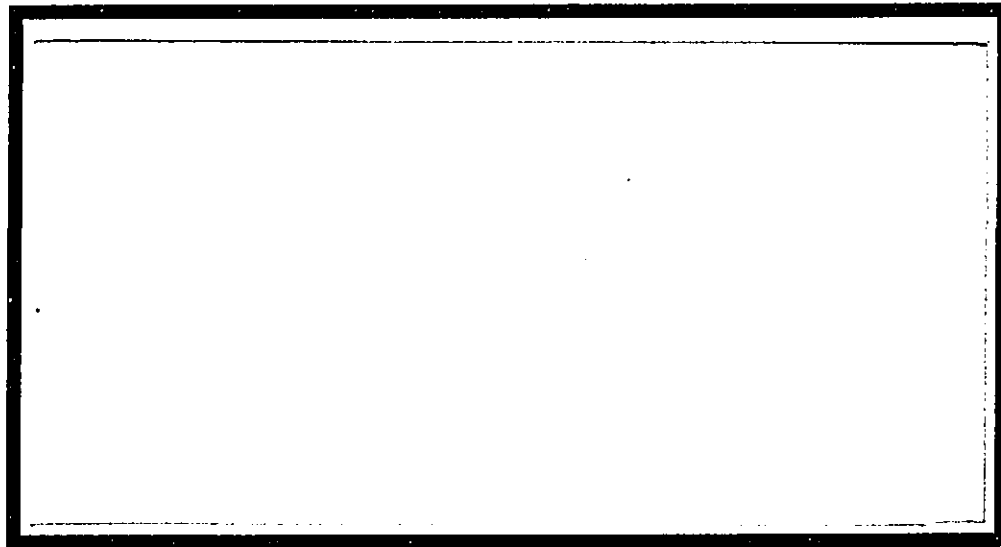


1995-08-23-0A-FEA-Kawa Ditch Improvements

AUG 23 2001

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Gray • Hong • Bills • Nojima & Associates, Inc.
CONSULTING ENGINEERS

841 Bishop Street, Suite 1100, Honolulu, Hawaii 96813 • Tel: (808) 521-0306 • Fax: (808) 531-8018

JUN 8 1995

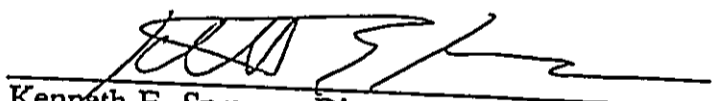
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

FINAL ENVIRONMENTAL ASSESSMENT
FOR
KAWA DITCH IMPROVEMENTS
KANEOHE, KOOLAUPOKO, OAHU, HAWAII
TAX MAP KEY: 4-5-89:23

This environmental document was prepared
pursuant to Chapter 343 HRS

Proposing Agency: Department of Public Works
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Responsible Official:


Kenneth E. Sprague, Director and Chief Engineer

March 25, 1995

Date

Date

Prepared by:

Gray, Hong, Bills & Associates, Inc.
Consulting Engineers
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Honolulu, Hawaii 96813

OEQC Bulletin



BENJAMIN J. CAYETANO
Governor

GARY GILL
Director

VOLUME XII

JUNE 8, 1995

NO. 11

REGISTER OF DOCUMENTS PREPARED UNDER CHAPTER 343, HAWAII REVISED STATUTES

The *OEQC Bulletin* is a semi-monthly publication. The publication dates of the *OEQC Bulletin* are the eighth and twenty-third of each month. Environmental Assessments should be submitted to the appropriate agency directly. For environmental assessments (EA) for which a Negative Declaration is anticipated, agencies should submit four copies of the Draft EA with a letter stating that a Negative Declaration is anticipated and that notice of the Draft EA should be published in the *OEQC Bulletin*. (When an agency initially determines that an EIS will be required for a project, an EIS Preparation Notice determination is made. No Draft EA is required since those projects undergo two comment periods throughout the EIS process.) After the Draft EA comment period ends, the agency will submit to OEQC, four copies of the document and a determination of a Negative Declaration or an EIS Preparation Notice for publication in the *OEQC Bulletin*. Applicants should deliver an appropriate number of Draft and Final Environmental Impact Statements (EIS) to the accepting authority before submitting copies to OEQC for publication. All documents submitted for publication in the *OEQC Bulletin* should be delivered to the Office of Environmental Quality Control, 220 South King Street, 4th Floor, Honolulu, Hawaii 96813. The deadline for all submittals is eight working days prior to the publication date. To ensure proper processing of documents, please attach the *OEQC Bulletin Publication Form* (Revised July, 1992) with all submittals. This form can be obtained by calling OEQC at 586-4185.

Please contact the approving or proposing agency to request copies of any Draft EAs, Negative Declarations, EISPNs or EISs. Any questions related to the content of these documents should be directed to the listed agency contact person.

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OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 South King Street, Central Pacific Plaza, Suite 400, Honolulu, HI 96813

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KAWA DITCH IMPROVEMENTS

District: Koolaupoko
TMK: 4-5-89:23
Agency: City & County of Honolulu
Department of Public Works
Contact: Laverne Higa (527-6246)
Consultant: Gray, Hong, Bills & Associates, Inc.
Contact: Beverly Ing (521-0306)

Kawa Ditch is a City & County of Honolulu drainage ditch located in Pikoiloa Track Unit No. 9 subdivision in Kaneohe, Koolaupoko, Oahu.

The ditch was partially lined in 1963. A recent survey has revealed erosion occurring, threatening to undermine several lined areas. The erosion has hampered maintenance by making vehicular access impossible, and has created pockets of stagnant water which sometimes prompts odor complaints from the residents. The ditch does not have channel capacity required by the City & County of Honolulu drainage standards.

The proposed project will involve construction of a concrete-lined channel within the present 40-foot right-of-way. The project will extend 900 feet upstream from the Mokulele Drive box culvert.

The project will involve channel excavation; demolition of existing lining; lining of walls and invert of channel; lining of remaining sideslopes of stream from top of channel to edge of right-of-way; backfilling; compaction; and restoration of private property as required.

The project will be funded by the City & County of Honolulu. Construction is scheduled to commence in the beginning of calendar year 1996.

OAHU OFFSHORE CONDUCTING OCEAN-BOTTOM TESTS OF ADVANCED SONAR

District: Oahu Offshore
TMK: Submerged Land
Agency: Department of Land and Natural Resources
Contact: Roy Schaefer (587-0377)
Applicant: Intech, Inc.
Contact: Jack Harmon (531-8330)

This project is within the State Conservation District.

This application is being processed as a departmental permit.

A research and development grant was issued in late 1994 by DBEDT's Center of Excellence for Research in Ocean Sciences to Alliant Techsystems Inc. of Mukilteo, Washington, and their subcontractor for test site, INTECH, Inc. of Honolulu. Under the grant, Alliant is modifying an existing side-looking sonar set at the University of Hawaii, HIG, to incorporate a synthetic aperture processing capability that will enable it to detect ordnance (bombs and large shell casings) buried in the seafloor. There is a major problem at Kahoolawe and numerous other sites off the State's small islands where target practice left scores of unexploded ordnance to menace future generations of Hawaii's citizens. If the

technology can be developed and demonstrated to successfully locate objects on or under the seafloor, then the State can call for their removal by the military. The Alliant grant is the start of a multi-sensor sonar capability that can provide the needed location

To demonstrate the capability of the sonar to detect such objects requires a calibrated test site where the depth and locations of the objects are known. A permit is requested for the installation of the targets (6) during the two-week sea trials in July or August of 1995; the targets will then be removed and the seafloor restored to its original condition. Since the bottom sands in the area of the proposed tests is continuously shifting, there isn't an established environmental situation; hence, the proposed insertion and removal of the targets should pose no degradation to the seafloor environment.

WILIWILINUI RIDGE PUBLIC ACCESS TRAIL

District: East Honolulu
TMK: 3-5-24:por.3
Agency: Department of Land and Natural Resources
Office of Conservation and Environmental Affairs
Contact: Sam Lemmo (587-0377)
Applicant: Gentry Waialae Iki V Partners
Contact: Tosh Hosoda (599-8300)

Gentry Waialae Iki V Partners proposes to build a public access easement hiking trail on Wiliwilinui Ridge above the Waialae Iki V subdivision. The trail will be approximately 1/3 to 1/2 mile long, and will be built in conjunction with the State's Na Ala Hale trails program. Access to the trail will be on Halakau Street in Waialae Iki V. When completed, it will provide increased recreational opportunities for Oahu residents.

EIS PREPARATION NOTICES

According to the listed agency, the following actions may have significant impacts upon the environment. As a consequence, Environmental Impact Statements will be prepared for these projects. A thirty-day consultation period commences with the initial publication of these projects in the bulletin (see listed deadline dates). The purpose of soliciting comments during the consultation period is to establish the scope and depth of coverage that the Draft EIS should have.

Aggrieved parties who wish to challenge the agency's determination have sixty days from the initial date of publication of the EIS Preparation Notice to initiate litigation.

Please send the original copy of your comments to the accepting authority and duplicate copies of the comments to the proposing agency or applicant, consultant and OEQC.

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APPENDICES

APPENDIX A - KAWA DITCH AQUATIC SURVEY

APPENDIX B - REVIEW COMMENTS FROM AGENCIES AND RESPONSES

I. GENERAL DESCRIPTION OF THE PROPOSED ACTION

A. Technical

The proposed project consists of flood and erosion control improvements to Kawa Ditch, from the 6' x 8'-6" box culvert at Mokulele Drive to an upstream box culvert (6'x8'). The proposed improvements are to be constructed in two phases. The initial phase includes 900 feet of concrete-lined channel. The future phase is to include widening of the Mokulele Drive box culvert.

The existing Kawa ditch is partially concrete-lined and located in Kaneohe, Oahu, Hawaii above Mokulele Drive (see Location Map, Figure 1). The ditch runs within a 40'-wide City & County right-of-way and is bordered by single-family residential lots (Pikoiloa Tract Unit No. 9 Subdivision). The tax map (TMK: 4-5-89:23) for the project site is shown as Figure 2.

Erosion has occurred along the ditch bottom in the curved portion, with the invert dropping 5'-6' below the sideslope lining. Despite this, the lining appears stable and is in no immediate danger of falling. Many of the small concrete linings which have been built opposite drain outlets have been undermined and are in danger of falling into the ditch. In one area, erosion near one of these linings is threatening to encroach into private property.

Erosion along the ditch bottom has also exposed a jacketed sewer line crossing the stream. Pools of stagnant water within the eroded bottom has prompted complaints from lot owners about odor.

The proposed project intends to address the maintenance and capacity by providing complete lining with reinforced concrete. The lining would extend to both edges of the right-of-way.

Construction would involve ditch excavation; demolition of existing lining; lining of walls and invert of ditch; lining of remaining sideslopes of ditch from top of ditch to edge of right-of-way; backfilling, compaction, and restoration of private property as required.

An expansion of the Mokulele box culvert will be necessary to completely bring the ditch up to County standards. However, because of lack of funds, and because this is not critical until such time that the infrastructure entering the ditch is upgraded, culvert work is being proposed as future.

B. Socio Economic

Improvements to Kawa Ditch will offer both social and economic benefits to the homeowners by providing a sense of security during periods of heavy rainfall and by eliminating nuisance ponding and accompanying odors during periods of low rainfall.

The City & County of Honolulu will realize benefits in the form of decreased maintenance costs. The County periodically clears vegetation from the ditch with the use of herbicides. Repair of the undermined linings would have to be done eventually. Costs to repair the eroded areas along the ditch are estimated at \$510,000.

The proposed project is estimated to cost \$970,000. Future cost for the box culvert expansion is estimated at \$260,000. The lining project will be funded by the City & County of Honolulu. Construction is scheduled to start in January 1996 and is estimated to have a 4-month construction period.

C. Environmental Characteristics

The project site is located within the Pikoiloa Unit 9 Subdivision, a single-family residential area. The project will involve construction of a concrete-lined ditch with an existing City & County right-of-way.

Since the project calls for complete lining of the ditch, all vegetation within the ditch would be removed. This would eliminate the weeds from the residents' backyards and stagnant ponds of water, improving the aesthetics of the area. Lining would also eliminate the need to administer herbicides.

The aquatic survey conducted for the improvements indicates that the ditch consists of introduced species. The survey also reveals that the general quality of the habitat is degraded in the ditch (see Appendix A, "Kawa Ditch Aquatic Survey").

II. SUMMARY DESCRIPTION OF THE ENVIRONMENT

A. Location

The project affects properties belonging to the Pikoiloa Subdivision in Kaneohe Koolaupoko, Oahu (see Figure 1 - Location Map). The project area is mauka of Mokulele Drive, running parallel with Mikihilina and Lehuuila Streets.

The existing City & County of Honolulu drainage ditch is 40-feet wide, with portions of its sideslopes and bottom lined with concrete. Utilities crossing or intersecting the ditch consist of an 8" gravity sewer and various drainlines.

Kaneohe is a major population center in Windward Oahu, approximately 10 miles north of downtown Honolulu. The Koolau Range lies to the west, the Kaneohe (Halekou) volcanic cone to the south and Kaneohe to the north and east. Much of the developed area is on a flat coastal plain which extends inland from Kaneohe Bay for approximately 1.7 miles, where it then gently rises up to the foot of the Koolau Range. (FEMA, 1989) Kaneohe is primarily a residential community with commercial and service establishments for residents. No significant agricultural activities exist within the area.

B. Population

The 1990 census estimated the resident population within Kaneohe to be 35,448 an insignificant change from the 1980 census population of 35,553. The project area is within Census Tract 107.02, extending from Kaneohe Bay Drive to Kamooalii Stream, with a population of 4,336. (State of Hawaii, 1992)

C. Climate

Average rainfall is approximately 50 inches near Kaneohe Bay to 75 inches near the Koolau mountains. Temperatures range from an average (mean) minimum of 69 degrees Fahrenheit to an average (mean) maximum of 85 degrees Fahrenheit. The prevailing wind is the northeasterly trade wind. (University of Hawaii, 1983)

D. Land Use

Based on the City & County of Honolulu Development Plan Map, the project is within a residential area and is surrounded by areas designated for residential, public facilities, preservation, and park use (see Figure 4 - Development Plan Map).

The project site is classified as within the State's urban district (see Figure 5 - State Land Use Map).

Zoning within the area is R-7.5, Residential. Surrounding areas are within P-2, Preservation and A-2 (see Figure 6 - Zoning Map).

