

MAR 23 1995

1995-03-23-HI-~~FEA~~-Keonepoko Nui Booster Addition **DRAFT**

February, 1995

NOTICE OF DETERMINATION: Negative Declaration

FOR: Keonepoko Nui Booster Addition
Job Number 93-585
Pahoa, Puna, Hawaii

BY: Department of Water Supply
County of Hawaii

The proposed action will not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Statement. This notice of Determination, together with the supporting environmental assessment, are being filed as a Negative Declaration.

ENVIRONMENTAL ASSESSMENT

Keonepoko Nui Booster Addition, Pahoa, Puna, Hawaii

I. Proposing Agency

Department of Water Supply
County of Hawaii

II. Parties Consulted

Department of Health, State of Hawaii
Department of Planning, County of Hawaii

III. Project Objective and Need

The objective of the project is to install an additional booster pump at the Keonepoko Nui Well site to supply both the Kapoho and Pahoa water systems, which has experienced an increase in demand due to the relocation of Kalapana lava flow disaster residents. The proposed action will ensure that adequate support services and facilities are provided to accommodate the water service zones experiencing the water problems.

IV. Project Description

The project calls for the installation of a 400 gallon per minute (gpm) booster to be connected to an existing 350 gpm booster, including all the necessary plumbing, electrical and structural items. The proposed project is located at the existing Keonepoko Nui Well site which is about 1 1/2 miles from Pahoa Village along the Keaau-Pahoa Highway (See Figure 1 - Location Map).

The existing Keonepoko Nui Well site has a well pump capable of pumping water to the existing concrete reservoir at a rate of 750 gpm. The installation of the additional booster will bring the booster pumping capacity equal to the well pumping capacity, utilizing the water resource to its maximum (See Figure 2 - Proposed Plan).

The construction cost is estimated at \$300,000.

