

Koa Ridge

SUSTAINABILITY PLAN

Castle & Cooke Homes Hawaii, Inc.

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Introduction

Castle & Cooke is a recognized leader in the development of master planned communities that support the needs and enhance the lifestyles of Hawaii's residents. Our diversified operations also include wind and solar energy projects which contribute to sustainability in its use of our abundant, natural resources to produce renewable energy for Hawaii.

For our future Koa Ridge community (which includes Koa Ridge Makai and Castle & Cooke Waiawa), we look at sustainability in a broad context of balancing the environment, economy and social equity. We aspire to create a community that enhances our ability to sustain all important aspects of life and allows us to leave to the next generation a world and life at least as good as the one we have.

Koa Ridge will be an integrated mixed-use community with a unique sense of place, where residents can live, work, and play in proximity to retail, services, health care, and community amenities. The development will feature generous landscaping and open space. The new community will be one that is safe, modern, walkable, and bicycle-friendly, where residents can live, work, and play in a vibrant and healthy master-planned, sustainable community encompassing principles consistent with "smart growth."

Sustainability Plan

The Koa Ridge Sustainability Plan is intended to be a dynamic guide which evolves as the project progresses through design and development. Sustainability goals are stated as high level purposes toward which Castle & Cooke aspires, and potential strategies and actions are listed in support of the goals.

Sustainability Goals include:

1. **Land Use and Urban Design** - *To create a compact, mixed-use community that provides all the services, amenities and diversity of homes that contribute towards the highest quality of life for residents and workers.*

2. **Transportation** - *To create a more sustainable community and environment by reducing traditional use of the automobile and encouraging the use of alternative transportation methods, from buses to car pooling and car sharing, to walking and bicycling.*
3. **Economics** – *To provide economic opportunities for residents and businesses and to contribute towards the regional economy.*
4. **Parks and Open Space Preservation** - *To create a system of parks, trails and open spaces, seamlessly integrated into the community, that provide a range of recreational opportunities while promoting healthy living, cooling, and water recharge.*
5. **Water Management** - *To care for our watershed by reducing and conserving water use, recharging groundwater and protecting stream and ocean water quality.*
6. **Energy Management** - *To reduce and conserve energy use through efficient community layout and building design and to incorporate alternative energy sources where feasible.*
7. **Education** - *To promote the understanding, support and practice of a sustainable lifestyle at Koa Ridge.*

The following tables summarize the Sustainability Plan strategies and currently planned actions to be implemented at Koa Ridge. These are expected to be supplemented and amended as the project progresses, incorporating comments from the project team, designers, and interested parties, with consideration for technological enhancements, government requirements, changes (if any) in county codes, success of pilot programs, market conditions, consumer acceptance, and balancing added costs for sustainability measures against resulting increased cost of development. While it is premature at this stage to predict or promise achievement of any particular goal, strategy or action, Castle & Cooke knows that moving toward a sustainable master planned community is the right thing to do for the future of Hawaii.

1. LAND USE AND URBAN DESIGN

GOAL: To create a compact mixed-use community that provides all the services, amenities, and diversity of homes that contribute towards the highest quality of life for Koa Ridge residents and workers.

<i>Target/Focus</i>	<i>Strategies</i>	<i>Planned Actions</i>
	<i>Implement Smart Growth Land Use and Design Practices</i>	
Community	Create a Mix of Land Uses	<p>Organize a variety of land uses vertically and horizontally to efficiently use land and provide for everyday needs within the community.</p> <p>Incorporate complementary dining, retail, and service establishments as amenities within the community.</p> <p>Provide space for community gatherings to encourage social interaction.</p> <p>Site schools, parks, recreation centers, and public gathering areas to define neighborhoods and to be readily accessible to the target population.</p> <p>Provide care centers for children and the elderly.</p> <p>Seek opportunities for multiple use of facilities such as community, recreational, educational, and parking facilities to encourage constant activity and highest use of facilities.</p> <p>Provide some industrial land for service uses within the community</p>
Community	Take Advantage of Compact Building Design	<p>Educate community members on density and compact building options.</p> <p>Ensure ready access to open space in compactly developed places.</p> <p>Match building scale to street type in zoning and permit approval process.</p> <p>Ensure a sense of privacy through the design of homes and yards.</p> <p>Use traditional neighborhood design to create a "complete" community.</p> <p>Use compact design to create more secure neighborhoods.</p> <p>Ensure that big box stores are appropriately scaled and designed for the Town Center.</p> <p>Manage the transition between higher-and lower-density neighborhoods.</p> <p>Achieve a residential net density of at least 10 units per acre to support neighborhood retail, transit service, and efficiently use infrastructure.</p>

Land Use and Urban Design (cont.)

Target/Focus	Strategies	Planned Actions
	Implement Smart Growth Land Use and Design Practices	
		Implement shared parking to reduce surface parking area.
		Provide 1,000 units within a 10-minute walk of the Village Center to promote the Village Center as a walkable destination.
Residences	Create a Range of Housing Opportunities and Choices	Consider building different product types on contiguous blocks of land to ensure a diversity of housing styles.
		Provide a diversity of housing to accommodate varied household types, family sizes and household incomes.
Community	Create Walkable Communities	Identify economic opportunities that stimulate pedestrian activity.
		Develop a pedestrian master plan.
		Design communities so that most children can walk to school.
		Use trees and other green infrastructure to provide shelter, beauty, urban heat reduction, and separation from automobile traffic.
		Provide off-street bicycle and pedestrian routes to transit stops.
		Develop walking awareness and promotion programs.
		Use techniques such as lighting and visible signage to increase pedestrian safety.
		Use visual cues and design elements to indicate pedestrian rights of way and minimize conflicts.
		Situate parking to enhance the pedestrian environment and facilitate access between destinations.
		Make places walkable for aging population in response to new demographic and special needs.
		Connect walkways, parking lots, greenways, and developments.
Comply with the Americans with Disabilities Act by providing persons with disabilities easy access to sidewalks, streets, parks, and other public and private services.		
Adopt design standards for streets that ensure safety and mobility for pedestrian and nonmotorized modes of transport.		

Land Use and Urban Design (cont.)

Target/Focus	Strategies	Planned Actions
	Implement Smart Growth Land Use and Design Practices	
		Require building design that makes commercial areas more walkable.
		Concentrate critical services near homes, jobs, and transit.
		Require traffic-calming techniques where traffic speed through residential and urban neighborhoods can potentially be excessive.
Community	Foster Distinctive, Attractive Communities with a Strong Sense of Place	Enact clear design guidelines so that streets, buildings, and public spaces work together to create a sense of place.
		Create community greens.
		Develop a comprehensive wayfinding system in town centers.
		Make retail centers distinctive and attractive destinations.
		Create opportunities for community interaction.
		Define communities and neighborhoods with visual cues.
		Create active and secure open spaces.
		Identify the list of allowable landscape material.
		Develop CC&Rs for residential buildings.
		Develop CC&Rs for Recreation Centers.
		Restrict high front fences and walls in front yards.
		Develop Koa Ridge signage standards.
		Honor the history of the "place" through the design guidelines.
		Create neighborhood cores and boundaries.
		Create a hierarchy of entry features to define primary and secondary entries.
		Determine a way to differentiate neighborhoods from each other to reinforce a sense of community.
		Prohibit gated communities-
		Bike paths (especially around schools) that cross as few public streets as possible.
Well planned lighting of public spaces to eliminate dark areas.		
Plan for "eyes on the street" especially in mixed-use areas to enhance a sense of security.		
Identify the iconic building in the Village Center.		

Land Use and Urban Design (cont.)

		Develop special CC&Rs for the Village Center to ensure that it is distinctive and attractive.
		Light poles, street furniture, landscaping should reinforce the Village Center Sense of Place.
		Establish a hierarchy of streets incorporating "complete streets" principles to provide convenient access and mobility for all users.
		Provide space for a police substation.

2. TRANSPORTATION

GOAL: To create a more sustainable community and environment by reducing traditional use of the automobile and by encouraging the use of alternative transportation methods, from buses, to carpooling and car sharing, to walking and bicycling.

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Auto Use Reduction	Seek a 30% reduction in external automobile trips	Provide a bus stop within 1/4 mile of 90% of all homes to provide convenient access to bus service and encourage ridership.
		Provide higher density mixed-use developments, live-work units, and senior housing which help to reduce external commutes.
		Provide one (1) permanent job for every two (2) homes to provide opportunities for residents to work in the community.
		Promote car-pooling by establishing a ride sharing program to be later administered by the community association or other group..
		Work with DTS to ensure that the bus runs in two directions through Koa Ridge for more complete service to encourage bus ridership.
		Connect transportation modes to one another to encourage walking, biking, and transit ridership.
Buses	Create an integrated transportation strategy that results in a minimum of 10% trips by bus	Plan the desired bus route with accommodations for safe, convenient bus stops.
		Incorporate a bus transit center in the Village Center to provide convenient access to the services and amenities in the area and encourage bus ridership.
		Provide convenient access to the planned rail transit system by working with DTS to plan the bus feeder to the Pearl Highlands rail station.

Transportation (cont.)

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
		<p>Strategic provision and placement of amenities within a 1/4 mile radius to encourage walking.</p> <p>Provide transit information (bus and rail) to residents and employees.</p>
Pedestrian	Create a walking environment such that twice as many people will walk compared to baseline community.	<p>Continuous sidewalks or equivalent provisions for walking, are provided along both sides of 90% of the streets in the project.</p> <p>Create minimum sidewalk widths of at least 5 feet wide (on at least 80% of sidewalks) to allow two people to walk comfortably together.</p> <p>Provide 1,000 units within a 10-minute walk of the Village Center to provide the density needed for pedestrian-oriented establishments to thrive.</p> <p>Design neighborhood-scaled streets (generally two or four lanes) with high levels of connectivity and short blocks to shorten distances and encourage walking and bicycling.</p>
Bicycles	Develop the land plan such that public amenities are so nearby and accessible that twice as many residents will use bicycles to get around	<p>Develop a bicycle master plan that includes bike paths (completely separate from traffic) and/or bike lanes that run the length of the community.-</p> <p>Work with public agencies to establish off-site bicycle paths.</p> <p>Plan safe bicycle routes that avoid as many vehicular conflicts as possible.</p> <p>Provide bicycle racks and storage spaces in the Village Center and transit center to make bicycling convenient.</p>

3. ECONOMICS

GOAL: *To provide economic opportunities for residents and businesses and to contribute towards the regional economy.*

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Community	To provide economic opportunities within the community.	Provide a minimum of 30% affordable housing in consonance with City policies.
		Build a continuum of housing to enable families to build home equity and “move-up” as their housing needs change.
		Provide live-work opportunities.
		Provide a variety of jobs in the community, from entry-level to professional, and in a range of industries.
		Consider the specific needs for varying types of businesses when drafting land use plans, urban design plans, and CC&R’s.
		Provide up to 5,000 homes, including affordable homes, to accommodate future population growth.
Community	Contribute towards the regional economy.	Maintain a level of activity that will create 750 direct jobs and over 1,800 jobs including direct, indirect and induced jobs annually during development.
		Seek opportunities to bring federal funding into Hawaii and provide a local match if required.
		Have a positive fiscal impact by generating more tax revenue than government expenditures required to support the community.

4. PARKS AND OPEN SPACE PRESERVATION

GOAL: To create a system of parks, trails and open spaces, seamlessly integrated into the community, that provide a range of recreational opportunities while promoting healthy living, cooling, and water recharge.

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Parks	Provide at least double the park space required under the City's park dedication rules.	Provide neighborhood and community parks within 1/4 mile of 90% of residences so residents can conveniently walk to recreation areas.
	Provide a hierarchy of parks to provide a variety of park types	Provide a strong connection to Patsy Mink Central Oahu Regional Park so that it feels like an extension of Koa Ridge.
		Provide a Bark Park .
		Provide passive parks to promote and provide access to open space.
		Incorporate mini parks and tot lots into the trail and pathway system to encourage walking.
		Work with the community association and other community groups to establish recreational and youth sports programs to encourage an active and healthy lifestyle for our children.
	Provide active parks to provide recreational opportunities and to promote a healthy lifestyle.	
Provide a park or recreational facility no more than a 5-minute walk to all homes.	Provide a ratio of 300 square feet of park per dwelling unit to ensure that there is sufficient park area for residents.	
	Provide "pocket parks" that are distributed throughout the community in addition to the other tiers of parks in the hierarchy to provide a variety of recreational opportunities.	
Open Space	Provide access to open space resources.	Provide parks along the perimeter of Kipapa Gulch so all residents can enjoy views in this area.
		Work with the State to provide access into Kipapa Gulch along the former Kamehameha Highway alignment to provide a link to Mililani Town and provide access to the open space system in Kipapa Gulch.
	Encourage use of trail network	Route trails leading or adjacent to variety of destinations points to promote walking (ie. Village center, active park, school, exercise nodes, playground equipment, bark park, passive park with benches).

Parks and Open Space Preservation (cont.)

<i>Target/Focus</i>	<i>Strategies</i>	<i>Planned Actions</i>
Agriculture	Provide and promote agricultural opportunities	Designate a community gardens area in the Community Park or elsewhere to encourage and facilitate agricultural awareness and self-sufficiency among residents.
		Provide and designate an area conducive for a farmer's market
		Educate residents on backyard gardening, catchment systems and rainwater harvesting
Trails	Provide a network of pedestrian and bicycle paths linking homes and uses throughout the community.	Develop the trail systems such that wayfinding is intuitive.
		Strongly define trails leading to the Village Center to promote the Village Center as a gathering area.
		Develop prototypical park plans that illustrate design guidelines to ensure that parks are suitably sized for their intended use (i.e. minimum size, minimum dimensions).
		Provide access to a trail system in Kipapa Gulch.

5. WATER MANAGEMENT

GOAL: To care for our watershed by reducing and conserving water use, recharging groundwater and protecting stream and ocean water quality.