E. Historic or Cultural Sites

Kawa Ditch and the surrounding residential areas have been altered by grading done as part of the subdivision construction. The existence of historic or cultural sites is therefore unlikely. The construction contractor will be required to contact the State Historic Sites Section should any artifacts be unearthed during trench excavations.

F. Wildlife and Flora

An aquatic survey for the ditch improvement project has been conducted and the findings are contained in Appendix A. The aquatic survey indicates that the ditch contains aquarium plants, introduced fishes and common snails. The survey further indicates that no native fishes, or other species were found in the ditch that are endangered or threatened.

Due to the urbanization of the area, wildlife and indigenous flora are non-existent. Flora within the area consists of introduced species.

G. Soils

Soils within the project area belong to the Lolekaa-Waikane association. These soils are characterized in the Soil Conservation Service's "Soil Survey, Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii" as "deep, nearly level to very steep, well-drained soils that have a dominantly fine-textured subsoil; on fans, terraces, and uplands". (USDA, 1972)

The soil within the project area is further classified as belonging to the Hanalei Series -- Hanalei silty clay loam, 0 to 2 percent slopes (HnA). This soil is found on stream bottoms and flood plains. This soil has a 10" surface layer of dark gray and very dark gray silty clay that has dark-brown and reddish mottles. The subsurface is 3" of very dark gray and dark-gray silty clay. A 13" subsoil layer is mottled, dark-gray and dark grayish-brown silty clay loam with an angular blocky structure. The soil is strongly acid to very strongly acid in the surface layer with a strongly neutral subsoil.

Permeability is moderate. Runoff is very slow with a no more than slight erosion hazard. Flooding is a hazard.

H. Drainage

The drainage basin for the Kawa Ditch tributary above Mokulele Drive is approximately 0.31 square miles (198.4 acres). The Pikoiloa Tract subdivision drainage system connects to the ditch with drainlines and a box culvert. Runoff from some of the lots adjacent to the ditch sheetflows directly into the stream. The present ditch was designed for a discharge of 600 cfs, less than 38% of the 1400 cfs required by City & County drainage standards.

On the Flood Insurance Rate Map dated September 28, 1990, the Federal Emergency Management Agency (FEMA) designated the project area as within Zone X, an area determined to be outside the 500-year flood plain (see Figure 7 Flood Insurance Rate Map).

The proposed action would provide the City with a more easily maintained drainageway which would be sized to handle storm runoff in accordance with City & County drainage standards. Expansion of the box culvert is planned to be done in the future to complete the necessary improvements.

III. SUMMARY OF THE MAJOR IMPACTS

The proposed project will involve construction within an existing right-of-way flanked on both sides by residential lots. The 900' foot long concrete-lined rectangular section will extend from the Mokulele Drive box culvert to the existing 6'x8' box culvert which extends through Pikoiloa Unit No. 10 Subdivision. Existing drainline and concrete swale connections will be maintained under the proposed improvements.

The construction will temporarily inconvenience residents along the right-of-way with equipment noise, dust and possibly some interference with vehicular and pedestrian traffic.

IV. ALTERNATIVES CONSIDERED

There were three alternatives that were considered for the proposed action: 1) No action; 2) Repair of ditch; and 3) The proposed action.

Under the "no action" alternative, erosion of the ditch would continue, possibly threatening private property. Accessibility for maintenance, ditch capacity, and odor would continue to be problems.

The "no action" alternative is not acceptable since the City & County of Honolulu is responsible for the maintenance of the ditch.

Repair of the ditch would involve filling depressions and repairing undermined concrete linings. This alternative would address concerns relating to maintenance, odor and protection of private property. However, the ditch capacity would remain substandard according to current City & County drainage standards.

The proposed action would address all concerns.

V. MITIGATION MEASURES PROPOSED

The contractor shall provide adequate grading, stockpiling and erosion control measures as required by Chapter 23 of the Revised Ordinances of Honolulu, 1978, as amended. The contractor will be required to equip all construction equipment and on-site vehicles with proper mufflers and comply with any conditional use requirements specified by the community noise permit. Traffic noise from heavy vehicles travelling to and from the site through the subdivision shall be minimized in accordance with Chapter 11-42, Vehicle Noise Control for Oahu.

Mokulele Drive is a two-lane road. The contractor will be required to minimize disruption of vehicular and pedestrian traffic within the area. Traffic safety signs and barriers will be erected by the contractor in accordance with requirements of the City Department of Transportation Services.

Due to the close proximity of the proposed work to residential homes, the contractor shall be required to minimize disturbance to surrounding areas and will be required to restore all areas back to their original condition or better after completion of the drainage work. In planting areas, this shall be limited to providing an area suitable for replanting, including importation of topsoil as required.

VI. AGENCIES CONSULTED

A. Federal Agencies

1. U.S. Army Engineer, Honolulu District
2. U.S. Department of the Interior, Fish & Wildlife Service

B. State Agencies

1. Department of Health
2. Department of Land and Natural Resources

C. City Agencies

1. Planning Department
2. Department of Land Utilization
3. Kaneohe Neighborhood Board No. 30

VII. DETERMINATION

After completing an assessment of the potential environmental effects of the proposed project and consulting formally with other governmental agencies, it has been determined that an Environmental Impact Statement is not required. Therefore, this document constitutes a notice of Negative Declaration.

VIII. FINDINGS AND REASONS SUPPORTING THE DETERMINATION

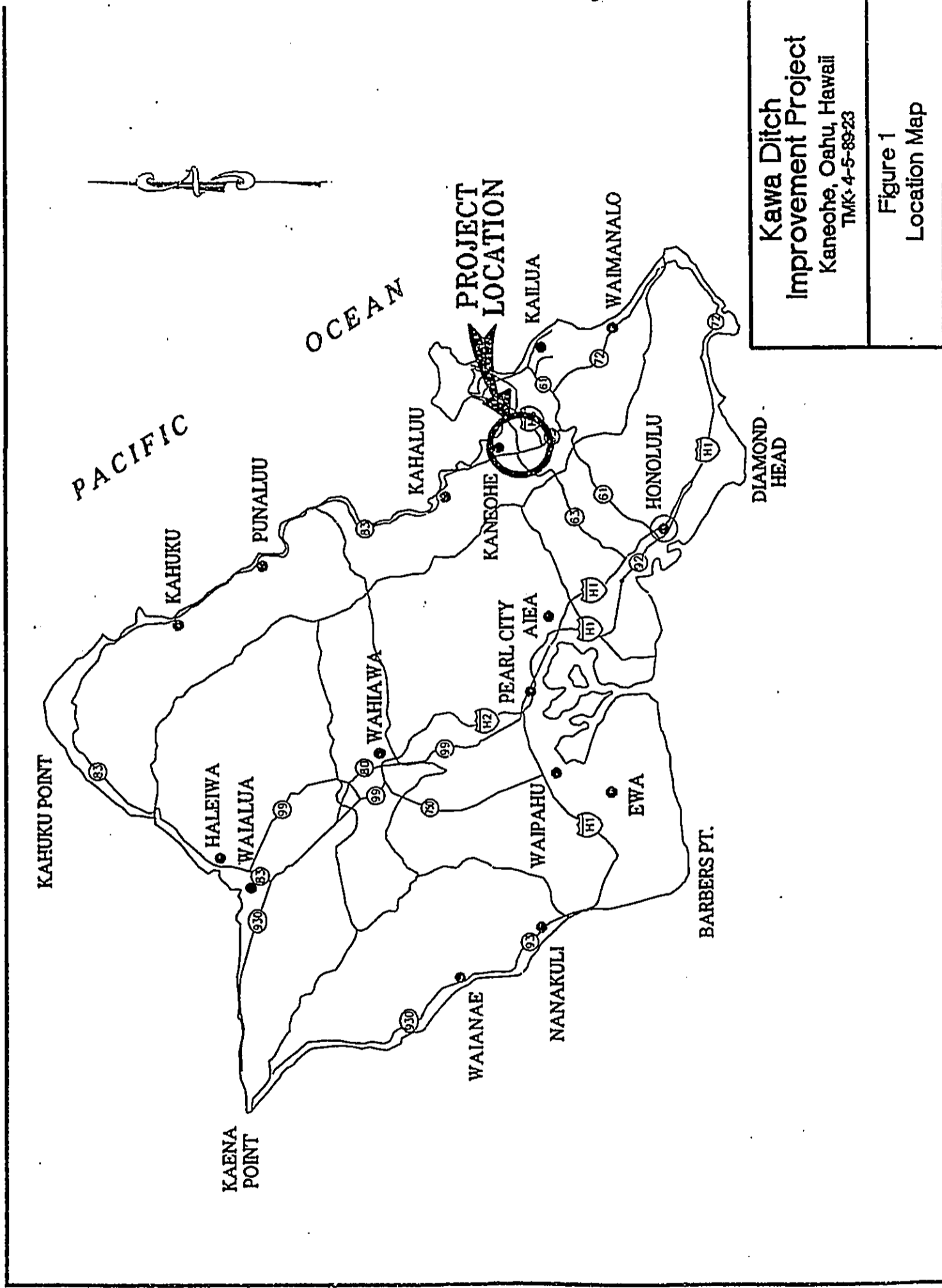
Findings and reasons supporting the Negative Declaration determination are as follows, using the criteria, policies, guidelines and provisions of Title 11, Chapter 200, Environmental Impact Statement Rules and Chapter 343, HRS. The proposed project will not:

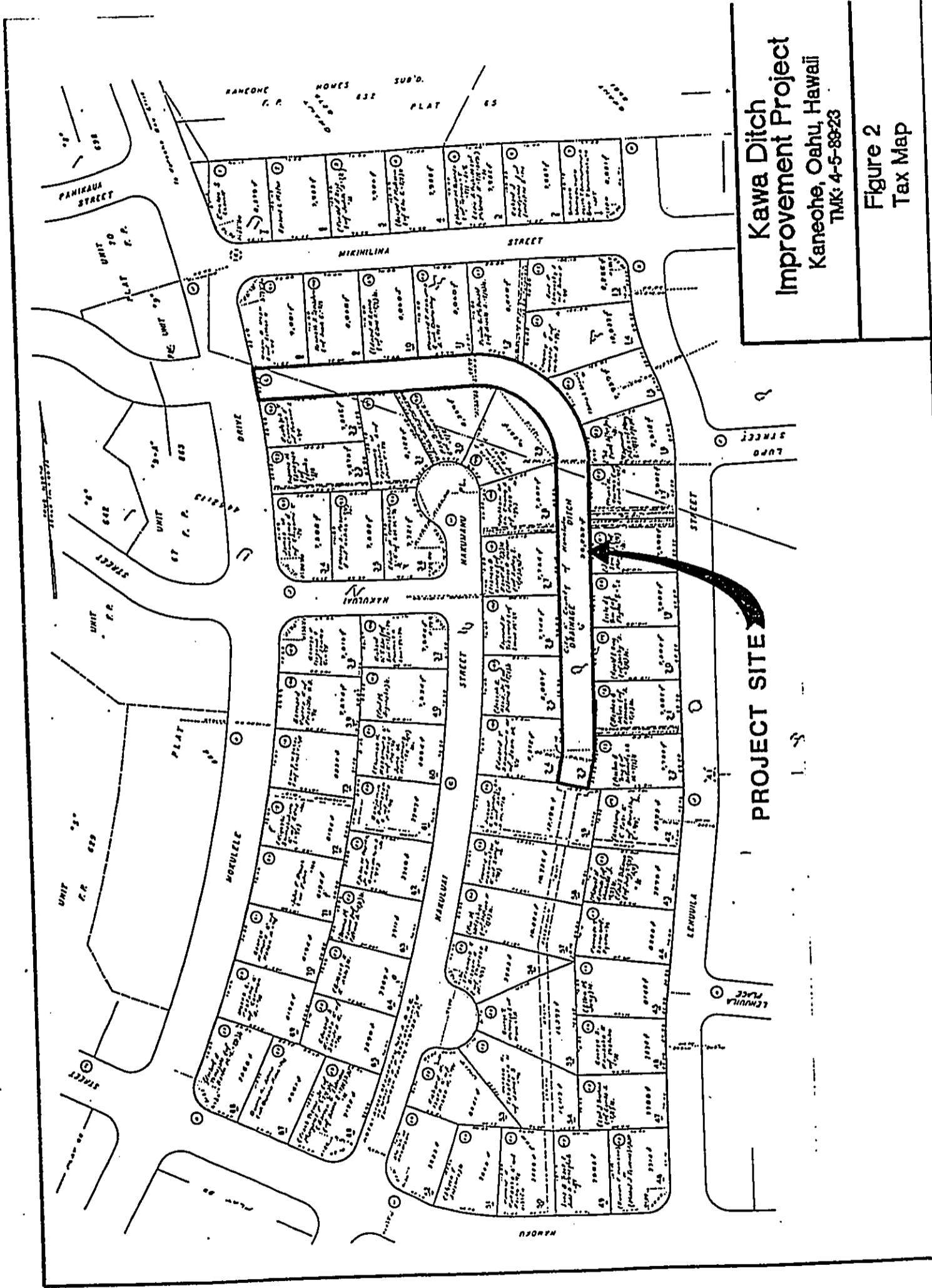
- A. Involve an irrevocable commitment to loss or destruction of any natural or cultural resource;
- B. Curtail the range of beneficial uses of the environment;
- C. Conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;
- D. Substantially affect the economic or social welfare of the community or State;
- E. Substantially affect public health;
- F. Involve substantial secondary impacts, such as population changes or effects on public facilities;
- G. Involve a substantial degradation of environmental quality;
- H. Substantially affect a rare, threatened or endangered species, or its habitat;

- I. Detrimently affect air or water quality or ambient noise levels; or
- J. Affect an environmentally sensitive area, such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. [Eff. Dec. 06, 1985] (Auth: HRS Sec. 343-6) (Imp. HRS Secs. 343-2, 343-6)

