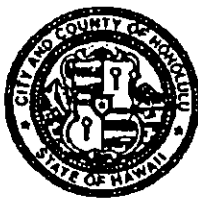


DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-4564 • FAX: (808) 523-4567

JEREMY HARRIS  
MAYOR

RECEIVED



RANDALL K. FUJIKI, AIA  
DIRECTOR

ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

'99 MAY 11 A9:08

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

April 27, 1999

IDEC 99-095

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

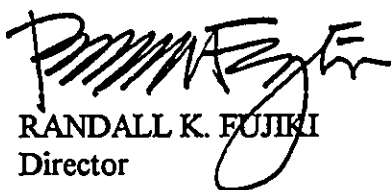
Dear Mr. Gill:

Subject: Finding of No Significant Impact (FONSI) for Kalaheo Avenue Reconstructed Sewer, TMK 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23 & 27, Kailua, Oahu, Hawaii

The Department of Design and Construction has reviewed the comments received during the 30-day public comment period which began on July 8, 1998. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the May 8, 1999 OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the final EA. Please call Mr. Glenn Okita at 527-5829, should you have any questions.

Very truly yours,

  
RANDALL K. FUJIKI  
Director

Enclosures

1999-05-23-0A-~~FEA~~—

MAY 23 1999

**FILE COPY**

# REVISED FINAL ENVIRONMENTAL ASSESSMENT

FOR

## \*KALAHEO AVENUE RECONSTRUCTED SEWER\*

TMKs: 1-4-2-18 to 20, 1-4-3-11 to 30, 69,70,75,80 & 83, 1-4-4-2 to 5, 11, 23 & 27  
Kailua, Oahu, Hawaii

Proposing Agency:

Department of Design and Construction  
City and County of Honolulu

This environmental document is prepared pursuant to Chapter 343, HRS

Responsible Official:

  
Randall K. Fujiki, Director

Date: APR 29 1999

Prepared by:

ParEn Inc., dba Park Engineering  
567 South King Street, Suite 300  
Honolulu, Hawaii 96813

April 1999

**REVISED FINAL  
ENVIRONMENTAL  
ASSESSMENT**

FOR

**KALAHEO AVENUE  
RECONSTRUCTED  
SEWER**

This environmental document is prepared pursuant to Chapter 343, HRS

Prepared for:

Department of Design and Construction  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

April 1999

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I. EXECUTIVE SUMMARY .....	1
II. SUMMARY INFORMATION .....	2
III. AGENCIES CONSULTED DURING THE PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT ..	4
IV. APPROVALS AND PERMITS REQUIRED .....	5
V. PROJECT DESCRIPTION .....	7
A. Background .....	7
B. Kailua-Kaneohe-Kahaluu Facilities Plan (KKK FAC Plan) .....	8
C. Project Location .....	9
D. Project Characteristics .....	9
1. Technical Characteristics .....	10
2. Socio-Economic Characteristics .....	12
3. Environmental Characteristics .....	12
VI. DESCRIPTION OF THE AFFECTED ENVIRONMENT .....	13
A. Topography .....	13
B. Geology/Soils .....	13
C. Climate .....	14
D. Land Use .....	14
E. Flora & Fauna .....	14
F. Historic Sites and Archaeological Resources .....	14
G. Flood Hazard .....	15

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
VII. POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES .....	15
A. Impacts During Construction .....	15
B. Long Term Impacts .....	17
VIII. ALTERNATIVES CONSIDERED .....	18
IX. FUNDING .....	19
X. DETERMINATION, FINDINGS, AND REASONS TO SUPPORT DETERMINATION .....	20
XI. REFERENCES .....	22

### FIGURES

- 1 VICINITY MAP
- 2 LOCATION MAP
- 3 SEWER COLLECTION DISTRICTS FOR  
KAILUA WWPS & KAILUA WWTP
- 4 TYPICAL MICROTUNNELING ARRANGEMENT AT JACKING PIT
- 5 THE CURED IN PLACE PIPE REHABILITATION PROCESS
- 6 FLOOD HAZARD MAP
- 7 SMA BOUNDARY MAP

### APPENDICES

- A COPIES OF CORRESPONDENCES RECEIVED DURING THE  
PREPARATION OF THE FINAL ENVIRONMENTAL  
ASSESSMENT
- B CONSTRUCTION COST ESTIMATE
- C GENERAL LAYOUT

I. EXECUTIVE SUMMARY

The City and County of Honolulu Department of Design and Construction is proceeding with plans to correct widespread hydraulic and structural problems with the Kailua area's wastewater system. In April, 1992 the City hired Akinaka and Associates to prepare an engineering report to evaluate the inadequacy of the Kalaheo Avenue Trunk Sewer to handle wet weather flows. The report included a discussion of the alternatives considered for corrective action and a recommendation of the most cost-effective solution to increase the system's capacity. Other alternatives considered besides rehabilitation included relief sewers, a modified pump station, new force mains and partial or total reconstruction. The City endorsed the rehabilitation alternative because hydraulic analyses using their existing flow model data (INFIX) indicated that a rehabilitated sewer line would be capable of handling projected future peak flows. This alternative involved rehabilitating approximately 14,600 feet of the gravity sewer, and replacing another 2,800 feet of sewer line. The original EA for this version of the project was completed and approved in August 1995.

Hydraulic flow models subsequently adopted by the City generated future peak flows that exceed the design capacity of portions of the rehabilitated line. Based on the latest available flow model data the City proposes to replace about 3,460 lineal feet of 66-inch gravity sewer line with a new 66-inch line and 11,850 lineal feet of 24-inch and 36-inch gravity sewer lines with a new 48-inch line. In addition, about 1,865 lineal feet of 54-inch gravity sewer lines are slated for rehabilitation work.

The revised EA will describe the project and be used to determine if the proposed actions will have any potential significant environmental impacts. After a review of the EA by various governmental agencies and other interested organizations or individuals followed by a formal comment period, either the proposing agency or approving agency will determine whether an Environmental Impact Statement (EIS) will be required.

Based on the findings of this revised Environmental Assessment it has been concluded that an EIS is not required at this time. Short term impacts such as the release of dust and noise from construction activities, and odors resulting from temporary bypasses are expected. These impacts shall be mitigated by strict adherence to applicable guidelines set by the State Department of Health.

