

**BOARD OF WATER SUPPLY**

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630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
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January 28, 1998

*Moanalua Road 36-Inch  
Transmission Main*

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RAYMOND H. SATO  
Manager and Chief Engineer

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OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Mr. Gary Gill, Director  
Office of Environmental Quality Control  
State of Hawaii  
Leiopapa A. Kamehameha Building  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Finding of No Significant Impact for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main from Punanani Channel to Pali Momi Street, Aiea, Oahu, Hawaii, TMK: 9-8-08: 11, 12, 13, 16, 17, 18

The Board of Water Supply has reviewed the comments received during the public comment period which began on December 8, 1997. We have determined that the environmental impacts of this project have been adequately addressed as discussed in the final environmental assessment (EA) and are therefore, issuing a finding of no significant impact. We request that the proposed well project be published as finding of no significant impact in the next Office of Environmental Quality Control (OEQC) Bulletin.

Attached are the completed OEQC bulletin publication form and four copies of the final EA for your review.

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

Very truly yours,

  
RAYMOND H. SATO  
Manager and Chief Engineer

**Attachments**

cc: Collette Sakoda, R.M. Towill Corp.

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1998-02-23-0A-*FEA*- Moanalua Road  
36-Inch Transmission Main, Phase II  
FINAL

FEB 23 1998

FILE COPY

Environmental Assessment

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BOARD OF WATER SUPPLY (BWS)

Moanalua Road: 36-Inch  
Transmission Main, Phase II

PUNANANI CHANNEL TO PALI MOMI STREET  
AIEA, OAHU, HAWAII

JANUARY 1998

PREPARED FOR:

Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Honolulu, Hawaii 96843

RMTC

*R. M. Towill Corporation*  
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0000 00 16 1898

**FINAL  
ENVIRONMENTAL ASSESSMENT**

**Board of Water Supply (BWS)**

**Moanalua Road: 36-Inch  
Transmission Main, Phase II**

**Punanani Channel to Pali Momi Street  
Aiea, Oahu, Hawaii**

January 1998

**PREPARED FOR:**

**Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Honolulu, Hawaii 96843**

**PREPARED BY:**

**R.M. Towill Corporation  
420 Waiakamilo Road, Suite 411  
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SECTION 1  
INTRODUCTION

The Board of Water Supply (BWS), City and County of Honolulu, plans to undertake a construction project to install a water transmission main in the Primary Urban Center of Oahu. The BWS is preparing an environmental assessment (EA) to address plans and implementation, as well as potential environmental impacts and mitigation measures of the proposed project. This Environmental Assessment (EA) is the first step in the process. This is prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS), Act 241, Session Laws of Hawaii (SLH) 1992, and Chapter 200 of Title 11, Department of Health (DOH) Administrative Rules.

The proposing agency is the BWS, City and County of Honolulu; the approving agency is BWS, City and County of Honolulu.

## SECTION 2 PROPOSED ACTION

### 2.1 Overview

The purpose of the proposed transmission main project is to supplement the transmission capability of existing water mains to move water from Pearl Harbor to demand centers of Honolulu. The proposed water main would assist the Board of Water Supply (BWS) in meeting the future water demands of Honolulu, and provides an alternative route to ensure availability of potable water in the event of an existing water main failure. The following water mains will connect to the proposed 36-inch transmission main; a 42-inch line from Waipahu and a 36-inch from Punanani. Distribution lines will then disperse the water to various demand centers of Honolulu.

### 2.2 Project Location and Description

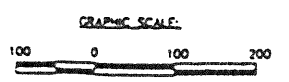
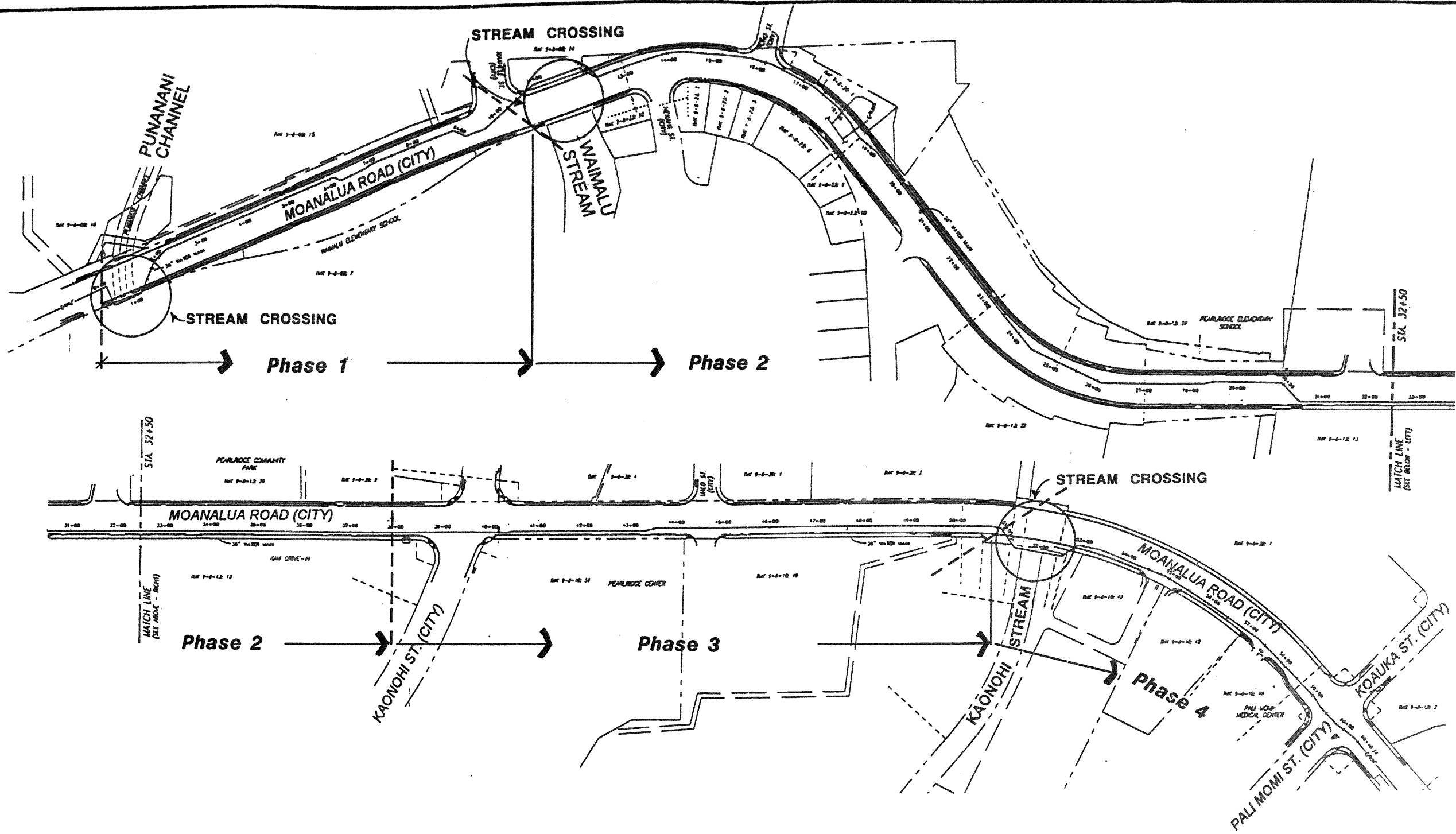
The project is located in Aiea within the development plan Primary Urban Center of Oahu (Figure 2-1 and Figure 2-2). The proposed 36-inch diameter transmission main will extend 6,040 lineal feet (1.4 miles) within the Right-of-Way of Moanalua Road from Punanani Channel to Pali Momi Street (Figure 2-3). Moanalua Road is under the jurisdiction of the City and County of Honolulu, Department of Transportation Services.

Construction of the project will be accomplished in four phases. The majority of the water main will be buried in the Moanalua Road Right-of-Way. It will have a minimum cover of three feet throughout its length. Figure 2-4 represents a typical cross sectioned view of the trench for the water main. The water main is planned to be installed in sections (lengths to be determined by the construction contractor).









**FIGURE 2-3**  
**PROPOSED ALIGNMENT PLAN**  
 BWS MOANALUA ROAD  
 36-Inch Transmission Main, Phase II  
**R. M. TOWILL CORPORATION**  
 January 1998

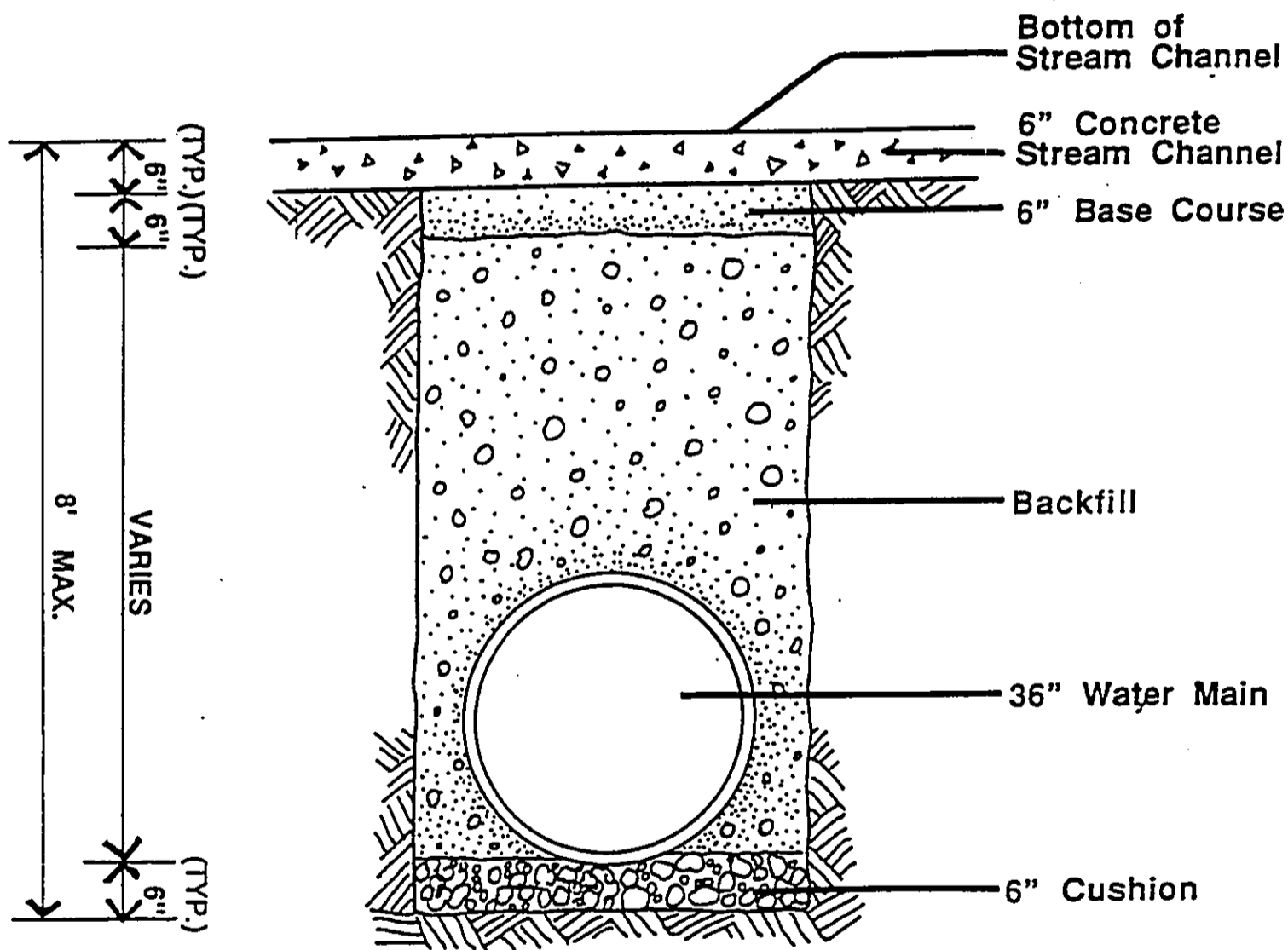


Figure 2-4  
TYPICAL TRENCH SECTION  
UNDER STREAM CROSSINGS

BWS MOANALUA ROAD  
36-Inch Transmission Main, Phase II

R. M. TOWILL CORPORATION

January 1998

There are three stream crossings along the proposed alignment: Punanani Channel (Phase I), Waimalu Stream (Phase II), and Kaonohi Stream (Phase IV). According to the Hawaii Stream Assessment, December 1990, State of Hawaii, Commission on Resource Management and the National Park Service, Waimalu Stream is perennial and Punanani Channel and Kaonohi Stream are intermittent. All of the streams have been channelized in the lower reaches. Burial of the water main will be required beneath Punanani Channel and Kaonohi Stream, which are channelized concrete drainage ways. Waimalu Stream will be crossed overhead, along an existing bridge.

The surface of Moanalua Road Right-of-Way will be saw cut and excavated to approximately 6 to 8 feet below grade in order to install the water main. At Punanani Channel, the water main will be inverted to 7 to 8 feet below the channel bottom, which is 18 to 19 feet below existing ground level approximately -0.5 feet in elevation (Figure 2-5). In order to reach that depth, the water main will be inverted 30 feet away from the channel walls with a slope of approximately 42 percent for both sides. At Kaonohi Stream, the water main will be similarly inverted 7 to 8 feet below the channel bottom, which will be  $\pm 20$  feet below the ground at the west side of the channel wall and  $\pm 16$  feet at the east side of the channel wall approximately 27.3 feet in elevation (Figure 2-6). At 80 feet away from the west side of the channel wall, the water main will be inverted with a slope of  $\pm 20$  percent to cross under the stream. At 30 feet from the east side of the concrete wall, the water main will be inverted up to 7 to 8 feet below existing ground. This will provide an adequate depth under both stream channels for the water main.

During the installation of the water main, Punanani Channel and Kaonohi Stream will be temporarily realigned to ensure non-interruption of storm flow. The temporary diversion structures will be constructed of concrete road dividers. The use of the temporary diversions at Punanani Channel and Kaonohi Stream, will last approximately 2 to 4 weeks for each stream. The proposed crossing alignment is approximately 5 feet away from Moanalua Road at Punanani Channel and 15 feet away at Kaonohi Stream.

