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September 9, 1996

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

FINAL ENVIRONMENTAL ASSESSMENT FOR THE PIIHONUA-KUKUAU TRANSMISSION MAIN & RESERVOIR, PUNAHOA 1, PONAHAWAI HOMESTEADS, KUKUAU 1, SOUTH HILO DISTRICT, HAWAII (TAX MAP KEY: PORTIONS OF 3/2-5-08:24; 2-5-60;, 2-5-35; 2-5-11:04; 2-5-06:61, 142 AND 149; 2-4-75)

The County of Hawaii Department of Water Supply has reviewed the comments received during the 30-day public review period which began on June 8, 1996. We have determined that this project will not have significant environmental effects and hereby issue this Findings of No Significant Impact. Please publish this notice in September 23, 1996 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the Final EA. Please contact Mr. Gary Kawasaka at (808) 961-8660 if you have any questions.

for Milton D. Pavao, P.E.
Manager

GK

Enc.

copy - Hawaii District Land Agent, State of Hawaii Department of Land and Natural Resources

1996-09-23-HI-FEA- Piihonua - Kukuau Transmission Main & Reservoir

Final Environmental Assessment

PIIHONUA-KUKUAU TRANSMISSION MAIN & RESERVOIR

Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii

Prepared for:
Department of Water Supply
County of Hawaii

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August 13, 1996

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1.0 INTRODUCTION

1.1 Proposing Agency

The proposing agency, the County of Hawaii Department of Water Supply ("DWS"), proposes to construct a 1.0 MG reservoir and 16" transmission main. The use of State land and County funds trigger the environmental review requirements under Chapter 343, Hawaii Revised Statutes.

1.2 Agencies Consulted

The following agencies and organizations were consulted in the process of preparing this environmental assessment or during the public review period:

- Federal
  - U.S. Army Corps of Engineers
  - U.S. Department of the Interior, Fish and Wildlife Services
- State
  - Department of Health
  - Department of Land and Natural Resources
  - Office of State Planning
  - Department of Accounting and General Services
- County
  - Planning Department
  - Department of Public Works
  - Fire Department

2.0 DESCRIPTION OF PROPOSED ACTION

2.1 Project Description, Location, and Ownership

The proposed project consists of land acquisition, design, and construction of a 1.0 MG reservoir and appurtenances, service road, and approximately 8,400' of 16" transmission main. The approximately 1-acre reservoir site is located 300'

east (makai) of the existing deadend of Haleoke Street in Punahoa 1, South Hilo District, island and county of Hawaii (see Figure 1, "Location Map," on page 3)(TMK: 2-5-08:24 por.). DWS will subdivide and purchase this site from the current private landowner. An easement for a temporary service road located within a planned right-of-way would also have to be negotiated with the landowner until the permanent right-of-way is created.

The proposed 16" transmission main traverses Punahoa 1, Ponahawai Homesteads, and Kukuau 1 with one end of the line at the Hilo Heights Subdivision and the other end at Sunrise Estates Subdivision (TMK: 2-5-08:24, 2-5-60 (Hokulani Street), 2-5-35 (Hokulani Street), 2-5-11 (Kaumana Drive and parcel 4), 2-5-06:61, 142 & 149, and 2-4-75 (easement)) (see Figure 2, "Proposed Reservoir Site and Transmission Main Alignment," on page 4). The proposed alignment is entirely within existing or planned street rights-of-way, except for the segment where the alignment crosses Alenaio Stream and enters Sunrise Estates. For the undeveloped segments within planned rights-of-way, DWS must negotiate easements with the private landowners to enable the lines to be installed prior to the creation of the actual rights-of-way.

2.2 Need and Objectives for the Proposed Facilities

The proposed reservoir and transmission main are part of the County of Hawaii distribution system for the South Hilo water system. The surface water sources for this system have been replaced by a recent well at the Piihonua well field. The proposed reservoir will tie into an existing 10" transmission main (see Figure 3, "South Hilo Water System (portion)," on page 5).

The objectives for this project, which implement the County's Water Use and Development Plan (see Section 4.5 on page 21), are threefold:

- increase the storage capacity of this system to assure sufficient reserve to meet peak demands and to optimize pumping hours, thereby moderating the power cost of the well pumps.
- improve the pressure to serve existing and planned developments (e.g., Sunrise Estates);
- replace the existing 10" line that is very old, possibly leaking, and in places inaccessible.

2.3 Timetable and Cost

Land acquisition negotiations are ongoing. Construction plans will be prepared once the alignment has been confirmed based on the final land acquisitions. DWS plans to start construction by the last quarter of 1997 and complete a year later. The estimated construction cost is $2.8 million using County funds.

FIGURE 1. Location Map

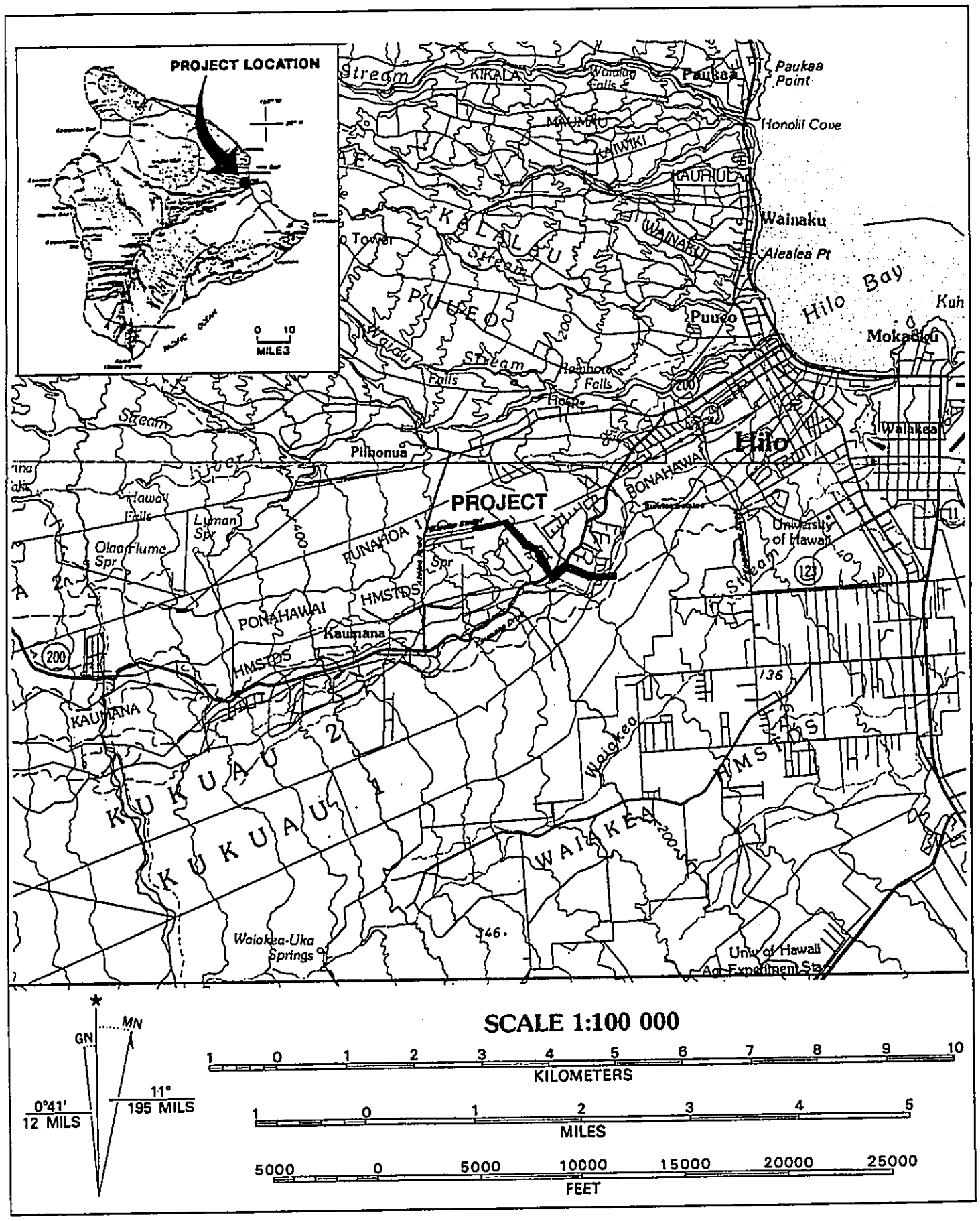


FIGURE 2. Proposed Reservoir Site and Transmission Main Alignment

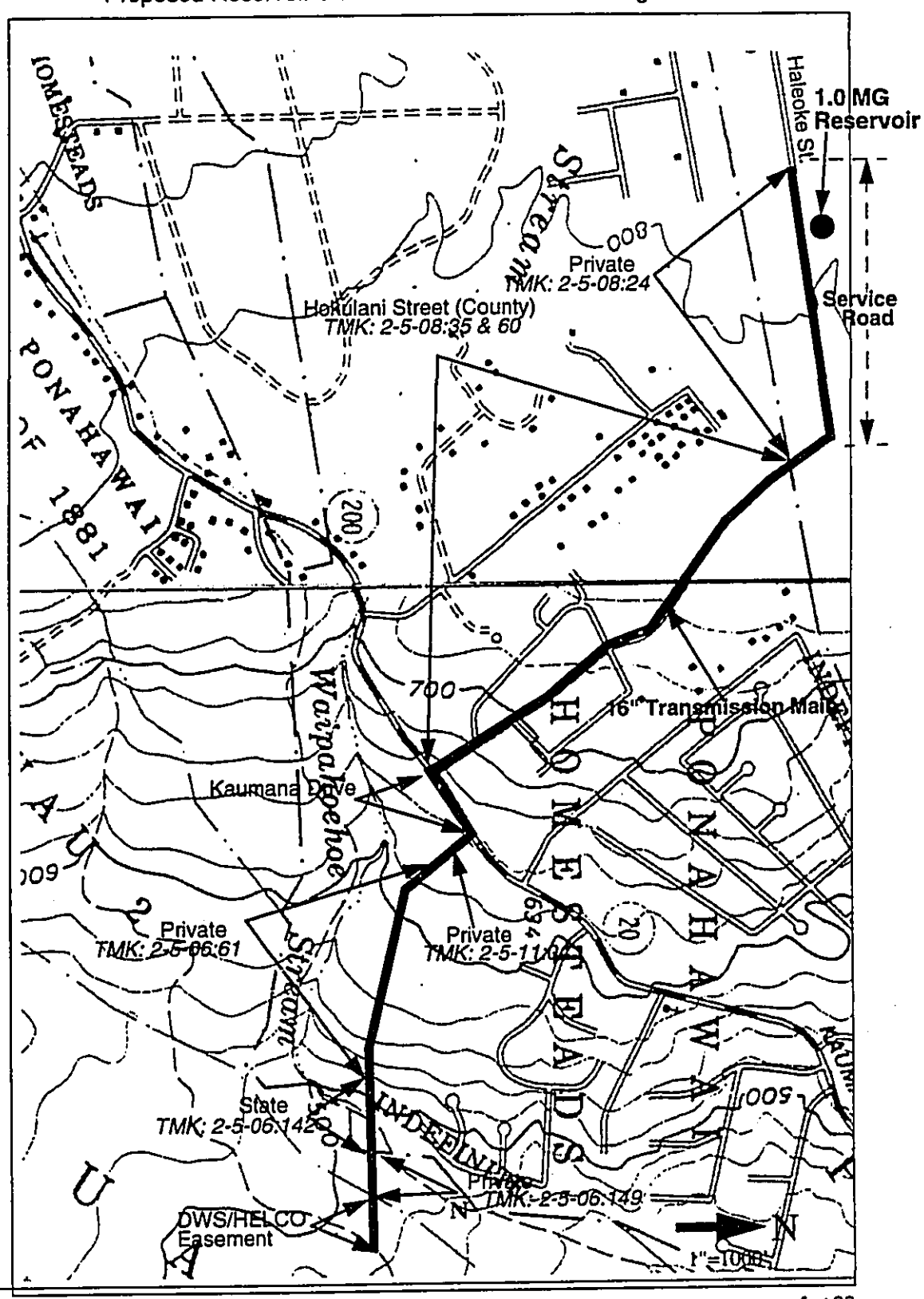
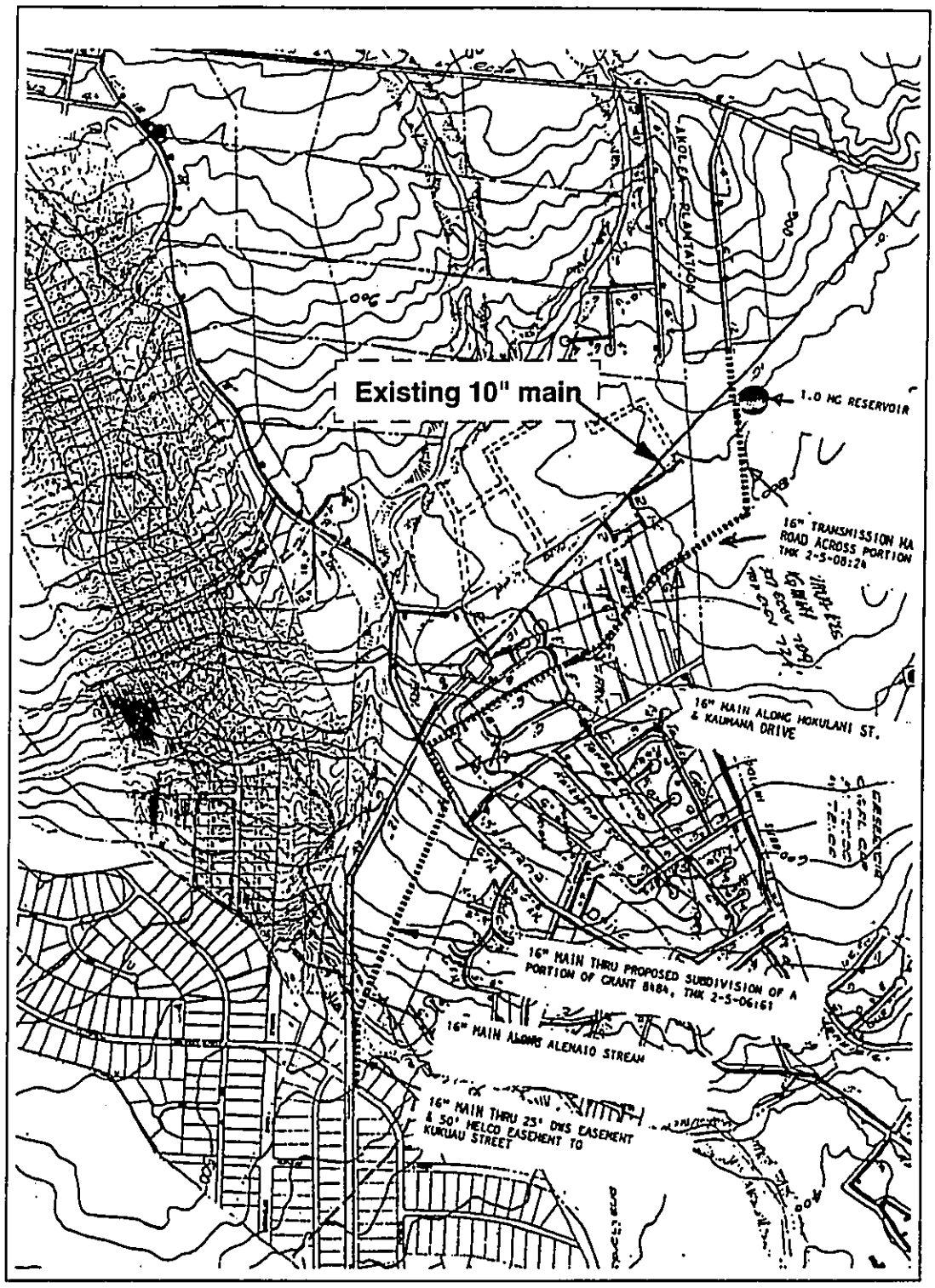