II. SUMMARY INFORMATION

CHAPTER 343, HAWAII REVISED STATUTES (HRS)  
ENVIRONMENTAL ASSESSMENT

Proposing and Approving Agency: Department of Design and Construction  
City and County of Honolulu  
Randall K. Fujiki, Director

Contact person: Glenn Okita, Project Engineer  
Phone number: 527-5829

Prepared by: ParEn, Inc. dba Park Engineering  
567 South King Street, Suite 300  
Honolulu, Hawaii 96813

Project Name: Kalaheo Avenue Reconstructed Sewer

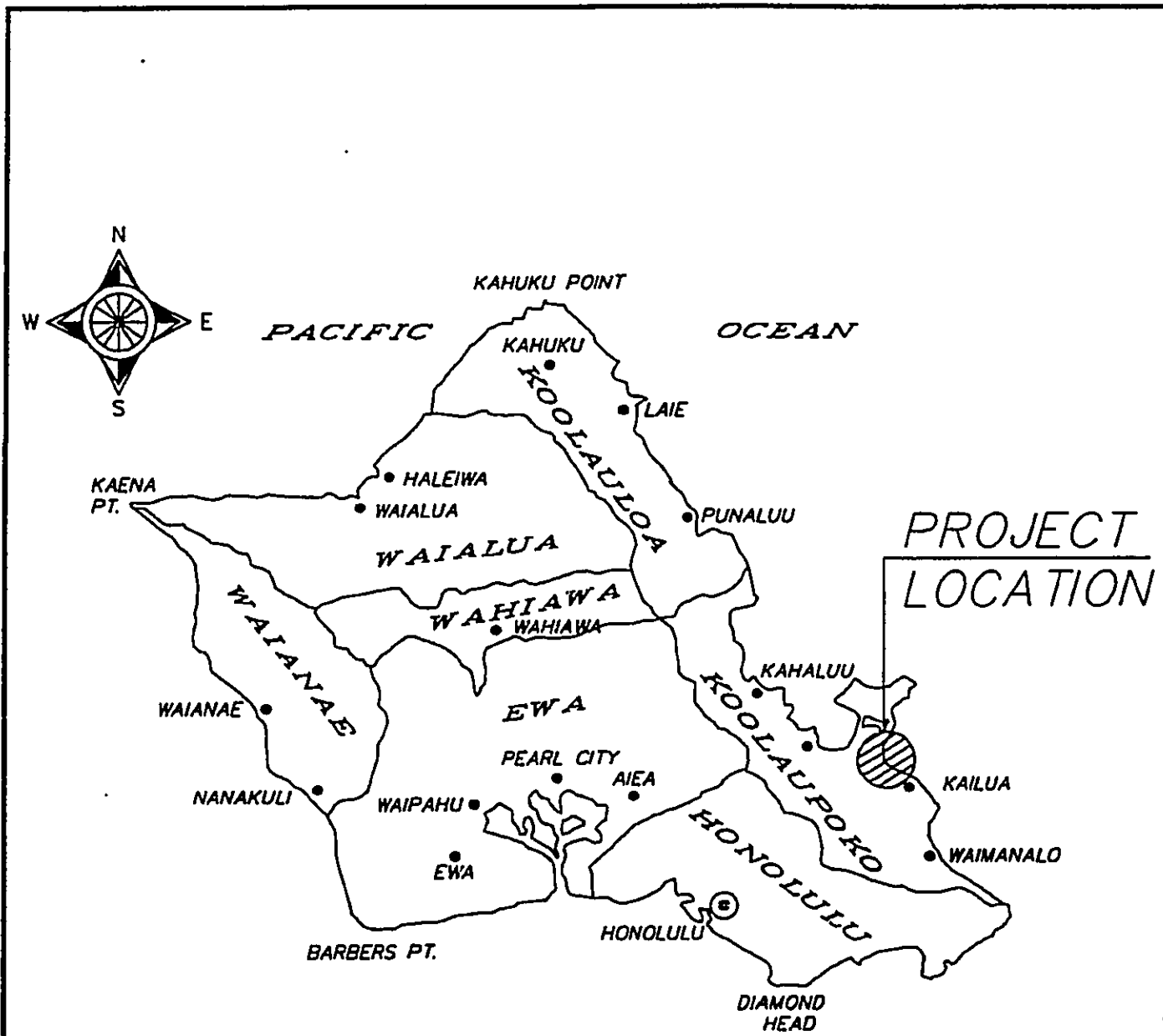
Project Description: Approximately 3,460 lineal feet of 66-inch gravity sewer line will be replaced with a new 66-inch line from the Kailua Wastewater Treatment Plant (WWTP) to the intersection of Mokapu Boulevard and Kaneohe Bay Drive. The new 66-inch line will connect to an existing 54-inch sewer line starting at that intersection. About 1,865 lineal feet of 54-inch sewer line will be rehabilitated. The 54-inch section extends from the 66-inch connection, goes south along North Kalaheo Avenue, crosses below Kawainui Drainage Canal and ends at the North Kalaheo Avenue-Kainui Drive intersection. At that point, the rehabilitated sewer will connect to a new 48-inch replacement sewer. This portion of the proposed sewer will consist of about 11,940 lineal feet of 48-inch sewer which will replace existing 24- and 36-inch sewer lines from the Kainui Drive intersection to the terminus of the force main for the Kailua Heights Wastewater Pump Station (WWPS).

Project Location: Kailua, Oahu, Hawaii (See Figures 1 and 2)

Tax Map Key: 1-4-2-18 to 20, 1-4-3-11 to 30, 69,70, 75, 80 & 83  
1-4-4-2 to 5,11,23 & 27

Land Area:	Not Applicable	
State Land Use	Urban	
Land Owner:	City and County of Honolulu	
County Zoning:	Kalaheo Avenue, Wanaao Road, Kailua Road, Mokapu Road	Residential, R-10
	Aikahi Loop:	Residential, R-7.5
	Kaelepulu Stream Kawainui Drainage Canal: Kalama Beach Park Kaelepulu Playground	Preservation, General P-2
	Aikahi Park Shopping Center Kailua Shopping Center Kailua Beach Center	Neighborhood Business, B-1