IX. LIST OF REFERENCES

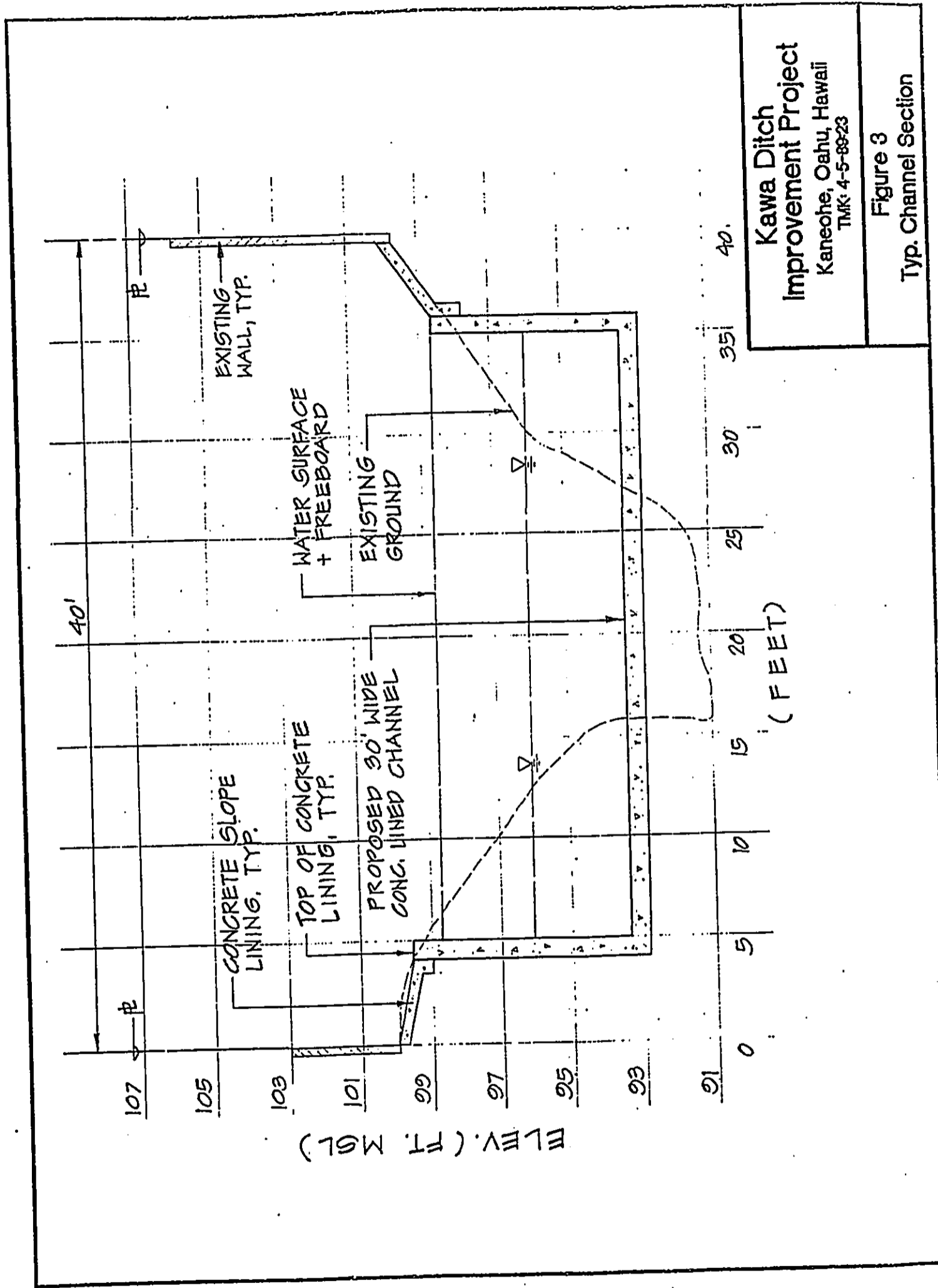
- 1. Federal Emergency Management Agency (FEMA). 1989. Flood Insurance Study, City & County of Honolulu, Hawaii.
- 2. State of Hawaii. Department of Business, Economic Development and Tourism. 1992. State of Hawaii Data book: A Statistical Abstract. Honolulu.
- 3. University of Hawaii. Department of Geography. 1983. Atlas of Hawaii, Second Edition. Honolulu: University of Hawaii Press.
- 4. U.S. Department of Agriculture. Soil Conservation Service. 1972. Soil Survey, Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii. Washington D.C.: GPO.





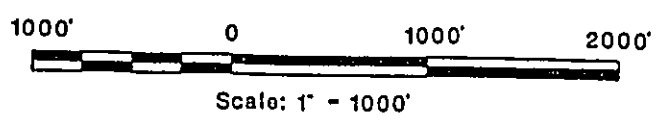
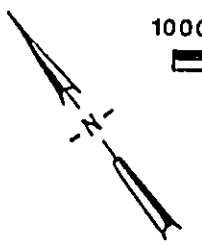
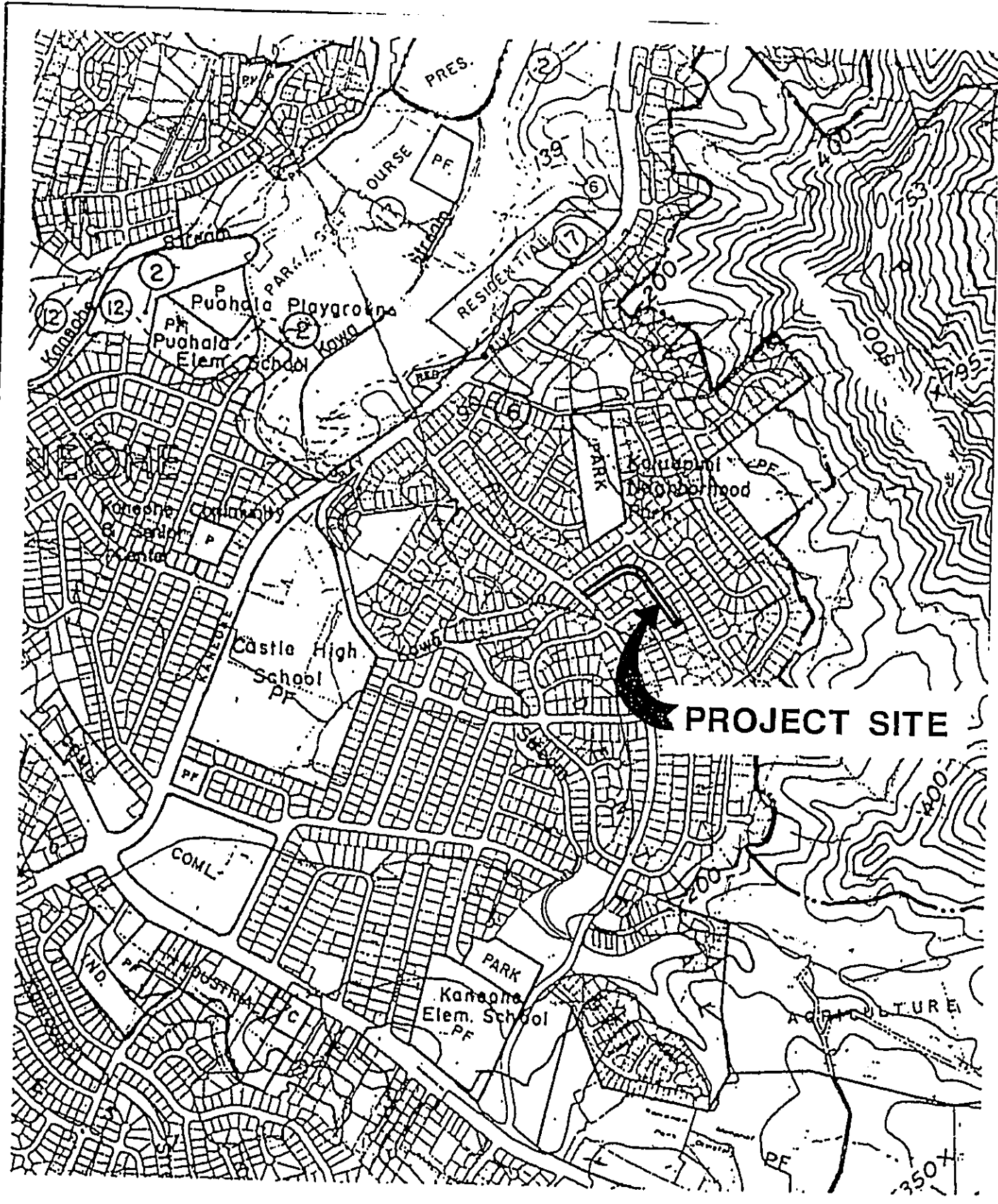
**Kawa Ditch
Improvement Project**
Kaneohe, Oahu, Hawaii
TMK: 4-5-89-23

**Figure 2
Tax Map**



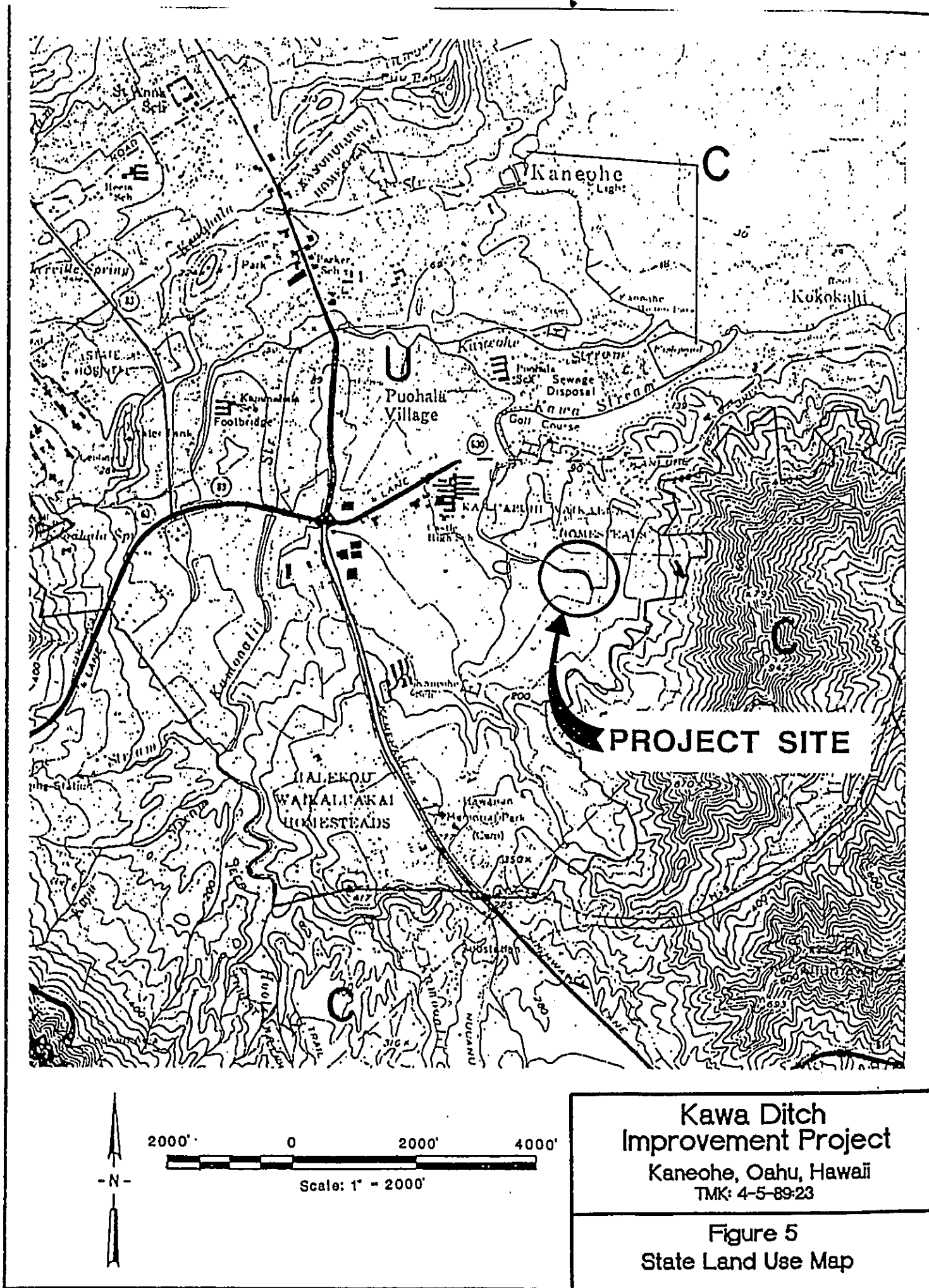
**Kawa Ditch
Improvement Project**
Kaneohe, Oahu, Hawaii
TMK: 4-5-88-23