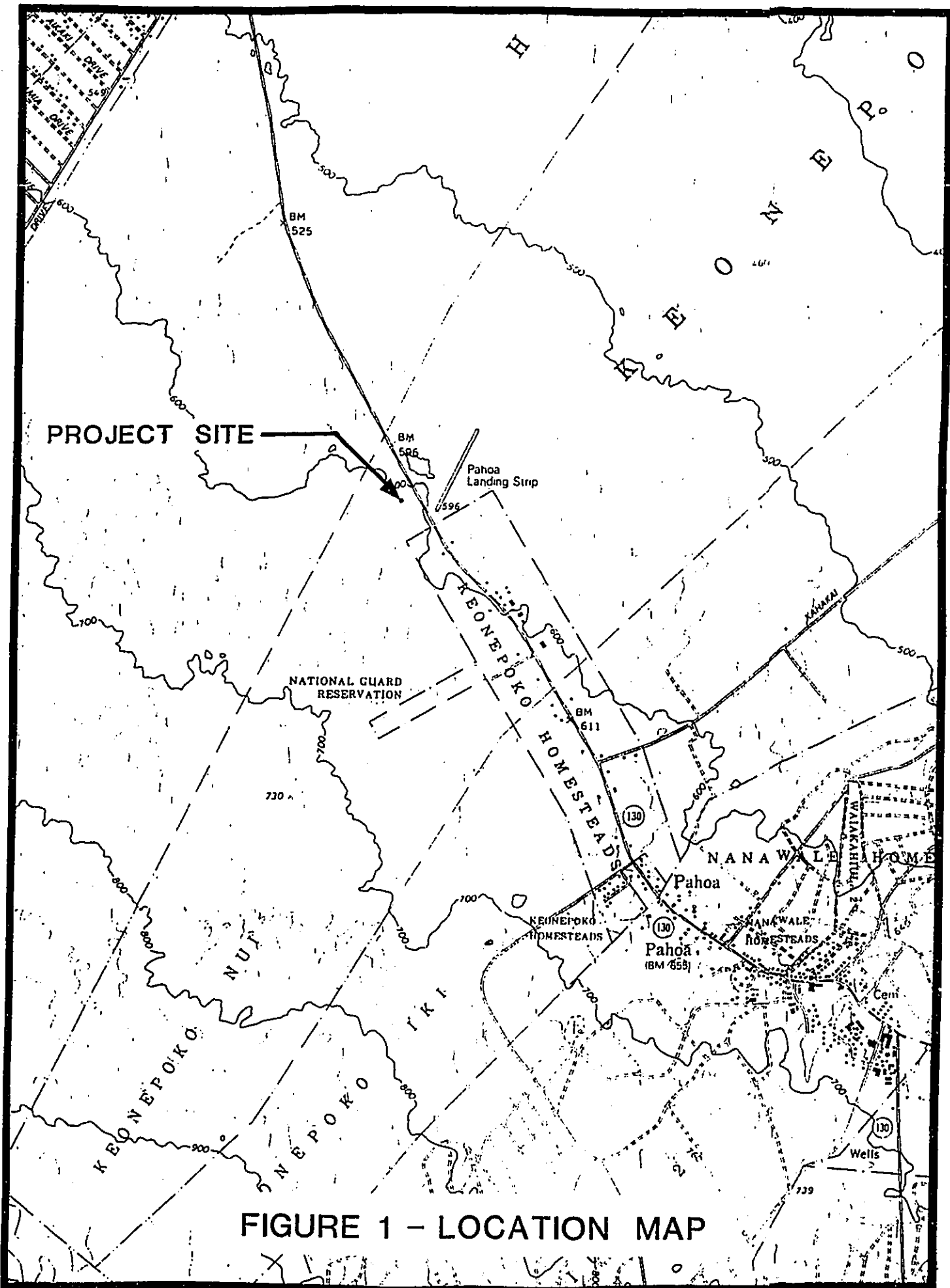


FIGURE 1 - LOCATION MAP

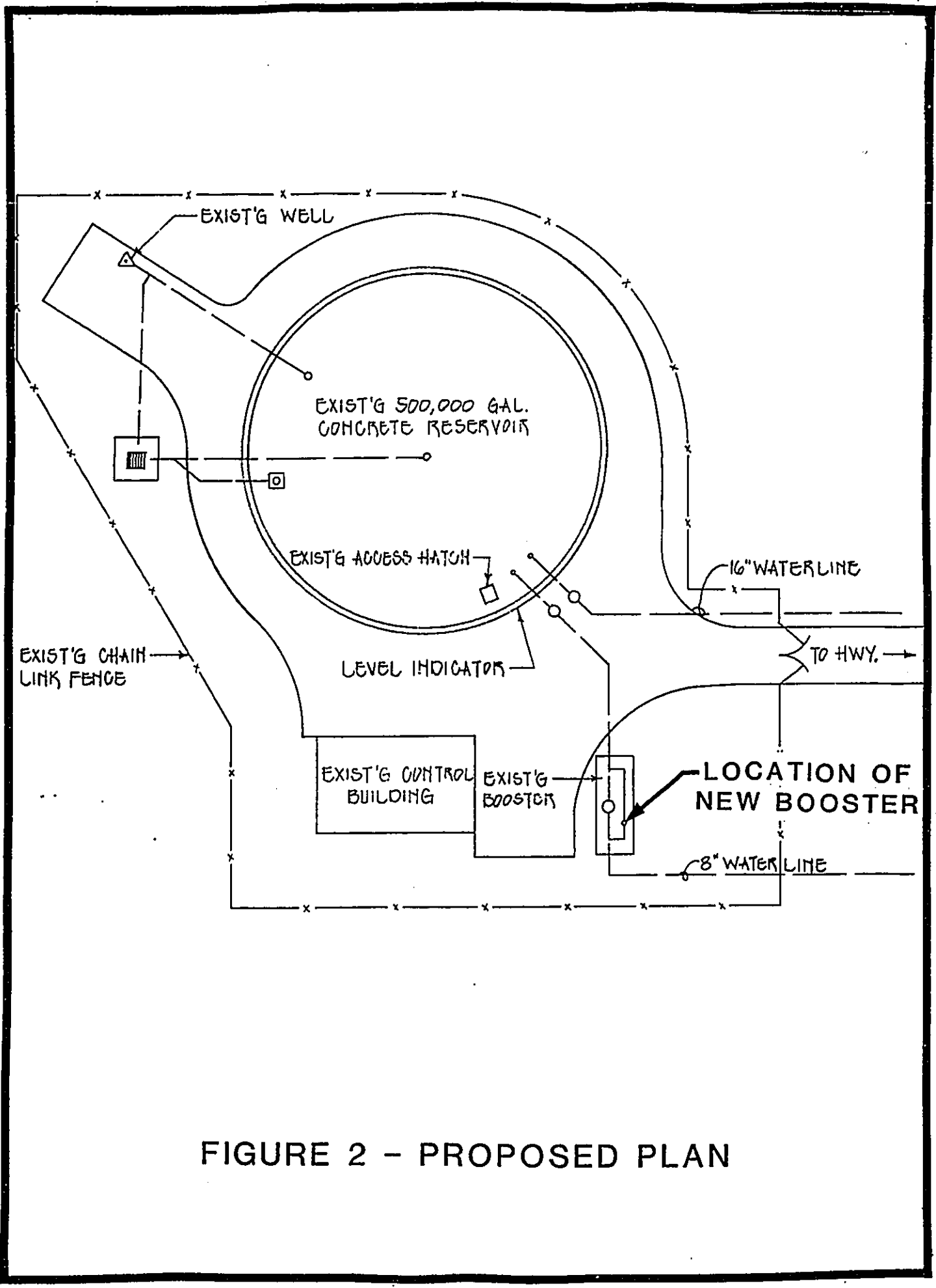


FIGURE 2 - PROPOSED PLAN

V. Description of the Environment

A. Location

The proposed booster addition is at the existing Keonepoko Nui Well site, Tax Map Key: 1-05-08: Portion of Parcel 1 (See Figure 3 - Tax Map Key). This site is about 1 1/2 miles from Pahoa Village along the Keaau-Pahoa Highway. The existing site is surrounded by scattered ohia trees, lichens, mosses, and amaumau ferns.

B. Topography and Climate

The area is relatively flat in slope and is at the 1,000 foot elevation (See Figure 4 - USGS Map). The annual rainfall is about 150 inches per year (See Figure 5 - Rainfall Map). The temperature varies from a low mean of 69 degrees to a high mean of 75 degrees Fahrenheit.

C. Soils

The Soil Conservation Service's Soil Survey of Island of Hawaii describes the soil at the project site as Pahoehoe Lava Flow. This lava has a billowy, glassy surface, that is relatively smooth. Pahoehoe lava has no soil covering and is typically bare of vegetation except for mosses and lichens. In areas of higher elevation and rainfall, scattered ohia trees, amaumau ferns, and aalii have gained a foothold in cracks and crevices (See Figure 6 - Soil Conservation Map).

This miscellaneous land type is at an elevation from sea level to 13,000 feet. The annual rainfall ranges from 10 inches to 250 inches per year. The lava flows are gently sloping to steep, excessively drained, and nearly barren.

D. Geology and Hydrology

The site is located on the remote slopes of Mauna Loa mountain and the soil type is Pahoehoe Lava Flow. This soil type makes up 50 per cent of the island area and most of it is saddled between Mauna Kea and Mauna Loa mountains.