FIGURE 3. South Hilo Water System (portion)



3.0 ENVIRONMENTAL SETTING, IMPACTS, & MITIGATION MEASURES

3.1 Physical Characteristics

3.1.1 Climate

Setting

The transmission main alignment is located at elevations ranging from 400' to 840' above mean sea level. The mean annual rainfall at this elevation in Hilo is over 150". Generally, the wet months occur from October through April. Mean annual temperature is about 70°F. Wind patterns are sharply diurnal. Dominant easterly tradewinds prevail during the day (9am - 8pm). In the evening (9pm - 8am), cooler westerly winds sweep down the slopes of Mauna Kea.[1]

Impacts and Mitigation Measures

None.

3.1.2 Soils

Setting

According to the *Soil Survey of the Island of Hawaii*[2], the soil types for the reservoir site and transmission main alignment are as follows:

- *Reservoir Site.* The soil on the reservoir site is classified as Keaukaha extremely rocky muck, 6-20% (rKFD). This well-drained organic soil forms a thin layer over pahoehoe lava bedrock and the topography generally follows the undulations of the underlying pahoehoe. The soil is rapidly permeable, runoff is medium, and erosion hazard slight. It dehydrates irreversibly into gravel-sized aggregates, has high shrinkage but low swelling potential. The depth to bedrock is shallow at about 8". The soil is unsuited for agriculture (rated VIIs on a scale of I to VIII).
- *Transmission Main Alignment.* Along the proposed alignment, the Keaukaha soils extend to Kaumana Drive. From Kaumana Drive to Sunrise Estates, the soil type is pahoehoe lava (rLW).

1. Department of Land and Natural Resources, State of Hawaii. An Inventory of Basic Water Resources Data: Island of Hawaii, Report R34, 1970 (rainfall data); University of Hawaii, Department of Geography, Atlas of Hawaii (2d. ed.). Honolulu: University of Hawaii Press, 1983, p. 66 (wind data).
2. U.S. Department of Agriculture, Soil Conservation Service. *Soil Survey of Island of Hawaii.* State of Hawaii, 1973, Sheets 82 and 83.

Impacts and Mitigation Measures

Erosion and sedimentation. The grading and grubbing permit will specify the necessary temporary erosion control measures to control runoff during construction, as well as the permanent drainage controls especially for the service road proposed to connect Haleoke and Hokulani Streets. For the easement area between Kaumana Drive and Sunrise Estates, all areas denuded during construction should be mulched, revegetated, or otherwise protected from erosion.

Foundations. Any foundation concerns to support the reservoir can be mitigated by recommendations from a soils engineer.

Prime agricultural lands. There would be no impacts to agriculture since none of the areas are presently used for agriculture and the soils are not suited for agriculture.

3.1.3 Flora/Fauna

Setting

For the purposes of describing the flora and fauna, the proposed alignment will be divided into three sections. Section 1 is the undeveloped area between Haleoke and Hokulani Streets. Section 2 is the portion of the alignment within the existing Hokulani Street and Kaumana Drive. Section 3 is the undeveloped area between Kaumana Drive and Sunrise Estates. The flora and fauna are described by section as follows (see Figure 4 on page 9):

- *Section 1.* At the end of Haleoke Street, the existing vegetation is a mix of guava (Psidium guajava), strawberry guava (Psidium cattleianum), eucalyptus (Eucalyptus robusta), uluhe (false staghorn fern) (Dicranopteris linearis), and scattered ohia trees (Metrosideros collina). In the vicinity of Hokulani Street, the forest is slightly denser and dominated by eucalyptus with scattered ironwood trees and ohia.
- *Section 2.* This section is the existing paved street right-of-way. Approximately half of the alignment is located within this section.
- *Section 3.* This area is a mixed guava-ohia forest. Other common species include hala (Pandanus odoratissimus), swordfern (Nephrolepis exaltata), strawberry guava (Psidium cattleianum), banana (Musa sp.), yellow ginger (Hedychium flavenscens), torch ginger (Phaeomeria magnifica), kukui (Aleurites moluccana), coconut (Cocos nucifera), Alexandria palm (Archontophoenix alexandae), rose apple (Euginia jambos), heliconia (Heliconia sp.), passion fruit (Pasiflora sp.), and African tulip (Apathodea campanulata). In clearings, grasses and low-growing shrubs prevail, including California grass (Brachiaria mutica), quackgrass (Panicum repens), sourbush, sleeping grass, and morning glory.[3]

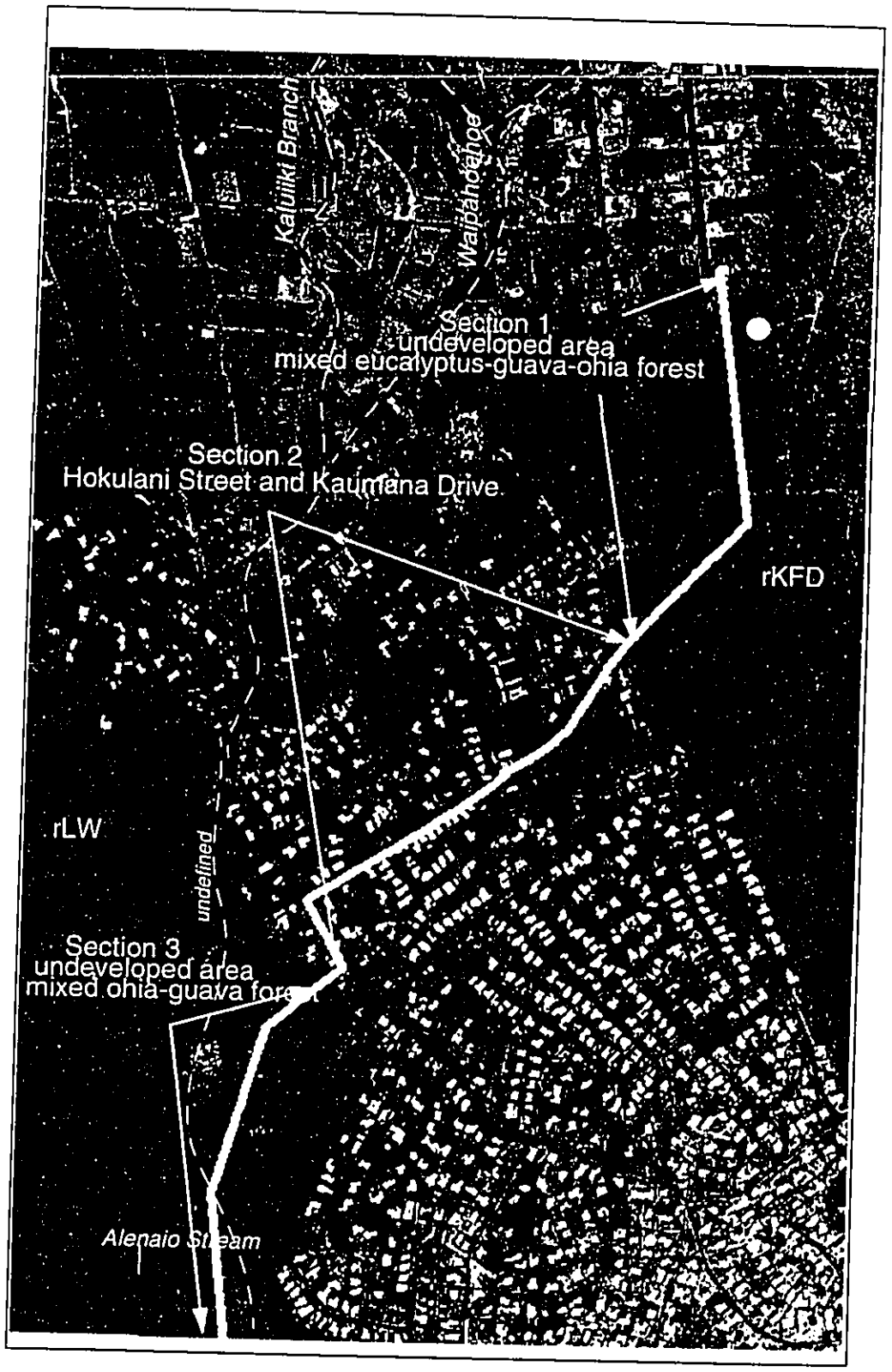
In Section 3, the transmission main will cross Alenaio Stream. Riparian vegetation include California grass, sourbush, and honohono. Native diadromous species are found in the lower reach of the stream (Waiakea Pond-Waiolama Canal) and include the gobioid fishes o'opu okuhe, o'opu naniha, and o'opu nakea, as well as the decapod crustacean opae oeha'a. In the upper reach of Alenaio Stream where the main would cross, common species are all non-native and include guppies (Poecilia reticulata), bullfrog (Rana catesbeiana), giant marine toad (Bufo marinus), and dojo (Misgurnus anguillicaudatus).[4]

Impacts and Mitigation Measures

None-- neither the reservoir site nor any part of the proposed alignment is a habitat for endangered or threatened species.

3. U.S. Army Corps of Engineers, Alenaio Stream, Island of Hawaii: Final Survey Report and EIS, July 1982, p. 14.
4. U.S. Army Corps of Engineers, Alenaio Stream, Island of Hawaii: Final Survey Report and EIS, July 1982, p. 15 & Appendix G.

FIGURE 4. Existing Conditions



3.1.4 Water Resources

Setting

The transmission main will have to cross Alenaio Stream. Depending on the design profile of the transmission main, the stream crossing will most likely be under the streambed where it will not be subject to washout from streamflows.

Alenaio Stream flows intermittently. When it does flow after heavy rains, it is part of the Waipahoehoe-Kaluiiki-Alenaio stream complex and drains into Wailoa River via Waiolama Canal. The Kaluiiki Branch joins Waipahoehoe Stream above Chong's Bridge. The stream then becomes undefined in the flood plain below Chong's Bridge in the lava-covered land area. As the flow disappears in the lava land area primarily through seepage into fractures or lava tubes, part of the flow reappears above Komohana Street where it forms Alenaio Stream. This ephemeral stream is not a significant habitat for any rare or endangered stream fauna (see Section 3.1.3, "Flora/Fauna," on page 7).

Impacts and Mitigation Measures

If the main is installed under the streambed by micro-tunneling, there should be no alteration to the stream channel that would trigger the Stream Channel Alteration Permit.[5] If the streambed will be excavated or if the main will be hung over the stream, then a Stream Channel Alteration Permit should be submitted and the permit will set forth the conditions to mitigate any impacts to the stream.

3.1.5 Natural Hazards

Setting

Flooding. According to the Flood Insurance Rate Maps, the reservoir site and transmission line are not within any special flood hazard areas, except for that segment crossing Alenaio Stream (see Figure 5, "Flood Insurance Rate Map," on page 12 and Figure 6, "Proposed Alignment in Relation to Flood Hazard Area," on page 13).[6] The method of crossing of Alenaio Stream is discussed under the previous section on Water Resources.

According to the Department of Public Works, the older section of Hokulani Street nearest to Kaumana Drive experiences flooding. The source of the floodwaters has not been definitively determined. One possible source is a minor

5. State Water Code, Hawaii Revised Statutes §174C-71(3); Hawaii Administrative Rules §13-169-50 et seq.
6. Federal Emergency Management Agency. Flood Insurance Rate Map, Panels 860 and 880, September 16, 1988.

stream that flows from the terminus of Haleoke Street and flows past several feet from the deadend of Hokulani Street. However, the topography between this minor stream and Hokulani Street is much higher than the stream and would possibly channel the flow away from Hokulani Street. The homes in the vicinity of the Hokulani Street deadend closest to this minor stream have not experienced flooding problems. Another possible source of floodwaters is where the new section of Hokulani Street adjoins the old section. During heavy rains, runoff has been observed flowing from the mauka areas into this area.

Volcanic and Earthquake Hazards. The volcanic hazard zone is Zone 3 on a scale of 1 through 9 (Zone 1 has the most severe hazard).[7]

Impacts and Mitigation Measures

Alenaio Stream flood hazard area. The Department of Public Works will review the construction plans detail for installing the main across Alenaio Stream to ensure that the structure is floodproofed and the base flood elevation would not be affected.