Figure 3
Typ. Channel Section

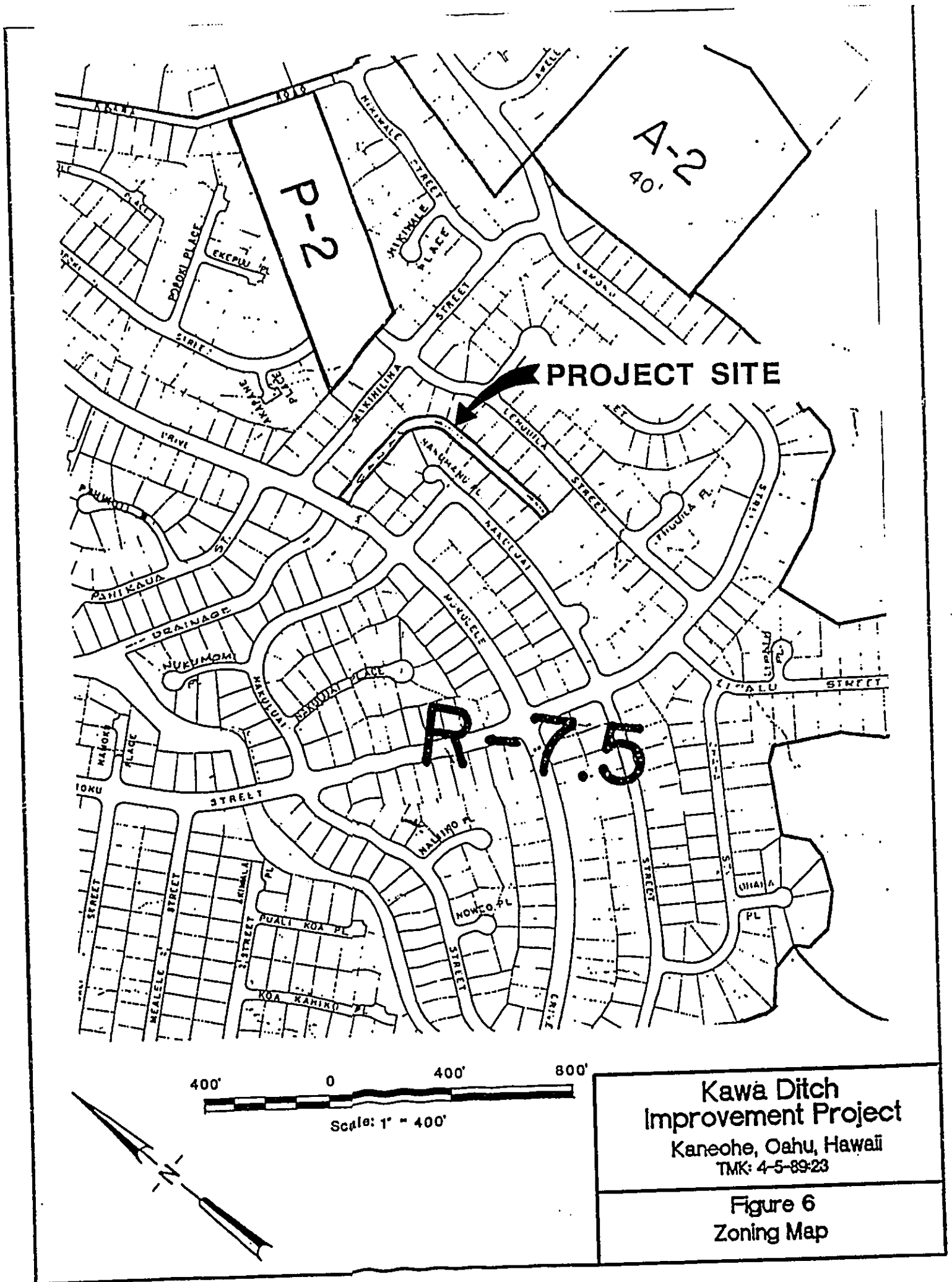


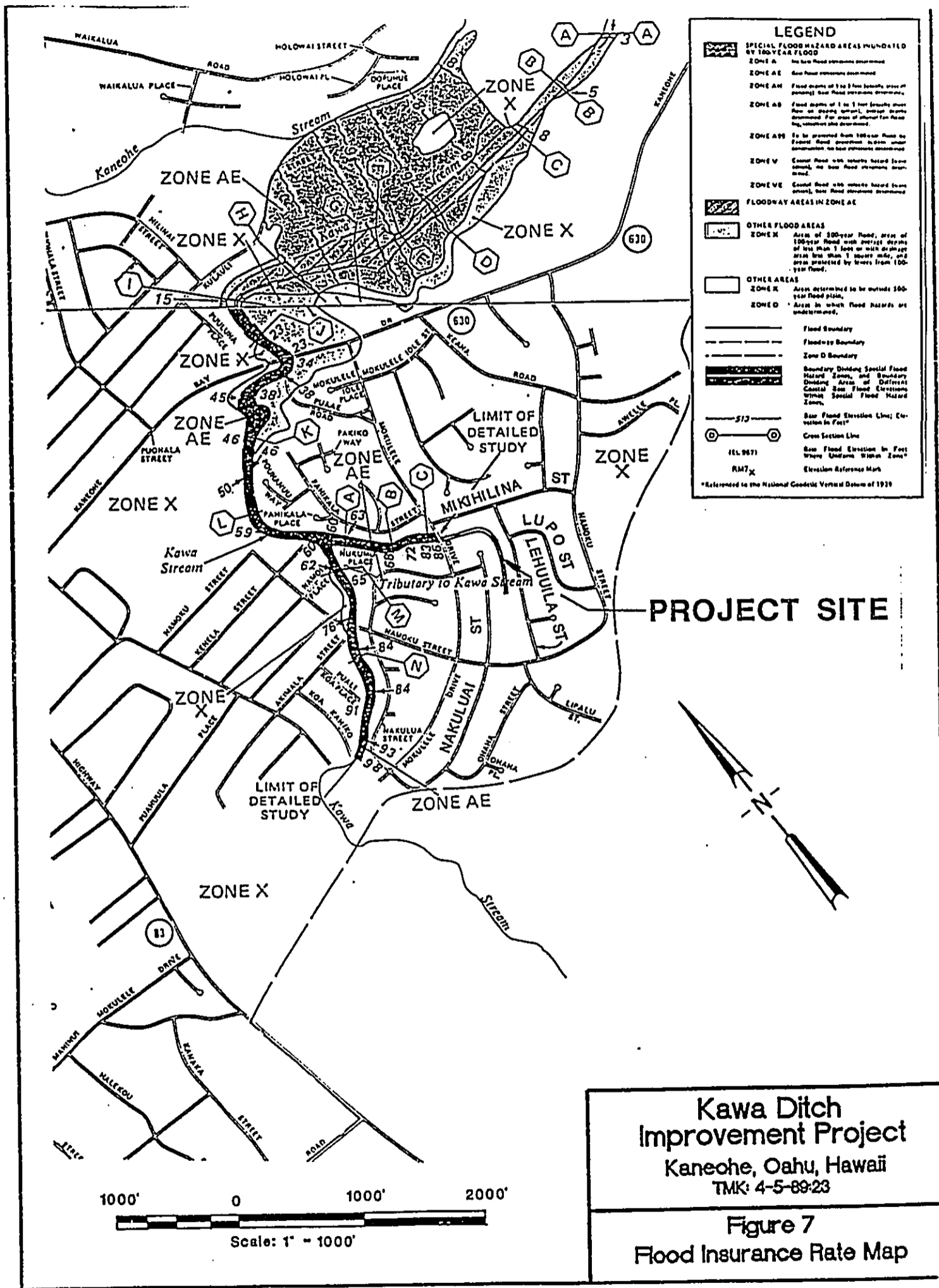
**Kawa Ditch
Improvement Project**
Kaneohe, Oahu, Hawaii
TMK: 4-5-89-23

Figure 4
Development Plan Map



Job No 2392





APPENDIX A

KAWA DITCH AQUATIC SURVEY

KAWA DITCH AQUATIC SURVEY
KANEHOE, OAHU

PREPARED BY
ANNE M. BRASHER

18 SEPTEMBER 1994

SUMMARY

An aquatic survey of Kawa ditch (a tributary of Kawa Stream, Kaneohe Oahu) was conducted on 10 September 1994. The ditch is fed by some spring input from a box culvert and predominantly by urban runoff, it was realigned in the early 1960s and runs through a residential area. The area surveyed contained large numbers of the introduced mosquito fish Gambusia affinis, and was choked with introduced aquarium plants including Elodea densa and Cabomba sp. The proposed ditch improvement project of lining the channel will have no negative impacts as the fauna consists primarily of introduced species and the general quality of the habitat is degraded.

SPECIES PRESENT

Species were collected using dipnets and by hand, identified and returned to the stream. Samples of the snails and clams were kept for verification.

| Common Name | Scientific Name | Status |
|-----------------|----------------------------------|--------------|
| FISH | | |
| mosquito fish | <u>Gambusia affinis</u> | introduced |
| molly | <u>Xiphophorus helleri</u> | introduced |
| convict cichlid | <u>Cichlasoma nigrofasciatum</u> | introduced |
| tilapia | <u>Tilapia sp.</u> | introduced |
| SNAILS | | |
| thiarid snail | <u>Melanoides sp.</u> | pan tropical |
| lymnaid snail | <u>Lymnaea sp.</u> | uncertain |
| aquarium snail | | introduced |

AMPHIBIANS

| | | |
|-------------|------------------------|------------|
| marine toad | <u>Bufo marinus</u> | introduced |
| bullfrog | <u>Rana catesbiana</u> | introduced |

INSECTS

| | | |
|-----------|------------------------|------------|
| damselfly | <u>Ischnura posita</u> | introduced |
| mosquito | Culicidae | introduced |

No native fishes were observed in the areas above and below Mokulele Drive. Few insects were observed and all were introduced, including two species of dragonflies, one species of damselfly, and adult mosquitoes. A tiny white introduced clam (not Corbicula) was collected, its identity is being verified by experts on the mainland.

WATER QUALITY

The ditch water appears polluted and a fair amount of trash (including cans of automobile oil) was present. Water chemistry parameters were measured twice. Air temperature, measured using a hand held mercury thermometer, was 26c and 28c and water temperature was 25c and 24c at 8:35 and 9:10 a.m. respectively. Total dissolved solids (turbidity), measured with a Hanna Instruments Dist WP meter, averaged 130 *umhos/cm* and pH, measured with an Orion Model 250A pH meter, averaged 6.08. Dissolved oxygen could not be measured due to a malfunction of the meter.

CONCLUSIONS

The aquatic survey showed that Kawa Ditch contains almost entirely introduced organisms. Kawa ditch is at the top of the channel and appears to be fed primarily by urban runoff. Consequently, lining the ditch should have no negative impacts.

APPENDIX B

**REVIEW COMMENTS FROM AGENCIES AND
RESPONSES**

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET
HONOLULU, HAWAII 96813



ROLAND D. LIBBY, JR.
ACTING CHIEF PLANNING OFFICER
CALOEL TAKAMUHI
SENIOR CITY PLANNING OFFICER

MM 11/94-4565

November 21, 1994

Mr. Daniel S. C. Hong
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Hong:

Environmental Assessment (EA) for the Kawa Ditch
Improvements Project, Tax Map Key 4-5-89: 23,
Kaneohe, Koolauopoko, Oahu, Hawaii

This is in response to your November 1, 1994 letter requesting our comments on the
subject EA.

The proposal is consistent with the Koolauopoko Development Plan Public Facilities
Map which was recently amended to depict the proposed improvements to the Kawa Stream
in the "within six year" category.

Thank you for the opportunity to comment. Should you have any questions, please
contact Mel Murakami of our staff at 527-6020.

Sincerely,

Roland D. Libby, Jr.
ROLAND D. LIBBY, JR.
Acting Chief Planning Officer

RDL:js

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
230 SOUTH KING STREET
HONOLULU, HAWAII 96813 • 808-533-3333



RONALD A. CLEGG
DIRECTOR
DEPARTMENT OF LAND UTILIZATION

94-00124 (DT)

November 18, 1994

Mr. Daniel S.C. Hong, P.E.
Gray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Hong:

Comments to Environmental Assessment (EA)
For Kawa Ditch Improvements in Kaneohe, Oahu
Tax Map Key: 4-5-89: 23

We have reviewed the above-referenced EA and have no comments to
offer at this time. The project is not within the Special
Management Area.

Very truly yours,

Ronald A. Clegg
RONALD A. CLEGG
Director of Land Utilization

DAC:dt
940124.djt



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion
300 Ala Moana Blvd, Room 6307
P.O. Box 50167
Honolulu, Hawaii 96850

In Reply Refer To: CAW

NOV 20 1994

NOV 20 1994

Gray, Hong, Bills & Associates, INC.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

DLI / 1342
RE 1/3

Re: Environmental Assessment for the proposed Kawa Ditch Improvements, Kaneohe, Koolauapoko, Oahu, Hawaii, TMK: 4-5-89:23

Dear Mr. Hong:

The U.S. Fish and Wildlife Service (Service) has reviewed the Environmental Assessment (EA) for the proposed Kawa Ditch Improvements, Kaneohe, Koolauapoko, Oahu, Hawaii. The applicant is the Department of Public Works City & County of Honolulu. The proposed project would involve construction of a concrete-lined channel within the present 40 foot (12.2 meter) right-of-way. The project would extend 900 feet (274 meters) upstream from the Mokulele Drive box culvert. Also proposed in the project is ditch excavation; demolition of the existing lining; lining of walls and invert of ditch; and backfilling, compaction, and restoration of private property as required. The Service offers the following comments for your consideration.

The EA adequately describes the flora, fauna, and habitats that exist at the proposed project site. However, the Service believes that there may be an increase of silt in the Kawa Stream as a result of the construction activities. Therefore, the Service recommends the following measures to minimize the degradation of water quality and impacts to fish and wildlife resources located in Kawa stream:

- a. All construction-related materials should be free of pollutants;
- b. No contamination of the aquatic environment (trash or debris disposal etc.) should result from construction activities;
- c. Turbidity and siltation from excavation activities should be minimized and contained to the immediate vicinity of construction through the use of effective silt containment devices and the curtailment of excavation during adverse weather conditions; and

- d. Dewatering of excavated materials should be done in a manner that will minimize the reintroduction of silt into the aquatic environment.

Provided that the construction activities include the preceding recommendations, the Service will concur with a Negative Declaration finding and determination that an environmental impact statement is not required for the project. The Service appreciates the opportunity to comment on the proposed project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

cc: DAR, Hawaii
DLNR, Hawaii
CZMP, Hawaii
CWB, Hawaii

Mr. Brooks Harper, Field Supervisor
U.S. Department of the Interior
Fish and Wildlife Service
February 21, 1995
Page Two

February 21, 1995

Mr. Brooks Harper, Field Supervisor
U.S. Department of the Interior
Fish and Wildlife Service
300 Ala Moana Blvd, Room 6307
P.O. Box 50167
Honolulu, Hawaii 96850

SUBJECT: Environmental Assessment for the
Kawa Ditch Improvements Project
Kaneohe, Koolauapoko, Oahu, Hawaii
TMK: 4-5-89-23

Dear Mr. Harper:


Thank you for reviewing the Environmental Assessment for the Kawa Ditch Improvements Project. We are providing the following responses to your comments:

- Item a: The contractor will conform with the applicable portions of Chapter 54, Water Quality Standards, and Chapter 55, Water Pollution Control, of Title 11, Administrative Rules Standards of the State Department of Health. However, we are providing a note on the construction plans for the ditch improvement project to address this matter.
- Item b: Silt curtains will be installed immediately below the work area and downstream side of Mokuale drive. A monitoring plan is proposed to monitor the discharge into the ditch. A Best Management Practices Plan is also prepared as part of the Department of the Army Nationwide Permit application (enclosed).
- Item c: We are providing a note on the construction plans for the ditch improvement project to address curtailment and stoppage of work during adverse weather conditions.
- Item d: All solid waste and excavated material will be disposed of at a county approved landfill. Refer to the Best Management Practices Plan in the Department of the Army Nationwide application package for preventive measures during construction.

Should you have any questions regarding this matter or need additional information, please contact our office at 521-0306.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


Daniel S. C. Hong

UG:Bi:DH:am
2392
Encl. as above

cc: DPW (Laverne Higa) w/out encl.



