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STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

GEOHERMAL RESOURCES MINING LEASE NO. R-4

between

STATE OF HAWAII

by its

BOARD OF LAND AND NATURAL RESOURCES

- Grantor

and

PUNA GEOHERMAL VENTURE,

a Hawaii general partnership

- Grantee

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
GEOTHERMAL RESOURCES MINING LEASE

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STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

GEOTHERMAL RESOURCES MINING LEASE NO. R-4

THIS INDENTURE OF LEASE, made this 1st day of
June, 1985, pursuant to Chapter 182,
Hawaii Revised Statutes, and the rules and regulations pro-
mulgated thereunder, by and between the STATE OF HAWAII,
by its Board of Land and Natural Resources, hereinafter
called the "Lessor", and PUNA GEOTHERMAL VENTURE, a Hawaii
General Partnership, whose business
and post office address is Suite 808, 1600 Kapiolani
Boulevard, Honolulu, Hawaii 96814,
respectively, hereinafter called the "Lessee",

W I T N E S S E T H:

1. LEASE

Subject to the provisions of paragraph 23 entitled
"No Warranty of Title", Lessor, in consideration of the
royalties, rental, and other monetary considerations, agree-
ments and stipulations herein contained, does hereby lease
unto the Lessee the right to develop geothermal resources
and geothermal by-products in and under that certain parcel
of land, hereinafter designated as the "leased lands", des-
cribed in Exhibit "A" containing approximately 279.377
acres situated at Kapoho and Halekamahina, Puna, Hawaii, as
shown on the map marked Exhibit "A", which exhibits are
attached and made a part hereof.

The Lessee shall have the sole and exclusive right
to drill for, produce and take geothermal resources from the
leased lands and occupy and use so much of the surface of

the leased lands as may be reasonably required pursuant to the provisions of section 182-3 of the Hawaii Revised Statutes and section 6.1 of the regulations. Lessee agrees to comply with these provisions and to save and hold the Lessor harmless with respect to the claims made under said statute and regulations by the owners and occupiers of the surface of the leased lands. This Lease does include the right to reinject beneath the leased lands geothermal fluids subject to the prior written approval of the Lessor and upon such terms and conditions as the Lessor considers to be in the public interest and include any other right as may be necessary to produce the geothermal resources. This Lease does not confer upon the Lessee the privilege or right to store hydrocarbon gas beneath the leased lands; nor does this Lease confer upon the Lessee any other privilege or right not expressly given herein.

This Lease is entered into with the agreement that its purposes are and its administration shall be consistent with the principle of multiple use of public lands and resources; this Lease shall allow co-existence of other permits or leases of the same lands for deposits of other minerals under applicable laws, and the existence of this Lease shall not preclude other uses of the leased lands. However, operations under such other permits or leases or other such uses shall not unreasonably interfere with or endanger operations under this Lease, nor shall operations under this Lease unreasonably interfere with or endanger operations under any permit, lease, or other entitlement for use issued or held pursuant to the provisions of any other law. Nor shall this Lease be construed as superseding the authority which the head of any State department or agency

has with respect to the management, protection, and utilization of the State lands and resources under his jurisdiction. The State may prescribe in its rules and regulations those conditions it deems necessary for the protection of resources.

2. RESERVATION TO LESSOR

All rights in the leased lands not granted to the Lessee by this Lease are hereby reserved to the Lessor. Without limiting the generality of the foregoing such reserved rights include:

A. Disposal - If the State owns the surface of the land, the right to sell or otherwise dispose of the surface of the leased lands owned by the State or to sell or dispose of any other resource in the leased lands under existing laws, or laws hereafter enacted subject to the rights of the Lessee under this Lease. Nothing provided herein shall be construed to authorize or provide for the sale or disposition of the surface of reserved or other privately owned lands.

B. Rights-of-way - The right to authorize geological and geophysical explorations on the leased lands which do not interfere with or endanger present operations or reasonable prospective operations under this Lease, and if the State owns the surface of the land the right to grant such easements or rights-of-way for joint or several use upon, through or in the leased lands for steam lines and other public or private purposes which do not interfere with or endanger present operations or reasonable prospective operations or facilities constructed under this Lease. Nothing provided herein shall be construed as a grant or the

right to grant an easement or right-of-way upon reserved or other privately owned lands.

C. Certain Mineral Rights - The right to extract at its sole cost and expense and own oil, hydrocarbon gas, and helium from all geothermal steam and associated geothermal resources produced from the leased lands; provided, however that such extraction and ownership rights shall be exercised by Lessor in such manner as will not unduly interfere with the rights of Lessee under this Lease.

D. Casing - If the State owns the surface of the land, the right to acquire the well and casing when the Lessee finds only potable water, and such water is not required in lease operations; and

E. Measurements - The right to measure geothermal resources and to sample any production thereof.

3. TERM

A. Primary Term, Extended Term, Maximum Term

This Lease shall be for a term of ten (10) years from and after the effective date of this Lease pursuant to DLNR Rule 13-183-29, (hereinafter referred to as the "primary term"), and for so long thereafter as geothermal resources are produced or utilized in commercial quantities, provided that the maximum term of this Lease shall not exceed sixty-five (65) years; provided, however, that if the primary term or the maximum term for geothermal leases should be extended by statute, retroactively, such extended terms shall be applicable to this Lease, or should said terms be extended generally by statute, such extended terms may be made applicable to this Lease upon such other terms and conditions as the Board may determine. Production or uti-

lization of geothermal resources in commercial quantities shall be deemed to include the completion of one or more wells capable of producing geothermal resources for delivery to or utilization by a facility or facilities not yet installed but scheduled for installation not later than fifteen (15) years from the date of commencement of the primary term of this Lease.

B. Extension of Lease Beyond Primary Term by Drilling Operations

If at the expiration of the primary term hereof geothermal resources in commercial quantities are not being produced from the leased lands, but the Lessee is actively engaged in drilling operations designed to drill below the depth of 1,000 feet, or, to a production zone at a lesser depth in a diligent manner, this Lease shall be continued for so long thereafter as such operations are continued with no cessation thereof for more than 180 days, but not to exceed a period of five (5) years, and if such drilling operations are successful, as long thereafter as geothermal resources are being produced or utilized in commercial quantities except for the sixty-five (65) year limit provided above.

C. Shut-in Production

If the Lessee has voluntarily shut-in production for lack of a market, but is proceeding diligently to acquire a contract to sell or to utilize the production or is progressing with installations needed for production, this Lease shall continue in force upon payment of rentals for the duration of the primary term or for five (5) years after shut-in, whichever is longer. The Chairman shall continue to review this Lease every five (5) years until production

in commercial quantities occurs or this Lease is terminated by Lessor for Lessee's lack of due diligence or is surrendered by the Lessee. When production and sale or utilization of geothermal resources in commercial quantities has been established, the term of this Lease shall continue as provided in Paragraph A of this paragraph 3.

D. Drilling or Reworking Operations After Cessation of Production

If production of geothermal resources should cease by reason of a decline in the productive capacity of existing wells after expiration of the primary term, or before the end of the primary term if production has commenced, this Lease shall continue so long as Lessee actively and continuously engages in drilling or reworking operations which shall be commenced within One Hundred Eighty (180) days after cessation of production. Continuous drilling or reworking operations shall be deemed to have occurred where not more than One Hundred Eighty (180) days elapse between cessation of operations on one well and commencement of operations on the same or another well. If such operations are continued and if they are successful, this Lease shall continue as long thereafter as geothermal resources are being produced in commercial quantities, except for the sixty-five (65) year limit provided above.

4. RENTALS

A. Amount and Time of Payment

The first year's annual rent shall be paid pursuant to DLNR Rule 13-183-30. Thereafter, Lessee shall pay to Lessor at the Department, in advance of each year on or before the anniversary date hereof, the annual rental of ONE AND NO/100 DOLLARS (\$1.00) per acre per year on the leased lands during the life of the lease or a total of TWO HUNDRED SEVENTY-NINE AND NO/100 DOLLARS (\$279.00) per year.

B. Credits Against Royalties

The annual rental due and paid for each year shall be credited against any production royalties due and accrued during the same year. Annual rentals paid for a given year shall not be credited against production royalties due in future years.

5. ROYALTIES

A. For Period of Initial Thirty-five Years

For the primary ten (10) year term and during the first twenty-five (25) years thereafter Lessee shall pay to Lessor the following royalties on production measured and computed in accordance with the regulations:

1. Geothermal Resources (Excluding Geothermal By-products)
A royalty of ten per cent (10%) of the gross proceeds received by the Lessee from the sale or use of geothermal resources produced from the leased lands and measured at the wellhead without any deduction for treating, processing and transportation cost, notwithstanding DLNR Rule 13-183-31(b).
2. Geothermal By-Products
Five per cent (5%) of the gross proceeds received by the Lessee from the sale of any by-product produced under this Lease contained in and extracted from the effluence produced under the Lease as measured at the wellhead and as specified in DLNR Rule 13-183-31(b), including demineralized or desalted water, after deducting the treating, processing and transportation costs incurred.

In the event that geothermal resources hereunder is not sold to a third party but is used or furnished to a plant owned or controlled by the Lessee, the gross proceeds of such production for the purposes of computing royalties hereunder shall be that which is reasonably equal to the gross proceeds being paid to other geothermal producers for geothermal resources of like quality under similar conditions

without deducting any treating, processing, and transportation costs incurred, notwithstanding DLNR Rule 13-183-31(b).

No payment of royalty will be required on water if it is used in plant operation for cooling or generation of electric energy or is reinjected into the sub-surface. No royalty shall be paid for geothermal by-products used or consumed by Lessee in his production operations.

In the event the Lessee desires to mine minerals other than geothermal resources, the Lessee shall before mining such other minerals, notify the Board in writing, and the Lessee shall negotiate and fix the royalty rates for such other minerals, as may be allowed to be mined by the Board.

Gross proceeds shall not be deemed to include excise, production, severance or sales taxes or other taxes imposed on the Lessee by reason of the production, severance or sale of geothermal resources or geothermal by-products.

B. Readjustment After Thirty-five Years

Royalty rates on geothermal resources and geothermal by-products shall be readjusted, subject to the limitations specified in the regulations and in accordance with the procedures prescribed therein at the expiration of the thirty-fifth (35th) and fiftieth (50th) years of the Lease; provided, however, that such readjustment shall be only as to the royalty rate and not as to the basis for determining payment to the Lessor. Royalty rates for the new period shall be determined by an independent appraisal but shall be no less than the royalty rates at the time of the reopening, nor shall it be higher than the maximum permitted by law.

If the royalty rates for any ensuing period have not been determined prior to the expiration of the preceding period, the Lessee shall continue to pay the royalty rates effective for the previous period, but the Lessee shall, within thirty (30) days after the new royalty rates have been so determined, pay the deficiency, if any.

C. Deadline for Royalty Payments

The Lessee shall make payments of royalties to the Lessor within thirty (30) days after the end of each calendar month following such production and accompany such payment with a certified true and correct written statement by the Lessee, showing the volume and amount of geothermal resources and geothermal by-product produced, sold, used and/or otherwise disposed of and the basis for computation and determination of royalties. The Lessee shall furnish such other data as may be necessary to enable the Lessor to audit and verify all royalties due and payable to the Lessor.

D. Royalties-Production (absolute open flow potential)

If the Lessee supplies steam to any electrical generating facility from wells on both the leased lands and other lands and there is producible from all such wells in aggregate a quantity of steam greater than the maximum quantity utilizable by said electrical generating facility, Lessee agrees to produce and sell or use steam from the leased lands in a proportion no less than the proportion that the absolute open flow potential (the absolute open flow potential as used herein is the rate of flow in pounds of steam per hour that would be produced by a well if the only pressure against the

face of the producing formation in the well bore were atmospheric pressure) of the wells on the leased lands bears to the total absolute open flow potential of all such wells from which Lessee supplies steam to such electrical generating facility. For purposes of this section it shall be deemed that the Lessee supplies steam from a well to an electrical generating facility when such well is capable of producing geothermal resources in commercial quantities to such facility. The absolute open flow potential of all such wells whether on the leased lands or other lands shall be determined by the Lessor and shall be based upon tests performed by the Lessee as prescribed by the Lessor. In this regard, Lessee shall, upon completion of each of such wells, and prior to the placing of such wells on commercial production, perform, and deliver to the Lessor the results of, the following tests:

1. Pressure Test - Pressure-buildup tests to determine static reservoir pressure and well bore conditions. If pressure-buildup tests are based on shut-in wellhead data, then static well bore temperature surveys must also be conducted.

2. Isochronal Flow Tests - Isochronal flow tests or two rate flow tests to establish a back pressure curve and the absolute open flow potential.

3. Other Tests-Static Reservoir Pressure - Other tests as deemed to be necessary by the Lessor.

After commencement of commercial production from each of such wells, Lessee shall annually, or more frequently if requested by the Lessor, determine static

reservoir pressure and complete any other tests as specified by the Lessor.

Metering equipment shall be maintained and operated by Lessee in such a manner as to meet acceptable standards of accuracy consistent with geothermal industry practices.

E. Geothermal By-Products Testing

The Lessee shall furnish the Chairman the results of periodic tests showing the content of by-products in the produced geothermal resources on a calendar semi-annual basis. Such tests shall be taken as specified by the Chairman and by the method of testing approved by him, except that tests not consistent with industry practice shall be conducted at the expense of the Lessor.

F. Interest and Penalties

1. Interest - It is agreed by the parties hereto that any royalties, rentals, or other monetary considerations arising under the provisions of this Lease and not paid when due as provided in this Lease, shall bear interest from the day on which such royalties, rentals, or other monetary consideration were due at the rate of 12% per annum or such higher rates as may be permitted by law until such royalties, rentals, or other monetary considerations shall be paid to the Lessor.

2. Penalty - It is agreed by the parties hereto that any royalties, rentals or other monetary

considerations arising under the provisions of this Lease and not paid when due as provided in this Lease, shall be subject to an immediate five per cent (5%) penalty on the amount of any such royalties, rentals, percentage of net profits, or other monetary considerations arising under the provisions of this Lease.

3. Definition of Royalties, etc. - It is agreed by the parties hereto that, for the purpose of this section, "royalties, rentals or other monetary considerations arising under the provisions of this Lease and not paid when due" includes but is not limited to any amounts determined by the Lessor to have been due to the Lessor if, in the judgment of the Lessor, an audit by the Lessor of the accounting statement required by Paragraph 28 below shows that inaccurate, unreasonable or inapplicable information contained or utilized in the statement resulted in the computation and payment to the Lessor of less royalties, rentals, or other monetary considerations than actually were due to the Lessor.

6. REQUIREMENT TO COMMENCE MINING OPERATIONS

Lessee shall commence mining operations upon the leased lands within three years from the effective date of this Lease, excluding any research period which has been granted, and shall complete at least one geothermal resources well for production within four (4) years of the effective date of this Lease; provided, that so long as the Lessee is actively and on a substantial scale engaged in

mining operations on at least one geothermal resources lease, the obligations set forth above shall be suspended as to all other leases held by the Lessee, covering lands on the same island.

7. TAXES

A. Real Property Taxes

Lessee shall pay any real property taxes levied on that portion of the surface of the leased lands utilized by Lessee, according to the value allocated thereto by Lessor or other appropriate State or County agency based on the use of the surface of the portion of the land by Lessee and the use of the remainder of the land by others entitled thereto. Lessee shall also pay any real property taxes levied on the structures and improvements placed thereon and utilized by Lessee; provided that all subsurface rights and any geothermal resources underlying the leased lands under this Lease shall be deemed to have only nominal value for real property tax assessment purposes until such time, if any, as specifically authorized by law. If Lessor has exercised its rights under paragraph 2 herein, said taxes shall be prorated according to Lessee's interests.

B. Other Taxes

Royalties paid hereunder shall be in lieu of any severance or other similar tax on the extracting, producing, winning, beneficiating, handling, storage, treating or transporting of geothermal resources or any product into which the same may be processed in the State of Hawaii; nevertheless, if any such tax should be assessed, then such tax shall be deducted from any royalties otherwise due here-

under. As to any and all other taxes of any nature assessed upon geothermal resources or geothermal by-products therefrom or assessed on account of the production or sale of geothermal resources or geothermal by-products from the leased land, Lessor and Lessee each shall bear such tax in proportion to its respective fractional share of the value of such production.

8. UTILITY SERVICE

Lessee shall be responsible for all charges, duties and rates of every description, including water, electricity, sewer, gas, refuse collection or any other charges, arising out of or in connection with Lessee's operations hereunder.

9. SANITATION

Lessee shall keep its operations and improvements in a strictly clean, sanitary and orderly condition.

10. WASTE: USE OF PREMISES

a. Lessee shall not commit, suffer or permit to be committed any waste, nuisance, strip mining or unlawful use of the leased lands or any part thereof.

b. Negligence - Breach - Non-Compliance - Lessee shall use all reasonable precautions to prevent waste of, damage to, or loss of natural resources including but not limited to gasses, hydrocarbons and geothermal resources, or reservoir energy on or in the leased lands, and shall be liable to the Lessor for any such waste, damage or loss to the extent that such waste, damage, or loss is caused by (1) the negligence of Lessee, its employees, servants, agents or contractors; (2) the breach of any provision of this Lease by Lessee, its employees, servants, agents or contractors, or non-compliance with applicable federal, state or county

statutes or rules and regulations; provided, however, that nothing herein shall diminish any other rights or remedies which the Lessor may have in connection with any such negligence, breach or non-compliance. With respect to any other such waste damage or loss, Lessee agrees to indemnify, save the Lessor harmless and, at the option of the Lessor, defend the Lessor from any and all losses, damages, claims, demands or actions caused by, arising out of, or connected with the operations of the Lessee hereunder as more specifically provided under paragraph 16 hereof. Lessee shall not be obligated to defend the Lessor's title to geothermal resources.

11. COMPLIANCE WITH LAWS

Lessee shall comply with all valid requirements of all municipal, state and federal authorities and observe all municipal, state and federal laws and regulations pertaining to the leased lands and Lessee's operations hereunder, now in force or which may hereafter be in force, including, but not limited to, all water and air pollution control laws and those relating to the environment including environmental impact statements; provided, however, no revision or repeal of the regulations as defined in paragraph 34 subsequent to the effective date hereof shall change the rental, royalty rate, term, or otherwise substantially change the economic terms under this Lease; provided, further, however, that the State of Hawaii, acting in its governmental capacity, may by such regulations or amendments thereto made at any time regulate the drilling, location, spacing, testing, completion, production, operation, maintenance and abandonment of a well or wells or similar activity

as well as the construction, operation and maintenance of any power plant or other facilities in the exercise of its police powers to protect the public health, welfare and safety as provided in the regulations.

Lessee shall have the right to contest or review, by legal procedures or in such other manner as Lessee may deem suitable, at its own expense, any order, regulation, direction, rule, law, ordinance, or requirement, and if able, may have the same cancelled, removed, revoked, or modified. Such proceeding shall be conducted promptly and shall include, if Lessee so decides, appropriate appeals. Whenever the requirements become final after a contest, Lessee shall diligently comply with the same. Lessee also agrees that in its employment practices hereunder it shall not discriminate against any person because of race, color, religion, sex, ancestry or national origin.

12. INSPECTION OF PREMISES AND RECORDS

Lessor, or persons authorized by the Lessor, shall have the right, at all reasonable times, to go upon the leased lands for the purpose of inspecting the same, for the purpose of maintaining or repairing said premises, for the purpose of placing upon the leased lands any usual or ordinary signs, for fire or police purposes, to protect the premises from any cause whatever, or for purposes of examining and inspecting at all times the operations of Lessee with respect to wells, improvements, machinery, and fixtures used in connection therewith, all without any rebate of charges and without any liability on the part of the Lessor for any loss of occupation or quiet enjoyment of the premises thereby occasioned.

Lessor or its agents may at reasonable times inspect

the books and records of Lessee with respect to matters pertaining to the payment of royalties to Lessor. Complete information shall be made available to Lessor. In addition, qualified representatives and/or consultants designated by Lessor may examine the reports specified in this Lease and all other pertinent data and information regarding wells on the leased lands and production therefrom. In the event of surrender of all or a part of the leased lands Lessee shall furnish Lessor all data with respect to such surrendered lands including interpretations of such data for use in future lease negotiations with third parties. Lessee agrees on written request to furnish copies of such information to Lessor's qualified representatives or consultants.

13. GEOHERMAL OPERATIONS

Lessee shall carry on all work hereunder with due regard for the preservation of the property covered by this Lease and with due regard to the safety and environmental impact of its operations and in accordance with the following terms and conditions:

A. Removal of Derrick. Lessee shall remove the derrick and other equipment and facilities within sixty (60) days after Lessee has ceased making use thereof in its operations.

B. Operating Sites. All permanent operating sites shall be landscaped or fenced so as to screen them from public view to the maximum extent possible, as required in the discretion of the Department of Land and Natural Resources. Such landscaping or fencing shall be approved in advance by the Lessor and kept in good condition.

C. Site Selection. Prior to commencing a particular operation on the surface of the leased lands, Lessee will

consult with the occupier and submit the details concerning the proposed operation, such as the location or route of any drill site, facility site, installation site, surface area, road, pond, pipeline, power line, or transmission line, as the case may be, to the occupier by certified mail for the occupier's approval. If the occupier does not approve such proposal, occupier will submit within thirty (30) days an alternate written proposal. If occupier does not submit an alternate proposal, Lessee may proceed with its operation as originally proposed, subject to the provisions of paragraph 23. If the occupier and Lessee cannot agree, the matter will be submitted to arbitration.

D. Drilling Operations. All drilling and production operations shall be conducted in such manner as to eliminate as far as practicable dust, noise, vibration, or noxious odors. The operating site shall be kept neat, clean and safe. Drilling dust shall be controlled to prevent widespread deposition of dust. Detrimental material deposited on trees and vegetation shall be removed. Lessee will take such steps as may be required to prevent damage to crops. The determination as to what is detrimental will be made by the Lessor.

No well shall be drilled within five hundred (500) feet of any residence or building on the leased lands without first obtaining the occupier's written consent.

In any well drilled by Lessee hereunder sufficient casing shall be set and cemented so as to seal off surface and subsurface waters, any of which would be harmful to agricultural or other operations.

E. Water Quality - Waste Disposal. Lessee shall file with the Lessor a report of any proposed waste discharge.

Wastes shall be discharged in accordance with requirements and prohibitions prescribed by the Lessor. The Lessor and any other state agency having jurisdiction over the affected lands shall also approve the place and manner of such waste disposal.

F. Fish and Game Notice - Interference. Lessee shall communicate with the Division of Fish and Game prior to any operations which may adversely affect fish and wildlife resources. Lessee shall conduct its operations in a manner which will not interfere with the right of the public to fish upon and from the public lands of the State and in the waters thereof or will not preclude the right of the public to use of public lands and waters.

G. Damage to Terrain. Any operations disturbing the soil surface, including road building and construction and movement of heavy equipment in support of or relating to specific geothermal exploration or development activities shall be conducted in such manner as will not result in unreasonable damage to trees and plant cover, soil erosion, or in degradation of waters of the State, including fish and aquatic life habitat. Lessee will conduct its operations in a manner that will not unreasonably interfere with the enjoyment of the leased lands by the occupier or persons residing on or near the leased lands.

H. Pollution. Pollution of the ocean and tidelands, rivers, or other bodies of water, and all impairment of and interference with bathing, fishing, or navigation in the waters of the ocean or any bay or inlet thereof is prohibited, and no brine, minerals, or any refuse of any kind from any well or works shall be permitted to be deposited on or pass into waters of the ocean, any bay or inlet thereof,

rivers, lakes or other bodies of water, without specific written State authorization.

No Leased Substances which may be produced from any well drilled upon the leased lands shall be blown, flowed, or allowed to escape into the open air or on the ground in such a manner as to create a nuisance, which shall specifically include but not be limited to noise, air or other pollution, and other activities which disturb the occupier's or his Tenant's use of the leased lands. Subject to the foregoing, Lessee may bleed Leased Substances to the atmosphere so long as such operations are lawfully and prudently conducted in accordance with good geothermal drilling and production practices and are not otherwise violative of the provisions of this lease or of law.

I. Filled Lands. No permanent filled lands, piers, platforms, or other fixed or floating structures in, on, or over any tide and submerged lands covered by this Lease or otherwise available to Lessee shall be permitted to be constructed, used, maintained, or operated without obtaining any and all permits required under applicable State and Federal law, rules and regulations, and complying with all valid ordinances of cities and counties applicable to Lessee's operations, and without securing the written permission of the Lessor specifically authorizing the activity.

J. Road Maintenance. Lessee will take such steps at Lessee's own expense as are necessary to insure that its roads, well sites, plant sites and other operation areas will be kept as dust free as is practicable so that dust will not decrease the market value of adjacent growing crops or interfere with the occupier's or his tenant's uses.

Lessee will use existing roads where such are available for its operations. All roads, bridges and culverts used by Lessee will be maintained by it and roads surfaced or treated in a manner that will prevent dust from interfering with agricultural or residential use of the leased lands. Lessee shall be responsible for the maintenance of and repair of damages caused to roads used by Lessee on or serving the leased lands. The occupier and Lessor and their agents, tenants and licensees shall have the full use of roads constructed by Lessee but shall be responsible for the repair of any unusual damage caused to such roads by their use. In constructing roads, Lessee shall install necessary

culverts or bridges so as not to interfere with the irrigation or drainage of the leased lands.