Hokulani Street flood problems. There should not be any impact from the project that would exacerbate the flooding problems along the older section of Hokulani Street due to the higher topography between Hokulani Street and the proposed alignment. The Department of Public Works can impose temporary measures to control runoff during construction as part of the grading and grubbing permit.

7. Heliker, C. Volcanic and Seismic Hazards on the Island of Hawaii, U.S. Geological Survey, 1991.

FIGURE 5. Flood Insurance Rate Map

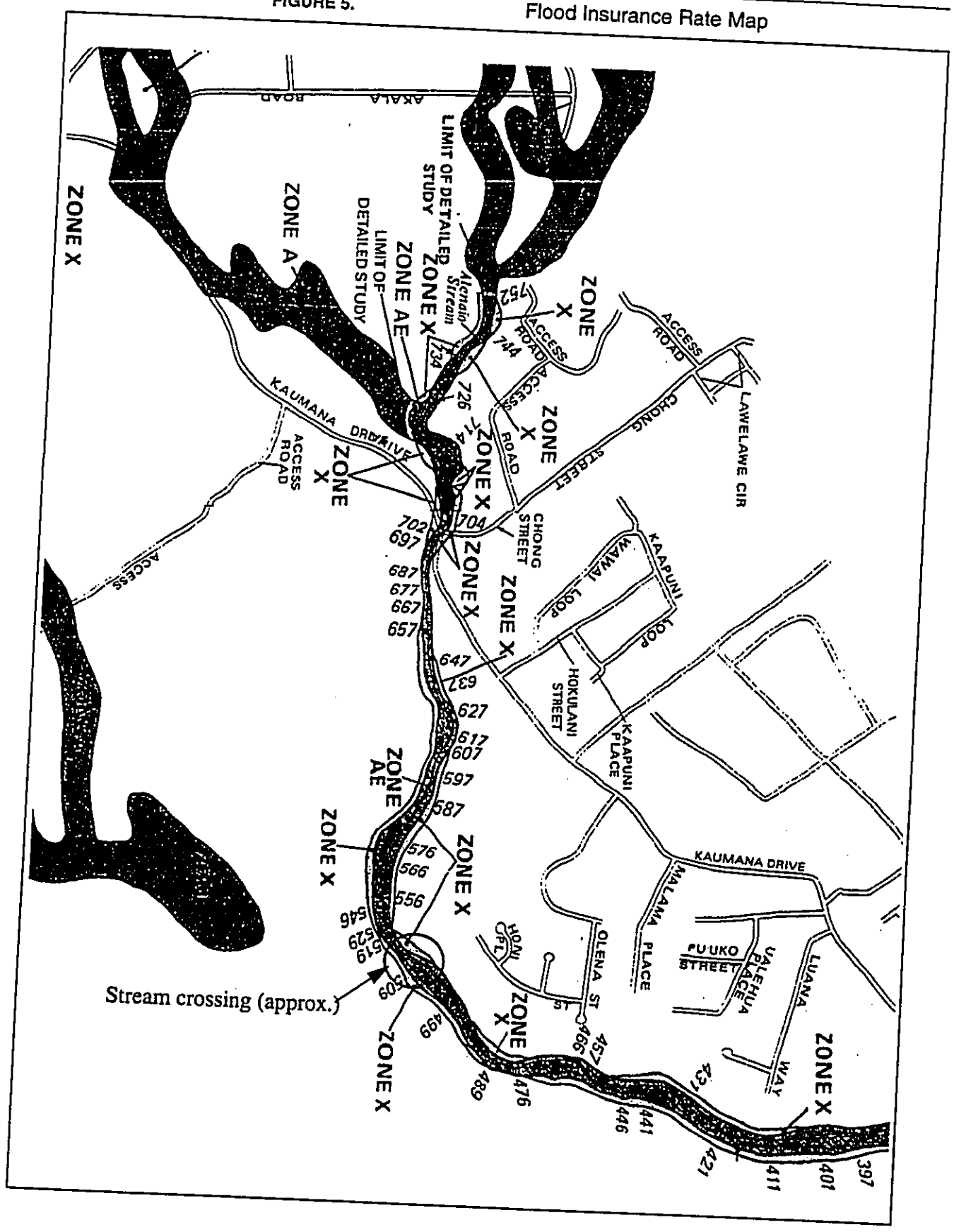
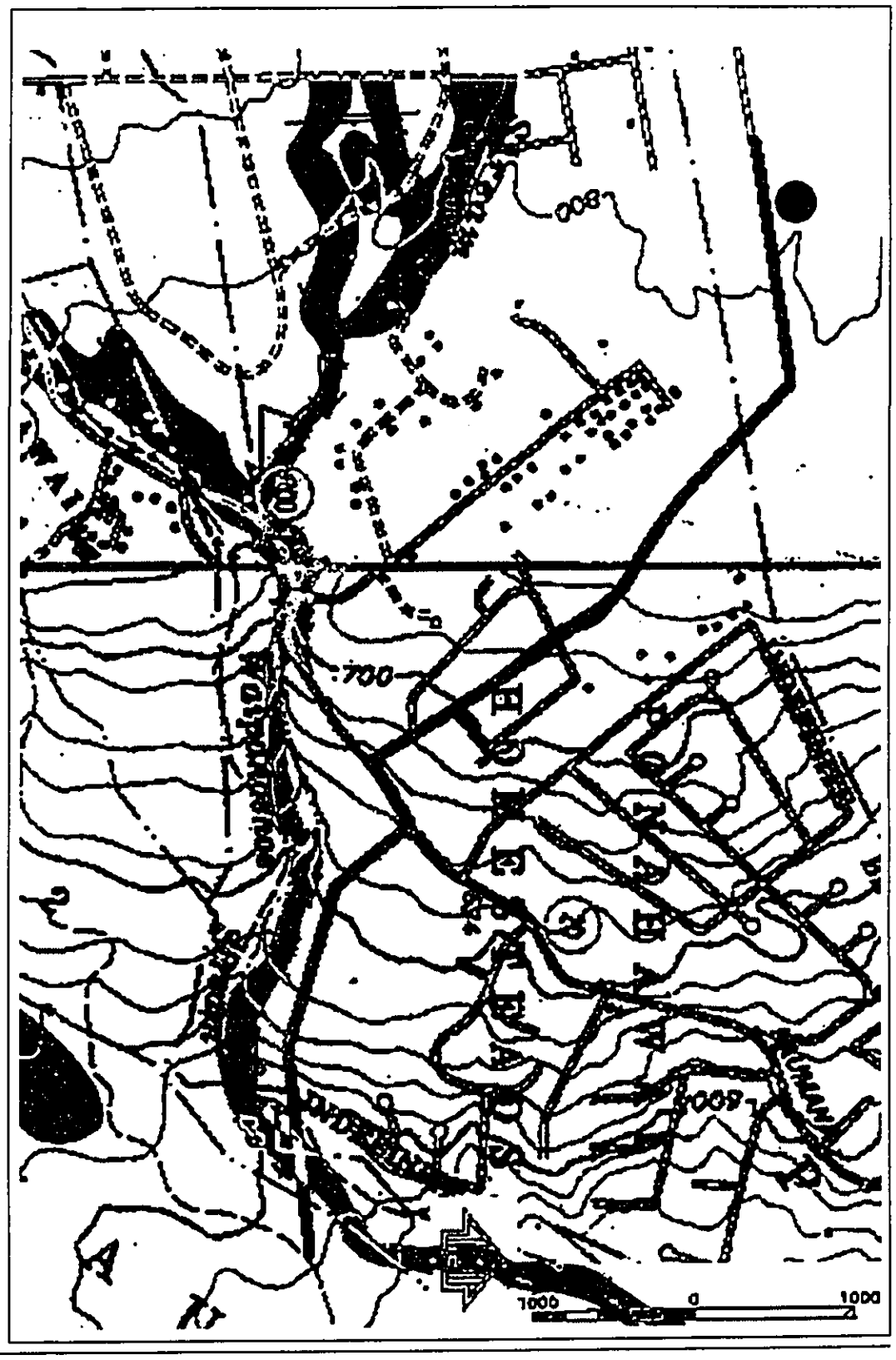


FIGURE 6. Proposed Alignment in Relation to Flood Hazard Area



3.1.6 Historic/Archaeological Resources

Setting

This section summarizes the findings and conclusions of an archaeological reconnaissance survey conducted for the project by Archaeological Consultants of the Pacific, Inc. (see Appendix A for the full text of the study). The survey included a walk-through of 100% of the undeveloped portions of the proposed project identified as Sections 1 and 3 (see Figure 7, "Location of Archaeological Features," on page 16). Section 2 consists of existing road rights-of-way.

No archaeological features were found in Section 1, including the reservoir site. Since this area is frequently inundated and lacks adequate soil deposits for intensive cropping or cultivation of garden plots, it is unlikely that the area was ever used for settlement or agricultural practices. Past logging activities could have also disturbed this area.[8]

Archaeological features were encountered in Section 3. The features are located between the existing 10" main and the nearby Waipahoehoe Stream in an area of slightly higher elevation and deeper soils than the surrounding terrain. The features included ten stacked stone mounds and platforms, most of which had at least one nicely faced vertical wall. All features were considerably overgrown with vegetation and were also in varying stages of degeneration. Although further studies would be necessary to determine feature function and age, the features are similar to traditional agricultural and burial features found elsewhere.[9]

Impacts and Mitigation Measures

The archaeologist concluded that Sections 1 and 2 are devoid of archaeological features and therefore no further archaeological work is necessary for these areas.[10] For Section 3, no further archaeological work would be necessary if the alignment can be located away from the features as shown in Figure 7 on page 16 as Alternative B. The Alternative B alignment would run through a wetter, marshy area. If these marshy conditions make it unavoidable to locate the alignment away from the features, a follow-up inventory survey would be necessary prior to construction. Even if no further archaeological work is required for Sections 1, 2, or 3, as a precaution the construction documents should include provisions to require the contractor to stop work and notify the

8. Archaeological Consultants of the Pacific, Inc., Archaeological Reconnaissance Survey and Assessment of the Piihonua-Kukuau Transmission Main & Reservoir, Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Island of Hawaii, July 31, 1996, p. 9.
9. Ibid., pp. 8-9.
10. Ibid., pp. 6 & 9.

County Planning Department and/or the State Department of Land and Natural Resources if any artifacts or other items of archaeological or historical significance are uncovered during construction.

The State Historic Preservation Division has concurred with the archaeologist's findings in a letter included in Appendix A. State and County projects require this written concurrence in compliance with *Hawaii Revised Statutes* §6E-8.

3.1.7 Noise

Setting

Since a portion of the transmission line alignment is within or near existing residential areas, the residents in the vicinity of the construction may be temporarily impacted by construction noise.

Impacts and Mitigation Measures

The construction contract documents should impose controls on the contractor to mitigate noise to acceptable levels by establishing work hour limitations and requiring all internal combustion equipment to have mufflers and be properly maintained. If the solid pahoehoe requires blasting, the construction contract documents should require the contractor to take the necessary precautions especially when blasting near the residential areas.

3.1.8 Visual Impact

Setting

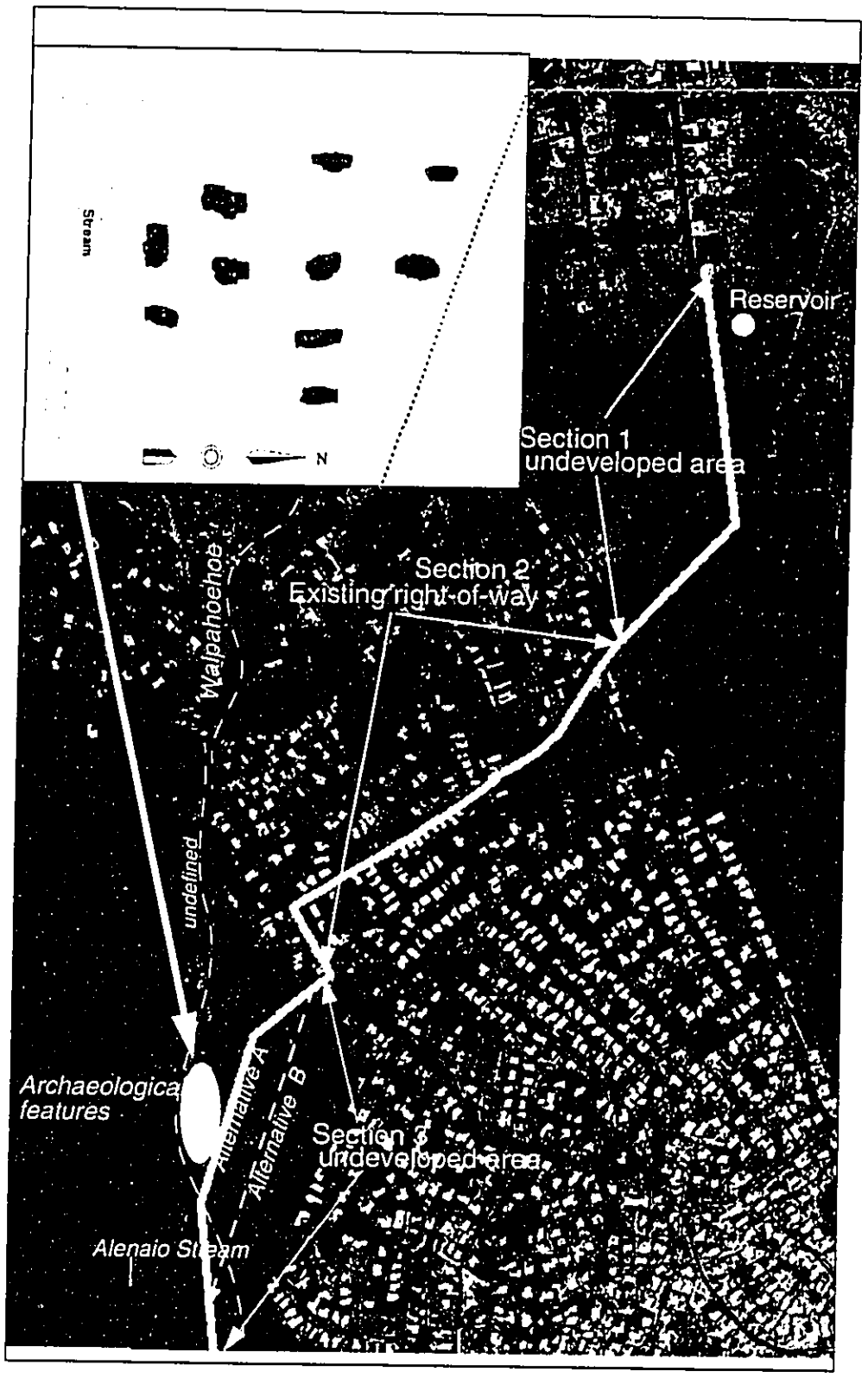
The proposed project is not in the vicinity of any of the significant natural beauty areas identified in the General Plan.[11] Since most of the project consists of buried pipes, the only visible component is the reservoir.