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Roads, Drainageways	Reduce water run-off with green infrastructure designs	Enhance percolation in the drainageways with bio-swales to allow groundwater recharge.
		Intercept and harvest rainwater before it gets to the dedicated drainageway to provide irrigation for plants, improve water quality and reduce stormwater runoff.
Parks	Reduce potable water use by at least 20%	Use plants and trees suited for the climate to reduce irrigation requirements.
		Use drought tolerant landscaping where feasible.
		Use the open space as percolation areas to allow groundwater recharge.
Landscaped Areas	Reduce potable water use by at least 20%	Use non-potable water for irrigation if source is available to preserve potable water.
		Use the open space as percolation areas to allow groundwater recharge.
		Use plants that can thrive in the Koa Ridge microclimate to reduce irrigation requirements.
Open Space	Water quality of Kipapa Stream will remain the same or better as a result of this project.	Use non-potable water for irrigation if source is available to preserve potable water.
		Use of bioswales to filter the storm water and improve water quality.
Commercial buildings	Reduce potable water use by at least 20%	Design and construct commercial buildings to be LEED-certified or equivalent. Multiple tenant buildings will be LEED Core and Shell certified or equivalent with an incentive-education program to encourage tenants to obtain a LEED interiors certification.
		Use waterless urinals to conserve water and reduce operating costs.
		Use dual-flush water closets to conserve water and reduce operating costs.
		Use non-potable water for irrigation if source is available to preserve potable water.
Residential Buildings	Reduce potable water use - by 20% over newer homes - by 40% over older homes (see attached tables)	Use ultra low flow water closets (from 1.6 gpf to 1.28 gpf) or make dual flush toilets available.
		Make ultra low-flow showerheads (from 2.5 gpm to 1.9 gpm) available.
		Develop rainwater harvesting strategies to provide landscape irrigation and reduce potable water use.

6. ENERGY MANAGEMENT

GOAL: To reduce and conserve energy use through efficient community layout and building design and incorporate alternative energy sources where feasible.

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Village Center	Reduce non-renewable energy usage	Increase the R-value of insulation to keep interiors cooler and reduce air conditioning needs.
		Incorporate natural ventilation techniques to reduce the need for air conditioning.
		Landscaping to provide shading and cool buildings.
Residential buildings	Design to achieve reductions in energy use: - at least 25% over typical newer dwellings - at least 35% over older dwellings (see attached tables)	Install Smart meters and dashboards in the houses as an option so residents can monitor their energy usage.
		Offer PV as an option and inform residents about the potential long-term savings.
		Increase insulation R-value to keep homes cooler and reduce the need for air conditioning.
		Design homes to accommodate electric cars.
		All windows to be double paned with low-e glass to provide better insulation and reduce air conditioning requirements
		Prepare a sustainability educational primer for the buyer by the Design Center rep prior to the selection of options so buyers are aware of the long-term savings of energy and water efficient options.
		Install solar water heaters in all single-family homes to reduce electricity use.
		All residences to be provided with Energy Star appliances if available to reduce electricity use.
		Maximize natural ventilation through design and orientation whenever possible.
Accommodate the placement or location for clotheslines.		

Energy Management (cont.)

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Commercial buildings	Reduce non-renewable energy usage	Design and construct commercial buildings to be LEED-certified or equivalent. Multiple tenant buildings will be LEED Core and Shell certified or equivalent with an incentive-education program to encourage tenants to obtain a LEED Interiors certification.
		Increase insulation R-Value of the building envelope
		Operable windows for offices so natural ventilation can be used instead of air conditioning.
		All windows to be double paned with low-e glass to provide better insulation and reduce air conditioning loads.
Community buildings	Reduce non-renewable energy usage	All community buildings will be equipped with ceiling fans, whether air conditioned or not to reduce air conditioning needs and lower operating costs for the community association.
		Increase insulation R-Value of the building envelope to reduce air conditioning loads.

7. EDUCATION

GOAL: To promote the understanding, support and practice of a sustainable lifestyle at Koa Ridge.

<u>Target/Focus</u>	<u>Strategies</u>	<u>Planned Actions</u>
Community	Provide a variety of educational opportunities to the general public	Establish an online portal or website to distribute information and tips on living a sustainable lifestyle, including energy and water use, gardening and landscaping, consumption and recycling.
		Publish a Koa Ridge Brochure on sustainability features of the community -- green infrastructure, green building, transportation, energy and water use features.
		Interpretive signage along walking paths to teach about the history of the area as well as sustainability features of Koa Ridge.
		Produce a documentary on Koa Ridge's sustainability features for showing on public access TV and YouTube.
		Install a demonstration PV, mini wind turbine, or hydrogen fuel cell in a public place so people will be able to see how sun and wind can be transformed into energy.
Residents	Provide educational opportunities for the residents	Disseminate info on home green features so residents see the value and cost savings of sustainability.
		Disseminate sustainability tips.
		Promote recycling including the provision of space for a recycling center.
		Provide a "Green Living" class with homebuyer orientation.
		Educate buyers of the benefits and cost savings of "Green" options.
		Build-in "windows" (open sections) in the model homes that reveal sustainable features and long-term savings in the homes that would otherwise not be seen.
		Educate residents in backyard gardening.
Businesses & Organizations	Publicize building green features through different media	Prepare handout of green features.
		Arrange to have an article written in a trade magazine about Koa Ridge.
		Educate commercial tenants/developers about the long-term savings of green building.

APPENDICES

Water Model

Energy Model

APPENDICES

Water Model

Energy Model



The goal of creating an energy model is to determine a reasonable energy use reduction target for a typical Koa Ridge home.

1. Created a list of typical items in a home that consume electricity.
2. Made assumptions on the frequency of usage based on a family of four for a SFD and a family of three for a MFD.
3. Used average appliance and lighting energy consumption values provided by HECO.
4. First "back-check" is a comparison to average energy consumption of 686 kWh/month (Source: HECO)
5. Second "back-check" is anecdotal comparison to similar families' electric bills.



Typical older single family home with four occupants					
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use
Split A/C (1 ton)	2	Varies	149.99	224.98	21%
Clothes washer	1	8 loads/wk.	10.67	10.67	1%
Clothes dryer	1	8 loads/wk.	106.67	106.67	10%
Dishwasher	1	1 load/day	25.00	25.00	2%
Oven	1	2 hrs./wk.	9.60	9.60	1%
Range	1	15 min./day	9.60	9.60	1%
Refrigerator/freezer					
Non-Energy Star manuf. After 2001	1	all day	41.50	41.50	4%
Second refrigerator manuf. Btwn. 1980-2001	1	all day	70.00	70.00	7%
Electric Water Heater	1	on demand	260.00	260.00	24%
Clock	4	all day	1.44	5.76	1%
DVD Player					
On Mode	1	2 hrs./day	0.78	0.78	0%
Standby Mode	1	22 hrs./day	1.52	1.52	0%
Fan					
Ceiling Fan	1	4 hrs./day	12.00	12.00	1%
Oscillating fan	1	4 hrs./day	12.00	12.00	1%
Hair Blow dryer	1	20 mins./day	18.00	18.00	2%
Iron	1	30 mins./week	1.00	1.00	0%
Microwave Oven	1	20 mins./day	15.00	15.00	1%
Radio	2	2 hrs./day	2.00	4.00	0%
Rice cooker	1	20 mins./day	5.00	5.00	0%
Television					
42" plasma	1	7 hrs./day	57.12	57.12	5%
34" tube type TV	1	3.5 hrs./day	26.25	26.25	2%
Toaster	1	4 mins./day	3.00	3.00	0%
Vacuum Cleaner	1	1.25 hrs./week	3.25	3.25	0%
Light bulbs					
13 watt CFL	8	3 hrs./day	1.17	9.36	1%
26 watt CFL	8	3 hrs./day	2.34	18.72	2%
60 watt incand.	8	3 hrs./day	5.40	43.20	4%
100 watt incand.	8	3 hrs./day	9.00	72.00	7%
Computer & monitor	1	4 hrs./day	9.00	9.00	1%
Total				1074.98	
	At	\$0.30	per kWh, monthly bill will be	\$322.49	
	At	\$0.22	per kWh, monthly bill will be	\$236.50	

A/C use based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter and 4 hrs./day in spring and fall); also adjusted downward 25% to take into account that both units will not be on at the same time.



Typical older single family home with four occupants					
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use
Split A/C (1 ton)	2	Varies	149.99	224.98	27%
Clothes washer	1	8 loads/wk.	10.67	10.67	1%
Clothes dryer	1	8 loads/wk.	106.67	106.67	13%
Dishwasher	1	1 load/day	25.00	25.00	3%
Oven	1	2 hrs./wk.	9.60	9.60	1%
Range	1	15 min./day	9.60	9.60	1%
Refrigerator/freezer					
Non-Energy Star manuf. After 2001	1	all day	41.50	41.50	5%
Second refrigerator manuf. Btwn. 1980-2001	1	all day	70.00	70.00	8%
Solar water heating	1	on demand	26.00	26.00	3%
Clock	4	all day	1.44	5.76	1%
DVD Player					
On Mode	1	2 hrs./day	0.78	0.78	0%
Standby Mode	1	22 hrs./day	1.52	1.52	0%
Fan					
Ceiling Fan	1	4 hrs./day	12.00	12.00	1%
Oscillating fan	1	4 hrs./day	12.00	12.00	1%
Hair Blow dryer	1	20 mins./day	18.00	18.00	2%
Iron	1	30 mins./week	1.00	1.00	0%
Microwave Oven	1	20 mins./day	15.00	15.00	2%
Radio	2	2 hrs./day	2.00	4.00	0%
Rice cooker	1	20 mins./day	5.00	5.00	1%
Television					
42" plasma	1	7 hrs./day	57.12	57.12	7%
34" tube type TV	1	3.5 hrs./day	26.25	26.25	3%
Toaster	1	4 mins./day	3.00	3.00	0%
Vacuum Cleaner	1	1.25 hrs./week	3.25	3.25	0%
Light bulbs					
13 watt CFL	8	3 hrs./day	1.17	9.36	1%
26 watt CFL	8	3 hrs./day	2.34	18.72	2%
60 watt incand.	8	3 hrs./day	5.40	43.20	5%
100 watt incand.	8	3 hrs./day	9.00	72.00	9%
Computer & monitor	1	4 hrs./day	9.00	9.00	1%
Total				840.98	
	At	\$0.30	per kWh, monthly bill will be	\$252.29	
	At	\$0.22	per kWh, monthly bill will be	\$185.02	

A/C use based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter and 4 hrs./day in spring and fall); also adjusted downward 25% to take into account that both units will not be on at the same time.



Typical new single family home with four occupants						
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use	
Central A/C (4 ton)	1	Varies	498.47	498.47	52%	
Clothes washer	1	8 loads/wk.	8.00	8.00	1%	
Clothes dryer	1	8 loads/wk.	106.67	106.67	11%	
Dishwasher	1	1 load/day	25.00	25.00	3%	
Oven	1	2 hrs./wk.	9.60	9.60	1%	
Range	1	15 min./day	9.60	9.60	1%	
Refrigerator/freezer (Energy Star manuf. After 2001)	1	all day	36.50	36.50	4%	
Solar Water Heater	1	on demand	26.00	26.00	3%	
Clock	4	all day	1.44	5.76	1%	
DVD Player						
On Mode	1	2 hrs./day	0.78	0.78	0%	
Standby Mode	1	22 hrs./day	1.52	1.52	0%	
Fan						
Ceiling Fan	1	4 hrs./day	12.00	12.00	1%	
Oscillating fan	1	4 hrs./day	12.00	12.00	1%	
Hair Blow dryer	1	20 mins./day	18.00	18.00	2%	
Iron	1	30 mins./week	1.00	1.00	0%	
Microwave Oven	1	20 mins./day	15.00	15.00	2%	
Radio	2	2 hrs./day	2.00	4.00	0%	
Rice cooker	1	20 mins./day	5.00	5.00	1%	
Television						
42" plasma	1	7 hrs./day	57.12	57.12	6%	
34" tube type TV	1	3.5 hrs./day	26.25	26.25	3%	
Toaster	1	4 mins./day	3.00	3.00	0%	
Vacuum Cleaner	1	1.25 hrs./week	3.25	3.25	0%	
Light bulbs						
13 watt CFL	16	3 hrs./day	1.17	18.72	2%	
26 watt CFL	16	3 hrs./day	2.34	37.44	4%	
Computer & monitor	1	4 hrs./day	9.00	9.00	1%	
Total				949.68		
		At \$0.30 per kWh, monthly bill will be		\$284.90		
		At \$0.22 per kWh, monthly bill will be		\$208.93		

A/C use is based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter; and 4 hrs./day in spring and fall). No adjustment similar to other SFD models because assumption is that entire central system will either be on or off.



Typical Koa Ridge single family home with four occupants						
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use	
Split A/C (10,000 Btu)	2	Varies	125.01	187.52	27%	
Clothes washer	1	8 loads/wk.	8.00	8.00	1%	
Clothes dryer	1	6 loads/wk.	80.00	80.00	12%	
Dishwasher	1	1 load/day	25.00	25.00	4%	
Oven	1	2 hrs./wk.	9.60	9.60	1%	
Range	1	15 min./day	9.60	9.60	1%	
Refrigerator/freezer						
		Energy Star manuf. After 2001				
	1	all day	36.50	36.50	5%	
Solar Water Heater	1	on demand	26.00	26.00	4%	
Clock	4	all day	1.44	5.76	1%	
DVD Player						
	1	2 hrs./day	0.78	0.78	0%	
	1	22 hrs./day	1.52	1.52	0%	
Fan						
	4	8 hrs./day	12.00	48.00	7%	
	4	8 hrs./day	12.00	48.00	7%	
Hair Blow dryer	1	20 mins./day	18.00	18.00	3%	
Iron	1	30 mins./week	1.00	1.00	0%	
Microwave Oven	1	20 mins./day	15.00	15.00	2%	
Radio	2	2 hrs./day	2.00	4.00	1%	
Rice cooker	1	20 mins./day	5.00	5.00	1%	
Television						
	1	7 hrs./day	57.12	57.12	8%	
	1	3.5 hrs./day	26.25	26.25	4%	
Toaster	1	4 mins./day	3.00	3.00	0%	
Vacuum Cleaner	1	1.25 hrs./week	3.25	3.25	0%	
Light bulbs						
	16	3 hrs./day	1.17	18.72	3%	
	16	3 hrs./day	2.34	37.44	5%	
Computer & monitor	1	4 hrs./day	9.00	9.00	1%	
Total				684.06		
	At	\$0.30	per kWh, monthly bill will be	\$205.22		
	At	\$0.22	per kWh, monthly bill will be	\$150.49		

A/C use is based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter; and 4 hrs./day in spring and fall); also adjusted downward 25% to take into account tht both units will not always be running at the same time.