K. Timber Damaged. In the absence of any agreement to the contrary, timber damaged, destroyed, or used on the leased lands shall be compensated for at market value to the surface owner. Borrow pit material shall not be obtained from the leased lands without permission and payment of market value to the surface owner.

L. Improvements - Protection from Damage. Improvements, structures, telephone lines, trails, ditches, pipelines, water developments, fences, crops and other property of the State or surface owners, other lessees or permittees shall be protected from damage and repaired or replaced by Lessee when damaged by Lessee.

M. Damages - Payment. In the event any buildings or personal property or crops shall be damaged or destroyed because of Lessee's operations on the leased lands, then Lessee shall be liable for all damages occasioned thereby. Lessee in its operations on the leased lands shall at all times have due and proper regard for the rights and convenience, and the health, welfare and safety of the occupier and of all tenants and persons lawfully occupying the leased lands. In the event that Lessee's operations result in any condition, including but not limited to water table or deposition of chemicals, or harmful substances, which adversely affects the continued production of crops or then beneficial uses and purposes of the land, occupier at his option may require Lessee to reimburse the occupier, his tenants and persons lawfully occupying the leased lands as to the affected acreage in accordance with subparagraphs N 1 and 2 of this paragraph 13.

N. Damages to Surface or Condition of Land.

Lessee shall pay the surface owner for the surface of each acre of land or fraction thereof utilized, taken or used or rendered substantially unusable by the Lessee in its operations, pursuant to the terms of this Lease, for farming or stock raising operations or other uses or purposes for which the land is then being used or for which the surface owner had made other plans, which shall include, but not be limited to, the lands occupied by drill sites, facility sites, roadways constructed by Lessee, ponds, pipelines, utility lines, power and transmission lines, production facilities, and other facilities and structures, together with other uses of the surface, save and except certain plants and buildings provided for in subparagraph O below, in accordance with one of the following methods to be elected by surface owner.

1. Lessee shall pay the surface owner annually from the date of acquisition a rental equivalent to the fair rental value which is being paid each year for like property.

2. Lessee shall pay surface owner severance damages if any to the surrounding land and purchase the surface acreage required by Lessee for its fair market value with right of surface reverter in the surface owner when no longer utilized by Lessee in its operations.

O. Power Plants. In the event Lessee, or a public utility, pursuant to Lessee's operations hereunder, desires to construct any plant or building site and is required to have fee title for such purpose, then Lessee shall pay occupier the fair market value for the surface of such plant or building site and the severance damages, if any, to the parcel from which such plant or building site is taken.

P. Agreement with Surface Owner. In the event that the Lessor does not own the surface of the leased lands and if the geothermal developer who is responsible for developing the resources on the leased lands enters into a lease with the surface owner, then the provisions of such lease from the surface owner shall supercede the foregoing paragraphs 13.K. through 13.0 and 14 relating to surface use, and such paragraphs shall thereafter have no force and effect where it is inconsistent with the lease with the surface owner.

Q. Drilling Mud. Drilling mud shall be ponded in a safe manner and place, and where required by the Lessor, posted with danger signs, and fenced to protect persons, domestic animals, and wildlife. Upon completion of drilling, the mud shall be disposed of, or after drying in place, covered with a protective layer of soil.

Lessee agrees to fence all sump holes and excavations and all other improvements, works, or structures which might interfere with or be detrimental to the activities of the occupier or other adjacent or nearby users of the land, and to build sumps and to take all reasonable measures to prevent pollution of surface or subsurface waters on or in the leased lands. Upon abandonment of any well on the leased lands, or on the termination of this Lease, or upon quitclaim or reverter of any leased land by Lessee, then as to such leased land Lessee shall level and fill all sump holes and excavations shall remove all debris, and shall leave those areas of the leased lands used by Lessee in a clean and sanitary condition suitable for farming or in the condition it was at the inception of this Lease if its use was other than farming, and shall pay the occupier for all damages to occupier's buildings, structures, or other property caused by Lessee.

R. Facility Sites. Areas cleared and graded for drilling and production facility sites shall be kept to a reasonable number and size, and be subject to Lessor's approval.

Unless economic and technological considerations will not permit, wells will be drilled directionally in order to minimize the number of drill sites required. Well sites and facility sites will be shaped and located to the extent practicable to interfere as little as possible with the occupier's operations including the spacing, location and operation of the occupier's improvements, planned and contemplated uses, grading, utility and drainage systems, and roads, and to prevent undue interference or danger to the occupier's or his tenant's farming and other operations. Where economically and technologically feasible, wells shall be drilled directionally from a single well site. Drill sites may also be located on unused portions of the leased lands. The drill sites will not ordinarily exceed five (5) acres in size but will vary in accordance with the number of wells drilled from such site and the amount of production equipment placed thereon. Plant or facility sites will be limited in size to approximately ten (10) acres per site.

S. Construction of Terms. The above are in addition to, and not to be construed as limitations upon, all other rules, regulations, restrictions, mitigation measures and all other measures designed to restrict, limit, modify or minimize the environmental impact of operations carried out pursuant to this Lease as set forth in this Lease.

T. Spacing, Production, Etc. - The Lessor may determine the spacing of wells and the rate of development and production of such wells to prevent the waste of geo-

thermal resources and to promote the maximum economic recovery from, and the conservation of reservoir energy in, each zone or separate underground source of geothermal resources. Such determination shall be based on recognized engineering standards and shall be consistent with prevailing economic and market conditions.

U. Drilling - Notice - Plan - Lessee, before commencing the drilling of a well, shall notify the Lessor of its intention to drill, and such notice shall contain the location and elevation above sea level of derrick, proposed depth, bottom hole location, casing program, proposed completion program and the size and shape of drilling site, excavation and grading planned, and location of existing and proposed access roads. Where the surface of the leased lands is under the jurisdiction of a State agency other than the Department of Land and Natural Resources, Lessee shall provide at the same time such information listed above as is pertinent to that agency.

V. Drilling, etc. - Circulating Medium - All drilling, re-drilling, perforating, or work-over operations within the leased lands shall be done with an accepted circulating medium.

W. Generating Plants - Approval - No generating plants, buildings, structures, production equipment, metering systems, pipelines or roads for the production, sale or use of geothermal resources (hereinafter referred to as "geothermal facilities") shall be installed or constructed except on Lessor's prior written approval and the prior written approval of any other governmental agency having jurisdiction over such installation or construction. Any contract entered into by Lessee with a Public Utility or any other person or entity

for the installation or construction of geothermal facilities shall contain provisions requiring the Public Utility, or other person or entity to obtain the prior written approval of the Lessor and other governmental agencies before installation or construction of geothermal facilities.

14. LIENS

Lessee will not commit or suffer any act or neglect whereby the estate of the Lessor or the surface owner or occupier of the leased lands shall become subject to any attachment, lien, charge or encumbrance whatsoever, and shall indemnify and hold harmless the Lessor, surface owner and occupier, against all such attachments, liens, charges and encumbrances and all expenses resulting from any such act or neglect on the part of the Lessee.

Lessee will, before commencing construction of any improvements or any drilling operations or laying any pipe lines or doing any other work on or within the leased lands, deposit with Lessor, surface owner and occupier of such lands a bond or certificate thereof naming Lessor, said surface owner and occupier as obligees in a penal sum of not less than one hundred per cent (100%) of the cost of such construction, drilling or pipe line work and in form and with surety satisfactory to Lessor, the surface owner and occupier guaranteeing the completion of such work free and clear of all mechanics' and materialmen's liens.

15. ASSIGNMENT OR SUBLEASE

The Lessee shall not assign and/or sublet the whole or any portion of the rights herein leased, without the prior written approval of the Board of Land and Natural Resources,

provided that any assignment and/or sublease so made shall be to a person or persons, partnerships or corporations who have obtained from the owner of the lands the right to occupy and conduct geothermal resources mining operation thereon.

Subject to the Lessor's prior written approval, Lessee shall have the right to transfer this lease to any person qualified under the applicable law and regulations by assignment, sublease, or other transfer, of any nature including the creation of security interests in Lessee's interest in this Lease and Lessee's rights hereunder, in whole or in part, and as to all or a part of the leased lands, subject to the approval of the Lessor, which approval will not unreasonably be withheld. Upon approval, Lessor may release the transferor from any liabilities or duties except for any liability or duty which arose prior to such approval.

16. INDEMNITY

The Lessee agrees to hold harmless and indemnify the State of Hawaii and its divisions, departments, agencies, officers, agents and employees, together with the owner or lessee of the surface of the leased lands, if any, from any and all liabilities and claims for damages and/or suits for or by reason of death or injury to any person or damage to property of any kind whatsoever, whether the person or property of Lessee, his agents, employees, contractors, or invitees, or third persons, from any cause or causes whatsoever caused by any occupancy, use, operation or any other activity on the leased lands or its approaches, carried on by the Lessee, his agents, employees, contractors, or invitees, in connection therewith; and the Lessee agrees to indemnify and save harmless

the State of Hawaii, the Board, the Chairman, the Department, owner or lessee of the surface if there be one, and their officers, agents, and employees from all liabilities, charges, expenses (including counsel fees) and costs on account of or by reason of any such death or injury, damage, liabilities, claims, suits or losses.

The foregoing indemnity specified in this Lease and in the regulations is not intended to nor shall it be construed to require the Lessee to defend the Lessor's title to geothermal resources and in case of litigation involving the titles of the Lessee and the Lessor, Lessee and the Lessor will join in defending their respective interests, each bearing the cost of its own defense.

17. LIABILITY INSURANCE

Prior to entry upon the leased lands the Lessee or transferee shall secure, at its own costs and expense, and maintain in force during the entire term of this Lease, a policy or policies of comprehensive general public liability and property damage insurance and products liability insurance from any company licensed to do business in the State of Hawaii covering liability or injuries to persons, wrongful death, and damages to property caused by any occupancy, use, operations or any other activity on leased lands carried on by Lessee or transferee, its agents or contractors in connection therewith, in the following minimum amounts:

- a. Comprehensive General Bodily Injury
Liability - \$300,000.00 each occurrence,
\$1,000,000.00 aggregate.

- b. Comprehensive General Property Damage
\$50,000.00 each occurrence, \$100,000.00
aggregate.
- c. Products liability in the single-minimum
limit of \$250,000.00.

Liability coverage for injury or damage to persons or property caused by explosion, collapse and underground hazards are to be included prior to initiation of operations to drill a well for geothermal discovery, evaluation or production. Lessee shall provide evidence of such additional coverage to the Chairman prior to initiation of drilling operations. If the land surface and improvements thereon covered by this Lease are owned or leased by a person other than the State of Hawaii, the owner and lessee, if any, of the surface and improvements shall be a named insured. The State of Hawaii, the Hawaii State Board of Land and Natural Resources, the Chairman of the Board of Land and Natural Resources, and the Department of Land and Natural Resources, shall also be named insureds.

No cancellation provision in any insurance policy shall release the Lessee of the duty to furnish insurance during the term of this Lease. A signed and complete certificate of insurance, containing the special endorsement prescribed in the regulations and indicating the coverage required by this paragraph, shall be submitted to the Chairman prior to entry upon the leased lands. At least thirty (30) days prior to the expiration of any such policy, a signed and complete certificate of insurance, indicating the coverage required by this paragraph,

showing that such insurance coverage has been renewed or extended, shall be filed with the Chairman.

18. BOND REQUIREMENTS

The Lessee and every assignee, sublessee or transferee hereof shall file with the Board within thirty (30) days of the receipt of the completed lease document and keep in force for the term of the lease, a performance bond in the amount of \$10,000.00 in a form approved by the Board and made payable to the State of Hawaii, conditioned upon faithful observance and performance of all requirements of Chapter 182, Hawaii Revised Statutes, the regulations thereunder, and of this Lease, and also conditioned upon full payment by the Lessee of all damages suffered by the occupiers of the leased lands for which Lessee is legally liable. The bond shall name the Board and the Department of Land and Natural Resources and the State of Hawaii as obligees. If the Lessee holds more than one (1) geothermal resources mining lease from the State of Hawaii, it may file with the Board, in lieu of separate bonds for each lease, a blanket bond in the amount of \$50,000.00.

19. REVOCATION

This Lease may be revoked by the Board if the Lessee fails to pay rentals and/or royalties when due or fails to comply with any of the other terms of this Lease, law, or regulations, or if the Lessee wholly ceases all mining operations for a period of one year without the written

consent of the Board for reasons other than force majeure or the production of less than commercial quantities of geothermal resources or by-products. However, before revocation of this Lease for defaults other than the failure to pay rents and/or royalties when due, the Board shall give the Lessee written notice of the claimed default and an opportunity to be heard within thirty (30) days of such notice. The Lessee shall be allowed sixty (60) days to correct such default or, if the default is one that cannot be corrected within sixty (60) days, to commence in good faith and thereafter proceed diligently to correct such default, following written notice of a determination after hearing by the Board that such default exists. Failure to comply with the foregoing shall be deemed sufficient cause for revocation. Defaults arising because of failure to pay rents and/or royalties when due must be cured within sixty (60) days of a written notice of default; otherwise this Lease may be revoked. In the alternative the Lessee may surrender this Lease as hereinafter provided.

Upon the revocation of this Lease, Lessor shall have the right to retain the improvements or require the Lessee to remove the same and restore the leased lands to a similar condition prior to any development or improvements, to the extent reasonably possible and, upon failure by the Lessee to do so, the Lessor may recover the cost thereof,

in addition to imposing any penalties as provided by law or regulations.

20. SURRENDER

If Lessee has complied fully with all the terms, covenants and conditions of this Lease and the Regulations, Lessee may surrender, at any time and from time to time, this Lease in its entirety or with respect to any portion of the land described in this Lease. For the purposes hereof, if there are no deficiencies with respect to the land to be surrendered pertaining to public health, safety, conservation of resources and preservation of the environment, Lessee will be deemed to have complied fully with all of the terms, covenants and conditions of this Lease and the Regulations if Lessee shall have paid all rents and royalties due hereunder and an additional two years' rent for all of the leased lands or, in the event of a partial surrender, two years' rent prorated by reference to that portion of land described in this Lease which is to be surrendered. No deficiencies shall be deemed to exist unless, within sixty (60) days after delivery of the document of surrender, the Lessor has notified the Lessee in writing of any deficiency claimed to exist. If there are no deficiencies as aforesaid, such surrender shall be effective as of the delivery to Lessor of the document of surrender executed by Lessee describing this Lease or that portion of the leased lands which is to be surrendered. If there are claimed deficiencies with respect to the land to be surrendered pertaining to public health, safety, conservation of resources and preservation of the environment at the time of delivery of the document, such surrender shall not become fully effective until such time

as such deficiencies have been corrected or determined not to exist. However, if Lessee corrects such deficiencies within sixty (60) days of notification, (or if the deficiencies cannot be corrected within sixty (60) days, but the Lessee commences in good faith and proceeds diligently to correct such deficiencies), then even though the surrender shall not be fully effective upon delivery of the document, the Lessee shall be relieved of any other or further obligations and liability as to this Lease or as to that portion of the leased lands which has been submitted for surrender, whether such liabilities or duties arise out of this Lease or DLNR Regulations which include without limit to the foregoing, all obligations to pay rent, to commence mining operations and to be diligent in exploration or development of geothermal resources. During the notification and correction periods, this Lease shall not be subject to revocation by the Lessor except for a failure by the Lessee after notification to correct such deficiencies within the time period and in the manner hereinabove described or a breach of the terms of this Lease as to any of the remaining leased lands or rights retained by the Lessee; provided, however, that should Lessee contest the validity of any claimed deficiency, the Lessee's obligation to correct shall be suspended (except as to matters of public health, safety or welfare) pending appeal to and determination by a court of final jurisdiction. Except as aforesaid, nothing herein contained shall constitute a waiver of any liability or duty the Lessee may have with respect to the land or Lease surrendered as a result of any activity conducted on the leased land or under this Lease prior to such surrender. Upon the surrender of this Lease

as to all or any portion of the land covered thereby, or upon any other termination of this Lease except by revocation, the Lessee shall be entitled to all equipment, buildings, and plants placed in and on the leased lands and the Lessor may require the Lessee to remove the same and restore the premises to a similar and good condition prior to any development or improvements, to the extent reasonably possible. This Lease may also be surrendered if as a result of a final determination by a court of competent jurisdiction, the Lessee is found to have acquired no rights in or to the minerals on reserved lands, nor the right to exploit the same, pursuant to this Lease, and, in such event, the Lessor shall pay over to the person entitled thereto the rentals, royalties and payments paid to the Lessor pursuant to this Lease less costs already incurred.

21. ACCEPTANCE OF RENT AND ROYALTIES NOT A WAIVER

The acceptance of rent or royalties by the Lessor shall not be deemed a waiver of any breach by the Lessee of any term, covenant or condition of this Lease, nor of the Lessor's right to give notice of default and to institute proceedings to cancel this Lease in the manner set out in paragraph 19, and the failure of the Lessor to insist upon strict performance of any such term, covenant or condition, or to exercise any option conferred, in any one or more instances, shall not be construed as a waiver or relinquishment of any such term, covenant, condition or option.

22. EXTENSION OF TIME OF PERFORMANCE

That notwithstanding any provision contained herein to the contrary wherever applicable, the Lessor may for good cause, as determined by the Board, allow additional time beyond the time or times specified herein to the Lessee, in which to comply, observe and perform any of the terms, con-

ditions, and covenants contained herein.

23. NO WARRANTY OF TITLE

The Lessor does not warrant title to the leased lands or the geothermal resources and geothermal by-products which may be discovered thereon; this Lease is issued only under such title as the State of Hawaii may have as of the effective date of this Lease or may thereafter acquire. If the interest owned by the State in the leased lands includes less than the entire interest in the geothermal resources and geothermal by-products, for which royalty is payable, as determined by the courts or otherwise, then the bonus, if any, rentals, royalties and other monetary considerations paid or provided for herein shall be paid to the Lessor only in the proportion which its interest bears to said whole for which royalty is payable, and the Lessor shall be liable to such persons for any prior payments made and adjudged by the courts or otherwise less its actual costs; provided, however, that the Lessor shall not be liable for any damages sustained by the Lessee.

This Lease is issued subject to all existing valid rights at the date hereof and such rights shall not be affected by the issuing of this Lease. In the event the leased lands have been sold by the State, subject to mineral reservation, Lessee agrees to follow such conditions and limitations prescribed by law providing for the State, and persons authorized by the State to drill for, produce and take geothermal resources, and occupy and use so much of the surface of the leased lands as may be required for all purposes reasonably connected therewith. Without limiting the effects of the foregoing, where Lessee is not the surface owner, Lessee agrees that before entering, occupying, or

using any of the surface of the leased lands, for any or all purposes authorized by this Lease, Lessee will first secure the written consent or waiver of the owner of the surface of the leased lands or occupier; second, make payment of the damages to crops or other tangible improvements to the owner thereof; or third, in lieu of either of the foregoing provisions, execute a good and sufficient bond or undertaking, payable to and in an amount specified by the Lessor for the use and benefit of the surface owner or occupier of such land, to secure payment of such damages to the crops or tangible improvements of the surface owner or occupier of said land as may be determined and fixed in an action brought upon the bond or undertaking in a court of competent jurisdiction against the principal and sureties thereon, such bond or undertaking to be in the form and in accordance with the rules and regulations. In the event that the State owns only the mineral resources, this Lease is issued subject to any and all right, title and interest of the purchaser, title holder or owner of the surface of the leased lands, and any successor in interest to any such purchaser, title holder or owner of the leased lands, any other provision in this Lease to the contrary notwithstanding.

24. COMMINGLED PRODUCTION - PLANS - APPROVALS - ACCURACY

Subject to testing the absolute open flow potential of wells, whether on the leased lands or other lands, as set forth in paragraph 5D hereof, geothermal resources from any two or more wells, regardless of whether such wells are located on the leased lands, may be commingled when the metering system used to measure geothermal resources has been approved by the Lessor. Prior to the installation of the metering system, Lessee shall submit for approval a schematic

drawing of the proposed system and specifications of the major equipment components. The Lessor will determine if acceptable standards of accuracy for measuring geothermal resources have been obtained, and may approve commingling of geothermal resources. The metering equipment shall be maintained and operated in such a manner as will meet acceptable standards of accuracy. Use of the equipment shall be discontinued at any time upon determination by the State that standards of measurement accuracy or quality are not being maintained, with such commingling stopped until measurement accuracy has been obtained. In the event that the quality and composition of the geothermal resources to be commingled are substantially different, it shall not be approved by the Lessor until acceptable standards and methods of payments are established. If less than the total flow is to be utilized in a plant or facility, then the reduction in flow for each well shall be in the proportion which the total open flow of each contributing well bears to the total open flows of all contributing wells.

25. SUSPENSION OF OPERATIONS

In the event of any disaster or pollution, or likelihood of either, having or capable of having a detrimental effect on public health, safety, welfare, or the environment caused in any manner or resulting from operations under this Lease, the Lessee shall suspend any testing, drilling and production operations, except those which are corrective, or mitigative, and immediately and promptly notify the Chairman. Such drilling and production operations shall not be resumed until adequate corrective measures have been taken and authorization for resumption of operations has been made by the Chairman.

26. DILIGENT OPERATIONS REQUIRED

The Lessee shall be diligent in the exploration and development of the geothermal resources on the leased lands. Failure to perform diligent operations may subject this Lease to revocation by the Board. Diligent operations mean exploratory or development operations on the leased lands including without limitation geothermal surveys, heat flow measurements, core drilling, or the drilling of a well for discovery, evaluation, or production of geothermal resources.

The provisions hereof shall be construed and applied with reference and in relation to geological and engineering determinations and economic and market conditions with respect to geothermal resources in the area or field in which the leased lands is situated. In the event Lessor believes, based on reasonable cause, that Lessee has failed to perform diligently, Lessee may request a hearing and determination, in accordance with paragraph 19 hereof, of the particulars in which Lessee has failed to conduct diligent operations, and if after such hearing Lessee is found not to be diligent in its operations, then if Lessee does not, within ninety (90) days thereafter, commence and in good faith continue remedying such finding of lack of diligence, Lessor may revoke this Lease as herein provided.

27. PRODUCTION OF BY-PRODUCTS

Lessee shall have no obligation to save or process any geothermal by-products unless such saving or processing, independent of revenues or value received from the production of other geothermal resources, including other geothermal by-products, is economically feasible.

28. RECORDS AND REPORTS

(a) Accounting Data. No later than the twenty-fifth (25th) day of every calendar month following the effective date of this Lease, Lessee shall submit a detailed accounting statement for lease operations specifying all charges paid and credits received under this Lease, including but not limited to information showing the amount of gross revenue derived from all geothermal resources produced, shipped, used or sold and the amount of royalty due. The Lessee shall, at the option of the Lessor, provide more detailed statements and explanatory materials to aid the Lessor in interpreting and evaluating Lessee's accounting statement. All such statements are subject to audit and revision by the Lessor and Lessee agrees that the Lessor may inspect all Lessee's books, records and accounts relating to operations under this Lease, including but not limited to the development, production, sale, use or shipment of geothermal resources at all reasonable times. Any statutory or other rights that Lessee may have to object to such inspection by the Lessor are hereby waived.

(b) Exploration Data. Lessee agrees to supply to the Lessor within thirty (30) days of the completion thereof, or the completion of any recorded portion thereof, all physical and factual exploration results, logs, surveys and any other data in any form resulting from operations under this Lease or from any surveys, tests, or experiments conducted on the leased lands by Lessee or any person or entity acting with the consent of Lessee or with information or data provided by Lessee. Lessee agrees to supply to the Lessor within thirty (30) days of the completion thereof, or

the completion of any recorded portion thereof, the results of all geological, geophysical or chemical tests, experiments, reports and studies, including but not limited to reservoir studies and tests, experiments, reports or studies relating to reinjection or reservoir depletion irrespective of whether the result of such tests, experiments, reports or studies contain sensitive or proprietary or confidential information or trade secrets. Lessee further agrees that any statutory or other rights or objections it may have to prevent disclosure of any such tests, experiments, reports or studies referred to in this paragraph by the Lessor are hereby waived. Notwithstanding any provisions hereof, however, all data and documents supplied by Lessee pursuant to this section shall be deemed to have been "obtained in confidence" and may be disclosed to other persons only with the written consent of Lessee or upon a determination by the Lessor that such disclosure is in the public interest or as otherwise provided by law or regulation.

(c) Waiver by Lessee. Lessee hereby waives any and all rights and objections it may have to prevent an examination of the books and records at reasonable times of any individual, association, or corporation which has transported for, or received from Lessee, any geothermal resources produced from the leased lands. Further, Lessee waives any and all rights and objections it may have to prevent an examination and inspection of the books and records, at reasonable times, of any such individual, association or corporation with respect to such individual's, association's, or corporation's, or to Lessee's operations, wells, improvements, machinery and fixtures used on or in connection with

the leased lands.