Impacts and Mitigation Measures

The construction documents should specify that the reservoir be painted in earth-tone colors to minimize the visual impact.

11. Hawaii County General Plan Support Document, p. 33.

FIGURE 7. Location of Archaeological Features



3.2 Socioeconomic Characteristics

3.2.1 Land Acquisition

The reservoir site is privately owned; DWS will need to acquire this property (approximately 1 acre) in fee simple from the landowner. Approximately half of the proposed alignment for the transmission main will be within existing County-owned rights-of-way. For the remaining portions, DWS will need to obtain perpetual easements (25' wide) from the State and four private landowners. Because the proposed alignment is almost entirely within existing or planned rights-of-way, the alignment avoids interfering with overlying uses.

3.2.2 Growth-Inducing Impacts

The project is intended to serve existing or approved developments. The increased storage capacity allows the well pumps to operate more efficiently. The location of the storage tank also provides the necessary pressure to service the approved Sunrise Estates expansion.

The only area along the alignment that is not already zoned for urban development is the area between Haleoke and Hokulani Streets. This area is zoned Agriculture. The clearing required to install the transmission main could possibly support the justification to rezone this area to extend residential development along the alignment. However, because the project does not include any source development, approval for rezoning would depend on the source capacity at the time of the rezoning application.

4.0 RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

4.1 State Plan

The project conforms with the following State Plan objectives and policies:

Objectives and policies for facility systems-- water. (a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.

(b)To achieve the facility systems water objective, it shall be the policy of this State to:

(1)Coordinate development of land use activities with existing and potential water supply.

(2)Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.

(4)Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.

(5)Support water supply services to areas experiencing critical water problems.[12]

The proposed reservoir and transmission line will improve the efficiency and storage capabilities of the water system for domestic use. The reservoir will enable more efficient pumping at the well source to meet peak demands. The reservoir will also provide improved service to planned service areas in anticipation of need, and to improve service to existing areas that presently require elevation agreements due to inadequate pressure.

4.2 State Land Use Law

The State Land Use classification along the proposed alignment is Urban, except for the reservoir site and the segment between Haleoke and Hokulani Streets which is Agriculture. Water lines and storage tanks are permitted uses within the Agriculture district.[13]

4.3 Hawaii County General Plan

The proposed reservoir site and transmission main alignment are in the Low Density Urban or Urban Expansion General Plan LUPAG designation. The project conforms with the General Plan policies relating to water:

PUBLIC UTILITIES

WATER

POLICIES:

•Water system improvements and extensions shall promote the County's desired land use development pattern.

•All water systems shall be designed and built to Department of Water Supply standards.

•Improve and replace inadequate systems.

•Water system improvements should be first installed in areas which have established needs and characteristics, such as occupied dwellings and other uses, or in areas adjacent to them if there is need for urban expansion, or to further the expansion of the agricultural industry.

The proposed improvements will serve existing occupied dwellings that presently have inadequate water pressure and adjacent urban expansion that has received County approval. The proposed 16" transmission main will replace an old 10" transmission line.

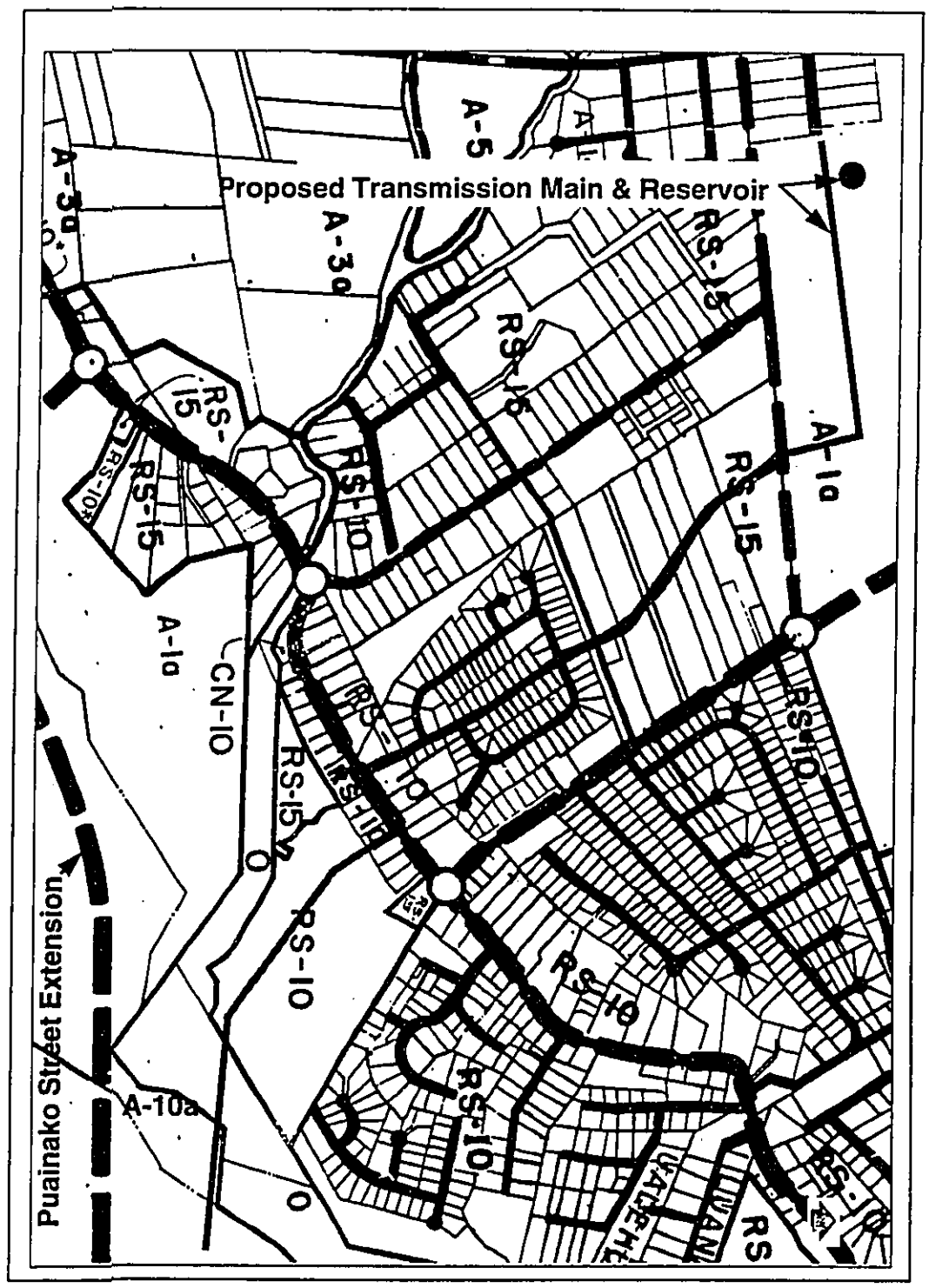
12. Hawaii Revised Statutes §226-16 (1985 & Supp. 1992).
13. Hawaii Revised Statutes §205-4.5(7) (Supp. 1992).

4.4 Hawaii County Zoning and Subdivision Codes

The reservoir site is zoned Agriculture-1a. The transmission main alignment traverses lands zoned Agriculture (Ag-1a, Ag-10a), Residential (RS-15, RS-10), and Open (see Figure 8 on page 20). The zoning code permits transmission lines and public facilities in all zoning districts.[14] The portion of the alignment in the Open zoning may require Plan Approval. Although DWS will need to subdivide the reservoir site in order to acquire it, the subdivision code exempts public utilities from meeting the minimum lot size requirements.[15] The creation of the easements for the transmission line will not require subdivision approval since easements do not fall under the definition of "subdivided land".[16]

14. Hawaii County Code §25-51.
15. Hawaii County Code §23-11.
16. Hawaii County Code §23-3.

FIGURE 8. Zoning Map



4.5 Hawaii County Water Use and Development Plan

The proposed project implements one of the solutions to problems identified by the Water Use and Development for the South Hilo District:

> If only ground water is to be used in the Hilo System, well capacity will not be a problem but the power cost of the well pumps can be expected to rise sharply and increase operational cost. In addition, the storage capacity of the system would need to be increased to assure sufficient reserve to meet peak demands and to optimize pumping hours, particularly to serve the proposed urban expansion areas located mauka of Komohana Street.
>
> The other major problem in the Hilo System is the large amount of leakage that are suspected in the old water mains, especially those with oakum caulk and leaded joints. It is difficult to pinpoint exactly where the leakages are occurring because unlike a major leak in a cracked main there are apparently many leaks in various parts of the system. . . . Recognizing the problem, the Water Department has initiated a program to systematically repair old lines and appurtenances.[17]

4.6 Coastal Zone Management and Special Management Area

The project is located outside of the Special Management Area; therefore, a Special Management Area Permit is not applicable to the project. However, all actions within the State must comply with the objectives and policies of the Coastal Zone Management Act.[18]

The project is consistent with the objectives and policies relating to Economic Uses, Coastal Ecosystems, and Coastal Hazards:

> Economic uses
>
> Provide public or private facilities and improvements important to the State's economy in suitable locations.[19]
>
> Coastal ecosystems
>
> Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs.[20]
>
> Coastal hazards
>
> Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards.[21]

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17. Kon, M. *Hawaii County Water Use and Development Plan.* Prepared for the Department of Water Supply, County of Hawaii, February 1992, p. 3-7.
18. *Hawaii Revised Statutes* §205A-4(b) (Supp. 1992).
19. *Hawaii Revised Statutes* §205A-2(5)(A) (Supp. 1993).
20. *Hawaii Revised Statutes* §205A-2(c)(4)(C) (Supp. 1993).
21. *Hawaii Revised Statutes* §205A-2(c)(6)(B) (Supp. 1993).

The transmission main will need to cross Alenaio Stream. Depending on the design profile, the pipe will most likely be installed beneath the streambed. The County Department of Public Works will review the constructions plans to ensure that the design and construction conform with the Flood Control code (Hawaii County Code Chapter 27). If applicable, the State Department of Land and Natural Resources will review the impacts on the stream under the Stream Channel Alteration Permit.

4.7 Other Permits and Approvals

Other applicable permits include the County grubbing and grading permit,[22] construction within the street right-of-way,[23] and building permit for the reservoir.[24] Since the limits of grading will involve less than 5 acres, the non-point source controls under the NPDES Permit administered by the State Department of Health will not be applicable to the project. However, the NPDES permit may be applicable if point source discharge is necessary to discharge the water used when testing the installed pipes. The Board of Land and Natural Resources will have to grant an easement for the segment of the transmission line traversing State land.

Table 1: List of Permits and Approvals

Permit or Approval	Authority	Approving Agency
STATE OF HAWAII		
Grant of easement to the County	HRS §171-11	Board of Land & Natural Resources; Governor
Stream channel alteration permit (possibly)	HRS §174C-71(3); HAR §13-169-50 et seq.	Commission on Water Resource Management
Historic preservation consultation (done)	HRS §6E-8	State Historic Preservation Division
NPDES for point source discharge during testing of installed pipes (possibly)	HAR Chap. 11-55	Department of Health
COUNTY OF HAWAII		
Subdivision approval (reservoir site)	HCC Chap. 23	Planning Department
Building permit (reservoir)	HCC Chap. 5	Department of Public Works
Plan Approval (Open zoning district)	HCC Chap. 25	Planning Department

22. *Hawaii County Code* Chapter 10.
23. *Hawaii County Code* Chapter 22, Article 3.
24. *Hawaii County Code* Chapter 5.

