihau Ditch
Makowiale Ditch
Kawaihau Tunnel
Makowiale Tunnel
Kawaihau Bridge
Makowiale Bridge
Kawaihau Dam
Makowiale Dam
Kawaihau Reservoir
Makowiale Reservoir
Kawaihau Pumping Station
Makowiale Pumping Station
Kawaihau Power Plant
Makowiale Power Plant
Kawaihau Transmission Line
Makowiale Transmission Line
Kawaihau Telephone Line
Makowiale Telephone Line
Kawaihau Railroad
Makowiale Railroad
Kawaihau Wagon Road
Makowiale Wagon Road
Kawaihau Trail
Makowiale Trail
Kawaihau Boundary
Makowiale Boundary
Kawaihau Survey Monument
Makowiale Survey Monument
Kawaihau Triangulation Station
Makowiale Triangulation Station
Kawaihau Bench Mark
Makowiale Bench Mark
Kawaihau Contour
Makowiale Contour
Kawaihau Index
Makowiale Index
Kawaihau Key
Makowiale Key
Kawaihau Legend
Makowiale Legend
Kawaihau Notes
Makowiale Notes
Kawaihau Title
Makowiale Title
Kawaihau Signature
Makowiale Signature
Kawaihau Date
Makowiale Date
Kawaihau Scale
Makowiale Scale
Kawaihau Drawing
Makowiale Drawing
Kawaihau Survey
Makowiale Survey
Kawaihau Plat
Makowiale Plat
Kawaihau Section
Makowiale Section
Kawaihau Zone
Makowiale Zone
Kawaihau District
Makowiale District
Kawaihau Island
Makowiale Island
Kawaihau County
Makowiale County
Kawaihau Territory
Makowiale Territory
Kawaihau State
Makowiale State
Kawaihau Nation
Makowiale Nation
Kawaihau World
Makowiale World
Kawaihau Universe
Makowiale Universe
Kawaihau Infinity
Makowiale Infinity
Kawaihau Eternity
Makowiale Eternity
Kawaihau Time
Makowiale Time
Kawaihau Space
Makowiale Space
Kawaihau Matter
Makowiale Matter
Kawaihau Energy
Makowiale Energy
Kawaihau Force
Makowiale Force
Kawaihau Motion
Makowiale Motion
Kawaihau Rest
Makowiale Rest
Kawaihau Equilibrium
Makowiale Equilibrium
Kawaihau Gravity
Makowiale Gravity
Kawaihau Mass
Makowiale Mass
Kawaihau Weight
Makowiale Weight
Kawaihau Volume
Makowiale Volume
Kawaihau Density
Makowiale Density
Kawaihau Pressure
Makowiale Pressure
Kawaihau Temperature
Makowiale Temperature
Kawaihau Heat
Makowiale Heat
Kawaihau Light
Makowiale Light
Kawaihau Sound
Makowiale Sound
Kawaihau Electricity
Makowiale Electricity
Kawaihau Magnetism
Makowiale Magnetism
Kawaihau Chemistry
Makowiale Chemistry
Kawaihau Biology
Makowiale Biology
Kawaihau Psychology
Makowiale Psychology
Kawaihau Sociology
Makowiale Sociology
Kawaihau Economics
Makowiale Economics
Kawaihau Politics
Makowiale Politics
Kawaihau Religion
Makowiale Religion
Kawaihau Philosophy
Makowiale Philosophy
Kawaihau Art
Makowiale Art
Kawaihau Music
Makowiale Music
Kawaihau Literature
Makowiale Literature
Kawaihau Poetry
Makowiale Poetry
Kawaihau Drama
Makowiale Drama
Kawaihau Comedy
Makowiale Comedy
Kawaihau Tragedy
Makowiale Tragedy
Kawaihau Epic
Makowiale Epic
Kawaihau Lyric
Makowiale Lyric
Kawaihau Ode
Makowiale Ode
Kawaihau Sonnet
Makowiale Sonnet
Kawaihau Limerick
Makowiale Limerick
Kawaihau Haiku
Makowiale Haiku
Kawaihau Tanka
Makowiale Tanka
Kawaihau Senryu
Makowiale Senryu
Kawaihau Kyoka
Makowiale Kyoka
Kawaihau Kanshi
Makowiale Kanshi
Kawaihau Waka
Makowiale Waka
Kawaihau Renga
Makowiale Renga
Kawaihau Haikai
Makowiale Haikai
Kawaihau Hokku
Makowiale Hokku
Kawaihau Haiga
Makowiale Haiga
Kawaihau Haibun
Makowiale Haibun
Kawaihau Zuihitsu
Makowiale Zuihitsu
Kawaihau Nikki
Makowiale Nikki
Kawaihau Monogatari
Makowiale Monogatari
Kawaihau Setsuwa
Makowiale Setsuwa
Kawaihau Otogizoshi
Makowiale Otogizoshi
Kawaihau Kusazoshi
Makowiale Kusazoshi
Kawaihau Ukiyo-e
Makowiale Ukiyo-e
Kawaihau Shunga
Makowiale Shunga
Kawaihau Manga
Makowiale Manga
Kawaihau Anime
Makowiale Anime
Kawaihau Cosplay
Makowiale Cosplay
Kawaihau Otaku
Makowiale Otaku
Kawaihau Fandom
Makowiale Fandom
Kawaihau Subculture
Makowiale Subculture
Kawaihau Counterculture
Makowiale Counterculture
Kawaihau Hippie
Makowiale Hippie
Kawaihau Punk
Makowiale Punk
Kawaihau Goth
Makowiale Goth
Kawaihau Emo
Makowiale Emo
Kawaihau Scene
Makowiale Scene
Kawaihau Hipster
Makowiale Hipster
Kawaihau Yuppie
Makowiale Yuppie
Kawaihau Slacker
Makowiale Slacker
Kawaihau Grunge
Makowiale Grunge
Kawaihau Metal
Makowiale Metal
Kawaihau Rock
Makowiale Rock
Kawaihau Pop
Makowiale Pop
Kawaihau Jazz
Makowiale Jazz
Kawaihau Blues
Makowiale Blues
Kawaihau Country
Makowiale Country
Kawaihau Folk
Makowiale Folk
Kawaihau World Music
Makowiale World Music
Kawaihau Classical
Makowiale Classical
Kawaihau Opera
Makowiale Opera
Kawaihau Ballet
Makowiale Ballet
Kawaihau Modern Dance
Makowiale Modern Dance
Kawaihau Tap Dance
Makowiale Tap Dance
Kawaihau Ballroom Dance
Makowiale Ballroom Dance
Kawaihau Latin Dance
Makowiale Latin Dance
Kawaihau Hula
Makowiale Hula
Kawaihau Tahitian Dance
Makowiale Tahitian Dance
Kawaihau Samoan Dance
Makowiale Samoan Dance
Kawaihau Fijian Dance
Makowiale Fijian Dance
Kawaihau Tongan Dance
Makowiale Tongan Dance
Kawaihau Maori Dance
Makowiale Maori Dance
Kawaihau Aboriginal Dance
Makowiale Aboriginal Dance
Kawaihau Native American Dance
Makowiale Native American Dance
Kawaihau Inuit Dance
Makowiale Inuit Dance
Kawaihau Sami Dance
Makowiale Sami Dance
Kawaihau Basque Dance
Makowiale Basque Dance
Kawaihau Irish Dance
Makowiale Irish Dance
Kawaihau Scottish Dance
Makowiale Scottish Dance
Kawaihau English Dance
Makowiale English Dance
Kawaihau French Dance
Makowiale French Dance
Kawaihau Spanish Dance
Makowiale Spanish Dance
Kawaihau Portuguese Dance
Makowiale Portuguese Dance
Kawaihau Italian Dance
Makowiale Italian Dance
Kawaihau German Dance
Makowiale German Dance
Kawaihau Dutch Dance
Makowiale Dutch Dance
Kawaihau Belgian Dance
Makowiale Belgian Dance
Kawaihau Swiss Dance
Makowiale Swiss Dance
Kawaihau Austrian Dance
Makowiale Austrian Dance
Kawaihau Hungarian Dance
Makowiale Hungarian Dance
Kawaihau Czech Dance
Makowiale Czech Dance
Kawaihau Slovak Dance
Makowiale Slovak Dance
Kawaihau Polish Dance
Makowiale Polish Dance
Kawaihau Russian Dance
Makowiale Russian Dance
Kawaihau Ukrainian Dance
Makowiale Ukrainian Dance
Kawaihau Belarusian Dance
Makowiale Belarusian Dance
Kawaihau Lithuanian Dance
Makowiale Lithuanian Dance
Kawaihau Latvian Dance
Makowiale Latvian Dance
Kawaihau Estonian Dance
Makowiale Estonian Dance
Kawaihau Finnish Dance
Makowiale Finnish Dance
Kawaihau Swedish Dance
Makowiale Swedish Dance
Kawaihau Norwegian Dance
Makowiale Norwegian Dance
Kawaihau Icelandic Dance
Makowiale Icelandic Dance
Kawaihau Faroese Dance
Makowiale Faroese Dance
Kawaihau Greenlandic Dance
Makowiale Greenlandic Dance
Kawaihau Canadian Dance
Makowiale Canadian Dance
Kawaihau American Dance
Makowiale American Dance
Kawaihau Mexican Dance
Makowiale Mexican Dance
Kawaihau Brazilian Dance
Makowiale Brazilian Dance
Kawaihau Argentinian Dance
Makowiale Argentinian Dance
Kawaihau Chilean Dance
Makowiale Chilean Dance
Kawaihau Peruvian Dance
Makowiale Peruvian Dance
Kawaihau Bolivian Dance
Makowiale Bolivian Dance
Kawaihau Paraguayan Dance
Makowiale Paraguayan Dance
Kawaihau Uruguayan Dance
Makowiale Uruguayan Dance
Kawaihau Venezuelan Dance
Makowiale Venezuelan Dance
Kawaihau Colombian Dance
Makowiale Colombian Dance
Kawaihau Ecuadorian Dance
Makowiale Ecuadorian Dance
Kawaihau Guyanese Dance
Makowiale Guyanese Dance
Kawaihau Surinamese Dance
Makowiale Surinamese Dance
Kawaihau French Guianese Dance
Makowiale French Guianese Dance
Kawaihau Falkland Islands Dance
Makowiale Falkland Islands Dance
Kawaihau South Georgia Dance
Makowiale South Georgia Dance
Kawaihau South Sandwich Islands Dance
Makowiale South Sandwich Islands Dance
Kawaihau Bouvet Island Dance
Makowiale Bouvet Island Dance
Kawaihau Peter I Island Dance
Makowiale Peter I Island Dance
Kawaihau Queen Maud Land Dance
Makowiale Queen Maud Land Dance
Kawaihau Antarctica Dance
Makowiale Antarctica Dance
Kawaihau Australian Dance
Makowiale Australian Dance
Kawaihau New Zealand Dance
Makowiale New Zealand Dance
Kawaihau Papua New Guinean Dance
Makowiale Papua New Guinean Dance
Kawaihau Indonesian Dance
Makowiale Indonesian Dance
Kawaihau Malaysian Dance
Makowiale Malaysian Dance
Kawaihau Singaporean Dance
Makowiale Singaporean Dance
Kawaihau Bruneian Dance
Makowiale Bruneian Dance
Kawaihau Filipino Dance
Makowiale Filipino Dance
Kawaihau Taiwanese Dance
Makowiale Taiwanese Dance
Kawaihau Chinese Dance
Makowiale Chinese Dance
Kawaihau Japanese Dance
Makowiale Japanese Dance
Kawaihau Korean Dance
Makowiale Korean Dance
Kawaihau Mongolian Dance
Makowiale Mongolian Dance
Kawaihau Tibetan Dance
Makowiale Tibetan Dance
Kawaihau Nepalese Dance
Makowiale Nepalese Dance
Kawaihau Bhutanese Dance
Makowiale Bhutanese Dance
Kawaihau Indian Dance
Makowiale Indian Dance
Kawaihau Pakistani Dance
Makowiale Pakistani Dance
Kawaihau Afghan Dance
Makowiale Afghan Dance
Kawaihau Iranian Dance
Makowiale Iranian Dance
Kawaihau Iraqi Dance
Makowiale Iraqi Dance
Kawaihau Kuwaiti Dance
Makowiale Kuwaiti Dance
Kawaihau Saudi Arabian Dance
Makowiale Saudi Arabian Dance
Kawaihau Yemeni Dance
Makowiale Yemeni Dance
Kawaihau Omani Dance
Makowiale Omani Dance
Kawaihau Emirati Dance
Makowiale Emirati Dance
Kawaihau Qatari Dance
Makowiale Qatari Dance
Kawaihau Bahraini Dance
Makowiale Bahraini Dance
Kawaihau Jordanian Dance
Makowiale Jordanian Dance
Kawaihau Syrian Dance
Makowiale Syrian Dance
Kawaihau Lebanese Dance
Makowiale Lebanese Dance
Kawaihau Israeli Dance
Makowiale Israeli Dance
Kawaihau Palestinian Dance
Makowiale Palestinian Dance
Kawaihau Egyptian Dance
Makowiale Egyptian Dance
Kawaihau Libyan Dance
Makowiale Libyan Dance
Kawaihau Tunisian Dance
Makowiale Tunisian Dance
Kawaihau Algerian Dance
Makowiale Algerian Dance
Kawaihau Moroccan Dance
Makowiale Moroccan Dance
Kawaihau Western Sahara Dance
Makowiale Western Sahara Dance
Kawaihau Mauritanian Dance
Makowiale Mauritanian Dance
Kawaihau Senegalese Dance
Makowiale Senegalese Dance
Kawaihau Gambian Dance
Makowiale Gambian Dance
Kawaihau Bissau-Guinean Dance
Makowiale Bissau-Guinean Dance
Kawaihau Guinean Dance
Makowiale Guinean Dance
Kawaihau Sierra Leonean Dance
Makowiale Sierra Leonean Dance
Kawaihau Liberian Dance
Makowiale Liberian Dance
Kawaihau Ivorian Dance
Makowiale Ivorian Dance
Kawaihau Ghanaian Dance
Makowiale Ghanaian Dance
Kawaihau Togolese Dance
Makowiale Togolese Dance
Kawaihau Beninese Dance
Makowiale Beninese Dance
Kawaihau Nigerian Dance
Makowiale Nigerian Dance
Kawaihau Cameroonian Dance
Makowiale Cameroonian Dance
Kawaihau Equatorial Guinean Dance
Makowiale Equatorial Guinean Dance
Kawaihau Gabonese Dance
Makowiale Gabonese Dance
Kawaihau Republic of the Congo Dance
Makowiale Republic of the Congo Dance
Kawaihau Democratic Republic of the Congo Dance
Makowiale Democratic Republic of the Congo Dance
Kawaihau Angolan Dance
Makowiale Angolan Dance
Kawaihau Zambian Dance
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Kawaihau Malawian Dance
Makowiale Malawian Dance
Kawaihau Mozambican Dance
Makowiale Mozambican Dance
Kawaihau Zimbabwean Dance
Makowiale Zimbabwean Dance
Kawaihau Botswanan Dance
Makowiale Botswanan Dance
Kawaihau Namibian Dance
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Kawaihau South African Dance
Makowiale South African Dance
Kawaihau Lesotho Dance
Makowiale Lesotho Dance
Kawaihau Eswatini Dance
Makowiale Eswatini Dance
Kawaihau Malagasy Dance
Makowiale Malagasy Dance
Kawaihau Comorian Dance
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Kawaihau Mauritian Dance
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Kawaihau Somali Dance
Makowiale Somali Dance
Kawaihau Djiboutian Dance
Makowiale Djiboutian Dance
Kawaihau Eritrean Dance
Makowiale Eritrean Dance
Kawaihau Ethiopian Dance
Makowiale Ethiopian Dance
Kawaihau South Sudanese Dance
Makowiale South Sudanese Dance
Kawaihau Sudanese Dance
Makowiale Sudanese Dance
Kawaihau Chadian Dance
Makowiale Chadian Dance
Kawaihau Central African Republic Dance
Makowiale Central African Republic Dance
Kawaihau Cameroonian Dance
Makowiale Cameroonian Dance
Kawaihau Nigerian Dance
Makowiale Nigerian Dance
Kawaihau Beninese Dance
Makowiale Beninese Dance
Kawaihau Togolese Dance