ISLAND OF OAHU



SCALE IN MILES

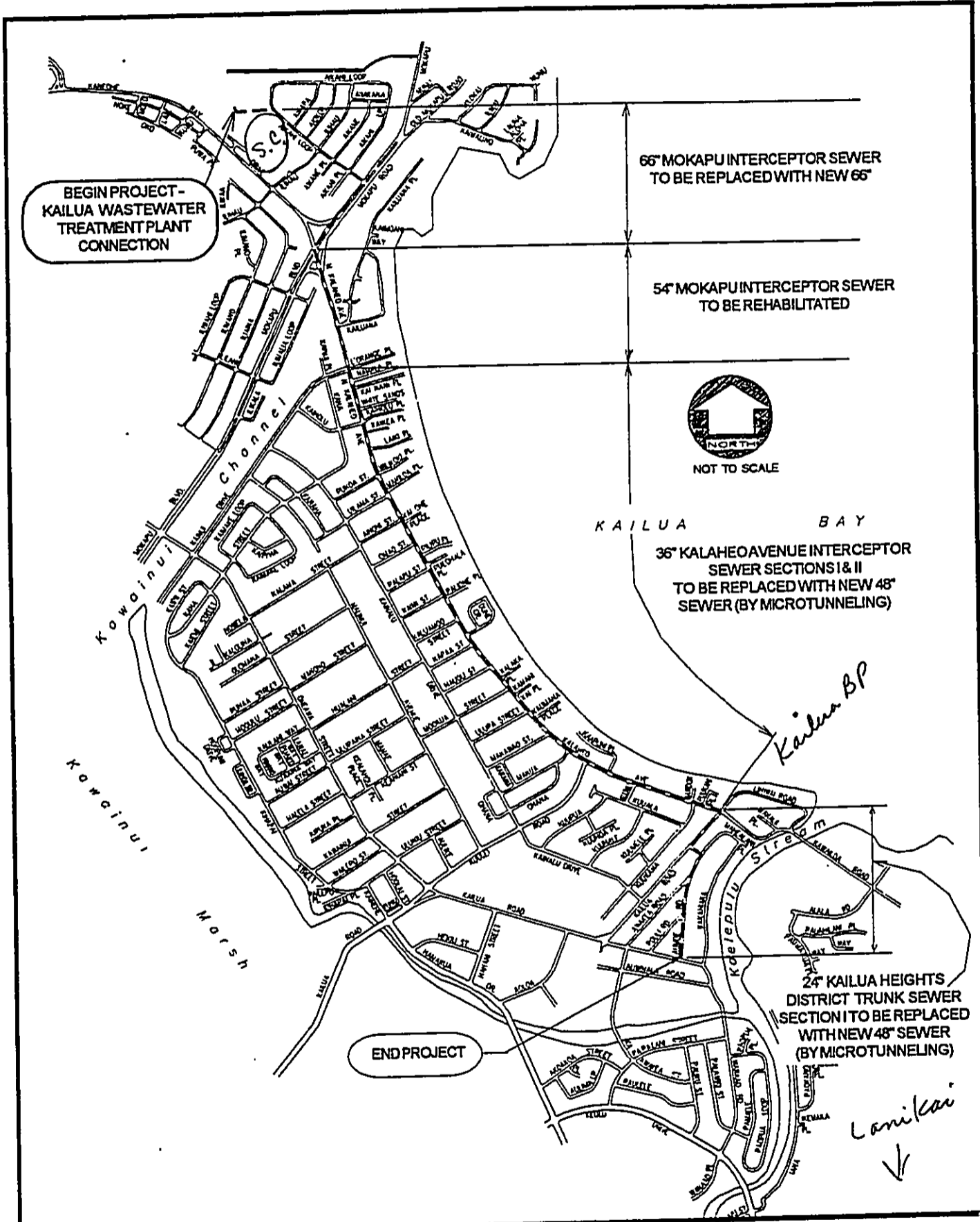
Prepared for:  
**DEPARTMENT OF DESIGN & CONSTRUCTION**  
 DIVISION OF INFRASTRUCTURE DESIGN  
 AND ENGINEERING

**KALAEHO AVENUE  
 RECONSTRUCTED SEWER**  
 KAILUA, OAHU, HAWAII  
 VICINITY MAP



**ParEn, Inc.**  
 dba Park Engineering  
 Engineers, Surveyors, Planners

**FIGURE 1**



Prepared for:  
**DEPARTMENT OF DESIGN & CONSTRUCTION**  
 DIVISION OF INFRASTRUCTURE DESIGN  
 AND ENGINEERING

**KALAHEO AVENUE  
 RECONSTRUCTED SEWER**  
 KAILUA, OAHU, HAWAII  
 Location Map



**ParEn, Inc.**  
 dba Park Engineering  
 Engineers, Surveyors, Planners

**FIGURE 2**

III. AGENCIES CONSULTED DURING THE PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT (See Appendix A)

Federal: U.S. Army District , Honolulu

State of Hawaii:

- Department of Accounting and General Services
- Department of Business, Economic Development and Tourism
- Department of Land and Natural Resources
- Department of Education
- Department of Health
- Department of Transportation
- University of Hawaii
- Office of Environmental Quality Control
- Office of State Planning
- Office of Hawaiian Affairs
- State Senate
- State House of Representatives

City and County of Honolulu:

- Building Department
- Planning Department
- Department of Land Utilization
- Department of Parks and Recreation
- Department of Planning and Permitting
- Department of Transportation Services
- Police Department
- Fire Department
- Honolulu City Council

Utility: Board of Water Supply  
Hawaiian Electric Company  
The Gas Company  
GTE Hawaiian Telephone  
AT & T  
Oceanic Cable

Community Groups / Businesses:

- Kailua Neighborhood Board
- Kailua-Kaneohe-Kahaluu Facilities Plan Steering Committee
- Kailua Chamber of Commerce
- Hawaii's Thousand Friends
- Sierra Club
- Aikahi Park Shopping Center
- Kalapawai Store

IV. APPROVALS AND PERMITS REQUIRED

A. APPROVALS

1. CITY AND COUNTY OF HONOLULU

- a. Department of Design and Construction
  - Construction plan approval
- b. Department of Planning and Permitting
  - Construction plan approval
  - Special Management Area (SMA)  
(not required per DLU letter of 7/23/98,  
See Appendix A)
- c. Department of Transportation Services
  - Construction plan approval

2. STATE OF HAWAII

- a. Department of Transportation
  - Construction plan approval for work within State right-of-way
- b. Department of Health
  - Construction plan approval

**B. PERMITS**

**1. FEDERAL**

**a. U.S. Army Corps of Engineers**

- Nationwide permit  
Rehabilitation work authorized for Kalaheo Avenue Relief Sewer project on August 9, 1994. Authorization NW94-058 extended until July 31, 2000 for Kalaheo Avenue Reconstructed Sewer (See Appendix A, Department of Army letter dated July 17, 1998, file #980000215).

**2. STATE OF HAWAII**

**a. Department of Health**

- National Pollutant Discharge Elimination System (NPDES) for construction dewatering and hydrotesting water
- Application for Community Noise Variance (under review by DOH)

## V. PROJECT DESCRIPTION

### A. Background

1. The City Department of Design and Construction (DDC) has identified serious hydraulic and corrosion problems on various segments of its Kailua Wastewater collection system. As a result, these areas have been recommended for Capital Improvement Projects (*Fukunaga & Associates Sewer Rehabilitation and Infiltration & Inflow Minimization Plan - Preliminary Cost-effectiveness Assessment, December 1995*).

2. DDC has suspected for some time the hydraulic inadequacy of the Kailua system. The surcharge problems experienced at the Kailua Heights WWPS and downstream 24-inch line during a March 1991 storm confirmed the system's inability to handle wet weather flows and emphasized the seriousness of the problems with the existing system (*Islandwide Sewer Adequacy Project [ISAP], July 1989*).

3. The original scope of this project involved rehabilitating approximately 14,600 feet of existing 36-, 54- and 66-inch gravity sewer pipe using a cured-in-place pipe (CIPP) lining method. The portion of the sewer line proposed for rehabilitation was from the Kailua WWTP to the intersection of Kailua Road and South Kalaheo Avenue. This action was recommended after field inspections conducted in 1992 and 1993 revealed significant sections of badly deteriorated sewer line. Rehabilitation or replacement of the deteriorated sections not repairable by chemical grouting were the alternatives considered. The City favored the rehabilitation alternative because hydraulic analyses using projected future peak design flows estimated by the INFIX hydraulic flow model indicated that a rehabilitated line could handle these projected flows. Rehabilitation of the sewer line by a re-lining process was also attractive because of the large diameter of the existing pipe and good alignment of the system. In addition to the rehabilitation work, approximately 2,800 feet of 36-inch sewer lines along Wanaao, Aumoe and Kailua Roads was proposed for replacement.