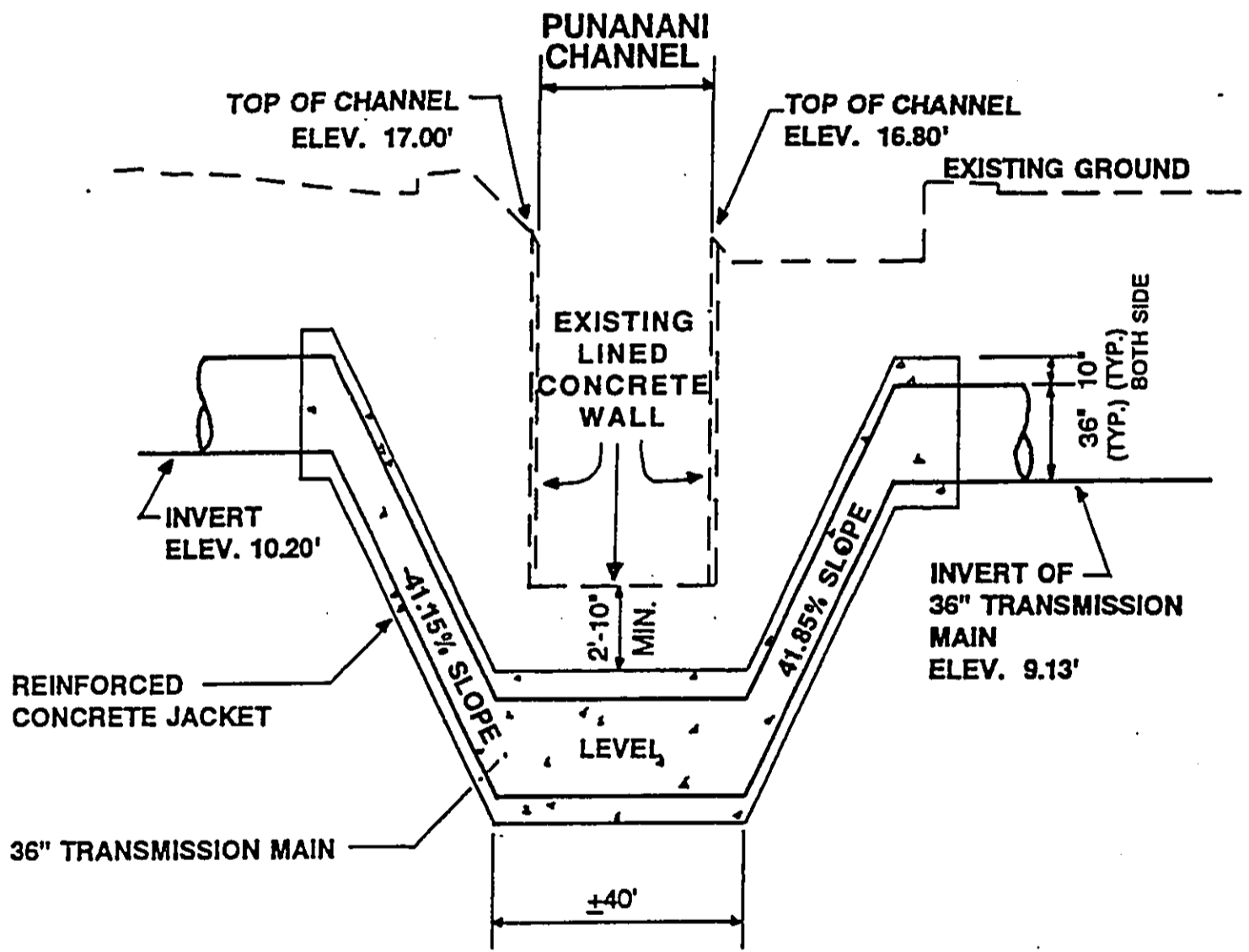


FIGURE 2-5  
TRENCH PROFILE AT  
PUNANANI CHANNEL

BWS MOANALUA ROAD  
36-Inch Transmission Main, Phase II

R. M. TOWILL CORPORATION  
January 1998

SCALE: HORIZ. 1"=30'  
VERT. 1"=6'

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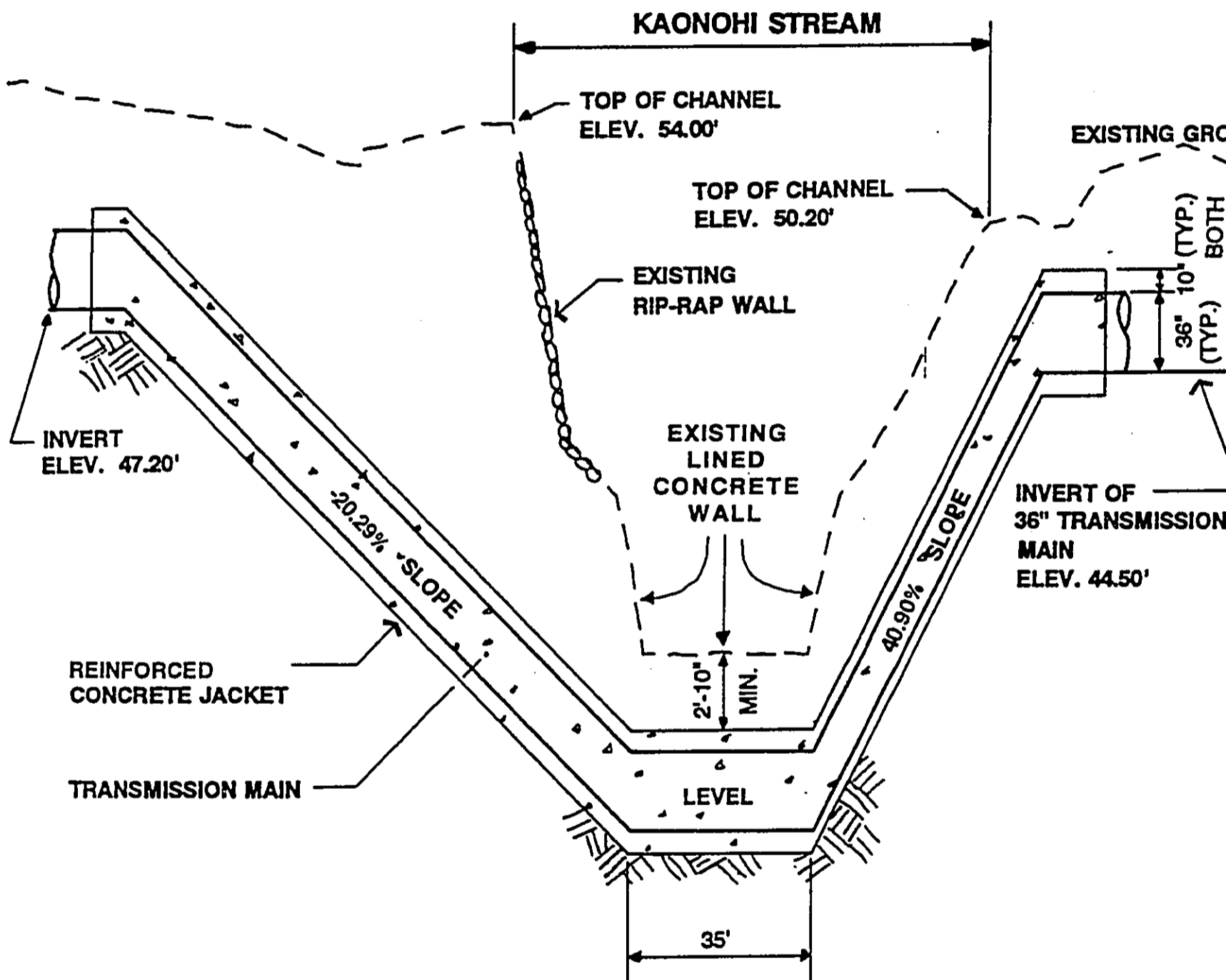


FIGURE 2-6  
TRENCH PROFILE AT  
KAONOHI STREAM

BWS MOANALUA ROAD,  
36-Inch Transmission Main, Phase II

R. M. TOWILL CORPORATION  
January 1998

SCALE: HORIZ. 1"=30'  
VERT. 1"=6'

Construction of the project will be accomplished in four phases: the first phase involves installation of approximately 1,050 linear feet of water main from Punanani Channel to Waimalu Stream; the second phase approximately 2,650 linear feet from Waimalu Stream to Kaonohi Street; the third phase approximately 1,300 linear feet from Kaonohi Street to Kaonohi Stream; and the last phase includes installing approximately 950 linear feet of water main from Kaonohi Stream to Pali Momi Street (see Figure 2-3). The Stream crossing phase will be completed in the shortest possible time, and construction activities will be scheduled to take place during the dry period of the year. Overall construction is estimated at 720+ days, each phase will take  $\pm 180$  days.

The contractor will schedule work activity between the hours of 8:30 a.m. to 3:00 p.m., Monday through Friday, excluding any State holidays. At least one through-lane will be open during all periods of construction. Trenches shall be covered during non-working hours with safe, non-skid bridging material to accommodate all types of vehicular traffic, and not more than the maximum permissible trenching length shall be exposed at any one time. In addition, the contractor shall provide ingress to and egress from driveways and public streets at all times. Should conditions warrant, the contractor may hire personnel to control the flow of traffic around the construction area.

The contractor shall perform all applicable construction work in accordance with the Board of Water Supply Water System Standards and the Standard Specifications for Public Works Construction " (September 1994) of the Department of Public Works (DPW), City and County of Honolulu, and the Revised Ordinances of Honolulu (ROH), 1978 as amended.

Additionally, construction and restoration of the existing roadway shall be performed in accordance with all applicable sections of the "Standard Specifications for Road and Bridge Construction" (1994). All work shall also conform with the "Administrative Rules of Hawaii Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways" and the "Manual of Uniform Traffic Control Devices for Street Maintenance Operation." Further, construction plans shall be submitted for review and approval by the City and County of Honolulu, Department of Transportation Services.

Construction work for the 36-inch main is tentatively scheduled for the fiscal year of 1998. The estimated cost of the project is approximately \$ 8,000,000. Funding will come from the BWS's Capital Improvements Program budget.

2.3 Project Summary

a. The following table contains a description of the subject water main project.

<u>ITEM</u>	<u>DATA</u>
Tax Map Keys	9-8-08: 11, 12, 13, 16, 17,18
State Land Use Designations	Urban
<u>ITEM</u>	<u>DATA</u>
Dev. Plan Land Use Designation	Commercial and Industrial
Dev. Plan Public Facilities Designation	W (water system) programmed for construction within 6 years
Zoning Designations	General Preservation, Residential, Apartment, and Community Business
Flood Insurance Rate Map Designation	Zone X, outside 500-year flood plain
Length and Diameter of Water Line	6,000 feet, 36-inches
Land Owner	City and County of Honolulu

b. Permits required for implementation of the proposed action:

<u>TYPE</u>	<u>Agency</u>
Stream Channel Alteration Permit	State Dept. of Land and Natural Resources
Section 10 or Nationwide Permit	Dept. of Army with concurrence from State Dept. of Health
Section 401 Water Quality Certification	State Dept. of Health
Coastal Zone Management Consistency Review	State Office of State Planning
NPDES NOI for Dewatering and Hydrotesting	State Dept. of Health
Building Permit/Excavation Permit	City and County of Honolulu Building Dept.



## SECTION 3 AFFECTED ENVIRONMENT

### 3.1 Physical Environment

#### 3.1.1 Geology

The Hawaiian Islands are emerged volcanoes on a submarine ridge extending from northwest to southeast for 1,600 miles in the Central Pacific Ocean. Oahu is the third largest island in the archipelago. It consists of two volcanic mountain ranges (Waianae and Koolau Ranges) joined by a broad plateau. The project area was formed from the Koolau Range, on the eastern part of the island. East of Pearl Harbor lies a cluster of overlapping tuff cones including Aliamanu, Makalapa, and Salt Lake craters. Near Aiea and within the project area, tuff deposits have well defined, thin, nearly horizontal bedding, and are probably part of a delta that evolved into Pearl Harbor. The coastal plains adjacent to the ocean formed from coral reefs and alluvium sediments. The project terrain varies from flat to rolling.

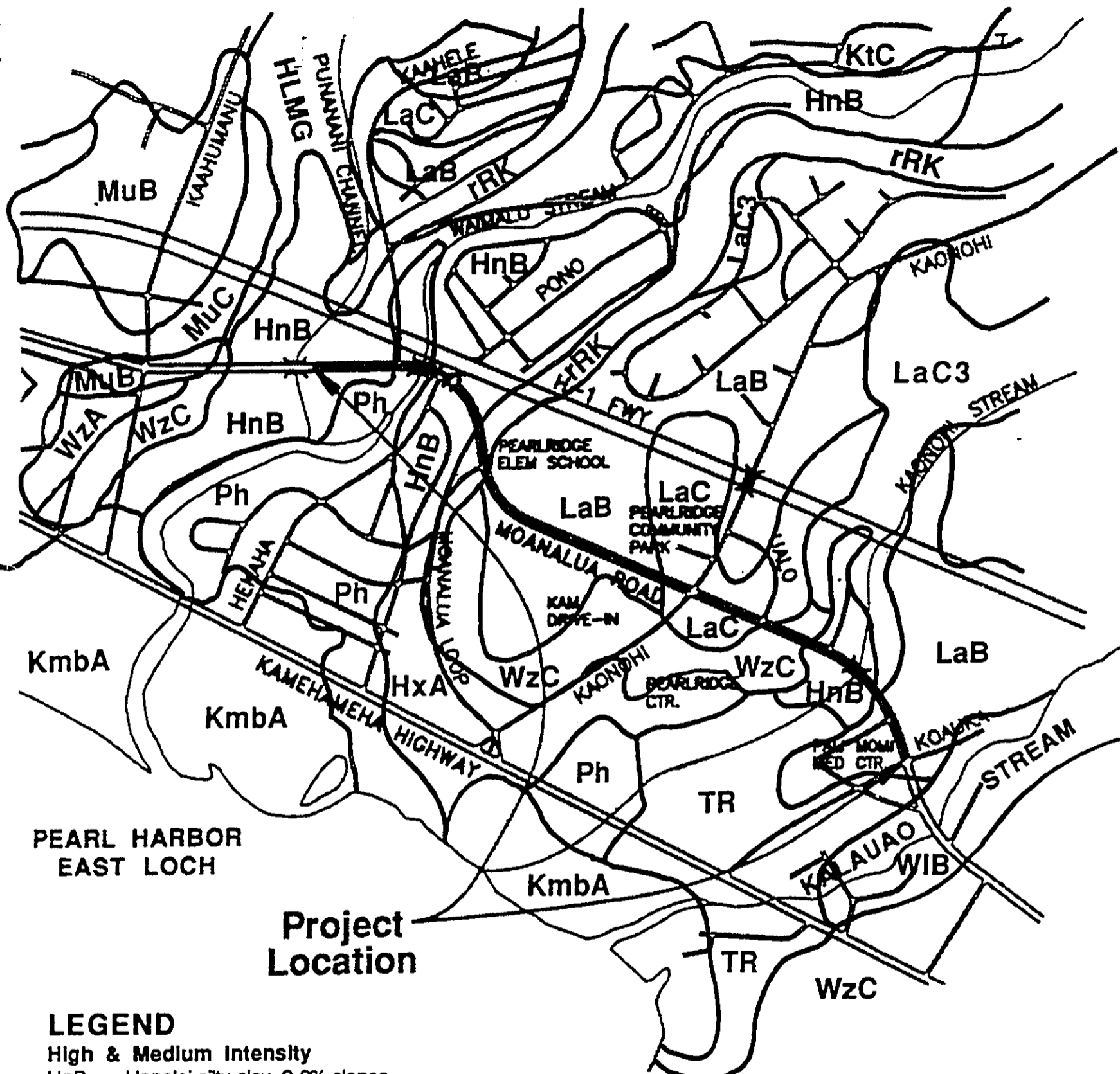
An important source of water supply is an exceptional lens of basal ground water in the Honolulu-Pearl Harbor area. Smaller accumulations of basal ground water occur elsewhere on the island.