Makowiale Togolese Dance
Kawaihau Ghanaian Dance
Makowiale Ghanaian Dance
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Makowiale Ivorian Dance
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Makowiale Liberian Dance
Kawaihau Sierra Leonean Dance
Makowiale Sierra Leonean Dance
Kawaihau Guinean Dance
Makowiale Guinean Dance
Kawaihau Bissau-Guinean Dance
Makowiale Bissau-Guinean Dance
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Kawaihau Mauritanian Dance
Makowiale Mauritanian Dance
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Makowiale Western Sahara Dance
Kawaihau Moroccan Dance
Makowiale Moroccan Dance
Kawaihau Algerian Dance
Makowiale Algerian Dance
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Makowiale Tunisian Dance
Kawaihau Libyan Dance
Makowiale Libyan Dance
Kawaihau Egyptian Dance
Makowiale Egyptian Dance
Kawaihau Palestinian Dance
Makowiale Palestinian Dance
Kawaihau Israeli Dance
Makowiale Israeli Dance
Kawaihau Lebanese Dance
Makowiale Lebanese Dance
Kawaihau Syrian Dance
Makowiale Syrian Dance
Kawaihau Jordanian Dance
Makowiale Jordanian Dance
Kawaihau Bahraini Dance
Makowiale Bahraini Dance
Kawaihau Qatari Dance
Makowiale Qatari Dance
Kawaihau Emirati Dance
Makowiale Emirati Dance
Kawaihau Omani Dance
Makowiale Omani Dance
Kawaihau Yemeni Dance
Makowiale Yemeni Dance
Kawaihau Saudi Arabian Dance
Makowiale Saudi Arabian Dance
Kawaihau Kuwaiti Dance
Makowiale Kuwaiti Dance
Kawaihau Iraqi Dance
Makowiale Iraqi Dance
Kawaihau Iranian Dance
Makowiale Iranian Dance
Kawaihau Afghan Dance
Makowiale Afghan Dance
Kawaihau Pakistani Dance
Makowiale Pakistani Dance
Kawaihau Indian Dance
Makowiale Indian Dance
Kawaihau Bhutanese Dance
Makowiale Bhutanese Dance
Kawaihau Nepalese Dance
Makowiale Nepalese Dance
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Makowiale Tibetan Dance
Kawaihau Mongolian Dance
Makowiale Mongolian Dance
Kawaihau Korean Dance
Makowiale Korean Dance
Kawaihau Japanese Dance
Makowiale Japanese Dance
Kawaihau Chinese Dance
Makowiale Chinese Dance
Kawaihau Taiwanese Dance
Makowiale Taiwanese Dance
Kawaihau Filipino Dance
Makowiale Filipino Dance
Kawaihau Bruneian Dance
Makowiale Bruneian Dance
Kawaihau Singaporean Dance
Makowiale Singaporean Dance
Kawaihau Malaysian Dance
Makowiale Malaysian Dance
Kawaihau Indonesian Dance
Makowiale Indonesian Dance
Kawaihau Papua New Guinean Dance
Makowiale Papua New Guinean Dance
Kawaihau New Zealand Dance
Makowiale New Zealand Dance
Kawaihau Australian Dance
Makowiale Australian Dance
Kawaihau Antarctica Dance
Makowiale Antarctica Dance
Kawaihau Queen Maud Land Dance
Makowiale Queen Maud Land Dance
Kawaihau Peter I Island Dance
Makowiale Peter I Island Dance
Kawaihau Bouvet Island Dance
Makowiale Bouvet Island Dance
Kawaihau South Sandwich Islands Dance
Makowiale South Sandwich Islands Dance
Kawaihau South Georgia Dance
Makowiale South Georgia Dance
Kawaihau Falkland Islands Dance
Makowiale Falkland Islands Dance
Kawaihau French Guianese Dance
Makowiale French Guianese Dance
Kawaihau Surinamese Dance
Makowiale Surinamese Dance
Kawaihau Guyanese Dance
Makowiale Guyanese Dance
Kawaihau Ecuadorian Dance
Makowiale Ecuadorian Dance
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Makowiale Colombian Dance
Kawaihau Venezuelan Dance
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Kawaihau Bolivian Dance
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Kawaihau Paraguayan Dance
Makowiale Paraguayan Dance
Kawaihau Uruguayan Dance
Makowiale Uruguayan Dance
Kawaihau Chilean Dance
Makowiale Chilean Dance
Kawaihau Peruvian Dance
Makowiale Peruvian Dance
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Makowiale Argentinian Dance
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Kawaihau Mexican Dance
Makowiale Mexican Dance
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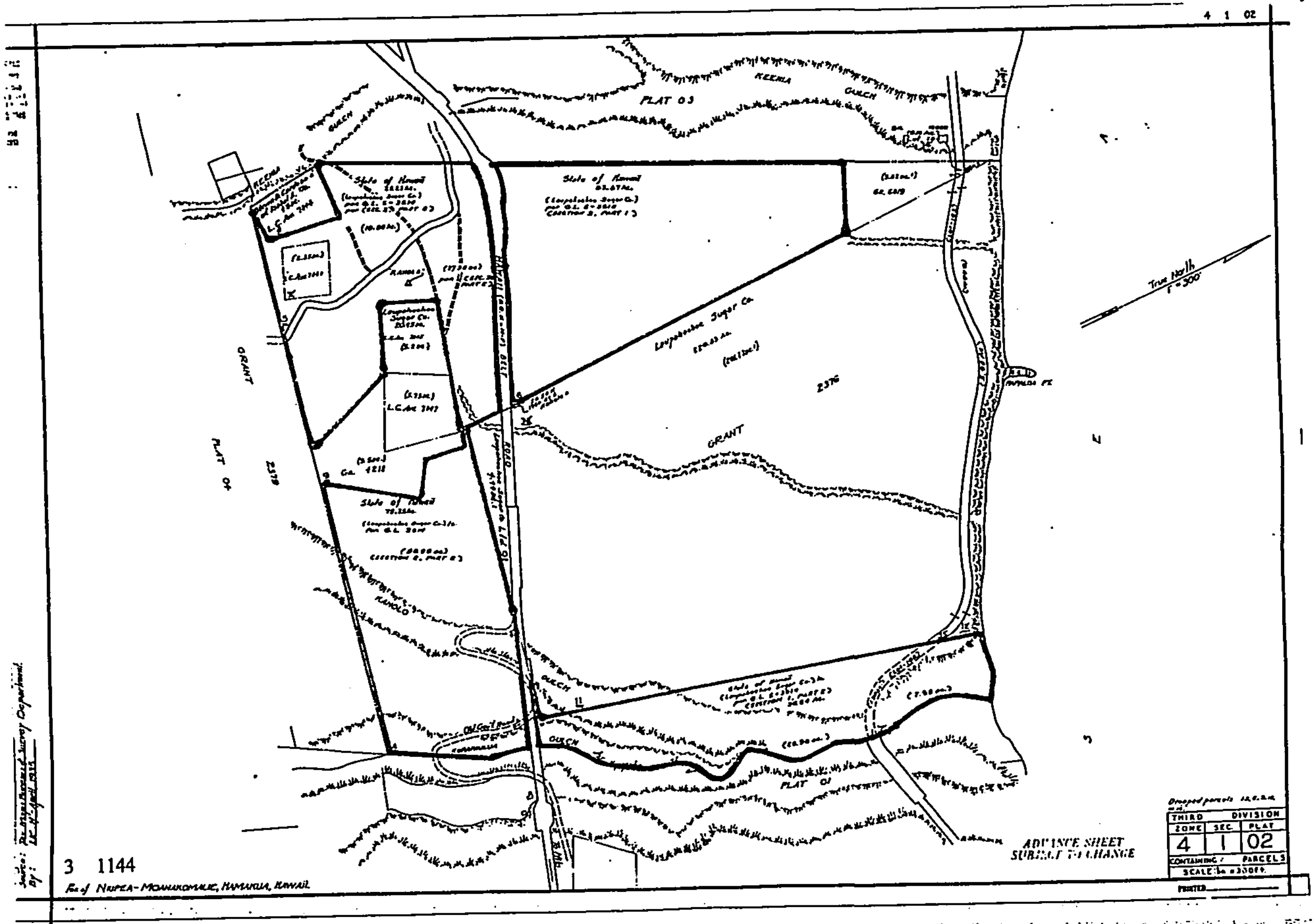
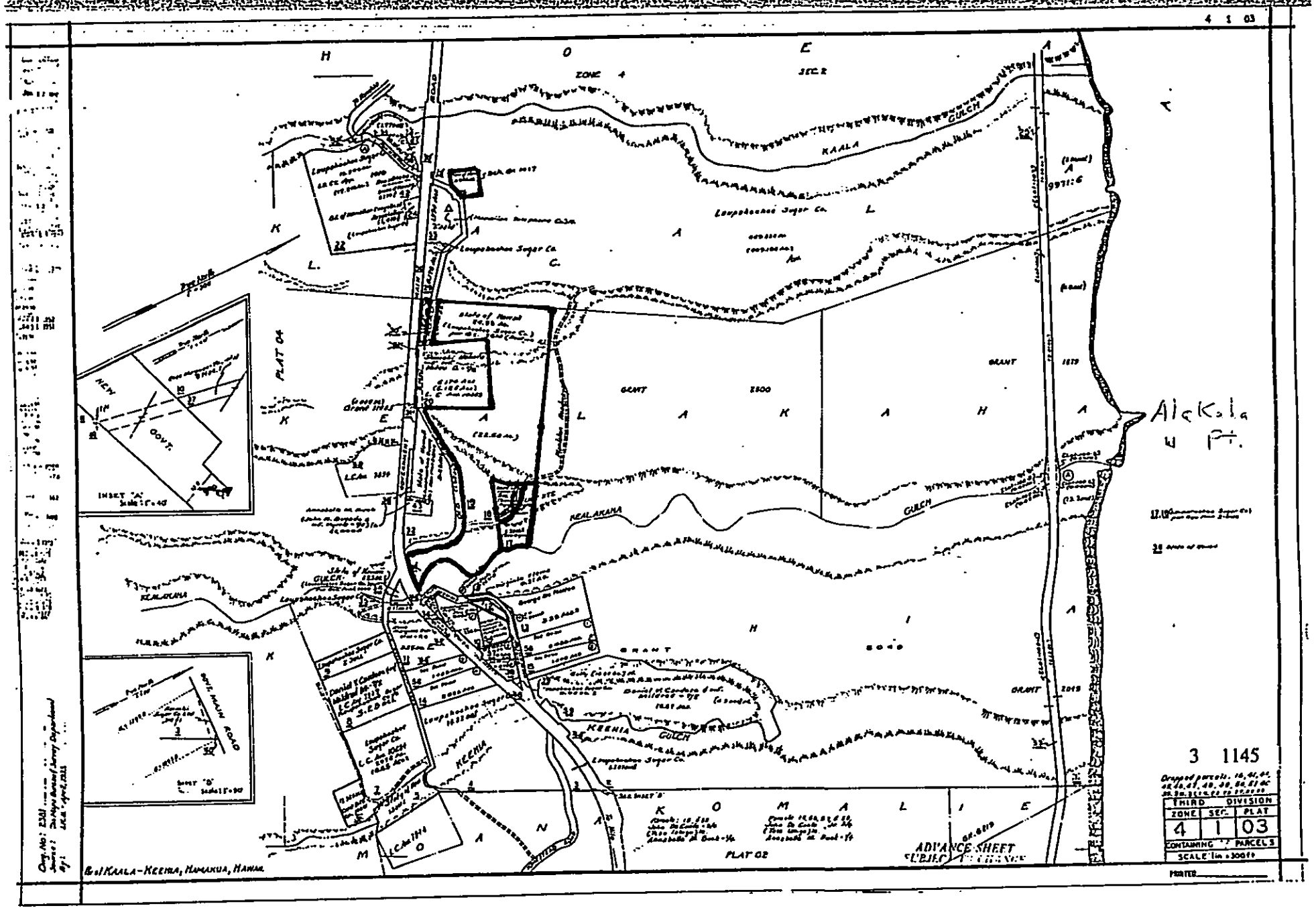
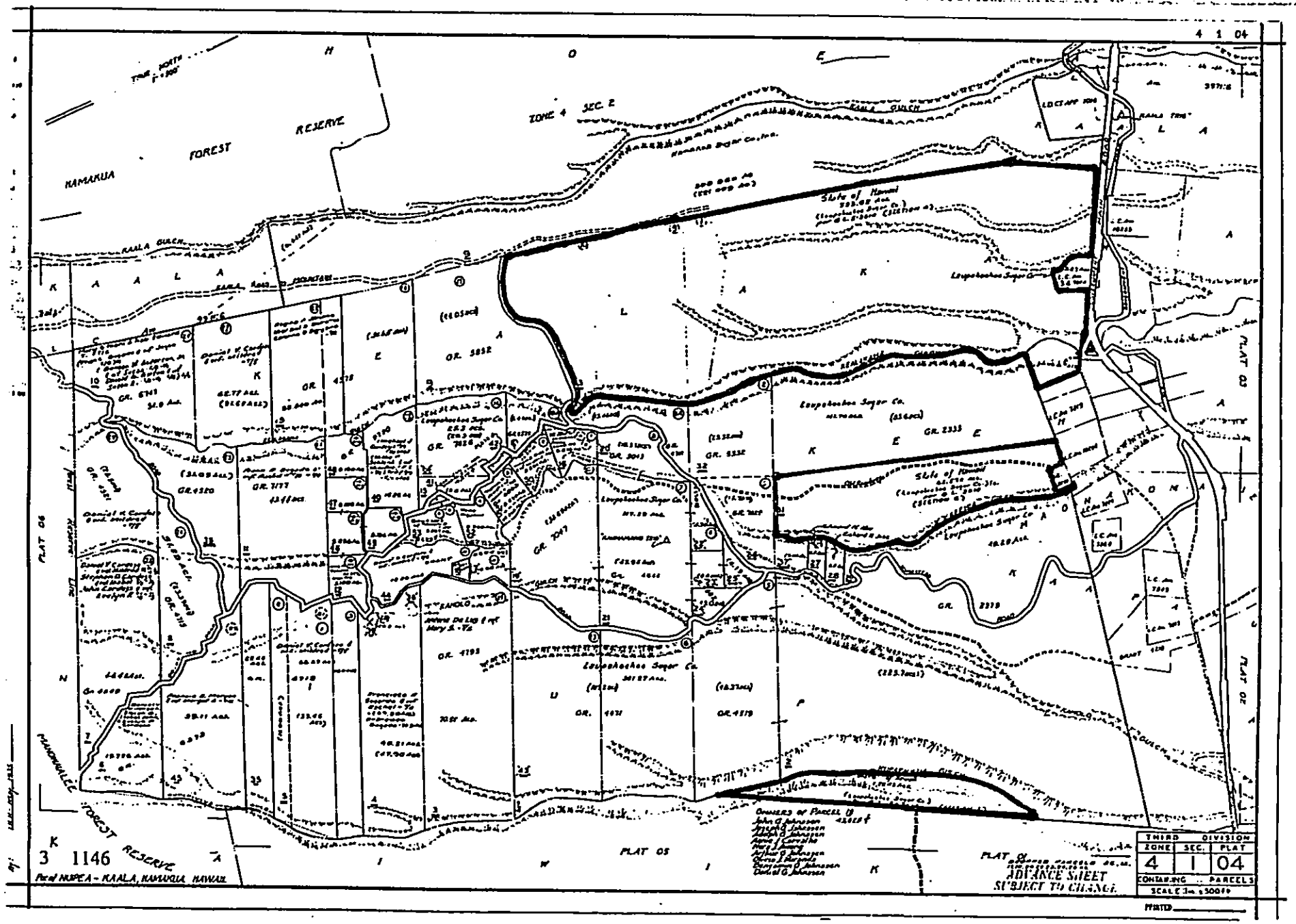
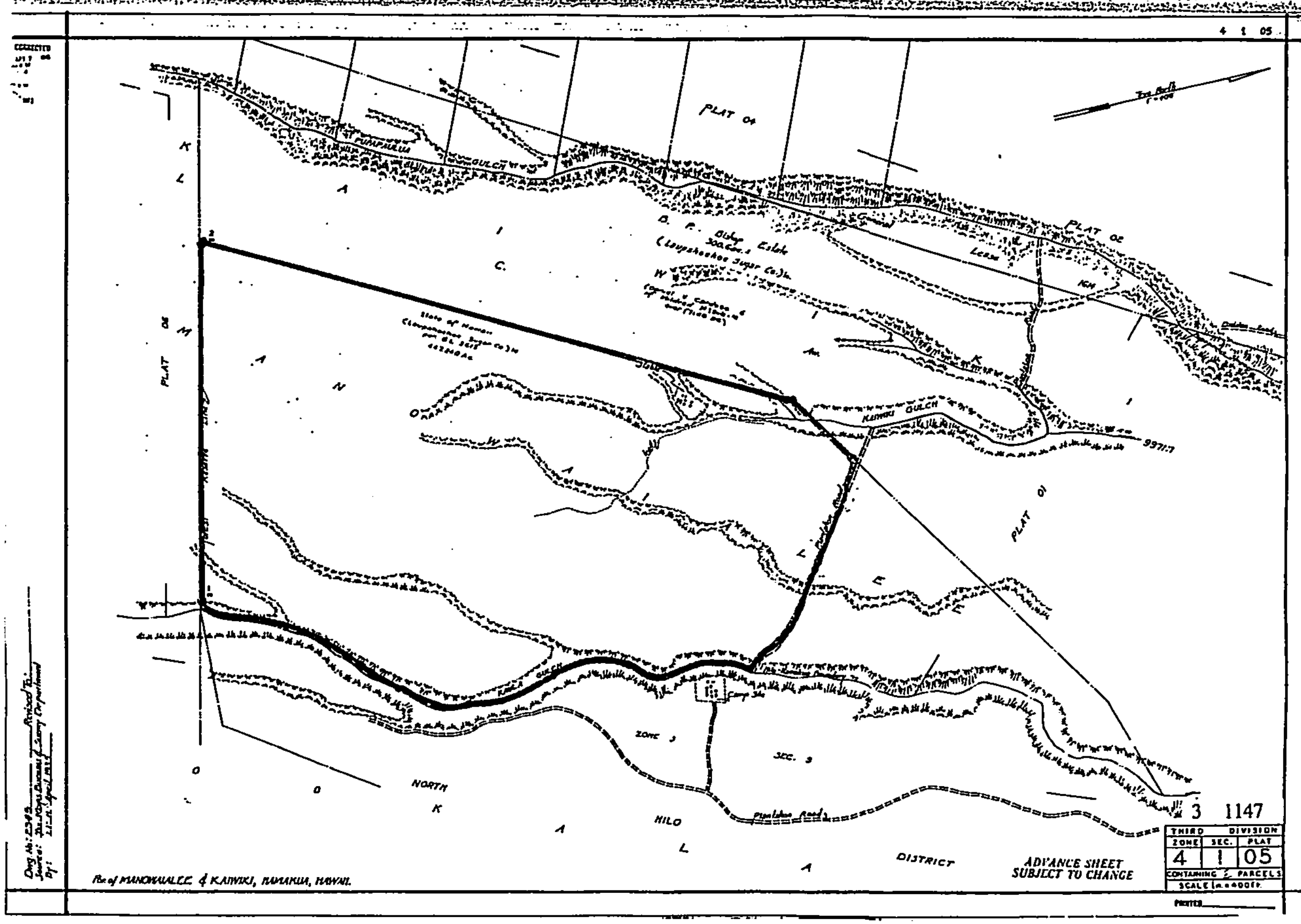
Makowiale American Dance
Kawaihau Canadian Dance
Makowiale Canadian Dance
Kawaihau Greenlandic Dance
Makowiale Greenlandic Dance
Kawaihau Faroese Dance
Makowiale Faroese Dance
Kawaihau Icelandic Dance
Makowiale Icelandic Dance
Kawaihau Norwegian Dance
Makowiale Norwegian Dance
Kawaihau Swedish Dance
Makowiale Swedish Dance
Kawaihau Finnish Dance
Makowiale Finnish Dance
Kawaihau Estonian Dance
Makowiale Estonian Dance
Kawaihau Latvian Dance
Makowiale Latvian Dance
Kawaihau Lithuanian Dance
Makowiale Lithuanian Dance
Kawaihau Belarusian Dance
Makowiale Belarusian Dance
Kawaihau Ukrainian Dance
Makowiale Ukrainian Dance
Kawaihau Russian Dance
Makowiale Russian Dance
Kawaihau Polish Dance
Makowiale Polish Dance
Kawaihau Slovak Dance
Makowiale Slovak Dance
Kawaihau Czech Dance
Makowiale Czech Dance
Kawaihau Hungarian Dance
Makowiale Hungarian Dance
Kawaihau Austrian Dance
Makowiale Austrian Dance
Kawaihau Swiss Dance
Makowiale Swiss Dance
Kawaihau Belgian Dance
Makowiale Belgian Dance
Kawaihau Dutch Dance
Makowiale Dutch Dance
Kawaihau German Dance
Makowiale German Dance
Kawaihau Italian Dance
Makowiale Italian Dance
Kawaihau Portuguese Dance
Makowiale Portuguese Dance
Kawaihau Spanish Dance
Makowiale Spanish Dance
Kawaihau French Dance
Makowiale French Dance
Kawaihau English Dance
Makowiale English Dance
Kawaihau Scottish Dance
Makowiale Scottish Dance
Kawaihau Irish Dance
Makowiale Irish Dance
Kawaihau Basque Dance
Makowiale Basque Dance
Kawaihau Sami Dance
Makowiale Sami Dance
Kawaihau Inuit Dance
Makowiale Inuit Dance
Kawaihau Native American Dance
Makowiale Native American Dance
Kawaihau Maori Dance
Makowiale Maori Dance
Kawaihau Aboriginal Dance
Makowiale Aboriginal Dance
Kawaihau Samoan Dance
Makowiale Samoan Dance
Kawaihau Fijian Dance
Makowiale Fijian Dance
Kawaihau Tongan Dance
Makowiale Tongan Dance
Kawaihau Tahitian Dance
Makowiale Tahitian Dance
Kawaihau Hula
Makowiale Hula
Kawaihau Ballroom Dance
Makowiale Ballroom Dance
Kawaihau Latin Dance
Makowiale Latin Dance
Kawaihau Tap Dance
Makowiale Tap Dance
Kawaihau Modern Dance
Makowiale Modern Dance
Kawaihau Ballet
Makowiale Ballet
Kawaihau Opera
Makowiale Opera
Kawaihau Classical
Makowiale Classical
Kawaihau World Music
Makowiale World Music
Kawaihau Folk
Makowiale Folk
Kawaihau Country
Makowiale Country
Kawaihau Blues
Makowiale Blues
Kawaihau Jazz
Makowiale Jazz
Kawaihau Pop
Makowiale Pop
Kawaihau Rock
Makowiale Rock
Kawaihau Metal
Makowiale Metal
Kawaihau Grunge
Makowiale Grunge
Kawaihau Slacker
Makowiale Slacker
Kawaihau Yuppie
Makowiale Yuppie
Kawaihau Hipster
Makowiale Hipster
Kawaihau Scene
Makowiale Scene
Kawaihau Emo
Makowiale Emo
Kawaihau Goth
Makowiale Goth
Kawaihau Punk
Makowiale Punk
Kawaihau Hippie
Makowiale Hippie
Kawaihau Counterculture
Makowiale Counterculture
Kawaihau Subculture
Makowiale Subculture
Kawaihau Fandom
Makowiale Fandom
Kawaihau Otaku
Makowiale Otaku
Kawaihau Cosplay
Makowiale Cosplay
Kawaihau Anime
Makowiale Anime
Kawaihau Manga
Makowiale Manga
Kawaihau Shunga
Makowiale Shunga
Kawaihau Ukiyo-e
Makowiale Ukiyo-e
Kawaihau Kusazoshi
Makowiale Kusazoshi
Kawaihau Otogizoshi
Makowiale Otogizoshi
Kawaihau Setsuwa
Makowiale Setsuwa
Kawaihau Monogatari
Makowiale Monogatari
Kawaihau Nikki
Makowiale Nikki
Kawaihau Zuihitsu
Makowiale Zuihitsu
Kawaihau Haibun
Makowiale Haibun
Kawaihau Haiga
Makowiale Haiga
Kawaihau Hokku
Makowiale Hokku
Kawaihau Haikai
Makowiale Haikai
Kawaihau Renga
Makowiale Renga
Kawaihau Waka
Makowiale Waka
Kawaihau Kanshi
Makowiale Kanshi
Kawaihau Kyoka
Makowiale Kyoka
Kawaihau Senryu
Makowiale Senryu
Kawaihau Tanka
Makowiale Tanka
Kawaihau Haiku
Makowiale Haiku
Kawaihau Limerick
Makowiale Limerick
Kawaihau Sonnet
Makowiale Sonnet
Kawaihau Ode
Makowiale Ode
Kawaihau Lyric
Makowiale Lyric
Kawaihau Epic
Makowiale Epic
Kawaihau Tragedy
Makowiale Tragedy
Kawaihau Comedy
Makowiale Comedy
Kawaihau Drama
Makowiale Drama
Kawaihau Poetry
Makowiale Poetry
Kawaihau Literature
Makowiale Literature
Kawaihau Music
Makowiale Music
Kawaihau Art
Makowiale Art
Kawaihau Philosophy
Makowiale Philosophy
Kawaihau Religion
Makowiale Religion
Kawaihau Politics
Makowiale Politics
Kawaihau Economics
Makowiale Economics
Kawaihau Sociology
Makowiale Sociology
Kawaihau Psychology
Makowiale Psychology
Kawaihau Biology
Makowiale Biology
Kawaihau Chemistry
Makowiale Chemistry
Kawaihau Magnetism
Makowiale Magnetism
Kawaihau Electricity
Makowiale Electricity
Kawaihau Sound
Makowiale Sound
Kawaihau Light
Makowiale Light
Kawaihau Heat
Makowiale Heat
Kawaihau Temperature
Makowiale Temperature
Kawaihau Pressure
Makowiale Pressure
Kawaihau Density
Makowiale Density
Kawaihau Volume
Makowiale Volume
Kawaihau Weight
Makowiale Weight
Kawaihau Mass
Makowiale Mass
Kawaihau Gravity
Makowiale Gravity
Kawaihau Equilibrium
Makowiale Equilibrium
Kawaihau Rest
Makowiale Rest
Kawaihau Motion
Makowiale Motion
Kawaihau Force
Makowiale Force
Kawaihau Energy
Makowiale Energy
Kawaihau Matter
Makowiale Matter
Kawaihau Space
Makowiale Space
Kawaihau Time
Makowiale Time
Kawaihau Eternity
Makowiale Eternity
Kawaihau Infinity
Makowiale Infinity
Kawaihau Universe
Makowiale Universe
Kawaihau World
Makowiale World
Kawaihau Nation
Makowiale Nation
Kawaihau State
Makowiale State
Kawaihau Territory
Makowiale Territory
Kawaihau County
Makowiale County
Kawaihau Island
Makowiale Island
Kawaihau District
Makowiale District
Kawaihau Zone
Makowiale Zone
Kawaihau Section
Makowiale Section
Kawaihau Plat
Makowiale Plat
Kawaihau Survey
Makowiale Survey
Kawaihau Drawing
Makowiale Drawing
Kawaihau Scale
Makowiale Scale
Kawaihau Date
Makowiale Date
Kawaihau Signature
Makowiale Signature
Kawaihau Title
Makowiale Title
Kawaihau Notes
Makowiale Notes
Kawaihau Legend
Makowiale Legend
Kawaihau Key
Makowiale Key
Kawaihau Index
Makowiale Index
Kawaihau Contour
Makowiale Contour
Kawaihau Bench Mark
Makowiale Bench Mark
Kawaihau Triangulation Station
Makowiale Triangulation Station
Kawaihau Survey Monument
Makowiale Survey Monument
Kawaihau Boundary
Makowiale Boundary
Kawaihau Trail
Makowiale Trail
Kawaihau Wagon Road
Makowiale Wagon Road
Kawaihau Railroad
Makowiale Railroad
Kawaihau Telephone Line
Makowiale Telephone Line
Kawaihau Transmission Line
Makowiale Transmission Line
Kawaihau Power Plant
Makowiale Power Plant
Kawaihau Pumping Station
Makowiale Pumping Station
Kawaihau Reservoir
Makowiale Reservoir
Kawaihau Dam
Makowiale Dam
Kawaihau Bridge
Makowiale Bridge
Kawaihau Tunnel
Makowiale Tunnel
Kawaihau Ditch
Makowiale Ditch
Kawaihau Flume
Makowiale Flume
Kawaihau Camp
Makowiale Camp
Kawaihau Mill
Makowiale Mill
Kawaihau Gulch
Makowiale Gulch
Kawaihau Stream
Makowiale Stream
Kawaihau Road
Makowiale Road
Kawaihau Mamane
Makowiale Mamane
Kawaihau Paauilo
Makowiale Paauilo
Kawaihau Honokaa
Makowiale Honokaa
Kawaihau Ookala
Makowiale Ookala
Kawaihau Hakalau
Makowiale Hakalau
Kawaihau Kalopa
Makowiale Kalopa
Kawaihau Kaiwiki
Makowiale Kaiwiki
Kawaihau Hawaii
Makowiale Hawaii
Kawaihau Sugar Co., Ltd.
Makowiale Sugar Co., Ltd.
Kawaihau Plat 01
Makowiale Plat 01
Kawaihau Plat 02
Makowiale Plat 02
Kawaihau Plat 03
Makowiale Plat 03
Kawaihau Plat 04
Makowiale Plat 04
Kawaihau Zone 3
Makowiale Zone 4
Kawaihau Section 9
Makowiale Section 9
Kawaihau Hamakua District
Makowiale Hamakua District
Kawaihau Island of Hawaii
Makowiale Island of Hawaii
Kawaihau Territory of Hawaii
Makowiale Territory of Hawaii
Kawaihau United States of America
Makowiale United States of America
Kawaihau North America
Makowiale North America
Kawaihau Western Hemisphere
Makowiale Western Hemisphere
Kawaihau Earth
Makowiale Earth
Kawaihau Solar System
Makowiale Solar System
Kawaihau Milky Way Galaxy
Makowiale Milky Way Galaxy
Kawaihau Local Group
Makowiale Local Group
Kawaihau Virgo Supercluster
Makowiale Virgo Supercluster
Kawaihau Laniakea Supercluster
Makowiale Laniakea Supercluster
Kawaihau Observable Universe
Makowiale Observable Universe
Kawaihau Universe
Makowiale Universe

