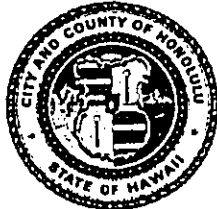


*Waikalua Wastewater pump station force main replacement*

DEPARTMENT OF WASTEWATER MANAGEMENT  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



JEREMY HARRIS  
MAYOR

FELIX B. LIMTIACO, P.E.  
DIRECTOR

CHERYL K. OKUMA-SEPE, ESO.  
DEPUTY DIRECTOR

WEP 96-699

November 15, 1996

*Received 11/21/96  
at 10:02 am  
OEQC*

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

Dear Mr. Gill:

Subject: Negative Declaration for Waikalua Wastewater Pump Station  
Force Main Replacement. TMK:4-5-07:48

The City and County of Honolulu, Department of Wastewater Management, has reviewed the comments received during the 30-day public comment period which began on September 8, 1996. The agency has determined that this project will not have significant environmental effects and has issued a negative declaration. Please publish this notice in the December 8, 1996 OEQC bulletin.

We have enclosed a completed OEQC bulletin publication form and four copies of the final EA.

If you have any questions on the above, please contact Mr. Wes Yokoyama of the Engineering and Construction Division at 527-5152.

Very truly yours,

*Cheryl Okuma-Sepe*  
FELIX B. LIMTIACO  
Director

Attachments

145

- 1996-12-08-0A-FEA-Waikalua Wastewater Pump Station Force Main Station <sup>DEC 8 1996</sup>

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ENVIRONMENTAL ASSESSMENT

FOR

WAIKALUA WASTEWATER PUMP STATION FORCE MAIN REPLACEMENT

AT

KANEOHE, OAHU, HAWAII  
TMK: 4-5-07:48

October 1996

PROPOSING AGENCY: Department of Wastewater Management  
City & County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

RESPONSIBLE OFFICIAL: Cheng K. Okuma NOV 15 1996  
Felix B. Limtiaco Date  
Director

PREPARED BY: Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite. 300  
Honolulu, HI 96817-4716

This Environmental Document was prepared pursuant to Chapter 343,  
Hawaii Revised Statutes

ENVIRONMENTAL ASSESSMENT

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**EXHIBIT 2 - PROJECT LOCATION MAP**

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**APPENDICES**

**A. AGENCY CONSULTATION REVIEW LETTERS**

## **I. INTRODUCTION**

### **A. Project Description**

The proposed action involves the replacement of the existing force main for the existing Waikalua Wastewater Pump Station ( WWPS ). Modifications to the existing WWPS on-site piping may be required to accommodate the replacement force main.

### **B. Project Location**

The Waikalua WWPS is located in Kaneohe, Oahu, Hawaii ( See **EXHIBIT 1 - VICINITY MAP** ) on the northerly side of the Kaneohe Stream at the end of Holowai Place. The pump station is situated on the lower residential level of the Kaneohe Stream area. ( See **EXHIBIT 2 - LOCATION MAP** )

The parcels impacted by the project are as follows:

1. TMK: 4 - 5 - 07: 48 ( Waikalua WWPS site )
2. TMK: 4 - 5 - 30: 47 ( Kaneohe Stream )
3. TMK: 4 - 5 - 30: 1 ( Pacific Atlas - Hawaii Inc. )
4. TMK: 4 - 5 - 30: 40 ( C&C Easement )

### **C. Pre-assessment consultation was conducted with the following:**

1. Board of Water Supply, City & County of Honolulu;
2. Dept. of Transportation Services, City & County of Honolulu;
3. Dept. of Business, Economic Development & Tourism, State of Hawaii, Land Use Commission;
4. Dept. of Health, State of Hawaii;
5. Dept. of Transportation, State of Hawaii
6. U.S. Army, Corps of Engineers

## II. DESCRIPTION OF PROPOSED PROJECT

### A. Background and Existing Conditions

The Waikalua WWPS is part of the Kaneohe Collection System and serves the lower Kaneohe-Heeia residential areas adjacent to Kaneohe Stream. ( See EXHIBIT 3 - TRIBUTARY AREA MAP )

The existing Waikalua WWPS was constructed in 1967. Sewage is pumped from the Waikalua WWPS to the 36" Kaneohe Bay East Interceptor Sewer, before final discharge to the Kaneohe Pretreatment Facility ( PTF ), via approximately 365 feet of a 6" diameter ductile iron pipe force main which traverses under Kaneohe Stream. A portion of the 6" force main, approximately 216 feet, was constructed within the streambed and is protected with a reinforced concrete jacket.

The original design flows were 0.103 Million Gallons per Day ( MGD ) Average; 0.412 MGD Maximum; and 0.460 MGD Peak. Current flow measurement records indicate that the average flows are approaching 0.194 MGD according to the Department of Wastewater Management ( WWM ). For the purpose of this project the design flows projected by WWM are as follows:

1. Design Average Flow = 0.194 MGD
2. Design Maximum Flow = 0.424 MGD
2. Design Peak Flow = 0.895 MGD

Recent inspection programs for various force mains within the Kaneohe and Kailua have found that the existing Waikalua WWPS force main is extremely deteriorated and immediate replacement is recommended. Ultrasonic testing indicates that as much as 78% of the original pipe wall thickness is eroded due to corrosion. The force main has experienced breaks due to the critically reduced pipe wall thickness and the frequency of leaks will increase in the future.

Emergency power for the existing two 5-hp pumps is supplied by an on-site engine generator. Diesel fuel for the engine generator is stored in an underground five hundred gallon tank. When commercial power is interrupted, the engine is automatically started and supplies power to the pumps through the emergency transfer switch.

B. Proposed Improvements

The primary goal of the proposed action is to develop a replacement force main which will have minimal impact on the existing pumps, motors, and other operational equipment. Additionally, the new pipe/valve system will be able to direct flows to either the new force main or the existing force main which will be used as a backup. ( See EXHIBIT 4 - SITE PLAN )

**FORCE MAIN**

The proposed action includes the replacement of the existing 6" ductile iron force main with a 8" internal diameter ( I.D. ) High Density Polyethylene ( HDPE ) force main. The use of HDPE pipe will preclude the need for an external corrosion protection system and its associated maintenance.

Alternatives alignments considered were as follows:

1. **ALTERNATIVE NO. 1** - Crossing Kaneohe Stream
2. **ALTERNATIVE NO. 2** - Connect to Existing Ahuimanu 16" Force Main
3. **ALTERNATIVE NO. 3** - Install liner in abandoned 6" waterline

After evaluation of the above alternatives, only Alternative No. 1 accomplishes the primary goal of requiring minimal modifications to the existing facility. The existing Ahuimanu force main appears to be under capacity for present flows as evidenced by popping of force main manhole covers.

Sliplining of the abandoned 6" waterline will result in a 4-inch I.D. force main. This is less than the minimum standard size and would result in force main velocities in excess of the maximum allowable.

The following methods of construction were considered for achieving Alternative No. 1:

- 1) **OPTION A** - Open Trench Construction
- 2) **OPTION B** - Horizontal Directional Drilling



C. Construction Cost Estimates

1. **ALTERNATIVE NO. 1**, Crossing Kaneohe Stream

- a) OPTION A - Open Trench Method = \$450,000
- b) OPTION B - Horizontal Directional Drilling = \$405,000

D. Preferred Alternative

**ALTERNATIVE NO. 1, OPTION B** is preferred because that alignment will preclude major renovation of the facility. Also, construction of the 8" I.D. HDPE replacement force main under Kaneohe Stream with Horizontal Directional Drilling will result in lesser construction and maintenance cost. This alternative will not require a permit from the Corps of Engineers for crossing Kaneohe Stream because the entry and exit locations of the replacement force main will not be affected by the tidal zone. ( See **EXHIBIT 9** )

The new replacement force main will be constructed while the existing 6-inch force main is in service. Connection of the replacement force main to the existing facility will require a minimal shut-down time and will be scheduled during "off-peak" flows

A new easement will be required for the new replacement force main. The exact location will be finalized during design, however, its location is anticipated to be parallel to the easement for the existing 6-inch force main as shown in **EXHIBIT 4**.

Waikalua WWPS includes an emergency engine generator for HECO power failure situations. This generator was installed during pump station improvements. The original means to mitigate power failure were two independent HECO feeds which still exists. Bypassing flows during major equipment failure could be accomplished using portable pumps. Therefore the existing force main must be intact for emergency situations as the WWPS has contingency plans to continue operations.

Emergency conditions during construction requiring pumping will be addressed by portable engine driven units pumping flows from the wetwell to the existing force main. This pumping condition is identical to that required during connection of the new force main.

### **III. RELATIONSHIP TO EXISTING LAND USE PLANS AND CONTROLS**

The land use zoning for the existing wastewater pump station and force main are designated R-5 and P-2 respectively. The proposed action will replace the deteriorated force main and allow continual sewage disposal service for this part of the community. The General Plan of Honolulu designates the project area as Urban Fringe. ( See EXHIBIT 5 - POPULATION PLANNING AREA MAP )

The project is also in concert with the Department of Wastewater Management's ( WWM ) recent implemented long-range plan to abandon the existing Kaneohe Wastewater Treatment Plant ( WWTP ) in favor of a pretreatment facility. The Kaneohe PTF currently pumps all wastewater flows to the Kailua Regional WWTP for final processing.