4. The Kailua RWWTP Influent Pump Station currently has a hydraulic capacity of 18 mgd. The existing treatment process consists of primary and secondary treatment with sludge handling capability. To adequately handle an estimated 45 mgd, the City evaluated the feasibility of installing equalization storage facilities in the Kailua area to hold and control the release of wastewater flows during peak wet weather conditions. Details of the evaluation are contained in the Kailua-Kaneohe-Kahaluu Facilities Plan summarized in the next section.

B. Kailua-Kaneohe-Kahaluu Facilities Plan (KKK FAC Plan). The KKK FAC Plan is a long-term plan which addresses the future needs of the windward region in terms of its wastewater collection, treatment and disposal system. Many equalization basin options were evaluated during various planning phases of the FAC Plan. Evaluation criteria for selection of feasible alternatives included cost, construction, environmental and community impacts. At this time there are four flow equalization alternatives still being considered for implementation and are shown below.

Kailua Flow Equalization Scenarios and Recommendations

Design Storm	Previous I/I Reduction (35%)	Anticipated I/I Reduction (40%)
2-Year	3J: Kailua RWWTP (use existing storage) [1.5 MG]	3L: Kalaheo-Wanaao (pipe storage) [0.5 + 0.95 MG] <b>CITY'S RECOMMENDATION</b>
5-Year	3K: MCBH K-Bay EQ Basin [2.75 MG]	3M: Kailua RWWTP Kalaheo Ave. [2.1 + 0.5 MG]

The selection and sizing of flow equalization storage facilities for the Kailua Basin is dependent on two unresolved factors; the chosen design storm and I/I reduction. A 2-year design storm would require a 1.5 MG storage volume while a 5-year design storm would require a 2.75 MG of storage volume. The use of the 2-year storm is preferred by the City because their analysis shows minimal additional reduction in spill volume between the two design storms. The second factor involves the amount of I/I reduction that can be achieved by rehabilitating the collection system lines in the area. The extent of I/I reduction achieved by the City's previous rehabilitation efforts amounted to about 35%. With more extensive rehabilitation of laterals, connections and sewers in private property, the City anticipates achieving I/I reductions of 40%.

Scenario 3J: If the conservatively anticipated 35% I/I reduction is used with a 2-year design storm, 1.5 MG of storage would be required and can be provided by using existing unused clarifier tanks at the Kailua RWWTP.

Scenario 3K: Assuming a 5-year design storm and 35% I/I reduction, this alternative would provide 2.75 MG of storage at a site on the Marine Corps Base Hawaii near the existing Kailua RWWTP.

Scenario 3M: Assuming a 5-year design storm and 40% I/I reduction, this alternative would provide 2.1 MG of storage using existing unused clarifier tanks at the Kailua RWWTP. Another 0.5 MG of storage will be provided by the existing 36-inch Kalaheo Avenue Sewer which will be abandoned under the Kalaheo Avenue Reconstructed Sewer Project.

Scenario 3L: This scenario is the alternative the City is pursuing because of its relatively low cost and environmental impacts and moderate construction and community impacts. Using a 2-year design storm and anticipating I/I reductions of 40 percent or more, this alternative would provide in-pipe storage from two separate sewer systems in the Kailua area. The first storage system would be created by rehabilitating the existing 36-inch line along Kalaheo Avenue and would provide 0.5 MG of storage. This 36-inch line is being replaced by a 48-inch line as part of this Kalaheo Avenue Reconstructed Sewer project. The second system would be provided by a new 60-inch gravity line along Wanaao and Kailua Roads and would provide 0.95 MG of storage.

Equalization and rehabilitation in the Kailua basin, combined with the storage basins at Ahuimanu and Kaneohe will reduce peak wet weather wastewater flows at the Kailua RWWTP.

#### C. Project Location

The project site is located in the northeast portion of the Windward Oahu community of Kailua, near Kailua Bay. The proposed new 66-inch sewer starts from the Kailua WWTP and is installed within roadways serving the Aikahi Park subdivision. From the Kailua WWTP it heads east until it intersects with Aikahi Loop, follows Aikahi Loop in an easterly direction to the Mokapu Road intersection, and turns in a southerly direction. At the intersection of Mokapu Boulevard, Kaneohe Bay Drive and North Kalaheo Avenue, the 66-inch sewer connects to an existing 54-inch line. The 54-inch sewer continues in a southerly direction along North Kalaheo Avenue, crosses under the Kawainui Drainage Canal and ends at the intersection of Kainui Drive/L'Orange Place and North Kalaheo Avenue. At that point, the rehabilitated 54-inch sewer will connect to a new 48-inch replacement sewer. The new 48-inch sewer continues along North and South Kalaheo Avenue, turns on Kailua Road and Aumoe Road and ends at the terminus of the force main for the Kailua Heights Wastewater Pump Station (WWPS). See Figure 2.

#### D. Project Characteristics

The primary objective of this project is to increase the system capacity of the Kailua wastewater collection system. Replacement and rehabilitation of a major segment of the system plagued with serious corrosion and infiltration will correct widespread hydraulic and structural inadequacies of the system. This action will prevent the occurrence of spills caused by storm water influent entering and surcharging the



sewer lines, and will also minimize future bypasses and overflows. Figure 2 shows the sewer reconstruction project including the location of existing sewer lines to be rehabilitated or replaced. Figure 3 shows the sewer collection districts for the Kailua WWPS & WWTP which feed into the proposed reconstructed sewer lines. The Mokapu Interceptor Sewer (existing 66-inch slated for replacement, 54-inch slated for rehabilitation) was installed in 1966. It starts from the Kailua WWTP and ends at the North Kalaheo Avenue-Kainui Drive intersection. The interceptor sewer consists of about 3,390 lineal feet of 66-inch gravity sewer line laid along Aikahi Loop and Mokapu Road. At the Mokapu Road intersection the 66-inch line connects to a 54-inch gravity sewer line and continues south along North Kalaheo Avenue for another 1,875 lineal feet.

The two other existing wastewater collection systems proposed for replacement with a new 48-inch sewer are the Kalaheo Avenue Interceptor Sewer, Sections I and II and the Kailua Heights District Trunk Sewer. The Kalaheo Avenue Interceptor Sewer was installed in 1965 and is comprised of about 9,350 lineal feet of 36-inch sewer line extending from the North Kalaheo-Kainui Drive intersection to the North Kalaheo-Kailua Road intersection. The Kailua Heights District Trunk Sewer, Section 1 was installed in 1966 and is comprised of 2,480 lineal feet of 24-inch sewer line.

1. Technical Characteristics. The project area service population is based on the Koolauoko Development Plan. Design flows were determined using the Department of Design and Construction Design Standards and existing flow records, including actual wet weather infiltration/inflow flow monitoring records for the Kailua area. Design flows are summarized in the table below.

Proposed Pipe Segment	Design Peak Flow * (mgd)	Full Flow Capacity (mgd)	Ave. Daily Flow ** (mgd)	Peak Daily Flow ** (mgd)
48"	23.1	28.2	3.2	4.1
54"	41.7	29.2	--	--
66"	45.0	56.8	7.5	11.0

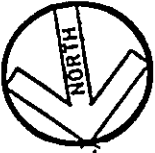
\* Design Peak flows are 5 year/6 hour flows based on year 2020 projected population.