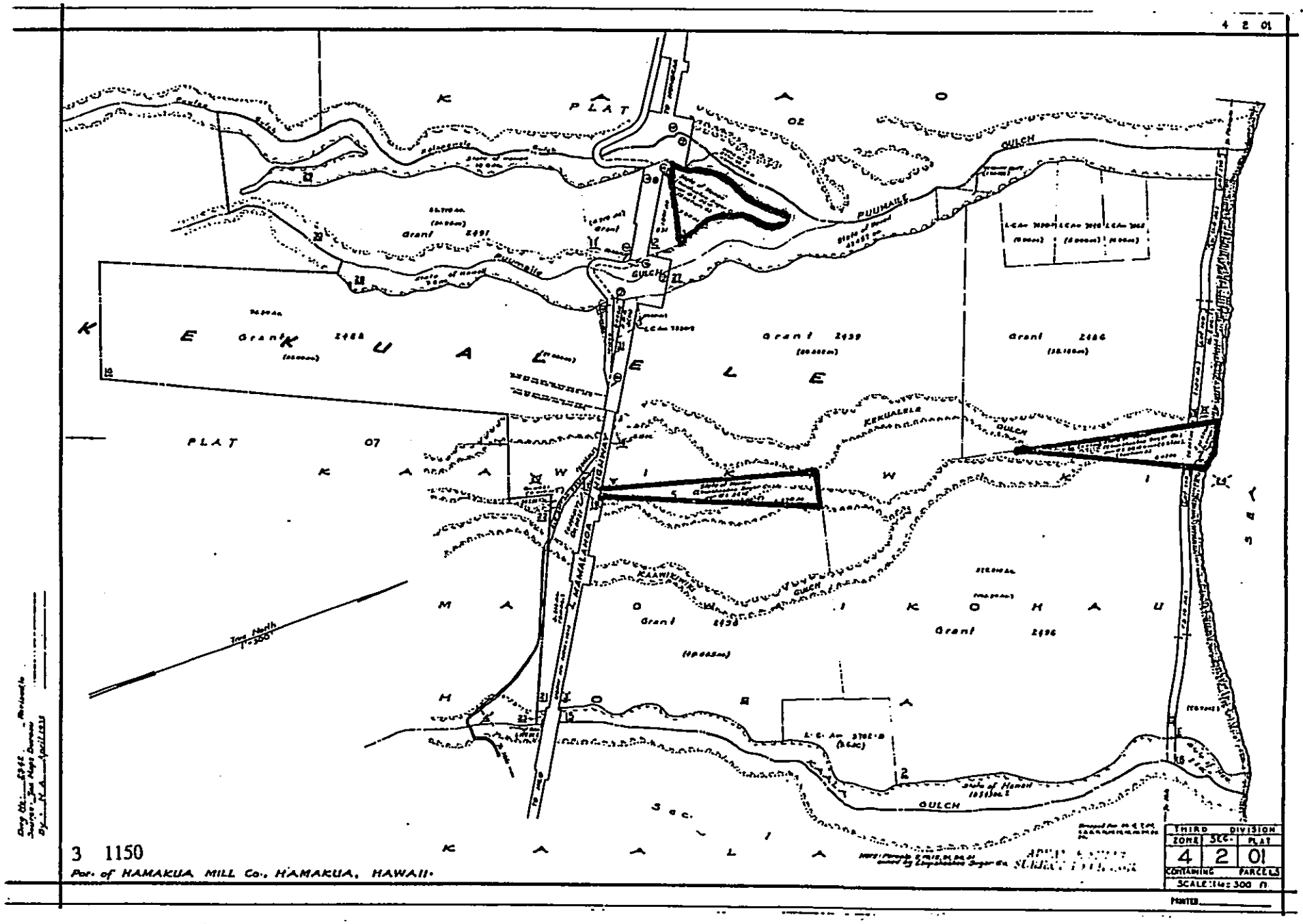

4 1 02
KEEKIA
GULCH
PLAT 03
State of Hawaii
Laupahoehoe Sugar Co.
2376
GRANT
2379
PLAT 04
KAHOLO
ROAD
PLAT 01
True North
ADVANCE SHEET
SUBJECT TO CHANGE
THIRD DIVISION
ZONE SEC. PLAT
4 1 02
CONTAINING / PARCELS
PRINTED
3 1144


4 1 03
H
O
E
ZONE 4
SEC. 1
KAALA
GULCH
Laupahoehoe Sugar Co.
L
A
C.
ROAD
PLAT 04
INSET "A"
NEW
GOVT.
GRANT
2500
K
H
KEALAKAHA
GULCH
KEEHIA
GULCH
GRANT
KOMALIE
PLAT 02
ADVANCE SHEET
INSET "B"
GOVT. MAIN ROAD
Bd Kaala-Keehia, Hamakua, Hawaii
Alakala Pt.
3 1145
Dropped parcels
THIRD DIVISION
ZONE 4
SEC. 1
PLAT 03
CONTAINING PARCELS
SCALE 1in = 300ft
PRINTED


4 1 04
HAMAKUA FOREST RESERVE
ZONE 4 SEC. 2
KAALA GULCH
KAALA
PLAT 03
PLAT 02
PLAT 05
PLAT 06
State of Hawaii
Laupahoehoe Sugar Co.
GR. 5832
GR. 2335
GR. 4519
GR. 4511
GR. 7017
GR. 4320
GR. 6741
GR. 4193
GR. 2379
MAHOWALI FOREST RESERVE
Owners of Parcel 13
John G. Johnsen
Joseph G. Johnsen
Adolph G. Johnsen
Annie J. Carvalho
Mary J. Young
Arthur G. Johnsen
Olive J. Burgess
Benjamin G. Johnsen
Daniel G. Johnsen
PLAT
ADVANCE SHEET
SUBJECT TO CHANGE
THIRD DIVISION
ZONE 4
SEC. 1
PLAT 04
CONTAINING .. PARCELS
SCALE 1 in. = 500 ft.
PRINTED
3 K 1146
Por of NUPEA - KAALA, HAMAKUA HAWAII


4 1 05
PLAT 04
PLAT 02
PLAT 01
PLAT 06
PUMPAUKUI GULCH
KAIWIKI GULCH
B. P. Bishop Estate
(Laupahoehoe Sugar Co.) Le.
State of Hawaii
ZONE 3
SEC. 3
NORTH HILO DISTRICT
Papaikou Road
ADVANCE SHEET
SUBJECT TO CHANGE
3 1147
THIRD DIVISION
ZONE SEC. PLAT
4 1 05
Por. of MANOWAIALEE & KAIWIKI, HAMAKUA, HAWAII