Lessee does hereby waive any statutory or other right or objection to prevent disclosure to the Lessor or a duly authorized employee or representative of the Lessor of any information, reports, data, or studies of any kind, filed by Lessee with any public agency, federal, state or local, relating to the leased lands, the geothermal resources thereunder, or any operations carried out in connection with this Lease irrespective of whether such information, reports, data, or studies of any kind contain sensitive or proprietary or confidential information or trade secrets. Any and all such information, reports, data, or studies of any kind filed by Lessee with any public agency, federal, state or local, including all information filed with the Lessor pursuant to any paragraph of this Lease, shall be available at all times for the use of the Lessor or its duly authorized representatives for any purpose. Notwithstanding any provisions hereof, however, any information, reports, data or studies obtained by the Lessor from any public agency and which are not public records shall be deemed to have been "obtained in confidence" and may be disclosed to other persons only with the written consent of Lessee or upon a determination by the Lessor that such disclosure is in the public interest.

29. FORCE MAJEURE

If the Lessee is rendered unable to wholly or in part by force majeure to carry out its obligations under this Lease, Lessee shall give to Lessor prompt written notice of the force majeure. Thereupon, any obligations of the Lessee to perform so far as they are affected by the force majeure shall be suspended during the continuance of

the force majeure and the primary term or any continuation period shall be extended for a period equal to the period of suspended performance caused by the force majeure. Lessee shall use all possible diligence to remove or correct the force majeure, but this shall not require the settlement of strikes, lockouts or other labor difficulties. In no event shall any extension affect the sixty-five (65) year maximum term of this Lease.

30. UNIT OR COOPERATIVE PLANS

The Lessee may, with the written consent of the Board, utilize the leased lands or portions hereof under a unit, cooperative or other plan of development or operation with other State, Federal or privately owned lands for the drilling and production of one or more wells in accordance with DLNR Rule 13-183-33 of the Regulations.

31. NOTICES

Pursuant to DLNR Rule 13-183-64, Lessor may give any notice or deliver any document hereunder to Lessee by mailing the same by registered mail addressed to Lessee at Puna Geothermal Venture, P. O. Box 621, Honolulu, Hawaii 96709 or by delivering the same to any officer of Lessee. Lessee may give any notice or deliver any document hereunder to Lessor by mailing the same by registered mail addressed to Lessor at Board of Land and Natural Resources, 1151 Punchbowl Street, Honolulu, Hawaii 96813, or by delivering the same to Lessor in person. For the purposes of this paragraph, either party may change its address by written notice to the other. In case of any notice or document delivered by registered mail, the same shall be deemed delivered when deposited in any United States Post Office,

properly addressed as herein provided, with postage fully prepaid.

32. RESTORATION OF PREMISES

Upon the revocation, surrender or expiration of this Lease, the Lessor or surface owner may require the Lessee to restore the leased lands to their original condition insofar as it is reasonable to do so within ninety (90) days thereof, except for such roads, excavations, alterations or other improvements which may be designated for retention by the surface owner, the Lessor or its agency having jurisdiction over said lands. When determined by the Lessor, surface owner or such State agency, cleared sites and roadways shall be replanted with grass, shrubs, or trees by the Lessee.

33. HEADINGS

The paragraph headings throughout this Lease are for the convenience of the Lessor and the Lessee and are not intended to construe the intent or meaning of any of the provisions thereof.

34. REFERENCE

Unless specifically indicated otherwise, the regulations referred to in and governing this Lease shall be the Rules in Title 13, Chapter 183 relating to Regulations on Leasing of Geothermal Resources and Drilling for Geothermal Resources in Hawaii approved and adopted by the Board on March 10, 1978, and all terms used herein shall be given the meaning as set out in Rule 13-183-3 of said Title 13, Chapter 183.

35. INSOLVENCY

In the event the Lessee at any time during the term hereof is insolvent under any of the provisions of the Federal Bankruptcy Act, or makes a voluntary assignment of his assets for the benefit of creditors, or is adjudged a

bankrupt, either upon Lessee's voluntary petition in bankruptcy, or upon the involuntary petition of Lessee's creditors, or any of them, or should an attachment be levied and permitted to remain for any unreasonable length of time upon or against the interest, rights or privileges of Lessee in or to any geothermal resources produced from the wells drilled by Lessee upon the leased lands, then, upon election by the Lessor, all of the interests, rights, and privileges of Lessee in and to all geothermal resources produced and saved from the leased lands by reason of Lessee's operations thereon, shall terminate upon receipt of written notice from the Lessor advising that the State has so elected. In such event the Lessor shall have, and Lessee, by the acceptance hereof, hereby gives the Lessor the right, option and privilege to cancel and terminate this Lease and all of the terms and provisions granted hereby, and all of the rights and privileges of Lessee in and to or upon the leased lands and in and to any geothermal resources produced and saved from the leased lands by reason of Lessee's operations thereon, and all of Lessee's rights and privileges granted by this Lease shall terminate immediately upon receipt of written notice from the Lessor that the Lessor has so exercised its option.

36. SUBSIDENCE. Any subsidence to the leased or adjacent lands shall be considered pursuant to DLNR Rule 13-183-60.

37. WORKMEN'S COMPENSATION INSURANCE

Lessee shall at all times in any and all operations under this Lease and in any and all work in and upon the leased lands carry full and complete Workmen's Compensation Insurance covering all employees.

38. SUCCESSORS

The term "Lessor" herein shall mean and include

Lessor, its legal successors and assigns, and the term "Lessee" herein or any pronoun used in place thereof shall mean and include the masculine or feminine, the singular or plural number, and jointly and severally individuals, firms or corporations, and their and each of their respective heirs, successors, personal representatives and permitted assigns, according to the context hereof.

39. SEVERABILITY

If any provision herein is judicially determined to be invalid, it shall be considered deleted herefrom and shall not invalidate the remaining provisions.

40. GEOHERMAL OWNERSHIP

If the Lessee hereunder is the surface landowner, it is mutually agreed that issuance of this Lease by the Lessor and acceptance thereof by the Lessee shall not be deemed or construed to be a waiver of, and shall be without prejudice to, any claim of ownership to the geothermal resources by the Lessee and Lessor incidental thereto.

41. LEASE TERMS VS. RULES UNDER TITLE 13, CHAPTER 183

Unless indicated otherwise herein, Rules in Title 13, Chapter 183 of the Department of Land and Natural Resources shall supersede any of the lease provisions herein which conflicts with said Regulation.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed this ¹¹ day of July, 1985.

STATE OF HAWAII

APPROVED BY THE BOARD OF
LAND AND NATURAL RESOURCES
AT ITS MEETING HELD ON

December 19, 1980

By S. C. Au
Chairman and Member
Board of Land and
Natural Resources

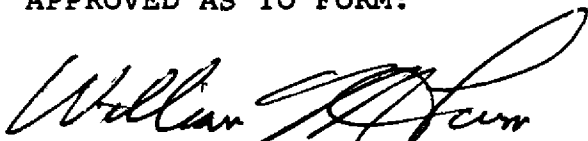
By W. S. Keolu
Member
Board of Land and
Natural Resources

LESSOR

Approved by the Board
at its meeting held on

April 12, 1985

APPROVED AS TO FORM:



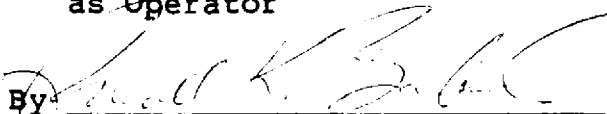
Deputy Attorney General

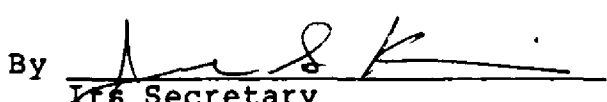
Dated: 6/27/85

PUNA GEOTHERMAL VENTURE, a
Hawaii General Partnership

By Thermal Power Company

a California corporation,
as Operator

By 
Its President

By 
Its Secretary

LESSEE

STATE OF CALIFORNIA)
)
CITY AND COUNTY OF SAN FRANCISCO) SS.

On this 2nd day of May, 1985, before me appeared Russell K. Burbank and Jane S. Kumin, to me personally known, who, being by me duly sworn, did say that they are the President and Secretary, respectively, of THERMAL POWER COMPANY, a California corporation, the general partner of PUNA GEOTHERMAL VENTURE, a Hawaii general partnership; that the seal affixed to the foregoing instrument is the corporate seal of such corporation and that such instrument was signed and sealed on behalf of such corporation by authority of its Board of Directors; and said Russell K. Burbank and Jane S. Kumin acknowledged such instrument to be the free act and deed of such partnership.

Janet A. Wood
Notary Public, State of California
My commission expires: May 24 1988

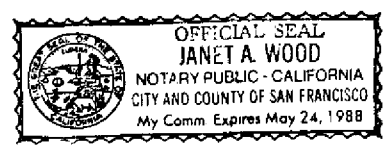


Exhibit "A"

THIRD TAXATION DIVISION

All those certain parcels of Land, (portion of the land described in and covered by Royal Patent No. 8177, Land Commission Award No. 8559, Apana 5 to C. Kanaina), situate lying and being at Kapoho, District of Puna, County and State of Hawaii more particularly described below:

Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
1	4	16	11	10.859
1	4	16	9	9.709
1	4	16	10	9.455
1	4	18	10	3.465
1	4	17	12	1.371
1	4	18	9	4.777
1	4	17	8	4.965
1	4	21	4	6.907
1	4	21	2	1.622
1	4	21	3	.565
1	4	18	3	3.016
1	4	18	4	2.092
1	4	18	1	3.445
1	4	18	2	13.498
1	4	18	13	1.118
1	4	18	5	5.508
1	4	19	3	15.874
1	4	18	7	7.815
1	4	18	8	4.373
1	4	19	1	8.399
1	4	19	2	19.899
1	4	16	2	5.498
1	4	16	8	1.332
1	4	17	6	4.915
			Subtotal I	150.477

All of those certain parcels of land (a portion of the land described in and covered by Royal Patent No. 8177, Land Commission Award No. 8559, Apana 5 to C. Kanaina, situate at Kapoho, Puna, Hawaii, and Royal Patent No. 7483, Land Commission Award No. 4452, Apana 3 to H. Kalama, situate at Halekamahina, Puna, Hawaii more particularly described below:

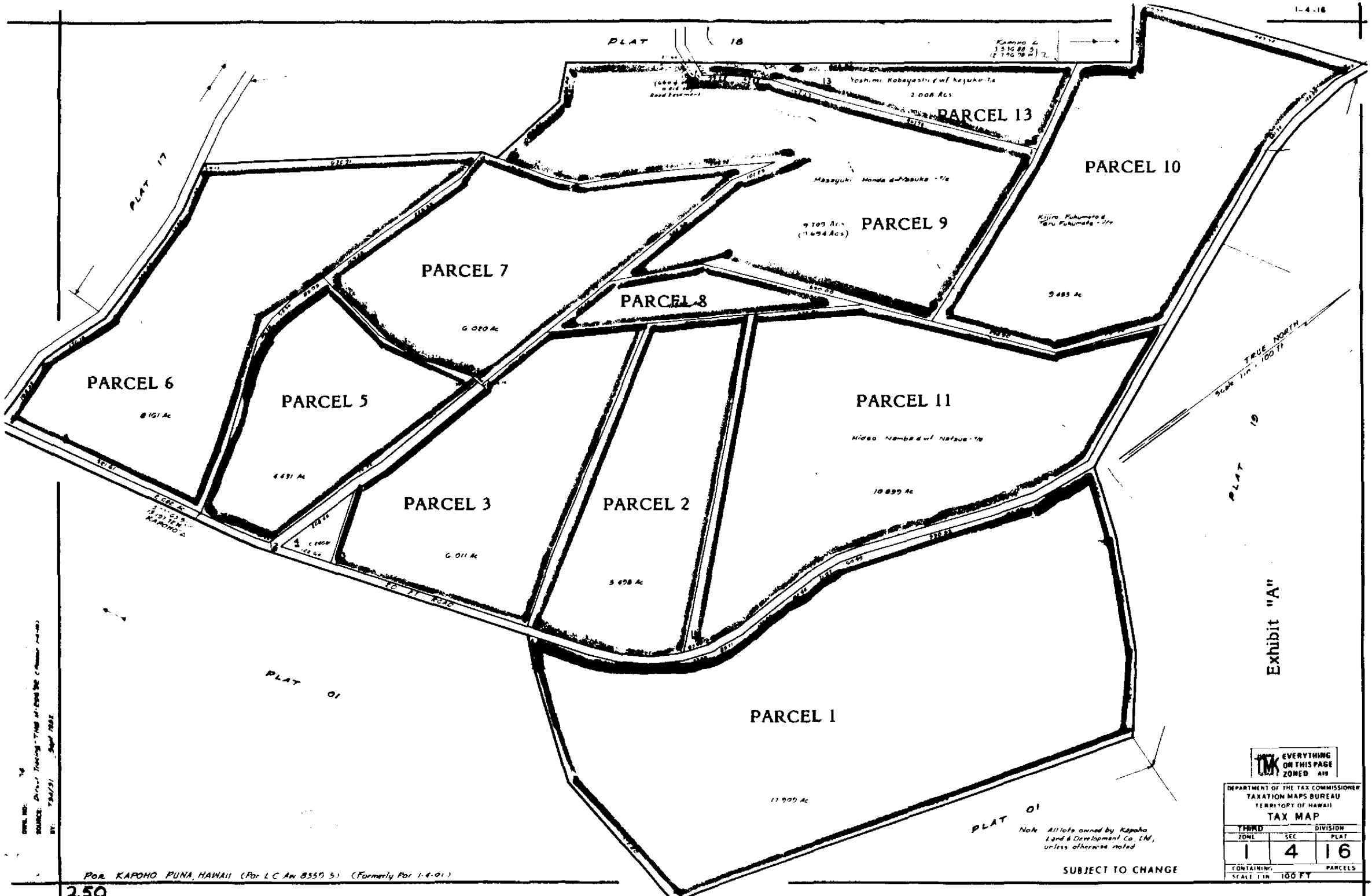
Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
1	4	20	7	17.502
1	4	20	8	<u>6.231</u>
Subtotal II				<u>23.733</u>

All of those certain parcels of land (a portion of the land described in and covered by Royal Patent No. 4497, Land Commission Award No. 8559, Land Patent No. 8177, Apana 5 to C. Kanaina, situate at Kapoho, Puna, Hawaii more particularly described below:

Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
1	4	16	7	6.020
1	4	16	13	2.008
1	4	16	5	4.431
1	4	16	6	8.161
1	4	17	7	5.335
1	4	17	2	4.844
1	4	17	9	4.861
1	4	17	10	4.316
1	4	19	9	1.704
1	4	16	1	17.909
1	4	17	3	32.101
1	4	17	11	7.466
1	4	16	3	<u>6.011</u>
Subtotal III				<u>105.167</u>
Subtotal I				150.477
Subtotal II				23.733
Subtotal III				<u>105.167</u>
Grand Total				<u><u>279.377</u></u>



74
 SOURCE: Deeds, Taxing, Title, etc. etc. etc. etc. etc.
 BY: 12/1/51 30th 1951

PO. KAPOHO PUNA, HAWAII (Por. LC Aw 8350-5) (Formerly Por. 1-4-01)

Exhibit "A"

EVERYTHING ON THIS PAGE ZONED AS

DEPARTMENT OF THE TAX COMMISSIONER		
TAXATION MAPS BUREAU		
TERRITORY OF HAWAII		
TAX MAP		
THIRD	DIVISION	
ZONE	SEC	PLAT
1	4	16
CONTAINING PARCELS		
SCALE 1 IN = 100 FT		

SUBJECT TO CHANGE

PLAT 01

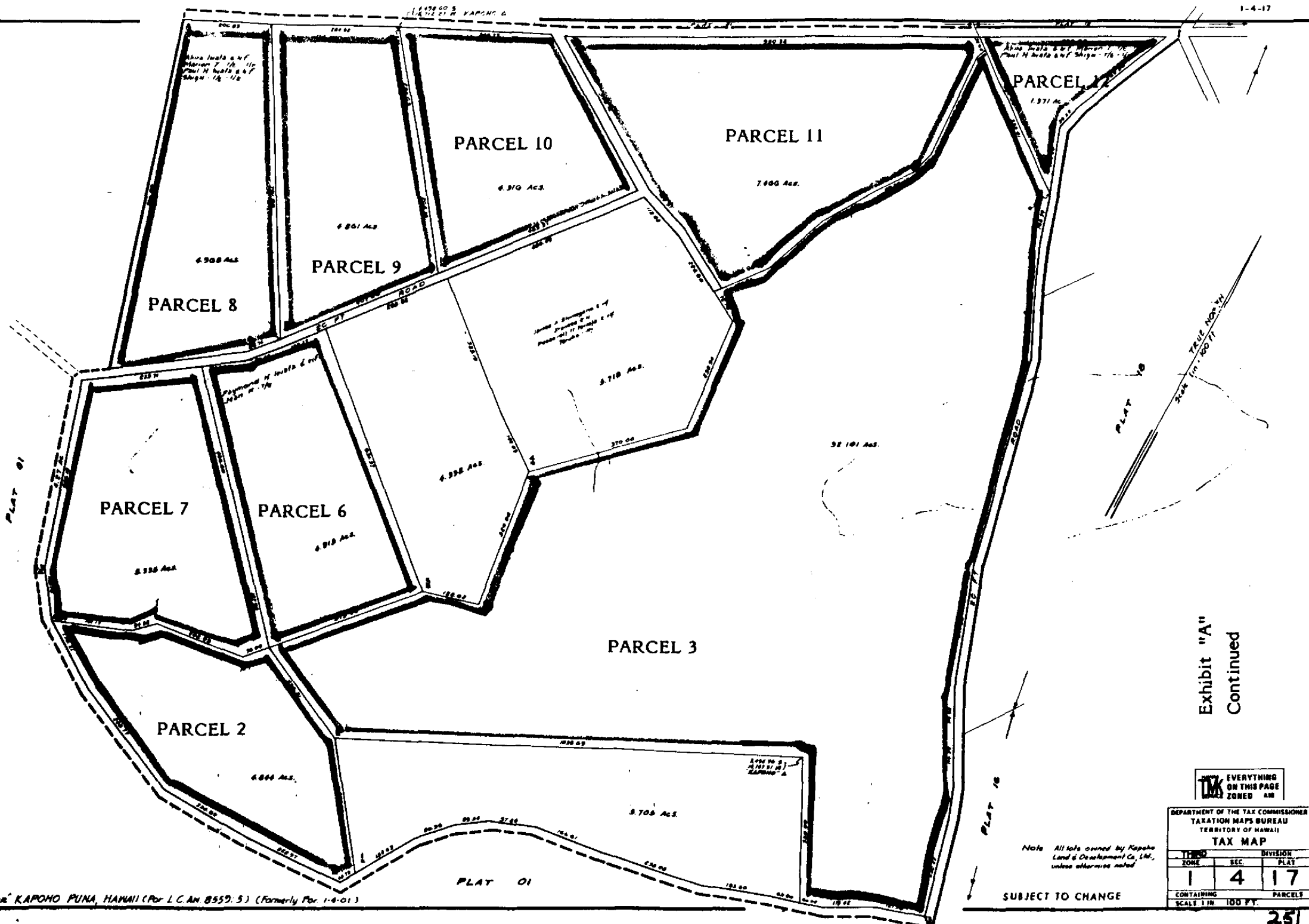


Exhibit "A"
Continued

EVERYTHING
ON THIS PAGE
ZONED AM

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII

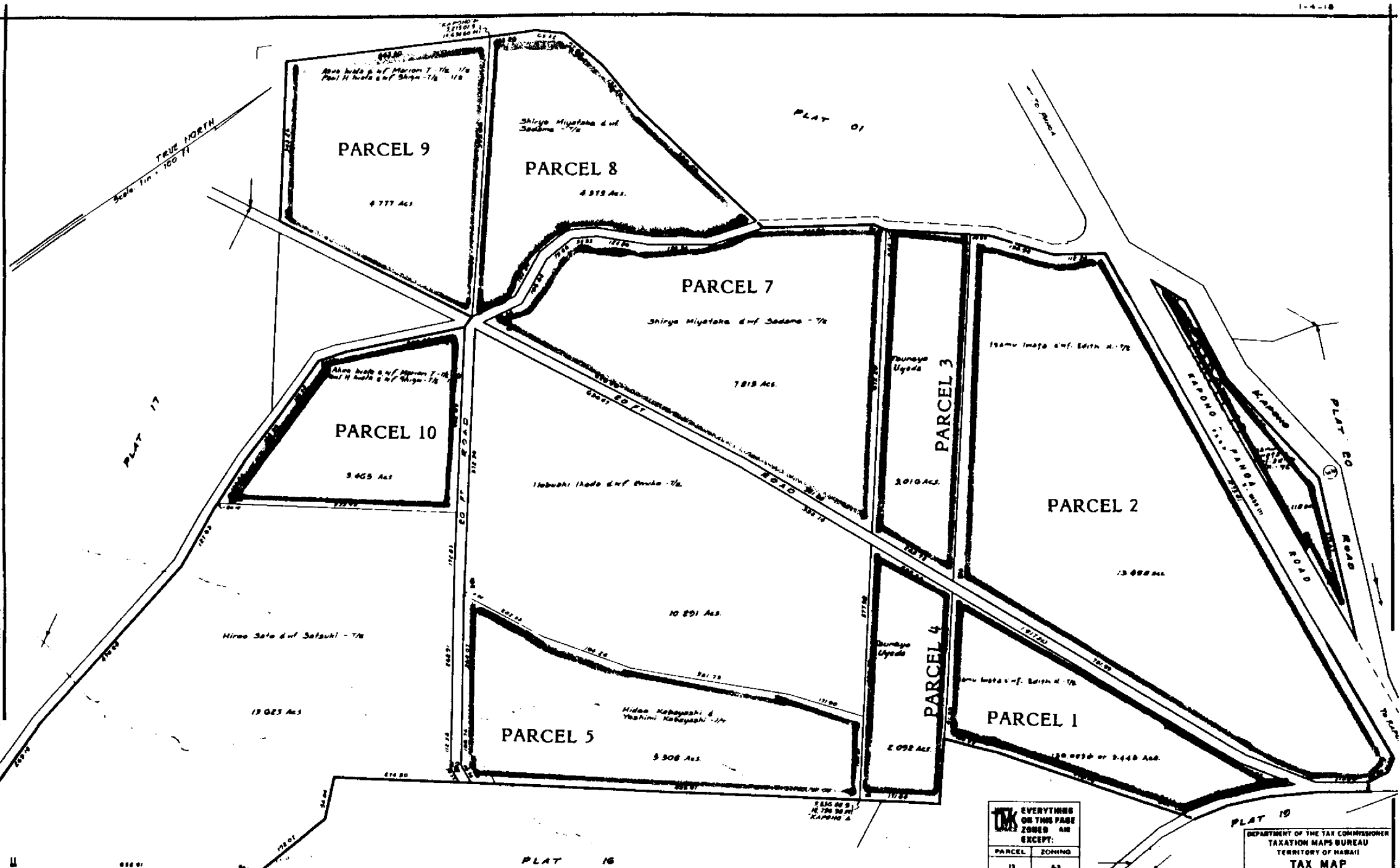
TAX MAP

ITEM	SEC.	DIVISION
1	4	17
CONTAINING		PARCELS
SCALE 1 IN		100 FT.

Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

SUBJECT TO CHANGE

POE KAPOHO PUNA, HAWAII (Per L.C. Am. B559, 5) (Formerly Plat 1-4-01)



EVERYTHING ON THIS PAGE ZONED AS EXCEPT:	
PARCEL	ZONING
13	A3

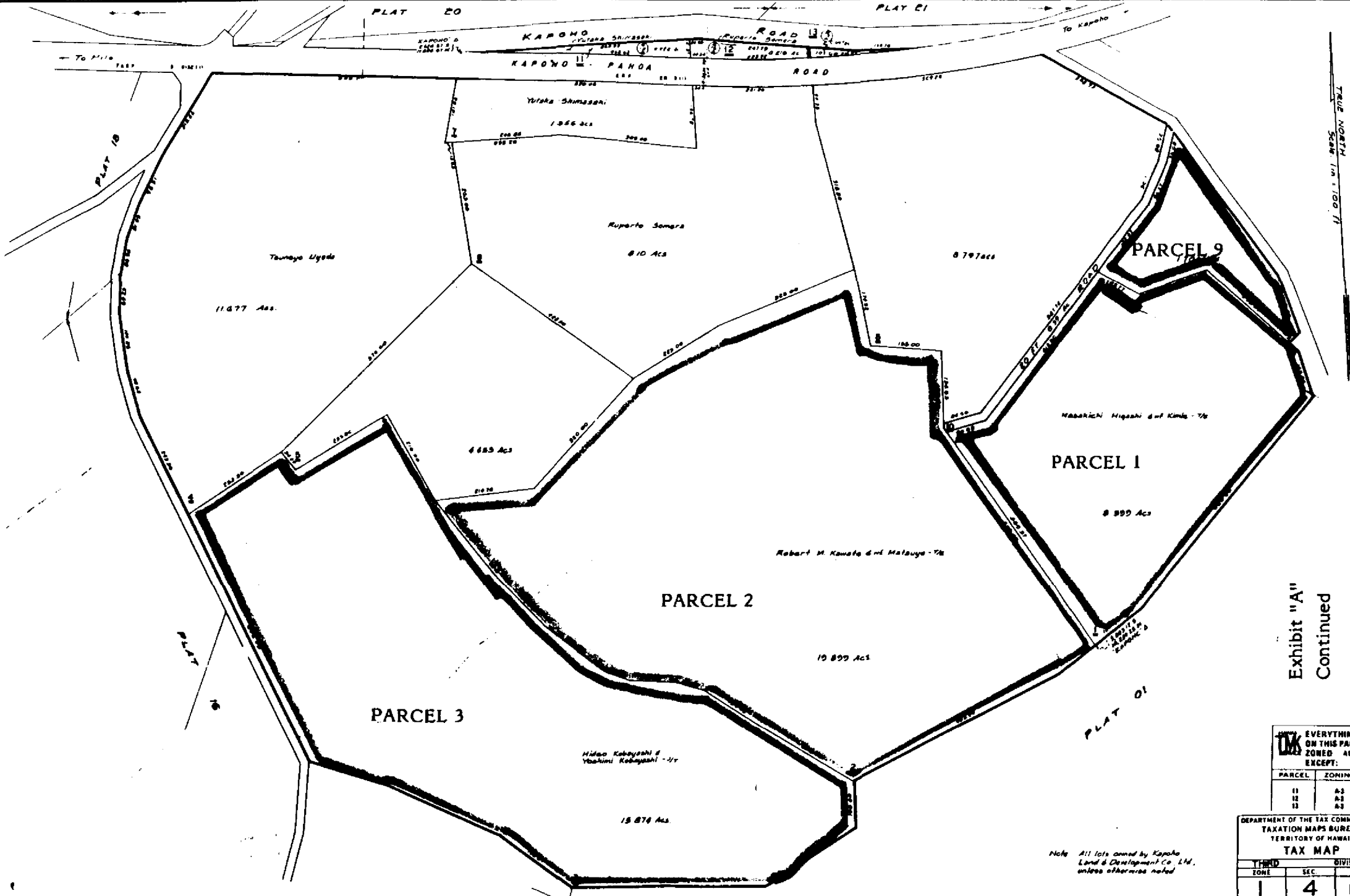
Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

PLAT 19

DEPARTMENT OF THE TAX COMMISSIONER			
TAXATION MAPS BUREAU			
TERRITORY OF HAWAII			
TAX MAP			
TOWN	SEC.	DIVISION	
1	4	18	
CONTAINING			PARCELS
SCALE 1 IN = 100 FT.			

Exhibit "A"
Continued

SUBJECT TO CHANGE



Direct Tracing - This is a true copy of the original map
TBA/S/L Supt. PLAC

Exhibit "A"
Continued

DK	
EVERYTHING ON THIS PAGE ZONED A10 EXCEPT:	
PARCEL	ZONING
11	A2
12	A3
13	A3

DEPARTMENT OF THE TAX COMMISSIONER TAXATION MAPS BUREAU TERRITORY OF HAWAII		
TAX MAP		
TERR	DIVISION	
ZONE	SEC.	PLAT
1	4	19
CONTAINING		PARCELS
SCALE 1 IN		100 FT.

Note All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted

SUBJECT TO CHANGE

From KAPOHO PUNA, HAWAII (Per L.C. No. 8559:5) (Formerly Par 1-4-01)

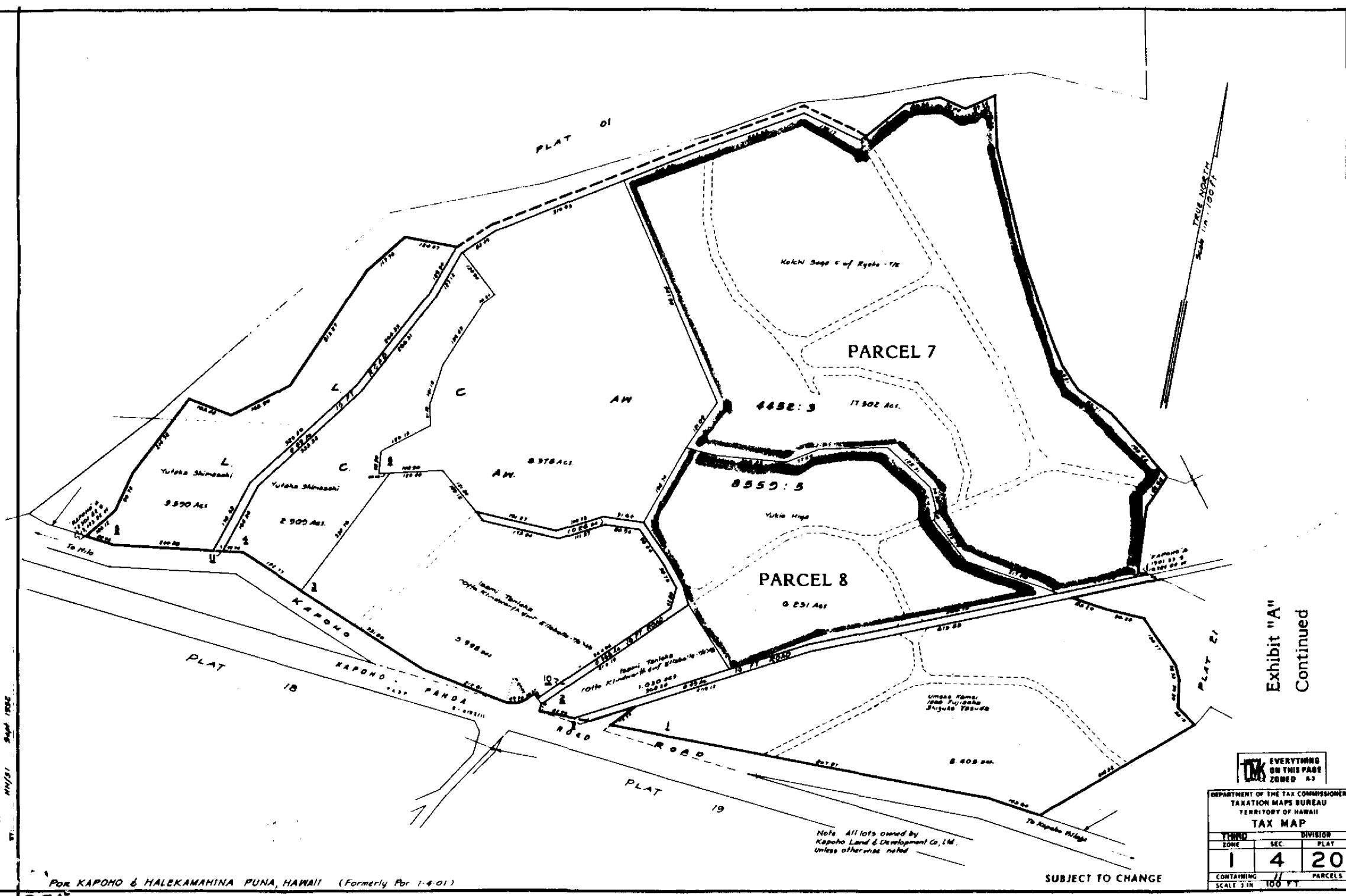


Exhibit "A"
Continued

TK EVERYTHING ON THIS PAGE IS ZONED A-2		
DEPARTMENT OF THE TAX COMMISSIONER TAXATION MAPS BUREAU TERRITORY OF HAWAII		
TAX MAP		
TERRITORY	ZONE	DIVISION
1	4	20
CONTAINING		PARCELS
SCALE 1 IN = 100 FT		

Note: All lots owned by Kapoho Land & Development Co., Ltd. unless otherwise noted.

SUBJECT TO CHANGE

FOR KAPOHO & HALEKAMAHINA PUNA, HAWAII (Formerly Por 1-4-01)

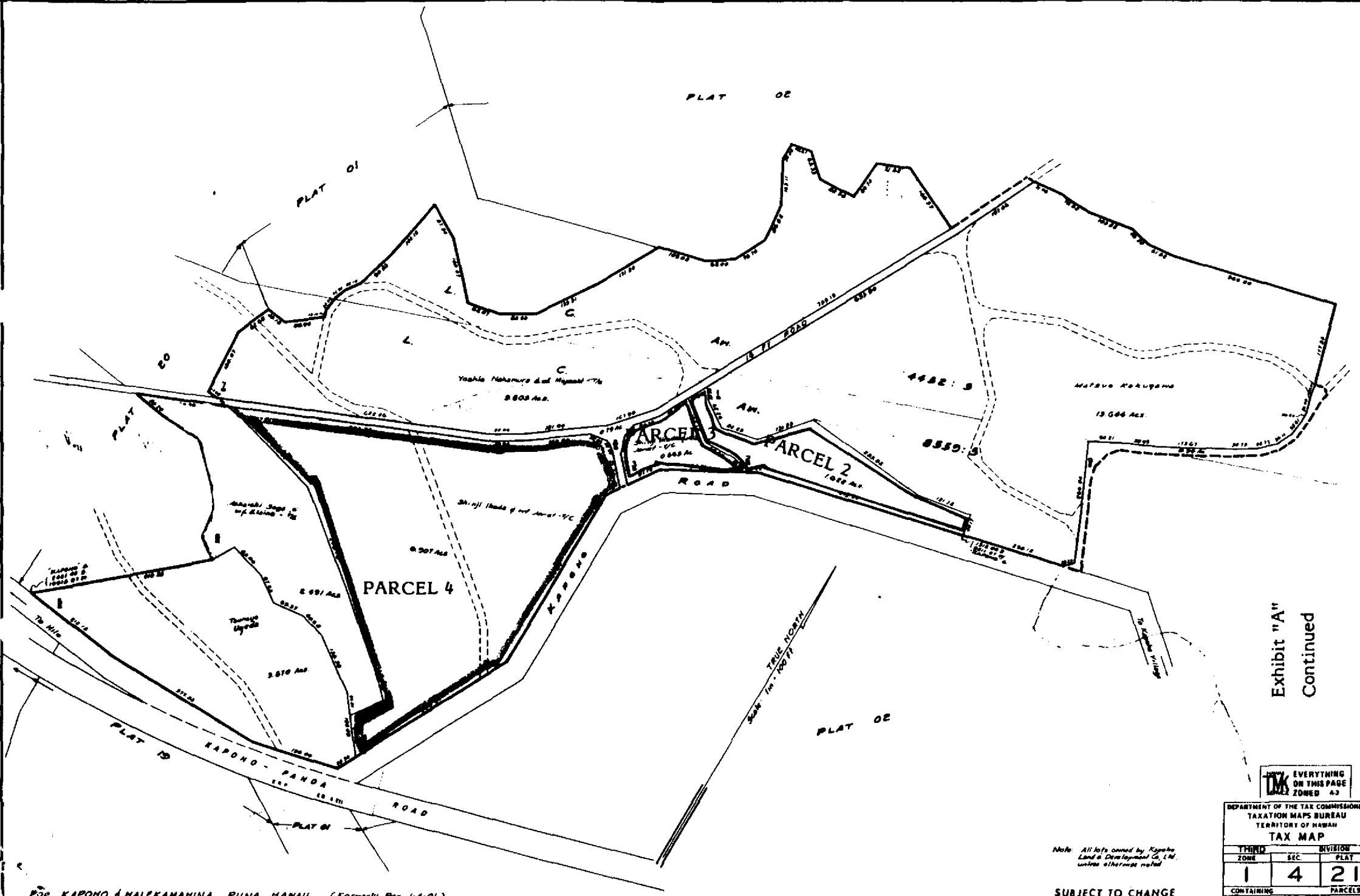


Exhibit "A"
Continued

EVERYTHING ON THIS PAGE ZONED A-3

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP

TRIMD ZONE	DIVISION	
	SEC.	PLAT
1	4	21
CONTAINING		PARCELS
SCALE 1 IN. = 100 FT.		

Note: All lots owned by Kapeho Land & Development Co., Ltd. unless otherwise noted.

SUBJECT TO CHANGE

FOR KAPONO & MALEKANAHINA PUNA, HANAII (Formerly Por 1-4-01)

RESERVE

PUNA

FOREST PLAT 10

State of Hawaii

State of Hawaii
GRANT 9275
2,526.2 Ac.

1,007.70 AC.
(1,985.0 AC.)

State of Hawaii
22.0 Ac.

UPPER KAIMU

Gr. 6328
Gr. 6330
Gr. 6331
Gr. 6332
Gr. 6333
Gr. 6334
Gr. 6335
Gr. 6336
Gr. 6337
Gr. 6338
Gr. 6339
Gr. 6340
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Gr. 6394
Gr. 6395
Gr. 6396
Gr. 6397
Gr. 6398
Gr. 6399
Gr. 6400

PLAT 10

PLAT 06

UPPER PUNA ROAD

KAPAAHU SECTION I

PUNA

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HULUNANAI

Louise (Kamae) John 1/2
Jennie K. (Edina) Awa 1/2
Dessie K. Watson & Rob. Clarence A. 1/2
Mary K. Kahilohina 1/2
Charles Awa 1/2
Lessa K. Kalihonohu 1/2
James H. Pa 1/2

PARCEL 10:
Joseph Kumalo, Jr.
Thelma K. Cochran,
Carole K. Richards,
Alfred Kumalo,
Betty K. Akana,
Clarence Kumalo,
Richard Akana,
Raymond K. Osheloa, Jr.

Orig. No. 2267
Source: Tax Maps
By: R.D.

KAPAAHU: 6 KIKALA, (MAUKA POR) PUNA, HAWAII

Dropped Parcels - 1

3 151

THIRD DIVISION		
ZONE	SEC.	PLAT
1	2	08
CONTAINING PARCELS		
SCALE: 1 in. = 1000 ft.		

ADVANCE SHEET
SUBJECT: [illegible]

PRINTED

W A I K A H E K A H A W A I I A N S E C . 1 H E I K I
HAWAIIAN SEC. 6 ACRES
PLAT 22 PLAT 23 PLAT 43 PLAT 44

James Campbell Trust Estate

PUNA FOREST RESERVE

5-15666

50124Ac.

James Campbell Trust Estate

16843.291 Ac.

1830.0 Ac.

UPPER KAMU HOMESTEADS

KAMAILI HOMESTEADS

PLAT 08

SECTION PLAT

3 153

THIRD DIVISION		
ZONE	SEC.	PLAT
1	2	10
CONTAINING		PARCELS
SCALE: 1 in = 2000 ft.		

ADVANCE SHEET
SUBJECT TO CHANGE

PRINTED

PUNA FOREST RESERVE, PUNA, HAWAII

418 21
2 18.

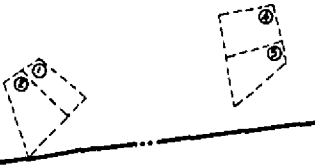
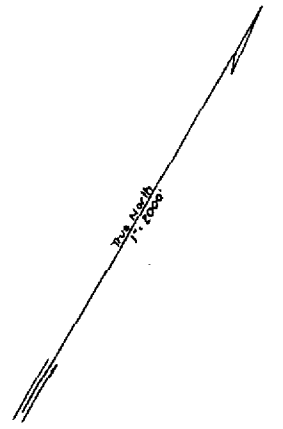
Dwg. No: E202
Source: Tax Maps
By: E.D.

SECTION A
SECTION U
PLAT 01

MAKUU
POPOKI
SECTION 5
PLAT 08
HALONA

KAOHE
PLAT 01
HOMESTEADS

SEC. 3, PLAT 09

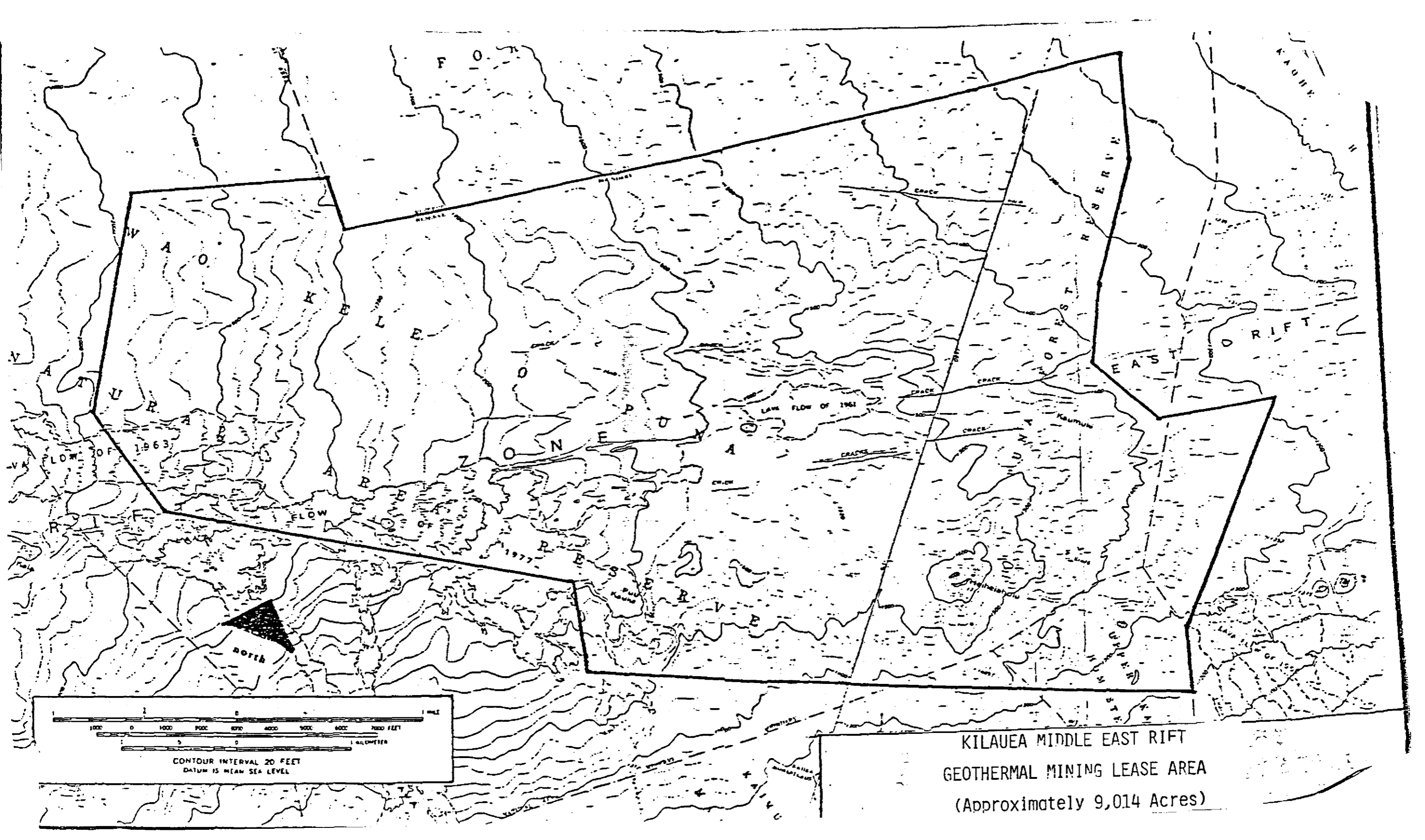


STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

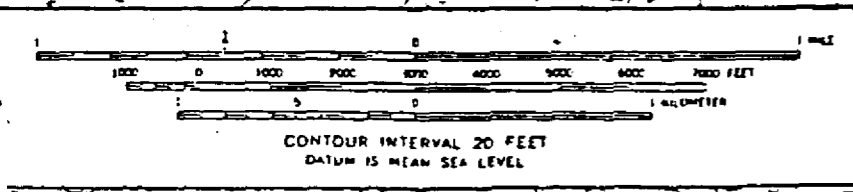
On this 23rd day of July, 1987, before me appeared Fred E. Trotter, W. H. McVay, P. R. Cassidy and H. C. Cornuelle, to me personally known, who, being by me duly sworn did say that Fred E. Trotter, W. H. McVay, P. R. Cassidy and H. C. Cornuelle are President, sole shareholder and sole director of F. E. TROTTER, INC., W. H. McVAY, INC., P. R. CASSIDAY, INC. and H. C. CORNUELLE, INC., respectively, Hawaii professional corporations and Trustees under the Will and of the Estate of James Campbell, Deceased; that the foregoing instrument was signed by each of the persons listed as appearing before me in the respective capacity above indicated (that is, as President of a Hawaii professional corporation which is a Trustee); that said corporations are corporations without seals; that the President of each and every corporation which is a signatory hereto acknowledged that the aforesaid instrument was signed on behalf of said corporation with the authority of the sole shareholder and director and as the free act and deed of said corporation as such Trustee.

Lydia J. Hannemann
Notary Public, State of Hawaii

My Commission expires: Feb. 11, 1988



KILAUEA MIDDLE EAST RIFT
GEOHERMAL MINING LEASE AREA
(Approximately 9,014 Acres)



(e) The lessee shall designate a local representative empowered to receive service of civil or criminal process, and notices and orders of the chairperson issued pursuant to these rules as prescribed in §13-183-64.

NOTIFICATION
of person-in-charge

(f) In all cases where exploration or mining operations are not to be conducted by the lessee but are to be conducted under an approved operating agreement, assignment or other arrangement, a designation of operator shall be submitted to the chairperson prior to commencement of operations. The designation shall be accepted as authority of the operator or the local representative to act for the mining lessee and to sign any papers or reports required under these rules. All changes of address and any termination of the authority of the operator shall be immediately reported, in writing, to the chairperson.

(g) The lessee shall commence mining operations on the leased lands within three years from the date of execution of the lease or upon the expiration of any research period approved by the board under §182-7, Hawaii Revised Statutes; provided that if the operator holds more than one lease this provision shall not apply to the other leases so long as the lessee is actively and on a substantial scale engaged in mining operations on at least one lease. Notwithstanding the above, the board may impose ~~more~~ stringent development requirements for any particular lease.

more than one lease is being mined actively

[Eff. JUN 22 1981] (Auth: HRS §182-14)
(Imp: HRS §§182-7, 182-14)

~~§13-183-55~~ ~~Plans of operations required.~~ (a) A lessee shall not commence operations of any kind prior to submitting to the chairperson ~~for board approval~~ a plan of operations. The plan shall include:

- (1) The proposed location and elevation above sea level of derrick, proposed depth, bottom hole location, casing program, proposed well completion program and the size and shape of drilling site, excavation and grading planned, and location of existing and proposed access roads;
- (2) Existing and planned access, access controls and lateral roads;
- (3) Location and source of water supply and road building material;
- (4) Location of camp sites, air-strips, and other supporting facilities;
- (5) Other areas of potential surface disturbance;
- (6) The topographic features of the land and the drainage patterns;
- (7) Methods for disposing of well effluent and other waste;

GEOHERMAL RESOURCES MINING LEASES

1. General Lease No. S-4602 (HGP-A) to The Research Corporation of the University of Hawaii
Location: Kapoho, Puna, Hawaii
Area: 4.1 acres
Effective: June 19, 1979
2. R-1 to: Trustees of B. P. Bishop Trust Estate
Location: Puna, Hawaii
Area: 3486.70 acres
Effective: March 1, 1981
Sublease assigned to Puna Geothermal Venture from Thermal Power Company & Dillingham Corporation
3. R-2 to: Kapoho Land Partnership
Location: Kapoho, Puna, Hawaii
Area: 815.997 acres
Effective: March 1, 1981
Sublease assigned to Puna Geothermal Venture from Thermal Power Company & Dillingham Corporation
4. R-3 to: Barnwell Geothermal Corporation
Location: Pohoiki & Keahialaka, Puna, Hawaii
Area: 769.1368 acres
Effective: September 1, 1981
5. Pending direct lease to Puna Geothermal Venture
Location: Kapoho, Puna, Hawaii
Area: 279.377 acres (aggregate)
Approved by Land Board on August 27, 1982

Land covered by the Board of Land and Natural Resources award of Direct Lease of Geothermal Resources on August 27, 1982.