Table 1: List of Permits and Approvals

Permit or Approval	Authority[a]	Approving Agency
Grubbing and Grading Permit	HCC Chap. 10	Department of Public Works
Construction within Right-of-Way	HCC Chap. 22	Department of Public Works
Flood control approval	HCC Chap. 27	Department of Public Works

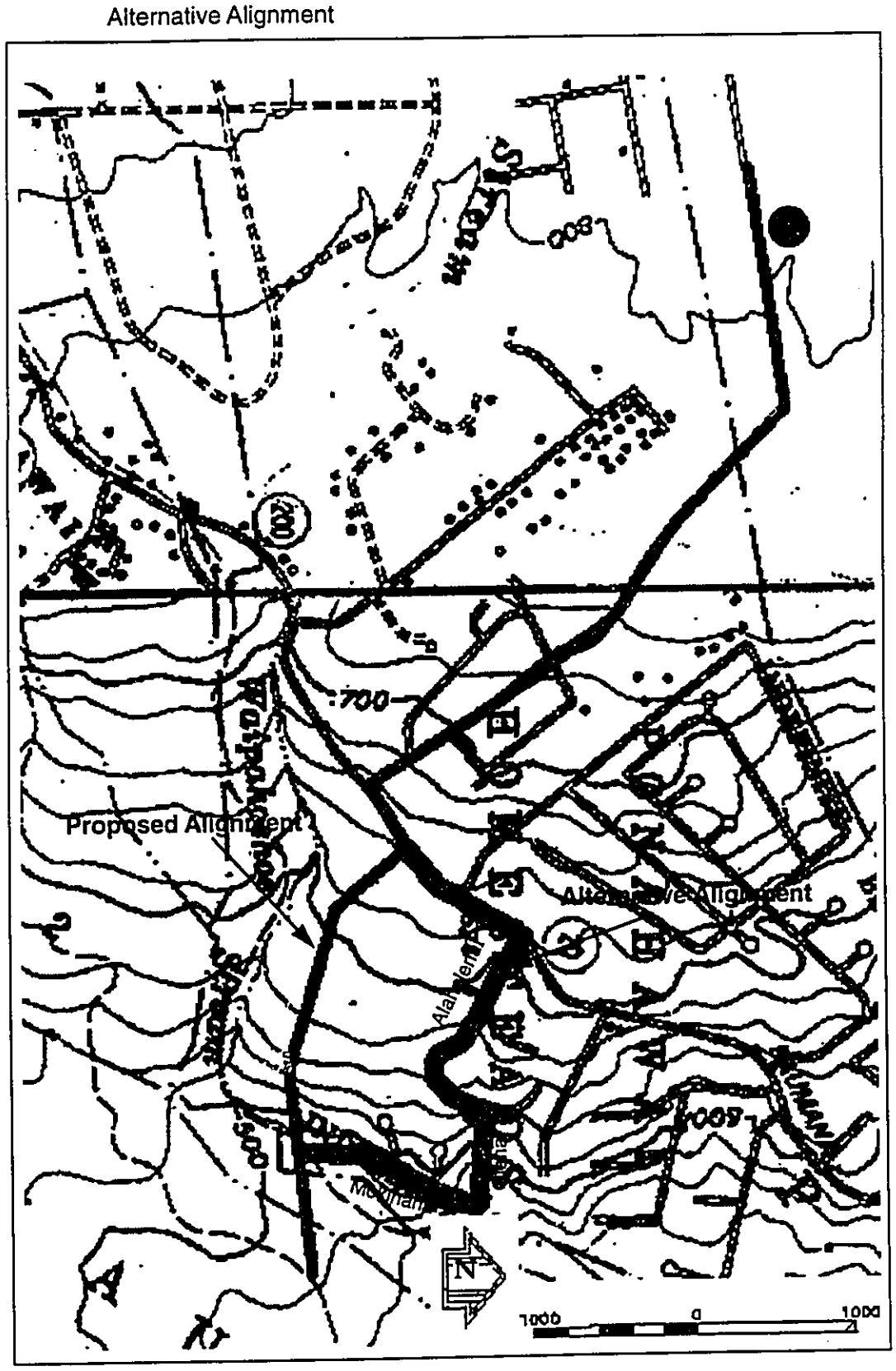
a. HCC= Hawaii County Code; HAR= Hawaii Administrative Rules; HRS= Hawaii Revised Statutes

5.0 ALTERNATIVES CONSIDERED

5.1 Alternative Alignment

To reduce the number of private landowners who would be impacted by the project, an alternative alignment would maximize the extent of the alignment within existing rights-of-way by extending the alignment further along Kaumana Drive to Alahelenui-Olena-Mokihana Streets (see Figure 9 on page 24). Although there may be some savings in land acquisition costs, the savings would be offset by the significant increase in length (approximately 2000 l.f. additional) and extra construction cost related to excavating and repatching existing pavement. In addition, more existing residents would be impacted during construction.

FIGURE 9. Alternative Alignment



5.2 No Action

The no-action alternative would result in several disadvantages:

- The inefficiencies associated with the existing storage capacity would continue.
- New development mauka of Komohana Drive may experience water pressure problems.
- Unaccounted water leaks from the existing transmission main would continue to detract from water conservation efforts.

6.0 DETERMINATION WITH SUPPORTING FINDINGS AND REASONS

The proposed reservoir and transmission main are not expected to cause significant impacts to the environment, pursuant to the significance criteria established by the Environmental Council as discussed below;[25] therefore, the determination is to issue a negative declaration.

The proposed project will not involve an irrevocable commitment to loss or destruction to any natural or cultural resources. The proposed reservoir site and transmission main alignment do not contain any significant natural or cultural resources, provided the alignment is directed away from potential archaeological resources in the area between Kaumana Drive and Sunrise Estates.

The proposed project will not curtail the range of beneficial uses of the environment. The reservoir and transmission main will not conflict with any existing or planned uses for the proposed land areas or adjacent areas. Beneficial impacts from the proposed project include improved service to DWS customers, improved water conservation by reducing leaks from the existing transmission main, and improved energy conservation from optimal pumping at the wells as a result of the increased storage capacity.

The proposed project will not conflict with the State's long-term environmental policies. The proposed project will not conflict with the environmental policies set forth in the State Plan and Chapter 344, Hawaii Revised Statutes in that the project will not damage sensitive natural resources nor emit excessive noise or contaminants.

The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities. The project will increase the efficiency of the existing system and also serve developments already approved

25. Hawaii Administrative Rules, §11-200-12.

by the County. The project does not involve any increase in source capacity that could induce additional population growth beyond what has already been approved.

The proposed project will not involve a substantial degradation of environmental quality. There will be no significant degradation of air, water, or noise quality. Painting the reservoir in earth-tone colors would mitigate potential visual impacts.

The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. The reservoir site or transmission main alignment are not a known habitat for endangered or threatened flora or fauna species.

The proposed project will not detrimentally affect air or water quality or ambient noise levels. The proposed project will not produce any air emissions. Sitework will be in accordance with grading permit conditions to minimize erosion, non-point source pollution, and dust. Noise during construction will be mitigated to acceptable levels by appropriate requirements set forth in the construction contract documents.

The proposed project is not located in an environmentally sensitive area (e.g., flood plain, tsunami zone, coastal area). The transmission main will have to cross the Alenaio Stream 100-year flood plain. The pipe will most likely be installed under the streambed. The Department of Public Works will review the design to ensure conformance with flood control requirements. The Department of Land and Natural Resources will also review the crossing if the streambed will be disturbed.

Summary of Mitigation Measures

Land Acquisition Phase:

- Negotiate appropriate compensation to private landowners for acquisition of the reservoir site in fee simple and perpetual easements for the transmission main.

Design Phase:

- Subdivide the reservoir site.
- Apply for stream channel alteration permit, if applicable.
- Have plans reviewed by the Department of Public Works for conformance with flood control requirements at the Alenaio Stream crossing.
- Design the alignment to avoid the potential archaeological resources in the area between Kaumana Drive and Sunrise Estates. If not feasible to relocate the alignment, conduct an archaeological inventory survey of this area.

Construction Phase:

- Include a standard clause in the construction contract for the contractor to stop work and inform the Division of Historic Sites in the event possible archaeological remains are uncovered.
- Limit construction to standard work hours to minimize noise disturbance to neighboring residents.
- Implement dust control, as required.
- Implement temporary (and permanent) erosion and runoff controls, as required.
- Obtain NPDES permit for discharge of the water used for pipe testing, if applicable.

7.0 REFERENCES

Archaeological Consultants of the Pacific, Inc., *Archaeological Reconnaissance Survey and Assessment of the Piihonua-Kukuau Transmission Main & Reservoir*, Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Island of Hawaii, July 31, 1996.

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University of Hawaii, Department of Geography, *Atlas of Hawaii* (2d. ed.). Honolulu: University of Hawaii Press, 1983.

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APPENDIX A

ARCHAEOLOGICAL RECONNAISSANCE SURVEY

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

August 22, 1996

Mr. Joseph Kennedy
Archaeological Consultants of Hawaii
59-624 Pupukea Road
Haleiwa, Hawaii 96712

LOG NO: 17891 ✓
DOC NO: 9608PM13

Dear Mr. Kennedy:

SUBJECT: ***"Archaeological Reconnaissance Survey and Assessment of the Piihonua-Kukuau Transmission Main & Reservoir"***
(Lantinis and Kennedy 1996)
Punahoa 1, Ponahawai, and Kukuau 1, South Hilo, Hawaii Island
TMK: 2-5-08; 2-5-60; 2-5-35; 2-5-11: 04; 2-5-06: 61, 142, 149; 2-4-75

Thank you for your letter of August 15, 1996, the one copy of the subject report, and a copy of the August 14 letter from Roy Takemoto.

As you know, we do not review reconnaissance survey reports because they do not meet minimal standards of our office for archaeological surveys. The survey, which was undertaken in response to our initial review of the proposed project (letter dated June 25, 1996 from Hibbard to Uchida), does appear to have been successful in determining the presence/absence of historic sites in different sectors of the proposed transmission main. It is our understanding that no evidence of historic sites was found in either of the two alternative alignments of Sections 1 and 2, but that there are some stone mounds/platforms in Section 3. According to the letter from Mr. Takemoto, the Hawaii County Department of Water Supply will ensure that the selected alignment avoids the historic remains in Section 3. This avoidance would result in this project having "no effect" on significant historic sites. If realignment is not possible, then impacts to sites seem likely to occur, and we would require an archaeological inventory survey of Section 3.

Though we have already said that we do not review reconnaissance survey reports, a State site number should have been assigned to what you found and described. Since all of the remains are clustered in one area we think you could use just one site number. Please contact our office to get a number. Minimally, use of this site number would require an errata sheet be sent to our office and to your client to go with the report. Ideally, the report could undergo some minor revisions in the text and illustrations to include this number. We would suggest the latter

approach for ease of your client. When you submit the errata sheet or revised report would you also please send a second copy to Marc Smith for our Hilo office library.

If you have any questions please contact Patrick McCoy (587-0006).

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

PM:amk

c. Roy Takemoto

ARCHAEOLOGICAL CONSULTANTS
OF THE PACIFIC, INC.

JOSEPH KENNEDY
Senior Archaeologist

Mr. Roy Takemoto
171 Hoomalu St.
Hilo, Hawaii 96720

September 3, 1996

RE: Errata sheet for archaeological report prepared for the Piihonua-Kukuau Transmission Main.

Dear Mr. Takemoto:

In July of this year we conducted a reconnaissance survey for your office entitled **ARCHAEOLOGICAL RECONNAISSANCE SURVEY AND ASSESSMENT OF PIIHONUA-KUKUAU TRANSMISSION MAIN & RESERVOIR, PUNAHOA 1, PONAHAWAI HOMESTEADS, KUKUAU 1, SOUTH HILO DISTRICT, ISLAND OF OAHU.**

In this document we detailed the presence of ten mounds/platforms which are located in one of the proposed survey corridors.

Even though the route of the proposed transmission main may not follow the survey corridor which contains the ten mounds/platforms, the Department of Land and Natural Resources, Historic Preservation Division has suggested that we assign these structures a single site number.

Therefore, we present this errata sheet in order to assign state site number 50-10-34-21145 to these ten structures.

If there are any questions regarding the assignment of this site number, please feel free to contact me directly.

Sincerely,

Joseph Kennedy
Senior Archaeologist

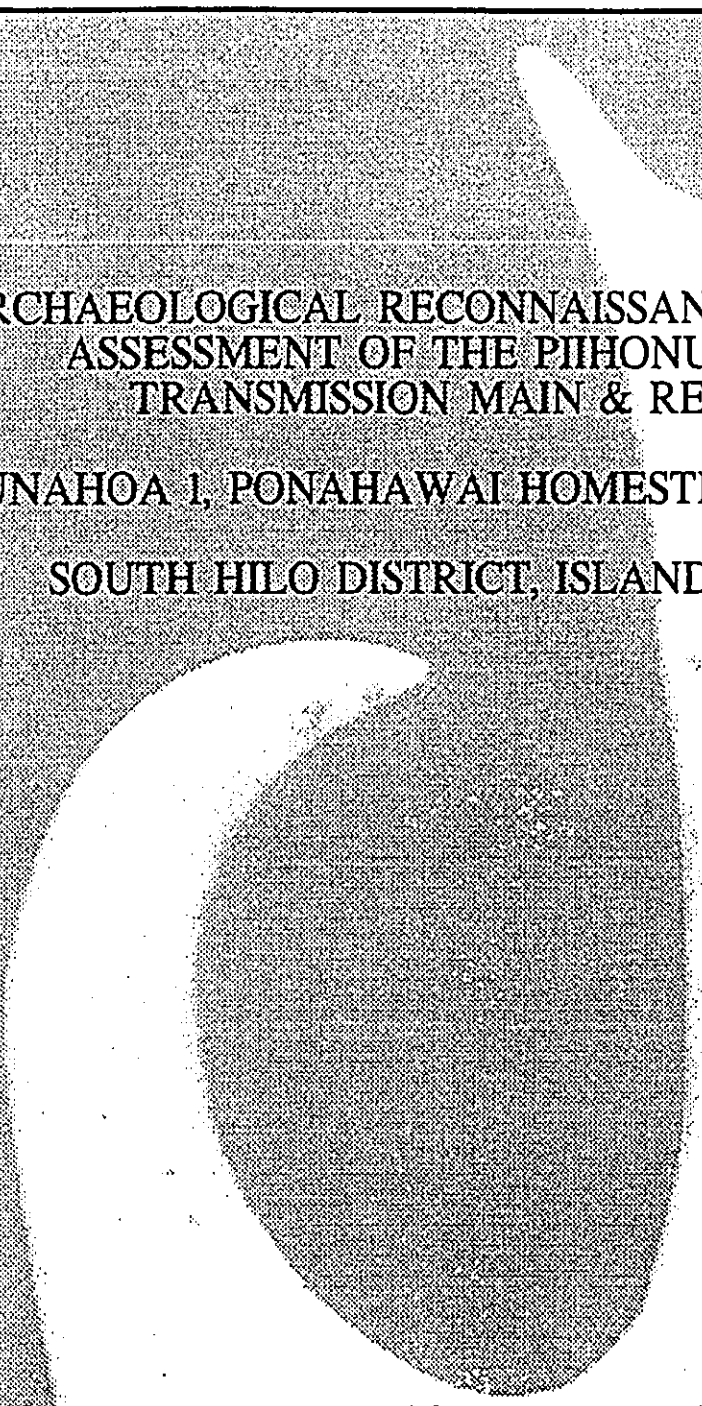
cc: M. Smith DLNR
P. McCoy DLNR

59-824 Pupukea Road • Haleiwa, Hawaii 96712
Telephone/Fax: (808) 638-7442
Samoa Office: P.O. Box 3735 • Pago Pago, American Samoa 96799
DBA: Archaeological Consultants of Hawaii • Archaeological Consultants of Samoa
Archaeological Consultants of Micronesia • Archaeological Consultants of the Pacific Rim

ARCHAEOLOGICAL RECONNAISSANCE SURVEY AND ASSESSMENT OF THE PIIHONUA-KUKUAU TRANSMISSION MAIN & RESERVOIR

PUNAHOA 1, PONAHAWAI HOMESTEADS, KUKUAU 1,

SOUTH HILO DISTRICT, ISLAND OF HAWAII



Prepared for: Mr. Roy R. Takemoto
171 Hoomalu Street
Hilo, Hawaii 96720

Prepared by: Archaeological Consultants of the Pacific, Inc.