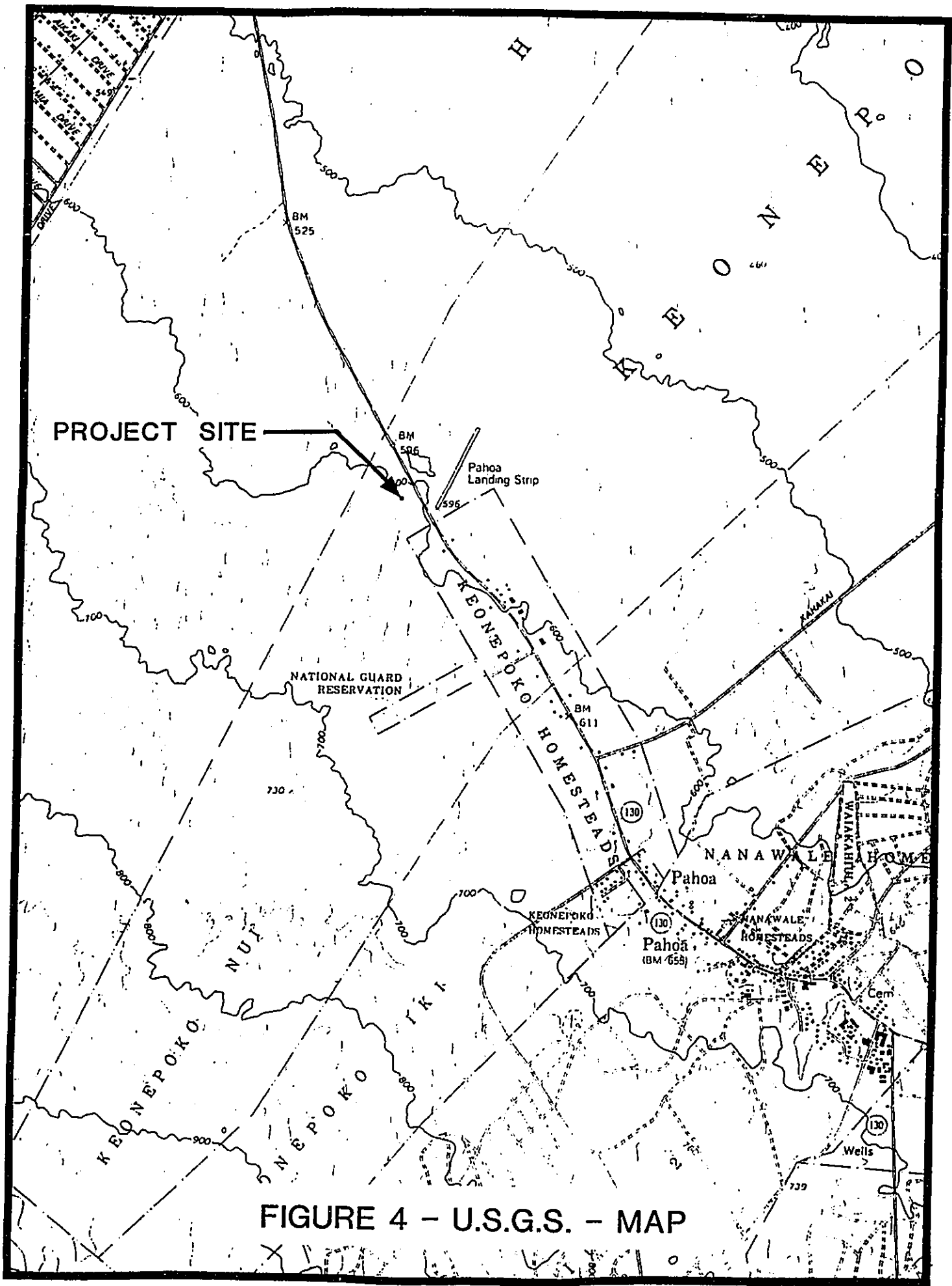