The WWPS is designated as Public Facility and the force main traverse as Park/Golf Course on the Development Plan of Koolaupoko. Land Use Boundaries District Map 0 - 12 of the State Land Use Commission includes the project area as within the Urban district.

#### IV. ENVIRONMENTAL SETTING

The description of environmental concerns for the project location are discussed in detail in the referenced Revised Environmental Impact Statement for Kaneohe-Kailua Wastewater Facilities, March 1984. Summary of the significant items are as follows:

##### A. Topography

The Waikalua WWPS is located on the northerly side bank of Kaneohe Stream at about the 10- foot elevation. The force main traverses below the streambed and connects to a the 36" Kaneohe Bay-East Interceptor Sewer leading to the Kaneohe WWTP.

##### B. Geology

The subsurface soils at the Waikalua WWPS and force main consists of clays and silty clays. The chloride content level is high and the soil is very corrosive. Poor foundation of the existing subsurface soils required the existing facility to be supported on piles.

##### C. Climate

The project area has a mild subtropical climate with strong northeast tradewinds about 75 percent of the time. Mean annual rainfall averages 50 inches along the coast.

##### D. Flood Hazard

The existing Waikalua WWPS was constructed adjacent to a flood-prone area. According to the Flood Insurance Rate Map, Community-Panel Number 150001 0060 B, the WWPS site is within an area designated as "Zone X", outside of the 500-year flood plain. ( See EXHIBIT 6 - FLOOD INSURANCE RATE MAP )

##### E. Air Basin

The air basin of the Kaneohe-Kailua area has been designated as an attainment area under the Federal Clean Air Act. The implication of this designation is that National ambient air quality standards are being maintained.

**F. Flora and Fauna**

Landscaping of residential areas is the predominant botanical feature in the Kaneohe service area. Natural vegetation at the lower elevations includes pili grass, kiawe, haole koa, and finger grass. Coconut trees, Bermuda grass, and a variety of grasses and weeds are features on and adjacent to the Waikalua WWPS site. There are no significant agricultural lands adjacent to the WWPS site.

Wild animal life within the Kaneohe service area includes the mongoose, rat, wild pig, and feral cats and dogs. The coastal regions include natural habitats and feeding areas for many introduced exotic birds such as cardinals, linnets, sparrows, mynah birds, thrush, and doves. The Hawaiian Owl, Pueo, is generally found in the open grassland areas. The State of Hawaii considers this species as endangered on Oahu. There will be no impacts from this project to the Pueo. ( See EXHIBIT 7 - BIRD HABITAT & FEEDING AREAS MAP )

**G. Environmentally Sensitive Areas**

The wetlands and the entire coastline and coastal waters are considered environmentally sensitive near the project site. The environmentally sensitive areas are all "Special Management Areas" (SMA) and, as such, are subject to special Coastal Zone Management (CZM) regulations under State statute administered by the City & County of Honolulu. ( See EXHIBIT 8 - SPECIAL MANAGEMENT AREA MAP )

**H. Other Areas of Concern**

1. **Noise:** The area surrounding the Waikalua WWPS consists of residences on the north and east sides, an open field on the west and Kaneohe Stream on the south side. Present noise levels are at rural levels due to the open areas.
2. **Water Quality:** Kaneohe Stream is a Class 2 water body. The selected method of pipe installation (drilling) precludes discharges into the stream.
3. **Archeology:** The project site has been extensively disturbed to build the WWPS. Kaneohe Stream is periodically dredged and the open areas are presently being graded for a golf course.

With these activities discovery of items of archaeological significance is remote.

4. **Infrastructure:** The project site is devoid of normal infrastructure items ( roads, sewer, water, drainage, gas, telephone, etc. ). Major sewer mains traverse the site and serve as restraints to construction in the area.

**V. SOCIO-ECONOMIC SETTING**

The basic zoning designations for the project area are P-2 ( Force Main ) & R-5 ( Waikalua WWPS ). The General Plan designation of the project area is "urban fringe". ( See EXHIBIT 5 - POPULATION PLANNING AREA MAP )

Kaneohe Marine Corps Air Station is the only large employer in the surrounding area. Although there are a number of jobs in the neighborhood commercial areas and minor institutions, the major locations of employment are on the leeward side of the Koolau range. The surrounding areas are primarily "bedroom" communities.

## VI. PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT

### A. Short Term Impacts

Short term impacts of the proposed action will be minimal. Daily traffic of the construction vehicles through the residential area and the noise associated with the construction activities will be restricted to daylight hours. Pilings may be required for the valve box and manhole. Noise production will depend on method of pile installation. Since installation will be restricted to daylight hours and will be of a short duration, noise impacts will not be significant. Dust and erosion from the construction activities will be controlled in accordance with the State Department of Health requirements.

The recommended use of Horizontal Directional Drilling eases the requirement of a Corps of Engineers Permit for Activities in Waterways. Entry and exit locations of the drilled force main will not be affected by the tidal zone. Water quality of the Kaneohe Stream and adjacent lands will not be affected.

Native flora and fauna will not be impacted. Areas of disturbance ( entry/exit pits and connection points ) are located in previously disturbed site ( WWPS ) or within the under-construction golf course. Tradewinds through the construction site will quickly disperse equipment exhaust fumes.

Use of Horizontal Directional Drilling will eliminate discharge into the Kaneohe Stream eliminating the need for a Section 401 Water Quality Certification Permit. Water used for drilling operations will be recycled, drilled material will be disposed at a licensed landfill. Also the drilling should negate the need for a DLNR Stream Channel Alteration Permit as the stream channel is not affected.

The replacement force main will be installed while the existing force main is operational. A temporary shut-down will be required to allow the cross over from the existing force main to the new force main. Duration of the shut-down will be coordinated with the facility operation and scheduled during non-peak flow hours. If construction is required during the normal "quiet time", affected neighbors will be notified in advanced and every effort to minimize noise impacts will be effectuated.

**B. Long Term Impacts**

The long term impact of not implementing the proposed action will have a greater negative impact on the welfare of the community than the short term impacts. The existing force main is deteriorated from corrosion and its remaining service life is unknown. Corrosion studies conclude that breakages will be experienced at an increased frequency. Breakage of the existing force main will allow raw sewage to enter Kaneohe Stream and threaten public health.

Aside from the continued service of sewage disposal, the replacement force main will prevent spills and subsequent violations of environmental laws.



## **VII. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED**

The noise level and traffic through the residential area will increase during the construction period. This effect will be of short duration, lasting only for the construction phase. The noise level can be reduced by the contractor by ensuring proper functioning of mufflers on all equipment, and conducting construction activity only during daylight hours, between 7:30 a.m. to 5:00 p.m.

Noise levels in Oahu are controlled by the Department of Health's Chapter 43 "Community Noise Control for Oahu" and Chapter 42 "Vehicular Noise Control for Oahu." During the day ( 7 a.m. - 10 p.m. ), noise levels at the project site cannot exceed 55 dBA except for 10 percent of the time within any twenty-minute period. Permits are required if the noise level exceeds these allowable limits. Allowable noise levels are specified for light and heavy vehicles in Chapter 42. Connection to the existing system must be done during low flows (normally between midnight and 5:00 am). The affected will be notified in advance and noise impacts shall be minimized by work methods and as specified by contract documents.

Dust impacts from the installation of the pipeline will be negligible considering the method specified - horizontal directional drilling. Dewatering will be limited to manhole locations at each end of the pipeline. The Contractor must adhere to the constraints imposed by the National Pollutant Discharge Elimination System ( NPDES ) permit. Disposal of dewatered material will be into pipe trenches or into the City's sewer system if accepted. Water used for hydrotesting can be possibly disposed into the sewer system by permit as only minor amounts of foreign material are expected.

## **VIII. ALTERNATIVES TO THE PROPOSED ACTION**

### **A. Alternative Site**

Consideration of an alternative site would not be feasible because of the capital investment already expended in the existing facility. The proposed action seeks to provide replacement of components of an existing facility which are required due to "wear & tear" associated with its long-term use.

### **B. No Action**

This alternative will not allow the Department of Wastewater Management to meet its policy of providing adequate wastewater collection and disposal for the service area and expose the City to possible legal action by the State, EPA and/or private citizens from spills.

The probability of pipe breakages and spills and threat to the safety and environmental quality will increase if the "no action" alternative is selected.

**IX. RELATIONSHIP BETWEEN LOCAL SHORT TERM USES AND MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY**

The short term use of the project site is the same as its long term use - providing wastewater conveyance for the community.

**X. MITIGATING MEASURES TO MINIMIZE ADVERSE IMPACTS**

The short term impacts occurring during the construction work will be minimized by applying current abatement techniques and methods. In addition, restrictions on operational hours will minimize noise impacts to the adjoining area.

The recommended use of Horizontal Directional Drilling will minimize the impacts associated with pipe installation by conventional trenching methods. Drilling fluids and cuttings removed from the drilled hole are retained in a Solids Control Unit where fluids and cuttings are separated. The fluids are recycled and the cuttings disposed in a method established to control any locally resident hazardous or toxic substance. The disposal method is determined from laboratory analysis of the drilling fluids and cutting.