D. Kyle Latinis, M.A.

Joseph Kennedy, M.A.
(Senior Archaeologist)

59-624 Pupukea Road
Haleiwa, Hawaii 96712

July 31, 1996

Archaeological Reconnaissance Survey and Assessment of the Piihonua-Kukuau Transmission Main & Reservoir

Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii

Abstract:

An archaeological survey and assessment was conducted by Archaeological Consultants of the Pacific, Inc. (ACP) for portions of properties located in Punahoa 1, Ponahawai Homesteads, and Kukuau 1, South Hilo District, Island and County of Hawaii (see Figures 1-3). This will be the location of a proposed 1-acre parcel for a 1.0 MG reservoir site and an 8,400' corridor for a 16'' transmission main; the Piihonua-Kukuau Transmission Main and Reservoir (Department of Water Supply, County of Hawaii).

There were two separate alignments for the proposed transmission main corridor provided to ACP based upon draft maps. If the more southerly alignment (Alternative A) is the correct alignment, the transmission main corridor will pass within close proximity of existing archaeological features (stone mounds/platforms (see Figure 4)). Subsequently, ACP recommends that an archaeological Inventory Survey be conducted for Section 3 if this is the case. If the more northerly alignment (Alternative B) is the correct alignment, ACP recommends that no further archaeological investigations are necessary for Section 3. Finally, ACP recommends that no further archaeological investigations are necessary for Sections 1 and 2.

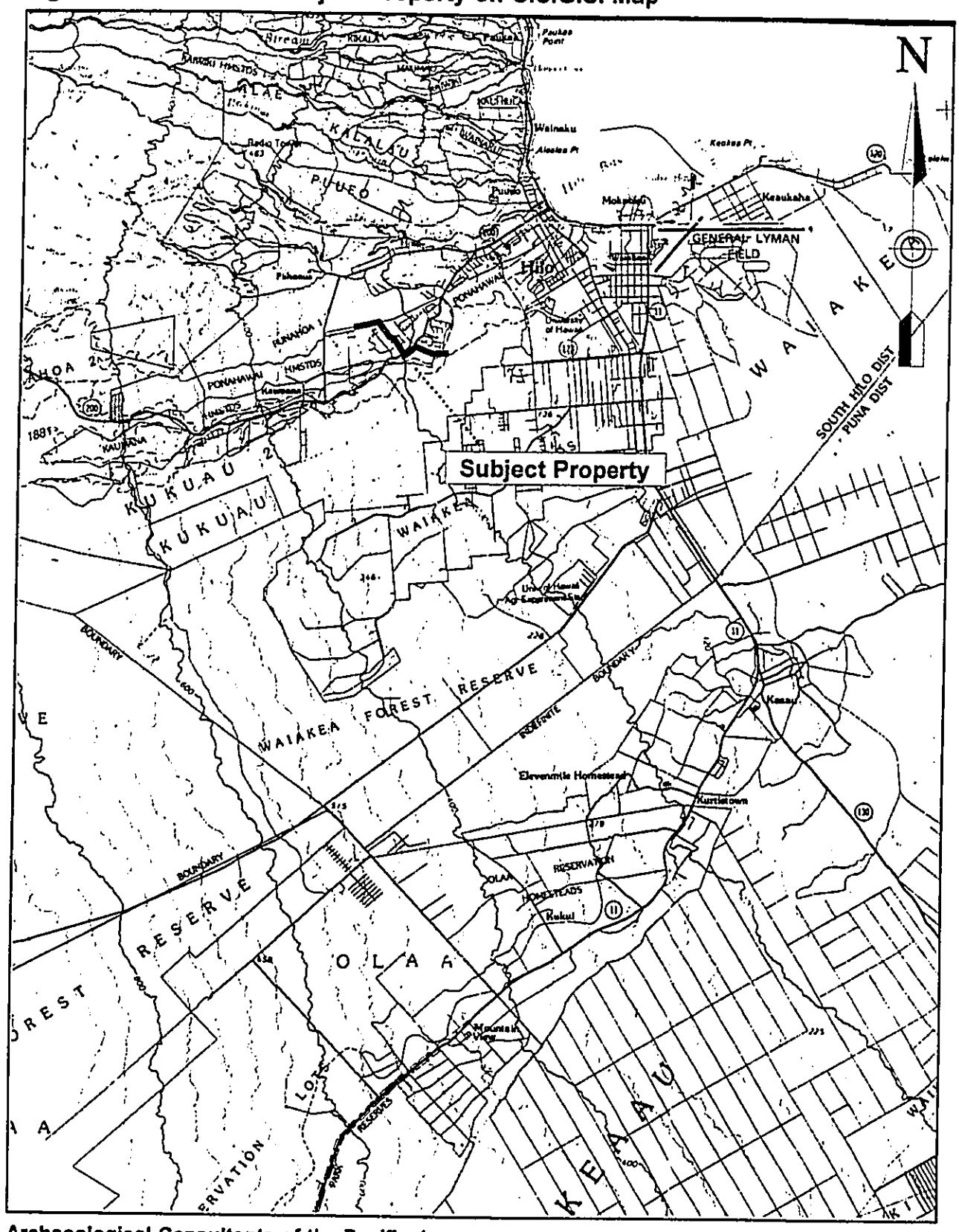
Introduction:

The project area has been divided into three sections (see Figure 2). The northernmost section, Section 1, transverses sections of TMK:2-5-08:24 and TMK:2-5-08:35 & 60. This section will contain the proposed reservoir site and the transmission main corridor. The middle section, Section 2, transverses sections of Hokulani Street (County), TMK:2-5-08:35 & 60, and Kaumana Drive. This section is located entirely within an existing residential subdivision and contains only the transmission main corridor. Section 3, the southernmost section, transverses sections of TMK:2-5-11:04, TMK:2-5-06:61, 142 & 149, and the DWS/HELCO Easement. This section contains only the proposed transmission main corridor.

Sections 1 and 3 were surveyed to determine the presence or absence of archaeological surface features. Section 2 was not surveyed as this portion has been completely disturbed due to previous development. As a result of a discrepancy in transmission main alignment locations between two separate maps provided to ACP, Section 3 was divided into two separate alternative locations based on the maps provided; Alternative A and Alternative B (see Figure 3).

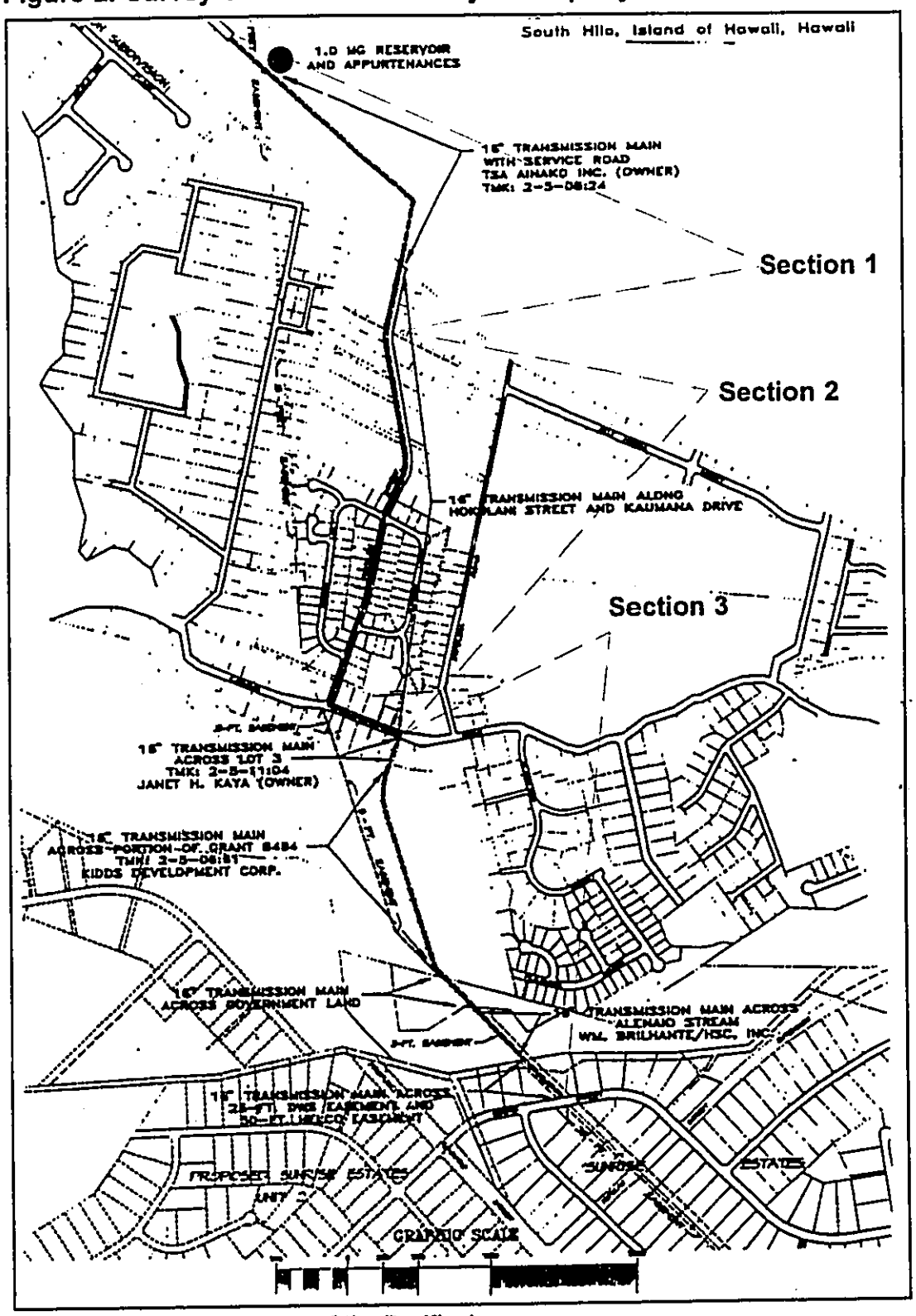
No archaeological features were encountered in the proposed transmission main corridors and the reservoir site throughout Section 1. However, adjacent to the southern

Figure 1. Location of Subject Property on U.S.G.S. Map



Archaeological Consultants of the Pacific, Inc.
Piihonua-Kukuau Transmission Main & Reservoir
July 1996

Figure 2. Survey Sections of the Subject Property



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Pilhonua-Kukuau Transmission Main & Reservoir
July 1996