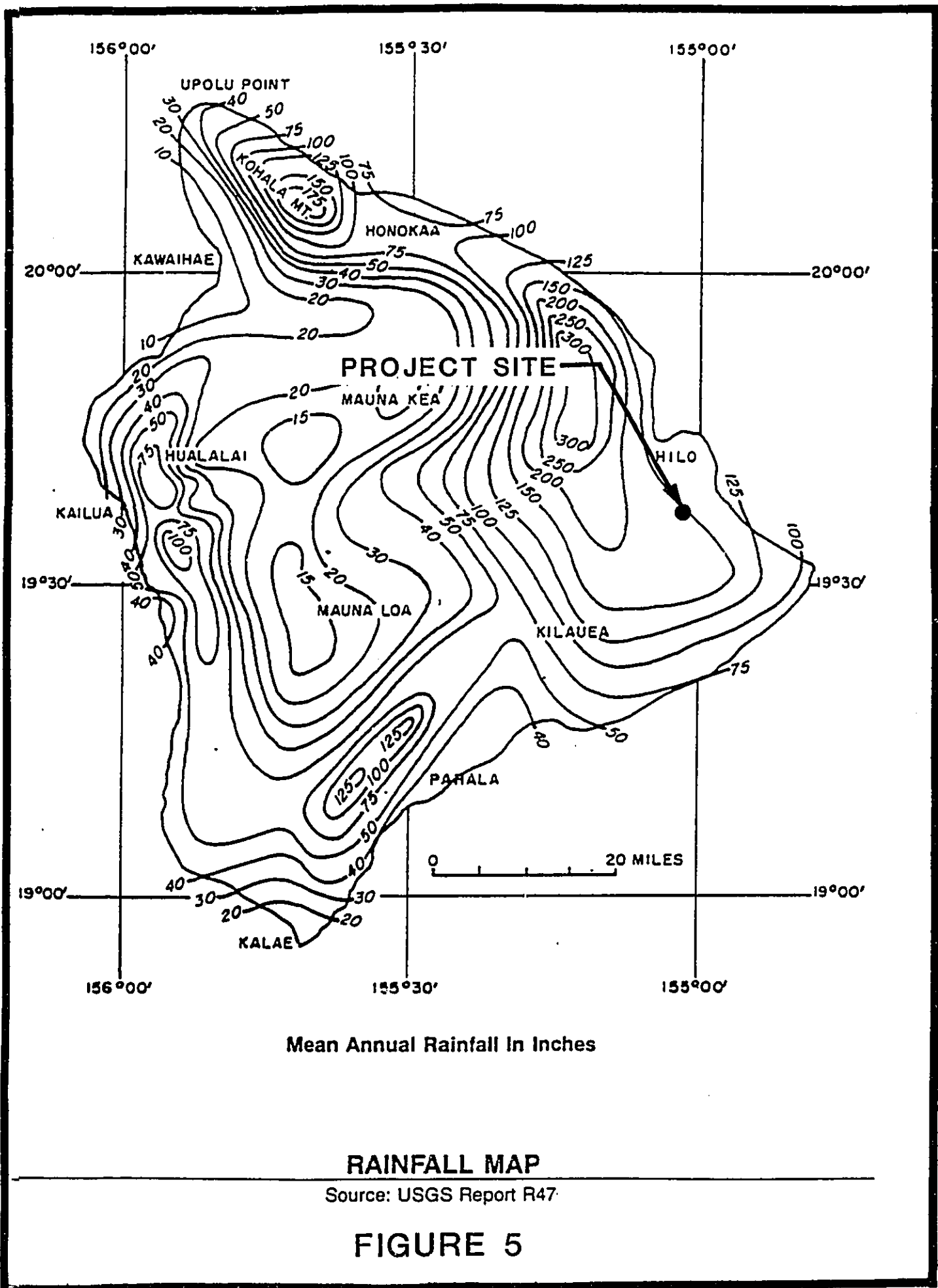