#### 3.1.2 Soils

There are primarily five soil types present within the study area, as identified by the U.S. Department of Agriculture Soil Conservation Service (Figure 3-1). Soil types in the area include:

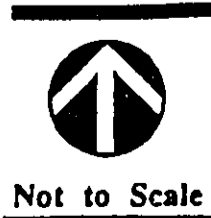
##### **Hanalei silty clay, 2 to 6 percent slopes (HnB)**

On this type of soil, runoff is slow and the erosion hazard is slight. This soil is developed in alluvium derived from basic igneous rock. It is used for sugarcane, taro, and pasture.



**LEGEND**

- High & Medium Intensity**
- HnB Hanalei silty clay, 2-6% slopes
- HxA Honouliuli clay, 0-2% slopes
- KmbA Keaau clay, saline, 0-2% slopes
- KtC Kokokahi clay, 6-12% slopes
- LaB Lahaina silty clay, 3-7% slopes
- LaC Lahaina silty clay, 7-15% slopes
- LaC3 Lahaina silty clay, 7-15% slopes, severely eroded
- MuC Mokokai silty clay lam, 7-15% slopes
- Ph Pearl Harbor clay
- WB Waialua stony silty clay, 3-8% slopes
- WzA Waipahu silty clay, 0-2% slopes
- WzC Waipahu silty clay, 6-12% slopes
- Low Intensity**
- HLMG Helemano silty clay, 30-90% slopes
- TR Tropaquepts
- Reconnaissance**
- rRK Rockland



**FIGURE 3-1  
SOILS MAP**

BWS MOANALUA ROAD  
36-Inch Transmission Main, Phase II  
**R. M. TOWILL CORPORATION**  
January 1998

**Lahaina silty clay, 3 to 7 percent slopes (LaB)**

Permeability is moderate. Runoff is slow, and the erosion hazard is moderate to severe. The soil is neutral to mildly alkaline. Most of the surface layer and parts of the subsoil have been removed by erosion. A few areas are eroded to soft, weathered rock.

**Lahaina silty clay, 7 to 15 percent slopes (LaC)**

On this soil, runoff is medium and the erosion hazard is moderate. Permeability is moderate. This soil is used for sugarcane, pineapple, pasture, and wildlife habitat.

**Lahaina silty clay, 7 to 15 percent slopes, severely eroded (LaC3)**

This soil has a profile like that of Lahaina silty clay, 3 to 7 percent slopes, except that most of the surface layer and, in places, part of the subsoil have been removed by erosion. Runoff is medium, and the erosion hazard is severe. This soil is used for sugarcane and pineapple.

**Pearl Harbor Clay (Ph)**

Pearl Harbor Clay is on low coastal areas near the ocean. It is level or nearly level. This soil developed on alluvium overlying organic material. This soil type has slow runoff and the erosion hazard is slight. Permeability is very slow. It is neutral in the surface layer and mildly to moderately alkaline in the subsoil.

**Waipahu silty clay, 6 to 12 percent slopes (wZc)**

On this soil, runoff is slow and the erosion hazard is slight. This soil is used for sugarcane and homesites.

**Rock Land (Rrk)**

Rock Land is made up of areas where exposed rock covers 25 to 90 percent of the surface. The rock outcrops are mainly basalt and andesite. This land type is described as being steep to precipitous, and well drained to excessively drained.

### 3.1.3 Climate and Air Quality

The climate at the project area is typical of the mild subtropical climate of Oahu. The average maximum temperature is 80 degrees Fahrenheit and the average minimum temperature is 68 degrees Fahrenheit.

Tradewinds blow across the project site from the northeast 75 percent of the time. Due to the trade winds the ambient air quality is usually good in the project area. According to the "Air Quality Assessment for Moanalua Road" levels of all monitored pollutants have been within Federal limits, but levels of particulates, carbon monoxide, and ozone have sometimes exceeded allowable State standards.

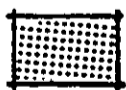
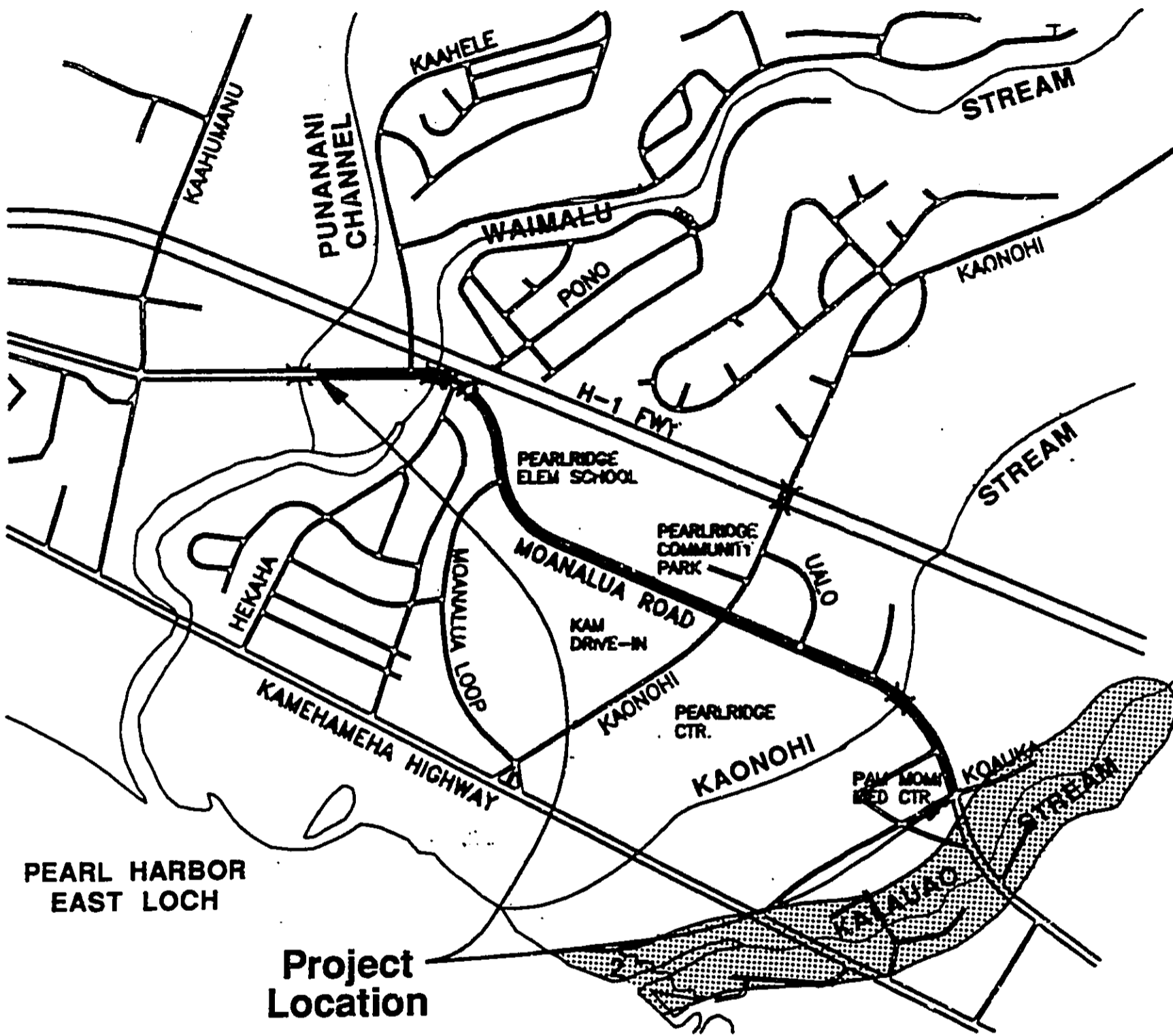
### 3.1.4 Coastal Hazards

No special consideration relative to tsunami inundation or flooding is necessary because the project area is not vulnerable to such hazards. According to the Civil Defense "Tsunami Inundation Map," the project site is not located within a vulnerable inundation area. Also, according to the Federal Emergency Management Area (FEMA)-Flood Insurance Rate Map (FIRM) the area is designated Zone X, and is determined to be outside the 500-year flood plain (Figure 3-2).

### 3.1.5 Hydrology

#### **Surface Water**

Three streams are located along the proposed alignment: Punanani Channel, Waimalu Stream, and Kaonohi Stream (Figure 3-3). According to the Hawaii Stream Assessment, December 1990, State of Hawaii, Commission on Resource Management and the National Park Service, Waimalu Stream is perennial and Punanani Channel and Kaonohi Stream are intermittent. All of the streams have been channelized in the lower reaches. The streams empty into Pearl Harbor. Water quality in Pearl Harbor is poor. The abundant rainfall at the heads of the streams that drain into Pearl Harbor results in runoff which transports pollutants from upland forest, commercial, industrial, military, and residential lands.



SPECIAL FLOOD HAZARD AREAS  
INUNDATED BY 100-YEAR FLOOD

ZONE AE Base flood elevations determined.



Not to Scale

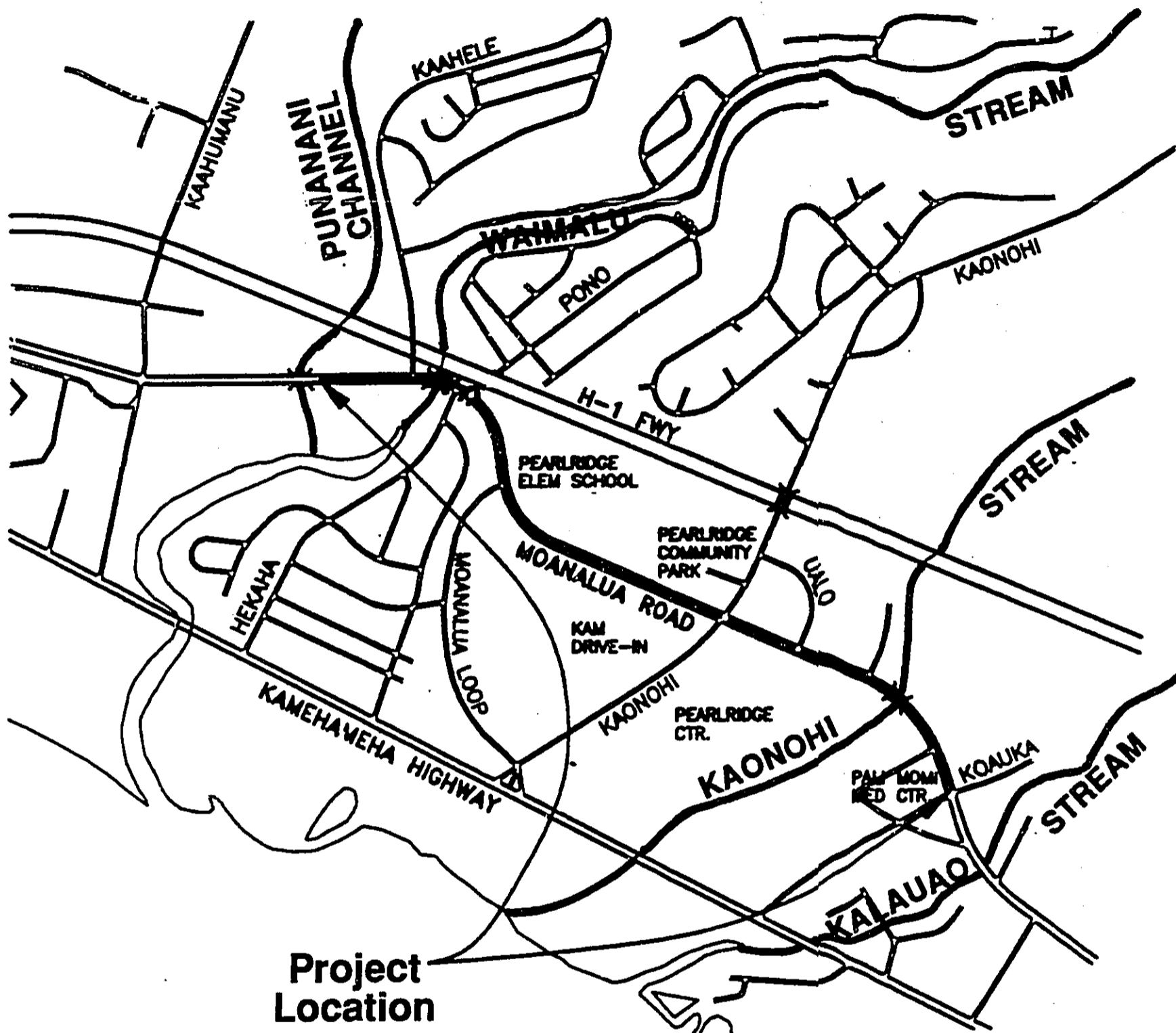
FIGURE 3-2  
FEMA-FLOOD INSURANCE MAP

BWS MOANALUA ROAD  
36-Inch Transmission Main, Phase II

R. M. TOWILL CORPORATION

January 1998

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Project Location

PEARL HARBOR  
EAST LOCH



FIGURE 3-3  
HYDROLOGY

BWS MOANALUA ROAD  
36-Inch Transmission Main, Phase II

R. M. TOWILL CORPORATION

January 1998

The U.S. Coast Guard classifies the Waimalu Stream as a navigable water. The navigable portion of the stream is 0.1 mile upstream from the mouth. This portion lies within the project area. Legislation generally defines waters that are subject to tidal influence as navigable. Navigability is further defined by usage such that non-tidal streams carrying commercial traffic would be deemed navigable.