Figure 3. Aerial Photo with Main Alignment Alternatives and Feature Locations

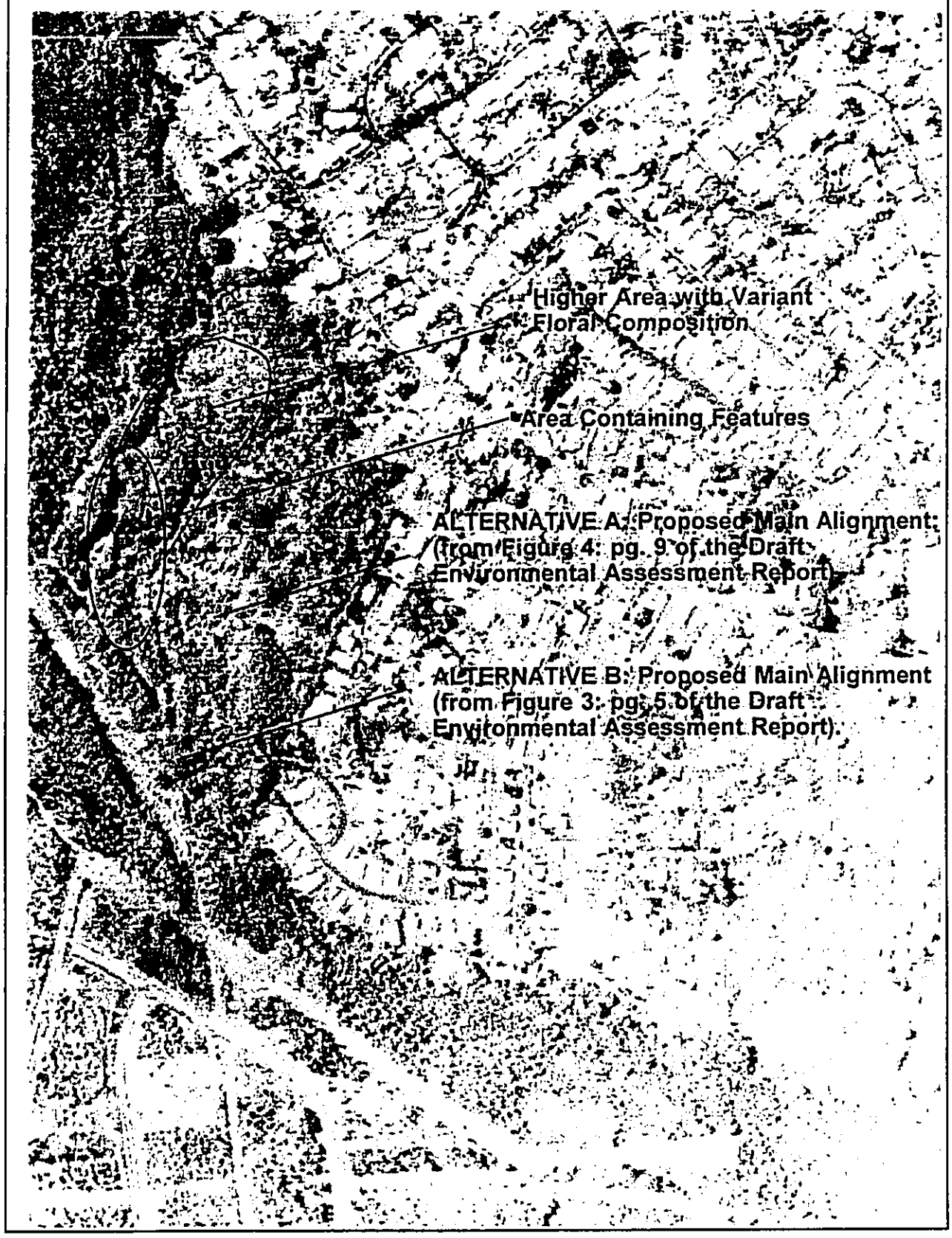
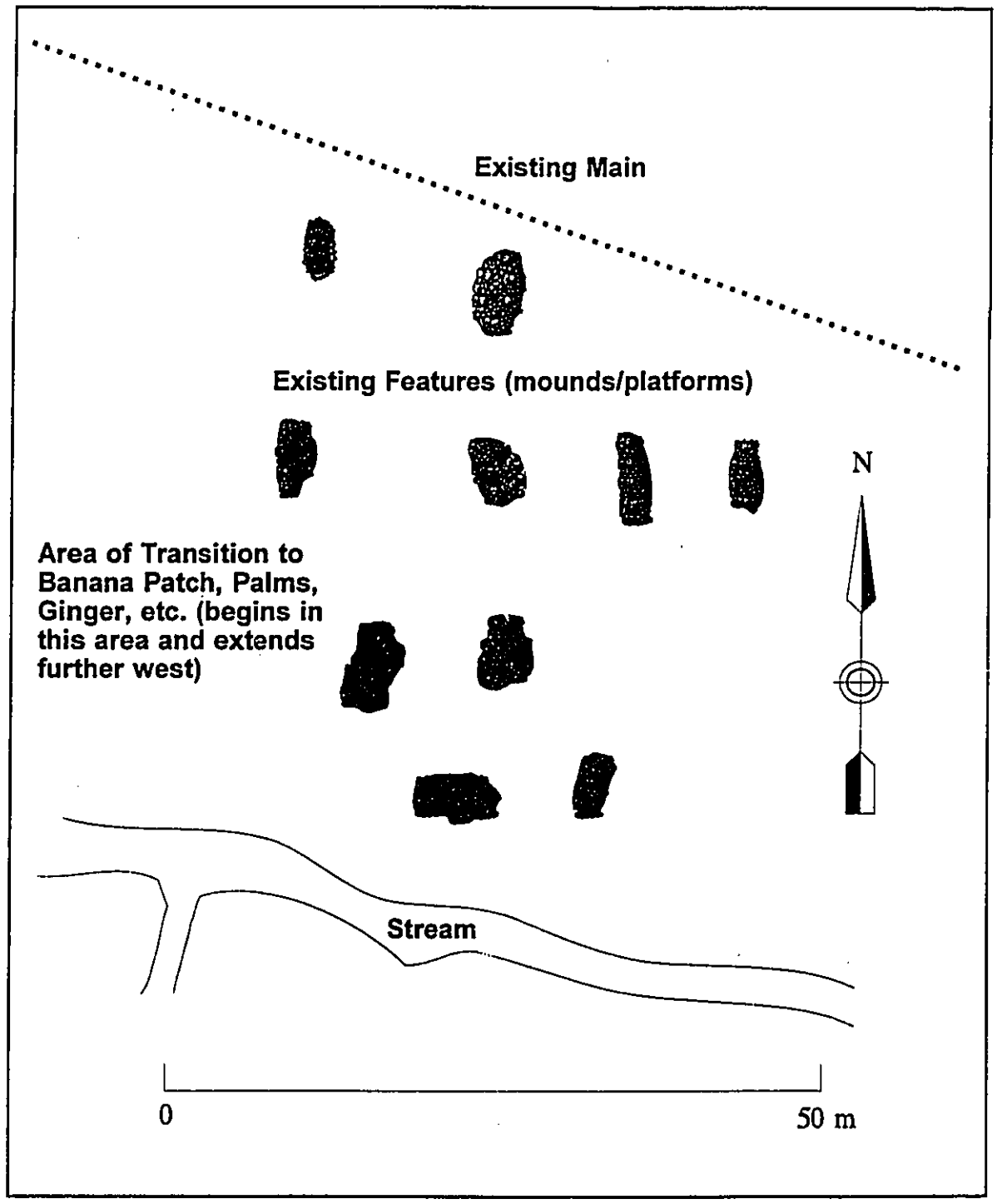


Figure 4. Plan View of Features



Archaeological Consultants of the Pacific, Inc.
Piihonua-Kukuau Transmission Main & Reservoir
July 1996

side of an existing 10'' transmission main at approximately the midpoint of Section 3, 10 stone mounds/platforms were encountered (see Figure 4). These features are stacked and faced stone mounds/platforms which are characteristic of past agricultural and burial features. However, function and age determinations cannot presently be made without further archaeological investigation. It is quite possible that these are more recent historical features, although morphological similarities with prehistoric and early historic archaeological features make age and function moot points at this juncture.

Alternative A assumes that the proposed corridor will be placed within close proximity of the existing feature. Alternative B assumes that the proposed corridor will be placed further north and away from the existing features. ACP recommends that an Inventory Survey be conducted for Section 3 if Alternative A is the correct location of the proposed transmission main. Only following an official Inventory Survey can further recommendations be made concerning the mitigation of future impacts to archaeological features located in the subject area. However, if Alternative B applies, such that the proposed corridor is placed further from the existing features, ACP recommends that no further archaeological investigation is necessary. The proposed corridor for Alternative B runs through a lower, wetter, marsh-like area which is barren of archaeological features.

Given the extreme conditions characterizing Section 1 it is not surprising that this section is devoid of archaeological features. Therefore, ACP recommends that no further archaeological work is necessary for Section 1. As Section 2 is located in a developed residential area, any previously existing archaeological features have more than likely been severely disturbed or destroyed. Therefore, ACP recommends that no further archaeological investigation is necessary for Section 2. Finally, there is always the possibility that archaeological remains may be inadvertently encountered during the course of future construction activities. If such inadvertent discoveries are encountered during these will need to be investigated according to local, State and Federal policy.

General Background:

The subject area is located in the South Hilo area. Elevation ranges from 400' to 840' amsl (above mean sea level). Mean annual rainfall is approximately 150'' while average annual temperature is approximately 70 degrees F. Soils characterizing the area fall into two classes; Keaukaha extremely rocky muck and *pahoehoe* lava. Permanent and intermittent streams are numerous in the area. Even during drier months, a great portion of the subject area is inundated.

For most of the subject area, the lack of soil deposits, constant threat of flooding and permanent inundation likely precluded traditional agricultural development of the area, although Section 3 offers an area which may be an exception. Portions of land within Section 3 between the existing main and the Waipahoehoe Stream to the south have adequate soil deposits and are significantly higher than surrounding areas such that flooding would be less frequent and limited gardening of certain crops would be possible. This area is also the location ten stone features and a variant floral composition as well.

Vegetation in Section 1 includes guava (*Psidium guajava*), strawberry guava (*Psidium cattleianum*), eucalyptus (*Eucalyptus robusta*), *uluhe* (false staghorn fern, *Dicranopteris linearis*), *'ohi'a lehua* (*Metrosideros collina*). Several small access roads are located in Section 1 which probably allowed past logging vehicles into the area. When questioned, a local resident, Bill Frazer, confirmed that past logging activities had occurred in the area of Section 1.

Vegetation in Section 3 includes a mixed guava-*'ohi'a* forest. Additional vegetation includes *hala* (pandanus, *Pandanus odoratissimus*), swordfern (*Nephrolepis exaltata*), strawberry guava, banana (*Musa* sp.), yellow ginger (*Hedychium flavenscens*), torch ginger (*Phaeomeria magnifica*), *kukui* (*Aleurites moluccana*), coconut (*Cocos nucifera*), Alexandria palm (Hilo palm, *Archontophoenix alexandae*), rose apple (*Euginia jambos*), heliconia (*Heliconia* sp.), passion fruit (*liliko'i, Pasiflora* sp.), and African tulip (*Spathodea campanulata*). Grasses and low growing shrubs are located in clearings and marsh-like areas.

Of significant importance concerning the vegetation in Section 3 is the existence of a dense cluster of untended banana, ginger, coconut palms, Hilo palm, mimosa, guava, heliconia, passion fruit and rose apple which are located in the vicinity of the ten stone features; also the area of higher elevation and deeper soil deposits. These factors may indicate that this area was once a past garden area in which a variety of plants were tended and exploited.

Archaeological Background:

The information in this section will briefly discuss Holly McEldowney's research concerning land use, settlement and expected sites typical of the zone in which the subject property is located (McEldowney 1979). McEldowney's research is perhaps the most appropriate for the current archaeological assessment. Detailed archaeological background research, settlement patterns, and past land use will be omitted. This information, however, would be necessary for an official Inventory Survey according to local, State, and Federal policy.

McEldowney (1979) subdivides the South Hilo/Puna region of Hawaii Island into five zones. Factors utilized for the classification include altitude, rainfall, vegetation, temperature, geology, past land use and settlement. However, considerable variation and overlap of zones occur for several reasons (e.g., variations due to geological formations of the three volcanic masses underlying the study area (McEldowney 1979:14)).

The coastal settlement zone ranges from approximately 0-50' amsl. The upland agricultural zone ranges from approximately 50-1,500' amsl. The lower forest, rain forest and sub-alpine zones occur at much higher elevations. Clearly, the subject area falls within the upland agricultural zone. This zone is archaeologically and historically characterized as being composed of scattered habitation structures emphasized by adjacent garden plots and small groves of economically beneficial tree species. Dryland

taro and bananas were cropped in this zone more intensively, but included plant varieties typical of coastal exploitation as well. This zone also includes occasional stands of *kukui*, pandanus and mountain apple.

Archaeological Methods:

Archaeological survey included a walk-through survey conducted on July 24, 1996 of Zones 1 and 3 by field archaeologists, D. Kyle Latinis M.A. and Michael O'Shaughnessy B.A. under the direction of Joseph Kennedy M.A., Principal Investigator. Zone 2 was not surveyed for reasons discussed above. Survey included a walk-through survey of 100% of the subject area within Zones 1 and 3. Zone 3 necessitated additional survey sweeps due to conflicting map locations discussed above. The survey was designed to identify the presence or absence of archaeological surface features.

Archaeological Findings:

Archaeological features were encountered in Section 3. The features are located between the existing main and the nearby Waipahoehoe Stream to the south at approximately the mid-section of the Section 3 corridor.

The features included ten stacked stone mounds and platforms, most of which had at least one nicely faced vertical wall. All features were constructed of angular cobbles and boulders ranging in diameter from 10-40 cm. Height ranged from approximately 0.75 to 1.75 m agl (above ground level). Feature dimensions ranged from between approximately 1.5 to 3.0 m in length and width. No definitive geometric shape to each feature was noted. The features were roughly oval to rectangular in shape. All features were considerably overgrown with vegetation and were also in varying stages of degeneration.

The features were dispersed rather evenly at approximately 10-20 m intervals. Four of the features were aligned in a north-south linear arrangement. Three additional features bisected this linear arrangement in another linear arrangement running east-west (perpendicular to the north-south arrangement) such that one of the features from the north-south arrangement was incorporated in the east-west arrangement to bring a total of four features in the east-west arrangement as well. It is quite possible that additional similar features are located in the nearby area.

At present, feature function and age cannot be determined. Morphologically similar features in other locations have been noted to be traditional agricultural features and burial features. However, similar features have been noted to be manufactured for more recent historical purposes (e.g., supports for elevated water lines), although, these features are not present on engineering maps provided by the county water department.

These features are located in an area of slightly higher elevation than the surrounding terrain. This is further supported by the lack of dense surface flood debris

characteristic of surrounding areas (especially in comparison to the area on the south side of the stream). Soils are deeper than the surrounding area and exposed *pahoehoe* surfaces are less frequent than comparative adjacent areas. Vegetation includes rose apple trees, guava and strawberry guava in the immediate vicinity. At the west end of the features, and extending more than 50 m in a westerly direction, is a dense stand of banana trees and torch ginger plants. Other plants include mimosa, palms, guava, yellow ginger, heliconia, passion fruit and tree ferns. This area appears to be somewhat of an island of less frequently inundated land with deeper soil deposits. These plants are currently untended. This area may have served as a past garden plot.

Section 1 of the subject area, including the one acre location for the reservoir, was devoid of archaeological features. As this area is frequently inundated and lacks adequate soil deposits for intensive cropping or cultivation of garden plots, it is likely that this area was never significantly utilized for settlement or agricultural practices. The area may have been occasionally frequented to collect some tree and plant products, but was likely unsuitable for more intensive use in the past. Historically, this area may have been a location for various logging activities as well.

Conclusions and Recommendations:

An archaeological survey and assessment was conducted for the proposed Piihonua-Kukuau Transmission Main and Reservoir project (Department of Water Supply, County of Hawaii). Survey covered a one acre area where the proposed reservoir will be located and an approximate 7,000' corridor which will be the location of the main. The subject property is located in Punahoa 1, Ponahawai Homesteads, and Kukuau 1, South Hilo District, Island and County of Hawaii. The subject property was divided into three sections (see Introduction above). Sections 1 and 3 were surveyed while Section 2 was not.

Section 1 contained no archaeological features. It is recommended that no further archaeological investigations are necessary in Section 1.

Section 2 has been previously developed as a residential area. All archaeological features during the development of Section 2 would have likely been severely altered or destroyed. It is recommended that no further archaeological investigations are necessary in Section 2.

Section 3 contained ten stone platforms/mounds which may be of significant archaeological concern. However, it is currently unknown whether the area in which these sites are located will be affected by future activities concerning the construction of the transmission main. The reason that there is some uncertainty is the fact that two separate maps show two separate locations for the proposed transmission main alignment (see Introduction above). Both areas were then subsequently surveyed.