THIRD TAXATION DIVISION

All those certain parcels of Land, (portion of the land described in and covered by Royal Patent No. 8177, Land Commission Award No. 8559, Apana 5 to C. Kanaina), situate lying and being at Kapoho, District of Puna, County and State of Hawaii more particularly described below:

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1	4	17	6	4.915
Subtotal I				150.477

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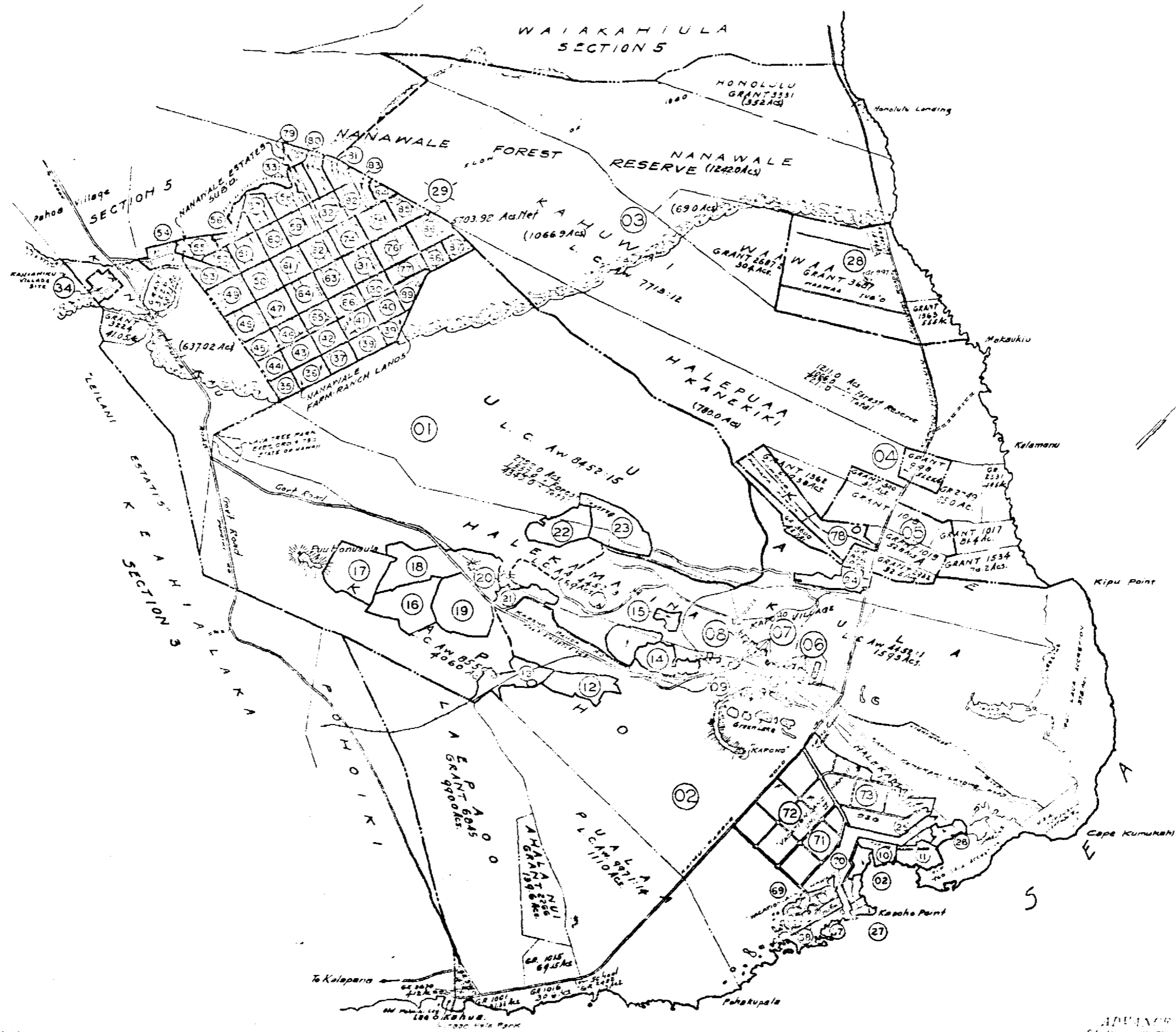
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<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
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1	4	20	8	6.231
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All of those certain parcels of land (a portion of the land described in and covered by Royal Patent No. 4497, Land Commission Award No. 8559, Land Patent No. 8177, Apana 5 to C. Kanaina, situate at Kapoho, Puna, Hawaii more particularly described below:

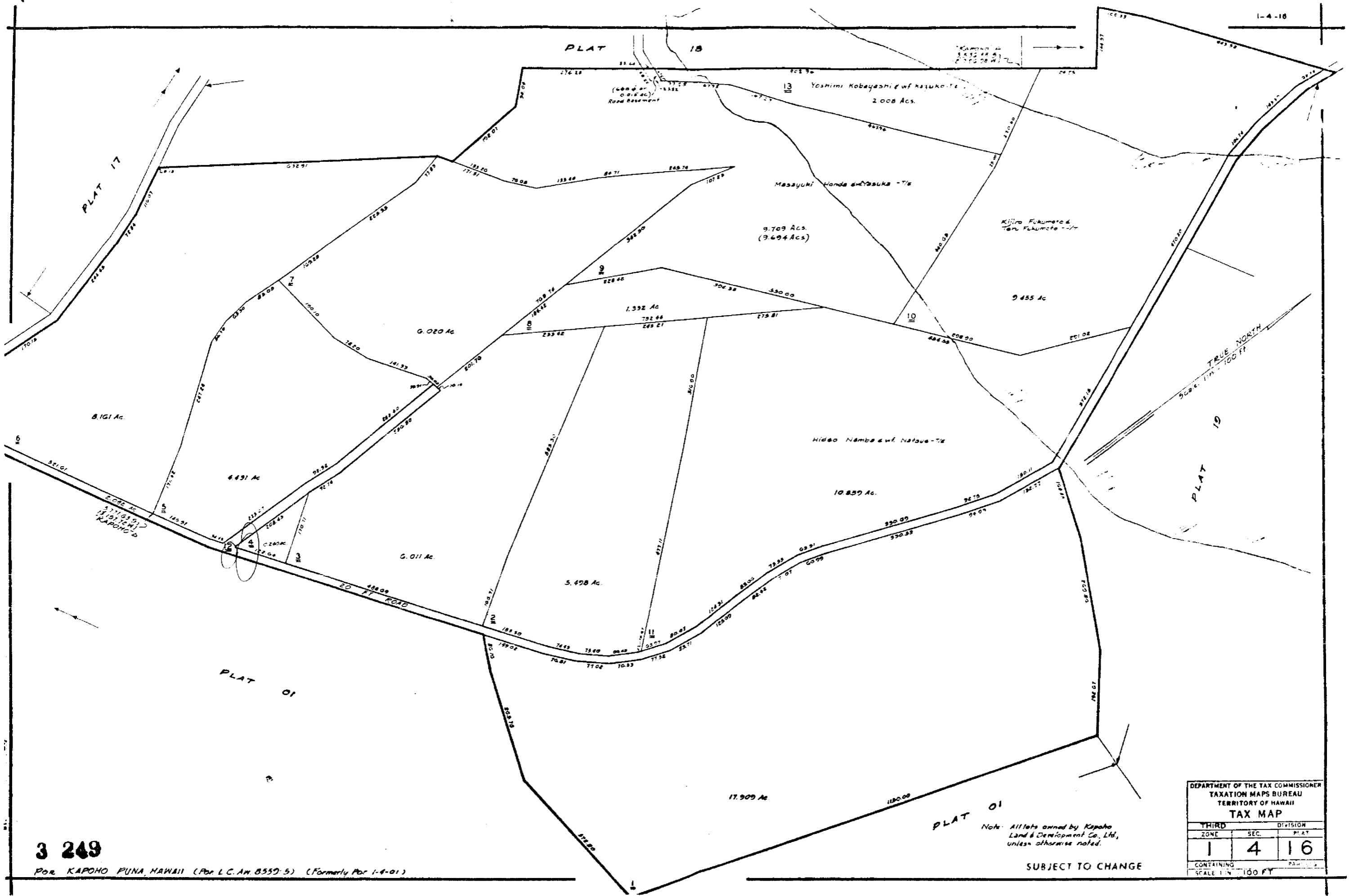
Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
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1	4	16	6	8.161
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1	4	17	11	7.466
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Subtotal III				<u>105.167</u>
Subtotal I				150.477
Subtotal II				23.733
Subtotal III				<u>105.167</u>
Grand Total				<u>279.377</u>



DROPPED PLAT: ED

THIRD DIVISION	
ZONE	SEC
1	4
CONTAINING PLAT	
SCALE: 1" = 2000 FT	



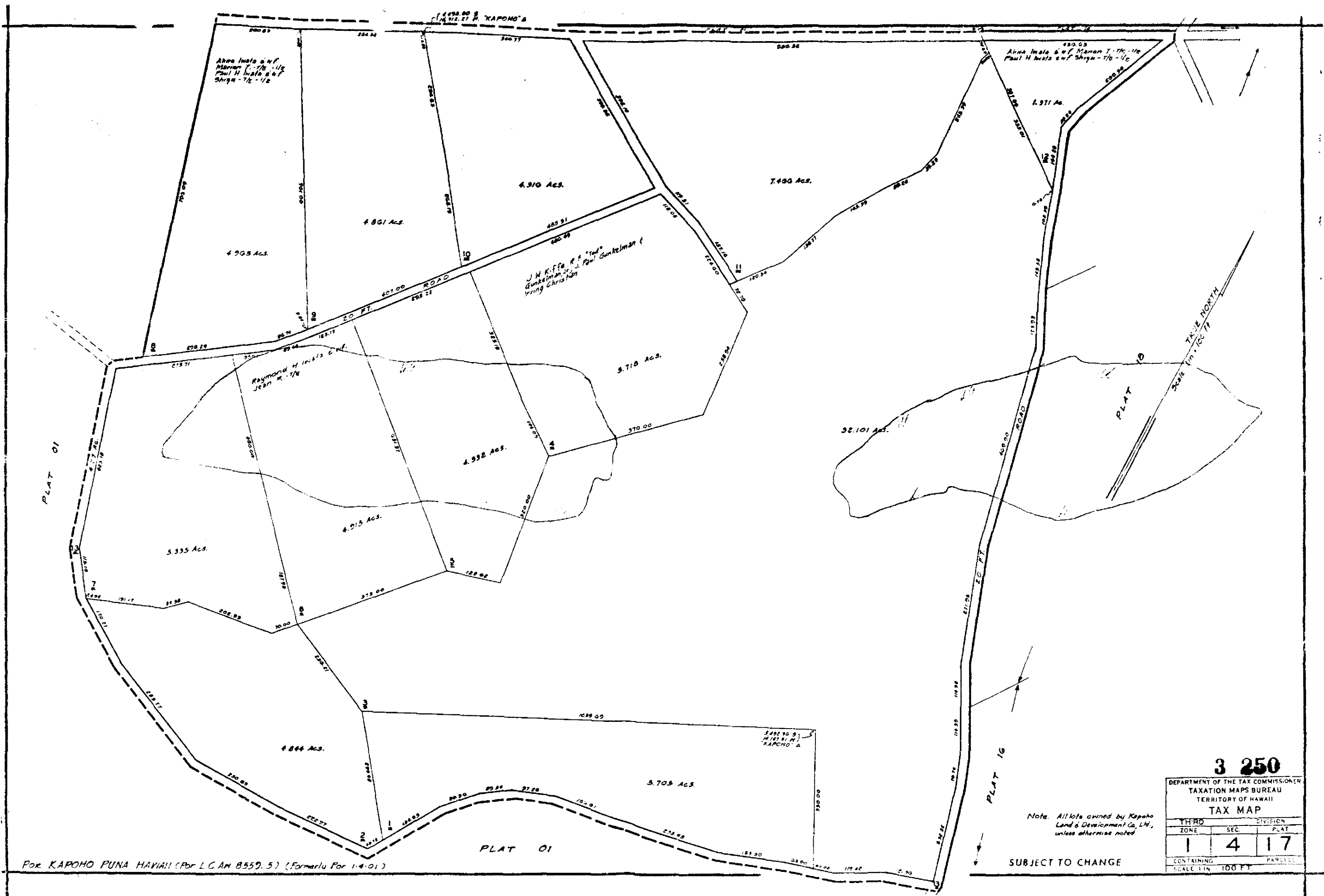
3 249

FOR KAPOHO PUNA, HAWAII (FOR L.C.A. 8559-5) (Formerly For 1-4-01)

PLAT 01
 Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

SUBJECT TO CHANGE

DEPARTMENT OF THE TAX COMMISSIONER		
TAXATION MAPS BUREAU		
TERRITORY OF HAWAII		
TAX MAP		
THIRD	DIVISION	
ZONE	SEC.	PLAT
1	4	16
CONTAINING		
SCALE 1 IN. = 100 FT.		



POR. KAPOHO PUNA HAWAII (Por. L.C. AN. 8559.5) (Formerly Por. 1-4-01)

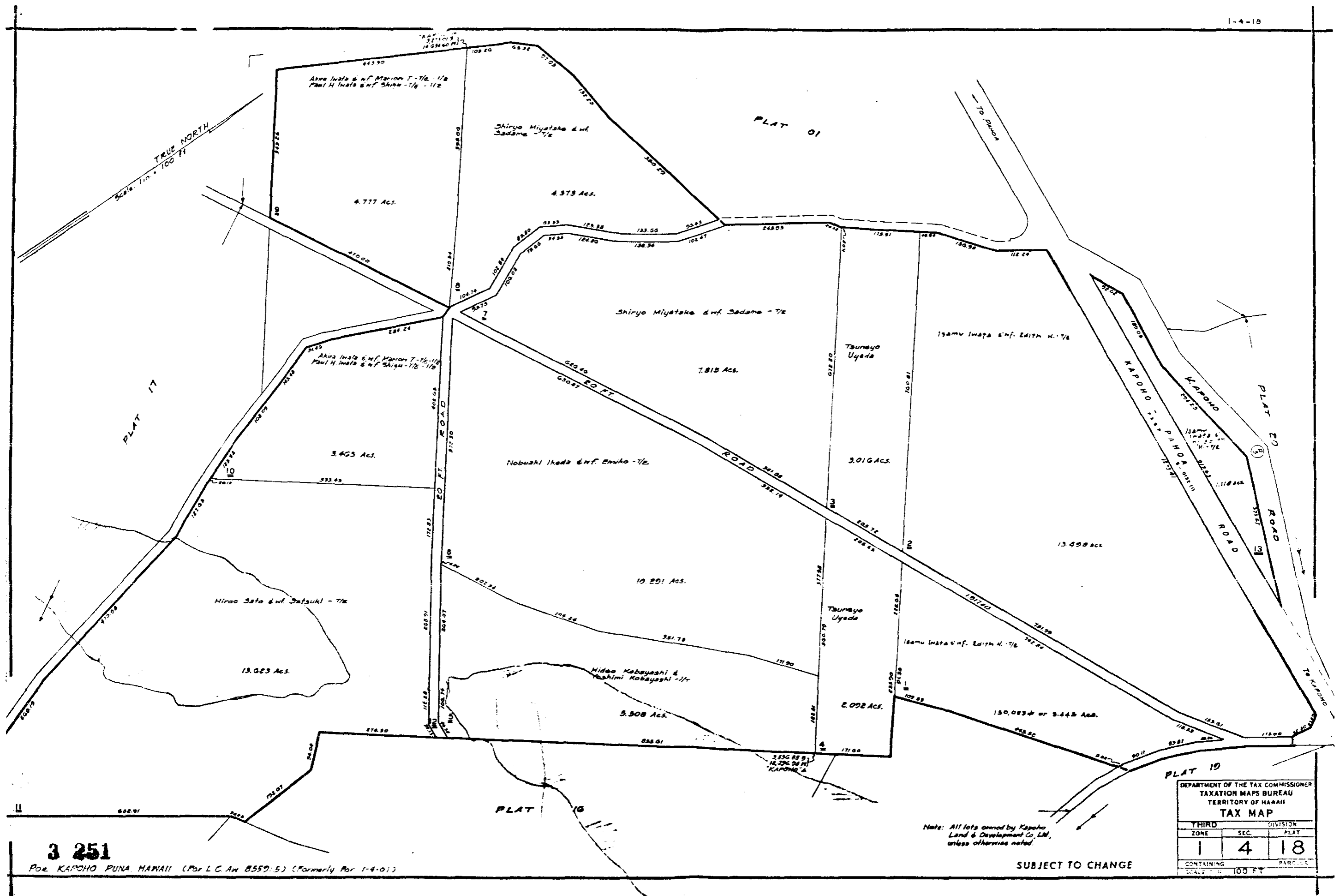
3 250

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP

THIRD		DIVISION	
ZONE	SEC	PLAT	
1	4	17	
CONTAINING		PARCELS	
SCALE 1 IN		100 FT	

Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted

SUBJECT TO CHANGE



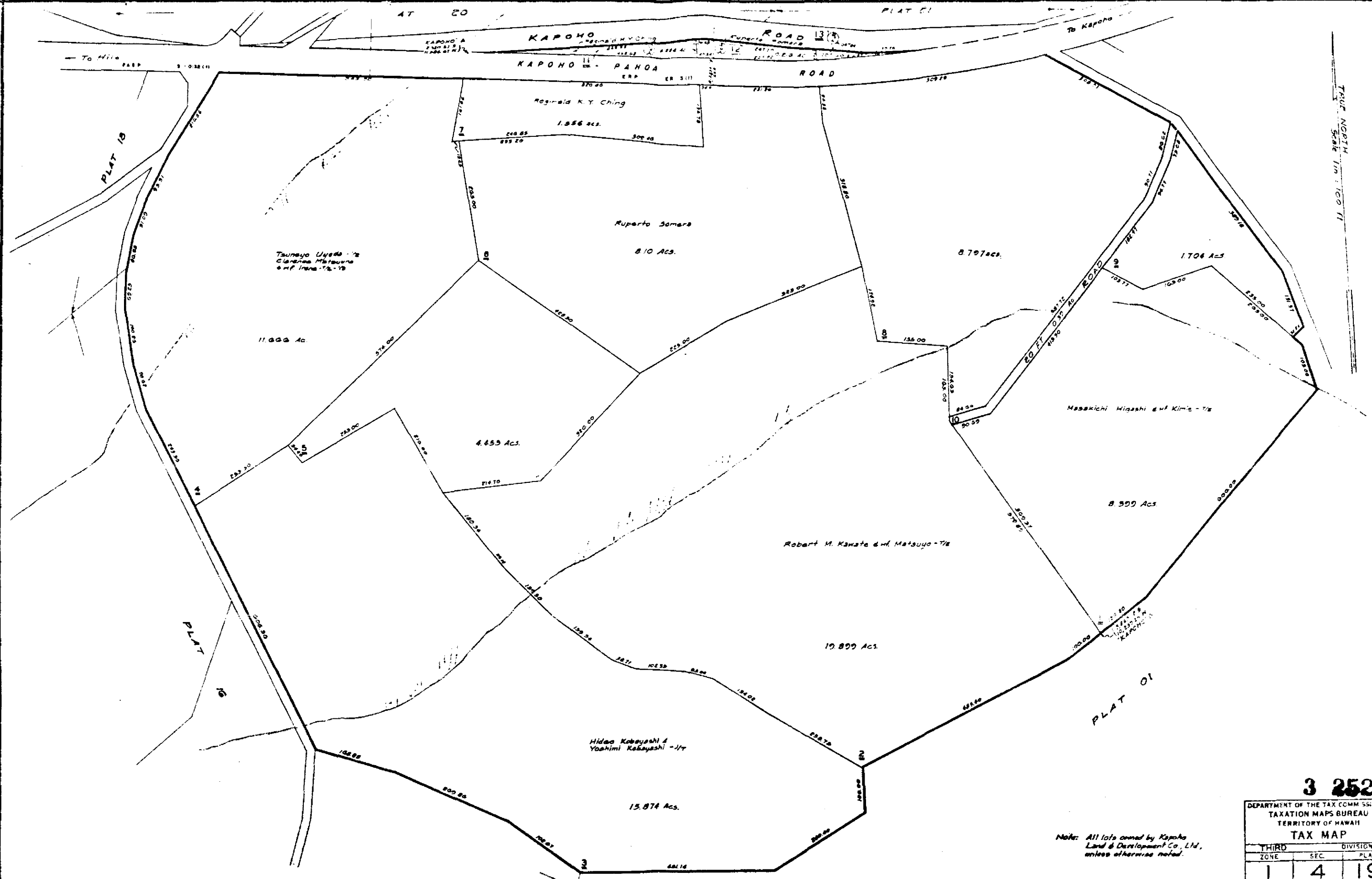
3 251

FOR KAPOHO PUNA, HAWAII (FOR L.C. AN 8559-5) (Formerly For 1-4-01)

Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

SUBJECT TO CHANGE

DEPARTMENT OF THE TAX COMMISSIONER			
TAXATION MAPS BUREAU			
TERRITORY OF HAWAII			
TAX MAP			
THIRD	DIVISION		
ZONE	SEC.	PLAT	
1	4	18	
CONTAINING			PARCELS
SCALE: 1" = 100 FT.			



TRUE NORTH
Scale 1 in = 100 ft

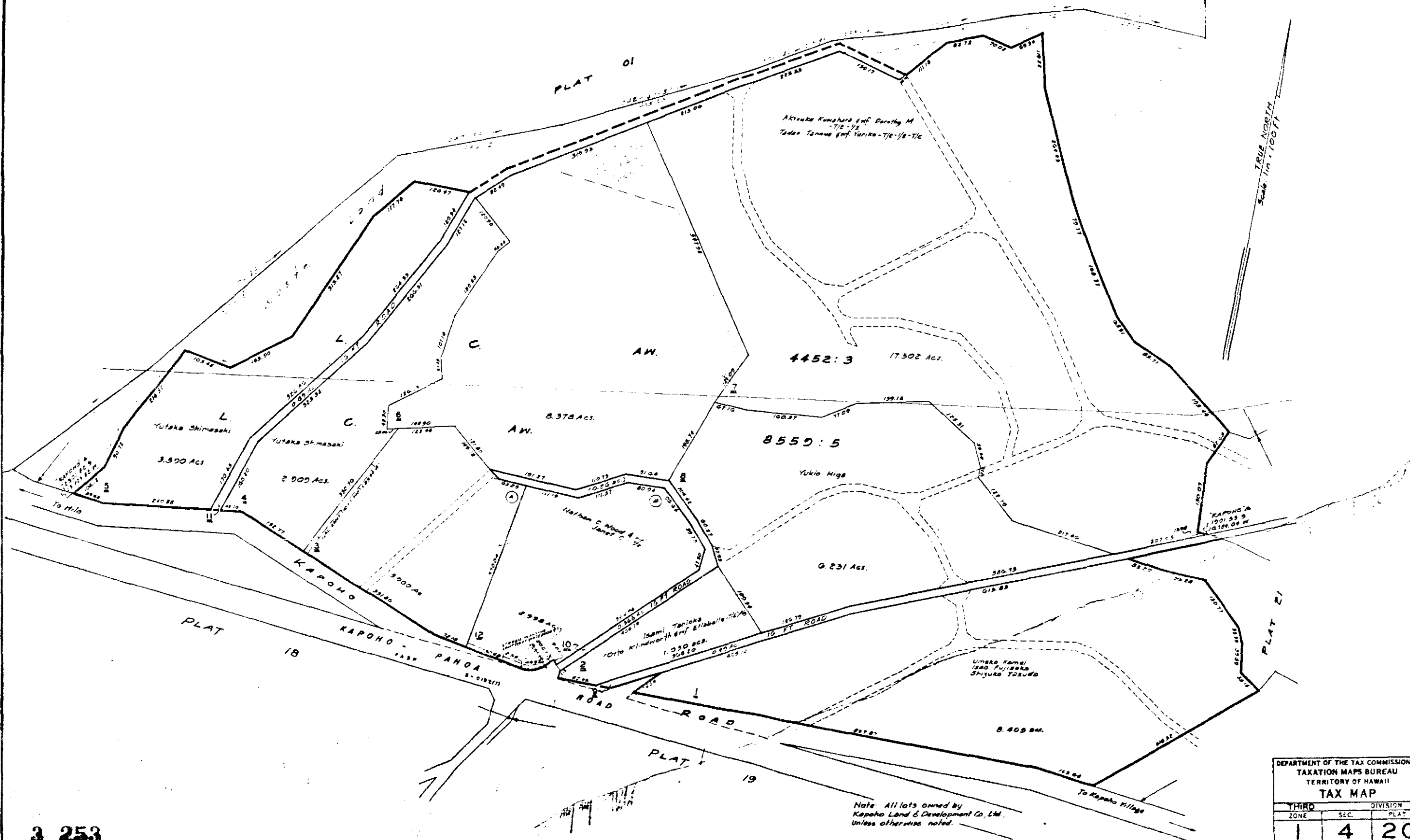
3 252

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP

THIRD		DIVISION	
ZONE	SEC.	PLAT	
1	4	19	
CONTAINING		PARCELS	
SCALE 1 IN = 100 FT			

Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

SUBJECT TO CHANGE



TRUE NORTH
Scale 1 in. = 100 FT

Note: All lots owned by
Kapoho Land & Development Co., Ltd.
unless otherwise noted.