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96828-3440

ATTENTION OF

November 21, 1994

Planning Division

File: NOV 25 1994
To: DPW
Action: UG

Mr. Daniel S. C. Hong
Gray, Hong, Bills and Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Hong:

Thank you for the opportunity to review and comment on the Environmental Assessment for the Kawa Ditch Improvements Project, Kaneohe, Oahu (TMK 4-5-89: 23). 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. A DA permit will be required for improvements to the Kawa Ditch. Please contact our Regulatory Branch for further information at 438-9258 and refer to file number P094-090.

b. We concur with the flood information provided on page 5 of the environmental assessment.

Sincerely,

Ray H. Jyo, P.E.
Director of Engineering

February 21, 1995

Mr. Ray H. Jyo, P.E.
Director of Engineering
Planning Division
Department of the Army
U.S. Army Engineer District, Honolulu
Ft. Shafter, HI 96858-5440

SUBJECT: Environmental Assessment for the
Kawa Ditch Improvements Project
Kaneohe, Koolauapoko, Oahu, Hawaii
TMK: 4-5-89:23

Dear Mr. Jyo:

Thank you for reviewing the Environmental Assessment for the Kawa Ditch Improvements Project. We are providing the following response to your comment:

Item a: A Department of the Army Nationwide permit application was submitted on December 2, 1994 for the proposed project. A "provisional permit" was issued by the Army on February 2, 1995 for the project, pending 401 Water Quality Certification and CZM consistency determination. We are presently in the process of obtaining the 401 Water Quality Certification and CZM consistency determination.

Should you have any questions regarding this matter or need additional information, please contact our office at 521-0306.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.

Daniel S. C. Hong

UG:BI:DH:am
2392

cc: DPW (Laverne Higa)



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3181
HONOLULU, HAWAII 96813

FOR REUSE
DATE OF REUSE

FEDERAL BUREAU OF INVESTIGATION
U.S. DEPARTMENT OF JUSTICE

IN REPLY, PLEASE REFER TO:

November 21, 1994

94-249/epo

NOV 23 1994

Mr. Daniel S. C. Hong
Cray, Hong, Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Hong:

Subject: Environmental Assessment

Kawa Ditch Improvement Project
Kaneohe, Oahu
TKK: 4-5-89: 23

Thank you for allowing us to review and comment on the subject project. We have the following comments to offer:

Nonpoint Source Pollution Concerns

The project is located within the watershed of Kaneohe Bay, one of sixteen Water Quality Limited Segments identified by the Hawaii State Department of Health. State monitoring of Kaneohe Bay shows water quality standards are regularly exceeded for nitrogen, phosphorus, turbidity and fecal coliform. These standards cannot be met unless nonpoint source pollution is controlled. Major sources of nonpoint source pollution in the bay are construction activities and discharges of sewage.

The control of on-site runoff, erosion and sediment production during construction is important because Kawa Stream drains into Kaneohe Bay. The following are suggested measures that should be taken to minimize construction impacts:


- a. Conduct grubbing and grading activities during the low rainfall months (April - October).
- b. Clear areas sequentially so that only a small portion of the total site is bare at any one time.
- c. Plant bare areas as soon as grading is completed. To ensure rapid stand development soil amendments, high planting and/or seeding rates, fertilizers, and irrigation should be used.

Mr. Daniel S. C. Hong
November 21, 1994
Page 2

- d. Properly and promptly dispose of all loosened and excavated soil and debris material from ditch improvement work.

If you should have any questions, please contact Ms. Shirley Nakamura of the Environmental Planning Office at 586-7550.

Sincerely,


Peter A. Sybinsky, Ph.D.
Director of Health

c: Shirley Nakamura

Mr. Lawrence Milke, Director
Department of Health
February 21, 1995
Page Two

February 21, 1995

Mr. Lawrence Milke, Director
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801
Attn: Shirley Nakamura

SUBJECT: Environmental Assessment for the
Kawa Ditch Improvements Project
Kaneohe, Koolauapoko, Oahu, Hawaii
TMK: 4-5-89-23

Dear Mr. Milke:

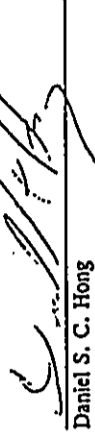
Thank you for reviewing the Environmental Assessment for the Kawa Ditch Improvements Project. We are providing the following responses to your comments:

- Item a: The contractor will be required to divert the flow away from the work area during construction. However, we are providing a note on the construction plans requiring the contractor to curtail or stop the excavation work during adverse weather conditions.
- Item b: The Department of the Army application package for the ditch improvement project contains the Best Management Practices Plan and monitoring plan. We are providing a copy of the application package for your information.
- Item c: The ditch improvement project consists of complete lining of the ditch area. Therefore, grassing is not proposed for the project.
- Item d: All solid waste and excavated material will be disposed of at a county approved landfill.

Should you have any questions regarding this matter or need additional information, please contact our office at 521-0306.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.



Daniel S. C. Hong

UG:BF:DH:am
7392
Encl. as above

/cc: DPW (Laverne Higa) w/out encl.

BENJAMIN J. CAVETASO
COMMISSIONER



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 211
HONOLULU, HAWAII 96819

REF: OCEA: EKG

FILE NO.: 95-226
DOC. ID.: 5184

DEC 16 1994

Mr. Daniel S.C. Hoog, Consulting Engineer
Gray Hoog Bills & Associates, Inc.
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

Dear Mr. Hoog:

SUBJECT: Draft Environmental Assessment (EA): Kava Ditch Improvements
Project, Kaneohe, Koolauloaha, Oahu; TRKI 4-5-89: 23

We have reviewed the assessment information for the subject project transmitted by your memorandum dated November 1, 1994, and have the following comments:

Division of Aquatic Resources

The Division of Aquatic Resources (DAR) comments that the area around Kava Stream is already overdeveloped. The stream is thought to have minimal value as habitat for native aquatic species around the involved area. An aquatic biological reconnaissance survey of the Kava Ditch tributary was done by a qualified consultant in September 1994. Only introduced species (fishes, molluscs, amphibians, insects) were found. The consultant noted that Kava Ditch is at the top of the channel and is fed primarily by urban runoff. Considering the circumstances, the project should have little effect on habitat availability for native aquatic species in the immediate area. Measures should nevertheless be taken to limit downstream sediment loading during construction, and construction waste materials should not be dumped in the stream.

Commission on Water Resource Management

The Commission on Water Resource Management's (CWRM) staff comments that they understand that a Stream Channel Alteration Permit (SCAP) pursuant to Section 13-169-50, is being prepared for this project.

Mr. Hoog

File No.: 95-226

Historic Preservation Division

The Historic Preservation Division (HPD) comments that a review of their records shows that there are no known archaeological sites along the stream improvement corridor. The nearest historic site, Kawaewe Heiau, lies outside of the project area and is located on a knoll above the subdivision. Archaeological survey and assessment for the proposed Bay View Golf Course expansion project to the west of this area, indicated that Kava stream was integral to the agricultural history of the area, first in taro production and later rice cultivation. The project area surrounding the stream has been developed by residential use and it is unlikely that historic sites remain. Also, because this project proposes repairs to an existing improved ditch, HPD believes that the Kava Ditch Improvements will have "no effect" on significant historic sites.

We have no other comment to offer at this time. Thank you for the opportunity to comment on this matter.

Please feel free to call Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

KEITH W. AHEUE

February 21, 1995

Mr. Michael Wilson, Chair
Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

SUBJECT: Environmental Assessment for the
Kawa Ditch Improvements Project
Kaneohe, Koolaulopoko, Oahu, Hawaii
TMK: 4-5-82:23

Dear Mr. Wilson:

Thank you for reviewing the Environmental Assessment for the Kawa Ditch Improvements Project. We are providing the following responses to your comments:

Division of Aquatic Resources:

We are proposing to install silt curtains to prevent the discharge of pollutants into the Kawa Ditch. A monitoring plan and a Best Management Practices Plan has been prepared as part of the Department of the Army Nationwide permit application. We are enclosing a copy of the Department of the Army application package for your information.

Commission on Water Resource Management:

We have submitted the Stream Channel Alteration Permit application pursuant to Section 13-169-50. We understand that the application is presently under review.

Should you have any questions regarding this matter or need additional information, please contact our office at 521-0306.

Very truly yours,

GRAY, HONG, BILLS & ASSOCIATES, INC.


Daniel S. C. Hong

UG:BJ:DH:am

2392

1 Encl. as above

/cc: DPW (Laverne Higa) w/out encl.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

ENVIRONMENTAL ASSESSMENT
FOR
KAWA STREAM IMPROVEMENTS
KANEOHE, KOOLAUPOKO, OAHU, HAWAII
TAX MAP KEY: 4-5-89:23

This environmental document was prepared
pursuant to Chapter 343 HRS

Proposing Agency: Department of Public Works
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Responsible Official: _____

Kenneth Sprague, Director and Chief Engineer

Date

Prepared by:

Gray, Hong, Bills & Associates, Inc.
Consulting Engineers
119 Merchant Street, Suite 607
Honolulu, Hawaii 96813

DOCUMENT FOR PUBLICATION IN THE OEQC BULLETIN

TITLE OF PROJECT: KAWA STREAM IMPROVEMENTS

LOCATION: ISLAND OAHU DISTRICT KOOLAUPOKO

TAX MAP KEY: 4-5-89:23

TO BE FILLED OUT BY THE AGENCY ONLY:

TYPE OF ACTION: AGENCY _____ APPLICANT _____

PLEASE CHECK ALL THAT APPLY IN BOTH CATEGORIES:

CATEGORY 1: Applicable State or Federal Statute

_____ Chapter 343, HRS _____ Chapter 205A, HRS _____ NEPA (Federal Actions Only)

CATEGORY 2: Type of Document

_____ Negative Declaration or FONSI _____ Revised Draft EIS
_____ EIS Preparation Notice or NOP _____ Revised Final EIS
_____ Draft EIS _____ Supplemental Draft EIS
_____ Final EIS _____ Supplemental Final EIS

Prior to general distribution, please submit to OEQC: 4 copies of the Negative Declarations or EIS Preparation Notices, 4 copies of the Draft EIS's or Final EIS (For Draft and Final EIS's an additional copy is mailed to OEQC.)

PROPOSING AGENCY OR APPLICANT SHOULD SUBMIT COPIES OF THE DOCUMENTS TO THE ACCEPTING AUTHORITY PRIOR TO SUBMITTING COPIES TO OEQC.

ACCEPTING AUTHORITY: _____

ADDRESS: _____

CONTACT: _____ PHONE: _____

PROPOSING AGENCY OR APPLICANT: DEPARTMENT OF PUBLIC WORKS

ADDRESS: CITY & COUNTY OF HONOLULU

650 SOUTH KING STREET

HONOLULU, HI 96813

CONTACT: LAVERNE HIGA PHONE: 527-6246

CONSULTANT: GRAY, HONG, BILLS & ASSOCIATES, INC.

ADDRESS: 119 MERCHANT STREET, SUITE 607

HONOLULU, HI 96813

CONTACT: BEVERLY ING PHONE: 521-0306

COMMENT LETTERS ADDRESSED TO: AGENCY OR APPLICANT X CONSULTANT _____

CONDITIONS WHICH TRIGGERED THE EIS LAW, PLEASE CHECK ALL THAT APPLY TO THE PROPOSED ACTION.

- | | |
|---|--|
| <input checked="" type="checkbox"/> Use of State or County lands or funds | <input type="checkbox"/> Amendment to a County General Plan |
| <input type="checkbox"/> Use of Conservation District Lands | <input type="checkbox"/> Reclassification of Conservation Lands |
| <input type="checkbox"/> Use of Shoreline Setback Area | <input type="checkbox"/> Construction or modification of helicopter facilities |
| <input type="checkbox"/> Use of Historic Site or District | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Use of lands in the Waialiki Special District | |

SUMMARY of the proposed action or project to be published in the OEQC Bulletin. Please submit it as a summary ready for publication. The description should be brief (300 words or less), yet provide sufficient detail to convey the full impact of the proposed action.

Kawa Stream is a City & County of Honolulu drainage ditch located in Pikoiloa Track Unit No. 9 subdivision in Kaneohe, Koolaupoko, Oahu (TMK: 4-5-89:23).

The stream was partially lined in 1963. A recent survey has revealed erosion occurring, threatening to undermine several lined areas. The erosion has hampered maintenance by making vehicular access impossible, and has created pockets of stagnant water which sometimes prompts odor complaints from the residents. The ditch does not have channel capacity required by the City & County of Honolulu drainage standards.

The proposed project will involve construction of a concrete-lined channel within the present 40' right-of-way. The project will extend 900' upstream from the Mokulele Drive box culvert.

The project will involve channel excavation; demolition of existing lining; lining of walls and invert of channel; lining of remaining sideslopes of stream from top of channel to edge of right-of-way; backfilling; compaction; and restoration of private property as required.

The project will be funded by the City & County of Honolulu. Construction is scheduled to commence in the beginning of calendar year 1996.

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APPENDIX

APPENDIX A - RESPONSES AND REPLIES FROM AGENCIES CONSULTED
DURING THE ASSESSMENT PROCESS

I. General Description of the Proposed Action

A. Technical

The proposed project consists of flood and erosion control improvements to Kawa Stream, from the 6' x 8'-6" box culvert at Mokulele Drive to an upstream box culvert (6'x8'). The proposed improvements are to be constructed in two phases. The initial phase includes 900 feet of concrete-lined channel. The future phase is to include widening of the Mokulele Drive box culvert.

Kawa Stream is one of four major streams that make up the Kaneohe area a sub-watershed of 12.8 square miles. The four streams and their tributaries include Heeia, Keahala, Kaneohe, and Kawa. The project area is the existing Kawa Stream drainage ditch at the upstream end of the Kawa Stream Tributary, which is also known as "East Branch".

The existing Kawa Stream drainage ditch is partially concrete-lined and located in Kaneohe, Oahu, Hawaii above Mokulele Drive (see Location Map, Figure 1). The ditch runs within a 40'-wide City & County right-of-way and is bordered by single-family residential lots (Pikoiloa Tract Unit No. 9 Subdivision). The tax map (TMK: 4-5-89:23) for the project site is shown as Figure 2.

The drainage channel originally had a trapezoidal section. Portions of the channel are lined - mainly at drain outlets and along its 194' long curved section.

Erosion has occurred along the stream bottom in the curved portion, with the invert dropping 5'-6' below the sideslope lining. Despite this, the lining appears stable and is in no immediate danger of falling. Many of the small concrete linings which have been built opposite drain outlets have been undermined and are in danger of falling into the stream. In one area, erosion near one of these linings is threatening to encroach into private property.