To minimize adverse impacts due to uncontrolled disposal of dewatered fluids, the fluids will be pumped to trenches or if approved, to the City sewer system. The water used during drilling operations will be recycled.

The potential social, economic and political problems brought on by increased development will not be associated with this project as the existing wastewater pump station will continue to serve the same service area.

Prior to installation, various, governmental permits must be obtained or waived. During the permit application process, the project will be investigated and constraints instituted by the approved permits. These constraints will minimize the adverse impacts of the construction activities of the project.

**XI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

The proposed project would involve the commitment of certain natural and fiscal resources. The commitment of construction materials, manpower, and energy are mostly unrenowable and irretrievable. The impacts of using these resources should, however, be weighed against the benefits to the residents of the community when Waikalua Wastewater Pump Station continues to function as required.

**XII. DETERMINATION**

Based on the preceding paragraphs, it is anticipated that the proposed action will result in no significant adverse impacts. Consequently, a "Findings of No Significant Impact" is recommended and therefore, an Environmental Impact Statement would not be required.

### XIII. REASONS SUPPORTING RECOMMENDED DETERMINATION

In considering the significance of potential environmental effects, the applicant has considered the sum of effects on the quality of the environment and evaluated the overall cumulative effects of the proposed action. The applicant has considered every phase of the proposed action, the expected consequences, both primary and secondary and the cumulative as well as the short- and long-term effects of the proposed action. As a result of these considerations, the applicant has determined that:

- A. The proposed action does not involve an irrevocable commitment or loss of or destruction of any significant natural / cultural resource:

There are no significant natural or cultural resources associated with the project site. The site is presently used as a wastewater pump station facility. The corridor for the new force main will require a 10-foot wide easement in proximity of the existing easement.

- B. The proposed action does not curtail the range of beneficial uses of the environment:

The proposed project is consistent with the City & County's General Plan and the Department of Wastewater policy and would not curtail beneficial uses of the environment in the area. The proposed project will be compatible with the uses of the surrounding area.

- C. The proposed action is in concert with the state's long-term environmental policies, goals and guidelines as expressed in Chapter 343, HRS, and any revisions and amendments thereto, court decisions and executive orders:

The proposed project is consistent with the State Land Use Plan. It is in concert with all applicable policies, goals and guidelines. No long-term environmental conflicts are foreseen.

The project is also in concert with the Department of Wastewater Management's ( WWM ) recent implemented long-range plan to abandon the existing Kaneohe Wastewater Treatment Plant ( WWTP ) in favor of a pretreatment facility. The Kaneohe PTF currently pumps all wastewater flows to the Kailua Regional WWTP for final processing.

- D. The Proposed action does not substantially affect the economic or social welfare of the community or state:

The economic impact will be affected by the short-term, construction related activities. Upon completion of the project, economic conditions should return to the existing situation since this action merely allows the continuation of an existing function.

- E. The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities:

The proposed project will not result in an increase of population in the area as construction is limited to replacement of an existing sewer force main. If successful, the wastewater pump station and force main will continue to serve the Department of Wastewater Management's policy of sewage disposal. Normal population growth should not be affected.

- F. The proposed action does not substantially affect public health:

Construction activities will be regulated to minimize noise, dust and erosion concerns. The long term impact will be positive as the frequency of pipe breaks will be lessened.

- G. The proposed action does not involve a substantial degradation of environmental quality:

The existing physical aspects of the surrounding area will be preserved.

- H. The proposed action is individually limited and cumulatively, does not have a considerable effect upon the environment or involve a commitment for larger actions:

The proposed project is an integral part of the sewage disposal system. Operation of the facility is the responsibility of the City & County of Honolulu, Department of Wastewater Management. Approval of the project does not involve a commitment for any larger action.

- I. The proposed action does not substantially affect rare, threatened or endangered species or habitats:

There are no known rare, threatened or endangered species or habitat associated with the project site.



- J. The proposed action does not detrimentally affect air or water quality or ambient noise levels:

Development of the site will not increase ambient noise levels as it conforms to existing activities.

Short-term impacts on air and water quality, as well as noise, will occur during the construction period, but will be mitigated by normal construction practices and will be regulated by the project plans and specifications.

- K. The proposed action does not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary or coastal waters.

The proposed force main is located within the flood plain of Kaneohe and Kawa Streams. However, the force main will not affect the area because of its location beneath the Kaneohe Stream bed. The proposed action will allow for the continued transmission of sewage for ultimate treatment and disposal.

#### **XIV. LIST OF POSSIBLE PERMITS OR APPROVALS**

The agencies administering the following permits or activity approval will be contacted for jurisdictional responsibility.

**A. Special Management Area Use Permit - City & County of Honolulu**

A permit is required for developments within designated Special Management Area boundaries. Maps identifying the boundaries are maintained by the Department of Land Utilization. Exemptions are allowed based on unique circumstances.

**B. Coastal Zone Management - Office of State Planning**

Developments within the Special Management Area of Hawaii's community development districts require approval from the Office of State Planning. The proposed project is subject to assessment of its potential environmental effects.

**C. Section 401: Water Quality Certification - Department of Health**

A certification is required to conduct an activity in State waters that would include the construction and operation of facilities that may result in any discharge.

**D. Stream Channel Alteration Permits - Department of Land & Natural Resources**

A stream channel alteration permit is required for any activity that will obstruct, diminish, destroy, modify or relocate a stream channel.

**E. Department of the Army Permit for Activities in Waterways - Corps of Engineers**

Any person, firm or agency who plans to do work in the waters of the United States must obtain a permit from the U.S. Army Corps of Engineer.

**F. Construction Activity Review/Approvals**

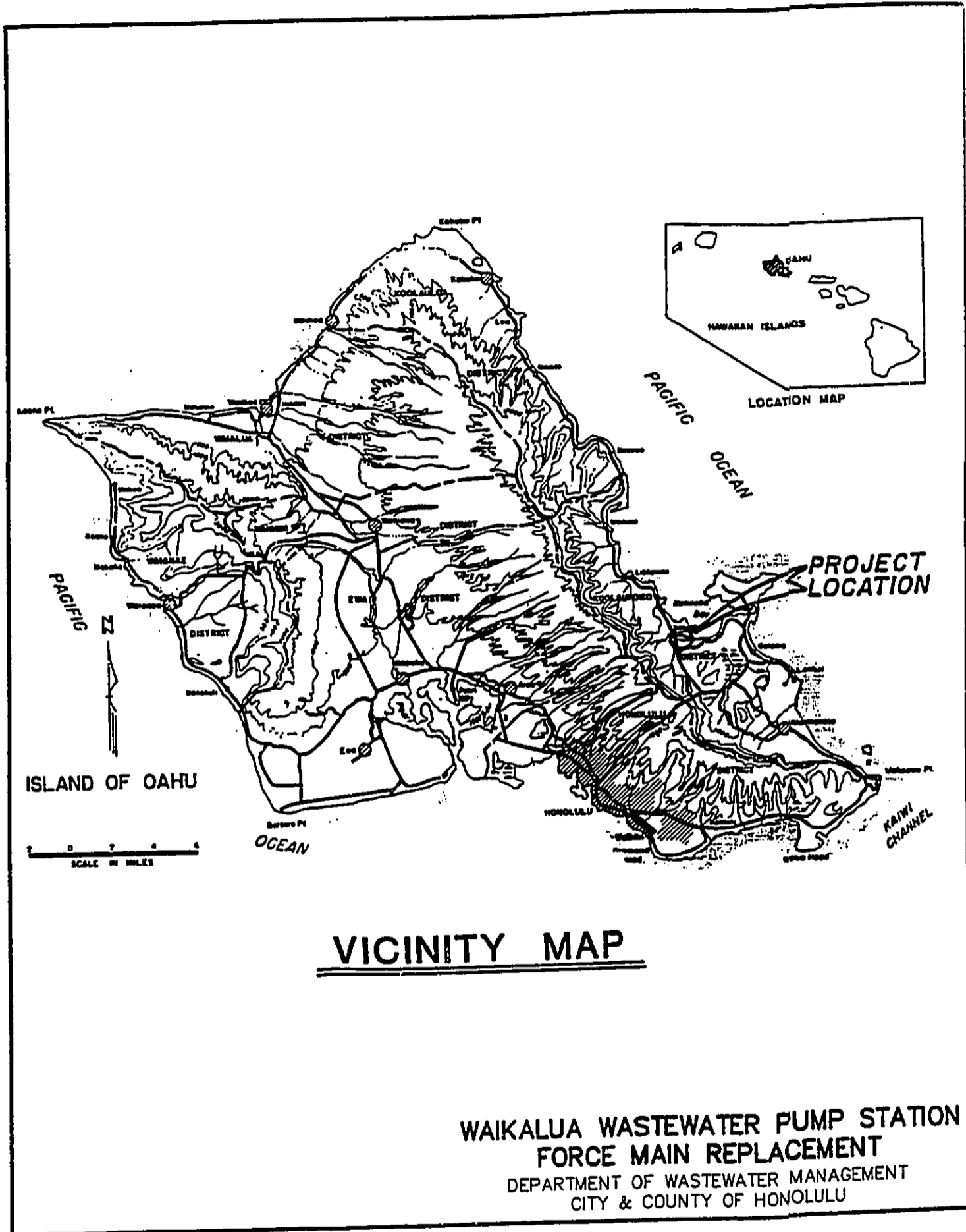
**1. State Department of Health**

- a. Construction Plan Approval
- b. Community Noise Control for Oahu, Title 11, Chapter 43
- c. Vehicular Noise Control for Oahu, Title 11, Chapter 42