### **Ground Water**

The proposed alignment is underlain by caprock. Water within the caprock is brackish and not suitable for potable water development. Beneath the caprock is an extensive basal aquifer that is heavily developed, containing large supplies of fresh water. The groundwater is under artesian pressure where overlain by caprock; water levels range from ten to twenty feet above sea level. Ground water levels along portions of the alignment are not anticipated to be encountered due to the relatively high ground elevations in relation to mean sea level.

#### **3.1.6 Noise Quality**

The major source of noise in the project area is traffic along Moanalua Road. Major east-west regional traffic through the area is served by the parallel H-1 Freeway and Kamehameha Highway. Moanalua Road serves as a collector and distributor to these major highways. Traffic volumes and subsequent traffic noises are highest on week days generated by commuting traffic from the residential areas of Pearl City and Aiea combined with traffic generated by the businesses, schools, churches, and other activities along Moanalua Road.

### **3.2 Biological Environment**

#### **3.2.1 Flora**

The proposed alignment is within an urbanized residential community. Therefore, flora species located within the area are common in urbanized regions and consists of maintained landscape plantings. No officially listed, proposed, or candidate threatened or endangered plant species designated by the Federal and/or State governments are known to occur along the proposed alignment.

### 3.2.2 Fauna

The project site is within an urbanized residential community. The area has been used for urban residential purposes for many decades and no threatened or endangered flora or fauna are known to inhabit the site. Several introduced fauna including the Common Indian Mynah (Acridotheres tristis), House Sparrow (Passer domesticus), Spotted or Lace-necked Dove (Streptopelia chinensis), Zebra Dove (Geopelia striata), and Cardinal (Cardinalis) have been observed at the project location. Mammals such as cats and dogs owned by residents inhabit the area.

### 3.2.3 Stream Fauna

There are three stream crossings along the proposed alignment: Punanani Channel, Waimalu Stream, and Kaonohi Stream. The fauna of Waimalu Stream will not be affected, because the water main will bridge the stream. Burial of the water main will be required beneath Punanani Channel and Kaonohi Stream.

A diverse population of native fauna is not expected to inhabit Punanani Channel or Kaonohi Stream, because they are modified and intermittent. According to Hawaii Stream Assessment, "the populations and distributions of amphidromous native stream animals have been reduced in modified streams, especially those in which the physical habitat have been significantly altered". Gobiid gobies are one of the few native species which can exist in modified streams. "They are uniquely adapted and have modified (fused) ventral fins that function as suction disks. This adaptation allows them to "climb" waterfalls and colonize stream sections inaccessible to other fishes" (Hawaii Stream Assessment, 1990). Common inhabitants of modified streams include aquatic beetles, snails, guppies (family Poeciliidae), crayfish (Procambarus clarkii), tilapia (Tilapia mossambica), tadpoles, and bullfrogs (Rana catesbiana). Because of the dry concrete channelized environment at Punanani Channel and Kaonohi Stream, none of these species have been observed.



### 3.3 Socio-Economic Environment

#### 3.3.1 Population

The study area is located within the Primary Urban Center district and the community of Aiea on the Island of Oahu. According to the 1990 census, the residential populations within the Ewa district numbered 230,189 and in Aiea numbered 8,906. In comparison the population of Honolulu County as of 1994 was 836,000 and is projected to increase to 999,500 by 2010 (The State of Hawaii Data Book, 1994).

#### 3.3.2 Surrounding Land Uses

The proposed project is within an urbanized residential area. Residential areas consist of single-family homes, condominiums, and town houses. Along the alignment these residential areas are located around the Waimalu Elementary School and Park, the Pearlridge Elementary School and Park, the Pearlridge Center, Kam Drive-In, and Pali Momi Medical Center.

#### 3.3.3 Scenic and Visual Resources

Views along the proposed alignment are of residential housing, interspersed with limited views of the ocean and surrounding hills. In the project area, Pearl Ridge Community Park and Waimalu Park provide the only open space views.

#### 3.3.4 Cultural Resources

The Historic Preservation Division of the Department of Land and Natural Resources states that there are no known features of historic or archaeological significance in the vicinity of the proposed project. The proposed alignment is in the Moanalua Road right-of-way, which has been heavily disturbed during its construction. If any potential remains existed it is most likely that they would already have been discovered and recovered.

#### 3.3.5 Recreational Resources

Pearl Ridge Community Park and Waimalu Park are located along the proposed alignment. Several other parks are located in the vicinity of the proposed alignment, including the Neal

Blaisdell Park, Newtown Park, and Pearl Harbor Park. Newtown Golf Driving Range is also located northwest of the project.

#### 3.4 Traffic and Transportation Systems

Major east-west regional traffic through the area is served by the parallel H-1 Freeway and Kamehameha Highway. Moanalua Road serves as a collector and distributor to these major highways. Moanalua Road begins at Waimano Home Road in Pearl City, crosses under the H-1 Freeway at the Waiiau Interchange, and continues to the Aiea Interchange. Within the Aiea area, Moanalua Road is typically a four-lane, limited access roadway with separate left turns at intersections.

Bus routes currently serving the Aiea area include: Route 11, Aiea Height-Honolulu; Route 53, Pacific Palisades-Honolulu; Route 54, Pearl City-Honolulu and Route 74, Aiea-Halawa Heights.

#### 3.5 Utilities

The existing utility systems along the project include electric power facilities, CATV underground cables, telephone facilities, gas pipelines, and sewer. Location of all utilities shown on the construction documents are taken from existing records from varying degrees of accuracy. Prior to start of excavation, all agencies and utilities will be contacted to locate their respective lines affected.

## SECTION 4

### POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### 4.1 Physical Environment

##### 4.1.1 Geology

There will be no significant impact to the geology of the project area. The installation of the 36-inch transmission main will involve excavation to a depth of approximately 6 to 8 feet to the bottom of the trench over most of the project where weathered Koolau Basalt will be encountered. Where the water line is built to bridge the Waimalu Stream channel, the depths on either side of the banks of the stream will range from 8 to 10 feet below ground level. Upon completion of the installation, the ground surface will be returned to preconstruction conditions.

##### 4.1.2 Soils

No significant negative impact to soils in the project area is anticipated. Clearing and grubbing activities during construction will temporarily disturb the soil retention values of existing vegetation and expose the soil to erosional forces. The impact of construction activities on soils will be mitigated by several measures, as outlined in the following regulations:

- a. City and County of Honolulu's Grading, Grubbing and Stockpiling Ordinance No. 3968, (1972);
- b. Department of Public Work's Soil Erosion Standards and Guidelines, (1975);
- c. USDA Soil Conservation Services Erosion and Sediment Control Guide for Hawaii, (1968).

Prior to issuance of a grading permit, the project proponent will submit an erosion control plan for approval by the City and County of Honolulu, Department of Public Works, which will include applicable measures as specified in the regulations cited above. Such erosion control

measures may include, but are not limited to, the use of cut-off ditches, temporary ground cover, and detention ponds.

#### 4.1.3 Air Quality

Temporary and localized negative impacts on air quality will occur in areas adjacent to the construction site. Equipment that will be used during the construction phase will emit exhaust and airborne particulates, and construction work will also produce dust. Due to the close proximity to existing residences and a major thoroughfare along Moanalua Road, the appropriate mitigative measures will be employed by the contractor in order to reduce the potential for fugitive dust during construction and installation of the 36-inch main. These mitigative measures will include the following:

1. Construction will be further phased to minimize the amount of excavation and exposed time of excavated/trench areas.
2. Clearing and excavation/trenching will be held to the minimum necessary for site access and equipment.
3. Stockpiles will be covered with appropriate materials. Construction debris and excavated materials that will not be used for construction will be disposed of at permitted facilities.
4. Water truck will visit the sites occasionally to ensure wetting of the construction sites. If necessary, the contractor will provide additional watering of the sites.
5. Exposed trench areas will be covered with steel plates during weekends and after hours.

6. The contractor will ensure proper vehicle maintenance. Construction truck and equipment used at the site will be kept in clean condition at all times.
7. Construction work will be scheduled to avoid peak traffic periods on Moanalua Road.

Also, normal tradewind patterns should disperse pollutant emissions generated by activities at the project site. Fugitive dust emissions will be reduced by following State DOH Rules and Regulations (Chapter 43, Section 10) which specifies the control measures. Construction activities will comply with provisions of Hawaii Administrative Rules (HAR), Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust.

#### 4.1.4 Hydrology

##### Surface Water

There are three stream crossings along the proposed alignment: Punanani Channel, Waimalu Stream and Kaonohi Stream. The project will not affect the stream flow or stream biota of Waimalu Stream, because the water main will bridge the stream. Burial of the water main will be required beneath Punanani Channel and Kaonohi Stream.

During construction and installation of the 36-inch main, particularly in the vicinity of Punanani Channel and Kaonohi Stream, construction dewatering may be necessary. Best management practices (BMPs) will be employed to mitigate potential for impacts. BMPs will include the following:

1. Clearing and excavation/trenching will be held to the minimum necessary for site access and equipment operation.
2. Construction will be phased to minimize the exposure time of excavated/trenched areas. Areas of one phase will be stabilized to

prevent co-mingling of runoff before another phase can be initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed surface from rainfall impacts and runoff.

3. The contractor will ensure that storm water control measures will be in place and functional before trenching operations begin. The control measures shall be maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but shall be replaced at the end of the work day.

Due to construction design, a portion of the stream will continue to permit storm flows while the portion that is being worked on will be free from water intrusion.

Structural practices may also include the following:

1. Storm water flowing toward the construction materials area shall be diverted as much as practicable using the appropriate controls such as berms, as determined by the project contractor depending on the site conditions.
2. Storm water flowing toward open trench sections shall similarly be diverted using the fore-mentioned controls such as berms. During construction dewatering, water quality analysis of the discharge water will be undertaken in accordance with the Water Quality Monitoring Plan. The results will be forwarded to the Department of Health (DOH), Clean Water Branch, upon completion.

Dewatering effluent will not be directly discharged into any storm drain or receiving waters without prior treatment to remove pollutants.

The project will primarily involve discharge of hydrotesting effluent to Kaonohi Stream (Class 2 waters) and Punanani Stream (Class 2 waters). The main will be disinfected with chlorine at a concentration of 50 milligrams per liter (mg/L) after being hydrostatically tested and checked for leaks. This chlorinated water will be retained in the pipeline for a sufficient period to allow disinfection. Disposal of the effluent will be in accordance with applicable Federal, State, and City requirements. All hydrotesting, preflushing, and chlorination will be undertaken using potable source water. Prior to construction, a plan indicating the locations and amounts of chlorinated water to be discharged will be submitted by the contractor for review and approval. Hydrotesting and disinfection of the water main will be coordinated following installation of each phase as determined appropriate by construction contractor. The State DOH, NPDES Permit, NOI for Discharges of Hydrotesting waters and City Department of Public Works' Permit to discharge effluent into the municipal storm sewer system, are required for this project. The best management practices prepared for the NOI for Discharges of Hydrotesting waters describes mitigation measures and effluent discharge control plan as well as hydrotesting effluent monitoring procedures and treatment system.

#### Ground Water

The proposed project is not expected to have any significant adverse impact on the existing ground water sources. If dewatering is necessary, it is anticipated that pumping of ground water from dewatering areas into the existing roadway storm drain system will contribute water of higher mineral and nitrate content than the waters of Punanani Channel and Kaonohi Stream. These substances normally enter the streams during rainy periods. Brackish water and nutrients derived from any dewatering will not significantly impact the stream environments because quantities will be low relative to natural sources. The best management practices prepared for the State DOH Notice of Intent (NOI) addresses methods designed to keep the turbidity low in the dewatering discharge, thereby reducing particulate contributions.

#### 4.1.5 Noise Quality

A temporary increase in noise levels due to construction activities is likely to occur adjacent to areas being worked on. Any increase in noise due to construction will be eliminated as work is completed along the alignment. All activities associated with the construction phase of the project will comply with the provisions of the State DOH Administrative Rules, Chapter 11-43, "Community Noise Control for Oahu." Noise levels from construction activities are not expected to exceed the allowable levels of the regulations. Mitigation measures such as the use of mufflers and limiting construction to daylight hours will be employed.

#### 4.2 Biological Environment

##### 4.2.1 Flora

The proposed project is not expected to have a significant adverse effect on flora. None of the plant species noted within the project site are Federal or State of Hawaii listed, or are candidates for threatened or endangered status. However, to the extent possible, vegetation removal will be kept to a minimum. If necessary, the proposed alignment of the main will be adjusted to avoid the removal of or damage to trees along the pipeline route.

##### 4.2.2 Fauna

No impacts to fauna in the project area are expected since installation of the proposed water line will not change the physiography of the area. None of the aforementioned fauna are listed on, or are candidates for the Federal or State of Hawaii threatened or endangered species lists. Some introduced species may be displaced into surrounding areas during construction as a result of the increased activity and noise in the area, but should return to the site upon completion of the project.