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP

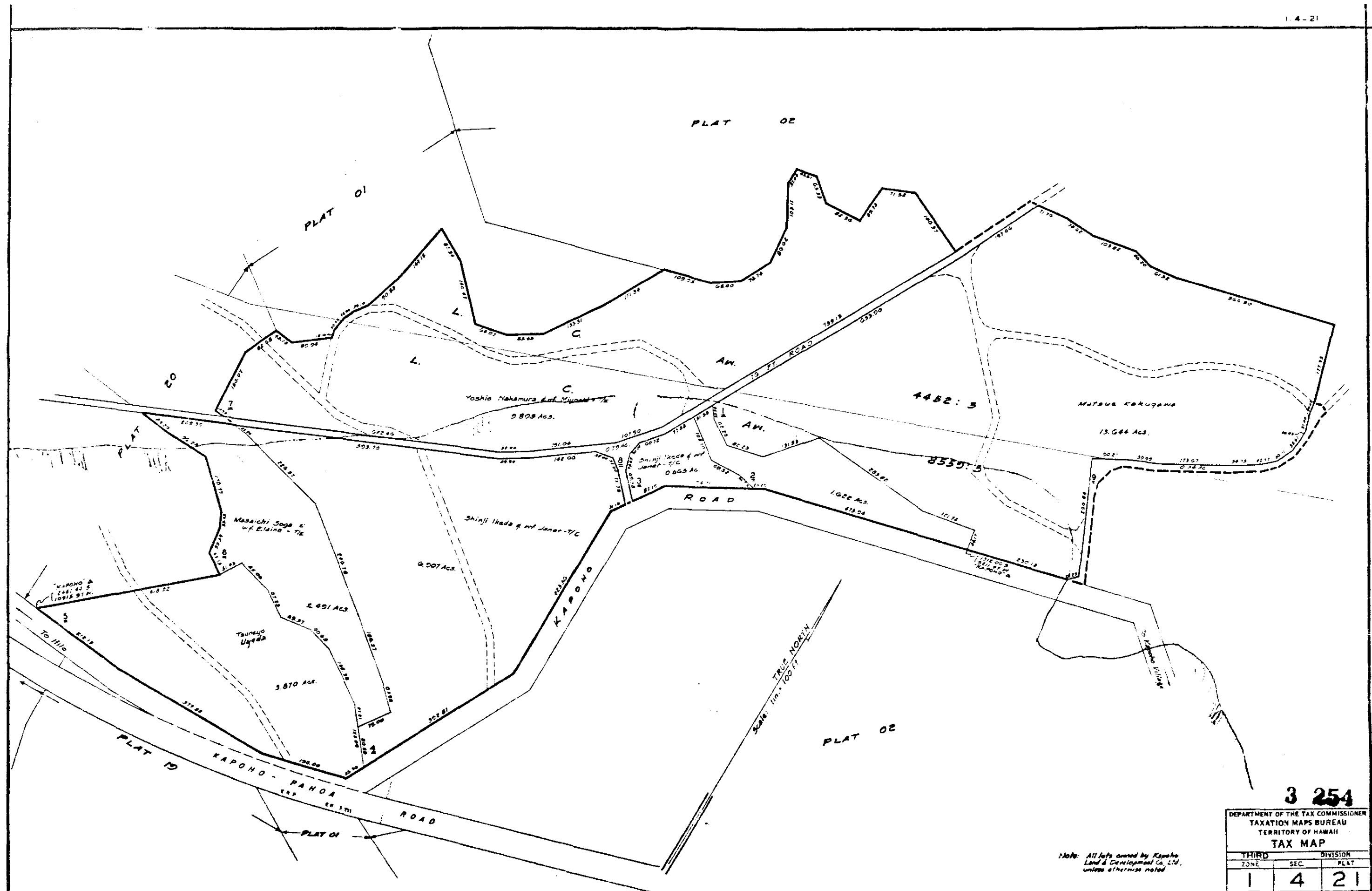
THIRD		DIVISION	
ZONE	SEC.	PLAT	
1	4	20	

CONTAINING
SCALE 1 in. = 100 FT

SUBJECT TO CHANGE

3 253

Por. KAPOHO & HALEKAMAHINA PUNA, HAWAII (Formerly Por. 1-4-01)



3 254

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP

THIRD		DIVISION	
ZONE	SEC.	PLAT	
1	4	21	
CONTAINING		PARCELS	
SCALE 1" = 100 FT.			

Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

SUBJECT TO CHANGE

FOR KAPOHO & HALEKAMAHINA PUNA, HAWAII (Formerly Por 1-4-01)

OESI Power Corporation

May 29, 1991

VIA REGISTERED MAIL
RETURN RECEIPT REQUESTED

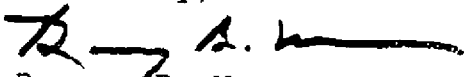
State of Hawaii
Department of Land and
Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Re: Geothermal Lease No. 067, Puna Geothermal Venture, Hawaii
County, Hawaii

Gentlemen:

Enclosed is our check No. 16678, dated May 21, 1991, in the amount of \$279.00 for payment in full of annual rental under the Geothermal Resources Mining Lease No. R-4 (Geothermal Lease No. 067) by and between Puna Geothermal Venture, Lessee, and the State of Hawaii, Lessor, dated June 1, 1985; Memorandum recorded as Recorder's Document No. 85-125689, in Liber 19058, page 188, Bureau of Conveyances, State of Hawaii.

Sincerely,



Barney B. Menor
Hawaii Land Manager

Encl.

DEPT. OF LAND AND
NATURAL RESOURCES
STATE OF HAWAII

31 JUL 23 1991 02

RECEIVED
JUL 2 1991

PUNA GEOTHERMAL VENTURE

101 Aupuni Street, Suite 1014B, Hilo, Hawaii 96720
14-3860 Kapoho Pahoa Road, Pahoa, Hawaii 96778

(808) 961-2184
(808) 961-2786

Facsimile (808) 961-3531
Facsimile (808) 935-5562

RECEIVED
JUL 23 1991

31 JUL 23 1991

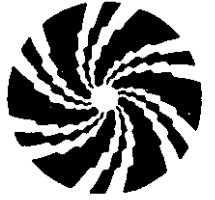
DEPT. OF LAND AND NATURAL
RESOURCES
STATE OF HAWAII

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. Show to whom delivered, date, and addressee's address. (Extra charge) 2. Restricted Delivery (Extra charge)

<p>3. Article Addressed to:</p> <p>STATE OF HAWAII DEPT. OF LAND AND NATURAL RESOURCES P.O. Box 621 Honolulu, Hawaii 96809 (LN No. 067)</p>	<p>4. Article Number 261814097</p> <p>Type of Service:</p> <p><input checked="" type="checkbox"/> Registered <input type="checkbox"/> Insured <input type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>Always obtain signature of addressee or agent and DATE DELIVERED.</p>
<p>5. Signature - Address X</p>	<p>8. Addressee's Address (ONLY if requested and fee paid)</p>
<p>6. Signature - Agent X</p>	
<p>7. Date of Delivery MAY 30 1991</p>	

ORMAT®
RECEIVED



90 JUL 12 P 3: 56

July 10, 1990
Reference No. 90248.011

DIV. OF WATER &
LAND DEVELOPMENT

Mr. Dean Nakano
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

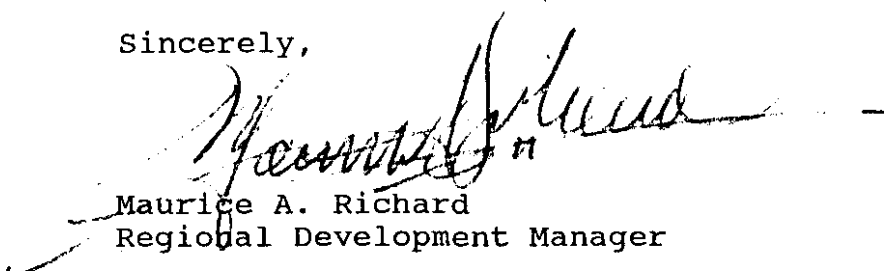
Subject: Puna Geothermal Venture Project
Certificates of Insurance

Dear Mr. Nakano:

Attached please find for your information and files a copy of our current insurance certificates for the Hawaii State Leases designated R-1, R-2, and R-4. I trust these are in order.

We have been informed that the original insurance certificates were sent to your office in May of this year via the postal service. If the original insurance certificates are needed, or if there are any questions, please contact me in the Hilo office at 961-2184.

Sincerely,


Maurice A. Richard
Regional Development Manager

Attachments

PUNA GEOTHERMAL VENTURE

- | | | | | |
|---|---|--------------------------|---|--------------------------|
| <input type="checkbox"/> 101 Aupuni Street Suite 1014-B, Hilo, Hawaii 96720 | • | Telephone (808) 961-2184 | • | Facsimile (808) 961-3531 |
| <input type="checkbox"/> 610 East Glendale Ave., Sparks, Nevada 89431-5811 | • | Telephone (702) 356-9111 | • | Facsimile (702) 356-9125 |

CERTIFICATE OF INSURANCE

THE POLICIES DESCRIBED BELOW ARE SUBJECT TO EXCLUSIONS, NEGATIVELY AMENDS, EXTENDS OR ALTERS THE COVERAGE

AND THIS VERIFICATION OF INSURANCE NEITHER AFFIRMATIVELY NOR DENIES THE EXCLUSIONS AFFORDED BY OR CONTAINED IN SAID POLICIES

RECEIVED
MAY - 4 1990
FORMAT

NAME AND ADDRESS OF AGENCY
Adams & Porter
510 Bering Drive
Houston, Texas 77057-408
713/975-7500

COMPANIES AFFORDING COVERAGES
COMPANY LETTER **A** Lloyds of London and London Companies
COMPANY LETTER **B**

NAME AND ADDRESS OF INSURED
Puna Geothermal Venture
Hilo Lagoon Office Center
Hilo, Hawaii 96720

COMPANY LETTER **C**
COMPANY LETTER **D**
COMPANY LETTER **E**

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (\$000)					
				EACH OCCURRENCE	AGGREGATE				
A	<input checked="" type="checkbox"/> GENERAL LIABILITY COMPREHENSIVE FORM <input checked="" type="checkbox"/> PREMISES-OPERATIONS EXPLOSION AND COLLAPSE HAZARD <input checked="" type="checkbox"/> UNDERGROUND HAZARD PRODUCTS/COMPLETED OPERATIONS HAZARD <input checked="" type="checkbox"/> CONTRACTUAL INSURANCE BROAD FORM PROPERTY DAMAGE <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS BROAD FORM-CGL <input checked="" type="checkbox"/> PERSONAL INJURY	A&PH 13185	4-1-91	BODILY INJURY	\$	\$			
				PROPERTY DAMAGE	\$	\$			
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 1,000	\$ 1,000			
				PERSONAL INJURY	\$	\$			
				AUTOMOBILE LIABILITY COMPREHENSIVE FORM OWNED			BODILY INJURY (EACH PERSON)	\$	\$
				NON-OWNED			BODILY INJURY (EACH ACCIDENT)	\$	\$
							PROPERTY DAMAGE	\$	\$
							BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$	\$
A	<input checked="" type="checkbox"/> EXCESS LIABILITY UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM	A&PH 13185	4-1-91	BODILY INJURY AND PROPERTY DAMAGE COMBINED	\$ 10,000	\$ 10,000			
	WORKERS' COMPENSATION and EMPLOYER'S LIABILITY			STATUTORY	\$	(EACH ACCIDENT)			
A	OTHER Operators Extra Expense	A&PH 13185	4-1-91	\$10,000					

DESCRIPTION OF OPERATIONS/LOCATION/VEHICLES
As respects State of Hawaii Lease #1000, it is hereby understood and agreed Kaponu Land Partnership, State of Hawaii, Hawaii State Board of Land and Natural Resources, Chairman of the Board of Land and Natural Resources, and the Board of Land and Natural Resources are added as Additional Insureds.

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 30 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

NAME AND ADDRESS OF CERTIFICATE HOLDER:
State of Hawaii
Board of Land and Natural Resources
1151 Punch Bowl Street
Honolulu, Hawaii 96813

DATE ISSUED: April 30, 1990 /ks
[Signature]
AUTHORIZED REPRESENTATIVE

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
GEOTHERMAL RESOURCE LEASE PERFORMANCE BOND

Bond No.

KNOW ALL MEN BY THESE PRESENTS:

That we Amor VIII Corporation, as PRINCIPAL, and American Motorists Insurance Company, as SURETY, organized and doing business under and by virtue of the laws of the STATE OF ~~Illinois~~ and/or authorized to do business in the STATE OF HAWAII, are held and firmly bound unto the STATE OF HAWAII and the Occupier of the land covered by Lease hereinafter described, in the sum of TEN THOUSAND AND NO/100 (\$10,000.00), lawful money of the UNITED STATES OF AMERICA, to be paid to the STATE OF HAWAII, BOARD OF LAND AND NATURAL RESOURCES, for which payment, we bind ourselves, our heirs, executors, successors and assigns, jointly and severally, firmly by these presents.

The conditions of the foregoing obligation is such that if the above bounded PRINCIPAL shall comply with the provisions of GEOTHERMAL RESOURCES MINING LEASE NO. R-4, Regulation No. B relating to Leasing of Geothermal Resources and applicable laws of this State, then this obligation shall be void; otherwise, to remain in full force and effect.

AND, IT IS HEREBY STIPULATED AND AGREED:

1. That any change, extension or alteration permitted by said Lease, regulation or laws of the State shall not in any way affect the obligation of said Surety on this bond; and that said Surety does hereby waive notice of any such change, extension or alteration.

2. That suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in said Lease as liquidated damages which shall be forfeited to the State of Hawaii, its successors or assigns, in the event of a breach of any, or all, or any part of, the stipulations, agreements, covenants or conditions contained in said contract or in this bond, in accordance with the terms hereof.

3. That this bond shall also inure to the benefit of the Occupier of the leased land and any and all persons entitled to file claims for labor performed

STATE OF HAWAII)
) SS
COUNTY OF HAWAII)

On this 16th day of May, 1990, before me personally appeared Hezy Ram and Maurice Richard, to me personally known, who did say that they are the Principal and Hawaii Resident Agent, respectively, of Amor VIII Corporation, and that the seal affixed to the instrument is the corporate seal of the corporation, and that Hezy Ram and Maurice Richard acknowledged the instrument to be the free act and deed of the corporation.

l.s.

Christine E. Iha
My commission expires: 9/30/90

STATE OF CALIFORNIA,)
COUNTY OF Los Angeles) SS.

007 07 1991



On this _____ day of _____, 19____, before me Angela A. Rego
_____ personally appeared William J. Shupper

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument as the Attorney-in-Fact of AMERICAN MOTORISTS INSURANCE COMPANY, and acknowledged to me that he (she) subscribed the name of said company thereto as Surety, and his (her) own name as Attorney-in-Fact



Angela A. Rego
NOTARY PUBLIC

bond, and that said Surety does hereby waive notice of any such change, extension or alteration.

2. That suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in said Lease as liquidated damages shall be considered as, and held to be, fixed and liquidated damages which shall be forfeited to the State of Hawaii, its successors or assigns, in the event of a breach of any, or all, or any part of, the stipulations, agreements, covenants or conditions contained in said contract or in this bond, in accordance with the terms hereof.

3. That this bond shall also inure to the benefit of the Occupier of the leased land and any and all persons entitled to file claims for labor performed or material furnished in said work so as to give such Occupier(s) a right of action against said PRINCIPAL and SURETY and so as to give any and all such persons a right of action as contemplated in Section 507-17, Hawaii Revised Statutes.

WITNESS our hands and seals at Los Angeles

State of California, this 7th day of October
1988.

PRINCIPAL:

Amor VIII Corporation

BY J. H. P. O'Connell

Hawaii Resident Agent

BY Maesata Reed

APPROVED AS TO FORM:

William H. San
Deputy Attorney General

2/5/90

SURETY:

American Motorists Insurance Company

BY William J. Shupper

Its Attorney-in-Fact



POWER OF ATTORNEY

Know All Men By These Presents:

That the American Motorists Insurance Company, a corporation organized and existing under the laws of the State of Illinois, and having its principal office in Long Grove, Illinois, does hereby appoint *****
William J. Shupper of Los Angeles, California*****

its true and lawful agent(s) and attorney(s)-in-fact, to make, execute, seal, and deliver during the period beginning with the date of issuance of this power and ending December 31, 1988, unless sooner revoked for and on its behalf as surety, and as its act and deed: **Any and all bonds and undertakings provided the amount of no one bond or undertaking exceeds TWO MILLION DOLLARS (\$2,000,000.00)*******

EXCEPTION: NO AUTHORITY is granted to make, execute, seal and deliver any bond or undertaking which guarantees the payment or collection of any promissory note, check, draft or letter of credit.

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

This appointment may be revoked at any time by the American Motorists Insurance Company.

The execution of such bonds and undertakings in pursuance of these presents shall be as binding upon the said American Motorists Insurance Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal office in Long Grove, Illinois.

THIS APPOINTMENT SHALL CEASE AND TERMINATE WITHOUT NOTICE AS OF DECEMBER 31, 1988.

This Power of Attorney is executed by authority of a resolution adopted by the Board of Directors of said American Motorists Insurance Company on May 20, 1981 at Long Grove, Illinois, a true and accurate copy of which is hereinafter set forth and is hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the Chairman, the President, or any Vice President, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings, obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

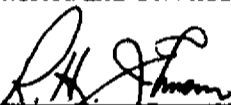
This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 20th day of May, 1981:

"VOTED, That the signature of the Chairman of the Board, the Chairman, the President, any Vice President, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to resolution adopted by the Board of Directors on May 20th, 1981 and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company."


In Testimony Whereof, the American Motorists Insurance Company has caused this instrument to be signed and its corporate seal to be affixed by its authorized officers, this 8th day of August, 19 86.

Attested and Certified:

AMERICAN MOTORISTS INSURANCE COMPANY


R. H. Johnson, Secretary




By 
G. H. Kasbohm, Vice President

STATE OF ILLINOIS
COUNTY OF LAKE ss

I, Olga W. Bennett, a Notary Public, do hereby certify that G. H. Kasbohm and R. H. Johnson personally known to me to be the same persons whose names are respectively as Vice President and Secretary of the American Motorists Insurance Company, a Corporation of the State of Illinois, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary act for the uses and purposes therein set forth.




Olga W. Bennett, Notary Public

My commission expires: November 18, 1988



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

April 16, 1990

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

KEITH W. AHUE
MANABU TAGOMORI
RUSSELL N. FUKUMOTO

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

Mr. Maurice A. Richard
Hawaii Regional Development Manager
Puna Geothermal Venture
101 Aupuni Street, Suite 1014-B
Hilo, Hawaii 96720

Dear Mr. Richard:

The Department of Attorney General has reviewed the bonds submitted by Amor VIII Corporation (Puna Geothermal Venture) and has identified several matters requiring your attention.

Geothermal Resource Lease Performance Bond Nos. 3SM 714 750 00, 3SM 714 751 00, and 3SM 714 752 00; and Geothermal Resources Well Indemnity Bond No. 3SM 714 749 00 require notarized signatures of both the Principal and Hawaii Resident Agent.

Enclosed are the original documents which have been signed and approved as to form by the Deputy Attorney General. However, please note that this prior approval is dependent upon the aforementioned conditions being satisfied. If the above requirements are not met, the Deputy Attorney General's signature shall be considered invalid.

Please have these documents signed and completed as required. Should you have any questions, please contact George Matsumoto at 548-7619.

Very truly yours,

A handwritten signature in black ink, appearing to read "Manabu Tagomori", written over a large, stylized flourish.

MANABU TAGOMORI
Deputy Director

DN:ln
Encl.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
GEOTHERMAL RESOURCE LEASE PERFORMANCE BOND

Bond No.

KNOW ALL MEN BY THESE PRESENTS:

That we Amor VIII Corporation, as PRINCIPAL, and American Motorists Insurance Company, as SURETY, organized and doing business under and by virtue of the laws of the STATE OF ~~Illinois~~ and/or authorized to do business in the STATE OF HAWAII, are held and firmly bound unto the STATE OF HAWAII and the Occupier of the land covered by Lease hereinafter described, in the sum of TEN THOUSAND AND NO/100 (\$10,000.00), lawful money of the UNITED STATES OF AMERICA, to be paid to the STATE OF HAWAII, BOARD OF LAND AND NATURAL RESOURCES, for which payment, we bind ourselves, our heirs, executors, successors and assigns, jointly and severally, firmly by these presents.

The conditions of the foregoing obligation is such that if the above bounded PRINCIPAL shall comply with the provisions of GEOTHERMAL RESOURCES MINING LEASE NO. R-4, Regulation No. 8 relating to Leasing of Geothermal Resources and applicable laws of this State, then this obligation shall be void; otherwise, to remain in full force and effect.

AND, IT IS HEREBY STIPULATED AND AGREED:

1. That any change, extension or alteration permitted by said Lease, regulation or laws of the State shall not in any way affect the obligation of said Surety on this bond; and that said Surety does hereby waive notice of any such change, extension or alteration.

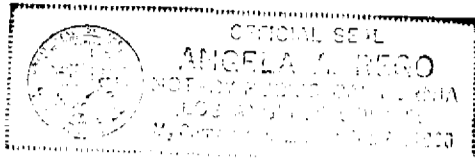
2. That suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in said Lease as liquidated damages which shall be forfeited to the State of Hawaii, its successors or assigns, in the event of a breach of any, or all, or any part of, the stipulations, agreements, covenants or conditions contained in said contract or in this bond, in accordance with the terms hereof.

3. That this bond shall also inure to the benefit of the Occupier of the leased land and any and all persons entitled to file claims for labor performed

STATE OF CALIFORNIA,)
COUNTY OF Los Angeles) SS.



On this _____ day of _____, 19____, before me Angela A. Rego
_____ personally appeared William J. Shupper
personally known to me (or proved to me on the basis of satisfactory evidence) to be
the person whose name is subscribed to this instrument as the Attorney-in-Fact of
AMERICAN MOTORISTS INSURANCE COMPANY, and acknowledged to me that he (she) subscribed
the name of said company thereto as Surety, and his (her) own name as Attorney-in-Fact



Angela A. Rego
NOTARY PUBLIC



bond; and that said Surety does hereby waive notice of any such change, extension or alteration.

2. That suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in said Lease as liquidated damages shall be considered as, and held to be, fixed and liquidated damages which shall be forfeited to the State of Hawaii, its successors or assigns, in the event of a breach of any, or all, or any part of, the stipulations, agreements, covenants or conditions contained in said contract or in this bond, in accordance with the terms hereof.

3. That this bond shall also inure to the benefit of the Occupier of the leased land and any and all persons entitled to file claims for labor performed or material furnished in said work so as to give such Occupier(s) a right of action against said PRINCIPAL and SURETY and so as to give any and all such persons a right of action as contemplated in Section 507-17, Hawaii Revised Statutes.

WITNESS our hands and seals at Los Angeles

State of California, this 7th day of October,
1988.

PRINCIPAL:

Amor VIII Corporation

By J. ARON

By _____

APPROVED AS TO FORM:

William R. San
Deputy Attorney General

2/5/96

SURETY:

American Motorists Insurance Company

By W. J. Shupper

Its William J. Shupper
Attorney-in-Fact



POWER OF ATTORNEY

Know All Men By These Presents:

That the American Motorists Insurance Company, a corporation organized and existing under the laws of the State of Illinois, and having its principal office in Long Grove, Illinois, does hereby appoint *****
William J. Shupper of Los Angeles, California*****

its true and lawful agent(s) and attorney(s)-in-fact, to make, execute, seal, and deliver during the period beginning with the date of issuance of this power and ending December 31, 1988, unless sooner revoked for and on its behalf as surety, and as its act and deed: **Any and all bonds and undertakings provided the amount of no one bond or undertaking exceeds TWO MILLION DOLLARS (\$2,000,000.00)*******

EXCEPTION: NO AUTHORITY is granted to make, execute, seal and deliver any bond or undertaking which guarantees the payment or collection of any promissory note, check, draft or letter of credit.

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

This appointment may be revoked at any time by the American Motorists Insurance Company.

The execution of such bonds and undertakings in pursuance of these presents shall be as binding upon the said American Motorists Insurance Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal office in Long Grove, Illinois.

THIS APPOINTMENT SHALL CEASE AND TERMINATE WITHOUT NOTICE AS OF DECEMBER 31, 1988.

This Power of Attorney is executed by authority of a resolution adopted by the Board of Directors of said American Motorists Insurance Company on May 20, 1981 at Long Grove, Illinois, a true and accurate copy of which is hereinafter set forth and is hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the Chairman, the President, or any Vice President, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings, obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."


This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 20th day of May, 1981:

"VOTED, That the signature of the Chairman of the Board, the Chairman, the President, any Vice President, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to resolution adopted by the Board of Directors on May 20th, 1981 and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company."

In Testimony Whereof, the American Motorists Insurance Company has caused this instrument to be signed and its corporate seal to be affixed by its authorized officers, this 8th day of August, 1986.

Attested and Certified:

AMERICAN MOTORISTS INSURANCE COMPANY


R. H. Johnson, Secretary



By


G. H. Kasbohm, Vice President

STATE OF ILLINOIS
COUNTY OF LAKE SS

I, Olga W. Bennett, a Notary Public, do hereby certify that G. H. Kasbohm and R. H. Johnson personally known to me to be the same persons whose names are respectively as Vice President and Secretary of the American Motorists Insurance Company, a Corporation of the State of Illinois, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary act for the uses and purposes therein set forth.