Typical older townhome with three occupants						
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use	
Split A/C (1 ton)	1	Varies	149.99	149.99	18%	
Clothes washer	1	6 loads/wk.	8.00	8.00	1%	
Clothes dryer	1	6 loads/wk.	80.00	80.00	10%	
Dishwasher	1	1 load/day	25.00	25.00	3%	
Oven	1	2 hrs./wk.	9.60	9.60	1%	
Range	1	15 min./day	9.60	9.60	1%	
Refrigerator/freezer (Non-Energy Star manuf. After 2001)	1	all day	42.00	42.00	5%	
Electric Water Heater	1	on demand	260.00	260.00	31%	
Clock	4	all day	1.44	5.76	1%	
DVD Player						
On Mode	1	2 hrs./day	0.78	0.78	0%	
Standby Mode	1	22 hrs./day	1.52	1.52	0%	
Fan						
Ceiling Fan	1	4 hrs./day	12.00	12.00	1%	
Oscillating fan	1	4 hrs./day	12.00	12.00	1%	
Hair Blow dryer	1	20 mins./day	18.00	18.00	2%	
Iron	1	30 mins./week	1.00	1.00	0%	
Microwave Oven	1	20 mins./day	15.00	15.00	2%	
Radio	2	2 hrs./day	2.00	4.00	0%	
Rice cooker	1	20 mins./day	5.00	5.00	1%	
Television						
42" plasma	1	7 hrs./day	57.12	57.12	7%	
Toaster	1	4 mins./day	3.00	3.00	0%	
Vacuum Cleaner	1	1.25 hrs./week	3.25	3.25	0%	
Light bulbs						
13 watt CFL	6	3 hrs./day	1.17	7.02	1%	
26 watt CFL	6	3 hrs./day	2.34	14.04	2%	
60 watt incand.	6	3 hrs./day	5.40	32.40	4%	
100 watt incand.	6	3 hrs./day	9.00	54.00	6%	
Computer & monitor	1	4 hrs./day	9.00	9.00	1%	
Total				839.08		
		At \$0.30 per kWh, monthly bill will be		\$251.72		
		At \$0.22 per kWh, monthly bill will be		\$184.60		

A/C use is based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter; and 4 hrs./day in spring and fall)



Typical new townhome with three occupants						
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use	
Central A/C (3 ton unit)	1	Varies	373.86	373.86	49%	
Clothes washer	1	6 loads/wk.	8.00	8.00	1%	
Clothes dryer	1	6 loads/wk.	80.00	80.00	11%	
Dishwasher	1	1 load/day	25.00	25.00	3%	
Oven	1	2 hrs./wk.	9.60	9.60	1%	
Range	1	15 min./day	9.60	9.60	1%	
Refrigerator/freezer (Energy Star manuf. After 2001)	1	all day	36.50	36.50	5%	
Solar Water Heater	1	on demand	26.00	26.00	3%	
Clock	4	all day	1.44	5.76	1%	
DVD Player						
On Mode	1	2 hrs./day	0.78	0.78	0%	
Standby Mode	1	22 hrs./day	1.52	1.52	0%	
Fan						
Ceiling Fan	1	4 hrs./day	12.00	12.00	2%	
Oscillating fan	1	4 hrs./day	12.00	12.00	2%	
Hair Blow dryer	1	20 mins./day	18.00	18.00	2%	
Iron	1	30 mins./week	1.00	1.00	0%	
Microwave Oven	1	20 mins./day	15.00	15.00	2%	
Radio	2	2 hrs./day	2.00	4.00	1%	
Rice cooker	1	20 mins./day	5.00	5.00	1%	
Television						
42" plasma	1	7 hrs./day	57.12	57.12	8%	
Toaster	1	4 mins./day	3.00	3.00	0%	
Vacuum Cleaner	1	1.25 hrs./week	3.25	3.25	0%	
Light bulbs						
13 watt CFL	12	3 hrs./day	1.17	14.04	2%	
26 watt CFL	12	3 hrs./day	2.34	28.08	4%	
Computer & monitor	1	4 hrs./day	9.00	9.00	1%	
Total				758.115		
		At \$0.30 per kWh, monthly bill will be		\$227.43		
		At \$0.22 per kWh, monthly bill will be		\$166.79		

A/C use is based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter; and 4 hrs./day in spring and fall)



Koa Ridge new townhome with three occupants						
Item	Qty.	Use	kWh/mo.	Total kWh/mo.	% of use	
Split A/C (10,000 Btu)	1	Varies	125.0	125.01	23%	
Clothes washer	1	6 loads/wk.	8.0	8.00	1%	
Clothes dryer	1	6 loads/wk.	80.0	80.00	15%	
Dishwasher	1	1 load/day	25.0	25.00	5%	
Oven	1	2 hrs./wk.	9.6	9.60	2%	
Range	1	15 min./day	9.6	9.60	2%	
Refrigerator/freezer (Energy Star manuf. After 2001)	1	all day	36.5	36.50	7%	
Solar Water Heater	1	on demand	26.0	26.00	5%	
Clock	4	all day	1.4	5.76	1%	
DVD Player						
On Mode	1	2 hrs./day	0.8	0.78	0%	
Standby Mode	1	22 hrs./day	1.5	1.52	0%	
Fan						
Ceiling Fan	4	4 hrs./day	12.0	48.00	9%	
Oscillating fan	1	4 hrs./day	12.0	12.00	2%	
Hair Blow dryer	1	20 mins./day	18.0	18.00	3%	
Iron	1	30 mins./week	1.0	1.00	0%	
Microwave Oven	1	20 mins./day	15.0	15.00	3%	
Radio	2	2 hrs./day	2.0	4.00	1%	
Rice cooker	1	20 mins./day	5.0	5.00	1%	
Television						
42" plasma	1	7 hrs./day	57.1	57.12	10%	
Toaster	1	4 mins./day	3.0	3.00	1%	
Vacuum Cleaner	1	1.25 hrs./week	3.3	3.25	1%	
Light bulbs						
13 watt CFL	12	3 hrs./day	1.2	14.04	3%	
26 watt CFL	12	3 hrs./day	2.3	28.08	5%	
Computer & monitor	1	4 hrs./day	9.0	9.00	2%	
Total				545.265		
		At \$0.30 per kWh, monthly bill will be		\$163.58		
		At \$0.22 per kWh, monthly bill will be		\$119.96		

A/C use is based on 4.5 hrs./day (8 hrs./day in summer; 2 hrs./day in winter; and 4 hrs./day in spring and fall)



Summary				
Dwelling type	kWh/month	\$/month @ \$0.30/kWh	\$/month @ \$0.22/kWh	% reduction at Koa Ridge
Older Single Family Home with four occupants w/o solar HW (	1074.98	\$322.49	\$236.50	36.37%
Older Single Family Home with four occupants with solar HW (	840.98	\$252.29	\$185.02	18.66%
New Single Family Home with four occupants	949.68	\$284.90	\$208.93	27.97%
Koa Ridge Single Family Home with four occupants	684.06	\$205.22	\$150.49	
Older Townhome with three occupants w/o solar HW	839.08	\$251.72	\$184.60	35.02%
New Townhome with three occupants	758.12	\$227.43	\$166.79	28.08%
Koa Ridge Townhome with three occupants	545.27	\$163.58	\$119.96	



Summary				
Dwelling type	kWh/month	\$/month @ \$0.30/kWh	\$/month @ \$0.22/kWh	% reduction at Koa Ridge
Older Single Family Home with four occupants w/o solar HW (	1074.98	\$322.49	\$236.50	36.37%
Older Single Family Home with four occupants with solar HW (	840.98	\$252.29	\$185.02	18.66%
New Single Family Home with four occupants	949.68	\$284.90	\$208.93	27.97%
Koa Ridge Single Family Home with four occupants	684.06	\$205.22	\$150.49	
Older Townhome with three occupants w/o solar HW	839.08	\$251.72	\$184.60	35.02%
New Townhome with three occupants	758.12	\$227.43	\$166.79	28.08%
Koa Ridge Townhome with three occupants	545.27	\$163.58	\$119.96	



The goal of creating a water model is to determine a reasonable water use reduction target for a typical Koa Ridge home.

Water model methodology

- Started with the results of a 1999 AWWA study of 1,188 homes in 12 study areas in the western US. This gave us the average number of gallons per capita for various uses.
1. Created a model for a family of four for an SFD and a family of three for an MFD. Made some assumptions on the consumption per fixture or use. The assumptions are footnoted as comments.
 2. The "back-check" for the model was an average of 500 gallons per dwelling unit that BWS uses for planning purposes.
 - 3.



Summary			
Dwelling type	Gallons Per Day	% reduction over older DU	% reduction over newer DU
Older Single Family Home with four occupants	660.15		
New Single Family Home with four occupants	535.25		
Koa Ridge Single Family Home with four occupants	380.19	42.41%	28.97%
Older Townhome with three occupants	266.7		
New Townhome with three occupants	193.46		
Koa Ridge Townhome with three occupants	152.66	42.76%	21.09%

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THELEN
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CONSERVATION AND RESOURCES ENFORCEMENT
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

May 27, 2009

Mr. David Shideler
Cultural Surveys Hawai'i
P. O. Box 1114
Kailua, Hawai'i 96734

LOG NO: 2009.2376
DOC NO: 0905WT100
Archaeology

Dear Mr. Shideler:

**SUBJECT: 6E-42 Historic Preservation Review—
FINAL Archaeological Inventory Survey for a Trunk Sewer Line Alignment as
Part of Off-Site Improvements for the Proposed Koa Ridge Makai Community
Development,
Waipi'o & Waikele Ahupua'a, 'Ewa District, O'ahu
TMK: (1) 9-4-002: 024; 9-4-005: por. 074; 9-4-006: por. 005; 9-4-007, 011, 013, 104,
015, 017, 020, 026, 160 & 9-4-096:149**

Thank you for providing the opportunity to review this FINAL Archaeological Inventory Survey (*FINAL Archaeological Inventory Survey for a Trunk Sewer Line Alignment as Part of Off-Site Improvements for the Proposed Koa Ridge Makai Community Development, Waipi'o & Waikele Ahupua'a, 'Ewa District, O'ahu, TMK: (1) 9-4-002: 024; 9-4-005: por. 074; 9-4-006: por. 005; 9-4-007, 011, 013, 104, 015, 017, 020, 026, 160 & 9-4-096:149 [Tulchin, Whitman and Hammatt, PhD, March 2009]*) which we received on May 22, 2009. We apologize for the delay in reviewing this document as we are short Staffed

This project was the 100% pedestrian survey of a right-of-way for a proposed sewer trunk line extending 3 miles from upland Waikele down through Waipi'o and Waipahu town terminating at the Waipahu Sewage Treatment plant. A single historic property SIHP# 50-80-09-6959, an irrigation ditch and water control feature related to historic sugar cane agriculture was recorded in the mauka section of the project area.

When we reviewed the Draft report (LOG NO: 2008.5435/DOC NO: 0903WT29) for this project we asked for two revisions; check the references, and the conversion of linear footage into acres. Both of these revisions have been addressed.

This report is accepted and meets the minimum standards for compliance under HRS 6E-8 and Hawai'i Administrative Rules (HAR) §13-13-279 *Rules governing Standards for Archaeological Monitoring Studies and Reports.*

Mr. David Schideler
Page 2

We are in receipt of a final report, which was submitted along with a copy of this review letter and a text-searchable PDF version on CD for inclusion in the "SHPD Library" at the Kapolei SHPD office.

Please contact Wendy Tolleson at (808) 692-8024 if you have any questions or concerns regarding this letter.

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy A. McMahon (Deputy SHPO)
Archaeology and Historic Preservation Manager

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

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CONSERVATION AND RESOURCES ENFORCEMENT
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

October 5, 2009

Mr. David Shideler
Cultural Surveys Hawai'i
P. O. Box 1114
Kailua, Hawai'i 96734

LOG NO: 2009.3878
DOC NO: 0910NM16
Archaeology

Dear Mr. Shideler:

**SUBJECT: Draft Addendum to an Archaeological Inventory Survey of a 1339-Acre Parcel at Castle and Cooke Lands within Portions of Waipi'o and Waiawa Ahupua'a, O'ahu
Waipi'o and Waiawa, Ewa, O'ahu
TMK: 9-4-006:001, 003, 010por.; 9-5-003:001por. 004, 007 and 9-6-004:021**

Thank you for the submission of a report on an archaeological inventory survey of Castle and Cooke Lands in Waipi'o and Waiawa, O'ahu [*Archaeological Inventory Survey of a 1339-Acre Parcel at Castle and Cooke Lands within Portions of Waipi'o and Waiawa Ahupua'a, O'ahu* (Tulchin, Shideler, and Hammatt, September 2009)]. We received the report in September 3, 2009.

The original survey was approved in 2002 (0203EJ09) which identified one site - portions of Waiahole Ditch (State Site No. 50-80-09-2268) within the subject parcels. This Addendum covers an additional 59 acres which identified two historic sites (50-80-09-9530- Plantation Era Ditch system, with 6 features and 50-80-09-7080-historic clearing mound). Site 9530 is significant under criteria A, C, and D and site 7080 is significant under criteria D. We concur with these determinations. Site 7080 was test excavated and yield no findings.