\*\* Average Daily and Peak Daily flows are actual measured flows at two monitoring stations near the proposed alignment.

The 48-inch trunk lines for the proposed sewer project will be installed by microtunneling, a trenchless process in which successive pipe sections are jacked behind a remotely controlled excavating unit or cutting disk head between spaced

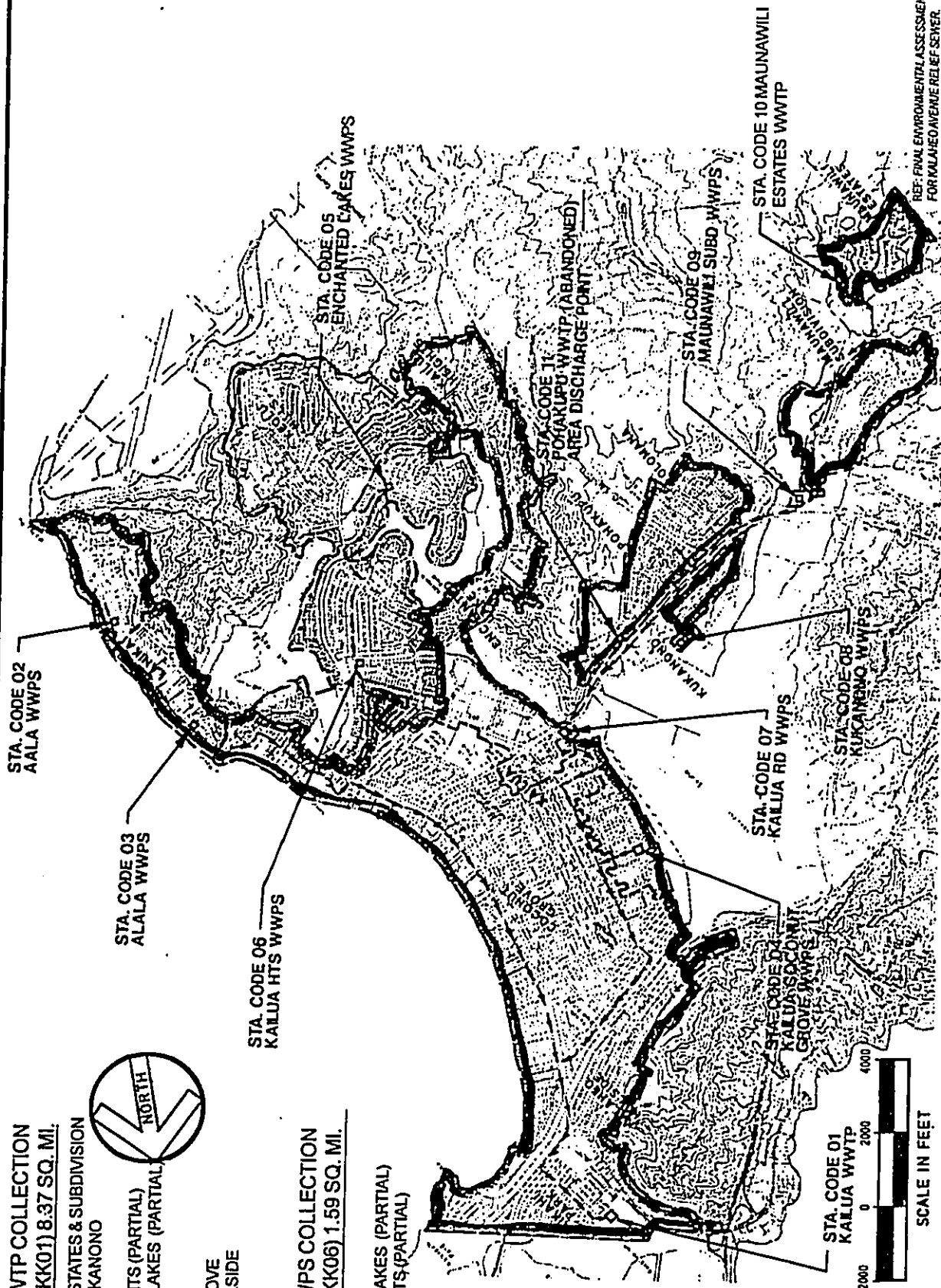
**KAILUA WWTP COLLECTION DISTRICT (KK01) 8.37 SQ. MI.**

MAUNAWILI ESTATES & SUBDIVISION  
 OLOMANA KAKANONO  
 POHAKUPU  
 KAILUA HEIGHTS (PARTIAL)  
 ENCHANTED LAKES (PARTIAL)  
 LANIKAI  
 KAILUA TOWN  
 COCONUT GROVE  
 KALAHEO HILLSIDE  
 AIKAHI PARK  
 KK06



**KAILUA WWPS COLLECTION DISTRICT (KK06) 1.59 SQ. MI.**

KEOLUHILLS  
 ENCHANTED LAKES (PARTIAL)  
 KAILUA HEIGHTS (PARTIAL)



REF: FINAL ENVIRONMENTAL ASSESSMENT FOR KALAHEO AVENUE RELIEF SEWER, AKURAKA & ASSOCIATES, AUG. 1995

**KALAHEO AVENUE  
 RECONSTRUCTED SEWER  
 KAILUA, OAHU, HAWAII  
 SEWER COLLECTION DISTRICTS  
 FOR KAILUA WWPS & WWTP**