Olga W. Bennett, Notary Public

My commission expires: November 18, 1988

JOHN WAIHEE
GOVERNOR



APR 2 1990

WARREN PRICE, III
ATTORNEY GENERAL

CORINNE K. A. WATANABE
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII
DEPARTMENT OF THE ATTORNEY GENERAL
LAND/TRANSPORTATION DIVISION
ROOM 300, KEKUANAO'A BUILDING
465 SOUTH KING STREET
HONOLULU, HAWAII 96813

March 28, 1990

Mr. Manabu Tagomori
Deputy Director
Hawaii Commission on Water
Resource Management
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Tagomori:

Re: Geothermal Mining Lease Performance Bond and
Well Indemnity Bonds

We are writing in response to your January 24, 1990 request for approval as to form of geothermal mining lease performance bonds and well indemnity bonds. We call to your attention three matters that need completion before these bonds are legally proper.

First, the True Geothermal Bond Number 5615149 needs to be signed by the principal and notarized.

Second, the Geothermal Exploration and Development Corporation Bond must be countersigned by a Hawaii resident agent because its surety is not a Hawaii registered company.

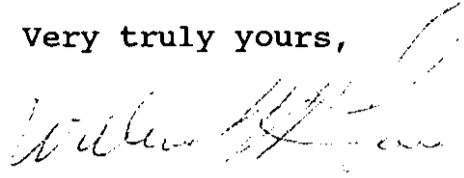
Third, the Amor VIII corporation bonds need notaries on the signatures and they need to be countersigned by their Hawaii resident agent with documentation.

We have signed and approved as to form in order to save time in processing these bonds. However, this prior approval is expressly dependent upon the above three conditions being satisfied. If the above conditions are not met, then the approval signatures should be considered invalid and stricken. Please so advise the relevant parties when you forward the documents for completion.

Mr. Manabu Tagomori
March 28, 1990
Page 2

If you have any questions, please feel free to contact me.

Very truly yours,



William M. Tam
Deputy Attorney General

WMT:ksy
3012E



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

January 24, 1990

L-D-90-2-15
L-D-90-2-16
WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
Keith W. Ahue
MANABU TAGOMORI
RUSSELL N. FUKUMOTO

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

MEMORANDUM

TO: Honorable Warren Price III, Attorney General
ATTN: Johnson Wong, Deputy Attorney General
Land/Transportation Division
FROM: Manabu Tagomori, Deputy Director
SUBJECT: Review for Approval as to Form of Geothermal Resource
Mining Lease Performance Bonds and Well Indemnity Bonds

JAN 26 1 40 PM '90

Attached for your review and approval as to form are the required bonds filed by True Geothermal Energy Company, Ormat Energy Systems, Inc., and Barnwell Geothermal Corporation in compliance with our Department's Administrative Rules, Chapter 13-183, Sections 13-183-34 and 13-183-68.

Please note, that while the language contained in section 13-183-34, asks for the submittal of bond on a form approved by the Board, no such "generic" version of a bond has been utilized by the Department. However, the Department has no objections to the current body of language contained in each of the bonds submitted to date, and as such, asks for your review as to form of these bonds.

The specific bonds submitted are identified as follows:

TRUE GEOTHERMAL ENERGY COMPANY

- 1) Geothermal Resources Exploration Indemnity Bond, (Geothermal Resource Mining Lease No. R-5) for the amount of \$10,000, and identified by Bond No. 5615149.
- 2) Geothermal Resources Exploration Blanket Bond, (Geothermal Well Indemnity Bond - True/Mid-Pacific A-1) for the amount of \$250,000, and identified by Bond No. 11 1914 3680.

ORMAT ENERGY SYSTEMS/AMOR VIII

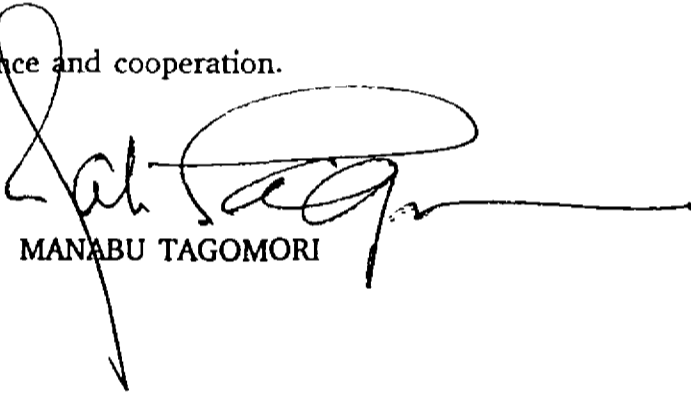
- 1) Geothermal Resource Lease Performance Bond, (Geothermal resource Mining Lease No. R-1) for the amount of \$10,000, and identified by Bond No. 3SM 714 751 00.
- 2) Geothermal Resource Lease Performance Bond, (Geothermal Resource Mining Lease No. R-2) for the amount of \$10,000, and identified by Bond No 3SM 714 751 00.
- 3) Geothermal Resource Lease Performance Bond, (Geothermal Resource Mining Lease No. R-4) for the amount of \$10,000, and identified by Bond No. 3SM 714 752 00.
- 4) Geothermal Resource Well Indemnity Bond, (Geothermal Well - Kapoho State Nos. 1, 2, and 1A) for the amount of \$250,000 and identified by Bond No. 3SM 714 749 00.

BARNWELL GEOTHERMAL CORPORATION

- 1) Geothermal Resources Well Indemnity Bond, (Geothermal Well - Lanipuna No. 1) for the amount of \$50,000, and identified by Bond No. YS 845 7457.
- 2) Geothermal Resources Well Indemnity Bond, (Geothermal Well - Lanipuna No. 6) for the amount of \$50,000, and identified by Bond No. YS 845 8885.
- 3) Geothermal Resources Well Indemnity Bond, (Geothermal Well - Ashida No. 1) for the amount of \$50,000, and identified by Bond No. 872109.

Your expeditious review and approval as to form of the attached bonds will be greatly appreciated. Should you have any questions, please feel free to contact me at Ext. 7533.

Thank you for your continued assistance and cooperation.



MANABU TAGOMORI

DN:bm
Attachment



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

P. O. BOX 373
HONOLULU, HAWAII 96809

November 20, 1989

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

LIBERT K. LANDGRAF
MANABU TAGOMORI
RUSSELL N. FUKUMOTO

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

Mr. Maurice A. Richard
Hawaii Regional Development Manager
Puna Geothermal Venture
101 Aupuni Street, Suite 1014-B
Hilo, Hawaii 96720

Dear Mr. Richard:

Pursuant to Item No. 17 of Geothermal Resource Mining Leases R-1, R-2 and R-34 the Department's Administrative Rules, Section 13-183-35, regarding the requirement for liability insurance, please submit evidence of a signed and completed certificate of insurance indicating the required coverage and named insured specified in the leases and our regulations.

Review of our records indicate that all Performance and Well Indemnity Bonds have been submitted to the Department as required, however, no evidence exists as to the receipt of the required certificates of insurance.

Your prompt attention to this matter will be greatly appreciated. Should you have any questions, please feel free to contact me at 548-7533.

Sincerely,

A handwritten signature in black ink, appearing to read "Manabu Tagomori".

MANABU TAGOMORI
Deputy Director

DN:bm

FACSIMILE MESSAGE from PUNA GEOTHERMAL VENTURE

276

WL

101 Aupuni Street Suite 1014-B, Hilo, Hawaii 96720
Phone: (808) 961-2184 Telefax: (808) 961-3531

MSG NO. 9021 DATE: January 18, 1989 PAGE #1 of 7

Department of Land and

To: Natural Resources

Fm: Maurice Richard

Attn: William W. Paty

CC: M. Tagomori, D. Lum / DLNR

89011/Geothermal Mining Lease R-2 - Amendment to Plan of Operatio

89012/Geothermal Mining Lease R-1, R-2, R-4 - Designation of

RE: Operator and Designation of Agent

Attachments for letter addressed to William W. Paty, reference number 89011 sent under separate cover.

Please provide Mr. Tagomori and Mr. Lum with copies of these letters with the necessary attachments, as necessary.

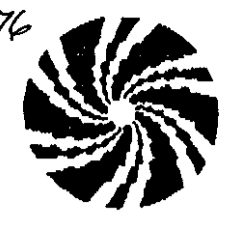
Thank you.

RECEIVED
30 JAN 19 7:43
DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

RECEIVED
30 JAN 19 8:05
DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

WL

ORMAT®



276

January 18, 1989
Reference No. 89012

DEPARTMENT OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

20 JAN 19 A 7:49

RECEIVED

Mr. William W. Paty, Chairperson
Board of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl Street
Honolulu, Hawaii 96813

Re: Geothermal Mining Lease R-1, R-2, and R-4 - Designation of Operator
and Designation of Agent

Dear Chairman Paty:

Puna Geothermal Venture (PGV), as sublessee of Geothermal Mining Leases R-1, R-2, and R-4, and pursuant to Department of Land and Natural Resources (DLNR) Administrative Rules, Title 13, Chapter 183, Section 45(f), hereby designates AMOR VIII Corporation as operator for each and all of the above-named leases. AMOR VIII Corporation, which is one of the two partners forming PGV, has previously filed, pursuant to our letter of October 24, 1988 to your office, a blanket well indemnity bond as required under DLNR administrative rules Section 13-183-68.

Pursuant to Section 13-183-64 of the DLNR administrative regulations, PGV and AMOR VIII Corporation also hereby designate Mr. Maurice A. Richard as their agent upon who may be served all orders, notices, and processes of the DLNR at the following address:

Mr. Maurice A. Richard
Hawaii Regional Development Manager
101 Aupuni Street, Suite 1014-B
Hilo, Hawaii 96720
Telephone (808) 961-2184
Facsimile (808) 961-3531

PUNA GEOTHERMAL VENTURE

□ 101 Aupuni Street Suite 1014-B, Hilo, Hawaii 96720 • Telephone (808) 961-2184 • Facsimile (808) 961-3531

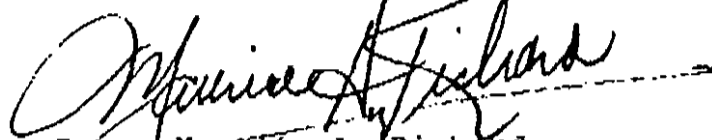
January 18, 1989
Reference No. 89012
Page 2

Please do not hesitate to contact me if you have questions concerning the above information or require any additional information to complete the requested actions.

Sincerely,

PUNA GEOTHERMAL VENTURE

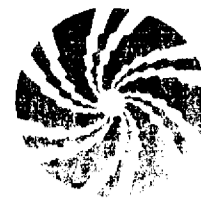
By: AMOR VIII CORPORATION
General Partner


By: Maurice A. Richard
Authorized Representative

cc:
M. Tagomori - DLNR
D. Lum - DLNR

MAR/ci

ORMAT®



24 October 1988

Mr. William Paty, Chairman
Board of Land & Natural Resources
Kalanimoku Building
1151 Punchbowl Street #220
Honolulu, HI 96813

Lease/Drilling Bonds

Dear Mr. Paty:

Pursuant to State Administrative Rules Title 13, Chapter 183, Sections 34 and 68, we submit the attached bonds with Amor VIII Corporation as Principal and American Motorists Insurance Company as Surety. These new Amor VIII bonds will replace bonds previously submitted by Thermal Power Company

<u>Bonds</u>	<u>Ormat/Amor VIII</u>	<u>Thermal Power</u>
R-1 Performance bond	3SM 714 750 00	553 4472
R-2 Performance bond	3SM 714 751 00	553 4471
R-4 Performance bond	3SM 714 752 00	930 4593
Well Indemnity bond	3SM 714 749 00	567 7792

As always, if you have any questions regarding the above matter, or require additional information, please do not hesitate to call our office at 524-8940 through October 28th.

We are in the process of relocating our office to Hilo. After November 15, 1988 please forward any correspondence to us at:

Ormat Energy Systems, Inc.
101 Aupuni Street Suite 1014-B
Hilo, Hawaii 96720
(808) 961-2184 Fax: 961-3531

Sincerely yours,

Maurice A. Richard
Hawaii Regional
Development Manager

encl
MAR/cn:0034
cc: M. Shimabukuro-DLNR

ORMAT ENERGY SYSTEMS, INC. 220 S. King St. #1750 Hon., HI 96813
(808) 524-8940
610 East Glendale Ave., Sparks, Nevada 89431-5811 • Telephone (702) 356-9111 • Facsimile (702) 356-9125 • Telex 170030

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES
GEOTHERMAL RESOURCE LEASE PERFORMANCE BOND

Bond No.

KNOW ALL MEN BY THESE PRESENTS:

That we Amor VIII Corporation, as PRINCIPAL, and American Motorists Insurance Company, as SURETY, organized and doing business under and by virtue of the laws of the STATE OF ~~Illinois~~ and/or authorized to do business in the STATE OF HAWAII, are held and firmly bound unto the STATE OF HAWAII and the Occupier of the land covered by Lease hereinafter described, in the sum of TEN THOUSAND AND NO/100 (\$10,000.00), lawful money of the UNITED STATES OF AMERICA, to be paid to the STATE OF HAWAII, BOARD OF LAND AND NATURAL RESOURCES, for which payment, we bind ourselves, our heirs, executors, successors and assigns, jointly and severally, firmly by these presents.

The conditions of the foregoing obligation is such that if the above bounded PRINCIPAL shall comply with the provisions of GEOTHERMAL RESOURCES MINING LEASE NO. R-4, Regulation No. 8 relating to Leasing of Geothermal Resources and applicable laws of this State, then this obligation shall be void; otherwise, to remain in full force and effect.

AND, IT IS HEREBY STIPULATED AND AGREED:

1. That any change, extension or alteration permitted by said Lease, regulation or laws of the State shall not in any way affect the obligation of said Surety on this bond; and that said Surety does hereby waive notice of any such change, extension or alteration.

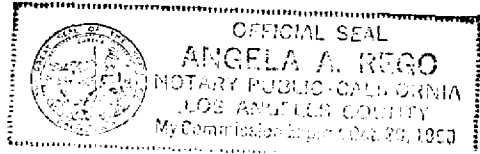
2. That suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in said Lease as liquidated damages which shall be forfeited to the State of Hawaii, its successors or assigns, in the event of a breach of any, or all, or any part of, the stipulations, agreements, covenants or conditions contained in said contract or in this bond, in accordance with the terms hereof.

3. That this bond shall also inure to the benefit of the Occupier of the leased land and any and all persons entitled to file claims for labor performed

STATE OF CALIFORNIA,)
COUNTY OF Los Angeles) SS.
08/07/2009



On this _____ day of _____, 19____, before me Angela A. Rego
_____ personally appeared William J. Shupper
personally known to me (or proved to me on the basis of satisfactory evidence) to be
the person whose name is subscribed to this instrument as the Attorney-in-Fact of
AMERICAN MOTORISTS INSURANCE COMPANY, and acknowledged to me that he (she) subscribed
the name of said company thereto as Surety, and his (her) own name as Attorney-in-Fact



Angela A. Rego
NOTARY PUBLIC

bond; and that said Surety does hereby waive notice of any such change, extension or alteration.

2. That suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in said Lease as liquidated damages shall be considered as, and held to be, fixed and liquidated damages which shall be forfeited to the State of Hawaii, its successors or assigns, in the event of a breach of any, or all, or any part of, the stipulations, agreements, covenants or conditions contained in said contract or in this bond, in accordance with the terms hereof.

3. That this bond shall also inure to the benefit of the Occupier of the leased land and any and all persons entitled to file claims for labor performed or material furnished in said work so as to give such Occupier(s) a right of action against said PRINCIPAL and SURETY and so as to give any and all such persons a right of action as contemplated in Section 507-17, Hawaii Revised Statutes.

WITNESS our hands and seals at Los Angeles

State of California, this 7th day of October,
1988.

PRINCIPAL:

Amor VIII Corporation

BY J. H. R. A. C.

BY _____

APPROVED AS TO FORM:

SURETY:

American Motorists Insurance Company

Deputy Attorney General

BY W. J. Shupper

its William J. Shupper
Attorney-in-Fact



POWER OF ATTORNEY

Know All Men By These Presents:

That the American Motorists Insurance Company, a corporation organized and existing under the laws of the State of Illinois, and having its principal office in Long Grove, Illinois, does hereby appoint *****
William J. Shupper of Los Angeles, California*****

its true and lawful agent(s) and attorney(s)-in-fact, to make, execute, seal, and deliver during the period beginning with the date of issuance of this power and ending December 31, 1988, unless sooner revoked for and on its behalf as surety, and as its act and deed: **Any and all bonds and undertakings provided the amount of no one bond or undertaking exceeds TWO MILLION DOLLARS (\$2,000,000.00)*******

EXCEPTION: NO AUTHORITY is granted to make, execute, seal and deliver any bond or undertaking which guarantees the payment or collection of any promissory note, check, draft or letter of credit.

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

This appointment may be revoked at any time by the American Motorists Insurance Company.

The execution of such bonds and undertakings in pursuance of these presents shall be as binding upon the said American Motorists Insurance Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal office in Long Grove, Illinois.

THIS APPOINTMENT SHALL CEASE AND TERMINATE WITHOUT NOTICE AS OF DECEMBER 31, 1988.

This Power of Attorney is executed by authority of a resolution adopted by the Board of Directors of said American Motorists Insurance Company on May 20, 1981 at Long Grove, Illinois, a true and accurate copy of which is hereinafter set forth and is hereby certified to by the undersigned Secretary as being in full force and effect:

* "VOTED, That the Chairman of the Board, the Chairman, the President, or any Vice President, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings, obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."


This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 20th day of May, 1981:

"VOTED, That the signature of the Chairman of the Board, the Chairman, the President, any Vice President, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to resolution adopted by the Board of Directors on May 20th, 1981 and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company."

In Testimony Whereof, the American Motorists Insurance Company has caused this instrument to be signed and its corporate seal to be affixed by its authorized officers, this 0th day of August, 19 86.

Attested and Certified:

AMERICAN MOTORISTS INSURANCE COMPANY


R. H. Johnson, Secretary



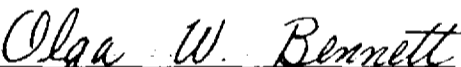
By


G. H. Kasbohm, Vice President

STATE OF ILLINOIS
COUNTY OF LAKE SS

I, Olga W. Bennett, a Notary Public, do hereby certify that G. H. Kasbohm and R. H. Johnson personally known to me to be the same persons whose names are respectively as Vice President and Secretary of the American Motorists Insurance Company, a Corporation of the State of Illinois, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary act for the uses and purposes therein set forth.




Olga W. Bennett, Notary Public

My commission expires: November 18, 1988

DIVISION OF WATER AND LAND DEVELOPMENT

From: Date: 8/17 File In:

To Initial

<u> </u>	<u> </u>	Robert T. Chuck	<u> </u>	See Me
<u> </u>	<u> </u>	Takeo Fujii	<u> </u>	Take action by
<u> </u>	<u> </u>	James Yoshimoto	<u> </u>	Route to your branch
<u> </u>	<u> </u>	Manabu Tagomori	<u> </u>	Review & comment
<u> </u>	<u> </u>	George Morimoto	<u> </u>	Draft reply by
<u> </u>	<u> </u>	Herbert Morimatsu	<input checked="" type="checkbox"/>	For information
<u> </u>	<u> </u>	George Miyashiro	<u> </u>	Xerox distributed
<u> </u>	<u> </u>	Harold Sakai	<u> </u>	Acknowledge receipt
<u> </u>	<u> </u>	Leslie Asari	<u> </u>	File
<u> </u>	<u> </u>	Albert Ching	<u> </u>	Jane Sakai
<u> </u>	<u> </u>	George Matsumoto	<u> </u>	Doris Hamada
<u> </u>	<u> </u>	Daniel Lum	<u> </u>	Lorraine Nanbu
<u> </u>	<u> </u>	Paul Matsuo	<u> </u>	Jean Siatot
<u> </u>	<u> </u>	Noboru Kaneshiro	<u> </u>	Elsie Yonamine
<u> </u>	<u> </u>	Edwin Sakoda	<u> </u>	

with initials

(hand's file)

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



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

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

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RECEIVED
DIVISION OF
LAND MANAGEMENT
Aug 13 1 08 PM '82

10 August 1982

Mr. James Detor
State of Hawaii
Department of Land & Natural Resources
1151 Punchbowl
Honolulu, Hawaii 96813

Re: Amendment to Application
for Non-competitive
Geothermal Lease,
Puna District, Hawaii

Dear Mr. Detor:

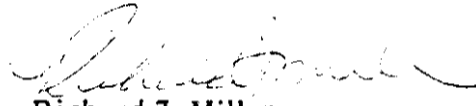
To confirm our recent telephone conversation, I enclose, on behalf of the Puna Geothermal Venture, a Tax Map Key description (Exhibit A) of two parcels covering an area of 12.031 acres, which are subject to an assignment of occupier rights from Mr. William C. Dugger, General Delivery, Pahoia, Hawaii, to the Puna Geothermal Venture.

These parcels are contiguous to parcels presently under application and therefore, it is our desire to amend the present application to include this acreage in our request for non-competitive lease which is to be heard at the BLNR meeting of August 27th, 1982, in Honolulu. With the addition of these parcels, the total acreage under the application is increased from the previous 267.346 request to the new total of 279.377.

The enclosed description is supplemented by Tax Map Key 1-4-16, showing the two parcels. Additionally, enclosed is a map showing all parcels under the new revised area (279.377 acres) of the application.

Thank you for your continued cooperation, and if I may be of further assistance in completing this amendment, please don't hesitate to call.

Sincerely,


Richard J. Miller
Landman

RJM/ikl

Enclosures: Exhibit A

Map of total area under amended application

EXHIBIT "A"

ALL OF THOSE CERTAIN PARCELS OF LAND (PORTIONS OF THE LAND DESCRIBED IN AND COVERED BY ROYAL PATENT NUMBERS 4497 AND 8177, LAND COMMISSION AWARD NUMBER 8559, APANA 5 TO C. KANAINA), SITUATE, LYING AND BEING IN THE DISTRICT OF PUNA, ISLAND, COUNTY AND STATE OF HAWAII, AND DESCRIBED AS FOLLOWS:

<u>THIRD DIVISION TAX MAP KEY</u>	<u>AREAS</u>	
1-4-16-3	6.011	.
1-4-16-7	<u>6.020</u>	
TOTAL ACRES	12.031	MORE OR LESS.

PLAT 18

2332 AC
12732 28 21

PLAT 17

Yoshimi Nobuyoshi & wife Hajuko - 7/8
2 008 Ac.

Masayuki Honda & wife Kaoru - 7/8

9 709 Ac.
(9 694 Ac.)

Kijima Fukumoto &
7/8 wife Fukumoto - 7/8

9 485 Ac.

6 010 Ac.

1 898 Ac.

Hideo Namba & wife Natsue - 7/8

10 890 Ac.

8 161 Ac.

4 891 Ac.

6 011 Ac.

3 408 Ac.

17 900 Ac.

PLAT 01

PLAT 01

Note: All lots owned by Kapoho Land & Development Co., Ltd., unless otherwise noted.

EVERYTHING ON THIS PAGE ZONED A10

DEPARTMENT OF THE TAX COMMISSIONER
TAXATION MAPS BUREAU
TERRITORY OF HAWAII

TAX MAP

THIRD ZONE	DIVISION
1	416
CONTAINING PARCELS	
SCALE 1 IN = 100 FT	

FOR KAPOHO PUNA, HAWAII (For L.C. No. 8550 5) (Formerly For 1-4-01)

SUBJECT TO CHANGE

DWG. NO. 74
SOURCE: Original Tracing - THE MCDONALD COMPANY
BY: TSM/STL 5/24/52



STATE OF HAWAII

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

June 10, 1982

Board of Land and
Natural Resources
Honolulu, HI 96813

Gentlemen:

HAWAII

Subject: Direct Lease of Geothermal Resources on Reserved
Lands to Assignee of Occupiers' Rights at Kapoho
and Halekamahina, Puna, Hawaii

STATUTE: Chapter 182, Hawaii Revised Statutes, and
Regulation No. 8 of the Department of Land and
Natural Resources

APPLICANT: THERMAL POWER COMPANY, a California corporation
qualified to do business in the State of Hawaii,
and Dillingham Corporation, a Hawaii corporation,
as assignees, of various assignors' rights as
occupier, pursuant to Section 182-5, Hawaii
Revised Statutes

FOR: Direct issuance of a geothermal lease on reserved
lands at Kapoho and Halekamahina, Puna, Hawaii,
being all of those certain parcels of land,
including portions thereof, described in and
covered by: 1) Royal Patent No. 8177, Land
Commission Award No. 8559, Apana 5 to C. Kanaina;
2) Royal Patent No. 7483, Land Commission
Award No. 4452, Apana 3 to H. Kalama; and
3) Royal Patent No. 4497, Land Commission
Award No. 8559, Land Patent No. 8177, Apana 5
to C. Kanaina; further identified by the tax
map keys as listed in staff Exhibit "A", attached.

AREA: Total: 267.346 acres, subject to verification

ZONING: State Land Use Commission--Agriculture
County of Hawaii--Agriculture, 3-acre minimum and
Agriculture, 10-acre minimum

LAND OWNERSHIP: Various, see Exhibit "A" attached

MINERAL RIGHTS: Reserved to the State of Hawaii by Royal Patent
Nos. 8177, 7483 and 4497 on Land Commission
Award Nos. 8559 and 4452

ITEM F-3

June 10, 1982

MINERAL TO BE
MINED:

Geothermal resources, classified as a mineral
by Section 182-1, Hawaii Revised Statutes

TERM:

The lease shall have a maximum term of sixty-five (65) years; provided that there shall be a primary period of ten (10) years from the effective date of the lease (and if during this primary period, geothermal resources are being produced or utilized in commercial quantities, the lease term shall continue for so long thereafter as geothermal resources are produced or utilized in commercial quantities, subject, however, to the sixty-five-(65) year limitations.