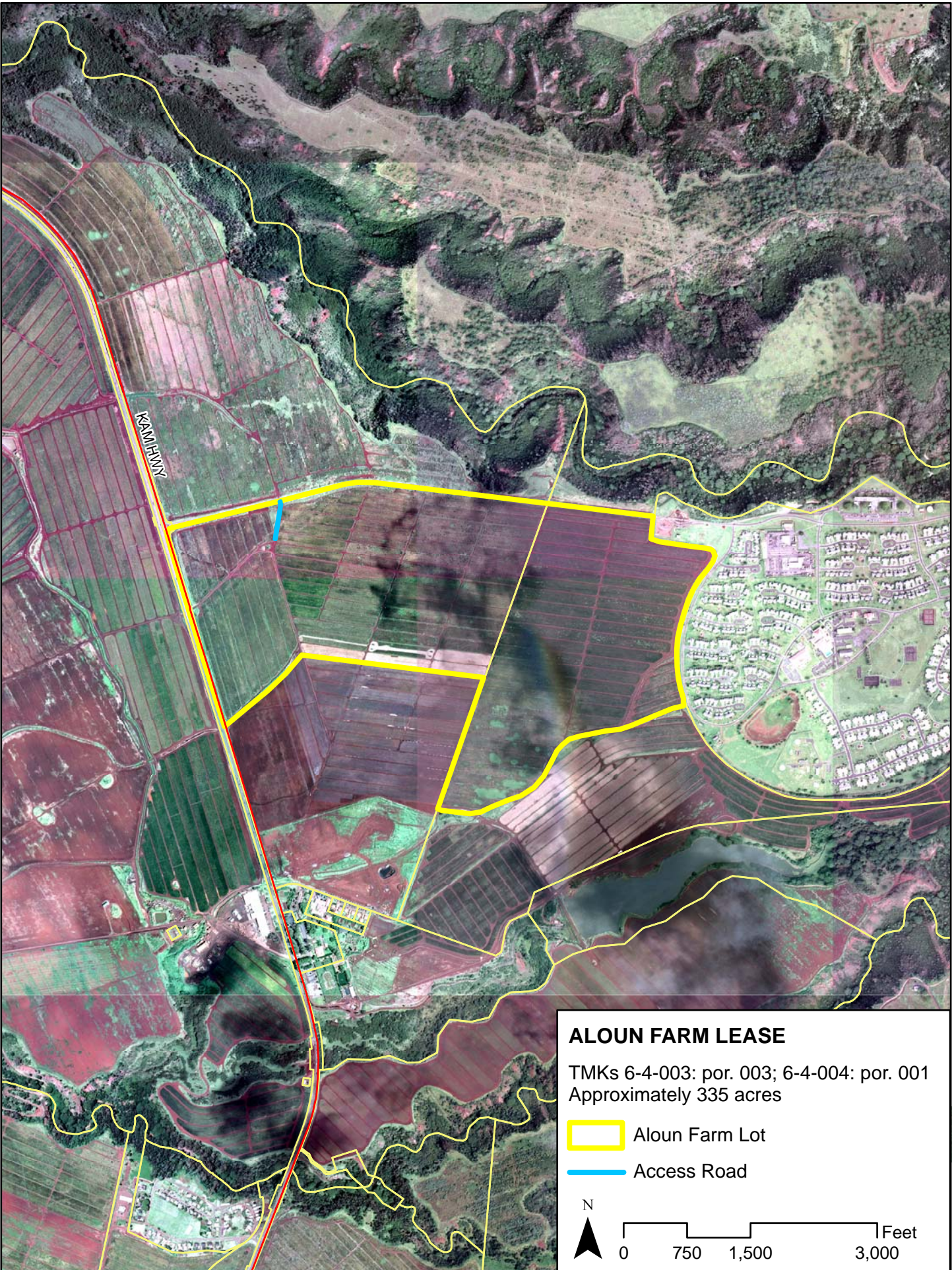
Site 9530, Feature A an irrigation ditch is recommended for preservation. Site 9530, Features B, H, I and J and site 7080 no further archaeological work is recommended. We agree with the proposed mitigation. Site 9530 is to be impacted by the development and we agree avoidance and protection is needed for this site. Therefore a preservation plan which addresses HAR-13-277 shall be submitted for approval.

This report is accepted, as it meets the minimum requirements under Hawaii Administrative Rules (HAR) §13-13-276 *Rules Governing Standards for Archaeological Inventory Surveys and Reports*.

Please send a bound hardcopy with the word FINAL in the title and a PDF searchable version on CD, with a copy of this letter attached, to the SHPD library at Kapolei.



Aloha,

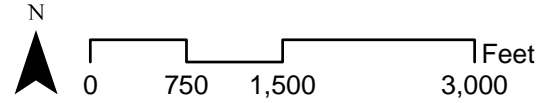
Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager



ALOUN FARM LEASE

TMKs 6-4-003: por. 003; 6-4-004: por. 001
Approximately 335 acres

-  Aloun Farm Lot
-  Access Road



Castle & Cooke
Homes Hawaii, Inc.

LAND USE COMMISSION
STATE OF HAWAII
2010 MAR 17 A 10:38

March 17, 2010

Brennon T. Morioka
Director of Transportation
State of Hawaii Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Morioka:

Subject: Koa Ridge Makai and Waiawa Development
Transportation Mitigation Improvements

Transmitted herewith is the Proposed Agreement in Principle for Transportation Mitigation Improvements for the Koa Ridge Makai and Waiawa Developments. This Agreement is based on extensive consultation and discussions with your Highways Division staff regarding the major roadway improvements proposed, their funding and implementation.

A Revised Traffic Impact Analysis Report reflecting the Agreement will be submitted shortly for your review and acceptance.

We very much appreciate the assistance and cooperation of your staff in meeting with us to formulate this Agreement.

Sincerely,

Castle & Cooke Homes Hawaii, Inc.



Laura Kodama
Director, Planning and Development,

Enclosure

EXHIBIT "52"

March 17, 2010

Castle and Cooke Homes Hawaii
Koa Ridge Makai and Waiawa Developments
Proposed Agreement in Principle
Transportation Mitigation Improvements

This agreement in principle summarizes the proposed transportation improvements, their funding and implementation for the Castle and Cooke Homes Hawaii Koa Ridge Makai and Waiawa developments based on a revised Traffic Impact Analysis Report (TIAR) prepared by Wilson Okamoto Corporation to be submitted to HDOT for review and acceptance that reflects a revised ultimate configuration for the Waipio Interchange based on recent discussions with the DOT Highways Division.

Castle & Cooke Homes Hawaii proposes to build Koa Ridge Makai as Increment 1 and Castle & Cooke Waiawa as Increment 2. Delivery of the first residential units at Koa Ridge Makai is expected by late 2012 or 2013, with full build out expected by 2020. The delivery of units at Castle & Cooke Waiawa could start by 2021 or sooner depending on the progress of infrastructure construction by the neighboring Waiawa Ridge Development. In particular, a roadway extension of Ka Uka Boulevard to the east across Panakauahi Gulch needs to be constructed by the Waiawa Ridge Development.

The proposed transportation improvements incorporate the following assumptions:

- o No new intersection connections to Kamehameha Highway from the Castle and Cooke Homes Hawaii Koa Ridge development.
- o 15% maximum internal trip capture due to mixed use development and multi-modal transportation alternatives.
- o Proposed development of Waiawa Ridge to include 5,000 residential units and a 90-acre regional commercial complex with access to H-2 Freeway provided through the Waipio Interchange and a new interchange to be constructed by Castle and Cooke Homes Hawaii referred to as Pineapple Interchange.
- o The construction of a separate northbound H-2 Freeway off-ramp to westbound Ka Uka Boulevard consistent with desirable full-build out of the Waipio Interchange configuration that would appropriately serve the Castle and Cooke Homes Hawaii Koa Ridge development as well as other existing and proposed developments in the area.

At this time, Koa Ridge Makai is anticipated to proceed in advance of both the Castle & Cooke Waiawa and the Waiawa Ridge Development. Castle & Cooke shall, at no cost

to the State HDOT, construct all necessary transportation improvements to mitigate project generated impacts at the Waipio Interchange to H-2 Freeway, along Ka Uka Boulevard in the vicinity of the Waipio Interchange to H-2 Freeway, at the Kamehameha Highway/Ka Uka Boulevard intersection, and at the developer proposed Pineapple Interchange on H-2 Freeway. Such transportation improvements shall include, but not limited to, additional lanes, turn lanes, merge/diverge lanes, freeway and road widening, on and off-ramps, traffic signalization and modifications, appropriate bicycle and pedestrian facilities, and related improvements as identified in a revised TIAR to be reviewed and accepted by HDOT. This revised TIAR shall include recommended improvements to mitigate all project generated traffic impacts with each major phase of development.

Castle and Cooke Homes Hawaii proposes to phase their Koa Ridge Makai development such that the initial phases of the development shall primarily access H-2 Freeway from the Waipio Interchange and later phases of the development shall access H-2 Freeway through a new interchange to be constructed in the general vicinity of the existing Pineapple Overpass. Castle and Cooke Homes Hawaii acknowledges that such new interchange connection to H-2 Freeway is subject to review and approval by the Federal Highway Administration (FHWA). Should FHWA deny such new interchange connection in the vicinity of the Pineapple Overpass, development within Koa Ridge may also be accordingly restricted. Castle and Cooke Homes Hawaii shall also be responsible for preparing and providing all necessary supporting information and services associated with the Interstate Modification request to FHWA for such new connection to H-2 Freeway.

By Year 2017 or five (5) years after the delivery of the 1st residential unit, Castle and Cooke Homes Hawaii will have completed design and construction on the Pineapple Interchange including all associated on- and off-ramps and necessary freeway improvements. This date is subject to confirmation by an updated traffic study to be undertaken prior to 2017 and/or within three (3) years from the delivery of the 1st residential unit.

Waiawa Ridge Development and Waipio Interchange Improvements

The ultimate configuration of the Waipio Interchange is based on overall regional needs in the surrounding area including but not limited to the combined Waiawa Ridge Development, Castle & Cooke Waiawa, and Koa Ridge Makai projects (see attached Figure). The timing and phasing of the necessary interim and ultimate interchange improvements are influenced by the development schedule pursued by the three projects. To determine the timing of specific improvements triggered by the combined

developments, a revised Traffic Impact Analysis Report (TIAR) shall be prepared and submitted to HDOT for review and acceptance that reflects the ultimate configuration for the Waipio Interchange. Such revised TIAR shall be reviewed and accepted prior to Castle and Cooke Homes Hawaii obtaining County zoning approval. An updated TIAR shall also be prepared and submitted to HDOT for review and acceptance prior to the start of construction of the Ka Uka Boulevard extension across Panakauahi Gulch. This updated TIAR shall reflect any changes in the conditions of the surrounding area as well as reflect any proposed changes to the developments or their anticipated schedules. The Waipio Interchange improvements shall be phased in a manner acceptable to HDOT that is consistent with regional needs and appropriately accounts for the anticipated pace of development of the Waiawa projects as well as the Koa Ridge Makai development.

Proposed improvements to the Waipio Interchange are anticipated to include the following:

- Two exclusive right-turn lanes on the northbound off-ramp approach to eastbound Ka Uka Boulevard. Improve the northbound H-2 Freeway off-ramp as well as improvements to northbound H-2 Freeway as needed.
- New northbound H-2 Freeway loop off-ramp to westbound Ka Uka Boulevard in the northeast quadrant of the Interchange. Relocation of the existing Ka Uka Boulevard northbound on-ramp to H-2 Freeway, adjacent to the northbound to westbound loop off-ramp. Improvements to H-2 Freeway to accommodate such new interchange improvements including widening of H-2 Freeway to provide appropriate merge and transition lanes. New westbound Ka Uka Boulevard to southbound H-2 Freeway loop on-ramp in the northwest quadrant of the interchange, including necessary improvements to southbound H-2 Freeway.
- Widen Ka Uka Boulevard bridge over H-2 Freeway to include a minimum of two through lanes in each direction, dedicated turn lanes at adjoining intersection, pedestrian and bicycle accommodations and other improvements as identified in the revised TIAR reviewed and accepted by HDOT

At the intersection of Ka Uka Boulevard and Kamehameha Highway:

- Improve Ka Uka Boulevard and Kamehameha Highway intersection to provide additional westbound right-turn lane and other improvements as identified in the revised TIAR review and accepted by HDOT.

Funding and Implementation

Castle & Cooke Homes Hawaii shall be responsible for mitigating all project generated impacts. It is acknowledged that private negotiations will be undertaken between Castle and Cooke Homes Hawaii and Waiawa Ridge Development for cost-sharing the proposed Waipio Interchange Improvements. Although public and other sources of funding will still be pursued should they become available, design and construction of the interchange improvements will otherwise be privately funded.

Updated TIARs shall be undertaken within five years of receiving LUC approval and/or within three (3) years following the first delivery of residential units at Koa Ridge Makai to adjust for changes to regional conditions as well as to account for changes in development proposal or schedule. Updated TIARs shall also be undertaken every three (3) years thereafter covering each Petition Area until 75 percent of planned residential units are constructed in each Petition Area and provided that full build-out occurs within five (5) years thereafter.



PROPOSED WAIPIO INTERCHANGE IMPROVEMENTS

DATE: 1/9/10

RECEIVED



BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Petition Of)
)
CASTLE & COOKE HOMES HAWAII, INC.)
)
For A Declaratory Order To Designate)
Important Agricultural Lands For)
Approximately 902.066 Acres At Waialua,)
Wahiawā, And Waikele, O'ahu, Hawai'i)
_____)

DOCKET NO. DR10-)
)
FINDINGS OF FACT,)
CONCLUSIONS OF LAW,)
AND DECISION AND ORDER;)
CERTIFICATE OF SERVICE)

2011 MAR 28
LAND USE COMMISSION
STATE OF HAWAII

FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND DECISION AND ORDER
AND
CERTIFICATE OF SERVICE

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

March 28, 2011 by

Executive Officer



BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Petition Of	)	DOCKET NO. DR10-42
)	
CASTLE & COOKE HOMES HAWAII, INC.	)	FINDINGS OF FACT,
	)	CONCLUSIONS OF LAW,
For A Declaratory Order To Designate	)	AND DECISION AND ORDER
Important Agricultural Lands For)	
Approximately 902.066 Acres At Waialua,)	
Wahiawā, And Waikele, O`ahu, Hawai`i)	
_____)	

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LAND USE COMMISSION
STATE OF HAWAII

**FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND DECISION AND ORDER**

CASTLE & COOKE HOMES HAWAII, INC. ("Petitioner"), filed a Petition for Declaratory Order to Designate Important Agricultural Lands on December 29, 2010, and a First Amendment to the Petition for Declaratory Order to Designate Important Agricultural Lands on January 13, 2011 (collectively "Petition"), pursuant to Hawai`i Revised Statutes ("HRS") §§ 205-44 and 45, and Hawai`i Administrative Rules ("HAR") chapter 15-15, to designate as Important Agricultural Lands ("IAL") approximately 902.066 acres of land, situated at Waialua, Wahiawā, and Waikele, O`ahu, Hawai`i, and identified as Tax Map Keys ("TMK"): 1-6-8-006: por. 10, 1-6-4-004: 7, 1-7-1-002: por. 32, and 1-9-4-003: 2 (collectively "Petition Area").