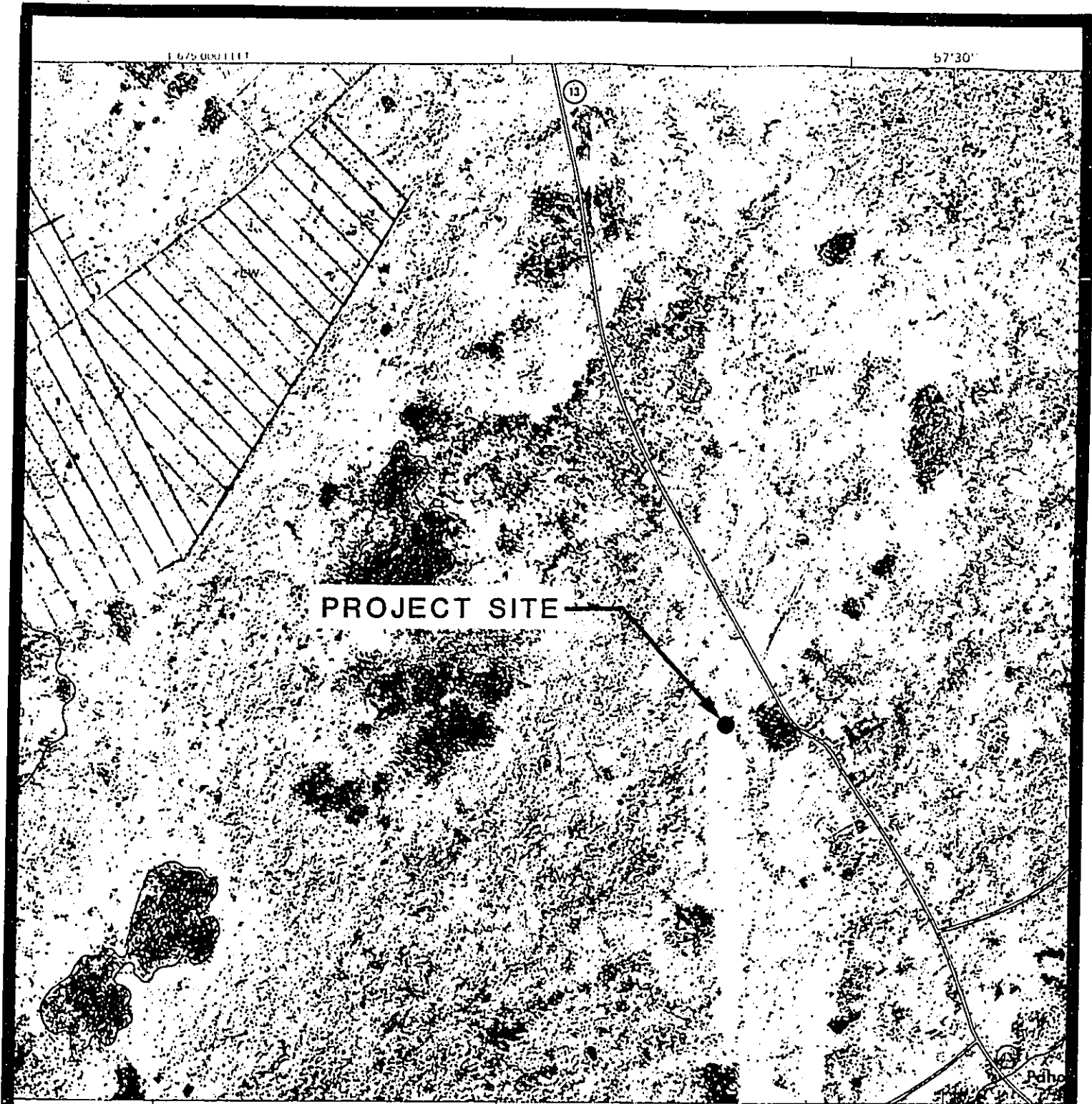