Continuation or termination of the lease after the primary ten-(10) year period shall be in accordance with (Rule No. 3.11 of) Regulation No. 8 of the Department of Land and Natural Resources.

COMMENCEMENT AND
COMPLETION DATES
OF DRILLING
OPERATION:

The lessee shall covenant and agree that geothermal resources mining and drilling operations on the reserved lands shall commence within three (3) years from the effective date of the lease, and that at least one geothermal resources well for production shall be completed within four (4) years of the effective date of the lease.

PAYMENT FOR THE
RIGHT TO EXPLOIT
GEOTHERMAL
RESOURCES:

The lessee shall pay to the State of Hawaii the amount of \$268 per annum for the right to exploit geothermal resources reserved to the State. Such payment shall be credited against production royalties due and accrued during any one given year, if there be any. The annual rental due a given year shall not be credited against production royalties due in future years.

ROYALTY:

- A. Ten percent (10%) of the gross amount or value of the geothermal resources produced under the lease as measured at the wellhead and sold or utilized by the lessee for the first 35 years of the lease. Rate readjustments as specified by Rule No. 3.13 of Regulation No. 8 of the Department of Land and Natural Resources.
- B. Five percent (5%) of the gross proceeds received by the lessee from the sale of any geothermal by-product contained in and extracted from the effluence produced under the lease as measured at the wellhead and as specified by Rule No. 3.13 of Regulation No. 8 of the Department of Land and Natural Resources.

PAYMENT:

The lessee shall make payments of royalties to the Board at its Honolulu office within thirty (30) days after the end of each month and accompany such payment with a written statement by the lessee, showing the volume of each

June 10, 1982

geothermal resources and its by-products sold, used, or otherwise disposed of. The lessee shall furnish such other data as may be necessary for the Board to audit and verify all royalty payments.

In the event that geothermal resources hereunder is not sold to a third party but is used or furnished to a plant owned or controlled by the lessee, the gross proceeds of such production for the purposes of computing royalties hereunder shall be that which is reasonably equal to the gross proceeds being paid to other geothermal producers for geothermal resources of like quality under similar conditions without deducting any treating, processing, and transportation costs incurred, notwithstanding Rule 3.13b. of Regulation 8.

REOPENING OF
ROYALTY RATE:

Royalty rates shall be subject to reopening at the end of the 35th and 50th years of the lease term. Royalty rates for the new period shall be determined by independent appraisal but shall be no less than the royalty rates at the time of reopening, nor shall it be higher than the maximum rate allowable under Regulation No. 8.

ROYALTIES ON
OTHER MINERALS:

In the event the lessee desires to mine minerals other than geothermal resources, the lessee shall before mining such other minerals, so notify the Board in writing, and the lessee shall negotiate and fix the royalty rates for such other minerals, as may be allowed to be mined by the Board.

METERING:

Metering equipment shall be maintained and operated by lessee in such a manner as to meet acceptable standards of accuracy consistent with geothermal industry practices.

TESTING OF
MINERALS:

The lessee shall on a calendar semi-annual basis furnish the Board the results of periodic tests showing the content of by-products in the produced geothermal resources. Such tests shall be consistent with acceptable method of testing practices by the industry.

ASSIGNMENT AND
SUBLETTING:

The lessee shall not assign and/or sublet the whole or any portion of the rights herein leased, without the prior approval of the Board of Land and Natural Resources, provided, that any assignment and/or sublease so made shall be to a person or persons, partnerships, corporations, etc. who have obtained from the owner of the lands the right to occupy and conduct geothermal resources mining operation thereon.

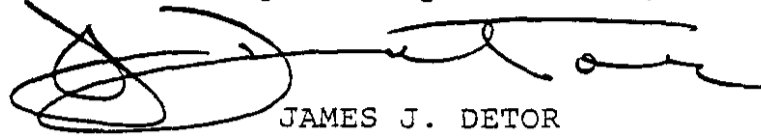
June 10, 1982

- BOND:** The lessee shall within thirty (30) days of receipt of the completed lease document, file with the Board, and keep in force for the term of the lease, a PERFORMANCE BOND, in the amount of \$10,000, conditioned upon faithful observance and performance of all requirements of the lease. Said bond shall name the Department of Land and Natural Resources, State of Hawaii, as obligee.
- LIABILITY** The lessee shall secure and maintain in force during the term of the lease, comprehensive general liability and property damage insurance and products liability insurance naming the State of Hawaii, Department of Land and Natural Resources as additional insured in the following minimum amounts:
- a. Comprehensive General Bodily Injury Liability \$300,000 each occurrence, \$300,000 aggregate
 - b. Comprehensive General Property Damage \$50,000 each occurrence, \$100,00 aggregate
 - c. Products liability in the single-minimum limit of \$250,000.
- RULES AND REGULATIONS:** The lease shall include other applicable provisions required by law and as contained in Regulation No. 8.
- ENVIRONMENTAL CONCERN:** The lessee shall comply with all water and air pollution control laws, rules and regulations of the State or its political subdivision. The lessee shall also comply with all applicable State and County laws relative to Environmental Impact Statements.
- REMARKS:** Thermal Power Company and Dillingham Corporation, as assignees of various landowners, as shown on staff Exhibit "A" attached, have made application as occupier for a geothermal lease on land in Puna which is subject to reservation of mineral rights in favor of the State of Hawaii. Application was made in accordance with Section 182-5, Hawaii Revised Statutes (mining leases on reserved lands).
- Under Section 182-5, Hawaii Revised Statutes, the Board may by vote of two-thirds of its members, without public auction, grant a mining lease on reserved land to the occupier thereof.
- RECOMMENDATION:** That the Board approve a direct grant of a geothermal resources mining lease on reserved lands to the above-named assignees covering the reserved lands listed above, subject to the approval of a special use permit by the County

June 10, 1982

of Hawaii and State Land Use Commission and to the terms and conditions above mentioned, which are by reference incorporated herein, in addition to such other terms and conditions required by law, Department of Land and Natural Resources Regulation No. 8, and as may be prescribed by the Chairman.

Respectfully submitted,



JAMES J. DETOR
Land Management Administrator

APPROVED FOR SUBMITTAL:



SUSUMU ONO, Chairman

April 2, 1982

MEMORANDUM

TO: Manabu Tagomori
FROM: Dan Lum
SUBJECT: Thermal Power Co. Application for
Geothermal Mining Lease dated
January 26, 1982

- Application for lease is for reserved lands of various parcels aggregating 267,346 acres.
- Thermal Power Co. requests a lease without public action, being assigned of the occupier rights according to their application.
- For reserved lands leasing without public auction, Board may do so by 2/3 vote to the occupier or the occupiers' assignee of the right to apply for a lease without public auction. (Thus, the applicant should provide satisfactory evidence of such assignee rights to DLNR for its verification).
- It would be good P.R. for DLNR to publish in the newspaper a notice of the lease application as would be required if the lease were to be issued at public auction. Such a notice is not required by regulation for the subject application, but is suggested because there were a number of parcel owners who declined to enter into an agreement with Thermal Power Co.
- The question of leasing with or without public auction is not a technical consideration, but rather an administrative and Board decision.
- I can think of no adverse technical impact in approving the lease application.


DAN LUM

DL:ey

February 25, 1982

Thermal Power Company
1600 Kapiolani Blvd., Suite 308
Honolulu, Hawaii 96814

Attention: Mr. Jere Denton

Gentlemen:

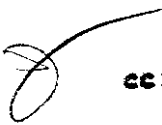
This will acknowledge receipt of your application for a geothermal mining lease on reserved lands in the Puna District and accompanying check for \$100.00.

Our staff will be reviewing your application and will contact you for further information if necessary.

Very truly yours,



SUSUMU ONO
Chairman of the Board



cc: Hawaii Board Member
Hawaii District Land Office

yd



DEPARTMENT OF LAND AND NATURAL RESOURCES

Division of Water and Land Development

Approved by the Board of
Land & Natural Resources
at the meeting held on


TO:

FOR:

- Chairman
- Deputy to Chairman
- Board Member
- Deputy Attorney General
- Planning Office
- State Parks
- Fish and Game
- Forestry
- Land Management

- Signature
- Approval
- Approval as to Form
- Approval & Transmittal to Governor
- Comment
- Recommendation
- Investigation & Report
- Appropriate Action
- Retention
- Return

REMARKS: Application for Geothermal
Lease - If letter is
ok pls send to Sus
for signature & also
pls deposit check in
YOUR ACCOUNT



Signature
Feb 24, 1982

857

Down



THERMAL POWER

COMPANY

26 January 1982

RECEIVED P 1: 37

STATE OF HAWAII

Jere Denton
Vice President
Hawaii Project

Mr. Susumo Ono, Chairman
Board of Land and Natural Resources
Division of Water and Land Development
Kalanimoku Building
1151 Punchbowl Street
Honolulu, Hawaii 96813

Re: Application for Geothermal Mining Lease on Reserved Lands by Thermal Power Company - Dillingham Corporation as Assignees of Certain Occupier Rights.

Dear Mr. Ono:

Thermal Power Company and Dillingham Corporation (Thermal/Dillingham), assignee's of certain Occupier Rights as defined in Chapter 183, Subchapter 1, section 13-183-3 of the rules on Leasing and Drilling of Geothermal Resources (effective June 22, 1981), hereby request and apply for a State of Hawaii Geothermal Mining Lease, without public auction, on certain Reserved Land described in Exhibit "A". Additional requirements under Subchapter 4, section 13-183-39 (a) (2) and (3) are contained in Exhibits "B" and "C" respectively.

In compliance with Subchapter 4, section 13-183-39 (a) (4), the undersigned, Jere Denton - Vice President of Thermal Power Company, a California corporation and A. C. Tiedeman, Group Vice President of Dillingham Corporation, a Hawaii corporation, certify that both Thermal Power Company and Dillingham Corporation are qualified to hold a mining lease as defined in Subchapter 1, section 13-183-3, and are both authorized to execute this application on behalf of said Corporations; and that neither corporation holds mining leases in excess of the 80,000 acre limitations prescribed in section 13-183-28 (b).

Thermal/Dillingham recognize that the request for non-competitive lease covers an array of parcels of Reserved Lands which aggregate 267.346 acres in an area covering 425.282 acres. Attached hereto as Addendum 1 is a summary of the contracts made with the property owners of the remaining 157.936 acres who declined to execute a geothermal lease or an assignment of their "occupier rights."


Mr. Susumo Ono
Page Two
26 January 1982


Thermal Power and Dillingham Corporation herewith submit three copies of this application along with the \$100 nonrefundable filing fee.

Very truly yours,

DILLINGHAM CORPORATION

THERMAL POWER COMPANY


By: A. C. Tiedeman
Group Vice President


By: J. M. Denton
Vice President

Attachments: Exhibits A, B, C and Addendum 1

Enclosures: Filing Fee

EXHIBIT "A"

Application for Geothermal Mining Lease on Reserved Lands By Assignees of Occupier Rights, Puna District, Hawaii :

THIRD TAXATION DIVISION

All those certain parcels of Land, (portion of the land described in and covered by Royal Patent No. 8177, Land Commission Award No. 8559, Apana 5 to C. Kanaina), situate lying and being at Kapoho, District of Puna, County and State of Hawaii more particularly described below:

Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
1	4	16	11	10.859
1	4	16	9	9.709
1	4	16	10	9.455
1	4	18	10	3.465
1	4	17	12	1.371
1	4	18	9	4.777
1	4	17	8	4.965
1	4	21	4	6.907
1	4	21	2	1.622
1	4	21	3	.565
1	4	18	3	3.016
1	4	18	4	2.092
1	4	18	1	3.445
1	4	18	2	13.498
1	4	18	13	1.118
1	4	18	5	5.508
1	4	19	3	15.874
1	4	18	7	7.815
1	4	18	8	4.373
1	4	19	1	8.399
1	4	19	2	19.899
1	4	16	2	5.498
1	4	16	8	1.332
1	4	17	6	<u>4.915</u>

Sub Total I 150.477

All of those certain parcels of land (a portion of the land described in and covered by Royal Patent No. 8177, Land Commission Award No. 8559, Apana 5 to C. Kanaina, situate at Kapoho, Puna, Hawaii, and Royal Patent No. 7483, Land Commission Award No. 4452, Apana 3 to H. Kalama, situate at Halekamahina, Puna, Hawaii more particularly described below:

Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
1	4	20	7	17.502
1	4	20	8	<u>6.231</u>
Sub Total II				<u>23.733</u>

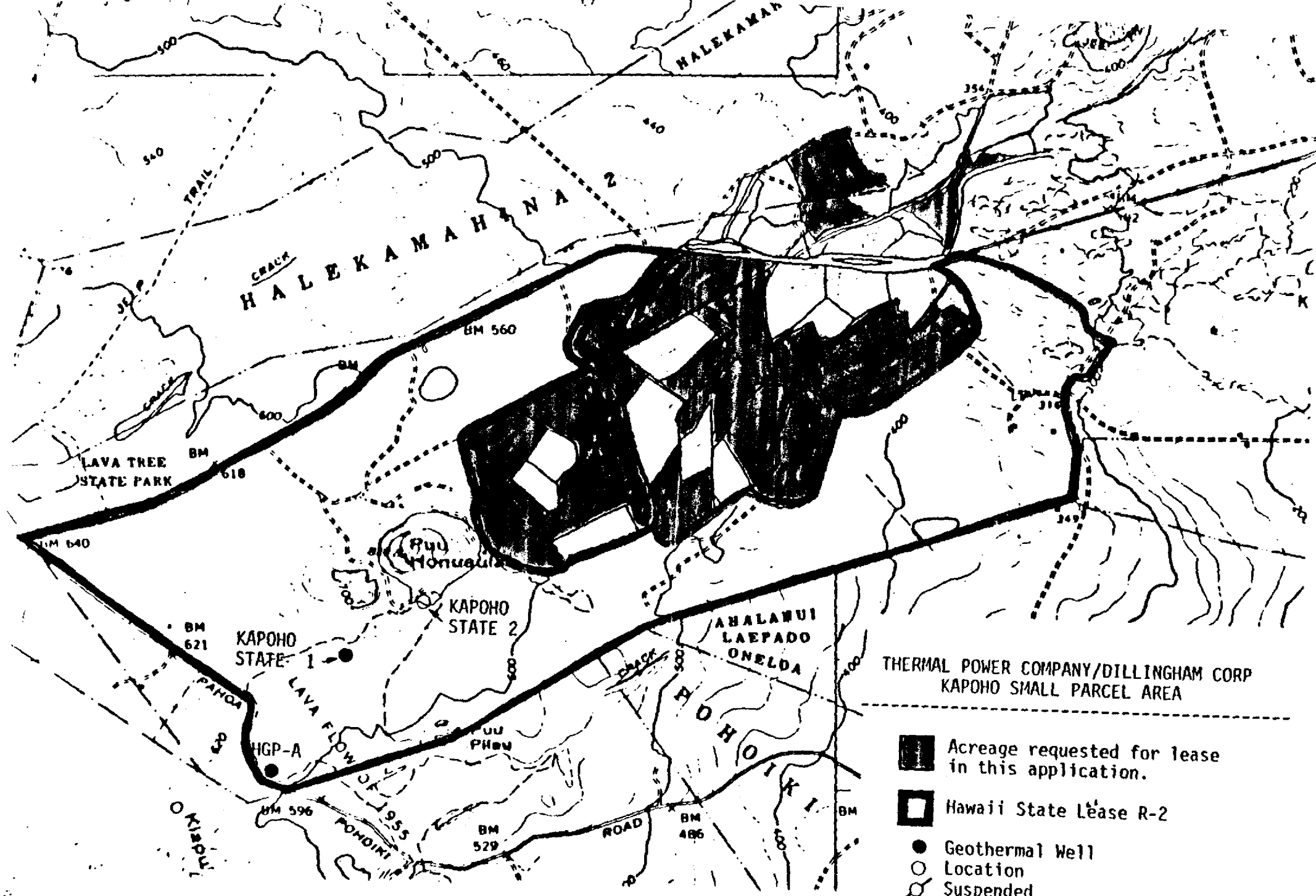
All of those certain parcels of land (a portion of the land described in and covered by Royal Patent No. 4497, Land Commission Award No. 8559, Land Patent No. 8177, Apana 5 to C. Kanaina, situate at Kapoho, Puna, Hawaii more particularly described below:

Tax Map Key

<u>Zone</u>	<u>Section</u>	<u>Plat</u>	<u>Parcel</u>	<u>Acres</u>
1	4	16	13	2.008
1	4	16	5	4.431
1	4	16	6	8.161
1	4	17	7	5.335
1	4	17	2	4.844
1	4	17	9	4.861
1	4	17	10	4.316
1	4	19	9	1.704
1	4	16	1	17.909
1	4	17	3	32.101
1	4	17	11	<u>7.466</u>
Sub Total III				<u>93.136</u>

Sub Total I 150.477
 Sub Total II 23.733
 Sub Total III 93.136

Grand Total 267.346



THERMAL POWER COMPANY/DILLINGHAM CORP
 KAPOHO SMALL PARCEL AREA






-  Acreage requested for lease in this application.
-  Hawaii State Lease R-2
-  Geothermal Well
-  Location
-  Suspended

EXHIBIT "B" Application for Geothermal Mining Lease on Reserved Lands,
Thermal Power Company and Dillingham Corporation.

This responds to Subchapter 4 Section 13-183-39 (a) (2) of Regulations on Leasing of Geothermal Resources and Drilling for Geothermal Resources in Hawaii, Chapter 183 of Title 13 Administrative Rule, May 8, 1981.

The southern part of the Island of Hawaii is dominated by the volcano Kilauea and its associated Rift Zones. The active East Rift of Kilauea passes through the Puna District as a linear zone approximately 3 miles (Mauka) from the coast. The East Rift has been proven prospective for geothermal resources at sites drilled by the Puna Geothermal Venture comprised of Thermal Power Company, Dillingham Geothermal, Inc., and Puna Sugar Company, Limited, (Kapoho State 1) and by the Hawaii Geothermal Project (HGP) near Pahoa. The HGP-A well, situated at the southern corner of State Lease R-2 has shown a capability of generating up to 3 megawatts of electrical power. Both the HGP-A well and Kapoho State 1 have established a geothermal resource potential contiguous to the Reserved Lands included in this Application for a Geothermal Mining Lease.

EXHIBIT "C"

Application for Geothermal Mining Lease on Reserved Lands Thermal Power Company and Dillingham Corporation.

This responds to Subchapter 4 Section 13-183-39(a)(3) of Regulations on Leasing of Geothermal Resources and Drilling for Geothermal Resources in Hawaii, Chapter 183 of Title 13 Administrative Rules, effective June 22, 1981.

Evaluation of the current exploration activities on State Lease R-2 will help define a Geothermal exploration plan for Kapoho small parcels. Provided that present exploration indicates a potential viable resource, a plan of exploration will be filed with the BLNR for their subsequent approval. These lands are contiguous to Thermal-Dillingham present activities on State Lease R-2 and approval of this application will provide for consistent operations in exploratory programs. This will help coordinate and accelerate prudent development and efficient utilization of the potential resource.

The results of the Environmental Baseline Study for Geothermal Development in Puna, Hawaii, (September 1976) and the Environmental Impact Statement for Geothermal Research and Demonstration Facility Utilizing the HGP-A well at Puna, Hawaii, (January 1978) indicate that the area of the Puna District within a one mile radius of the HGP-A well is relatively impervious to adverse environmental change consequent to geothermal development. Portions of the Kapoho small parcels lie within this one mile radius. Subsequent environmental base lines conducted in 1980 and 1981 reconfirm these findings. The Kapoho small parcel acreage was surveyed during November, 1981 and results indicate no evidence of rare, threatened or endangered species or natural environmental conditions which would be adversely impacted by Geothermal exploration or development.

Addendum 1

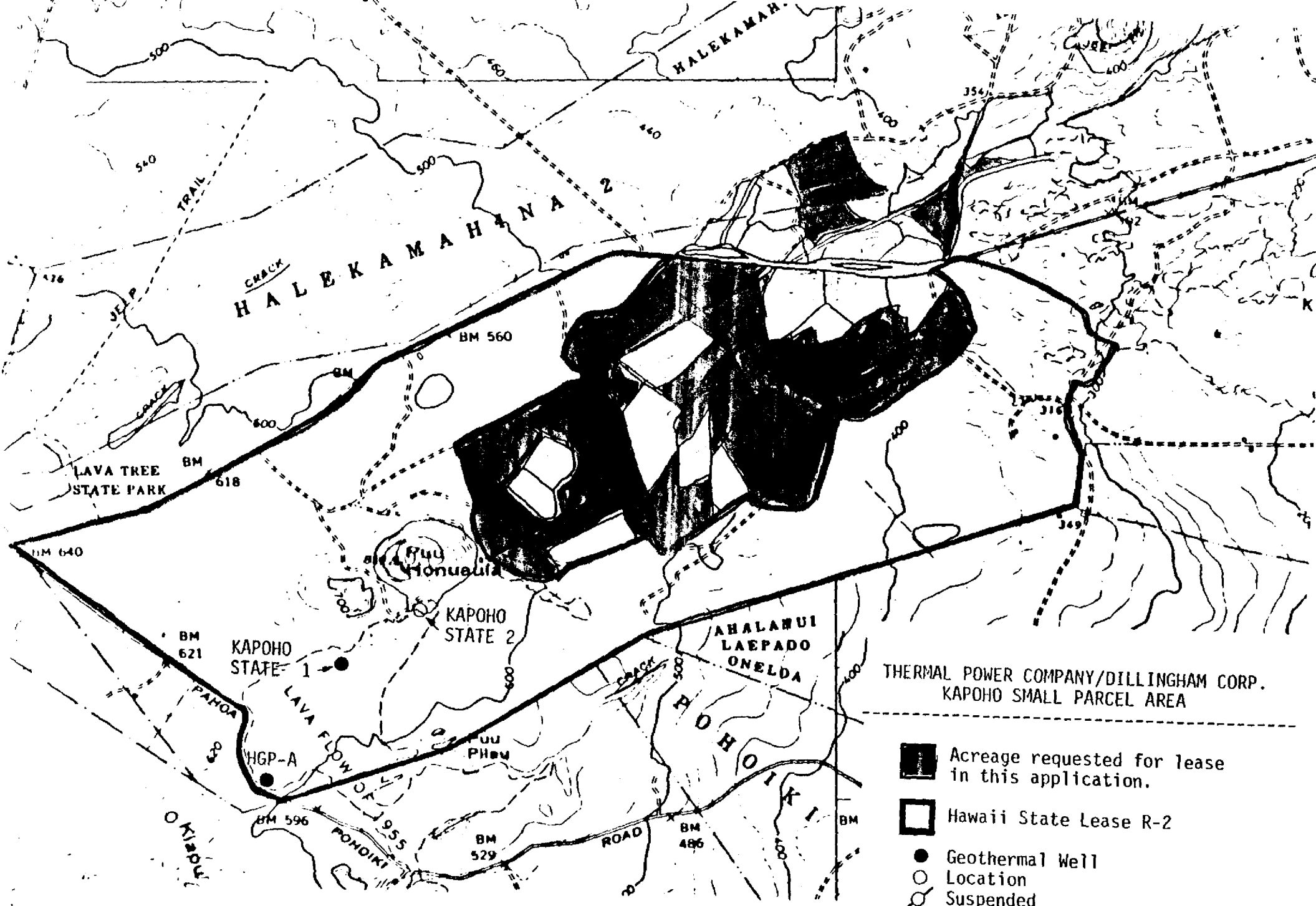
KAPOHO SMALL PARCEL AREA

Summary of Geothermal Leasing contacts where parcel owners declined to enter into an agreement.






<u>TMK No.</u>	<u>Telephone</u>		<u>Personal Visits</u>
	<u>Calls</u>	<u>Contacts</u>	
1-4-16-3 & 7	10	2	0
1-4-16-4	4	1	1
1-4-17-4	5	1	1
1-4-17-5	3	1	0
1-4-18-6	16	2	2
1-4-18-11	11	3	1
1-4-19-4	4	2	2
1-4-19-5	5	2	1
1-4-19-6, 7, 11 & 12	7	5	3
1-4-19-8	3	0	0
1-4-20-1	5	4	3
1-4-20-2 & 3	7	4	2
1-4-20-4	5	2	1
1-4-20-5	3	0	0
1-4-21-1	6	3	1
1-4-21-5	5	3	1
1-4-21-6	4	1	1
1-4-21-7	12	5	3

RJM/ikl

01/06/82



THERMAL POWER COMPANY/DILLINGHAM CORP.
 KAPOHO SMALL PARCEL AREA

-  Acreage requested for lease in this application.
-  Hawaii State Lease R-2
-  Geothermal Well
-  Location
-  Suspended