Erosion along the channel bottom has also exposed a jacketed sewer line crossing the stream. Pools of stagnant water within the eroded bottom has prompted complaints from lot owners about odor.

Although the area does not have a history of flooding, the existing stream does not have capacity to convey the City & County Drainage Standard criteria discharge of 1400 cfs with freeboard requirements.

The proposed project intends to address the maintenance and capacity by providing complete lining with reinforced concrete. The lining would extend to both edges of the right-of-way.

Construction would involve channel excavation; demolition of existing lining; lining of walls and invert of channel; lining of remaining sideslopes of stream from top of channel to edge of right-of-way; backfilling, compaction, and restoration of private property as required.

An expansion of the Mokulele box culvert will be necessary to completely bring the stream up to County standards. However, because of lack of funds, and because this is not critical until such time that the infrastructure entering the channel is upgraded, culvert work is being proposed as future.

B. Socio Economic

Improvements to Kawa Stream will offer both social and economic benefits to the homeowners by providing a sense of security during periods of heavy rainfall and by eliminating nuisance ponding and accompanying odors during periods of low rainfall.

The City & County of Honolulu will realize benefits in the form of decreased maintenance costs. The County periodically clears vegetation from the channel with the use of herbicides. Repair of the undermined linings would have to be done eventually. Costs to repair the eroded areas along the channel are estimated at \$510,000.

The proposed project is estimated to cost \$970,000. Future cost for the box culvert expansion is estimated at \$260,000. The lining project will be funded by the City & County of Honolulu. Construction is scheduled to start in January 1996 and is estimated to have a 4-month construction period.

C. Environmental Characteristics

The project site is located within the Pikoiloa Unit 9 Subdivision, a single-family residential area. The project will involve construction of a concrete-lined channel with an existing City & County right-of-way.

Since the project calls for complete lining of the stream, all vegetation within the stream would be removed. This would eliminate the weeds from the residents' backyards and stagnant ponds of water, improving the aesthetics of the area. Lining would also eliminate the need to administer herbicides.

FLORA/FAUNA INSERT

II. SUMMARY DESCRIPTION OF THE ENVIRONMENT

A. Location

The project affects properties belonging to the Pikoiloa Subdivision in Kaneohe Koolaupoko, Oahu (see Figure 1 - Location Map). The project area is mauka of Mokulele Drive, running parallel with Mikihilina and Lehuuila Streets.

The existing City & County of Honolulu drainage ditch is 40-feet wide, with portions of its sideslopes and bottom lined with concrete. Utilities crossing or intersecting the channel consist of an 8" gravity sewer and various drainlines.

Kaneohe is a major population center in Windward Oahu, approximately 10 miles north of downtown Honolulu. The Koolau Range lies to the west, the Kaneohe (Halekou) volcanic cone to the south and Kaneohe to the north and east. Much of the developed area is on a flat coastal plain which extends inland from Kaneohe Bay for approximately 1.7 miles, where it then gently rises up to the foot of the Koolau Range. (FEMA, 1989) Kaneohe is primarily a residential community with commercial and service establishments for residents. No significant agricultural activities exist within the area.

B. Population

The 1990 census estimated the resident population within Kaneohe to be 35,448 an insignificant change from the 1980 census population of 35,553. The project area is within Census Tract 107.02, extending from Kaneohe Bay Drive to Kamooalii Stream, with a population of 4,336. (State of Hawaii, 1992)

C. Climate

Average rainfall is approximately 50 inches near Kaneohe Bay to 75 inches near the Koolau mountains. Temperatures range from an average (mean) minimum of 69 degrees Fahrenheit to an average (mean) maximum of 85 degrees Fahrenheit. The prevailing wind is the northeasterly trade wind. (University of Hawaii, 1983)

D. Land Use

Based on the City & County of Honolulu Development Plan Map, the project is within a residential area and is surrounded by areas designated for residential, public facilities, preservation, and park use (see Figure 4 - Development Plan Map).

The project site is classified as within the State's urban district (see Figure 5 - State Land Use Map).

Zoning within the area is R-7.5, Residential. Surrounding areas are within P-2, Preservation and A-2 (see Figure 6 - Zoning Map).

E. Historic or Cultural Sites

Kawa Stream and the surrounding residential areas have been altered by grading done as part of the subdivision construction. The existence of historic or cultural sites is therefore unlikely. The construction contractor will be required to contact the State Historic Sites Section should any artifacts be unearthed during trench excavations.

F. Wildlife and Flora

(FLORA/FAUNA INSERT)

Due to the urbanization of the area, wildlife and indigenous flora are non-existent. Flora within the area consists of introduced species.

G. Soils

Soils within the project area belong to the Lolekaa-Waikane association. These soils are characterized in the Soil Conservation Service's "Soil Survey, Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii" as "deep, nearly level to very steep, well-drained soils that have a dominantly fine-textured subsoil; on fans, terraces, and uplands". (USDA, 1972)

The soil within the project area is further classified as belonging to the Hanalei Series -- Hanalei silty clay loam, 0 to 2 percent slopes (HnA). This soil is on stream bottoms and flood plains. This soil has a 10" surface layer of dark gray and very dark gray silty clay that has dark-brown and reddish mottles. The subsurface is 3" of very dark gray and dark-gray silty clay. A 13" subsoil layer is mottled, dark-gray and dark grayish-brown silty clay loam with an angular blocky structure. The soil is strongly acid to very strongly acid in the surface layer with a strongly neutral subsoil.

Permeability is moderate. Runoff is very slow with a no more than slight erosion hazard. Flooding is a hazard.

H. Drainage

The drainage basin for the Kawa Stream tributary above Mokulele Drive is approximately 0.31 square miles (198.4 acres). The Pikoiloa Tract subdivision drainage system connects to the channel with drainlines and a box culvert. Runoff from some of the lots adjacent to the channel sheetflows directly into the stream. The present channel was designed for a discharge of 600 cfs, less than 38% of the 1400 cfs required by City & County drainage standards.

On the Flood Insurance Rate Map dated September 28, 1990, the Federal Emergency Management Agency (FEMA) designated the project area as within Zone X, an area determined to be outside the 500-year flood plain (see Figure 7 Flood Insurance Rate Map).

The proposed action would provide the City with a more easily maintained channel which would be sized to handle storm runoff in accordance with City & County drainage standards. Expansion of the box culvert is planned to be done in the future to complete the necessary improvements.

III. SUMMARY OF THE MAJOR IMPACTS

The proposed project will involve construction within an existing right-of-way flanked on both sides by residential lots. The 900' foot long concrete-lined rectangular channel will extend from the Mokulele Drive box culvert to the existing 6'x8' box culvert which extends through Pikoiloa Unit No. 10 Subdivision. Existing drainline and concrete swale connections will be maintained under the proposed improvements.

The construction will temporarily inconvenience residents along the right-of-way with equipment noise, dust and possibly some interference with vehicular and pedestrian traffic.

IV. ALTERNATIVES CONSIDERED

There were three alternatives that were considered for the proposed action: 1) No action; 2) Repair of channel; and 3) The proposed action.

Under the "no action" alternative, erosion of the channel would continue, possibly threatening private property. Accessibility for maintenance channel capacity and odor would continue to be problems.

The "no action" alternative is not acceptable since the City & County of Honolulu is responsible for the maintenance of the channel.

Repair of the channel would involve filling depressions and repairing undermined concrete linings. This alternative would address concerns relating to maintenance, odor and protection of private property. However, the channel capacity would remain substandard according to current City & County drainage standards.

The proposed action would address all concerns.

V. MITIGATION MEASURES PROPOSED

The contractor shall provide adequate grading, stockpiling and erosion control measures as required by Chapter 23 of the Revised Ordinances of Honolulu, 1978, as amended. The contractor will be required to equip all construction equipment and on-site vehicles with proper mufflers and comply with any conditional use requirements specified by the community noise permit. Traffic noise from heavy vehicles travelling to and from the site through the subdivision shall be minimized in accordance with Chapter 11-42, Vehicle Noise Control for Oahu.

Mokulele Drive is a two-lane road. The contractor will be required to minimize disruption of vehicular and pedestrian traffic within the area. Traffic safety signs and barriers will be erected by the contractor in accordance with requirements of the City Department of Transportation Services.

Due to the close proximity of the proposed work to residential homes, the contractor shall be required to minimize disturbance to surrounding areas and will be required to restore all areas back to their original condition or better after completion of the drainage work. In planting areas, this shall be limited to providing an area suitable for replanting, including importation of topsoil as required.

VI. AGENCIES CONSULTED

A. Federal Agencies

1. U.S. Army Engineer, Honolulu District
2. U.S. Department of the Interior, Fish & Wildlife Service

B. State Agencies

1. Department of Health
2. Department of Land and Natural Resources

C. City Agencies

1. Department of General Planning
2. Department of Land Utilization
3. Department of Transportation Services
4. Kaneohe Neighborhood Board No. 30

Responses from agencies are attached in Appendix A.

VII. DETERMINATION

After completing an assessment of the potential environmental effects of the proposed project and consulting formally with other governmental agencies, it has been determined that an Environmental Impact Statement is not required. Therefore, this document constitutes a notice of Negative Declaration.

VIII. FINDINGS AND REASONS SUPPORTING THE DETERMINATION

Findings and reasons supporting the Negative Declaration determination are as follows, using the criteria, policies, guidelines and provisions of Title 11, Chapter 200, Environmental Impact Statement Rules and Chapter 343, HRS. The proposed project will not:

- A. Involve an irrevocable commitment to loss or destruction of any natural or cultural resource;
- B. Curtail the range of beneficial uses of the environment;
- C. Conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;
- D. Substantially affect the economic or social welfare of the community or State;
- E. Substantially affect public health;
- F. Involve substantial secondary impacts, such as population changes or effects on public facilities;
- G. Involve a substantial degradation of environmental quality;

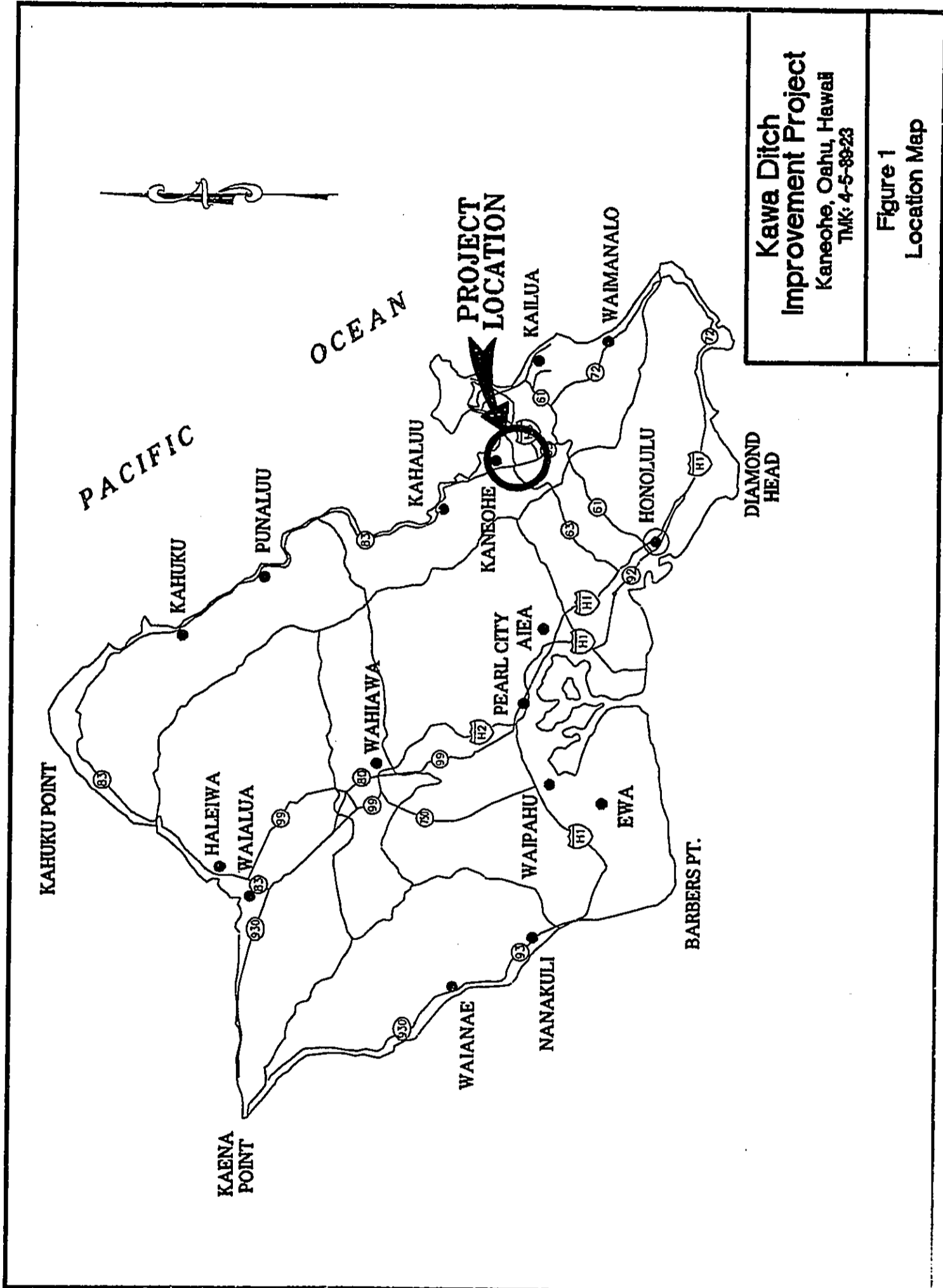
- H. Substantially affect a rare, threatened or endangered species, or its habitat;
- I. Detrimently affect air or water quality or ambient noise levels; or
- J. Affect an environmentally sensitive area, such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. [Eff. Dec. 06, 1985] (Auth: HRS Sec. 343-6) (Imp. HRS Secs. 343-2, 343-6)

IX. LIST OF REFERENCES

1. Federal Emergency Management Agency (FEMA). 1989. Flood Insurance Study, City & County of Honolulu, Hawaii.
2. State of Hawaii. Department of Business, Economic Development and Tourism. 1992. State of Hawaii Data book; A Statistical Abstract. Honolulu: _____.
3. University of Hawaii. Department of Geography. 1983. Atlas of Hawaii, Second Edition. Honolulu: University of Hawaii Press.
4. U.S. Department of Agriculture. Soil Conservation Service. 1972. Soil Survey, Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii. Washington D.C.: GPO.