Due to the discrepancy in transmission main alignments, two recommendations are proposed; alternative A and B (see Introduction above). If alternative A, the more southerly location, is the correct alignment, ACP recommends that an adequate Inventory Survey be conducted which accords with local, State and Federal policy. If alternative B, the more northerly location, is the correct alignment, ACP recommends that no further archaeological investigations are necessary.

References

McEldowney, Holly

1979 Archaeological and Historical Literature Search and Research Design: Lava Flow Control Study: Hilo Hawaii. B.P. Bishop Museum, Dept. of Anth. Honolulu, Hawaii.

APPENDIX B

COMMENTS & RESPONSES
TO THE DRAFT ENVIRONMENTAL ASSESSMENT

COMMENTS & RESPONSES

The 30-day public review period for the Draft Environmental Assessment (EA) commenced with the June 8, 1996 *OEQC Environmental Notice* publication date and ended on July 8, 1996. DWS consulted or sent the Draft EA to the agencies listed in §1.2 of the Final EA. Those who sent comments during the pre-assessment consultation or the 30-day comment period are listed below and copies of the letters are included in this Appendix. Some of the comments were not substantive (i.e., the comments either supported the project, concurred with information presented in the Draft EA, determined the project had no impact on resources within their jurisdiction, or had "no comments"), and therefore did not require a response.

Responses Sent:

- Federal
- State
  - Department of Land & Natural Resources, Chairperson's Office
  - Department of Land & Natural Resources, *Division of Historic Preservation*
  - Office of Environmental Quality Control
- County
  - Department of Public Works

No response necessary:

- Federal
  - U.S. Army Corps of Engineers
- State
  - Department of Accounting & General Services
  - Department of Health
- County
  - Fire Department

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

MICHAEL D. WILSON
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT S. COLOMA-AGARAN

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

REF:LM-AJ

JUL 11 1996

Roy R. Takemoto
Land Use Planning & Law consultant
P.O. Box 10217
Hilo, Hawaii 96721

Dear Mr. Takemoto:

FILE NO. A128

SUBJECT: Draft Environmental Assessment for the Piihonua-Kukuau Transmission Main & Reservoir, Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii (TMK: portions of 3/2-5-08; 2-5-60; 2-5-35; 2-5-11:04; 2-5-06:61, 142 & 149; 2-4-75)

We have reviewed the subject application and would like to offer the following comments:

Commission on Water Resource Management:

We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

If the transmission main does not affect the bed and banks of Alenaio Stream as planned (ie crossing beneath the stream), then a stream channel alteration permit (SCAP) is not required. However, should plans change or any construction work within the bed and banks of Alenaio is required to install the transmission crossing then a SCAP would be required before any work begins.

Thank you for the opportunity to review the subject application. We have no further comments to offer at this time. If you have any questions, please contact Al Jodar of the Land Division at 587-0424.

Aloha,

MICHAEL D. WILSON

I:\WETDATA\CASO\AL\LTR\COM126.RTN

ROY R. TAKEMOTO
Land Use Consultant
P.O. Box 10217
Hilo, HI 96721
Phone/Fax (808)959-0189

August 14, 1996

Mr. Michael Wilson, Director
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96808

RE: Draft Environmental Assessment for the Piihonua-Kukuau Transmission Main & Reservoir Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii (TMK: portions of 3/2-5-08:24; 2-5-60; 2-5-35; 2-5-11:04; 2-5-06:61, 142 & 149; 2-4-75)

On behalf of the County of Hawaii Department of Water Supply, this letter responds to your comments dated July 11, 1996 regarding the subject Draft Environmental Assessment.

1. Country's Water Use and Development Plans. We revised the Final EA to include a section on the County's Water Use and Development Plans. The Plan provides supporting rationale for the proposed project. The pertinent section of the Plan is quoted in the Final EA.

2. Stream Channel Alteration Permit. Thank you for confirming the accuracy of the statements in the Draft EA regarding the applicability of the Stream Channel Alteration Permit (§3.1.4 Water Resources on p. 10). During the design phase of the project, a determination will be made whether to microtunnel beneath the channel or to excavate the channel, and DWS will apply for the permit if applicable at that time.

Please call me if you have any questions.

Respectfully,

Roy Takemoto
Consultant

cc: Department of Water Supply

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

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AQUACULTURE DEVELOPMENT PROGRAM
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CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

June 25, 1996

MEMORANDUM

LOG NO: 17290
DOC NO: 9606PM29

TO: Dean Uchida, Adminstrator
Land Division

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Chapter 6E-8 Historic Preservation Review -- File No. A128. DraftEnvironmental Assessment for the Pihonua-Kukuau Transmission Main & Reservoir, Punahoa 1, Ponahawai Homesteads (County Dept. of Water Supply)
Kukuau 1, South Hilo, Hawaii Island
TMK: 2-5-08; 2-5-60; 2-5-35; 2-5-11: 04; 2-5-06: 61, 142, 149; 2-4-75

Most of the project area appears to be old sugarcane cropland that has subsequently been developed for residential use. It is thus highly unlikely that any historic sites would exist in the developed areas of the proposed project area because of the succession of land uses.

The Draft EA (page 14) also says that "There is no evidence of archaeological remains in the undeveloped portions of the project." This may be true, but there is no supporting reference for this statement. If an archaeological survey of the undeveloped portions of the project area has been undertaken we should be provided with a report for review and comment. If no survey has been undertaken we recommend that a qualified archaeologist be hired to conduct a survey to determine the presence/absence of historic sites in the undeveloped areas that were never in sugarcane production. The Alenaio Stream area in Section 3 of the project area is one locality that should be examined if it has not already been surveyed.

PM:jk

c. Gary Kawasaka, County of Hawaii Department of Water Supply, 25 Aupuni St., Hilo, HI 96720
√ Roy Takemoto, P.O. Box 10217, Hilo, HI 96721

ROY R. TAKEMOTO
Land Use Consultant
P.O. Box 10217
Hilo, HI 96721
Phone/Fax (808)959-0189

August 14, 1996

Mr. Don Hibbard, Administrator
State Historic Preservation Division
33 South King Street, 6th Floor
Honolulu, HI 96813

RE: Draft Environmental Assessment for the Pihonua-Kukuau Transmission Main & Reservoir Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii (TMK: portions of 3/2-5-08:24; 2-5-60; 2-5-35; 2-5-11:04; 2-5-06:61, 142 & 149; 2-4-75)

In response to your comments dated June 25, 1996 on the subject Draft EA, the County of Hawaii Department of Water Supply retained an archaeologist to conduct a reconnaissance survey. The archaeologist found potential archaeological features near one portion of the proposed alignment. In the final design of the project, DWS will ensure that the selected alignment avoids this area. The archaeologist recommended that no further archaeological investigations were necessary if this action is taken. If realignment is not possible, an inventory survey will be prepared for your review and approval.

The Final EA includes the archaeological study as an appendix and incorporates the findings in the section on Historic/Archaeological Resources (§3.1.6). The archaeologist forwarded a copy of their report to you for your review and approval. Your written concurrence of the findings and conclusions pursuant to the historic preservation review requirements of HRS §6E-8 will be included in the appendix with the archaeological report.

Please call me if you have any questions.

Respectfully,

Roy Takemoto
Consultant

cc: Department of Water Supply

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

GARY GILL
DIRECTOR

June 24, 1996

Milton Pavao, PE
Department of Water Supply
25 Aupuni Street
Hilo, HI 96720

Dear Mr. Pavao:

Subject: Draft Environmental Assessment (EA) for Piihonua-Kukuau Transmission Main & Reservoir, South Hilo

In the final EA please include the following:

1. Clearly indicate on one of the maps the location of Alenaio Stream and the point at which the proposed main crosses it.

2. List measures planned to mitigate the visual impact of the proposed reservoir. Painting the facility an earth-toned color is recommended.

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,

GARY GILL
Director

c: Roy Takemoto

ROY R. TAKEMOTO
Land Use Consultant
P.O. Box 10217
Hilo, HI 96721
Phone/Fax (808)959-0189

August 14, 1996

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

RE: Draft Environmental Assessment for the Piihonua-Kukuau Transmission Main & Reservoir Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii (TMK: portions of 3/2-5-08:24; 2-5-60; 2-5-35; 2-5-11:04; 2-5-06:61, 142 & 149; 2-4-75)

On behalf of the County of Hawaii Department of Water Supply, this letter responds to your comments dated July 11, 1996 regarding the subject Draft Environmental Assessment.

1. Location of Alenaio Stream Crossing. The Draft EA includes four figures that show the approximate location where the proposed transmission main would cross Alenaio Stream (figures 2, 4, 5, and 6). On one of those figures which shows the special flood hazard area (Figure 6), the location of the crossing was specifically identified to show the relevance of the flood control mitigation measures to the project.

2. Visual Impact of Proposed Reservoir. The Final EA incorporates your suggestion to require that the reservoir be painted an earth-tone color to mitigate visual impacts (new §3.1.8 Visual Impacts).

Please call me if you have any questions.

Respectfully,

Roy Takemoto
Consultant

cc: Department of Water Supply

Stephen K. Yamashiro
Mayor

Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

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

July 9, 1996

DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAII
ATT MR GARY KAWASAKA
25 AUPUNI STREET
HILO HAWAII 96720

SUBJECT : DRAFT ENVIRONMENTAL ASSESSMENT
Piihonua-Kukuau Transmission Main & Reservoir
Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo, Hawaii
TMK: 3 / 2-5-08: 24, 2-5-60, 2-5-35, 2-5-11: 04, 2-5-06: 61, 142 & 149, 2-4-75

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

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

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

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

4. Any work within the County right-of-way shall be in conformance with Chapter 22, Streets and Sidewalks, of the Hawaii County Code.

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

   A few affected areas are as noted in Sections 3 1.4 Water Resources and 3.1.5 Natural Hazards; however, may not be limited to these areas.

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

Galen M. Kuba, Division Chief
Engineering Division

CKY

cc: Roy R. Takemoto

ROY R. TAKEMOTO
Land Use Consultant
P.O. Box 10217
Hilo, HI 96721
Phone/Fax (808)959-0189

August 14, 1996

Mr. Galen Kuba, Division Chief
Engineering Division
Department of Public Works
25 Aupuni Street, Room 202
Hilo, HI 96720-4252

RE: Draft Environmental Assessment for the Pihonua-Kukuau Transmission Main & Reservoir Punahoa 1, Ponahawai Homesteads, Kukuau 1, South Hilo District, Hawaii (TMK: portions of 3/2-5-08:24; 2-5-60; 2-5-35; 2-5-11:04; 2-5-06:61, 142 & 149; 2-4-75)

On behalf of the County of Hawaii Department of Water Supply, this letter responds to your comments dated July 11, 1996 regarding the subject Draft Environmental Assessment.

1. Compliance with Building, Drainage, and Grading Controls. The Final EA incorporates your comments to include the building permit requirements for the reservoir. Drainage improvements as necessary will be submitted for your review and approval at the time of the construction plans for the project and/or subdivision approval for the reservoir site.

2. Approval for Construction within the Right-of-Way and Flood Control. The Draft EA identifies the approvals required for construction within the County rights-of-way (see Draft EA §4.6) and flood control (see Draft EA §3.1.5).

Please call me if you have any questions.

Respectfully,

Roy Takemoto
Consultant

cc: Department of Water Supply

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

June 20, 1996

Planning and Operations Division

Mr. Gary Kawasaka
County of Hawaii
Department of Water Supply
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Kawasaka:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Piihonua-Kukuau Transmission Main and Reservoir Project, South Hilo, Hawaii. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Any activity that results in the discharge of dredged or fill material to waters of the U.S. (i.e., Alenaio Stream) will require a DA permit. Please contact our Regulatory Section at 438-9258 for further information and refer to file number 960000254.

b. The flood hazard information provided on page 10 of the DEA is correct.

Sincerely,

Dr. Linda Hihara-Endo, P.E.
Acting Chief, Planning
and Operations Division

(P)1408.6

JUL 3 1996

Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Attention: Mr. Gary Kawasaka

Gentlemen:

Subject: Piihonua-Kukuau Transmission Main and Reservoir
South Hilo District, Hawaii
TMK Portions 3/2-5-08:24; 2-5-60; 2-5-35;
2-5-11:04; 2-5-06:61, 142 and 149; 2-4-75
Draft Environmental Assessment

Thank you for the opportunity to review the subject document. We have no comments to offer.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

Gordon Matsuoka

GORDON MATSUOKA
State Public Works Engineer

RY:jk
cc: Mr. Roy Takemoto

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to

July 29, 1996 96-087/epo

Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Attention: Mr. Gary Kawasaka

Subject: Draft Environmental Assessment
Piihonua--Kukuau Transmission Main and Reservoir
Punahoa 1, Ponahawai Homesteads, Kukuau 1
South Hilo, Hawaii
TMK: 2-5-08: 25 and various others

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer at this time.

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Deputy Director for Environmental Health

c: Roy R. Takemoto (Consultant) ✓

Stephen K. Yamashiro
Mayor

Nelson M. Tsuji
Fire Chief

Edward Bumatay
Deputy Fire Chief

County of Hawaii
FIRE DEPARTMENT
777 Kilauea Avenue • Mall Lane, Room 6 • Hilo, Hawaii 96720-4259
(808) 961-8297 • Fax (808) 961-8296

July 2, 1996

To: Department of Water Supply
Attention: Gary Kawasaka

From: Nelson H. Tsuji, Fire Chief

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PIIHONUA-KUKUAU MAIN & RESERVOIR, PUNAHOA 1, PONAHAWAI HOMESTEADS, KUKUAU 1, SOUTH HILO DISTRICT, HAWAII (TMK: PORTIONS OF 3/2-5-08:24; 2-5-60; 2-5-35; 2-5-11:04; 2-5-06:61, 142 & 149; 2-4-75)

We have reviewed the above-referenced draft environmental assessment and have no comments.

NELSON H. TSUJI
Fire Chief

NHT/mo

cc: ✓Roy Takemoto