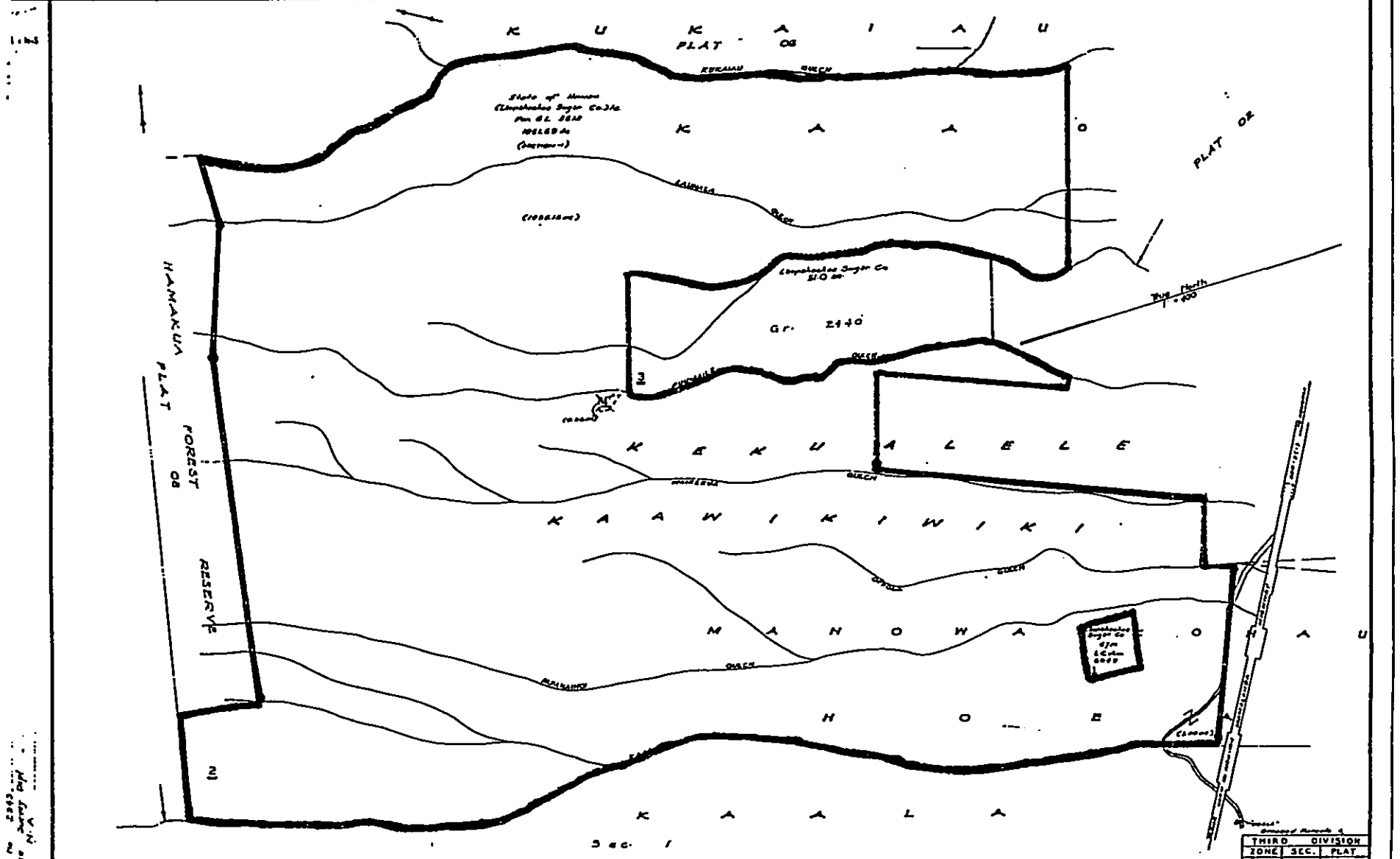
4 2 01



3 1150

Por. of HAMAKUA MILL Co., HAMAKUA, HAWAII.

4 2 07



3 1156

HOEA - KAAO TRACT, HAMAKUA, HAWAII · (Homakua Mill)

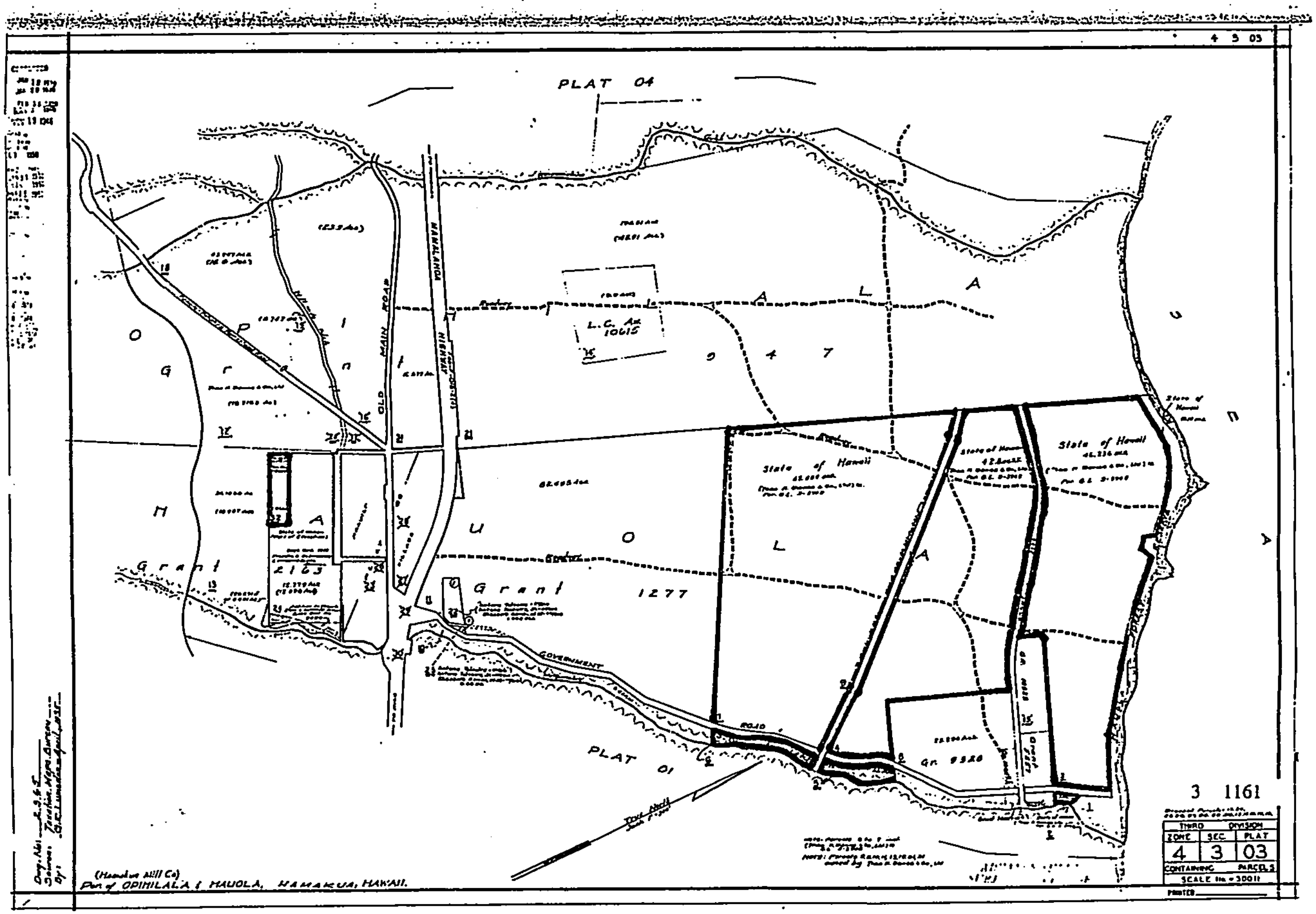
ADVANCE SHEET SUBJECT TO CHANGE

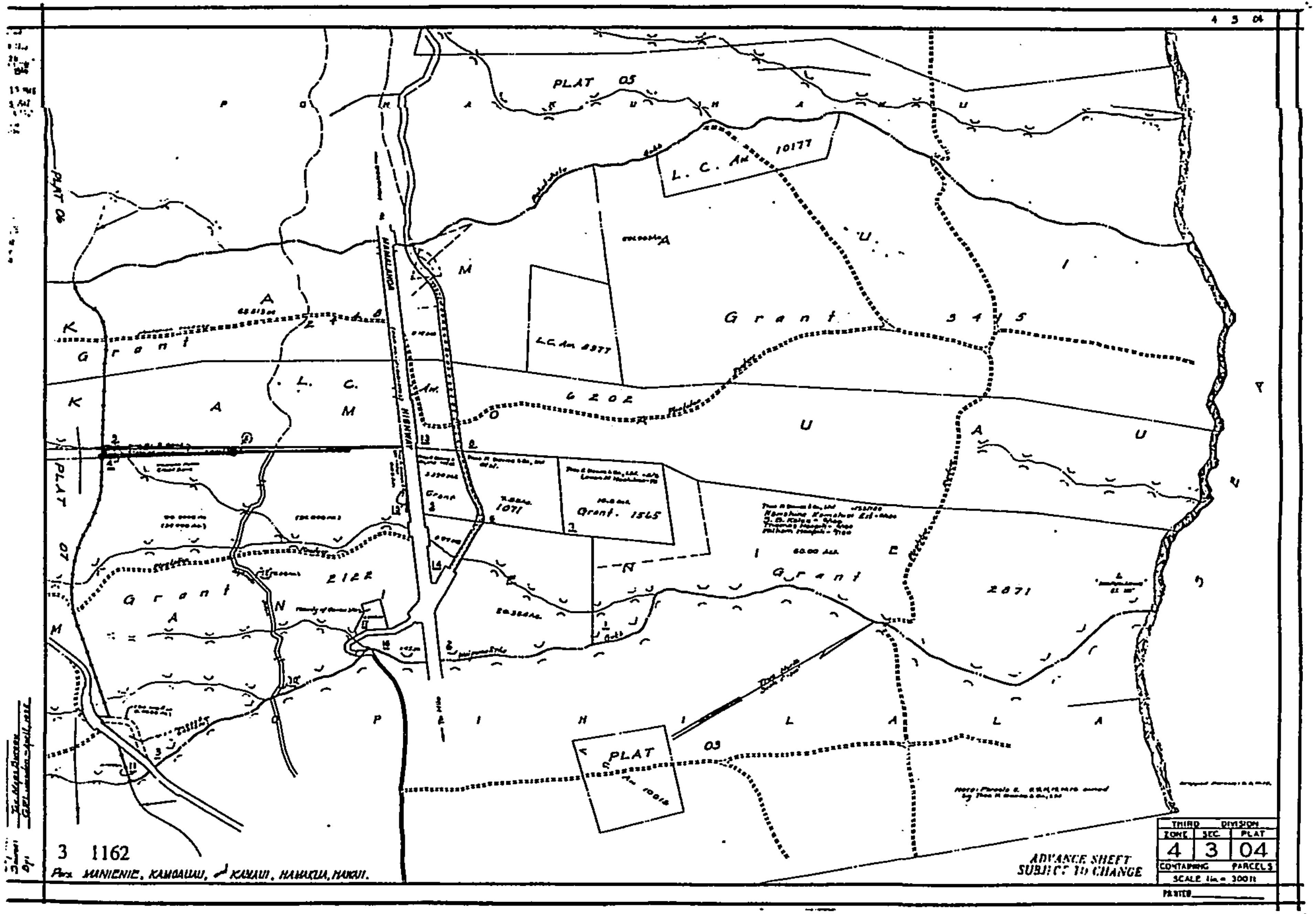
THIRD	DIVISION
ZONE	SEC.	PLAT
4	2	07

CONTAINING PARCELS

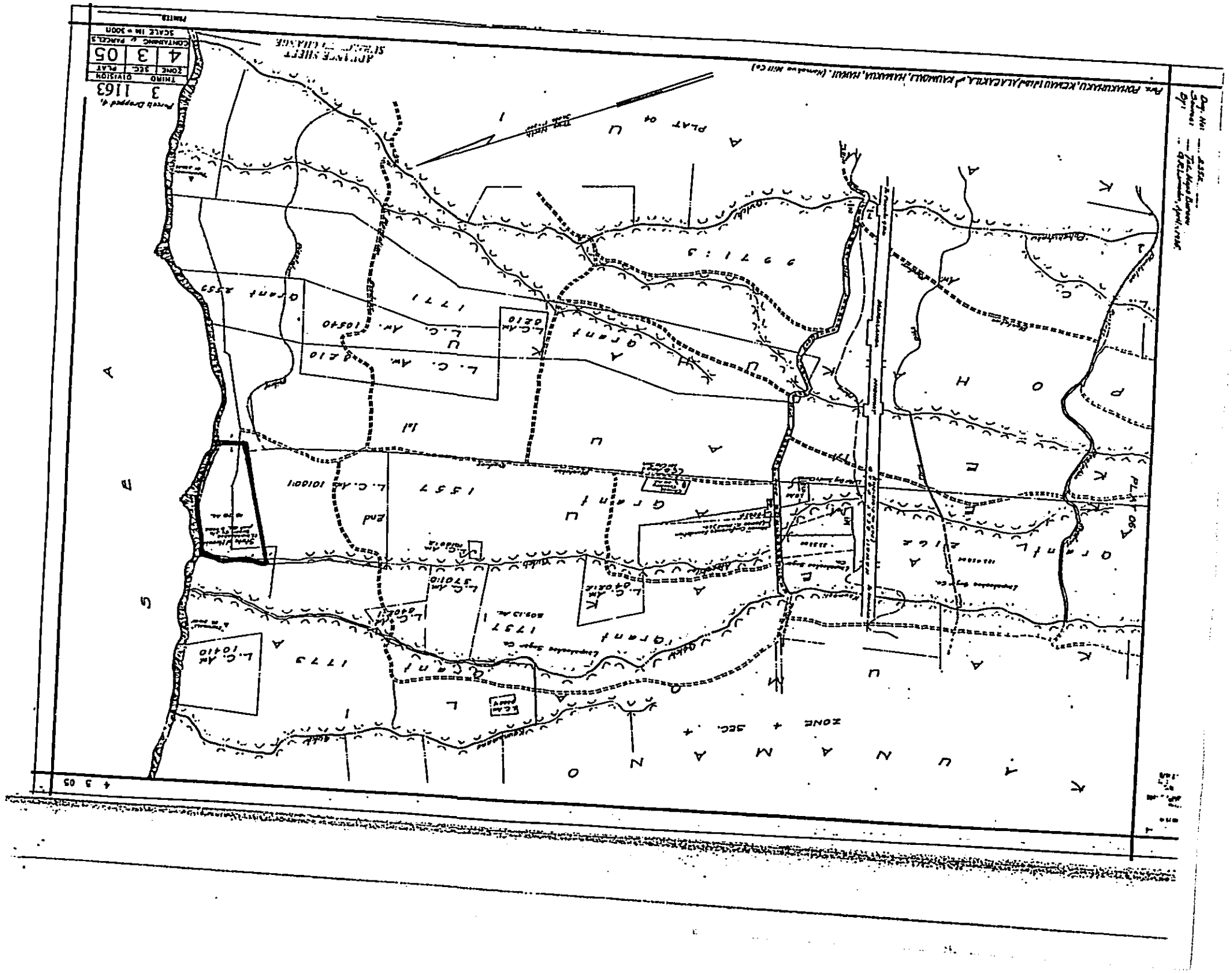
SCALE 1 INCH = 400 FT.

MAPS


4 3 03
PLAT 04
PLAT 01
OLD MAIN ROAD
MAMALAHOA HIGHWAY
GOVERNMENT ROAD
L.C. Aw. 10615
Grant 1277
Grant 2163
State of Hawaii
Gr. 9320
3 1161
THIRD DIVISION
ZONE 4
SEC. 3
PLAT 03
(Hamakua Mill Co.)
Por. of OPIHILALA & HAUOLA, HAMAKUA, HAWAII.



4 3 04
PLAT 05
PLAT 06
PLAT 07
PLAT 03
L. C. Aw. 10177
L.C.Aw. 8377
Grant 5415
6202
Grant 1071
Grant 1565
Grant 2122
Grant 2871
HAMALAHOA HIGHWAY
THIRD DIVISION
ZONE SEC PLAT
4 3 04
CONTAINING PARCELS
SCALE 1in = 300ft
PRINTED
ADVANCE SHEET
SUBJECT TO CHANGE
3 1162
Por. MANIENIE, KAMOAUAU, & KAWAII, HAMAKUA, HAWAII.