Prepared for:  
**DEPARTMENT OF DESIGN & CONSTRUCTION**  
 DIVISION OF INFRASTRUCTURE DESIGN  
 AND ENGINEERING



**ParEn, Inc.**  
 dba **Park Engineering**  
 Engineers, Surveyors, Planners

**FIGURE 3**

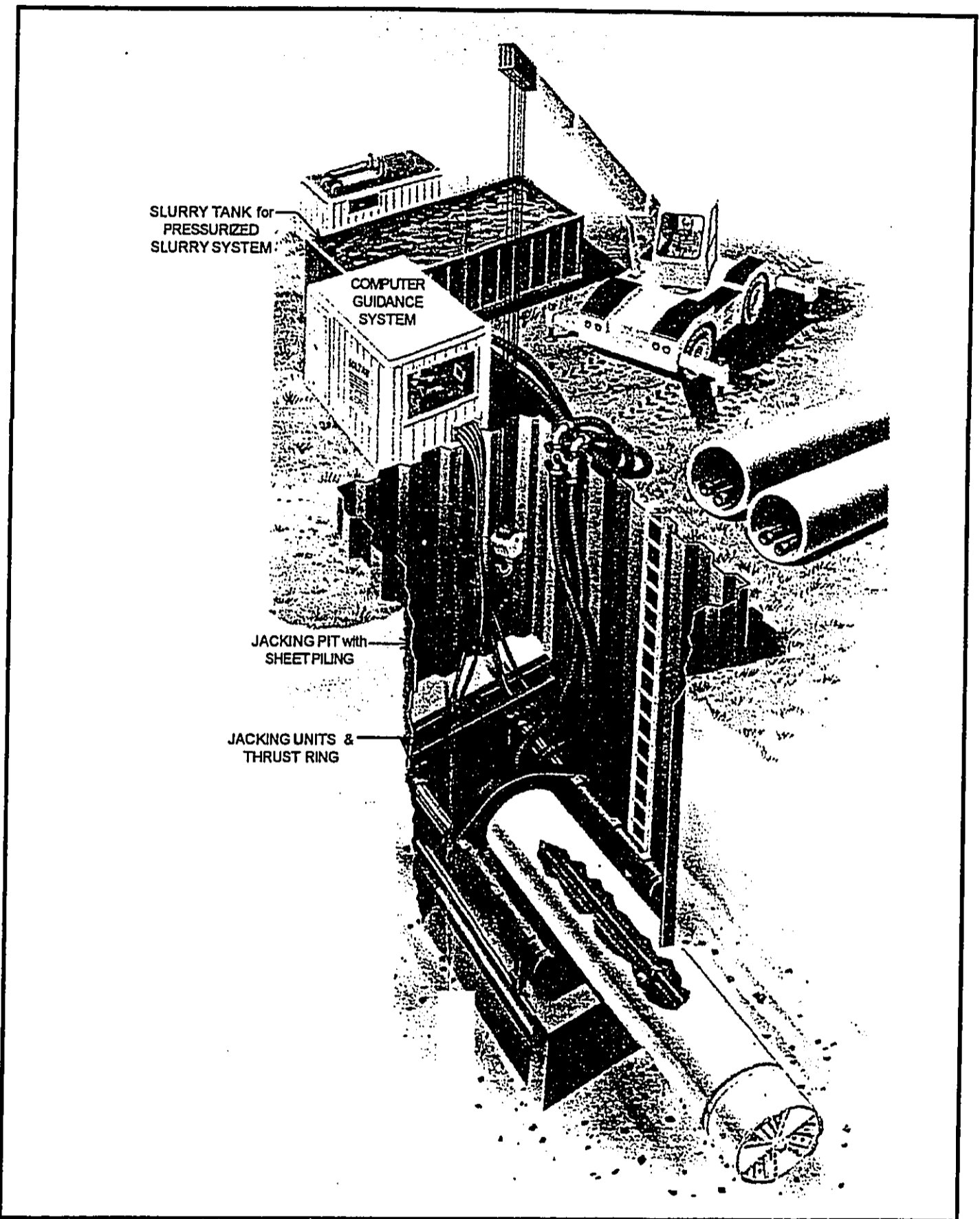
access pits. A large concrete thrust block is installed in a jacking access pit, behind a thrust wall designed to provide a reaction to jack against. As the machine is jacked against the excavation face the spoil is transported away by a suspension slurry or conveyor system, while continuous support is provided to the excavation face. A receiving pit for removal of the jacking shield shall be excavated at the completed end of each drive. To minimize excavation, both the jacking and receiving pits shall be installed at proposed manhole positions. The system's ability to bore under high ground water pressure and in unstable soil conditions, and the high degree of accuracy, makes the method ideal for installing sewers, where line and grade are critical. See Figure 4.

Microtunneling has many advantages over open trench construction. An important benefit of this method over open trenching is the reduction of impacts to residents and traffic. It will also reduce the costs associated with the installation of deep lines including excessive open trench excavation, stacking or removal of material, shoring, dewatering, ground settlement, impact on adjacent utilities, roadways and traffic. Construction plans will show the proposed jacking and receiving pits for microtunneling.

A series of branch sewers ranging in sizes from 8-inches to 27-inches will also be installed by open trench construction. These branch sewers collect sewage from laterals and chimneys and connect to the larger trunk lines at the manholes. The branch sewers will be laid at depths much shallower than the trunk line (typically 10' to 14' deep).

Where practical, existing sewer manholes along the proposed sewer trunk line alignment will be reconstructed and connected to collector lines which carry wastewater flows from residences along streets crossing the main trunk line. Work on these reconstructed manholes include: demolishing the existing manholes to a required depth to allow placement of a new reinforced concrete base, new precast riser and cone. Where practical, the reconstructed manhole shall consist of a precast slab and gravel fill installed within the existing sewer manhole to support collector lines. Many of the manholes designated for reconstruction have existing drops which transport flows into deeper trunk lines. These deep trunk lines will be used for storage of wet weather flows, where there is no conflict between the collector sewer lines and the deep trunk line.

The proposed method for rehabilitating the existing 54-inch sewerline is a trenchless, cured-in-place-pipe (CIPP) process accomplished by dragging or hydraulically pushing flexible pipelines from one existing manhole to another. Hot water is commonly used for curing during the in-situ process. The relative speed of CIPP compared to conventional repairs or sliplining makes this process attractive. See Figure 5.



SLURRY TANK for  
PRESSURIZED  
SLURRY SYSTEM

COMPUTER  
GUIDANCE  
SYSTEM

JACKING PIT with  
SHEET PILING

JACKING UNITS &  
THRUST RING

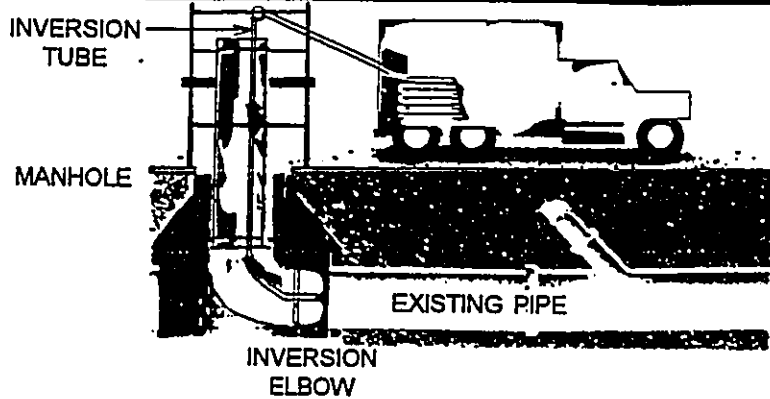
Prepared for:  
DEPARTMENT OF DESIGN & CONSTRUCTION  
DIVISION OF INFRASTRUCTURE DESIGN  
AND ENGINEERING

**KALAHEO AVENUE  
RECONSTRUCTED SEWER**  
KAILUA, OAHU, HAWAII  
Typical Microtunneling Arrangement  
at Jacking Pit



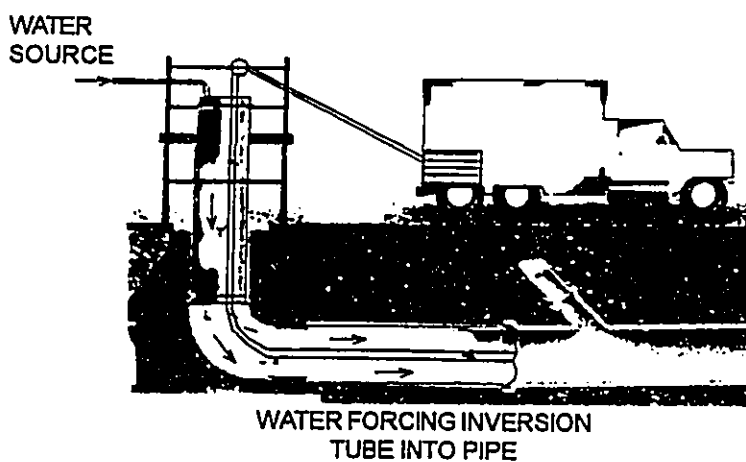
ParEn, Inc.  
dba Park Engineering  
Engineers, Surveyors, Planners