The State of Hawai'i Land Use Commission ("Commission"), having heard and examined the testimony, evidence, and argument of counsel presented during the hearings, along with the pleadings filed herein, hereby makes the following Findings of Fact, Conclusions of Law, and Decision and Order:

FINDINGS OF FACT

PROCEDURAL MATTERS

1. On December 29, 2010, Petitioner filed the Petition, Verification, and Exhibits "A" through "D" of the Petition.
2. On January 13, 2011, Petitioner filed a First Amendment to the Petition, Verification, and Exhibits "E" through "G."
3. On February 22, 2011, the State of Hawai'i Office of Planning ("OP") filed comments on the Petition to the Commission, which included a February 9, 2011, letter from the United States Department of Agriculture, Natural Resources Conservation Service ("NRCS"), also commenting on the Petition.
4. On February 23, 2011, the State of Hawai'i Department of Agriculture ("DOA") filed comments on the Petition to the Commission.
5. On February 24, 2011, the Commission held a site visit to view the Petition Area in Waialua, Wahiawā, and Waikele, O'ahu, Hawai'i.

6. On March 2, 2011, OP filed a February 23, 2011, memorandum from the State of Hawai`i Department of Land and Natural Resources, Commission on Water Resource Management (“CWRM”), commenting on the Petition.

7. On March 4, 2011, OP filed a revised Figure 1 to replace the Figure 1 submitted with OP’s comment letter dated February 22, 2011.

8. On March 8, 2011, the City and County of Honolulu Department of Planning and Permitting (“DPP”) filed comments on the Petition to the Commission.

9. On March 14, 2011, the Petitioner filed a response to the comments of OP, DOA, DPP, and CWRM to the Commission.

10. On March 23, 2011, the Commission held an action meeting on the Petition in Honolulu, O`ahu, Hawai`i. Benjamin M. Matsubara, Esq., Curtis T. Tabata, Esq., and Wyeth M. Matsubara, Esq., appeared on behalf of Petitioner. Also appearing were Bryan C. Yee, Esq., and Jesse Souki on behalf of OP, Dawn Takeuchi-Apuna, Esq., and Randy Hara on behalf of the DPP, and Russell Kokubun on behalf of the DOA.

11. The Commission entered the written comments of OP, DOA, DPP, CWRM, and NRCS, and Petitioner’s response thereto as well as the written testimony of Frederick M. Mencher into the record in this proceeding.

DESCRIPTION OF PETITION AREA

12. The Petition Area consists of approximately 902.066 acres of land, situated in Waialua, Wahiawā, and Waikele, O`ahu, Hawai`i, and identified as TMKs: 1-6-8-006: por. 10, 1-6-4-004: 7, 1-7-1-002: por. 32, and 1-9-4-003: 2.

13. The Petition Area consists of the following four parcels: TMKs: 1-6-8-006: por. 10 (the “Waialua property”), 1-6-4-004: 7 (the “Dole Plantation property”), 1-7-1-002: por. 32 (the “Whitmore property”), and 1-9-4-003: 2 (the “Mililani South property”). The Waialua property is owned in fee simple by Castle & Cooke Waialua, LLC; the Dole Plantation property is owned in fee simple by Castle & Cooke Properties, Inc.; and the Whitmore and Mililani South properties are owned by Castle & Cooke, Inc.

14. Castle & Cooke Waialua, LLC; Castle & Cooke Properties, Inc.; and Castle & Cooke, Inc., have provided their written consent to the filing of the Petition.

DESCRIPTION OF REQUEST

15. Petitioner seeks a determination from the Commission that the lands identified by Petitioner in this Petition should be designated as IAL pursuant to HRS §§ 205-44 and 45.

16. Petitioner is not seeking to reclassify any agricultural lands to the State Land Use Urban, Rural, or Conservation Districts.

17. Petitioner has represented that it is not claiming and will not claim any credits described in HRS § 205-45(h).

CONFORMANCE WITH THE STANDARDS AND CRITERIA FOR THE IDENTIFICATION OF IAL

18. The Waialua property, consisting of approximately 242.085 acres of land, is currently entirely under cultivation and is being leased to six independent farms for the growing of a wide variety of diversified crops: ginger, bird of paradise, heliconia, daikon, tomato, okra, long bean, bitter melon, ti leaf, banana, taro, sweet potato, eggplant, sweet pepper, wing bean, sequa, pumpkin, basil, green onion, crown flower, bozo, squash, dragon fruit, asparagus, sweet onion, potato, seed corn, pepper, and zucchini. Prior to being used for diversified agriculture, the Waialua property was used for growing sugarcane for nearly 100 years from 1898 until the closure of Waialua Sugar Company in 1996.

19. The Mililani South property, consisting of approximately 231.754 acres of land, is also completely under cultivation for diversified agriculture and leased to Mililani Ag Park, LLC. Mililani Ag Park, LLC, cultivates approximately 60 acres with sweet potato, field grown trees, longan, and banana. The remaining 172 acres are sub-leased to approximately 50 independent farmers who collectively grow banana, basil, beet, Chinese cabbage, chive, daikon, eggplant, green onion, kale, lemongrass, long bean, mushroom, okra, onion, peanut, pumpkin, seed corn, squash, tapioca, taro, tomato, toon (taro), wing bean, yam, ornamental trees and shrubs, ground cover, mondo grass, and turf grass. Prior use of Mililani South was for the cultivation of pineapple until the early 1990s.

20. The Dole Plantation property, consisting of approximately 222.634 acres of land, has the majority of its acreage in use for the Tanada Reservoir and gulch, which serve as an irrigation source for current agricultural activities and drainage. Approximately 14 percent (31 acres) are in active cultivation of diversified agriculture, including pineapple, plumeria, banana, mango, star fruit, a`ali`i, bromelaid, cacao, `iliahi, koa, lychee, moa, ohi`a lehua, papaya, pukiawe, rambutan, ti leaf, and tuberose. The Tanada Reservoir and gulch severely restrict the total area of the property available for cultivation. The cultivable land area is further limited by the steep slopes of the gulch which, together with the reservoir, fragment the property and contribute to an oddly configured parcel that is not conducive to the efficient layout of infrastructure and agricultural operations.

21. The Whitmore property, consisting of approximately 205.593 acres of land, is not currently in active agricultural production. The Whitmore property was used for the cultivation of pineapple for nearly 100 years until 2001, and is currently being evaluated for agricultural uses including seasonal crops, sugarcane, biofuel crops, forestry, and ranching.

22. The University of Hawai`i, Land Study Bureau ("LSB") developed the Overall Productivity Rating, which classified soils according to five levels, with "A" representing the class of highest productivity soils and "E" representing the lowest. The Waialua property consists of 57 percent "A," 43 percent "B," and a fraction of 1

percent "E" and unclassified. The Dole Plantation property consists of 38 percent "B," 51 percent "C" and "E," and 11 percent unclassified. A large portion of the property includes steep slopes that are located in the upper gulch areas to the east and in the lower gulch areas to the west of the Tanada Reservoir that limit the capability of the site for agricultural production. The Whitmore property consists of 63 percent "B" and 37 percent "E." The Mililani South property is 88 percent "A," 9 percent "B," and 3 percent "D" or "E."

23. Based on the Sunshine Maps prepared in 1985 by the Department of Business, Economic Development, and Tourism, formerly known as the State Department of Planning and Economic Development, Energy Division, 100 percent of the Waialua property receives an annual average 450 calories of solar energy per square centimeter per day, approximately 50 percent of the Dole Plantation property receives an annual average of 400 calories per square centimeter per day and the other 50 percent receives an annual average of 450 calories per square centimeter per day, approximately 96 percent of the Whitmore property receives an annual average of 400 calories per square centimeter per day and the other 4 percent receives an annual average of 350 calories per square centimeter per day, and approximately 46 percent of Mililani South receives an annual average of 400 calories per square centimeter per day and the other 54 percent receives an annual average of approximately 450 calories per square centimeter per day.

24. In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawai'i ("ALISH"). The classification system is based primarily, though not exclusively, upon the soil characteristics of the lands. The three classes of ALISH lands are: "Prime," "Unique," and "Other," with all remaining lands termed "Unclassified." When utilized with modern farming methods, "Prime" agricultural lands have a soil quality, growing season, and moisture supply necessary to produce sustained crop yields economically. "Unique" agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. "Other" agricultural lands include those that have not been rated as "Prime" or "Unique." The Waialua property consists of 32 percent Prime, 66 percent Other, and 2 percent not classified. The Dole Plantation property consists of 42 percent Prime, 1 percent Unique, and 57 percent not classified. The Tanada Reservoir and gulch on the property contribute to the large percentage of the acreage being unclassified. The Whitmore property consists of 16 percent Prime, 45 percent Unique, and 39 percent not classified. The Mililani South property consists of 90 percent Prime, 4 percent Other, and 6 percent not classified.

25. Approximately 56 percent of the Petition Area is currently being cultivated in diversified agriculture, including taro and ti leaf.

26. Irrigation water for the Waialua property is obtained from Pump 1 which is owned by Dole Food Company, Inc. Pump 1 also serves adjacent Dole Food Company, Inc., lands. Pump 1's capacity is 6 million gallons per day ("mgd"), and the Waialua property's water consumption is approximately 1.2 mgd.

27. Located within the Dole Plantation property is the 158 million gallon capacity Tanada Reservoir and gulch which supplies irrigation water to the Dole Plantation property and to a greater extent to adjacent lands, including 2,468 acres of Dole Food Company, Inc., agricultural lands and 40 acres of diversified agriculture at Helemano Plantation. The lower gulch is west of and adjacent to the reservoir and serves a drainage function by receiving water flow from neighboring upper east lands and overflow from Tanada Reservoir via a spillway. None of the adjacent lands that are supplied with irrigation water from the Tanada Reservoir and gulch are part of the Petition, and there is insufficient information in the record to determine the importance of the Dole Plantation property in supporting agricultural activity on these lands.

28. The Tanada Reservoir and gulch constitute a significant portion of the Dole Plantation property and contribute to a fragmented and oddly configured parcel, precluding cultivation of much of the area.

29. The Whitmore property is without current water allocation. Poamoho Stream is in the vicinity of the Whitmore Property. CWRM approval of a stream diversion works permit, a stream channel alteration permit, and an amendment

of the interim instream flow standard would be required for the development of a surface water source to serve the parcel. The Whitmore property, however, does receive approximately 60 inches of rainfall annually.

30. The Mililani South property receives its water from the Waiahole Ditch system which lies just north of the site. The current allocation available for Mililani South is 1.18 mgd, and actual usage is approximately 0.88 mgd.

31. The agricultural classification of the Waialua, Whitmore, and Mililani South properties is consistent with the North Shore Sustainable Communities Urban Land Use Map and Central O`ahu's Sustainable Communities Urban Land Use Map, and none of these properties are within the Urban Community Boundary.

32. The Waialua, Whitmore, and Mililani South properties are situated within the State Land Use Agricultural District.

33. The Waialua, Whitmore, and Mililani South properties contribute to maintaining a critical land mass important to agricultural operating productivity.

34. The Waialua, Whitmore, and Mililani South properties are fully integrated with the infrastructure necessary to support agricultural production, harvesting, processing, and shipping of product.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the Petition pursuant to HRS §§ 91-8, 205-44, and 205-45 and HAR § 15-15-98.

2. Pursuant to HRS § 205-44(a), the Commission has the authority to designate lands as IAL so long as any of the criteria in HRS § 205-44(c) are met.

3. The Waialua and Mililani South properties are currently used for agricultural production in accordance with HRS § 205-44(c)(1).

4. The Waialua, Whitmore, and Mililani South properties have soil qualities and growing conditions that support agricultural production in accordance with HRS § 205-44(c)(2).

5. The Waialua, Whitmore, and Mililani South properties constitute lands identified under agricultural productivity rating systems, such as the ALISH system adopted by the Board of Agriculture on January 28, 1977, in accordance with HRS § 205-44(c)(3).

6. The Waialua and Mililani South properties include the cultivation of traditional Native Hawaiian agricultural uses such as taro and ti leaf in accordance with HRS § 205-44(c)(4).

7. The Waialua and Mililani South properties have sufficient quantities of water to support viable agricultural production in accordance with HRS § 205-44(c)(5).

8. The Waialua, Whitmore, and Mililani South properties' designation as IAL is consistent with the general, development, and community plans of the City and County of Honolulu in accordance with HRS § 205-44(c)(6).

9. The Waialua, Whitmore, and Mililani South properties contribute to maintaining a critical land mass that is important to agricultural operating productivity in accordance with HRS § 205-44(c)(7).

10. The Waialua, Whitmore, and Mililani South properties are within close proximity to or are near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power in accordance with HRS § 205-44(c)(8).

11. The designation of the Waialua, Whitmore, and Mililani South properties as IAL meets the purposes of Article XI, Section 3, of the Hawai'i State Constitution by conserving and protecting agricultural lands, promoting diversified agriculture, increasing agricultural self-sufficiency, and assuring the availability of agriculturally suitable lands.

12. The designation of the Waialua, Whitmore, and Mililani South properties as IAL meets the objectives of HRS § 205-42(b) by contributing to the maintenance of a strategic agricultural land resource base that can support a diversity of agricultural activities and opportunities that expand agricultural income and job opportunities and increase agricultural self sufficiency for current and future generations.

13. The designation of the Waialua, Whitmore, and Mililani South properties as IAL meets the policies of HRS § 205-43(1) by promoting the retention of

IAL in blocks of contiguous, intact, and functional land units large enough to allow flexibility in agricultural production and management.

14. The designation of the Waialua, Whitmore, and Mililani South properties as IAL meets the policies of HRS § 205-43(7) by facilitating the access of farmers to IAL for long-term viable agricultural use.

15. The Waialua, Whitmore, and Mililani South properties meet the requirements of HRS § 205-45 for designation as IAL.

16. The Dole Plantation property does not meet the standards and criteria for the identification of IAL in accordance with HRS §§ 205-44(c)(2), (c)(3), and (c)(7).

17. The designation of the Dole Plantation property as IAL does not meet the purposes of Article XI, Section 3, of the Hawai'i State Constitution by conserving and protecting agricultural lands, promoting diversified agriculture, increasing agricultural self-sufficiency, and assuring the availability of agriculturally suitable lands.

18. Any conclusion of law herein improperly designated as a finding of fact should be deemed or construed as a conclusion of law; any finding of fact herein improperly designated as a conclusion of law should be deemed or construed as a finding of fact.