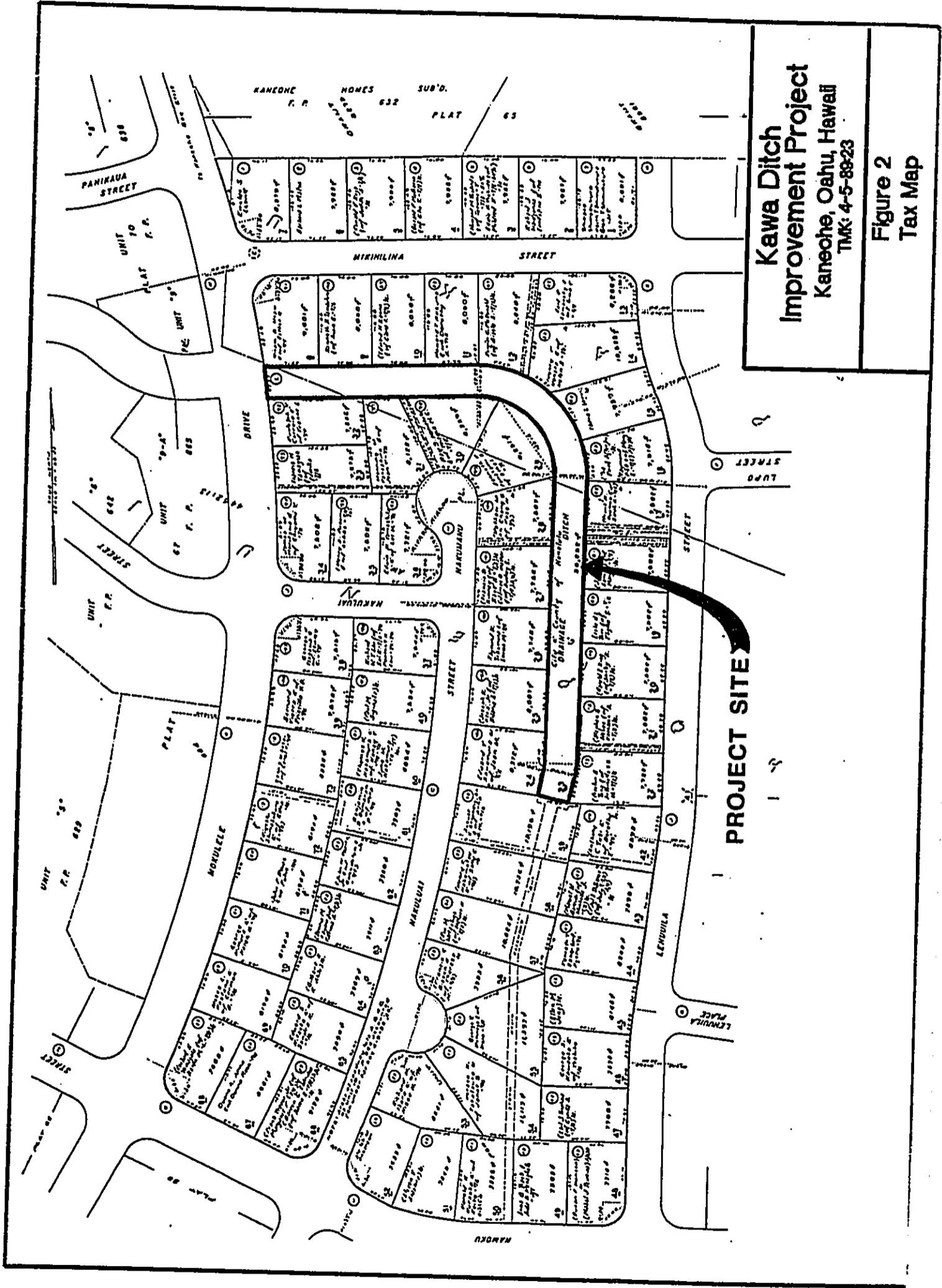
APPENDIX A

**RESPONSES AND REPLIES FROM AGENCIES CONSULTED
DURING THE ASSESSMENT PROCESS**



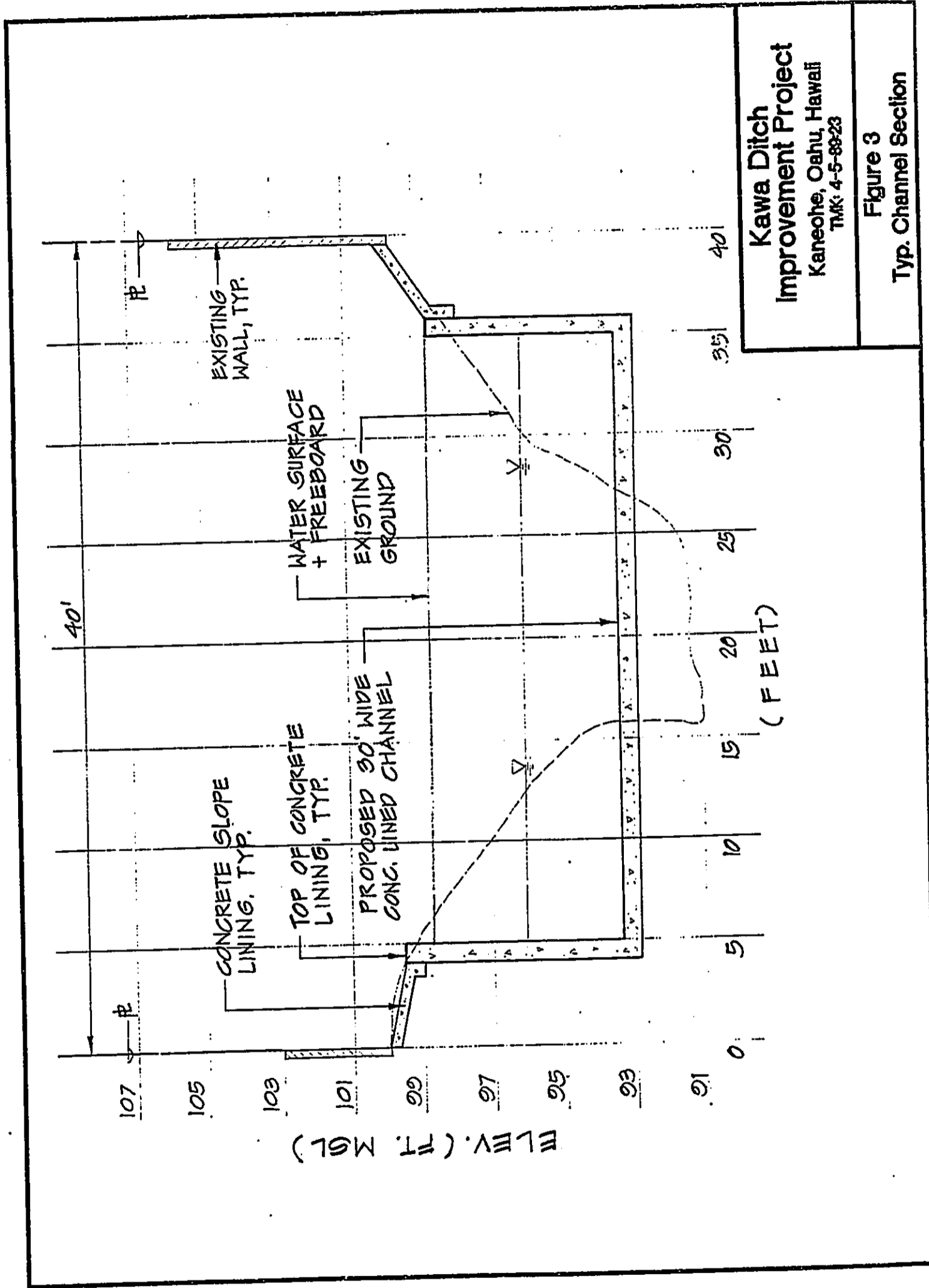
**Kawa Ditch
Improvement Project**
Kaneohe, Oahu, Hawaii
TMK: 4-5-88-23

**Figure 1
Location Map**



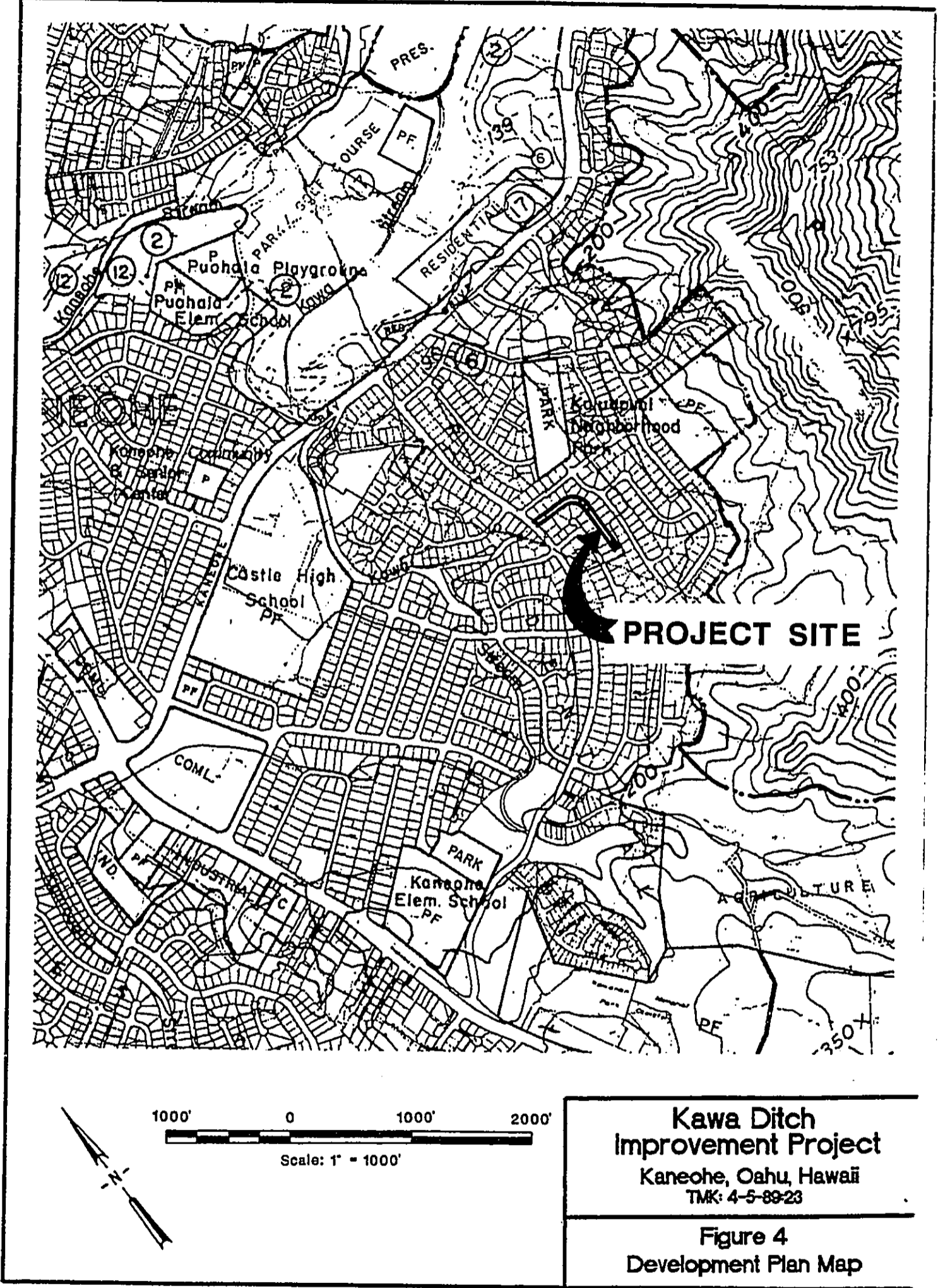
**Kawa Ditch
Improvement Project**
Kaneohe, Oahu, Hawaii
TMK: 4-5-89-23

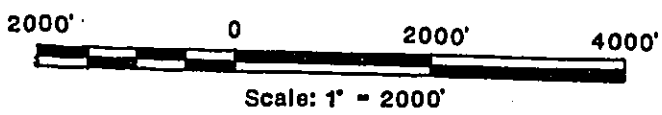
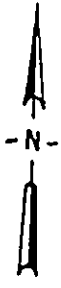
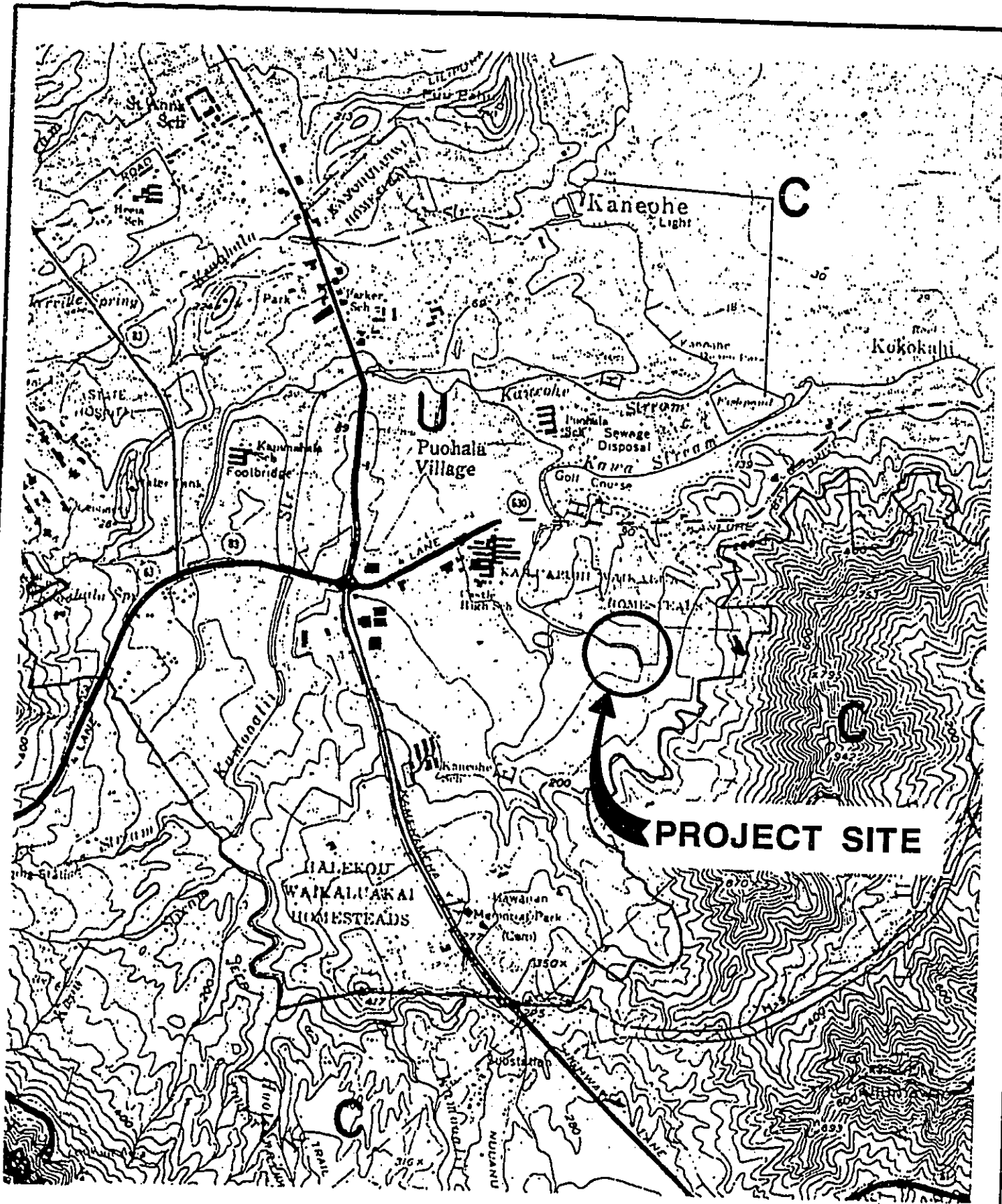
**Figure 2
Tax Map**