Parcels Dropped 4,
3 1163

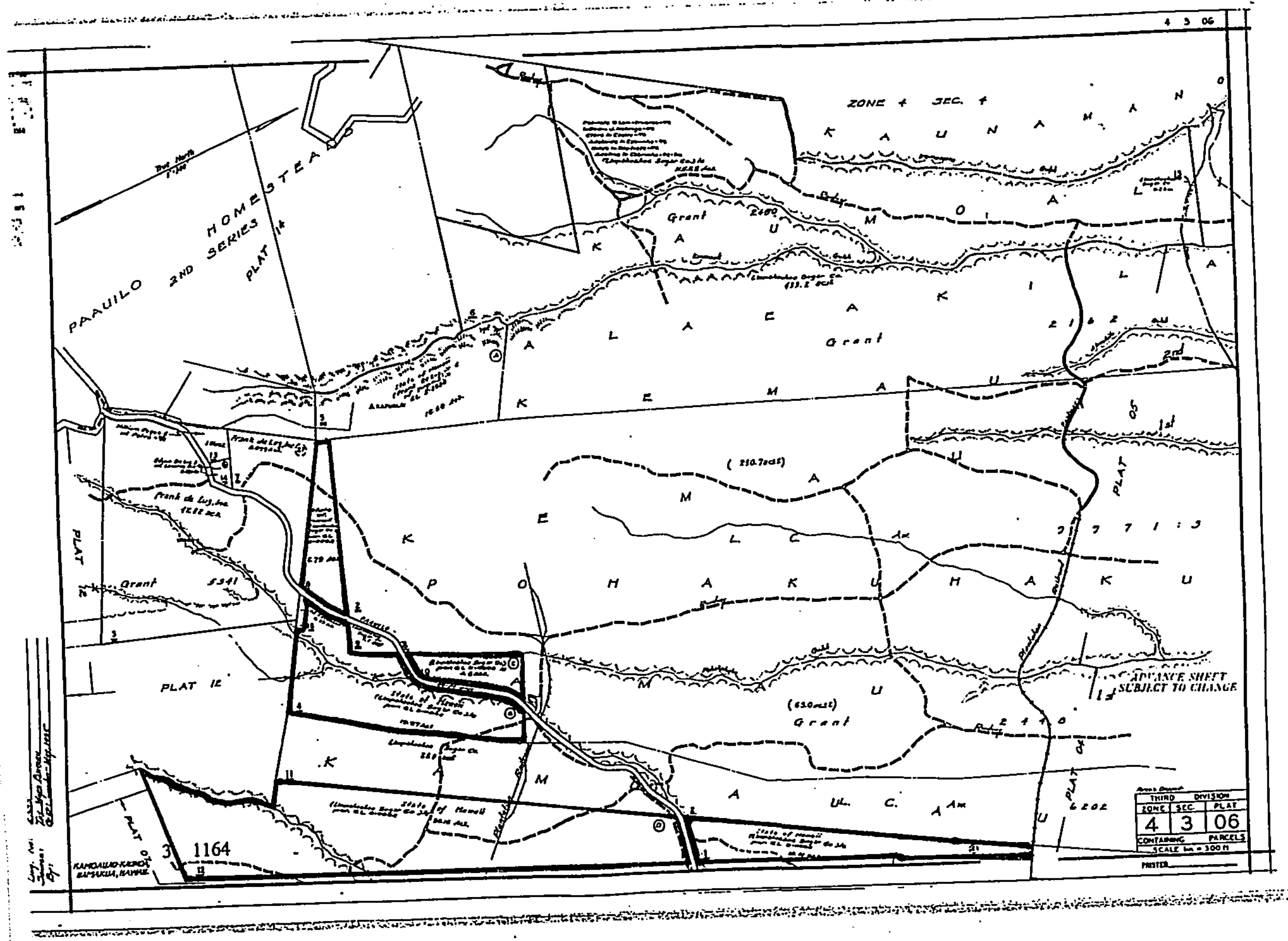
THIRD		DIVISION
ZONE	SEC.	PLAT
4	3	05

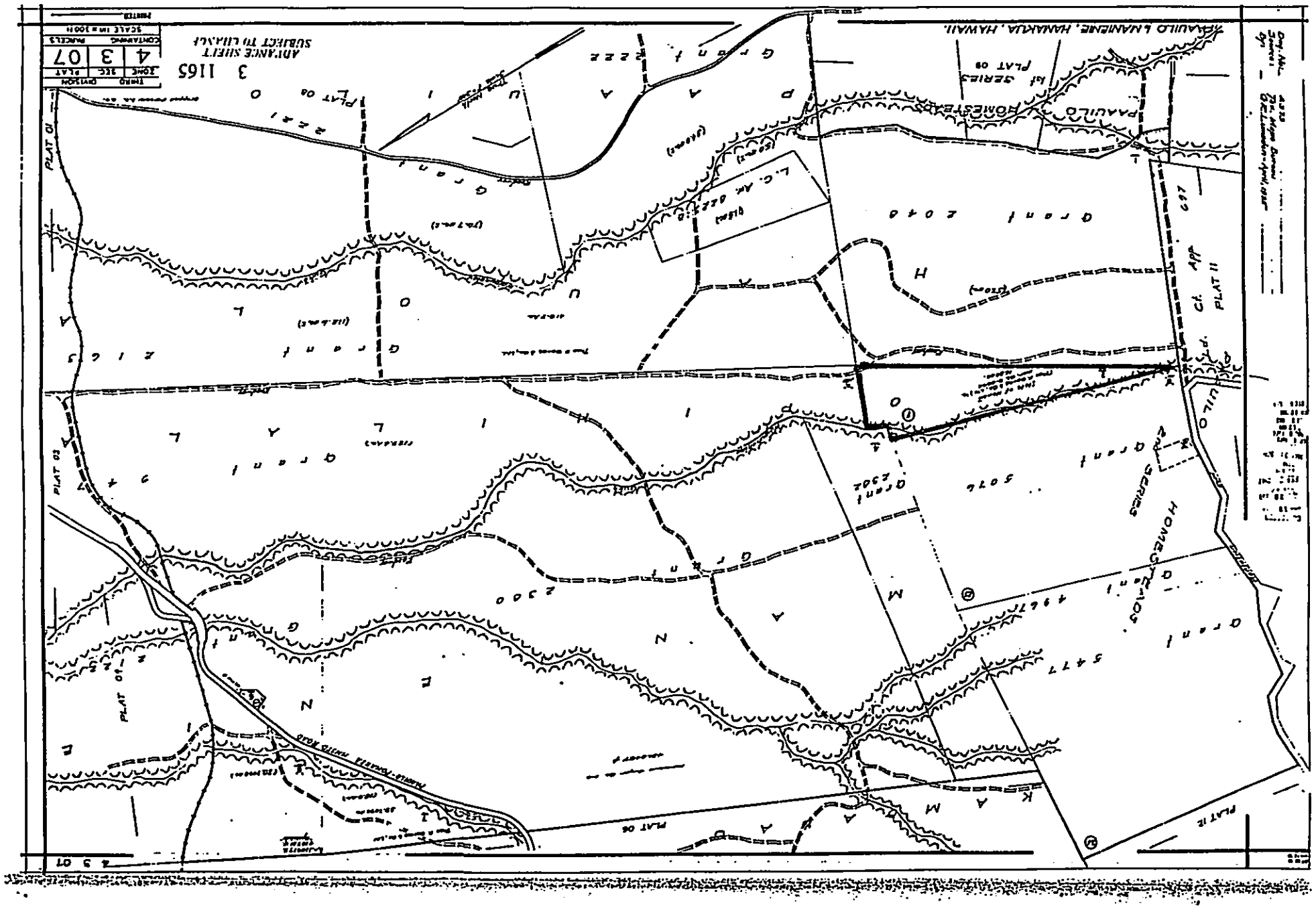
CONTAINING 4 PARCELS
SCALE 1 IN = 300 FT
PRINTED ____

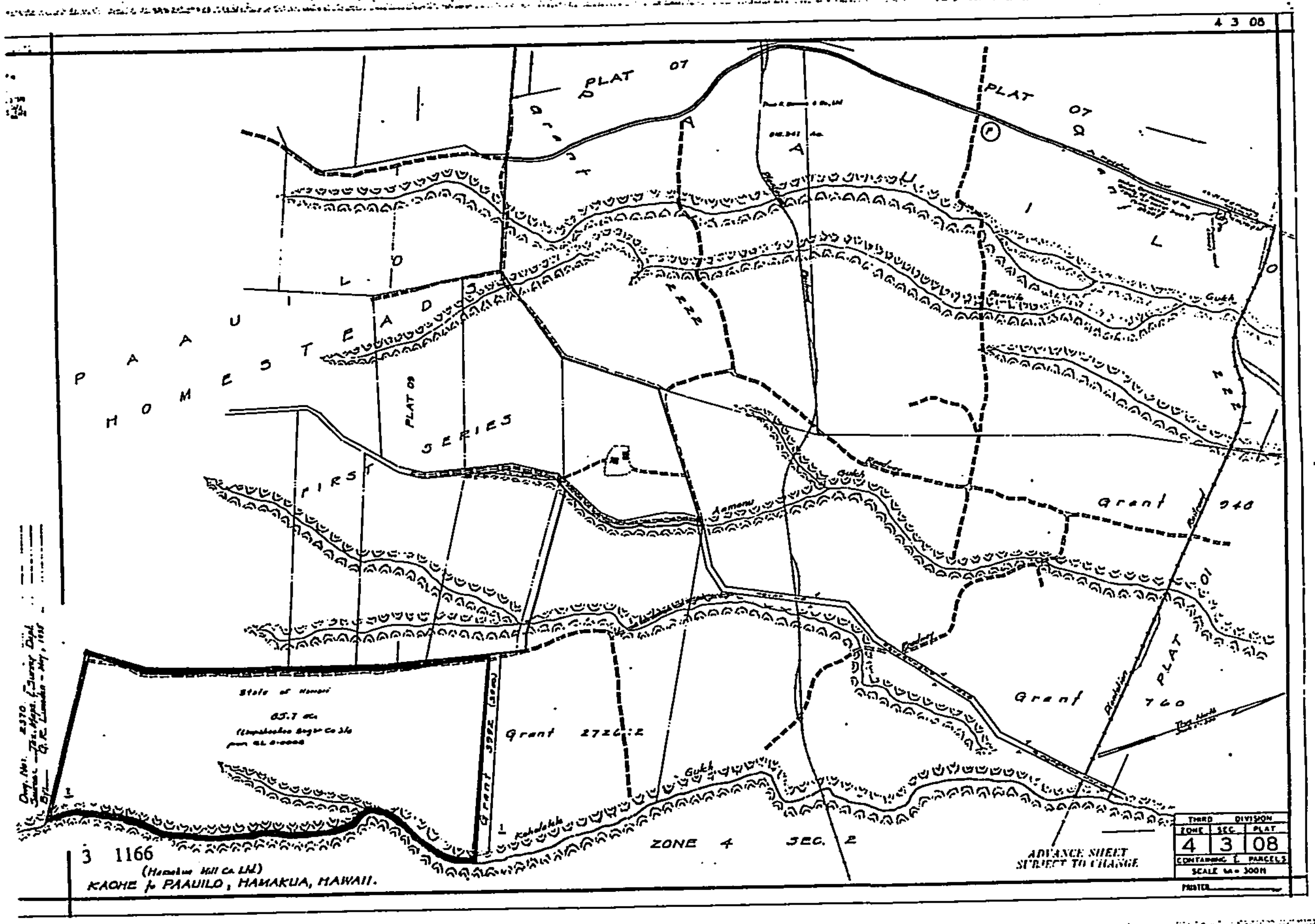
ADVANCE SHEET
SUBJECT TO CHANGE

Por. POHAKUHAKU, KEMAU (Hui) ALAEAKILA, and KAUMOALI, HAMAKUA, HAWAII. (Hamakua Mill Co)

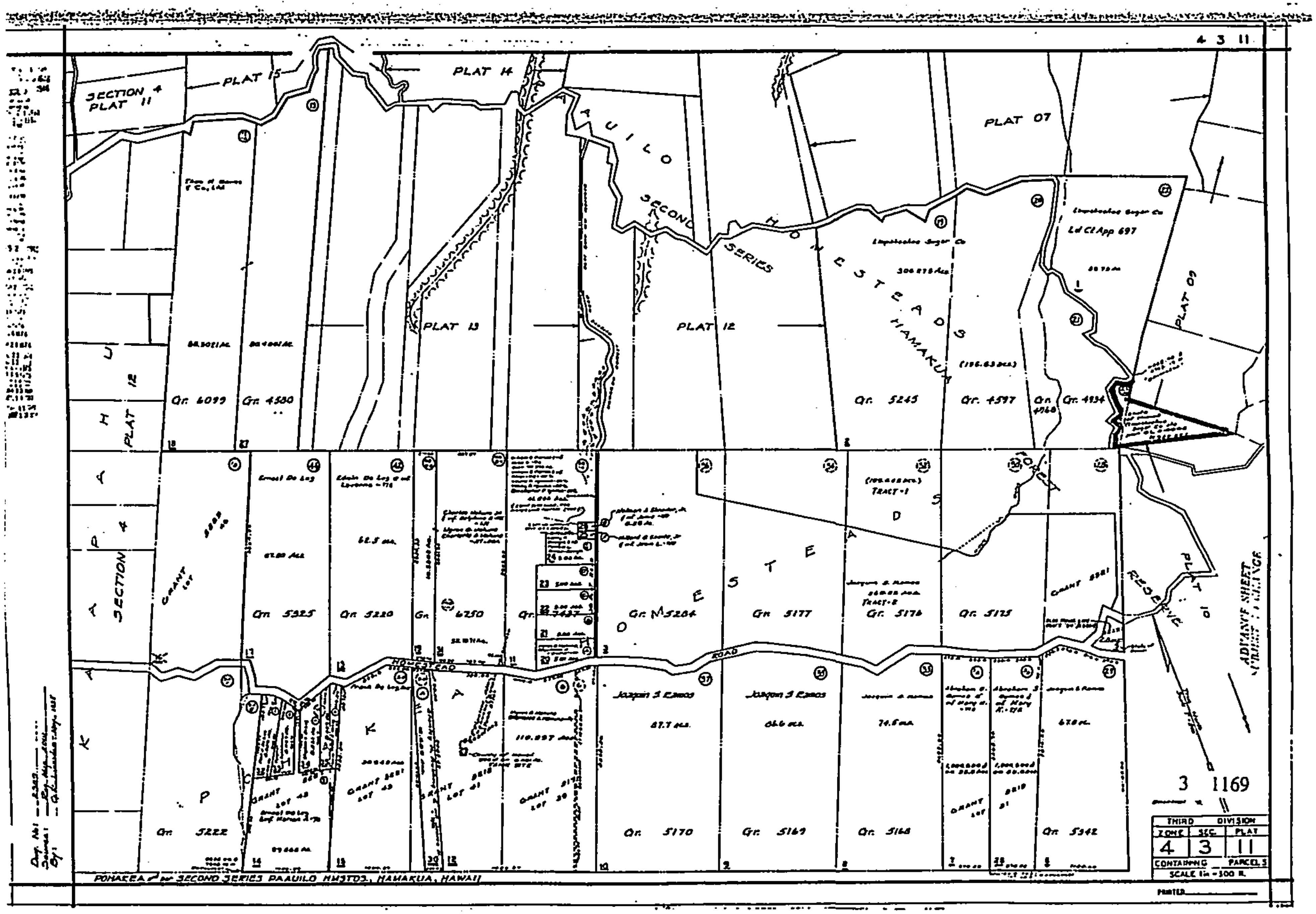
Dwg. No.
Source
Dyl

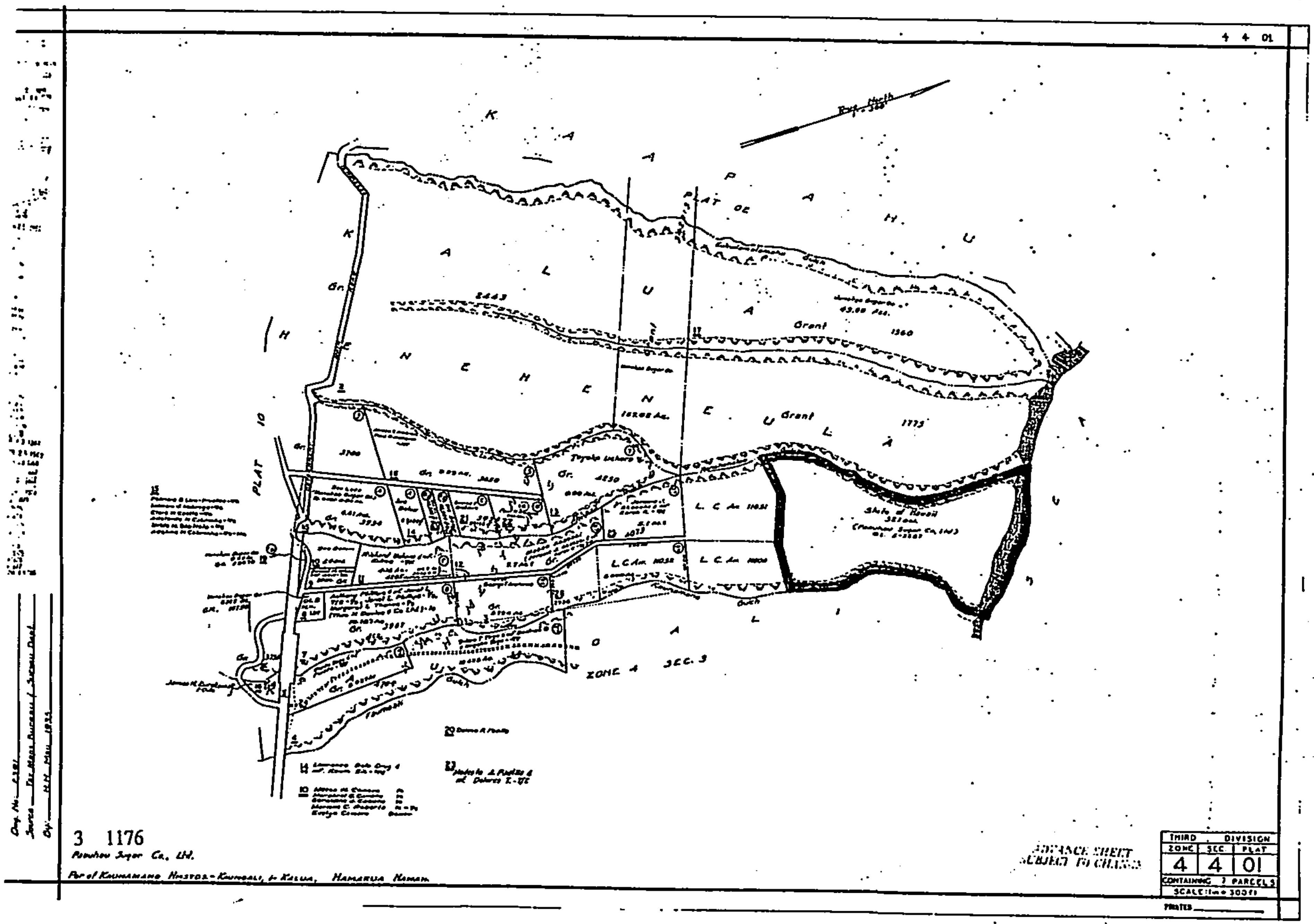

4 3 06
ZONE 4 SEC. 4
KAUNAMANO
PAAUILO 2ND SERIES
HOMESTEAD
PLAT 14
PLAT 12
PLAT 07
PLAT 05
PLAT 6202
Grant 5341
Grant 2680
Grant
(250.7acs)
(650acs)
ADVANCE SHEET
SUBJECT TO CHANGE
1164
KAMOALII-KAOKOI
KAPUKUA, HAMAKUA
THIRD DIVISION
ZONE SEC. PLAT
4 3 06
CONTAINING PARCELS
SCALE 1in = 300 ft
PRINTED