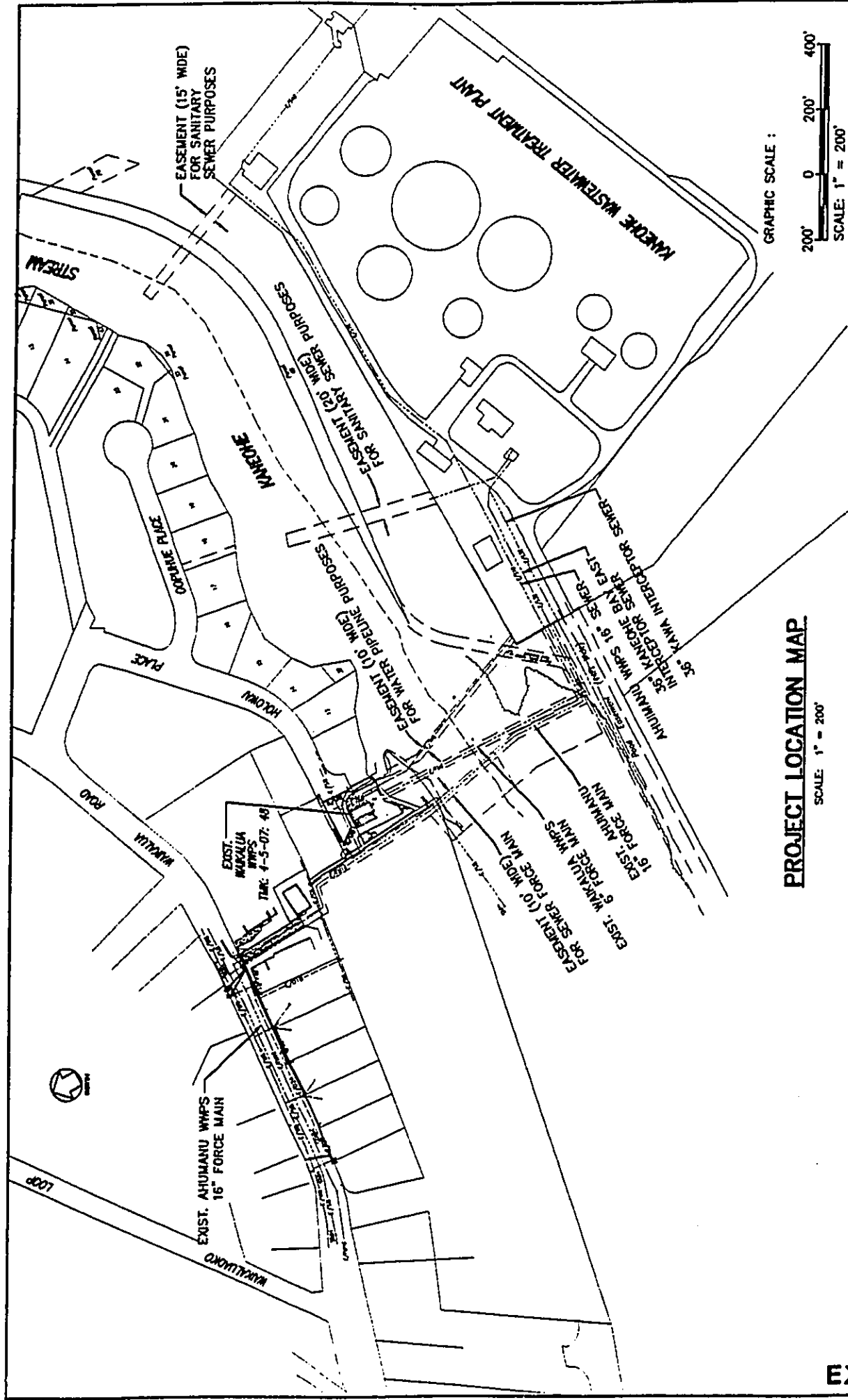
- d. Fugitive Dust, Air Pollution Control, Title 11, Chapter 60
  - e. National Pollutant Discharge Elimination System (NPDES) Permit
2. Department of Land Utilization
    - a. Construction Plan Approval
  3. Department of Wastewater Management
    - a. Construction Plan Approval

## XV. REFERENCES

1. Revised Environmental Impact Statement for Kaneohe - Kailua Wastewater Facilities, prepared by GMP Associates, Inc. for the Division of Wastewater Management, Department of Public Works, City and County of Honolulu, March 8, 1984.
2. Waikalua Sewage Pump Station and Force Main, Construction Plans, prepared by Y. Arachic - Consulting Engineers for the Division of Sewers, Department of Public Works, City & County of Honolulu, May 6, 1966.
3. Preliminary Inspection Program Report for the Ahuimanu WWTP Effluent Pump Station Force Main; Kaneohe-Kailua Effluent Force Main; and Heeia WWPS Force Main. Kaneohe Bay WWPS No. 1 Force Main. Kaneohe Bay WWPS No. 4 Force Main & Waikalua WWPS Force Main. prepared by SSFM Engineers, Inc. for the Division of Wastewater Management, Department of Public Works, City & County of Honolulu, February 26, 1990.
4. Inspection Report No. 2, Kaneohe to Kailua 42" Force Main; Kaneohe Bay SPS No. 4 - 8" Force Main; Waikalua WWPS 6" Force Main; and Above-Grade Steel Manifold at Kailua WWTP, prepared by SSFM Engineers, Inc. for the Division of Wastewater Management, Department of Public Works, City & County of Honolulu, April 17, 1991
5. Islandwide Sewer Adequacy Study, Kaneohe - Kahaluu Sewer Service Area, Volumes 1, 2 & 3, July 1989.



**EXHIBIT 1**



**PROJECT LOCATION MAP**  
SCALE: 1" = 200'



**EXHIBIT 2**

**WAIKALUA WASTEWATER PUMP STATION  
FORCE MAIN REPLACEMENT  
PROJECT LOCATION MAP**

PREPARED FOR: DEPARTMENT OF WASTEWATER MANAGEMENT  
CITY & COUNTY OF HONOLULU  
PREPARED BY: AONAKA & ASSOCIATES, LTD.

SCALE: 1" = 200' DATE: 10/18/94

**EXHIBIT 2**

NOTES:  
1. THIS MAP IS A SUMMARY OF THE PROJECT AND IS NOT A CONTRACT DOCUMENT.  
2. THE PROJECT IS SUBJECT TO THE CITY AND COUNTY OF HONOLULU DEPARTMENT OF WASTEWATER MANAGEMENT'S STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS.  
3. THE PROJECT IS SUBJECT TO THE CITY AND COUNTY OF HONOLULU DEPARTMENT OF WASTEWATER MANAGEMENT'S STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS.