FIGURE 4



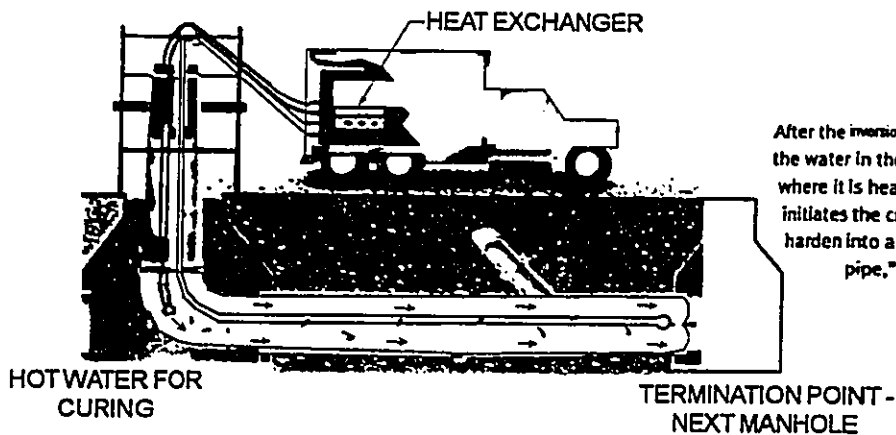
#### STAGE ONE

Resin-saturated, flexible inversion tube material is installed in the existing pipe, through either a manhole or other access point. The inversion tube material is then cuffed back and handed to an inversion elbow, creating a closed system that allows the water inversion process to take place.



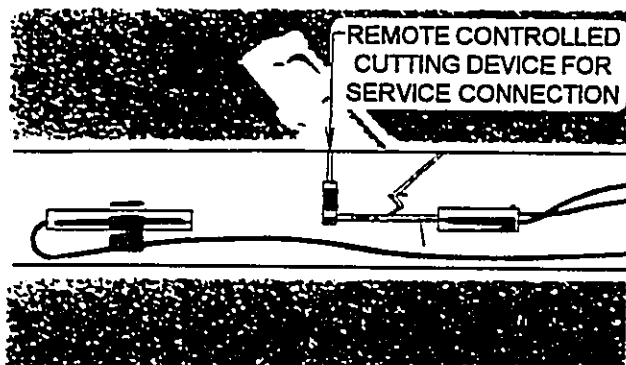
#### STAGE TWO

Water from nearby hydrants (or other convenient sources) is used to invert the inversion tube material. The force of the water turns the resin-impregnated tube inside out and into the pipe being reconstructed. As the tube travels through the pipe, water is continually added to maintain a constant pressure, keeping the tube pressed tightly against the walls of the old pipe. No dragging, tearing, or abrasion occurs as the tube gently inverts over pipeline irregularities.



#### STAGE THREE

After the inversion tube material reaches the termination point, the water in the line is circulated through a heat exchanger, where it is heated and returned to the tube. The hot water initiates the cure of the thermosetting resin, causing it to harden into a structurally sound, jointless "pipe within a pipe," an inversion tube cured-in-place-pipe.



#### STAGE FOUR

Once the inversion tube composite has hardened and cooled, the water pressure is released and the ends are trimmed. Service connections are reinstated internally with a remote-controlled cutting device or by man-entry techniques. The operation is then complete, and the newly installed pipe is ready for immediate use. All this is accomplished with little or no excavation.

Prepared for:  
DEPARTMENT OF DESIGN & CONSTRUCTION  
DIVISION OF INFRASTRUCTURE DESIGN  
AND ENGINEERING

KALAHEO AVENUE  
RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
THE CURED-IN-PLACE-PIPE (CIPP)  
REHABILITATION PROCESS



ParEn, Inc.  
dba Park Engineering  
Engineers, Surveyors, Planners

FIGURE 5

Bypassing of wastewater flows will be required during the project to assure no interruption of sewage service. The Contractor will provide and operate temporary facilities including plugs, pumps and other equipment necessary to intercept sewage flow before it reaches the work area, carry it past his work area and return it to the existing sewer at a point downstream. Where bypass pumping is required, work shall be done in a manner which does not damage private or public property or create a nuisance or public menace. The Contractor shall take measures to prevent excessive sewer surcharging and shall not dump or allow sewage flow on private property, gutters, streets, sidewalks or storm sewers. The bypass lines will be installed above ground except at driveway and street crossings. At driveway and street crossing locations the lines shall be installed at shallow depths in order to minimize impacts to traffic flow. Noise generated by bypass pumps shall be in compliance with applicable noise level restrictions or shall be dampened by enclosing pumps in noise attenuating housing units. Specific requirements that the Contractor must adhere to while conducting bypass operations are contained in Section 209 "Sewer Flow Control and Temporary Bypassing" of the contract specifications.

## 2. Socio-Economic Characteristics

The estimated construction cost of the project is about \$36.2 million. The labor costs associated with a sewer reconstruction project of this magnitude will provide a positive economic impact on the construction industry. The main long-term positive social impact of this project is the correction of inadequacies in the existing wastewater collection system allowing it to carry current peak wet weather wastewater flows. By correcting the problems of the system, the occurrence of odor problems and future spills will be significantly reduced.

Short term negative effects will be felt by residents and businesses of the Kailua Beach Center, Aikahi Park Shopping Center, and Kalapawai Store during sewer line construction. Motorists travelling on roads along the proposed alignment will be rerouted around excavated trenches and microtunneling access pits.

## 3. Environmental Characteristics

Temporary disruptions to the environment will occur due to construction activity such as excavation of jacking and receiving pits and open trenches for branch sewer lines and lateral connections. Operation of construction and microtunneling jacking equipment will temporarily effect dust, noise and exhaust emission levels. Some short-term increase in odors may result during connections to existing sewer lines. Environmental impacts caused by the project will be mitigated by complying with applicable state and federal standards and guidelines. See Section VII.

## VI. DESCRIPTION OF AFFECTED ENVIRONMENT

### A. Topography

The outer reaches of Keolu Hills and Kailua Heights have moderately steep slopes. All remaining areas within the project site near the Kaelepulu Pond, Kawainui Stream and the shoreline are relatively flat. Ground elevations in the project area range from 5.5 feet mean sea level (msl) at the Mokapu Road-Aikahi Loop intersection to 12 feet msl along Aumoe Road and North Kalaheo Avenue. About 220 feet east of the Kailua WWTP, before reaching Aikahi Loop the sewer will cross under an existing concrete drainage ditch. A 329-foot section of the existing 54-inch sewer line planned for rehabilitation will cross beneath the Kawainui Drainage Canal.