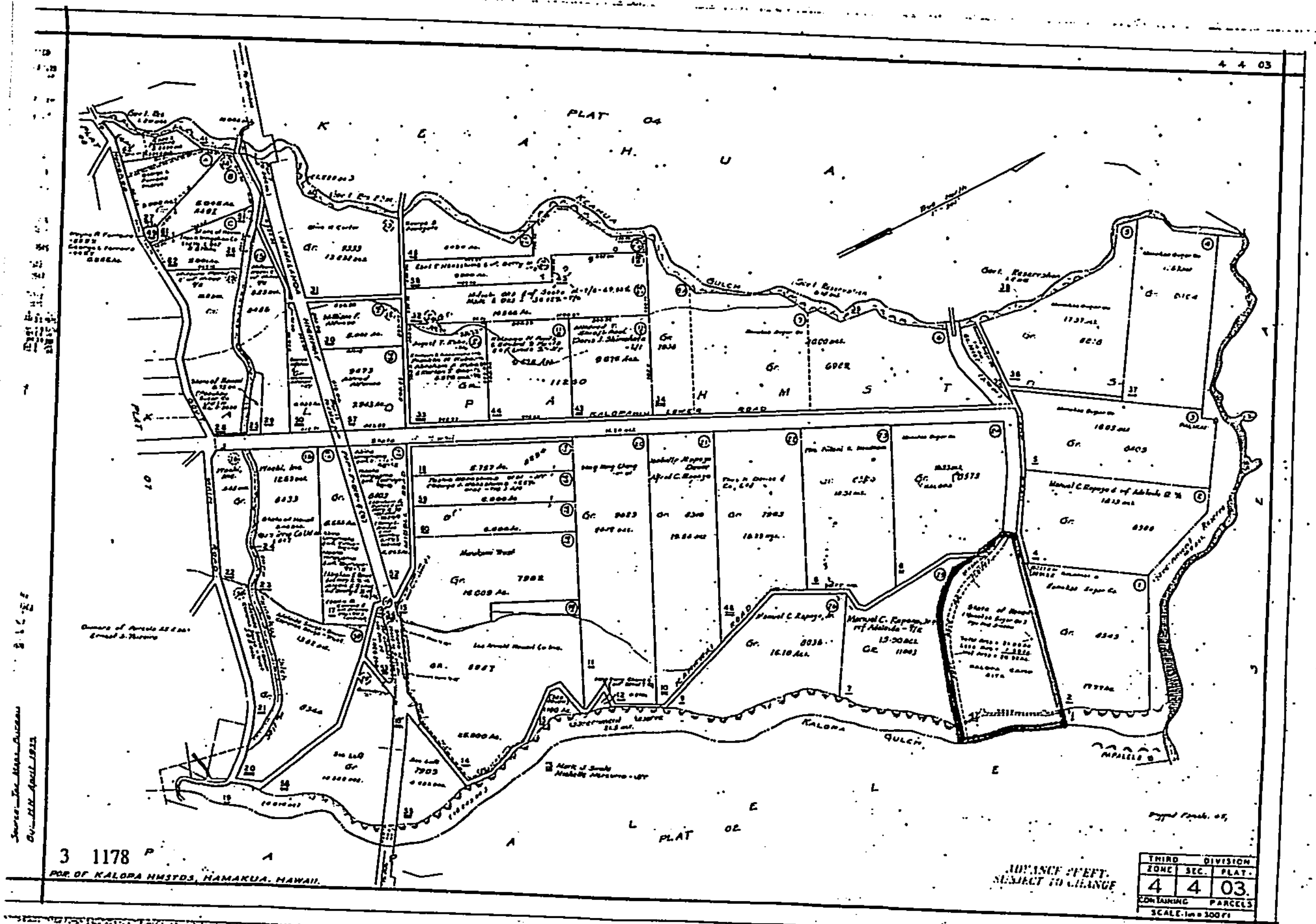

KAMAOA
NIENIE
KAMAOA
Grant 5477
Grant 4967
Grant 5076
Grant 2302
Grant 2300
Grant 2125
Grant 2147
Grant 2163
Grant 2040
Grant 2221
Grant 2222
PAAUILO
PAAUILO HOMESTEADS 1st SERIES PLAT 09
HOMESTEADS 2nd SERIES
L.C. Aw. 8223:B
Ld. Ct. App. 697
PLAT 01
PLAT 02
PLAT 03
PLAT 06
PLAT 08
PLAT 11
PLAT 12
4 3 07
3 1165
ADVANCE SHEET
SUBJECT TO CHANGE
THIRD DIVISION
ZONE 4
SEC. 3
PLAT 07
CONTAINING PARCELS
SCALE 1IN = 100 FT
PRINTED
PAAUILO & NANIENIE, HAMAKUA, HAWAII.

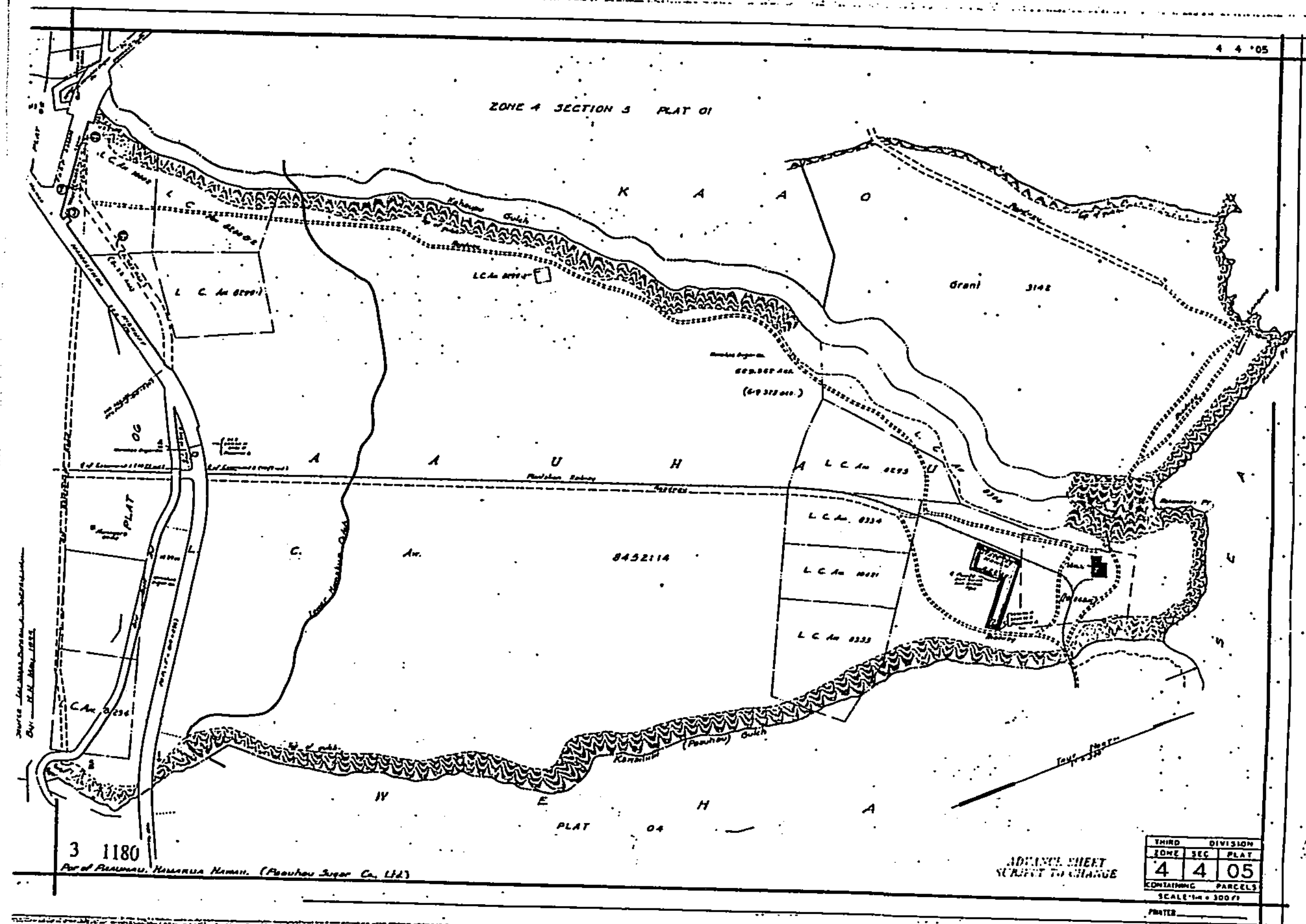


4 3 08
PLAT 07
PLAT 07
PAAUILO HOMESTEADS FIRST SERIES
PLAT 09
Grant 940
Grant 760
PLAT 10
Grant 2726:2
Grant 3992
State of Hawaii
65.7 Ac.
ZONE 4 SEC. 2
ADVANCE SHEET SUBJECT TO CHANGE
THIRD DIVISION
ZONE 4 SEC. 3 PLAT 08
CONTAINING PARCELS
SCALE 1 in = 300 ft
PRINTED
3 1166
(Hamakua Mill Co. Ltd.)
KAOHE & PAAUILO, HAMAKUA, HAWAII.

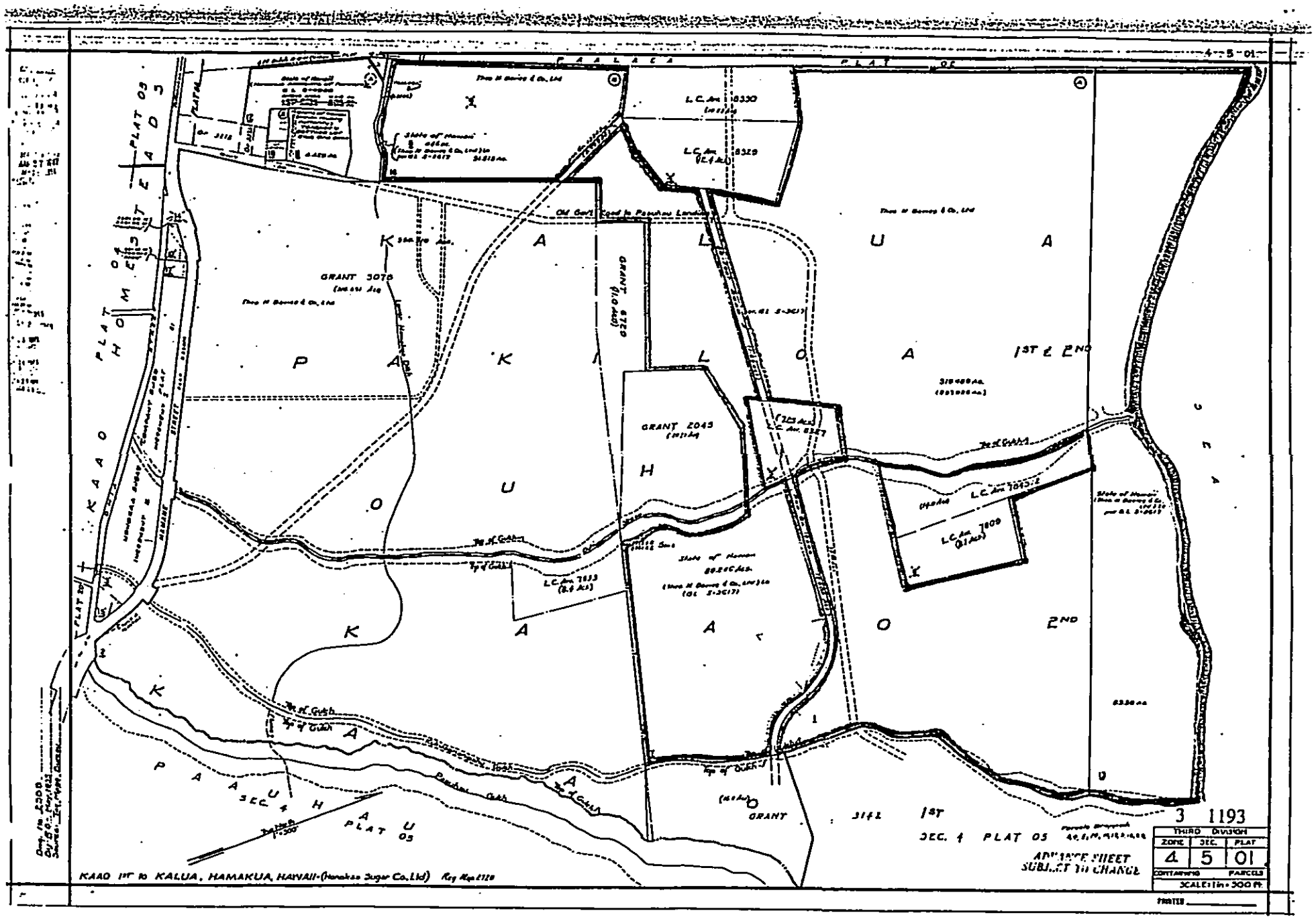

4 3 11
SECTION 4 PLAT 11
PLAT 15
PLAT 14
PLAT 13
PLAT 12
PLAT 07
PLAT 09
PLAT 10
SECTION 4
PLAT 12
SECOND SERIES
HAMAKUA
RESERVE
ROAD
ADVANCE SHEET
Gr. 6099
Gr. 4550
Gr. 5245
Gr. 4597
Gr. 4934
Gr. 5325
Gr. 5220
Gr. 5177
Gr. 5176
Gr. 5175
Gr. 5222
Gr. 5170
Gr. 5169
Gr. 5168
Gr. 5342
Joaquin S Ramos
3 1169
THIRD DIVISION
ZONE 4 SEC. 3 PLAT 11
SCALE 1in = 300 ft.
SECOND SERIES PAAUILO HMSTDS., HAMAKUA, HAWAII


4 4 01
K A P A H U
K A L U A
H E N E H E N E
U L A
PLAT 10
PLAT OF
ZONE 4 SEC. 3
Grant 1560
Grant 1775
L. C. Aw. 11031
L. C. Aw. 11030
State of Hawaii
3 1176
Paauhau Sugar Co., Ltd.
ADVANCE SHEET SUBJECT TO CHANGE
THIRD DIVISION
ZONE SEC PLAT
4 4 01
CONTAINING 7 PARCELS
PRINTED

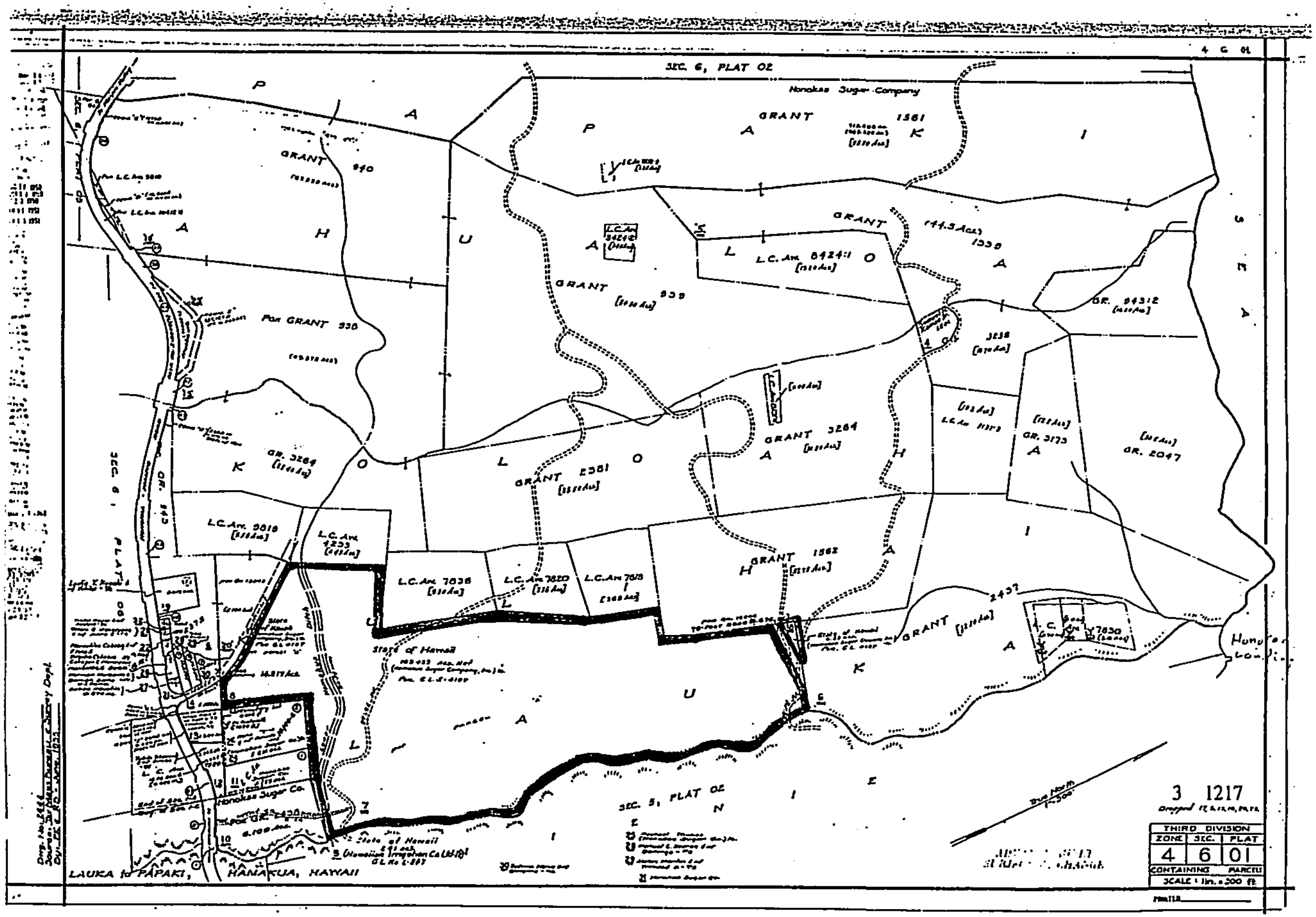

4 4 03
PLAT 04
K E A H U A
KEAHUA GULCH
Govt. Reservation
KALOPA GULCH
PLAT 02
HAMAKUA HIGHWAY
3 1178
POR. OF KALOPA HMSTDS, HAMAKUA, HAWAII
ADVANCE PRINT
SUBJECT TO CHANGE
THIRD DIVISION
ZONE SEC. PLAT
4 4 03
CONTAINING PARCELS