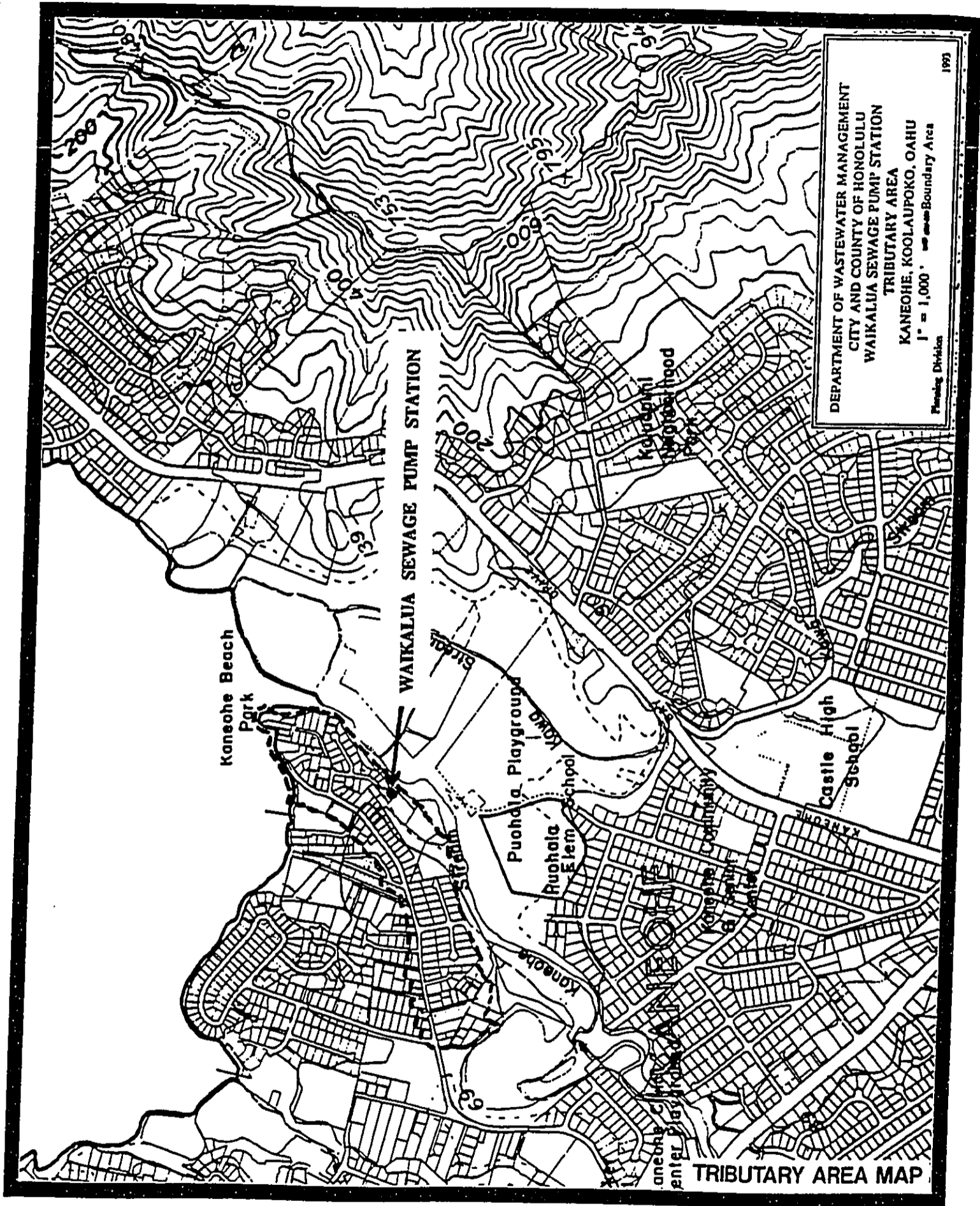
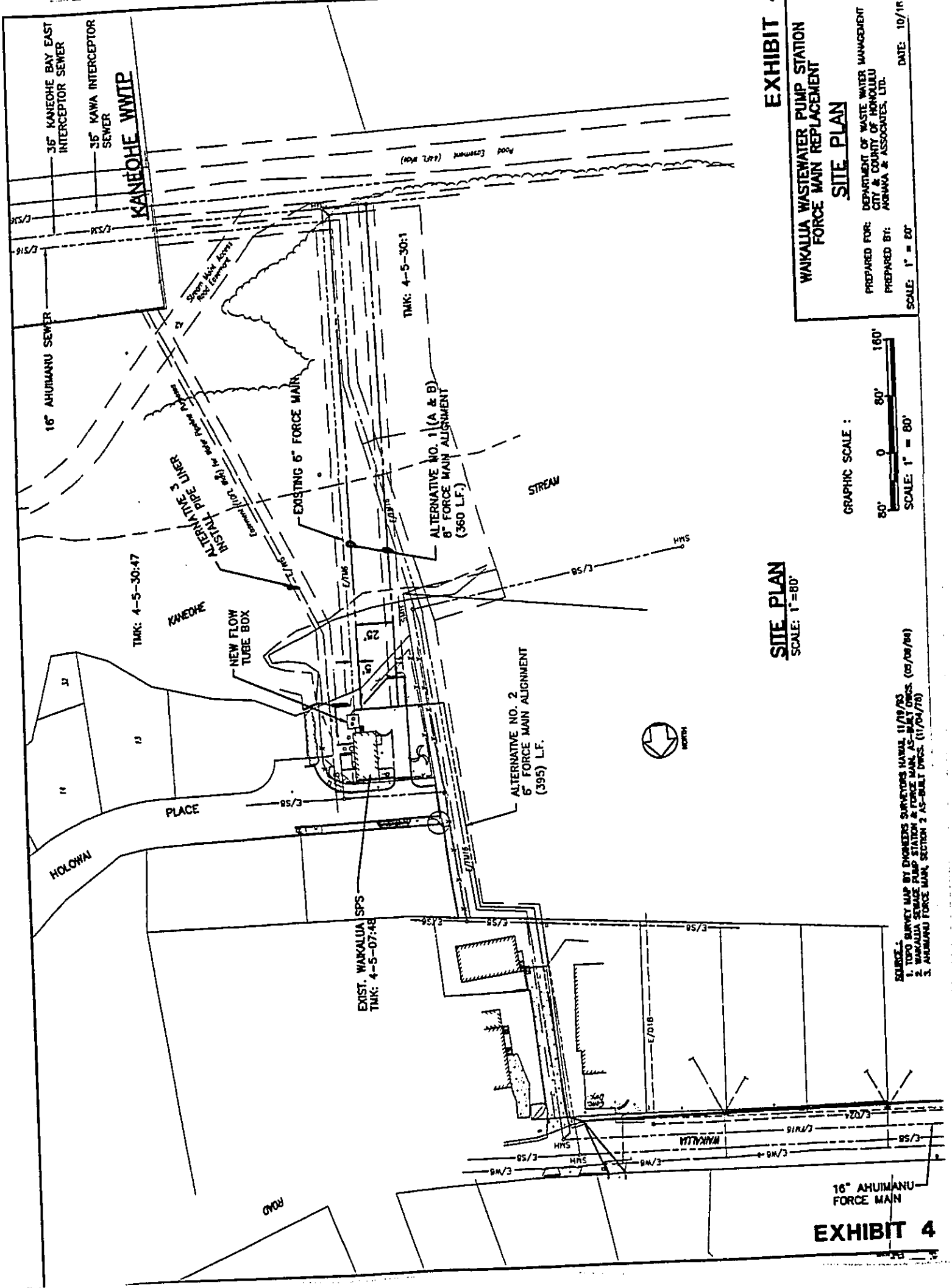


EXHIBIT 3

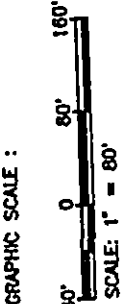


**EXHIBIT 4**

**WAIKALUA WASTEWATER PUMP STATION  
FORCE MAIN REPLACEMENT  
SITE PLAN**

PREPARED FOR: DEPARTMENT OF WASTE WATER MANAGEMENT  
CITY & COUNTY OF HONOLULU  
PREPARED BY: ARIHANA & ASSOCIATES, LTD.  
DATE: 10/18/00

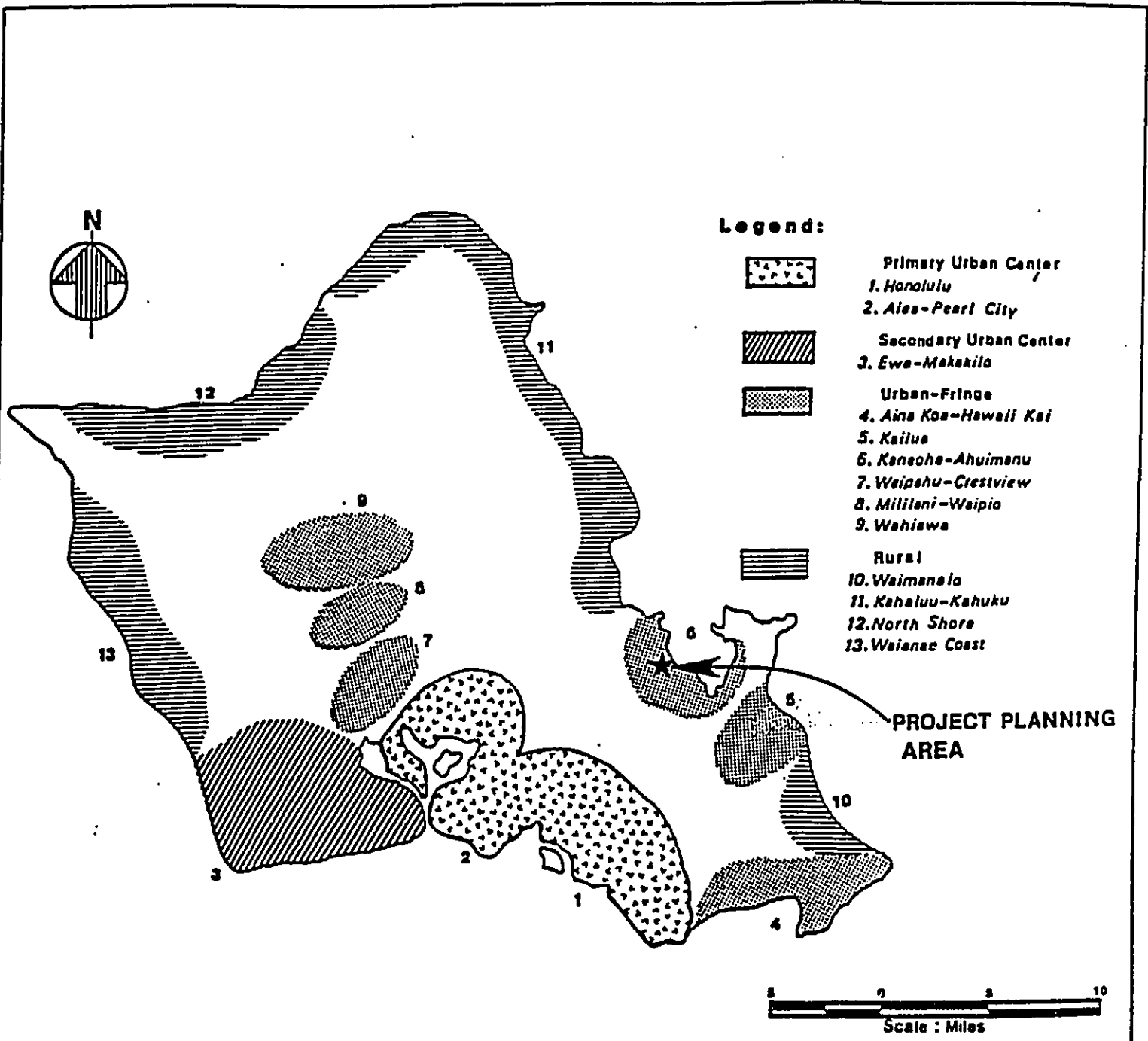
**SCALE: 1" = 80'**



- SOURCE:
1. TOPOG SURVEY MAP BY ENGINEERS SURVEYORS HAWAII 11/19/83
  2. WAIKALUA SEWAGE PUMP STATION & FORCE MAIN REPLACEMENT WORKS (05/08/99)
  3. AHUIMANU FORCE MAIN, SECTION 2 AS-BUILT DWGS. (11/04/78)