DECISION AND ORDER

This Commission, having duly considered the Petition, the oral and/or written comments of Petitioner, OP, DOA, DPP, CWRM, and the NRCS, and motions having been made and seconded at a meeting on March 23, 2011, in Honolulu, Hawai`i, and the motions having received the affirmative votes required by HAR § 15-15-13 and HRS § 205-45(e), and there being good cause for the motions,

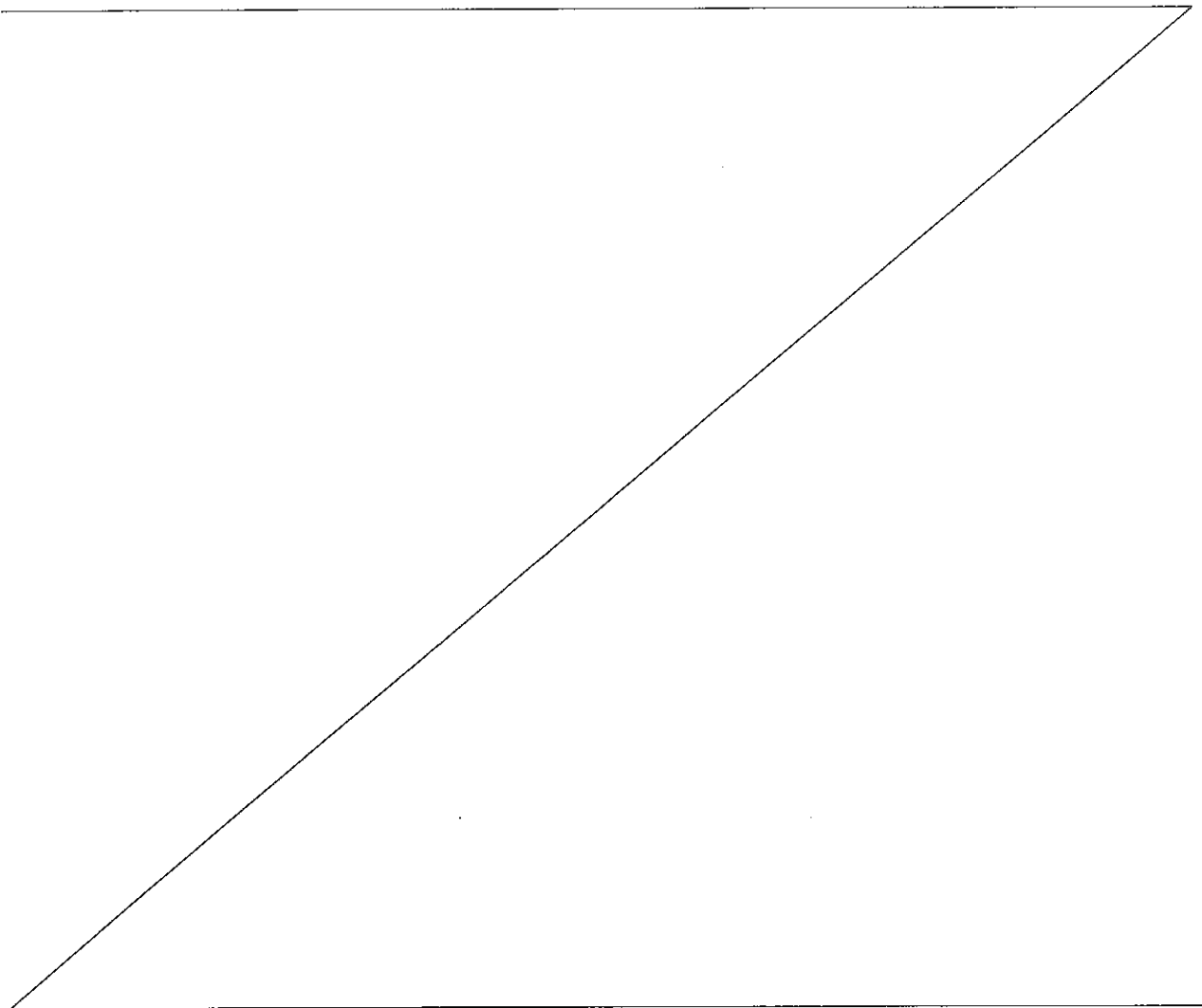
HEREBY ORDERS that the Waialua property, consisting of approximately 242.085 acres of land, situated in Waialua, O`ahu, Hawai`i, and identified as TMK: 1-6-8-006: por. 10; the Whitmore property, consisting of approximately 205.593 acres of land, situated in Wahiawā, O`ahu, Hawai`i, and identified as TMK: 1-7-1-002: por. 32; and the Mililani South property, consisting of approximately 231.754 acres of land, situated in Waikele, O`ahu, Hawai`i, and identified as TMK: 1-9-4-003: 2, and shown approximately on Exhibit "1," attached hereto and incorporated by reference herein, shall be and are hereby designated as IAL as governed by HRS Chapter 205.

IT IS FURTHER ORDERED that the designation of the Waialua property, the Whitmore property, and the Mililani South property as IAL shall be subject to the following conditions:

1. Petitioner shall comply with representations made to the Commission with respect to not claiming any credits described in HRS § 205-45(h) with respect to the Waialua property, Whitmore property, and the Mililani South property.

2. Within seven days of the issuance of the Commission's Decision and Order, Petitioner shall record it with the Bureau of Conveyances.

IT IS FURTHER ORDERED that the Dole Plantation property, consisting of approximately 222.634 acres of land, situated in Waialua, O'ahu, Hawai'i, and identified as TMK: 1-6-4-004: 7, and shown approximately on Exhibit "2," attached hereto and incorporated by reference herein, shall not be designated as IAL as governed by HRS Chapter 205.



ADOPTION OF ORDER


This ORDER shall take effect upon the date this ORDER is certified
by this Commission.

Done at Honolulu, Hawai'i, this 28th, day of March, 2011, per
motions on March 23, 2011.

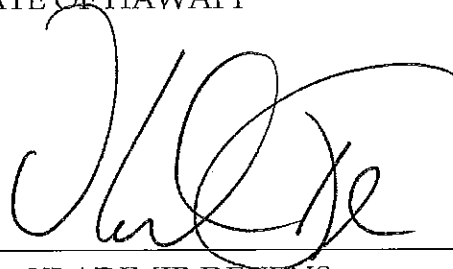
LAND USE COMMISSION

APPROVED AS TO FORM

STATE OF HAWAII



Deputy Attorney General


By 

VLADIMIR DEVENS
Chairperson and Commissioner

Filed and effective on:

3/28/2011

Certified by:



ORLANDO DAVIDSON
Executive Officer

EXHIBIT "1"

(Consisting of 4 pages)

DR10-42

Approximately 679.432 acres of land owned by Petitioner’s affiliated companies, Castle & Cooke, Inc., and Castle & Cooke Waialua, LLC, are designated as Important Agricultural Lands (“IAL”). The parcels are specifically described as TMK: 1-6-8-006: por. 10 (owned by Castle & Cooke Waialua, LLC); 1-7-1-002: por. 32 (owned by Castle & Cooke, Inc.); and 1-9-4-003: 2 (owned by Castle & Cooke, Inc.).

The following table shows a summary of the TMKs and approximate acreage for the IAL lands:

	TMK	Approximate Acreage
Waialua	1-6-8-006: por. 10	242.085
Whitmore	1-7-1-002: por. 32	205.593
Mililani South	1-9-4-003: 2	231.754
Total		679.432

The above table identifies the IAL lands and the related TMK parcels. The tax maps that follow further identify the individual TMK parcels and portions thereof that are designated IAL.

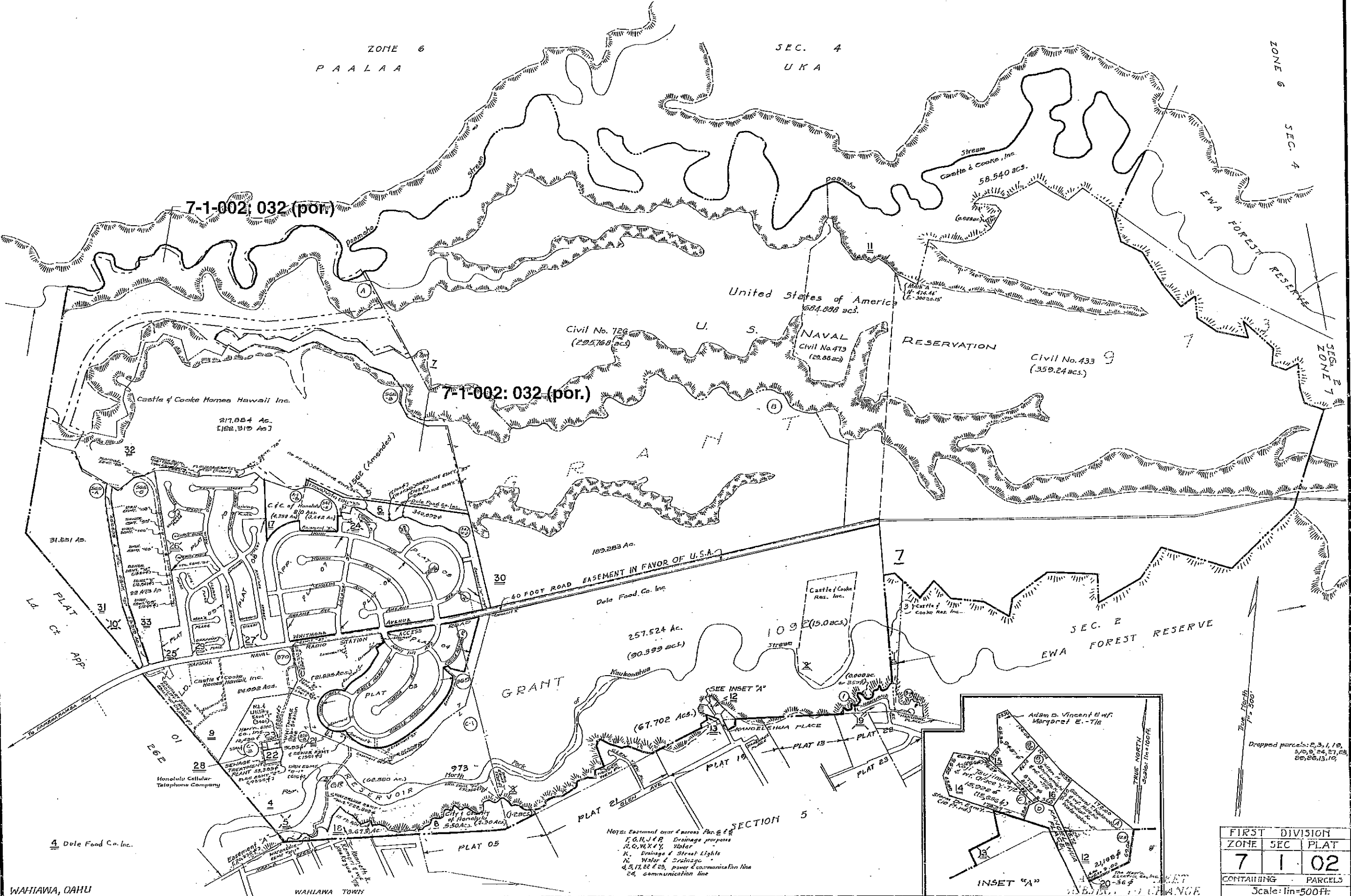
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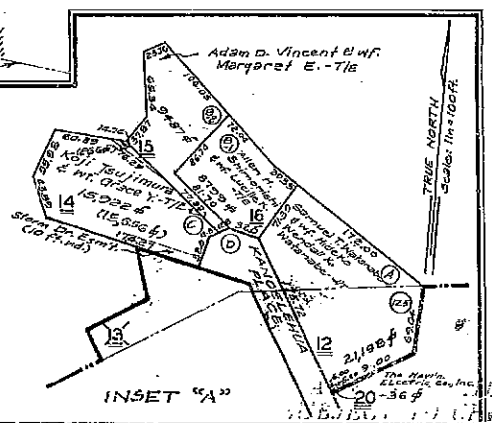
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7-1-002: 032 (por.)

7-1-002: 032 (por.)

Notes: Easement over & across Par. 6 & 7
 F, G, H, J, K Drainage purposes
 L, M, N, O, P Water
 Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ



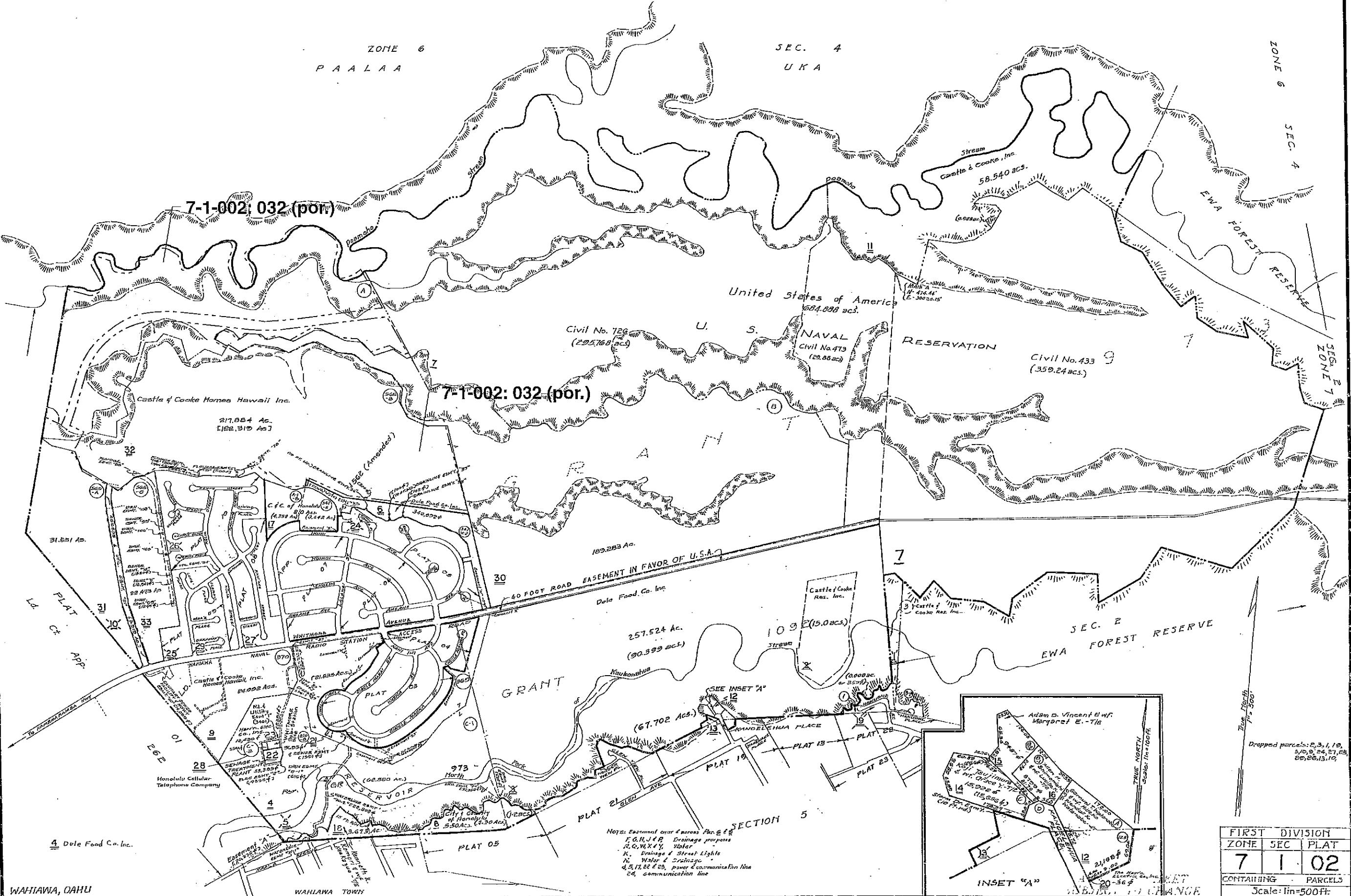
FIRST DIVISION		
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CONTAINING PARCELS		
Scale: 1 in = 500 FT.		