##### 4.2.3 Stream Fauna

Construction is not expected to impact any native fauna. There is no diverse population of native fauna inhabiting the area where the main is buried in Punanani Channel and Kaonohi Stream. For the pipe crossings over Waimalu Stream, the existing stream biota do not face potential adverse



impacts, with the proposed transmission main bridging the stream rather than being submerged in the stream bed. During construction over the stream, however, minor disturbance of stream life may occur with the construction activity around it. Best management practices (BMPs) will be employed to mitigate potential for impacts. To minimize the potential for any disturbance to the stream biota, construction near the stream banks will be scheduled for completion in the shortest possible time. No waste materials from construction activity will be discarded in the stream beds or flood plains.

A dewatering system may be installed during construction along the alignment of the proposed project when it is necessary to draw down water. The system is based on use of construction trenches to serve as retention basins with built-in dewatering filter sumps. This is intended to provide: 1) return percolation of dewatering effluent through the trench; and 2) filtration of additional ground water which will be discharged via flexible dewatering hoses to appropriate locations. All work involving dewatering will be in accordance with applicable regulations of the County, State and Federal government.

Chlorinated water used for pipeline disinfection will be dechlorinated to water quality standards prior to discharge into the storm water drain system. Discharge of this water will be undertaken so that it will not adversely impact aquatic resources. The water main will be tested for integrity against leakage followed by preflushing of hydrostatic test water. All hydrostatic testing, preflushing, and chlorination will be undertaken using potable source water. Chlorination will be introduced to the section of water main to be disinfected. Dechlorination procedures will include the following: section of water main being disinfected will be dechlorinated using sodium thiosulfate. The solution will be mixed to an average concentration of 60 lbs/100,000 gallons. Upon satisfactory flushing of all trace levels of chlorine, use of sodium thiosulfate will be terminated. Following dechlorination, testing for bacteria will be conducted by BWS.

### 4.3 Socio-Economic Environment

#### 4.3.1 Population

According to the Oahu Water Plan, March 7, 1995, by BWS, City and County of Honolulu, State of Hawaii, demand for water in Honolulu is projected to increase from 92 million gallons per day (mgd) in 1995 to 96 mgd in the year 2010 -- an estimated increase of 4 percent. The proposed water line is expected to provide the extra capacity and reliability to accommodate the demand centers of Honolulu, thereby insuring adequate long-term service of potable water to the area.

No adverse impacts on the population of Aiea are anticipated as a result of the project. The pipeline construction will be contracted by the BWS to a contractor who will be responsible for all aspects of the project, including supplying a construction crew. Crew members will most likely come from all areas of Oahu. However, the crew size is not significant when compared to the population of Aiea.

#### 4.3.2 Surrounding Land Uses

No adverse impacts are expected to surrounding land uses. Disruption to individual businesses and residences will be temporary and will last only as long as it takes to install each phase of the transmission main. The contractor shall provide public access and exit from driveways and public streets at all times.

#### 4.3.3. Scenic and Visual Resources

Based on the location of the water line, the project will have no significant adverse impacts on existing views throughout its course. Visual impact of the excavated roadside corridor for the proposed water line is anticipated during the short-term construction period. However, no addition of permanent structures such as fire hydrants, pumping stations, or other appurtenances are included as part of this project, and therefore, long-term impacts to scenic and visual resources are not expected. The line will not obscure or conflict with existing aesthetic values, and view planes from and of the Moanalua roadway.

#### 4.3.4 Cultural Resources

No short or long term impacts are expected from the development of the proposed project. The proposed 36-inch water line alignment is located on land that has been previously disturbed for urban uses. Should any unidentified cultural remains be uncovered during excavation operations, work in the immediate area will cease and the appropriate government agencies will be contacted for further instructions.

#### 4.3.5 Public Health, Safety, and Convenience

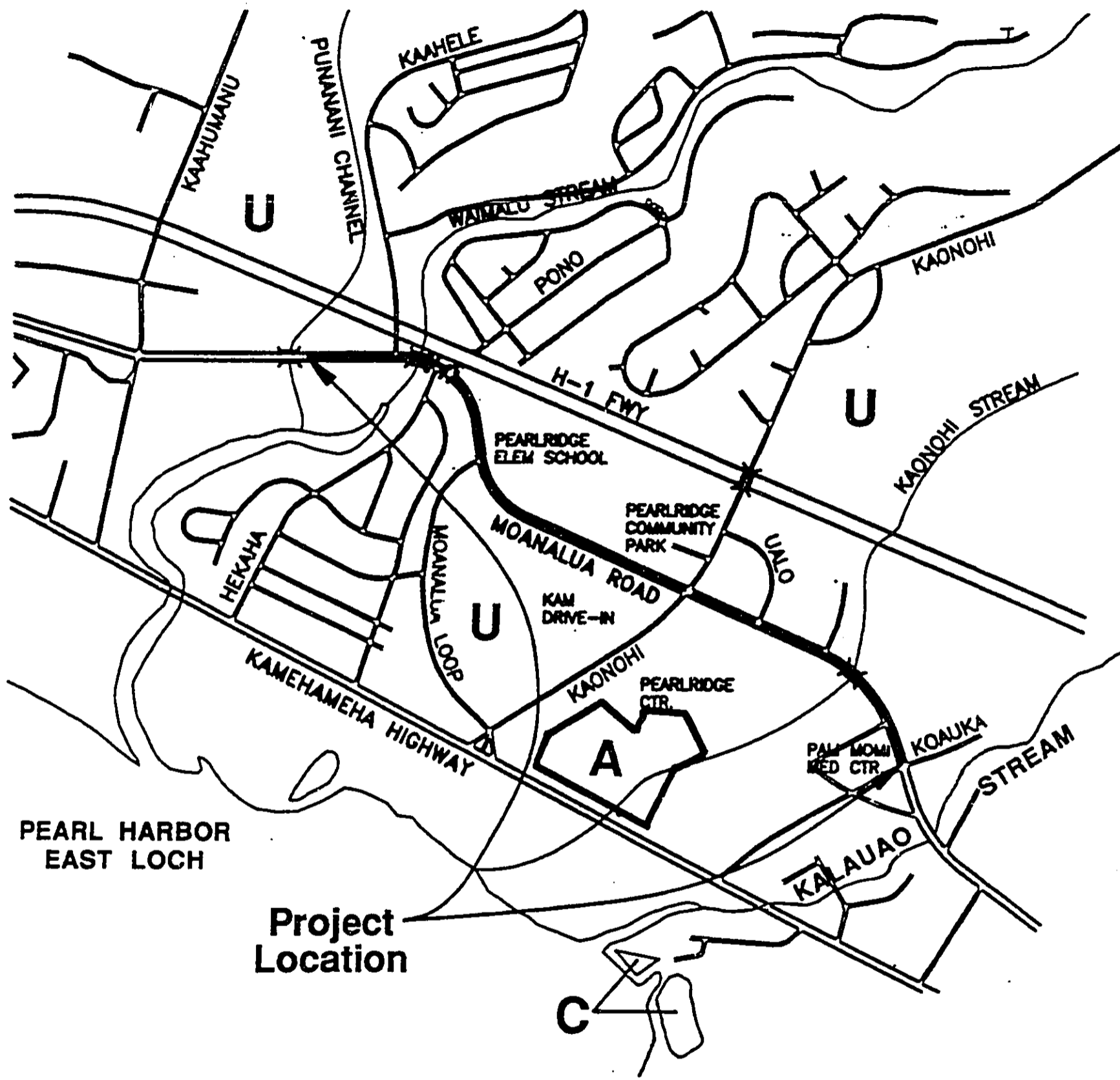
Necessary measures to assure public health, safety, and convenience will be provided throughout all phases of construction. The contractor shall provide, install, and maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities. Such safety precautions shall conform with the "Rules and Regulations Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways," as adopted by the Highway Safety Coordinator and the U.S. Federal Highway Administration.

#### 4.4 Land Use Plans, Policies, and Controls

The project area is designated as "Urban" within State of Hawaii Land Use District designations (Figure 4-1). Public facilities are a permitted use on Urban designated lands, and as such, the project is consistent with State of Hawaii land use plans and policies.

The project is also consistent with the City and County Development Plan Public Facilities Map (DPPFM) which indicates water system improvements as "determined for construction within 6 years." Additionally, the designation for the project as dictated by the Development Plan Land Use (DPLU) Map is Commercial and Industrial. Under the City and County Zoning map, the alignment is zoned General Preservation, Residential, Apartment, and Community Business (Figure 4-2). All of these zoning designations permit utility installation, such as water lines. Hence, the water main project is consistent with City and County of Honolulu land use plans and policies.

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**LEGEND**  
 U Urban  
 C Conservation  
 A Agriculture

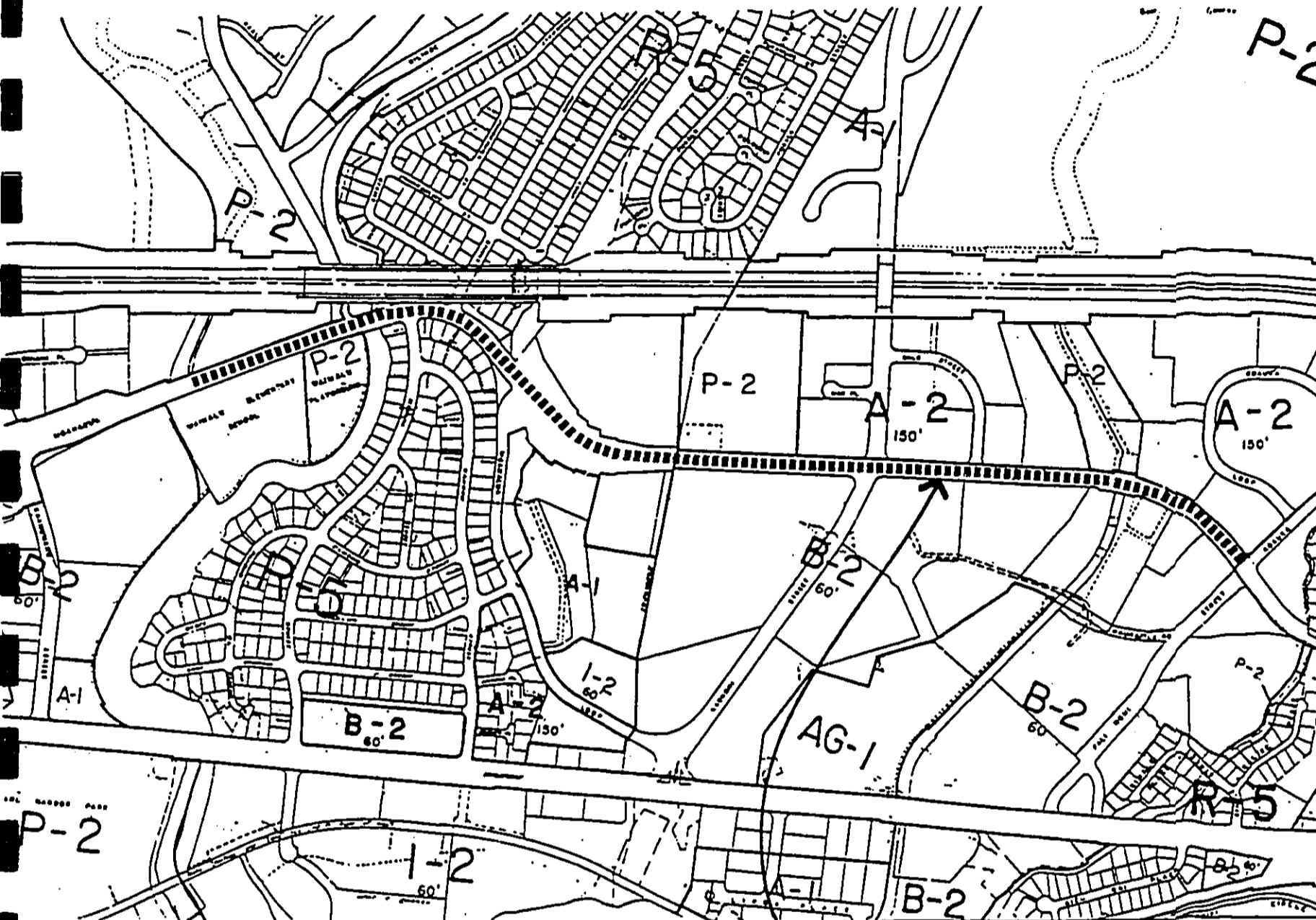


**FIGURE 4-1  
 STATE LAND USE**

**BWS MOANALUA ROAD  
 36-Inch Transmission Main, Phase II**

**R. M. TOWILL CORPORATION  
 January 1998**

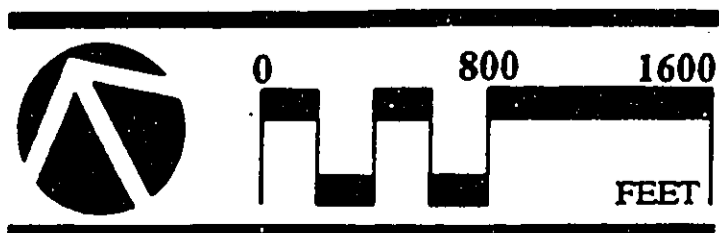
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**Project  
Location**

**LEGEND**

- P-2** General Preservation
- R-5** Residential
- A-1** Apartment
- A-2** Apartment
- B-2** Community Business
- I-2** General Industrial
- AG-1** Restricted Agriculture



**FIGURE 4-2  
COUNTY ZONING**

**BWS MOANALUA ROAD  
36-Inch Transmission Main, Phase II**

**R. M. TOWILL CORPORATION  
January 1998**

#### 4.5 Traffic

Some traffic congestion is expected once construction work begins. To minimize traffic impacts, the contractor will schedule work activity between the hours of 8:30 a.m. and to 3:00 p.m., Monday through Friday, excluding any State holidays. This construction schedule will help to minimize conflicts with morning and afternoon peak traffic periods. During construction, at least one through-lane will be open to traffic. Should conditions warrant, the contractor may hire personnel to control the flow of traffic around the construction area. During non-working hours, all trenches will be covered with a safe non-skid bridging material and all lanes will be open to traffic. The contractor shall provide ingress to and egress from driveways and public streets at all times.