**EXHIBIT 4**





**POPULATION PLANNING AREAS**

**WAIKALUA WASTEWATER PUMP STATION  
FORCE MAIN REPLACEMENT**  
DEPARTMENT OF WASTEWATER MANAGEMENT  
CITY & COUNTY OF HONOLULU

**EXHIBIT 5**

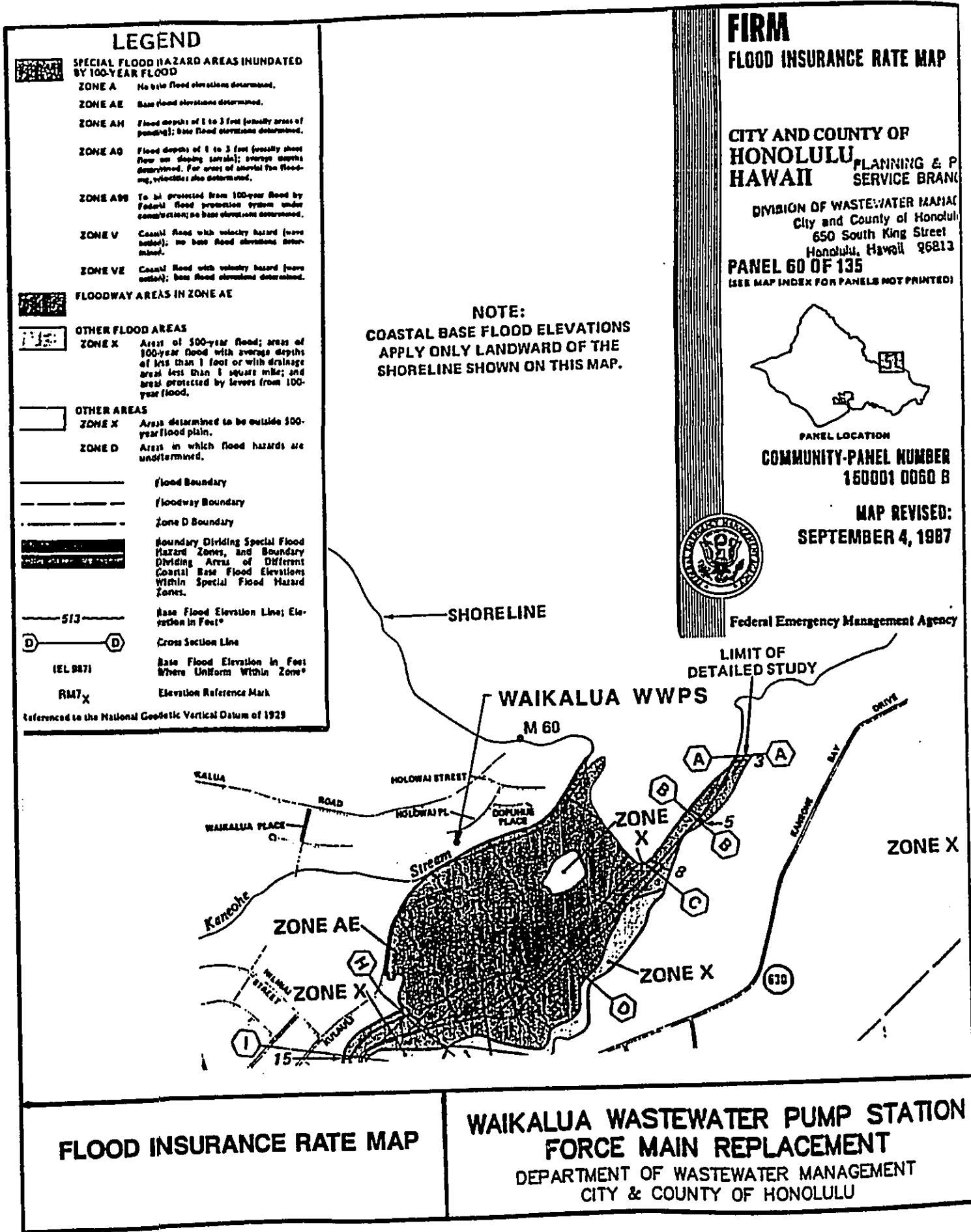
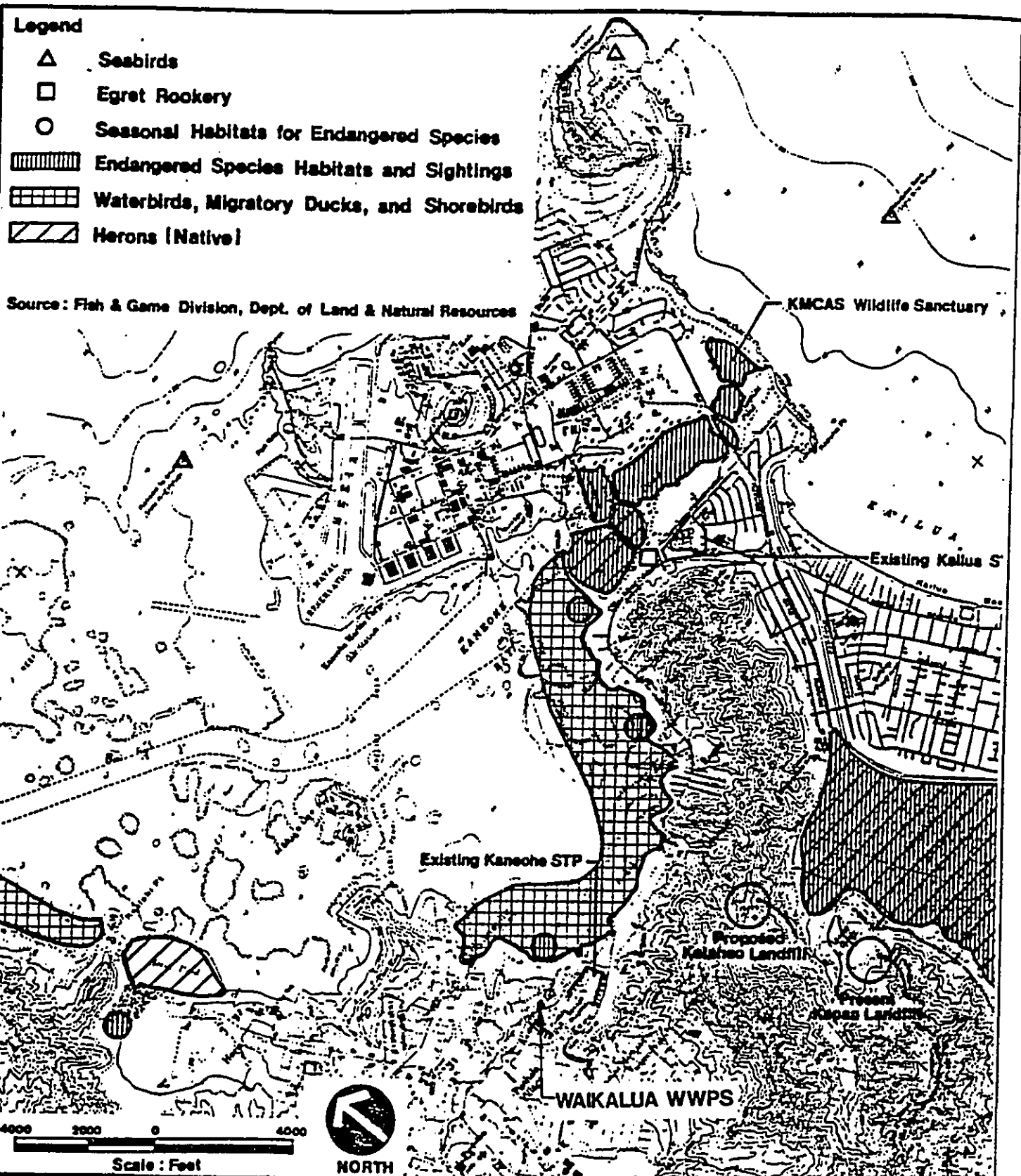