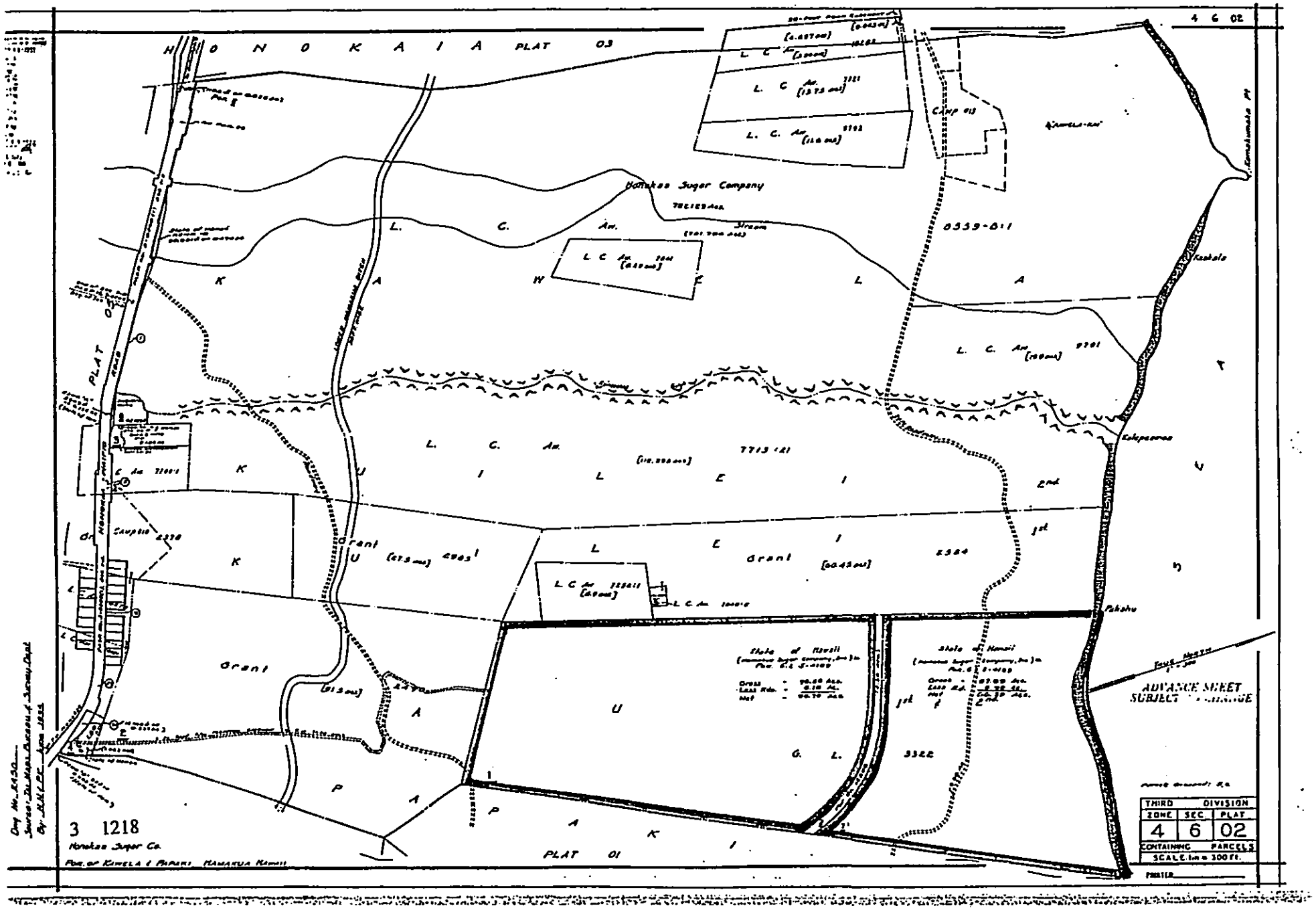


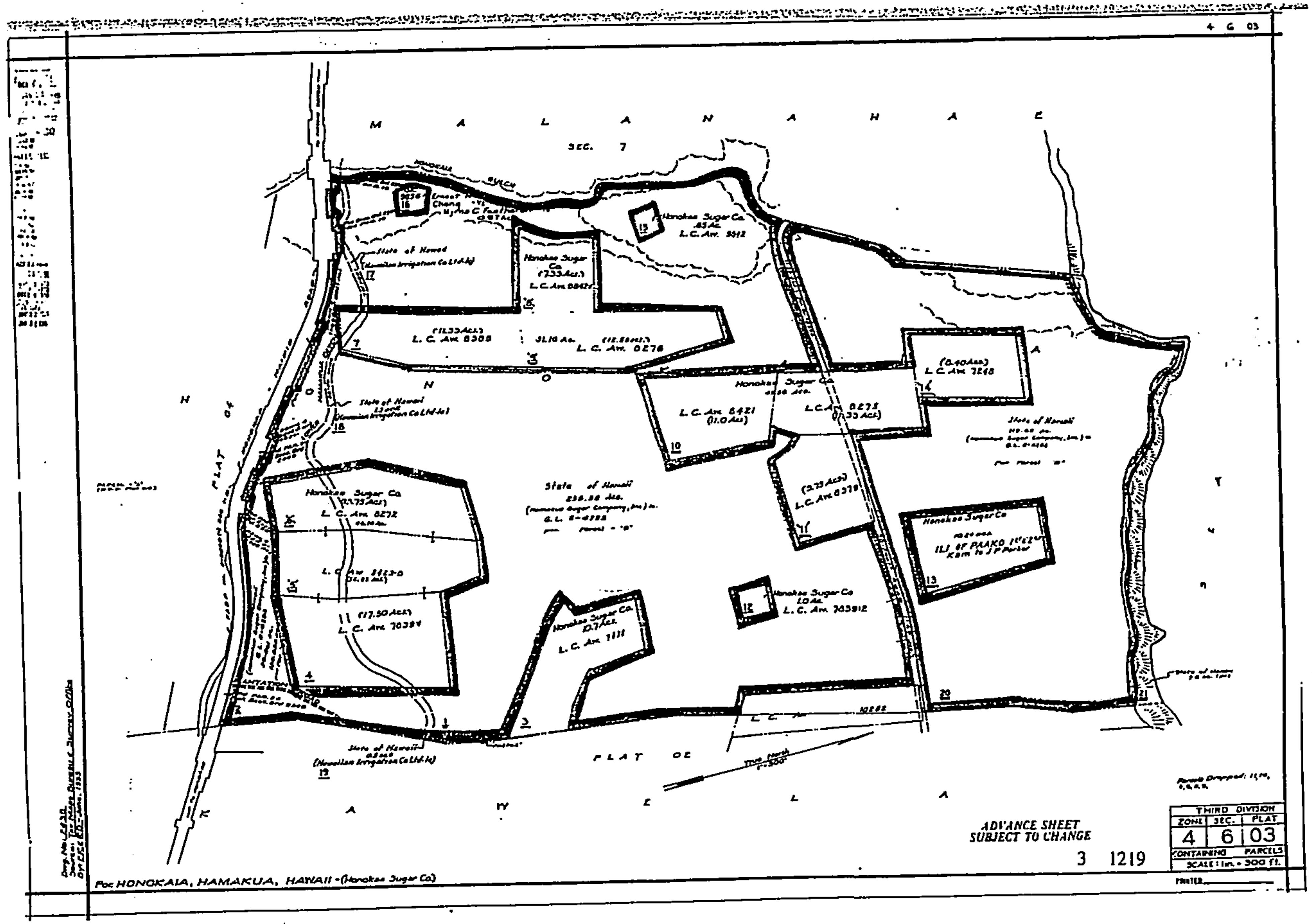
4 4 05
ZONE 4 SECTION 3 PLAT 01
K A A O
Grant 3142
Kahauu Gulch
A A U H
8452.114
Kaneloa (Paauhau) Gulch
W E H A
PLAT 04
ADVANCE SHEET
SUBJECT TO CHANGE
THIRD DIVISION
ZONE SEC PLAT
4 4 05
CONTAINING PARCELS
3 1180



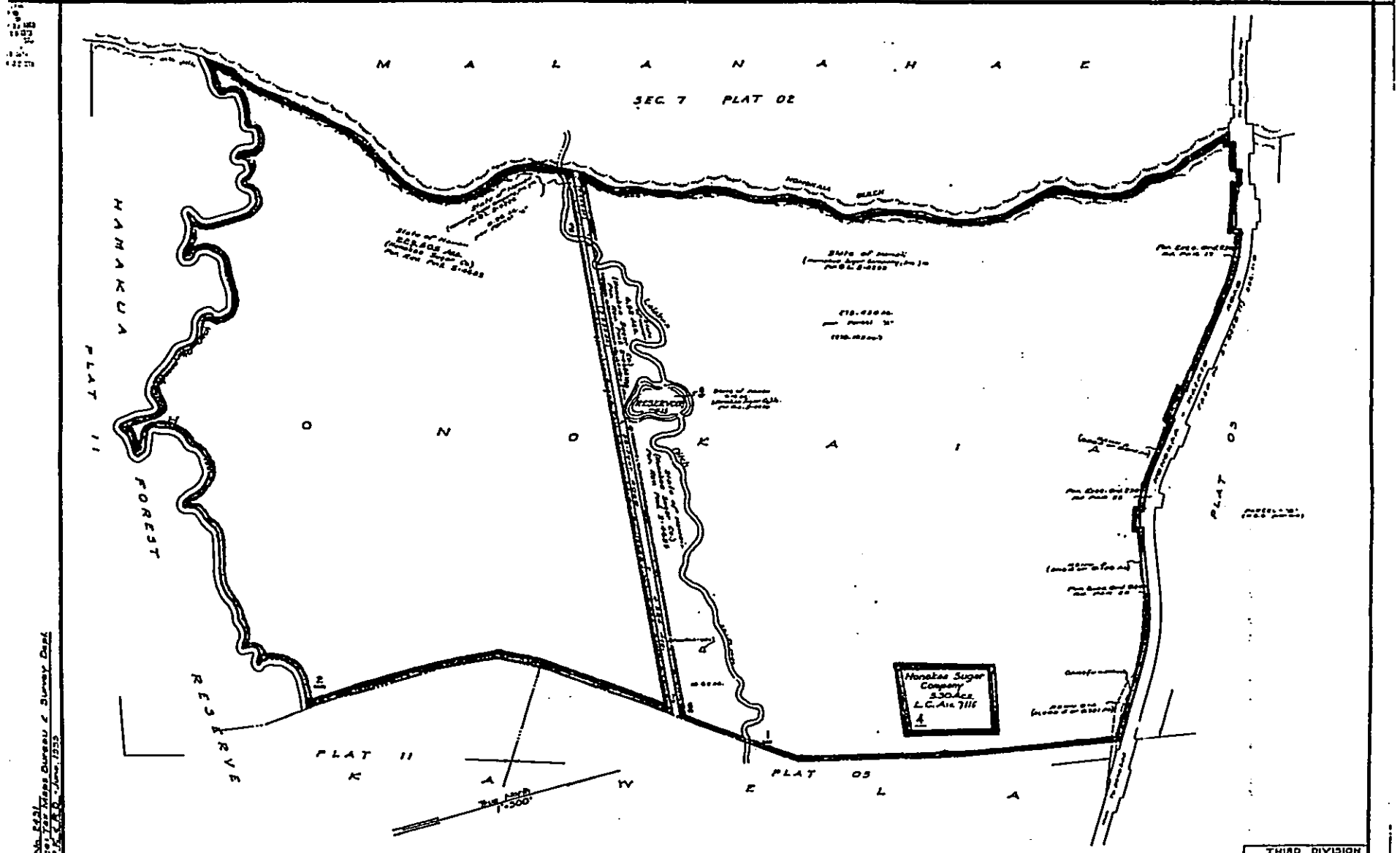
3 1193
THIRD DIVISION
ZONE 4
SEC. 5
PLAT 01
CONTAINING PARCELS
SCALE: 1 in. = 300 ft.
ADVANCE SHEET SUBJECT TO CHANGE
KAAO 1ST to KALUA, HAMAKUA, HAWAII - (Honokaa Sugar Co. Ltd) Reg. Map 2128
KALUA 1ST & 2ND
PAAUHAU SEC. 4 PLAT 05
KAAO
PAALAEA PLAT 02
SEC. 4 PLAT 05
GRANT 3078
GRANT 6720 (11.0 Acs)
GRANT 2045
L.C. Aw. 10330
L.C. Aw. 8329
L.C. Aw. 8527
L.C. Aw. 7013:2
L.C. Aw. 7809
L.C. Aw. 7813 (8.6 Acs)
Theo. H. Davies & Co., Ltd
State of Hawaii
Old Gov't Road to Paauhau Landing
Top of Gulch
Lower Hamakua Ditch
GRANT
1ST
2ND


SEC. 6, PLAT 02
Honokaa Sugar Company
GRANT 1561
GRANT 940
Por GRANT 930
GRANT 939
L.C. Aw. 8424:1
GRANT 1330
GR. 8431:2
GR. 2047
GR. 3173
GRANT 3264
GR. 3264
GRANT 2381
L.C. Aw. 9019
L.C. Aw. 4233
L.C. Aw. 7836
L.C. Aw. 7820
L.C. Aw. 7818
GRANT 1562
GRANT 2437
L.C. Aw. 7830
State of Hawaii
Honokaa Sugar Co.
SEC. 5, PLAT 02
SEC. 6, PLAT 00
SEC. 6, PLAT 05
GR. 943
LAUKA to PAPAKI, HAMAKUA, HAWAII
3 1217
THIRD DIVISION
ZONE SEC. PLAT
4 6 01
CONTAINING PARCELS
SCALE: 1 in. = 200 ft.


4 6 02
H O N O K A I A PLAT 03
PLAT 01
PLAT 0
Honokaa Sugar Company
Stream
L C Aw.
0539-B11
Camp 13
Kaokolo
Kalapaanoa
Pahoho
K A W E L A
K U K U I H A E L E
Grant
P A P A K I
U
G. L. 3322
State of Hawaii
1st
2nd
ADVANCE SHEET
SUBJECT TO CHANGE
THIRD DIVISION
ZONE SEC. PLAT
4 6 02
CONTAINING PARCELS
SCALE 1in = 300 ft.
PRINTED
3 1218
Honokaa Sugar Co.
Por. of Kawela & Papaki Hamakua Hawaii
Drg No. 2430
Source: Bu. Maps Bureau & Survey Dept
By: H.H.L.P.C. June 1955


4 6 03
M A L A N A H A E
SEC. 7
Honokaa Sugar Co.
.85 Ac.
L. C. Aw. 3512
Honokaa Sugar Co.
(7.33 Acs.)
L. C. Aw. 8842
(11.33 Acs.)
L. C. Aw. 8308
(12.80 Acs.)
L. C. Aw. 8276
(0.40 Acs.)
L. C. Aw. 7268
Honokaa Sugar Co.
L. C. Aw. 8421
(11.0 Acs.)
(3.75 Acs.)
L. C. Aw. 8379
State of Hawaii
State of Hawaii
(Hawaiian Irrigation Co Ltd-le)
State of Hawaii
236.38 Acs.
Honokaa Sugar Co.
L. C. Aw. 8272
(17.50 Acs.)
L. C. Aw. 10384
Honokaa Sugar Co.
L. C. Aw. 7111
Honokaa Sugar Co.
1.0 Ac.
L. C. Aw. 103812
Honokaa Sugar Co.
ILI OF PAAKO
Kam IV to J P Parker
L. C. Aw. 10282
State of Hawaii
(Hawaiian Irrigation Co Ltd-le)
PLAT OF
K A W E L A
H O N O
PLAT OF
True North
ADVANCE SHEET
SUBJECT TO CHANGE
3 1219
THIRD DIVISION
ZONE 4
SEC. 6
PLAT 03
CONTAINING PARCELS
SCALE: 1 in. = 300 ft.
PRINTED
For HONOKAIA, HAMAKUA, HAWAII - (Honokaa Sugar Co.)