The construction activity will be in conformance with the "Hawaii Administrative Rules governing the Use of Traffic Control Devices at Work Sites on or adjacent to Public Streets and Highways" adopted by the Director of Transportation, and the current U.S. Federal Highway Administration's "Manual on Uniform Traffic Controls for Streets and Highways, Part VI".

#### 4.6 Utilities

The existing utilities crossing the water main will remain in service and in place. The proposed alignment are designed to have minimum of five (5)-foot clearance with the existing electric poles. Excavation permits will be obtained from respective utilities by the contractor prior to starting construction. Any relocation of the existing utilities, if necessary, will be conducted with the approval of respective agencies and utilities.

## SECTION 5

### POSSIBLE ALTERNATIVES

#### 5.1 No Action

The no action alternative is not considered a feasible option to the proposed project. The water demand for Honolulu is expected to steadily increase and existing water mains are nearing their capacity. The no action alternative would result in the Board of Water Supply (BWS) being unable to meet future water demands for Honolulu. BWS would also lack an alternative route to provide potable water in the event of an existing water main failure.

#### 5.2 Delayed Action

Delay of the project will not materially alter the environmental impacts of the project and will increase project costs. In addition, delaying the project would not rule out its necessity in the near future.

#### 5.3 Alternative Alignments

No consideration was given to install the pipeline outside of the Moanalua right-of-way as it would require the taking or condemnation of portions of privately-owned lands, and remove land from the tax base. Another alternative alignment is to install the main in the center of Moanalua Road. However, this would affect all traffic lanes and may also require a detour route.

#### 5.4 Alternative Main Sizes

The proposed main size is based on the estimated optimum yield from existing water sources, and thus, there will be no advantage in installing a larger or smaller sized pipe. Installing a larger pipe would lower the head loss due to friction and result in lower operational costs. However, the higher construction costs would outweigh any operational cost savings. Although overall construction costs may be lower, installing a smaller pipe may result in a higher than normal line pressure, leading to frequent main breaks and may require an additional pipeline if the yield from the proposed sources are much greater than the designed capacity of the pipe.

### 5.5 Alternative Stream Crossings

There are three stream crossings along the proposed alignment: Punanani Channel, Waimalu Stream, and Kaonohi Stream. Two alternatives were reviewed for each site: bridging the channel and installing the 36-inch pipe beneath the stream channel. Burial of the water main will be required beneath Punanani Channel and Kaonohi Stream, because the existing bridges do not have enough reserve load support capacity to support the proposed water main. Waimalu Stream will be crossed overhead, along an existing bridge.

Environmental constraints differ between the under-stream crossing and crossing above the water scenarios. For example, if Best Management Practices are not implemented in the understream crossing scenario, sediments carried into the stream from trenching or earth fill activity could be a probable threat to stream biota. The above-stream alternative will have a visual impact along the bridge. This scenario would expose the 36-inch main to damage by corrosion and vandalism, which would result in disruption of service and contamination of the water supply.

A Department of the Army Section 404 permit will be required for utility installation, backfill and temporary coffer dam. A State Department of Health Section 401 Water Quality Certification and State Coastal Zone Management (CZM) consistency review will also be required. State Department of Health National Pollutant Discharge Elimination System (NPDES) Notices of Intent (NOI) for hydrotesting and construction dewatering activity will also be required.

Another permit which will be required for the implementation of this project is the Stream Channel Alteration Permit (SCAP) regulated by the State Department of Land and Natural Resources. The objective of the SCAP is to disclose the impacts the project would have on the stream biota and natural environment of the affected stream.

### 5.6 Alternative Sources

The BWS has considered a number of alternatives to potable groundwater sources, such as direct use of streamflow, desalination, blending and development of surface and brackish water sources,



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and the recycling of treated wastewater. However, until these alternatives become acceptable from a technical, health, environmental and/or cost perspective, BWS will continue its emphasis on the development of groundwater sources.

SECTION 6  
DETERMINATION

This Environmental Assessment, prepared in accordance with Chapter 343, Hawaii Revised Statutes as amended, has concluded that the potential for impacts associated with the proposed action will be minimal.

The potential effects of the proposed project are evaluated based on the significance criteria in section 11-200-12 (Hawaii Administrative Rules, revised in 1996). The following is a summary of the potential effects of the action.

- (1) Development of the project will involve the irrevocable loss of certain environmental and fiscal resources. However, the development of a new transmission main will enable BWS to meet the future water demands of Honolulu and provide an alternative route to ensure availability of potable water in the event of an existing water main failure. The water demand for Honolulu is expected to steadily increase and existing water mains are nearly their capacity.
- (2) The project will not curtail the range of beneficial uses of the environment. The majority of the water main will be buried in the Moanalua Road Right-of-Way. There will be moderate impacts to traffic conditions for the duration of the project; however, mitigative measures will be implemented to minimize traffic congestion. All other anticipated impacts will be temporary. Upon completion of the installation, the environmental quality of the area will return to preconstruction conditions.
- (3) The project would not conflict with the Chapter 344, HRS, State Environmental Policy. The project area is designated as "Urban" within State of Hawaii Land Use District designations. Public facilities are a permitted use on Urban designated

lands, and as such, the project is consistent with State of Hawaii land use plans and policies. The project is also consistent with the City and County Development Plan Public Facilities Map (DPPFM) which indicates water system improvements as "determined for construction within 6 years." Additionally, the designation for the project as dictated by the Development Plan Land Use (DPLU) Map is Commercial and Industrial. Under the City and County Zoning map, the alignment is zoned General Preservation, Residential, Apartment, and Community Business. All of these zoning designations permit utility installation, such as water lines.

- (4) The project is not anticipated to have significant adverse effects on the economic or social welfare of the community or state. Disruption to individual businesses and residences will be temporary and will last only as long as it takes to install each phase of the transmission main. The contractor shall provide public access and exit from driveways and public streets at all times.
- (5) The proposed project is not anticipated to have substantial effects on public health. Necessary measures to assure public health, safety, and convenience will be provided throughout all phases of construction. The contractor shall provide, install, and maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities.
- (6) The installation of the water main will not involve substantial secondary impacts. No adverse impacts on the population of Aiea are anticipated as a result of the project. There will be moderate impacts to traffic conditions for the duration of the project; however, mitigative measures will be implemented to minimize traffic congestion.
- (7) The project is not anticipated to result in substantial degradation of environmental quality. All anticipated impacts will be temporary. Upon completion of the

installation, the environmental quality of the area will return to preconstruction conditions.

- (8) The installation of 36-inch water main is not anticipated to result in cumulative effects. The purpose of the proposed transmission main project is to supplement the transmission capability of existing water mains to move water from Pearl Harbor to demand centers of Honolulu. The water demand for Honolulu is expected to steadily increase and existing water mains are nearing their capacity. The proposed water main would assist the Board of Water Supply (BWS) in meeting the future water demands of Honolulu, and provides an alternative route to ensure availability of potable water in the event of an existing water main failure. The proposed 36-inch transmission main will be connected to a 42-inch line from Waipahu and a 36-inch from Punanani. Distribution lines will then disperse the water to various demand centers of Honolulu. The project is not anticipated to have significant effects on local, regional and island-wide land use and/or population. Therefore, it would not involve a commitment to larger actions.
- (9) The proposed project is not anticipated to have substantial effects on a rare, threatened, or endangered species, or its habitat. Installation of the water main will be conducted within previously disturbed areas. During construction over the stream, however, minor disturbance of stream life may occur within the construction activity around it. Best Management Practices (BMP) will be employed to mitigate potential impacts.
- (10) No significant impacts on the area's long-term air or water quality or ambient noise levels are anticipated to result from the project. There will be some short-term impacts on the air quality and noise levels only within the close proximity of the

construction area. Mitigative measures will be implemented to minimize construction related impacts

- (11) The project is not anticipated to affect or suffer damage from potential natural hazards. The project area is not vulnerable to tsunami inundation or flooding. Mitigative measures will be provided to minimize the impacts of construction activities on soils. Upon completion of the installation, the ground surface will be returned to preconstruction conditions.
- (12) Based on the location of the water line, the project will have no significant adverse impacts on existing views throughout its course. Visual impact of the excavated roadside corridor for the proposed water line is anticipated during the short-term construction period. However, no long-term impacts to scenic and visual resources are expected. The line will not obscure or conflict with existing aesthetic values, and view planes from and of the Moanalua roadway.
- (13) The proposed project will not require substantial energy consumption.

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, the analysis contained in this Environmental Assessment has determined that the project will not have significant adverse impacts on the environment. The City and County of Honolulu Board of Water Supply is considering the issuance of a Finding of No Significant Impact (FONSI). Anticipated impacts will be temporary and will not adversely impact environmental quality of the area. Therefore, it is recommended that an Environmental Impact Statement (EIS) not be required.

SECTION 7

AGENCIES AND OTHERS CONSULTED DURING  
30-DAY COMMENT PERIOD OF THE DRAFT EA

FEDERAL AGENCIES

1. Department of the Interior  
Fish and Wildlife Service
2. Department of the Interior  
Geological Survey
3. Department of Agriculture  
Natural Resources Conservation Service
4. National Oceanic and Atmospheric Administration
5. U.S. Army Corps of Engineers

STATE AGENCIES

1. Department of Accounting and General Services
2. Department of Health
3. Department of Land and Natural Resources
  - State Historic Preservation Division
  - Commission on Water Resource Management
  - Aquatic Resources
4. University of Hawaii at Manoa  
Environmental Center
5. Department of Transportation

CITY AND COUNTY OF HONOLULU AGENCIES

1. Department of Land Utilization
2. Planning Department

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3. Department of Public Works
4. Department of Wastewater Management
5. Department of Transportation Services
6. Board of Water Supply

OTHER GROUPS/ORGANIZATIONS

1. Aiea Neighborhood Board No. 20
2. Councilmember Muffi Hanneman
3. Senator David Ige  
Seventeenth Senatorial District
4. Representative Mark Takai  
Thirty-fourth Representative District
5. Representative Tom Okamura  
Thirty-third Representative District
6. Hawaiian Electric Company (HECO)
7. GASCO (PRI)
8. GTE Hawaiian Tel

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Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, United States Department of Agriculture, Soil Conservation Service, In Cooperation with the University of Hawaii Agriculture Experiment Station, August 1972.

The State of Hawaii Data Book 1994: A Statistical Abstract, Department of Planning and Economic Development State of Hawaii, 1994.



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# CORRECTION

THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING

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## BIBLIOGRAPHY

"Air Quality Assessment for Moanalua Road," Barry D. Root, 1984.

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APPENDIX

COMMENTS AND RESPONSES RECEIVED DURING  
THE DRAFT EA 30-DAY COMMENT PERIOD



United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
677 Ala Moana Boulevard, Suite 415  
Honolulu, Hawaii 96813

November 13, 1997

Ms. Colette Sakoda  
R.M. Towill Corporation  
420 Waiakamilo Road, Suite 411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Subject: Draft Environmental Assessment (DEA)  
Board of Water Supply (BWS) Moanalua Road: 36-inch Transmission Main,  
Phase II, Aiea, Oahu, Hawaii

The staff of the U.S. Geological Survey, Water Resources Division, Hawaii District, has reviewed the Draft Environmental Assessment, and we have no comments to offer at this time.

Thank you for allowing us to review the DEA. We are returning the report for your future use..

Sincerely,

William Meyer  
District Chief

Enc.

**COPY**

JEREMY HARRIS Mayor  
WALTER O. WATSON, JR. Chairman  
MURRICE H. YAMAGATO Vice Chairman  
KAZU HAYASHIDA  
MELISSA V. J. LUM  
FORREST C. NAUPHY  
JONATHAN K. BIRKADA, PhD  
BARBARA KOU STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer



December 26, 1997

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714

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Department of the Interior  
U.S. Geological Survey  
677 Ala Moana Boulevard, Suite 415  
Honolulu, Hawaii 96813

Dear Mr. Meyer:

Subject: Your Letter of November 13, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu

Thank you for reviewing the Draft Environmental Assessment for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that you have no comments to offer at this time.

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

Very truly yours,

RAYMOND H. SATO  
Manager and Chief Engineer

cc: Collette Sakoda, R.M. Towill Corp.

0000 00 16 1947

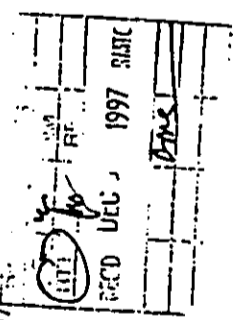
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Our People...Our Islands...In Harmony

December 4, 1997

Ms. Colette Sakoda  
R.M. Towill Corporation  
420 Waiakamilo Road, Suite 411  
Honolulu, Hawaii 96817-4941



BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



December 24, 1997

Mr. Kenneth M. Kaneshiro, State Conservationist  
United States Department of Agriculture  
Natural Resources Conservation Service  
P. O. Box 50004  
Honolulu, Hawaii 96850

Dear Mr. Kaneshiro:

Subject: Your Letter of December 4, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu

We have reviewed the above mentioned document and have no comments to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO  
State Conservationist

COPY

JEREMY HARRIS Mayor  
WALTER D. WATSON, JR. Chairman  
MAURICE H. YAMASATO Vice Chairman  
KAZU HAYASHIDA  
MELISSA J. LUM  
FORREST C. MURPHY  
JOYTHANK SHIMADA PRO  
BARBARA ION STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer

Thank you for reviewing the Draft Environmental Assessment for the proposed Moanalua Road 36-Inch Transmission Main project.

We acknowledge that you have no comments to offer at this time.

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

Very truly yours,

RAYMOND H. SATO  
Manager and Chief Engineer

cc: Colette Sakoda, R.M. Towill Corporation

0000 00 16 1949

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

MICHAEL D. WILSON  
DIRECTOR  
DIVISION OF AQUATIC RESOURCES  
SUBJECT: TRANSMISSIONS

AGRICULTURE DEVELOPMENT PROGRAMS  
AQUATIC RESOURCES  
BOATING AND CATCHER REGULATION  
CATCHER REGULATION  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CORRECTION AND WELFARE  
ECONOMIC DEVELOPMENT PROGRAMS  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

December 5, 1997

Ms. Colette Sakoda  
R.M. Towill Corporation  
420 Waiakamilo Road, Suite 411  
Honolulu, Hawaii 96817-4941

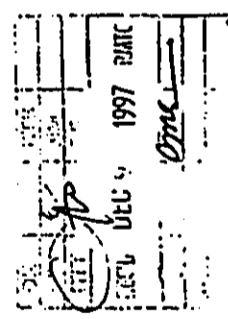
Dear Ms. Sakoda:

We reviewed the Draft Environmental Assessment for the Board of Water Supply's 36-inch Transmission Main project in Alea, and have determined that it should have minimal impact on the area's aquatic resources, provided the applicant implement all of the best management practices (BMPs) described in the report. It is particularly important to complete the stream crossing phase in the shortest possible time, and to schedule such work during the driest part of the year (June, July & August).