FIGURE 4 - U.S.G.S. - MAP





SOIL CONSERVATION MAP

FIGURE 6

The relatively young island of Hawaii has gentle slopes and little soil. The unweathered surface is highly permeable which allows most of the rainfall to percolate to the water table. Hence, there are few perennial streams on the island. Streams in the Puna area are intermittent or non-existent (See Figure 7 - Simplified Geological Map of Hawaii).

The subterranean underground basal water table provides the most dependable sources of water as it is less affected by droughts and seasonal changes in the weather. Ground water accounts for 100 per cent of the sources used in the Pahoehoe water system and all of Puna district.

The Keonepoko Nui Well of which the new booster will be used for pumping water, is designated the Pahoehoe Aquifer, Number 80801. This aquifer has a capacity of 435 million gallons per day (See Figure 8 - Aquifer Sectors and Systems).

E. Land and Water Uses

The existing well site is compatible with existing land uses. The booster addition will not impact land use.

The existing water system uses a 350 gpm pumping system. The booster addition will provide an additional pumping capacity of 400 gpm, thereby, doubling the existing pumping capacity.

F. Archaeological and Historic Sites

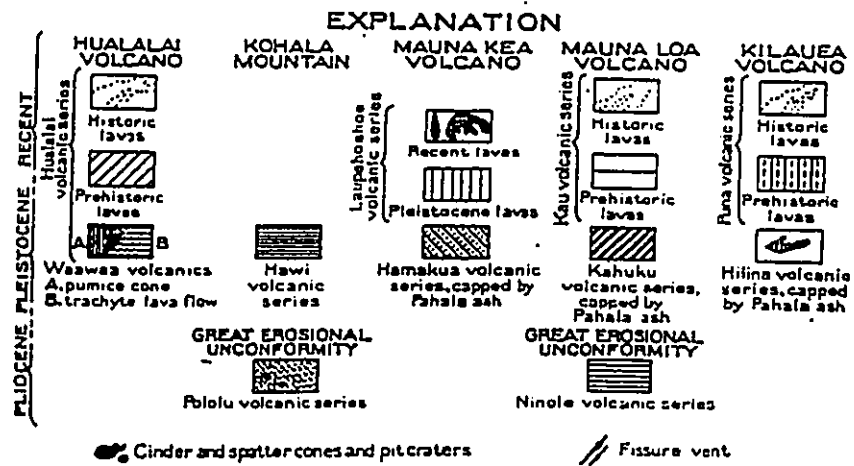
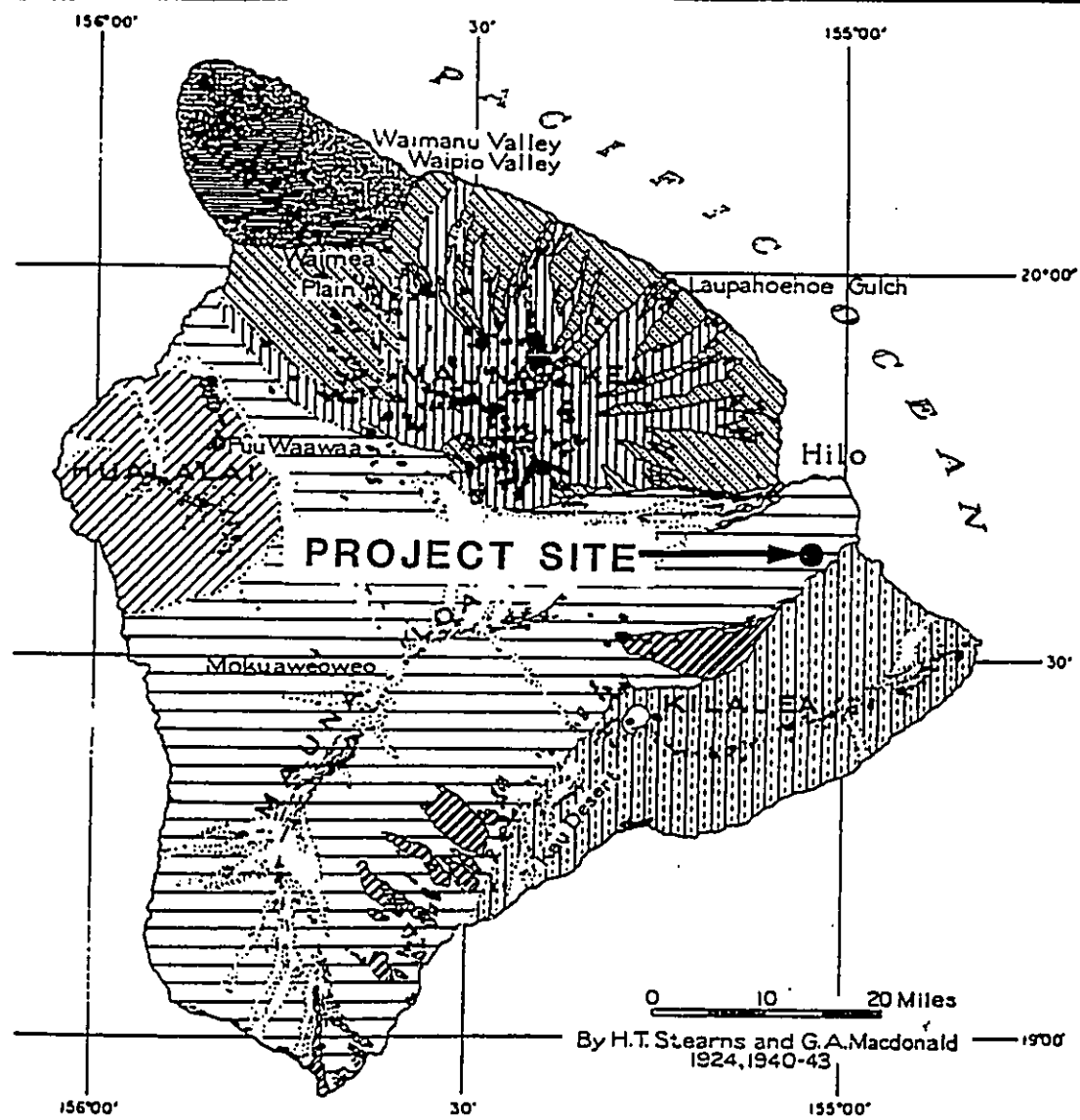
It is unlikely that any kind of historical, cultural, architectural and/or archaeological resources will be found on this parcel of land.