EXHIBIT 6



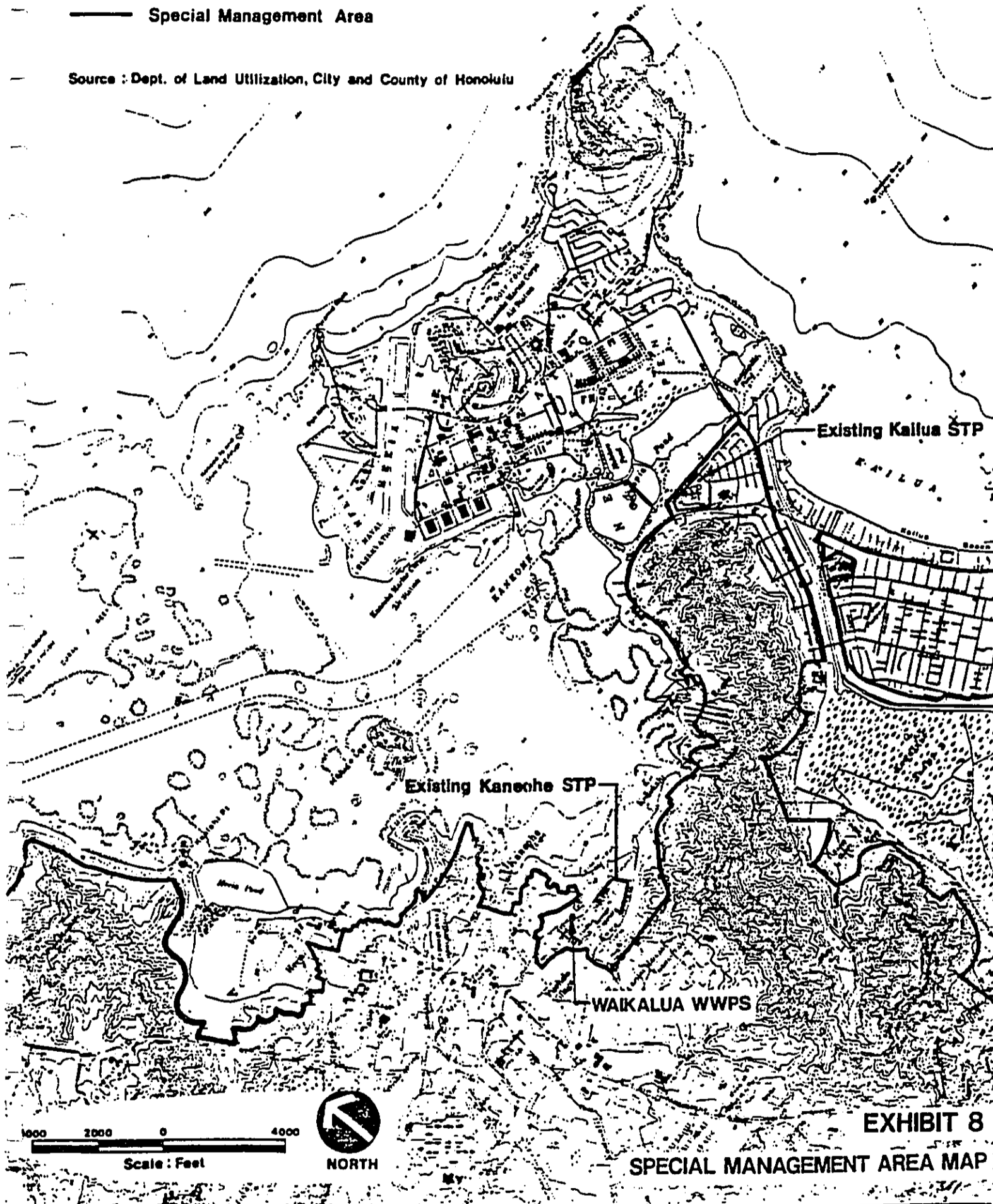
**BIRD HABITAT & FEEDING AREAS MAP**

**WAIKALUA WASTEWATER PUMP STATION  
FORCE MAIN REPLACEMENT**  
DEPARTMENT OF WASTEWATER MANAGEMENT  
CITY & COUNTY OF HONOLULU

**Legend**

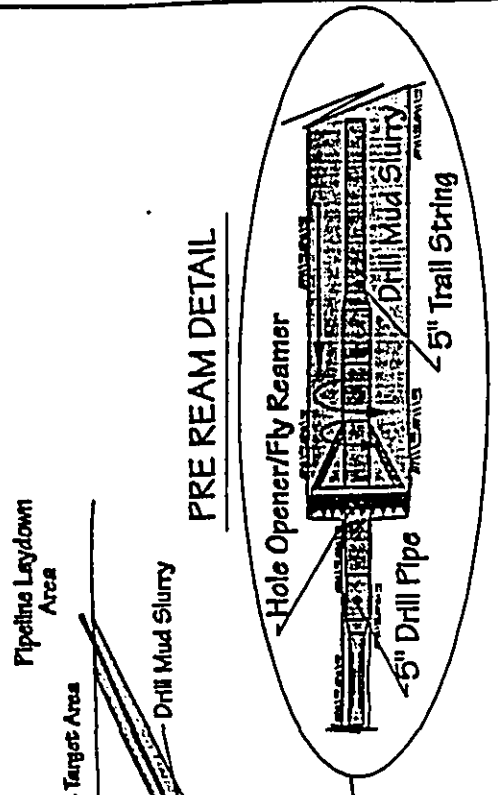
— Special Management Area

Source : Dept. of Land Utilization, City and County of Honolulu



**(1) PILOT HOLE (NOT SHOWN)**

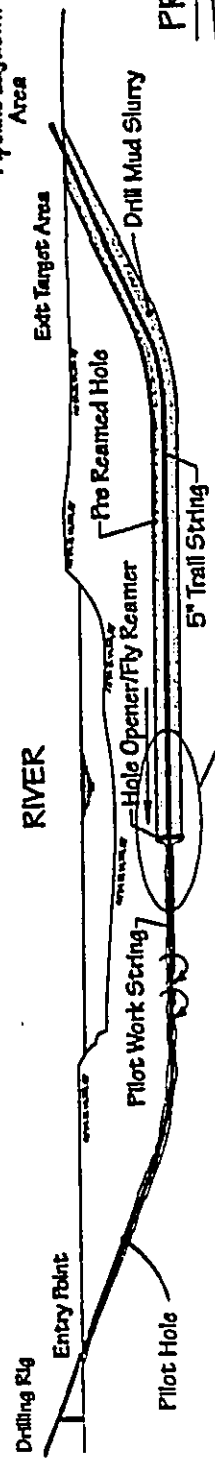
- 5" Drill Pipe Pilot Work String
- 75° Spud Jet
- Tension Wire Line Steering Tool w/ Tru Tracker



**PRE REAM DETAIL**

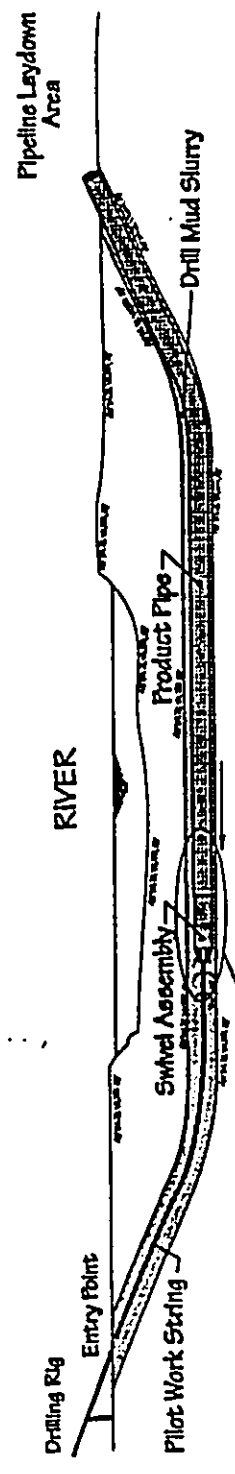
**(2) PRE REAM**

- 24" Hole Opener / Fly Reamer
- 5" Trailing String
- 5" Drill Pipe

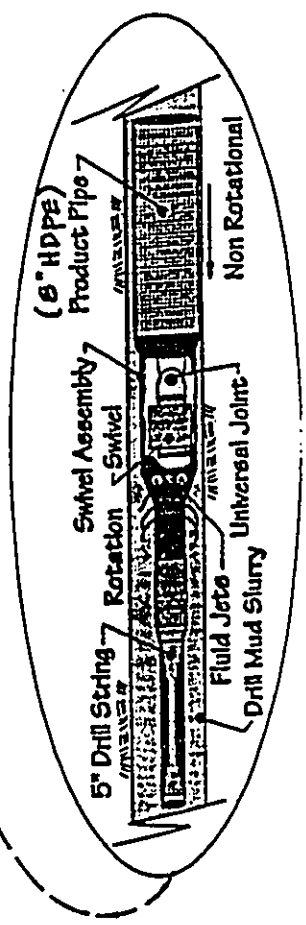


**(3) PRODUCT PIPE PULLBACK**

- External Flush Swivel Assembly
- 5" Drill Pipe
- Drilling Mud Slurry



**PULL BACK DETAIL**



**HORIZONTAL DIRECTIONAL DRILLING**

**EXHIBIT 9**

**WAIKALUA WASTEWATER PUMP STATION  
FORCE MAIN REPLACEMENT**  
DEPARTMENT OF WASTEWATER MANAGEMENT  
CITY & COUNTY OF HONOLULU