PRINTED.....

WAHIAWA, OAHU

WAHIAWA TOWN

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 1993
 1998
 2003
 2008
 2013
 2018
 2023



Notes: Easement over & across Par. 6 & 7
 F, G, H, J, K Drainage purposes
 L, M, N, O, P Water
 Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

Dropped parcels: 2, 3, 4, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34

FIRST DIVISION		
ZONE	SEC	PLAT
7	1	02
CONTAINING PARCELS		
Scale: 1 in = 500 FT.		

PRINTED

EXHIBIT "2"

(Consisting of 2 pages)

DR10-42

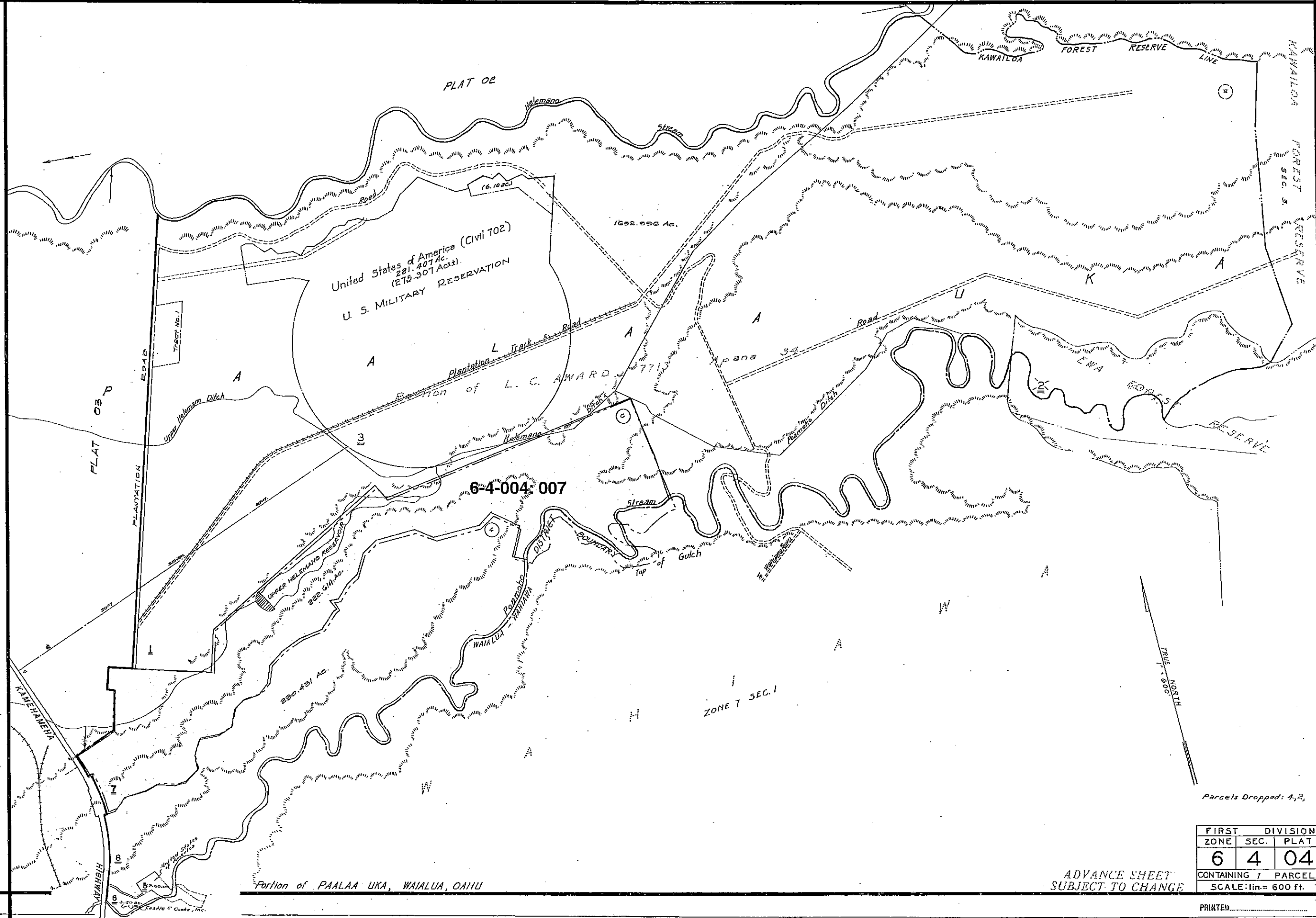
Approximately 222.634 acres of land owned by Petitioner's affiliated company, Castle & Cooke Properties, Inc., are not designated as Important Agricultural Lands ("IAL"). The parcel is specifically described as TMK: 1-6-4-004: 7.

The following table shows a summary of the TMK and approximate acreage for the non-IAL land:

	TMK	Approximate Acreage
Dole Plantation	1-6-4-004: 7	222.634
Total		222.634

The above table identifies the non-IAL land and the related TMK parcel. The tax map that follows further identifies the individual TMK parcel that is not designated IAL.

AUG 31 1939
 OCT 1 1939
 DEC 29 1939
 JAN 31 1940
 JAN 6 1941
 JAN 28 1941
 FEB 12 1945
 FEB 1 1948
 MAR 27 49
 APR 27 50
 MAY 9 50
 JUN 21 50
 JUL 7 50
 AUG 15 50
 SEP 25 50



Divg. No. 4622
 By: R. K. & H. J. Dept. 1211
 Source: Tax Maps, Bureau of Survey Dept. (Reg. Map No. 2796)
 Appr. by:

Portion of PAALAA UKA, WAIALUA, OAHU

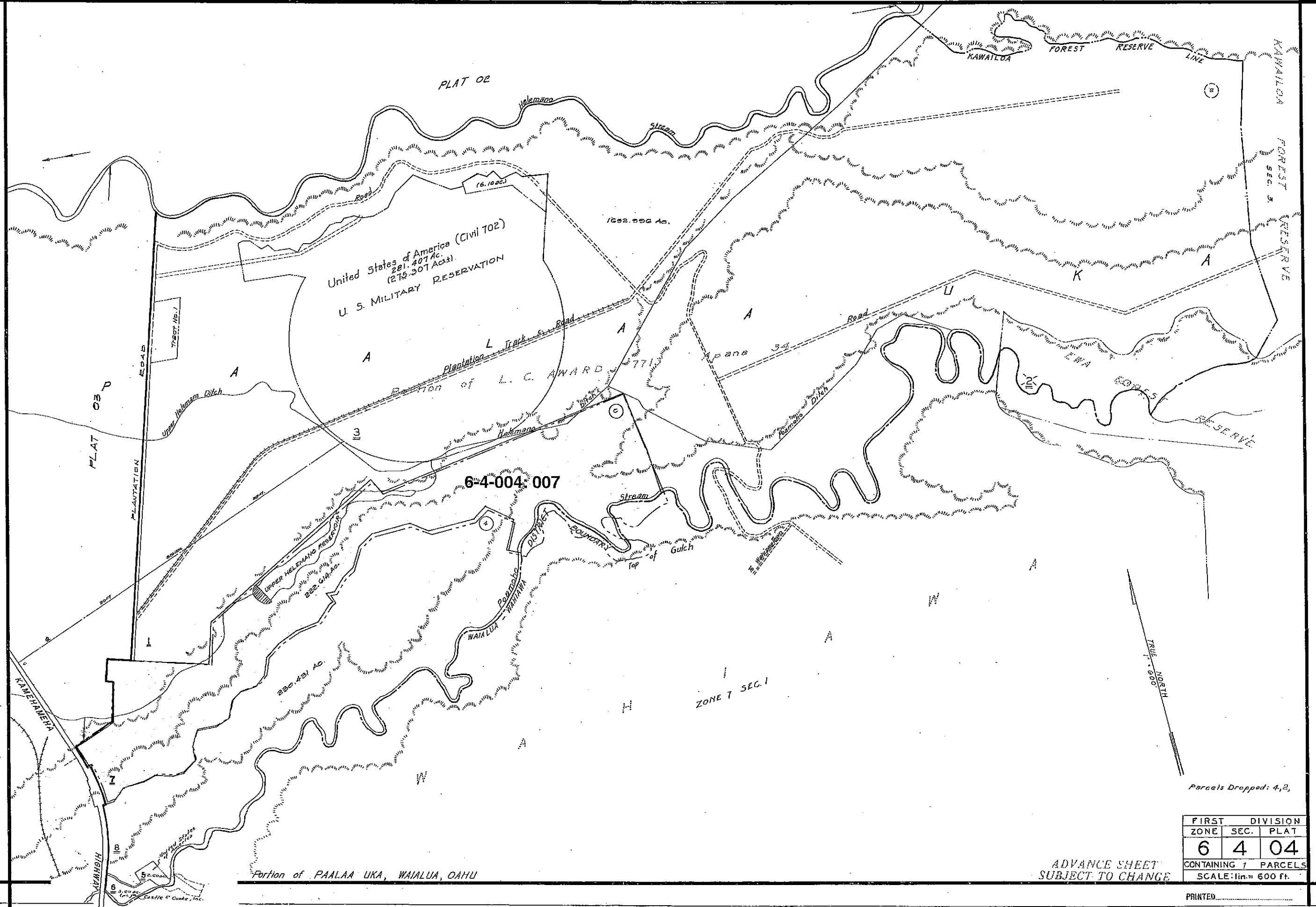
Parcels Dropped: 4, 2,

FIRST DIVISION		
ZONE	SEC.	PLAT
6	4	04
CONTAINING 1 PARCELS		
SCALE: 1 in. = 600 ft.		

ADVANCE SHEET
SUBJECT TO CHANGE

PRINTED

AUG 31 1939
 OCT 1 1939
 DEC 29 1939
 JAN 31 1940
 JAN 6 1941
 JAN 28 1941
 FEB 1 1945
 FEB 1 1948
 MAR 27 19
 APR 27 33
 MAY 9 33
 JUN 24 36
 JUL 7 38
 AUG 15 37
 SEP 25 37



Dwg. No. 4622
 By: R. K. S. H. J. - Dept. 1211
 Source: Tax Maps, Bureau of Survey Dept. (Reg. Map No. 2796)
 Appr. by: _____

Portion of PAALAA UKA, WAIALUA, OAHU

Parcels Dropped: 4, 2,

FIRST DIVISION		
ZONE	SEC.	PLAT
6	4	04
CONTAINING 1 PARCELS		
SCALE: 1 in. = 600 ft.		

ADVANCE SHEET
 SUBJECT TO CHANGE

PRINTED



BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In The Matter Of The Petition Of) DOCKET NO. DR10-42
)
CASTLE & COOKE HOMES HAWAII, INC.) CERTIFICATE OF SERVICE
)
For A Declaratory Order To Designate)
Important Agricultural Lands For)
Approximately 902.066 Acres At Waialua,)
Wahiawā, And Waikele, O`ahu, Hawai`i)
_____)

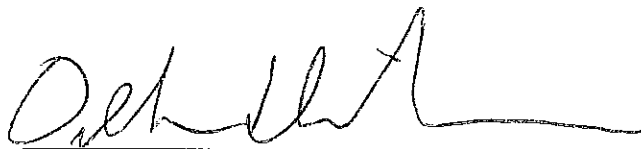
CERTIFICATE OF SERVICE

I hereby certify that a copy of the FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER dated March 24, 2011 was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by regular or certified mail as noted:

	HAND DELIVERED	REGULAR MAIL	CERTIFIED MAIL
JESSE SOUKI, DIRECTOR Office of Planning 235 S. Beretania Street Rm. 600 Honolulu, Hawai`i 96813	X		
BRYAN YEE, ESQ. Deputy Attorney General Hale `Auhau, Third Floor 425 Queen Street Honolulu, Hawai`i 96813		X	

	HAND DELIVERED	REGULAR MAIL	CERTIFIED MAIL
David Tanoue-Director of Planning City and County of Honolulu 650 South King Street Honolulu, HI, 96813		X	
Dawn Takeuchi-Apuna, Esq. Deputy Corporation Counsel City and County of Honolulu 530 South King St.. Honolulu, HI 96813		X	
BENJAMIN M. MATSUBARA, Esq. WYETH MATSUBARA, Esq. CURTIS T. TABATA, Esq. Matsubara-Kotake 888 Mililani Street, 8 th Floor Honolulu, Hawaii 96813			X

Dated Honolulu, Hawai'i, March 28, 2011.



ORLANDO DAVIDSON

2010 JUN 10 PM 2:22

Testimony of
BRUCE S. PLASCH, PH.D.
DECISION ANALYSTS HAWAII, INC.
SLUC Docket No. A07-775 Castle & Cooke Homes Hawai'i, Inc.

In the Matter of the Petition of Castle & Cooke Homes Hawai'i, Inc.
To Amend the State Land Use District Boundary of Lands Situated at
Waipi'o and Waiawa, O'ahu, Hawai'i

TMK: (1) 9-4-06: Portion 1, Portion 2, Portion 3, Portion 5,
Portion 29, and Portion 31; (1) 9-4-06: 38; (1) 9-4-06: Portion 39;
(1) 9-5-03: Portion 1 and Portion 4; and (1) 9-6-04: 21

January 2010

My name is Bruce Plasch and I am President of Decision Analysts Hawai'i, Inc., a consulting firm specializing in land economics. I have been an economic consultant in Hawai'i since 1971. A copy of my resume is attached.