Thank you for providing our agency with the opportunity to review the Draft Environmental Assessment. If you have any questions or require further clarification about any of the above, please contact Mr. Mike Yamamoto of my staff at 587-0087.

Sincerely,

William S. Devick  
Acting Administrator



BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



December 29, 1997

Mr. William S. Devick, Acting Administrator  
Division of Aquatic Resources  
Department of Land and Natural Resources  
State of Hawaii  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Devick:

Subject: Your Letter of December 5, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main Project, Alea, Oahu

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that the proposed project should have minimal impact on the area's aquatic resources due to the implementation of the best management practices indicated in the Draft EA. We intend to complete the stream crossing phase in the shortest possible time and will schedule construction activities during dry periods.

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

Very truly yours,

RAYMOND H. SATOU  
Manager and Chief Engineer

cc: Collette Sakoda, R.M. Towill Corp.

COPY

JEREMY HARRIS Mayor  
WALTER O. WATSON, JR. Chairman  
MAURICE H. YAMAGATO, Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y. LUM  
FOREST C. MURPHY  
JOHNATHAN K. SYLADA, PRO  
BARBARA NIM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer

0000 00 16 1950

**COPY**

JEREMY HARRIS, TOWILL  
WALTER D. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y. LUM  
FORREST C. MURPHY  
JOATHAN K. SHAMADA, P.E.  
BARBARA KIM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer



**BOARD OF WATER SUPPLY**  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714

December 29, 1997

Ms. Rae M. Loui, Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Ms. Loui:

Subject: Your Letter of November 14, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu.

Thank you for reviewing the Draft Environmental Assessment for the proposed Moanalua Road 36-inch transmission main project.

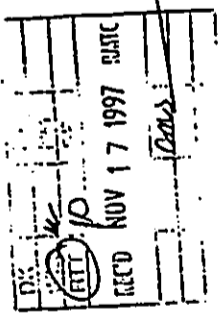
A stream channel alteration permit for installation of the transmission main across stream channels will be submitted for your review and approval prior to initiating any construction work in the stream.

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

Very truly yours,

*Raymond H. Sato*  
RAYMOND H. SATO  
Manager and Chief Engineer

cc: Collette Sakoda, R.M. Towill Corp.



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
P. O. BOX 631  
HONOLULU, HAWAII 96809

MICHAEL D. WILSON  
Chairman  
ROBERT G. ORLAND  
DAVID A. HONOHUA  
LAWRENCE H. LARKE  
MICHAEL H. COE  
KENNETH M. NICHOLS, JR.  
RAE M. LOUI, P.E.  
Deputy

NOV 14 1997

Ms. Collette Sakoda  
RM Towill Corporation  
420 Waikeunilo Rd. #411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Draft Environmental Assessment for Board of Water Supply  
Moanalua Road 36-Inch Transmission Main Phase II, Aiea, Oahu, Hawaii

Thank you for allowing us to review the subject DEA. The document properly acknowledges the need for a stream channel alteration permit for the placement of the transmission lines across stream channels.

We appreciate your coordination. If you have any questions regarding this letter, please call David Higa at 587-0249.

Sincerely,

*Rae M. Loui*  
Rae M. Loui  
Deputy Director

DH:fc

0000 00 16 1997

COPY

BERNARD J. CAYetano  
GOVERNOR OF HAWAII

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

RECEIVED NOV 14 1997  
STATE OF HAWAII  
STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
33 SOUTH KING STREET, SIXTH FLOOR  
HONOLULU, HAWAII 96813

**BOARD OF WATER SUPPLY**  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



December 29, 1997

Mr. Don Hibbard, Administrator  
State Historic Preservation Division  
Department of Land and Natural Resources  
State of Hawaii  
33 South King Street, Sixth Floor  
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

**Subject:** Your Letter of November 10, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that your records indicate that there are no known historic sites along the project corridor and that the proposed project will have "no effect" on historic sites in the area. However, we note that human burials were found during development of the "Toys-R-Us" parcel, adjacent to the project corridor. Therefore, as standard practice, in the event historical remains are uncovered during construction, all work in the area will stop and your office will be notified.

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

Very truly yours,

RAYMOND H. SATO  
Manager and Chief Engineer

cc: Collette Sakoda, R.M. Towill Corp.

November 10, 1997 DEPARTMENT OF LAND AND NATURAL RESOURCES  
Colette Sakoda  
R. M. Towill Corporation  
420 Waiakamilo Road # 411  
Honolulu, Hawaii 96817-4941

LOG NO: 20468 ✓  
DOCNO: 9711EJ05

**SUBJECT:** Historic Preservation Review -- Draft Environmental Assessment for Board of Water Supply Moanalua Road 36-Inch Transmission Main, Phase II  
Aiea, 'Ewa, O'ahu  
TMK: 9-8-08:11-13, 16-18

We commented in February of 1996 to RM Towill regarding this project. Our comments consisted of the following:

Thank you for the opportunity to review this project for the proposed 36-inch diameter water transmission main along Moanalua Road between Puanani Channel to Pali Momi Street. A review of our records shows that there are no known historic sites along the project corridor. However, human burials were found during the development of the "Toys-R-Us" parcel east of Pali Momi Street, just beyond the project corridor. Because installation will be within developed areas of the Moanalua Road right-of-way and also buried under Kaonohi Stream, a concrete channelized drainage, it is unlikely that historic sites will be found. Therefore, we believe that this project will have "no effect" on historic sites.

It is possible that historic sites, including human burials, will be uncovered during routine construction activities. Should this be the case all work in the vicinity must stop and the Historic Preservation Division must be contacted at 587-0047.

Should you have any questions, please feel free to call Elaine Jourdane at 587-0014.

Aloha  
  
Don Hibbard, Administrator  
Historic Preservation Officer

E:jjk



0000 00 16 1997

**COPY**

JEREMY HARRIS Mayor  
WALTER O. WATSON JR. Chairman  
LAURICE H. YAMASATO Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y. LIM  
FORREST C. MURPHY  
JONATHAN K. SHIMADA PhD  
BARBARA KIM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer



December 24, 1997

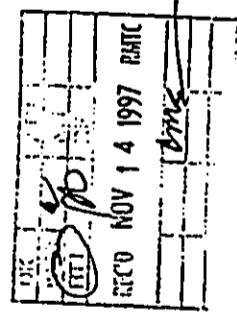
**BOARD OF WATER SUPPLY**  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714

KAZU HAYASHIDA  
DIRECTOR  
DEPUTY DIRECTORS  
SHUAN K. LIMUAI  
OLENIAL ODOBOTO



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

IN REPLY REFER TO:  
HWY-PS  
2.7015



NOV 13 1997

Ms. Colette Sakoda  
R. M. Towill Corporation  
420 Waikamilo Road, Suite 411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Subject: Draft Environmental Assessment, 36-Inch Water Transmission Main  
(Board of Water Supply), Phase II, Aiea, TMK: 9-8-var.

Thank you for requesting our review of the draft assessment.

The proposed water transmission will not impact our State highway facilities.

Very truly yours,

*Kazu Hayashida*  
KAZU HAYASHIDA  
Director of Transportation

Mr. Kazu Hayashida, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Hayashida:

Subject: Your Letter of November 13, 1997 to R.M. Towill Corporation Regarding the  
Draft Environmental Assessment for the Board of Water Supply's Proposed  
Moaialua Road 36-Inch Transmission Main Project, Aiea, Oahu

Thank you for reviewing the Draft Environmental Assessment for the proposed Moaialua  
Road 36-Inch Transmission Main project.

We acknowledge that the proposed project will not impact any State Highway facilities.

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

Very truly yours,

*Raymond H. Satou*  
RAYMOND H. SATO  
Manager and Chief Engineer

cc: Colette Sakoda, R.M. Towill Corporation

0000 00 16 1997

COPY

JEREMY HARRIS, Mayor  
WALTER O. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
KAZUO HAYASHIDA  
MELISSA Y. J. LUI  
FORREST C. MURPHY  
JONATHAN K. SHIMADA, PhD  
BARBARA KIM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer



BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714

November 21, 1997  
NOV 25 1997  
MAIL ROOM

(P) 1708.7

NOV 14 1997

Ms. Colette Sakoda  
R.M. Towill Corporation  
420 Waiakamilo Road, Suite 411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Subject: Board of Water Supply Moanalua Road: 36-Inch  
Transmission Main, Phase II, Aiea, Oahu, Hawaii  
Draft Environmental Assessment

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

If there are any questions, please have your staff contact  
Mr. Ronald Ching of the Planning Branch at 586-0490.

Sincerely,

*Gordon Matsuoaka*  
GORDON MATSUOKA  
Public Works Administrator

RC:JY  
C: BWS - R. Hiraki

Mr. Gordon Matsuoaka  
Department of Accounting and General Services  
State of Hawaii  
P. O. Box 119  
Honolulu, Hawaii 96810

Dear Mr. Matsuoaka:

Subject: Your Letter of November 14, 1997, to R.M. Towill Corporation Regarding the  
Draft Environmental Assessment for the Board of Water Supply's Proposed  
Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu

Thank you for reviewing the Draft Environmental Assessment for the proposed Moanalua  
Road 36-inch transmission main project.

We acknowledge that you have no comments to offer.

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

Very truly yours,

*Raymond H. Sato*  
RAYMOND H. SATO  
Manager and Chief Engineer

/cc: Colette Sakoda, R.M. Towill Corporation

0000 00 16 1954

COPY

DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU  
630 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 527-6181 • FAX: (808) 527-6887



RECEIVED  
NOV 26 1997  
NATHAN K. SHIMADA, PHD  
DIRECTOR AND CHIEF ENGINEER  
DEPARTMENT OF PUBLIC WORKS  
HONOLULU, HAWAII  
DEPUTY DIRECTOR  
ENV 97-260

BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96813  
PHONE: (808) 527-6180  
FAX: (808) 533-2714

RECEIVED  
NOV 26 1997  
WALTER O. WATSON, JR., CHIEF  
MANAGER  
DEPARTMENT OF PUBLIC WORKS  
HONOLULU, HAWAII  
DEPUTY DIRECTOR  
ENV 97-260

November 25, 1997

Ms. Colette Sakoda  
R.M. Towill Corporation  
420 Waiakamilo Road, Suite 411  
Honolulu, Hawaii 96817

Dear Ms. Sakoda:

Subject: Draft Environmental Assessment (DEA)  
Moanalua Road: 36-in Water Transmission Main  
TMKI: 9-8-08: 11, 12, 13, 16, 17 & 18

We have reviewed the subject DEA and have the following comments:

1. When will the main cross Waimalu Stream, during Phase I or Phase II construction?
2. If the main is to be attached to our bridge, the construction plans should be routed to Division of Engineering for review and approval.
3. Section 2.2: Expand description to include approximate elevations of the Punanai Channel and Kaonoahi Stream crossings and whether they are flowing or dry streams.
4. Section 4.1.4: Include discussion on page 4-4 to include State DOH and possible City permit requirements for discharging hydrotesting water.

Should you have any questions, please contact Mr. Alex Ho, Environmental Engineer, at 523-4150.

Very truly yours,

*[Signature]*  
NATHAN K. SHIMADA, PHD  
Director and Chief Engineer

TO: JONATHAN K. SHIMADA, Ph.D., DIRECTOR AND CHIEF ENGINEER  
DEPARTMENT OF PUBLIC WORKS  
FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER  
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF NOVEMBER 25, 1997 TO R.M. TOWILL CORPORATION REGARDING THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED MOANALUA ROAD 36-INCH TRANSMISSION MAIN PROJECT, AIEA, OAHU

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Moanalua Road 36-inch transmission main project.

We provide the following comments to your concerns:

1. Construction of the project will be accomplished in four phases. There are three stream crossings along the proposed alignment: Punanai Channel (Phase I), Waimalu Stream (Phase II), and Kaonoahi Stream (Phase IV), as noted in the Final EA, Section 2.2.
2. The waterline is proposed to be supported by reinforced concrete piers across Waimalu Stream. The construction drawings will be routed to the Department of Public Works, Division of Engineering for review and approval. The waterline is proposed to go underneath Punanai Channel and Kaonoahi Stream.
3. According to the Hirrell Stream Assessment (December 1990), State Commission on Water Resource Management and the National Park Service, Waimalu Stream is perennial and Punanai Channel and Kaonoahi Stream are intermittent in the vicinity of Moanalua Road. The Final EA, Section 2.2, will be revised to include stream information and the approximate elevations of the Punanai Channel and Kaonoahi Stream crossings.
4. The proposed project will discharge hydrotesting effluent into the Kaonoahi Stream (Class 2 waters) and the Punanai Channel (Class 2 waters). Hydrotesting and disinfection of the water main will follow standard best management practices and will be coordinated following installation of each phase of the transmission main. The State Department of Health (DOH), National Pollutant Discharge Elimination System Permit, NOI for Discharges of Hydrotesting Waters and City Department of Public Works' Permit to discharge effluent into the municipal storm sewer system, are required for this project. The Final EA, Section 4.1.4, will be revised to include State DOH and City permitting requirements for discharging hydrotesting waters.

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

0000 00 16 1955

**CITY AND COUNTY OF HONOLULU**

PLANNING DEPARTMENT  
830 SOUTH KING STREET, 8TH FLOOR - HONOLULU, HAWAII 96813-3017  
PHONE: (808) 933-4711 • FAX: (808) 933-4890



PATRICK T. ONISHI  
CHIEF PLANNING OFFICER  
DONAL L. MARALEE  
DEPUTY CHIEF PLANNING OFFICER  
RR 11/97-2154

November 28, 1997

Ms. Colette Sakoda  
R. M. Towill Corporation  
420 Waialealua Road, Suite 411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Draft Environmental Assessment (EA) for Proposed  
Moanalua Road: 36-Inch Transmission Main,  
Phase II, Aiea, Oahu, Hawaii

In response to your company's request of October 30, 1997 on behalf of the City and County of Honolulu Board of Water Supply (BWS), we have reviewed the EA with regards to the proposed project's General Plan and Development Plan impacts and find the project consonant with these plans' objectives and visions.