4 6 04



Orig. No. 1431
Source: Tax Maps Bureau & Survey Dept.
By: R.K.C.B. - Jan. 1955

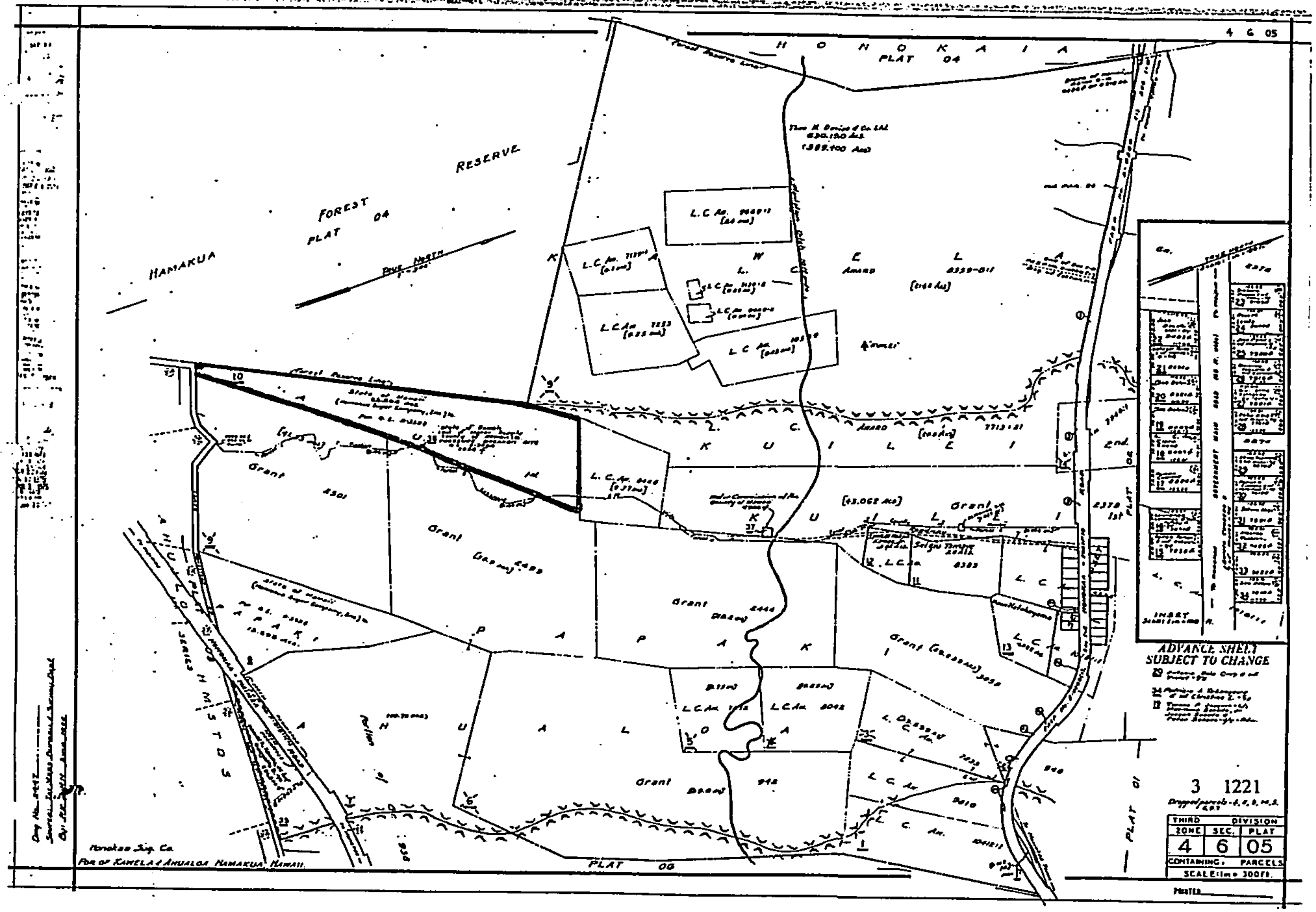
3 1220

Por. HONOKAIA, HAMAKUA, HAWAII - (Honokaa Sugar Co.)

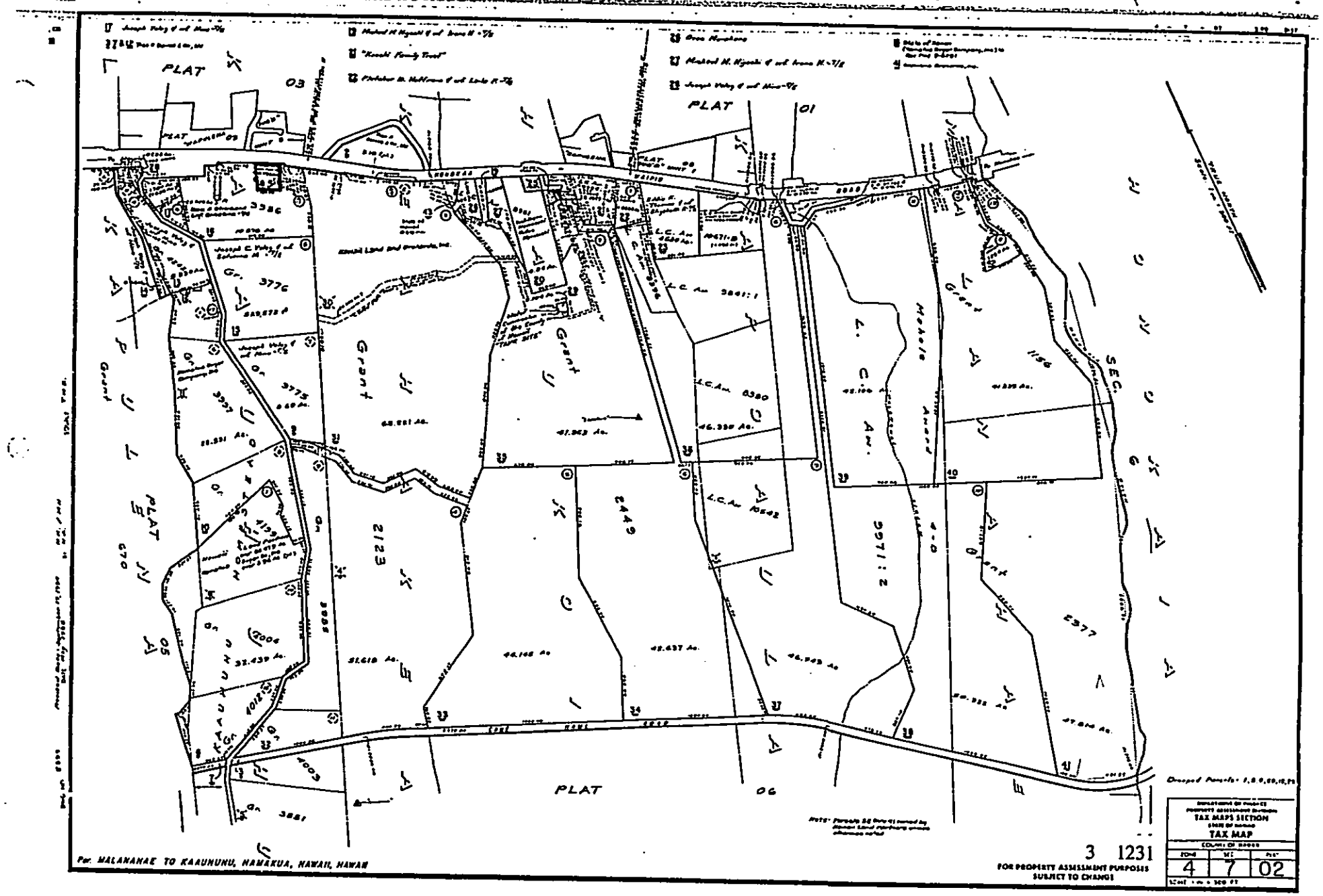
ADVANCE SHEET
SUBJECT TO CHANGE

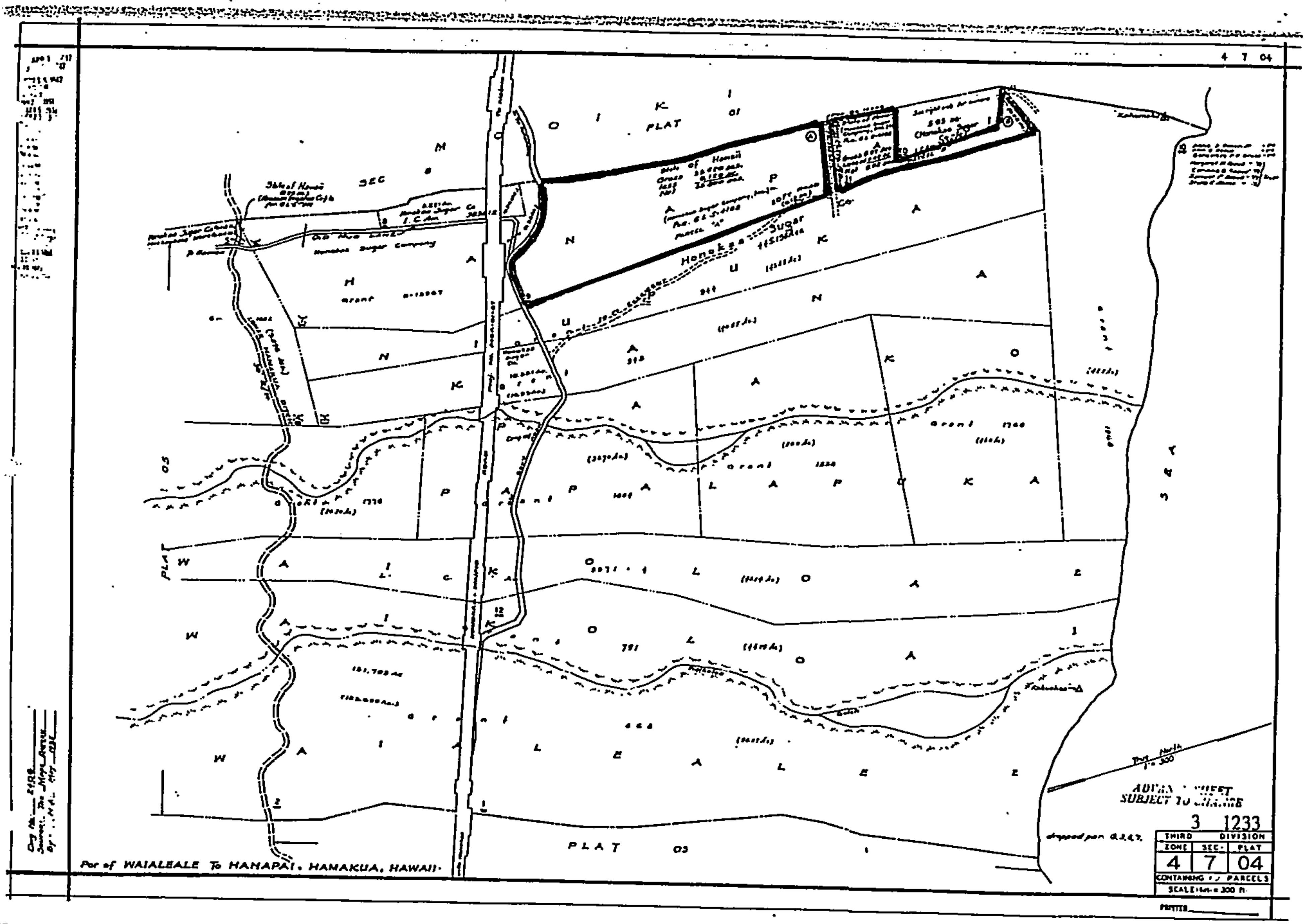
THIRD DIVISION		
ZONE	SEC.	PLAT
4	6	04

CONTAINING — PARCELS
SCALE: 1 in = 500 ft
PRINTED



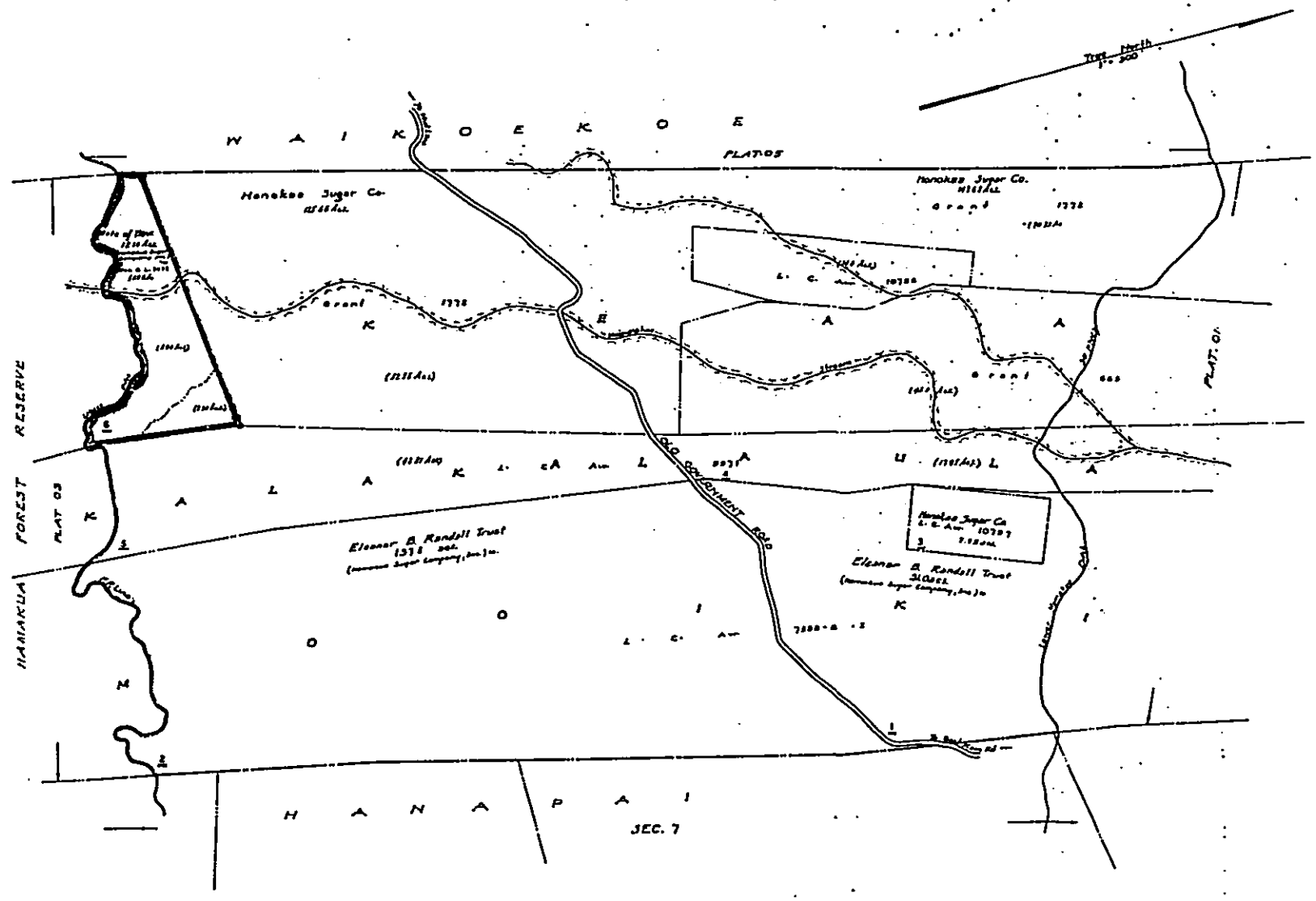
4 6 05
HONOKAIA
PLAT 04
FOREST RESERVE
PLAT 04
HAMAKUA
TRUE NORTH
Grant 4501
Grant
PLAT 06
PLAT 01
ADVANCE SHEET
SUBJECT TO CHANGE
INSET
3 1221
THIRD DIVISION
ZONE 4
SEC. 6
PLAT 05
CONTAINING PARCELS
SCALE: 1 in = 300 ft.
Honokaa Sug. Co.
Por. of Kawela & Ahualoa, Hamakua, Hawaii

 PLAT 03
PLAT 01
PLAT 05
PLAT 06
SEC. 6
Grant 1156
Mahele Award 4-O
L. C. Aw. 9971:2
L.C.Aw. 3841:1
L.C.Aw. 6380
L.C.Aw. 10542
Grant 2449
Grant 2123
Grant 2377
Gr. 3776
Gr. 3775
Gr. 3997
Gr. 3986
Gr. 4003
Gr. 3881
Gr. 2004
Gr. 2101
Grant 670
Mrs. Joseph Veloy & al.
"Kaaohi Family Trust"
Grant
TAX MAPS SECTION
TAX MAP
4
7
02
3 1231
FOR PROPERTY ASSESSMENT PURPOSES
SUBJECT TO CHANGE
Por. MALANAHAE TO KAAUNUHU, HAMAKUA, HAWAII, HAWAII



4 7 04
PLAT 01
SEC 8
Honokaa Sugar Company
Honokaa Sugar
State of Hawaii
Grant
PLAT 03
PLAT 05
Por of WAIALEALE To HANAPAI, HAMAKUA, HAWAII
ADVANCE SHEET SUBJECT TO CHANGE
3 1233
THIRD DIVISION
ZONE SEC. PLAT
4 7 04
True North

4 8 02



3 1242

Por. of MOOIKI to KEAA, HAMAKUA, HAWAII · (Honokaa Sugar Co.)

ADVANCE SHEET
SUBJECT TO CHANGE

THIRD	DIVISION	
ZONE	SEC.	PLAT
4	8	02

CONTAINING PARCELS

SCALE: 1 in. = 300 ft.

PRINTED