My company was retained by Castle & Cooke Homes Hawai'i (CCHH) to analyze the agricultural impacts of the Koa Ridge Makai and Castle & Cooke Waiawa development (included as Appendix H in the Final Environmental Impact Statement).

My analysis covered the agricultural conditions of the Petition Area, potential crops and crop production in the study areas, locational advantages and disadvantages for crop production, historic and current agricultural uses, impacts to the existing agricultural tenants, impacts on the growth of diversified crop farming, impacts on agricultural land values and rents, and food security. My analysis also addressed the value of open space and the project's consistency with relevant State and City policies. In response to comments on the project's Draft EIS, I conducted additional research and analysis on the suitability of the State's remaining agricultural lands for diversified agriculture and on food self-sufficiency.

I will briefly summarize my findings on the project's agricultural conditions, its impact on current farm and ranch tenants, and its impacts on the growth of diversified agriculture and food self-sufficiency.

Agricultural Conditions. The Project area totals about 766 acres. About 565 acres (74%) are suitable for growing low-elevation crops. The fields have favorable soil conditions and soil ratings; the terrain is gently sloping; the climate is mild and sunny; and access is good. A water allocation of 1.1 million gallons per day from Waiahole Ditch is sufficient to irrigate about 314 acres in diversified crops.

Based on these agronomic conditions, the lands within the Petition Area are suitable for growing a variety of commercial crops including, but not limited to: beans, herbs, flowers/nursery products, leafy vegetables, squashes, melons, tropical fruits, root vegetables, and summer seed corn.

Impact on Aloun Farms. Since 2002, 446 acres of the 576-acre Koa Ridge Makai Petition Area have been leased to Aloun Farms which farms about 325 acres. Aloun Farms uses the land to grow leafy vegetables for the Honolulu market and seed corn for export. Aloun Farms' operations on the Koa Ridge Makai lands provide an estimated 34 jobs, or about 24% of the total jobs it supports.

In order to replace the land lost to the Project and to allow an orderly transition to new fields, Castle & Cooke Homes Hawai'i arranged for Dole Food Company Hawai'i to issue a license to Aloun Farms for about 335 acres of former pineapple land located north of the Dole Plantation. The replacement land will allow Aloun Farms to grow the same crops and maintain about the same production, revenues, operating costs, delivery costs, employment and payroll as would occur at Koa Ridge Makai.

Because of the replacement lands that have been made available, the Project will not have a significant impact on the operations of Aloun Farms. However, some adjustments in varieties and cultivation practices might be required due to slightly different agronomic conditions (e.g., soils, temperature, solar radiation, and rainfall). Also, Aloun Farms could incur additional expenditures to prepare the soils and irrigation systems for their particular crops.

Impact on Grazing Operations. Since 2000, 186 acres of the 191-acre Castle & Cooke Waiawa Petition Area have been leased to the Flying R Livestock Company for cattle grazing. In addition to the Petition Area, Flying R Livestock Company's operation at Waiawa encompasses an additional 218 acres of adjoining gulch land. One part-time rancher is required to manage about 40 cow-and-calf units and three bulls that graze on the 404 total acres.

Development of the Project would eliminate cattle grazing in the Project Area and adjoining gulch lands. However, the proposed development is expected to have no significant impact on cattle production or employment since the herd at Castle & Cooke Waiawa, as well as the herd at Waiawa Ridge, can be moved onto the rancher's leased land at Koa Ridge Mauka (about 625 acres) and the North Shore (about 3,300 acres). Furthermore, the supply of grazing land in Hawai'i is very large—over 50,000 acres on O'ahu alone—and has increased statewide due to the contraction of plantation agriculture.

Land Available for Diversified Crops. The contraction and closure of sugarcane and pineapple plantations have released an enormous amount of farmland that can now be used for other crops. As of January 2010, over 177,000 acres remained available statewide for farming. On O'ahu, over 15,000 acres of former plantation land remain available (updated), including about 2,500 acres in upper Kunia, about 8,500 acres on the North Shore, over 2,700 acres near Kahuku, and about 1,700 acres scattered throughout other parts of the island.

Most of the former plantation land has high-quality soils (rated Prime under ALISH, and A or B by the LSB), ample sunshine (annual average of about 450 or more calories per square centimeter), and access to irrigation water. Thus, most of these lands have soil ratings, solar radiation, and access to irrigation water similar to Koa Ridge Makai and Castle & Cooke Waiawa.

Acreage Trends, Diversified Crops. Regarding the growth trends of diversified crops, acreage has not changed significantly since 1995. Some crops have expanded in acreage (e.g., seed corn), while other crops have declined in acreage (e.g., fresh vegetables and melons).

Impact on the Growth of Diversified Crop Farming. The Project will commit 565 acres of farm land to a non-agricultural use. In view of the available supply of farm

land (177,000+ acres statewide and 15,000+ acres on O'ahu), the development of this land—combined with the other planned developments in Hawai'i—involves the loss of too little farm land to significantly affect either (1) the growth of diversified crop farming (which has not grown significantly in acreage since 1995), or (2) the relocation of farms that are being displaced or could be displaced from Central O'ahu and `Ewa. In summary, good farmland is not the factor limiting the growth of diversified crop farming.

Food Self-Sufficiency. During the Draft EIS review period, we were asked to take a closer look at how committing 565 acres of farm land to non-agricultural uses would affect our State's ability to increase its food self-sufficiency. In our research, we found that less than 12,500 acres of Hawai'i's farmland are used to supply fresh fruits and vegetables consumed in Hawai'i. According to the University of Hawai'i College of Tropical Agriculture and Human Resources, this local supply is about one-third of the State's total fresh fruit and vegetable consumption, with the remaining two-thirds being supplied by imports. Thus, less than 25,000 additional acres would be needed for 100% self-sufficiency in fresh fruits and vegetables [(12,500 acres x 3) - (the existing 12,500 acres)]. In practice, acreage requirements would be much less than 25,000 acres since many imports cannot be grown profitably in Hawai'i. Subtracting the 25,000 acres required for 100% self-sufficiency from the 177,000+ available acres would leave over 150,000 acres to accommodate growth in demand as a result of population growth.

Replacing imports of beef, pork, eggs, and fresh milk with locally-raised products would not require high-quality farmland unless feed crops could be grown locally. Unfortunately, a number of commercial attempts to grow grains and alfalfa in Hawai'i have been unsuccessful. The major problems have been (1) pests, particularly birds that eat the grains before they are harvested; (2) humidity that is too high for drying alfalfa properly; and (3) high production costs compared to those of mainland farms.

Summary of Findings. My findings indicate that the proposed development is not expected to have a significant adverse impact on agriculture. Replacement lands are being made available to Aloun Farms. The Flying R Livestock Company has sufficient land to relocate its herd. And sufficient land is available to achieve 100% self-sufficiency in fresh fruit and vegetables, and to accommodate future growth.

BRUCE S. PLASCH, PH.D.

Decision Analysts Hawai'i, Inc.

Bruce Plasch is owner and President of *DAHI*, an economic and financial consultancy that specializes in the economies of Hawai'i and the Pacific basin.

Areas of Expertise

- **Economic Development:** community, regional and island development; comparative advantages of economic activities; exports, import substitution, support activities; tourism, recreation, ocean activities, agriculture, forestry, aquaculture, energy, commercial and industrial activities; infrastructure requirements; government support services and incentives; economic models and forecasts.
 - **Land and Housing Economics:** development forces and patterns, forecasts, values and rents.
 - **Resource and Environmental Economics:** resource pricing, incentives and disincentives, valuation of externalities, and carrying capacity studies.
 - **Market Assessments:** market forces, market potential, prices, absorption rates.
 - **Project Feasibility:** profitability, project financing, cash-flow analysis.
 - **Valuations:** leases, businesses, contracts, lost earnings.
 - **Economic Benefits and Impacts:** employment, community benefits, demographic impacts, government revenues and expenditures.
 - **Policy Analyses:** planning reports, position papers, analysis.
 - **Expert Witness Testimony:** government commissions, legislative bodies, contested-case hearings, court trials.
-

Education

- Ph.D. (1971) and M.S. (1966), Engineering-Economic Systems, Stanford University, specializing in economics, finance, and quantitative analysis.
 - B.S. (1965), University of California, supplemented with an additional year of liberal arts.
-

Professional Experience

- Hawaii-based economic and financial consultant since 1971.
 - President of *DAHI* since 1979.
 - Assistant Professor (economics and statistics), University of Hawai'i, 1970 to 1973.
-

Contact

- **Mailing Address:** 1655 Kamole Street, Honolulu, HI 96821-1425
- **Office:** (808) 373-9364 • **Fax:** (808) 373-9590 • **E-mail:** bplasch@hawaii.rr.com

PROFESSIONAL QUALIFICATIONS

Name: **Sharla M. Nakashima**

Title: Environmental Scientist

Education: BS, Chemistry, University of Hawaii at Manoa, 2000

Training: OSHA 40 Hour HAZWOPER
DOT Hazardous Materials Handling

Experience: EnviroServices & Training Center, LLC, Environmental Chemist, 2000 to Present.
University of Hawaii, Chemistry Department, Graduate Research Assistant, 2000.

Ms. Nakashima's primary responsibilities are conducting Phase I and II environmental site assessments. She is also the lead person to conduct data QA/QC/validation/reduction. Ms. Nakashima possesses experience in operating global positioning system (GPS) instrumentation and conducting hazardous materials inventories/classifications/segregations/compatibility determinations.

PAST PROJECT EXPERIENCE

Sharla M. Nakashima

Phase I Environmental Site Assessments on the Islands of Oahu, Maui, Kauai, Hawaii, Lanai; Environmental Professional. Ms. Nakashima has conducted numerous Phase I environmental site assessments throughout the State of Hawaii in accordance with generally accepted Phase I industry protocol as described in the ASTM E-1527 standard and to satisfy “all appropriate inquiry” as defined in 42 United States Code (U.S.C.) §9601(35)(B). Work sites included commercial, industrial, agricultural, condemned, and residential land ranging in size from small properties (less than 2.0 acres) to larger properties (greater than 300.0 acres).

Phase II Environmental Site Assessments/Site Screening Assessments on the Islands of Oahu, Maui, Kauai, Hawaii, Lanai; Project Manager. Ms. Nakashima has performed numerous Phase II environmental site assessments and site screening assessments throughout the State of Hawaii. Projects included surface soil investigation utilizing both multi-incremental and discrete sampling protocols and subsurface soil/groundwater investigations using hand tools, direct-push rig, and hollow-stem augering techniques. Contaminants investigated included petroleum/petroleum-related compounds, heavy metals, pesticides/herbicides, PCBs, and dioxins/furans.

Phase II Environmental Site Assessments/Site Screening Activities; GPS Team Leader. Ms. Nakashima utilized Trimble Navigation Global Positioning System (GPS) instrumentation and Geographical Information Systems (GIS) applications for numerous projects to identify/locate pre-determined sample locations, document sample locations or site features, and/or identify property limits. GIS data obtained were incorporated in both the planning and reporting phases of applicable projects.

Underground Storage Tank (UST) Closure and Release Response; Environmental Scientist. Ms. Nakashima has closed numerous UST systems throughout the State of Hawaii. Closure and release response activities were performed in accordance with Hawaii Administrative Rules 11-281. Duties included coordination and management of various subcontractors, documentation of closure (both removal and close in place), release assessment sample collection, site remediation, waste profiling/packaging/disposal, communication with State regulators, and report preparation.

Voluntary Response Program (VRP) Site Assessment and Remediation; Environmental Scientist/Project Manager. Ms. Nakashima has served as both environmental scientist and project manager on several VRP projects on the Island of Oahu. Ms. Nakashima worked on all phases of the VRP, including project scoping, planning document preparation, field sampling, data assessment, contaminated media removal/remediation, confirmation sampling, and report preparation. Contaminants addressed included petroleum/petroleum-related compounds, heavy metals, pesticides/herbicides, PCBs, and dioxins/furans.

Industrial Wastewater Discharge Permitting (IWDP), Environmental Scientist. Ms. Nakashima acquired an IWDP which authorized the facility to discharge industrial wastewater into the City and County of Honolulu’s publicly owned treatment works (POTW) under Chapter 14 of the Revised Ordinances of Honolulu.

Underground Injection Control (UIC) Permitting, Environmental Scientist. Ms. Nakashima acquired a UIC permit for two dry wells located at a car rental facility in Kona, Hawaii. Work included investigation and application procedures required by the Hawaii Department of Health-Safe Drinking Water Branch.

Hazardous Materials Inventory, Environmental Chemist. Ms. Nakashima conducted a hazardous materials survey at over sixty (60) public intermediate and high schools on the islands of Oahu, Kauai, Maui, Molokai, Lanai and Hawaii. Work included identification and categorizing of over 30,000 hazardous materials, conducting photographic documentation, and determining NFPA labeling requirements for classroom storage areas potentially containing hazardous materials.

Household Hazardous Waste (HHW) Collection, Environmental Scientist. Ms. Nakashima assisted with the collection of HHW in Honolulu, Lahaina, Wailuku, Hilo, and Kona. Tasks included identification, packaging, labeling, transportation and disposition of HHW in accordance with OSHA, EPA, and DOT protocol.

Hazardous Waste Characterization and/or Disposal, Environmental Scientist. Ms. Nakashima assisted in the disposal of various chemicals and hazardous wastes at an abandoned laboratory in Waimanalo, Oahu. Additional sites included several public intermediate and high schools. Tasks included identification, packaging, labeling, transportation and disposition of hazardous waste in accordance with OSHA, EPA, DOT, and local regulations.

Asbestos Air-Monitoring, City and County – Department of Agriculture, Environmental Scientist. Ms. Nakashima assisted and/or conducted air monitoring using low volume sampling pumps during asbestos abatement activities.

Laboratory Studies, Research Assistant. Ms. Nakashima conducted studies of protein conformational dynamics through photothermal methods and purified horse heart myoglobin within thin layered polymer slides and organic solvents. Lab experience also included utilization of Gas Chromatography (GC) -Mass Spectrometry (MS), High Performance Liquid Chromatography (HPLC), Nuclear Magnetic Resonance (NMR), Infrared (IR) spectrometry, and Ultraviolet/Visible (UV-VIS) Spectrometer.