APPENDIX A

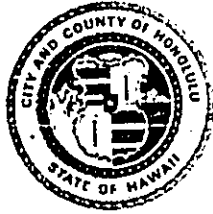
AGENCY CONSULTATION REVIEW LETTERS

**WAIKALUA WASTEWATER PUMP STATION FORCE MAIN REPLACEMENT  
 ENVIRONMENTAL ASSESSMENT AGENCY CONSULTATION  
 JANUARY 1994 SUBMITTAL**

<b>ORGANIZATION</b>	<b>REPLIED BY</b>	<b>REPLY DATE</b>	<b>COMMENTS</b>
<b>CITY &amp; COUNTY</b>			
Dept. of Transportation Services	Letter	2/2/94	No objections to improvements
Board of Water Supply	Letter	2/17/94	Available water determined later
Dept. of Parks & Recreation	Letter	1/27/94	No comments
<b>STATE</b>			
Dept. of Health	Letter	1/21/94	No objections, concur w/improvements
Dept. of Transportation	Letter	1/13/94	No significant impact to transportation facilities
Dept. of Business, Economic Development & Tourism	Letter	2/11/94	Project w/in State Land Use Urban District
<b>OTHERS</b>			
U.S. Army, Corps of Engineers			

DEPARTMENT OF TRANSPORTATION SERVICES  
**CITY AND COUNTY OF HONOLULU**

PACIFIC PARK PLAZA  
711 KAPIOLANI BOULEVARD, SUITE 1200  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

JOSEPH M. MAGALDI, JR.  
DIRECTOR

AMAR SAPPAL  
DEPUTY DIRECTOR

TE-0223  
PL94.1.020

February 2, 1994

RECEIVED

FEB 4 1994

AKINAKA & ASSOCIATES, LTD.

Mr. Sheldon T. Yamasato  
Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Yamasato:


Subject: Waikalua Wastewater Pump Station and  
Force Main Replacement  
Preliminary Draft Environmental Assessment  
TMK: 4-5-7: 48

This is in response to your letter of January 13, 1994 requesting our comments on the subject project.

Based on our review, we have no objections to the improvements at this time. However, future submittals should include a traffic assessment and plans for any work which will affect the City roadways.

Should you have any questions, please contact Lance Watanabe of my staff at 523-4199.

Sincerely,

  
JOSEPH M. MAGALDI, JR.  
Director



**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET

HONOLULU, HAWAII 96843



February 17, 1994

FRANK F. FASI, Mayor

WALTER O. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
SISTER M. DAVILYN AH CHICK, O.S.F.  
JOHN W. ANDERSON, JR.  
REX D. JOHNSON  
MELISSA Y.J. LUM

KAZU HAYASHIDA  
Manager and Chief Engineer

Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Attention: Sheldon Yamasato

Gentlemen:

Subject: Your Letter of January 13, 1994 Regarding the Preparation of a Preliminary Draft Environmental Assessment (DEA) for the Waikalua Wastewater Pump Station and Force Main Replacement, Kaneohe, Oahu, TMK: 4-5-07: 48

RECEIVED

FEB 19 1994

AKINAKA & ASSOCIATES, LTD.

Thank you for the opportunity to review and comment on the preparation of the Preliminary DEA for the proposed project.

We have the following comments to offer:

1. The availability of water will be determined when the Building Permit Application is submitted for our review and approval. If water is made available, the applicant will be required to pay our Water System Facilities Charges for source-transmission and daily storage.
2. We reserve further comment until the Preliminary DEA is submitted for our review.

If you have any questions, please contact Barry Usagawa at 527-5235.

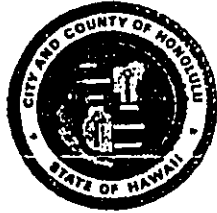
Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer

cc: Mr. Lynn Kurashima, Department of Wastewater Management

DEPARTMENT OF PARKS AND RECREATION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

WALTER M. OZAWA  
DIRECTOR

ALVIN K.C. AU  
DEPUTY DIRECTOR

RECEIVED

FEB 1 1994

January 27, 1994

AKINAKA & ASSOCIATES, LTD.

Mr. Sheldon T. Yamasato  
Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Yamasato:

Subject: Waikalua Wastewater Pump Station and  
Force Main Replacement  
Kaneohe, Oahu, Hawaii  
A&A Job. No. DWM 93-01

We have reviewed the preliminary information for the  
above-described project and have no comment to offer  
at this time.

Thank you for the opportunity to review this project.

Should you have any questions, please contact Lester Lai  
of our Advance Planning Branch at 523-4696.

Sincerely,

A handwritten signature in black ink, appearing to read "Walter M. Ozawa", is written over the word "Sincerely,".

For WALTER M. OZAWA, Director

WMO:ei

JOHN WAIHEE  
GOVERNOR OF HAWAII



JOHN C. LEWIN, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
ENVIRONMENTAL MANAGEMENT DIVISION  
FIVE WATERFRONT PLAZA, SUITE 250  
500 ALA MOANA BOULEVARD  
HONOLULU, HAWAII 96813  
January 21, 1994

In reply, please refer to:  
EMD  
A:04-05-07.48 F90

Mr. Sheldon T. Yamasato  
Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street Suite 300  
Honolulu, Hawaii 96817-4716

RECEIVED

JAN 25 1994

AKINAKA & ASSOCIATES, LTD

Dear Mr. Yamasato:

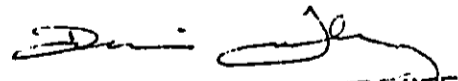
Subject: Environmental Assessment  
Waikalua Wastewater Pump Station and Force Main Replacement  
Kaneohe, Oahu  
A&A Job No. DWM 93-01  
TMK: 4-5-07: 48

We have reviewed the document on the subject project submitted by your office. At this time, we have no objections to the proposed construction of a new force main and upgrading of hardware at the existing sewer pump station as we concur with the improvements to the existing pump station.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at telephone 586-4290.

Sincerely,

  
DENNIS TULANG, P.E., CHIEF  
Wastewater Branch

JOHN WAIHEE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

January 31, 1994

REX D. JOHNSON  
DIRECTOR

DEPUTY DIRECTORS  
KANANI HOLT  
GLENN M. OKIMOTO  
JOYCE T. OMINE  
CALVIN M. TSUDA

IN REPLY REFER TO:  
STP 8.5737

RECEIVED

FEB 3 1994

AKINAKA & ASSOCIATES, LTD.

Mr. Sheldon T. Yamasato  
Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Yamasato:

Subject: Environmental Assessment - Waikalua Wastewater  
Pump Station and Force Main Replacement  
Kaneohe, Oahu, TMK: 4-5-07: 48, 4-5-30: 1, 36, & 47

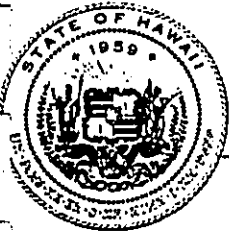
The construction of a new force main and upgrading of hardware at the Waikalua Wastewater Pump Station will not have a significant impact on our transportation facilities.

We appreciate the opportunity to provide comments.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rex D. Johnson".

Rex D. Johnson  
Director of Transportation



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

Central Pacific Plaza, 220 South King Street, 11th Floor, Honolulu, Hawaii  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804 Telephone: (808) 586-2406 Fax: (808) 586-2377

**JOHN WAIHEI**  
Governor  
**MUFI HANNEMANN**  
Director  
**JEANNE K. SCHULTZ**  
Deputy Director  
**RICK EGGER**  
Deputy Director  
**TAKESHI YOSHIHARA**  
Deputy Director

February 11, 1994

RECEIVED

FEB 23 1994

AKINAKA & ASSOCIATES, LTD.

**Mr. Sheldon T. Yamasato**  
Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Yamasato:

The Department of Business, Economic Development & Tourism is pleased to submit the enclosed comments on the Draft Environmental Assessment for Waikalua Wastewater Pump Station and Force Main Replacement.

The comments were provided by the Land Use Commission. Questions regarding these comments may be directed to Esther Ueda, LUC Executive Officer, at 587-3826.

Thank you for the opportunity to comment.

Sincerely,

  
Mufi Hannemann

Enclosure

JOHN WAIHEE  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
Room 104, Old Federal Building  
335 Merchant Street  
Honolulu, Hawaii 96813  
Telephone: 587-3822

February 1, 1994

SUBJECT: Director's Referral No. 94-030-H  
Preparation of Draft Environmental Assessment for  
Waikalua Wastewater Pump Station and Force Main  
Replacement; Kaneohe, Oahu, Hawaii

We have reviewed the project location map of the proposed project, that will include construction of a new force main and upgrading of hardware at the existing sewer pump station (TMK: 4-5-07: 48), and have the following comments to offer:

- 1) We note that the proposed project, as depicted on the project location map, is within the State Land Use Urban District.
- 2) The Draft Environmental Assessment being prepared for this project should include a listing of the tax map key parcels being affected.

We have no further comments to offer at this time.

EU:LRA:th