Kawa Ditch Improvement Project
 Kaneohe, Oahu, Hawaii
 TMK: 4-5-89-23

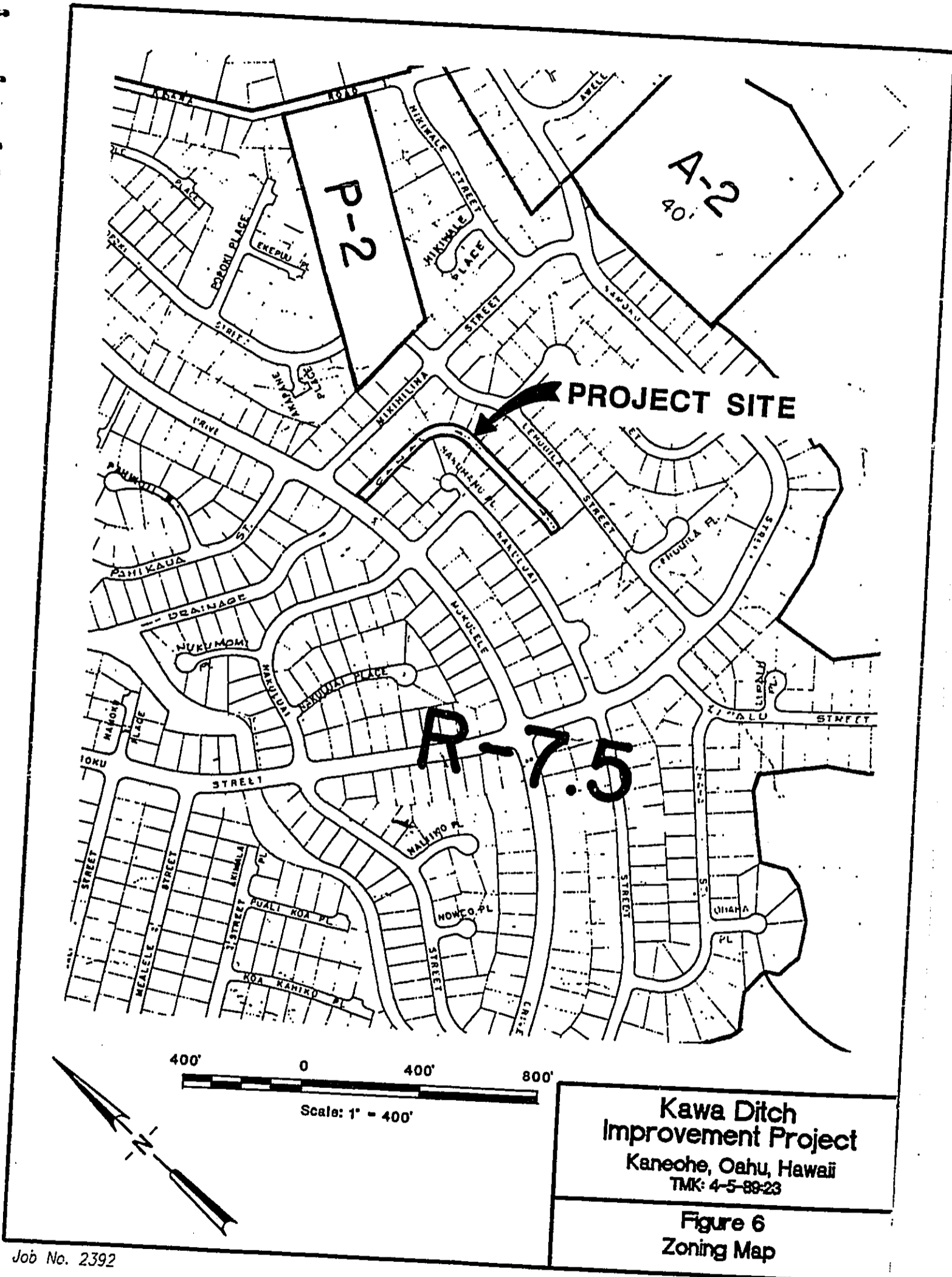
Figure 3
 Typ. Channel Section



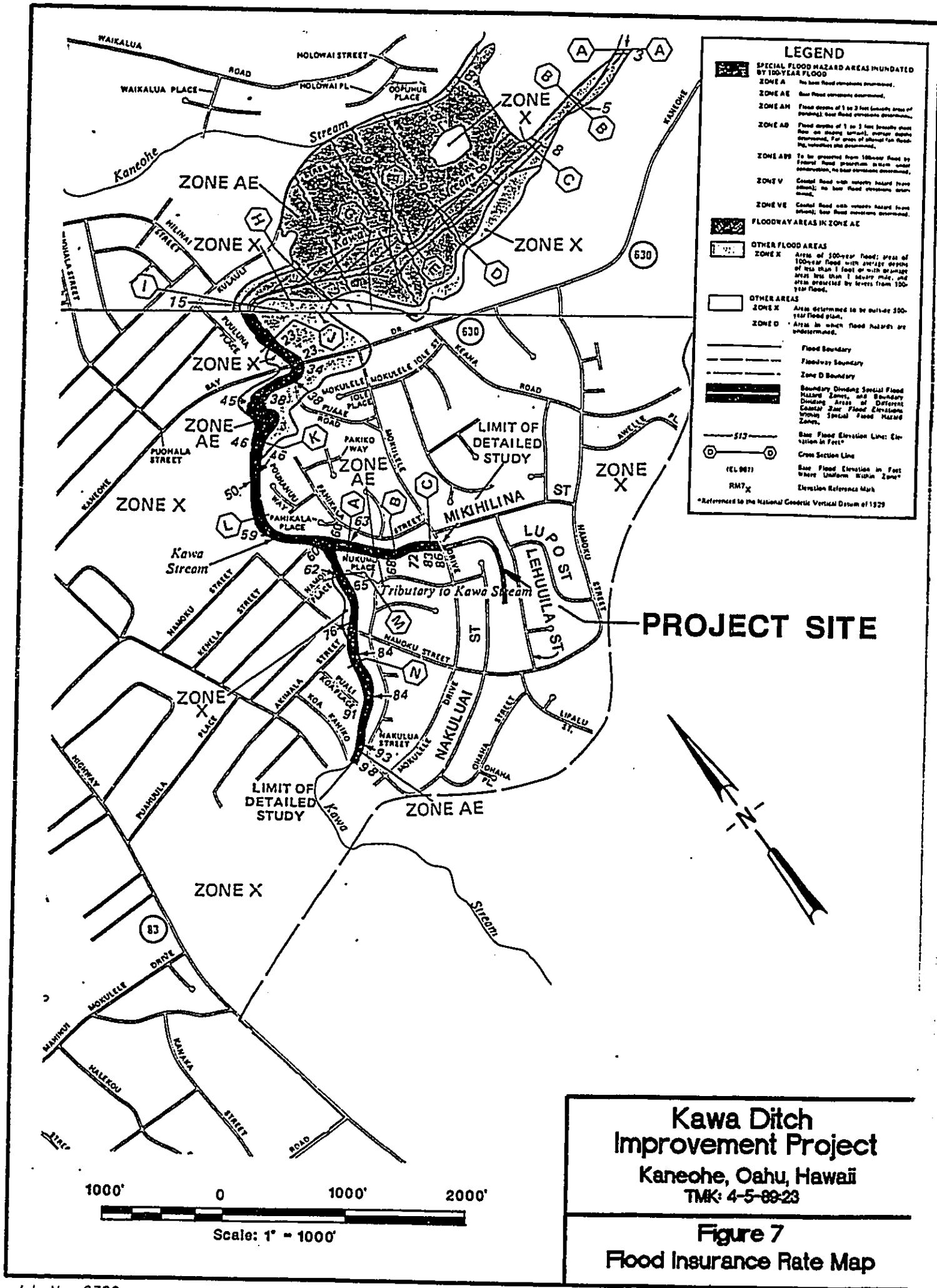


**Kawa Ditch
Improvement Project**
Kaneohe, Oahu, Hawaii
TMK: 4-5-89-23

**Figure 5
State Land Use Map**



Job No. 2392



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE AE** Areas of 100-year flood with average depths of 1 to 3 feet (boundary areas of ponds); see Flood Insurance Determination.
- ZONE AM** Flood areas of 1 to 3 feet (boundary areas of ponds); see Flood Insurance Determination.
- ZONE AD** Flood areas of 1 to 3 feet (boundary areas of ponds); see Flood Insurance Determination.
- ZONE AP** To be protected from 100-year flood by flood proofing program in accordance with FEMA regulations; see Flood Insurance Determination.
- ZONE V** Coastal flood with average hazard level (depth) of 1 to 3 feet (boundary areas of ponds); see Flood Insurance Determination.
- ZONE VE** Coastal flood with average hazard level (depth) of 1 to 3 feet (boundary areas of ponds); see Flood Insurance Determination.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X** Areas of 100-year flood; areas of 100-year flood with average depths of less than 1 foot or with average areas less than 1 acre; areas of 100-year flood with average depths of less than 1 foot or with average areas less than 1 acre; areas of 100-year flood with average depths of less than 1 foot or with average areas less than 1 acre.

OTHER AREAS

- ZONE X** Areas determined to be outside 100-year flood plain.
- ZONE D** Areas in which flood hazard are undetermined.

BOUNDARIES

- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Zone Flood Elevations Within Special Flood Hazard Zones.

SYMBOLS

- 512 — Base Flood Elevation Line: Elevation in Feet
- (E) ○ Cross Section Line
- RM7X Section Elevation in Feet Where Uniform Within Zone
- Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

PROJECT SITE

Kawa Ditch Improvement Project
 Kaneohe, Oahu, Hawaii
 TMK: 4-5-89-23

Figure 7
Flood Insurance Rate Map

1000' 0 1000' 2000'
 Scale: 1" = 1000'

APPENDIX A

KAWA DITCH AQUATIC SURVEY

KAWA DITCH AQUATIC SURVEY
KANEOHE, OAHU

PREPARED BY
ANNE M. BRASHER

18 SEPTEMBER 1994

SUMMARY

An aquatic survey of Kawa ditch (a tributary of Kawa Stream, Kaneohe Oahu) was conducted on 10 September 1994. The ditch is fed by some spring input from a box culvert and predominantly by urban runoff, it was realigned in the early 1960s and runs through a residential area. The area surveyed contained large numbers of the introduced mosquito fish Gambusia affinis, and was choked with introduced aquarium plants including Elodea densa and Cabomba sp. The proposed ditch improvement project of lining the channel will have no negative impacts as the fauna consists primarily of introduced species and the general quality of the habitat is degraded.

SPECIES PRESENT

Species were collected using dipnets and by hand, identified and returned to the stream. Samples of the snails and clams were kept for verification.

| Common Name | Scientific Name | Status |
|-----------------|----------------------------------|--------------|
| FISH | | |
| mosquito fish | <u>Gambusia affinis</u> | introduced |
| molly | <u>Xiphophorus helleri</u> | introduced |
| convict cichlid | <u>Cichlasoma nigrofasciatum</u> | introduced |
| tilapia | <u>Tilapia sp.</u> | introduced |
| SNAILS | | |
| thiarid snail | <u>Melanoides sp.</u> | pan tropical |
| lymnaid snail | <u>Lymnaea sp.</u> | uncertain |
| aquarium snail | | introduced |

AMPHIBIANS

| | | |
|-------------|------------------------|------------|
| marine toad | <u>Bufo marinus</u> | introduced |
| bullfrog | <u>Rana catesbiana</u> | introduced |

INSECTS

| | | |
|-----------|------------------------|------------|
| damselfly | <u>Ischnura posita</u> | introduced |
| mosquito | Culicidae | introduced |

No native fishes were observed in the areas above and below Mokulele Drive. Few insects were observed and all were introduced, including two species of dragonflies, one species of damselfly, and adult mosquitoes. A tiny white introduced clam (not Corbicula) was collected, its identity is being verified by experts on the mainland.

WATER QUALITY

The ditch water appears polluted and a fair amount of trash (including cans of automobile oil) was present. Water chemistry parameters were measured twice. Air temperature, measured using a hand held mercury thermometer, was 26c and 28c and water temperature was 25c and 24c at 8:35 and 9:10 a.m. respectively. Total dissolved solids (turbidity), measured with a Hanna Instruments Dist WP meter, averaged 130 *umhos/cm* and pH, measured with an Orion Model 250A pH meter, averaged 6.08. Dissolved oxygen could not be measured due to a malfunction of the meter.

CONCLUSIONS

The aquatic survey showed that Kawa Ditch contains almost entirely introduced organisms. Kawa ditch is at the top of the channel and appears to be fed primarily by urban runoff. Consequently, lining the ditch should have no negative impacts.