G. Effect on Streamflow

No streams exist in the area and the existing well taps off basal water and, therefore, there is no effect on stream flow.

VI. Assessment Process

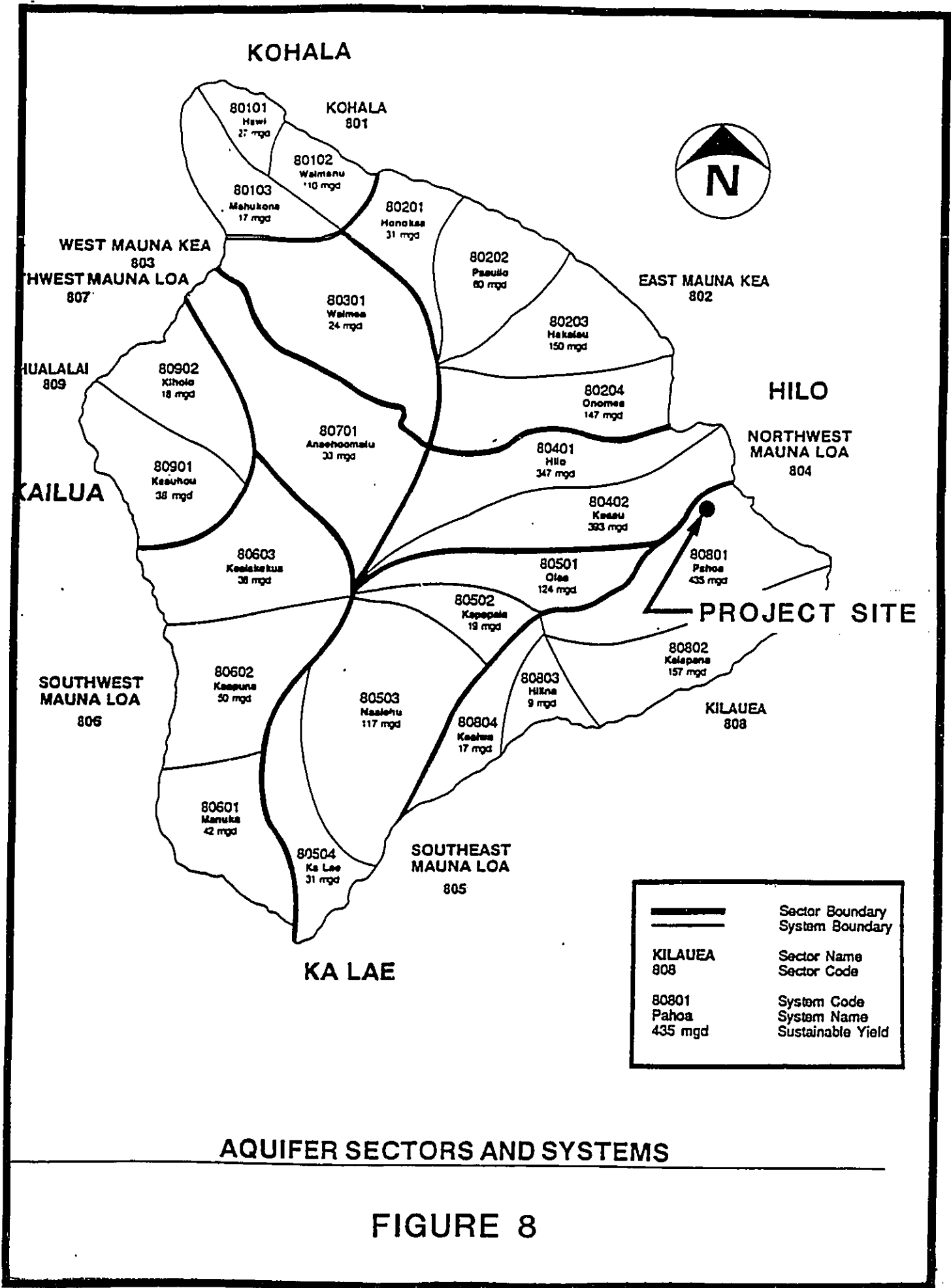
Since the proposed action is to add on to an existing facility and this facility allows for the booster addition, no field trip was made for this assessment.



SIMPLIFIED GEOLOGICAL MAP OF HAWAII

Source: Geology and Ground Water Resources Island of Hawaii
Stearn & MacDonald

FIGURE 7



VII. Probable Impacts and Mitigative Measures

A. Construction Related Impacts

The booster addition involves installing a motor/pump unit which is almost identical to the existing booster. The existing booster concrete pad and associated plumbing/electrical systems were made to accommodate an additional booster. Very little construction related impacts are anticipated.

B. Aesthetics

The booster addition will look identical to the existing booster and aesthetic impact is not anticipated.

C. Water Resources

The substantial yield of the Pahoa Aquifer, Number 80801, is 435 gallons per day. The existing booster yields about 1/2 millions per day. The additional booster will increase the yield to 1 million gallons per day which will not impact the water resources.

VIII. Alternatives

The "no-action" alternative was considered but deemed to be unacceptable because the public health and welfare was at risk. The good this project brings far outweighs possible impacts of this project.

XI. Determination

The booster addition is not expected to cause significant impacts to the environment. Therefore, it is the determination that a negative declaration be filed.

A. Findings and Reasons Supporting Determination

The proposed project will not involve an irrevocable commitment to loss or destruction of any natural or cultural resource.

The proposed project will not curtail the range of beneficial uses of environment.

The proposed project will not conflict with the State's long-term environmental policies.

The proposed project will not substantially affect the economic or social welfare of the community or state.

The proposed project will not involve substantial secondary effects, such as population changes or effects on public facilities.

The proposed project will not involve substantial degradation of environmental quality.

The proposed project will not substantially affect any rare, threatened or endangered species of flora and fauna or habit. No endangered species of flora or fauna are known to exist in the project site.

The proposed project will not detrimentally affect air or water quality or ambient noise levels.

The proposed project will not be located in any environmentally sensitive area, such as flood plain, tsunami zone, erosion-prone area, geological hazardous land, estuary, fresh water, or costal waters.

For the reasons stated above, the proposed project will not have any significant effect in the context of Chapter 343, Hawaii Revised Statutes and Section 11-200-12 of the State Administrative Rules.

REFERENCES

1. U. S. Department of Agricultural, Soil Conservation Service, Soil Survey of Island of Hawaii, December, 1973.
2. Department of Water Supply, Hawaii County Water Use and Development Plan, December, 1989.
3. County of Hawaii, The General Plan, Hawaii County, November, 1989.