The Draft EA should point out that the project lies in the Primary Urban Center Development Plan (DP) area, and not in the Ewa DP area as stated on Pages 1-1 and 2-1.

Should you have any questions please contact Rob Reed of our Staff at 523-4402.

Yours very truly,

*Patrick T. Onishi*  
PATRICK T. ONISHI  
Chief Planning Officer

CONSONANT

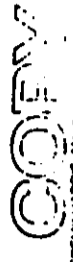
PTO:lh

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



December 29, 1997



JEREMY HARRIS, Mayor  
WALTER O. WATSON, JR., Chairman  
MURRICE H. YAMAGATO, Vice Chairman  
KAZUHIYASHIRO  
MELISSA Y. J. LUM  
FORREST C. MURPHY  
JONATHAN K. SHIMADA, PRO  
BARBARA TOM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer

TO: PATRICK T. ONISHI, CHIEF PLANNING OFFICER  
PLANNING DEPARTMENT

*Raymond H. Sato*  
RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER  
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF NOVEMBER 28, 1997 TO R.M. TOWILL  
CORPORATION REGARDING THE DRAFT ENVIRONMENTAL  
ASSESSMENT FOR THE PROPOSED MOANALUA ROAD 36-INCH  
TRANSMISSION MAIN PROJECT, AIEA, OAHU

Thank you for reviewing the draft environmental assessment for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that the proposed project complies with the General Plan and Development Plans' objectives and visions. The final environmental assessment will be revised to indicate that the project lies in the Primary Urban Center Development Plan area.

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

cc: Colette Sakoda, R.M. Towill Corporation

0000 00 16 1956

**COPY**  
JEREMY HARRIS TAYLOR

WALTER O. WATSON, JR., Chairman  
LAURICE H. YAMAGATO, Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y. LUN  
FORREST C. MURPHY  
JONATHAN K. SHIMADA, PhD  
BARBARA KIM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer



December 29, 1997

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
600 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714

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

650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 527-6663 • FAX: (808) 527-6663



SEARCHED	INDEXED
SERIALIZED	FILED
NOV 19 1997	
RMTIC	

KENNETH E. SPRAGUE, P.E., Ph.D.  
DIRECTOR  
BERT L. OJUMA-REPE, ESQ.  
DEPUTY DIRECTOR

Intrepley refer to:  
WCC 97-262

November 17, 1997

Ms. Collette Sakoda  
R. M. Towill Corporation  
420 Waiakamilo Road, #411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Subject: **Draft Environmental Assessment for the Board of Water Supply  
Moanalua Road: 36-inch Transmission Main, Phase II  
Aiea, Oahu, Hawaii  
TMK: 9-8-8-11-13.16-18**

We have no objection to the construction of the Board of Water Supply's Moanalua Road: 36-inch Transmission Main, Phase II project. Please contact our department to locate the existing sewer lines in the area during the design and construction of this project.

If you have any questions, please contact Ms. Tessa Ching of the Service Control Branch at 523-4956.

Sincerely,

*Cheryl K. Ojuma-Repe*  
KENNETH E. SPRAGUE  
Director

TO: KENNETH E. SPRAGUE, DIRECTOR  
DEPARTMENT OF WASTEWATER MANAGEMENT  
*Raymond H. Sato*  
FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER  
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF NOVEMBER 17, 1997 TO R.M. TOWILL CORPORATION REGARDING THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED MOANALUA ROAD 36-INCH TRANSMISSION MAIN PROJECT, AIEA, OAHU

Thank you for reviewing the draft environmental assessment for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that you have no objections to the proposed project. The design and construction of this project will be coordinated with your department to address any utility conflicts. Construction drawings will be submitted for your review and approval.

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

cc: Colette Sakoda, R.M. Towill Corporation

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**COPY**

JEREMY HARRIS, Mayor  
WALTER O. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
KAZUHIYASHIMA  
KEIICHA Y. LUM  
FORREST C. MURPHY  
JONATHAN K. SHIMADA, PhD  
BARBARA NOM STANTON  
RAYMOND H. SATO  
Manager and Chief Engineer



**BOARD OF WATER SUPPLY**  
CITY AND COUNTY OF HONOLULU  
630 SOUTH BERTANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714

December 29, 1997

**TO:** JAN NAOE SULLIVAN, DIRECTOR  
DEPARTMENT OF LAND UTILIZATION  
*Raymond H. Sato*  
**FROM:** RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER  
BOARD OF WATER SUPPLY

**SUBJECT:** YOUR MEMORANDUM OF NOVEMBER 28, 1997 TO R.M. TOWILL  
CORPORATION REGARDING THE DRAFT ENVIRONMENTAL  
ASSESSMENT FOR THE PROPOSED MOANALUA ROAD 36-INCH  
TRANSMISSION MAIN PROJECT, AIEA, OAHU

Thank you for reviewing the draft environmental assessment for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that you have no comments to offer at this time.

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

**cc:** Colette Sakoda, R.M. Towill Corporation

DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**  
490 SOUTH KING STREET, 3TH FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 533-4414 • FAX: (808) 533-8743



JAN NAOE SULLIVAN  
DIRECTOR

LORETTA K. CHEE  
DEPUTY DIRECTOR

'97 EA Comments Zone 9  
97-08135 (ST)

DIC	DATE	INITIALS	REMARKS
YES	12/29/97	JNS	
NO			
REV			
REC'D	DEC 1 1997	RMTC	

November 28, 1997

Ms. Colette Sakoda  
R.M. Towill Corporation  
420 Waikamilo Road, Suite 411  
Honolulu, Hawaii 96817-4941

Dear Ms. Sakoda:

Draft Environmental Assessment (DEA):  
Moanalua Road: 36-Inch Transmission Main, Phase II  
Aiea, Oahu  
Tax Map Keys: 9-8 various Plats

We have reviewed the DEA for the above-referenced project transmitted by your letter dated October 30, 1997, and have no comments to offer at this time.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Steve Tagawa of our staff at 523-4817.

Very truly yours,  
*Jan Naoe Sullivan*  
JAN NAOE SULLIVAN  
Director of Land Utilization

JNS:am

cc: State Office of Environmental Quality Control

9:ppd1DC/aoeana.eht

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Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

**COPY**

JEREMY HARRIS Mayor  
 WALTER D. WATSON, JR. Chairman  
 MALPICE H. YAMASATO, Vice Chairman  
 KAZU HAYASHIDA  
 HELENA Y. LUM  
 FORESELE MAHEKA  
 DANAHAWA SHIMADA, PhD  
 UNIVERSITY STATION  
 HONOLULU, HI 96822  
 RAYMOND H. SATO  
 HONOLULU, HI 96813  
 Chief Engineer



**BOARD OF WATER SUPPLY**  
 CITY AND COUNTY OF HONOLULU  
 630 SOUTH BERETANIA STREET  
 HONOLULU, HAWAII 96843  
 PHONE (808) 527-6180  
 FAX (808) 533-2714

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December 31, 1997

Ms. Patricia Uyehara Wong, Esq.  
 Environmental Department  
 Hawaiian Electric Company, Inc.  
 P. O. Box 2750  
 Honolulu, Hawaii 96840-0001

November 26, 1997



Patricia Uyehara Wong, Esq.  
 Manager  
 Environmental Department

Colette Sakoda  
 R.M. Towill Corporation  
 420 Waikamilo Road, Suite 411  
 Honolulu, HI 96817-4941

Dear Ms. Sakoda

Subject Board of Water Supply Moanalua Road: 36-Inch Transmission Main

Thank you for the opportunity to comment on your October 1997 Draft EA for the Moanalua Road: 36-Inch Transmission Main, as proposed by the Board of Water Supply. We have reviewed the subject document and noticed that this DEA does not address utilities. HECO does have a 136kv transmission line along Moanalua Road where the pier foundations are deeper than the proposed pipe.

HECO shall reserve further comments pertaining to the protection of existing powerlines bordering the project area until construction plans are finalized. Again, thank you for the opportunity to comment on this draft environmental assessment.

Sincerely,

cc: Board of Water Supply  
 City and County of Honolulu  
 630 South Beretania Street  
 Honolulu, HI 96843  
 Attn: R. Hiraki

cc: Colette Sakoda, R.M. Towill Corporation

RAYMOND H. SATO  
 Manager and Chief Engineer

Very truly yours,

Dear Ms. Wong:

Subject: Your Letter of November 26, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Proposed Moanalua Road 36-Inch Transmission Main Project. Alfa, Qahu

Thank you for reviewing the Draft Environmental Assessment for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that the Hawaiian Electric Company (HECO) has a 136kv transmission line along Moanalua Road where the pier foundations are deeper than the proposed pipeline. The proposed pipeline alignment is designed to have a minimum clearance of five feet from the existing utility poles. With regard to identification and potential conflicts with existing utilities, the construction drawings will be submitted for your review and approval.

The contractor will be required to obtain an excavation permit from HECO's Mapping and Records Division prior to starting construction.

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

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**GTE Hawaiian Tel**

GTE Hawaiian Telephone Company Incorporated  
P.O. Box 2200 • Honolulu, HI 96841 • 808 546-3511

*Beyond the call*

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JAN 5 1998	
HONOLULU, HI	

December 30, 1997

HIABY3  
Honolulu, HI

Ms. Colette Sakoda  
R. M. Towill Corporation  
S. 420 Waiakamilo Road, #411  
Honolulu, Hawaii 96817-4841

Dear Ms. Sakoda

Subject: DRAFT ENVIRONMENTAL ASSESSMENT FOR  
BOARD OF WATER SUPPLY, MOANALUA ROAD,  
38-INCH TRANSMISSION MAIN

Thank you for the opportunity to review and comment on the proposed 38-inch Board of Water Supply Transmission Main along Moanalua Road in Aiea. Upon review of our records of the area of the proposed project, our records have indicated that GTE Hawaiian Telephone Company Incorporated has a manhole system on the North side of Moanalua Road. There also exists a Military Joint Trucking System cable.

Also, at this time, GTE Hawaiian Telephone Company Incorporated has no plans for any work activity within the area of the proposed project.

If you have any questions on this matter, please call me at 483-8018.

Very truly yours,

*Mark K. Taosaka*

Mark K. Taosaka  
Section Manager - Access Design & Construction

MKT/9712301

cc: H. Asundon - HIABY2  
K. Ayano - HIA5  
D. Osato - HIABY3  
C. Fuke - HIABY3

January 28, 1998

Mr. Mark K. Taosaka  
Access Design & Construction  
GTE Hawaiian Telephone Company, Incorporated  
P. O. Box 2200  
Honolulu, Hawaii 96841

Dear Mr. Taosaka:

Subject: Your Letter of December 30, 1997 to R.M. Towill Corporation Regarding the Draft Environmental Assessment for the Proposed Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu

Thank you for reviewing the Draft Environmental Assessment for the proposed Moanalua Road 36-inch transmission main project.

We acknowledge that GTE has no work activity planned within the area of the proposed project. In addition, there is a GTE manhole system on the north side of Moanalua Road along with an existing military joint trucking system cable.

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

Very truly yours,  
*Raymond H. SATO*

RAYMOND H. SATO  
Manager and Chief Engineer

cc: Colette Sakoda, R.M. Towill Corporation

KK/BU:rk  
cc: R. Sato  
B. Usagawa



0000 00 16 1980

12/67

February 5, 1998

Mr. Gary Gill, Director  
Office of Environmental Quality Control  
State of Hawaii  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Your Letter of January 7, 1998 Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Moanalua Road 36-Inch Transmission Main Project, Aiea, Oahu

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Moanalua Road 36-inch transmission main project.

We provide the following comments to your concerns:

1. The Final EA will be revised to include a discussion on the existing water system and the cumulative effects of the proposed improvements. The primary purpose of the proposed main is to provide additional transmission capacity to accommodate the projected growth in the primary urban center. The proposed main will also be an integral part of the Moanalua water system and will ensure continuity of service during maintenance and repair of the existing transmission mains.
2. The State Department of Transportation has reviewed the Draft EA and indicated that the proposed project will not impact any State highway facilities. Moanalua Road is under the jurisdiction of the County's Department of Transportation Services (DTS); therefore, the Board of Water Supply will coordinate construction with DTS. In addition, the Draft EA has been sent to DTS and the Pearl City and Aiea Neighborhood Boards for their review.

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

Very truly yours,  
*Raymond H. Sato*

RAYMOND H. SATO  
Manager and Chief Engineer

cc: Colette Sakoda, R.M. Towill Corporation

SM:db  
cc: R. Sato, B. Uisagawa



STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 534-4185  
FACSIMILE (808) 534-4188

January 7, 1997

GARY GILL  
DIRECTOR

SEARCHED	INDEXED	SERIALIZED	FILED
JAN 16 1998 RHC			

Mr. Barry Uisagawa  
Board of Water Supply  
City and County of Honolulu  
630 South Perimeter Street  
Honolulu, Hawaii 96843

Dear Mr. Uisagawa:

The Office of Environmental Quality Control (OEQC) submits for your response the following comments on a draft environmental assessment (DEA) entitled "Moanalua Road 36-Inch Transmission Main: Pananal Channel to Pali Momi Street."

1. CUMULATIVE EFFECTS: Please discuss the existing water system in the area and the cumulative effects (on local, regional and island-wide land use, population, etc.) of the proposed improvements.
2. TRAFFIC CONTROL: Please consult with the Neighborhood Board and the City Department of Transportation Services on ways to minimize traffic disruption in the area.

Please include a copy of this letter and your response for their inclusion in the final environmental assessment and notice of determination on this project.

If there are any questions regarding this letter, please call Les Segundo of my staff at 586-4185. Thank you for the opportunity to comment.

Sincerely,

*Benjamin J. Cayetano*  
GARY GILL  
Director of Environmental Quality Control

c: Mr. Craig Laha, R. M. Towill Corporation