### B. Geology/Soils

In October 1995, and October 1998 PSC Associates Inc. conducted geotechnical engineering explorations to evaluate the general soil conditions along the proposed sewer alignment. These investigations revealed that the area of the proposed alignment is underlain by loose to medium dense coralline sands extending to depths of about 15 to 20 feet below the existing ground surface. Below this sand layer, loose to medium dense sandy and silty coralline gravel deposits were found. Groundwater was found in all drilled borings at depths of 6 to 12 feet below existing ground at elevations ranging from (-) 1.5 to 1.7 msl. The results are documented in two reports titled "GEOTECHNICAL ENGINEERING EXPLORATION, NEW SEWER LINE ALONG AUMOE ROAD AND KAILUA ROAD AND EXISTING SEWERLINE REHABILITATION ALONG KALAHEO AVENUE, KAILUA, OAHU, HAWAII", and "GEOTECHNICAL ENGINEERING EXPLORATION, KALAHEO AVENUE REHABILITATED SEWER, KAILUA, OAHU, HAWAII".

The soil in the project area is of the Jaucas Series, which is an excessively drained, calcareous soil with rapid permeability and slow runoff characteristics. A representative subsurface profile of the area consists of single grain, pale brown sandy soil more than 5 feet deep. Available water capacity is 0.5 to 1.0 inch per foot of soil. Workability of the soil is difficult because it is generally loose and lacks stability for equipment use. In many places the surface layer is dark brown because of accumulation of organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile. (*"Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii"*, dated August 1972, *Soil Conservation Service*).

#### C. Climate

The project site has a mild subtropical climate with strong northeast trade winds 75% of the time. Average temperature is 75° F, ranging from the upper fifties in January through February to over 90° F in August through October. Mean annual rainfall along the coastal areas of Kailua averages 50 inches. Heavy rains occur mainly between the months of November through April.

#### D. Land Use

Lands along the proposed sewer alignment are zoned for residential except for two neighborhood shopping centers. The larger of the two is the Aikahi Park Shopping Center located at the intersection of North Kalaheo Avenue and Mokapu Road and includes restaurants, office buildings, a fire station and other commercial activities. A small shopping center known as Kailua Beach Center is situated near the South Kalaheo Avenue Kailua Road intersection. Residential lot sizes range from 5,000 to 10,000 square feet with larger parcels occupying the shoreline areas. Multi-family residential units are insignificant in number.

#### E. Flora and Fauna

No known endangered species of flora or fauna live within the roadway project site. Installation of the proposed sewer line should have little or minimal impact on wildlife due to the high degree of existing development in the area.

#### F. Historic Sites and Archaeological Resources

The proposed project will involve excavation under existing roadways, within an existing utility corridor. Although archaeological surveys have not been previously conducted along the proposed alignment, the Department of Land and Natural Resources, State Historical Preservation Division (SHPD), believes that some historical sites may be present along Kalaheo Avenue. This is because the underlying sediments are beach sands which are known to contain significant historical burial sites and cultural deposits in nearby sites within the Kailua area. To counter any inadvertent adverse effects on significant historic sites, a written archaeological monitoring plan shall be in place before the start of any ground disturbance. This plan must be reviewed and accepted by the SHPD. Specific requirements of the monitoring plan are contained in Appendix A (SHPD letter, Log No. 21974, dated July 28, 1998).



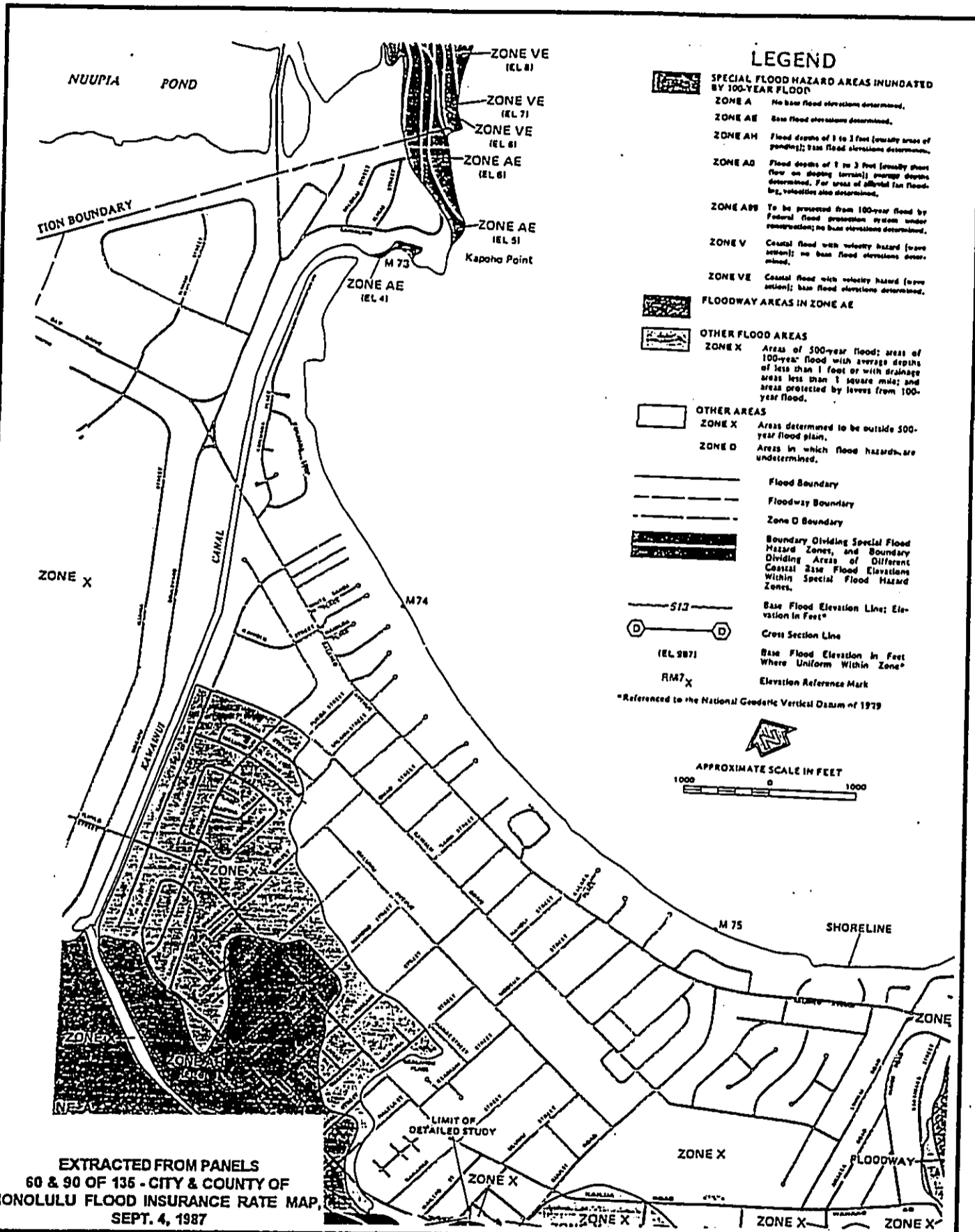
### G. Flood Hazard

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, panel 60 the project site lies within Zone X, an area determined to be outside the 500-year flood plain. The base flood elevation for this area has not been determined. Figure 6 contains a Flood Hazard Map and Figure 7 contains an SMA boundary Map.

## VII. POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

A. Impacts During Construction. The project is expected to take about four years to complete. Installation of the new and rehabilitated sewer trunk lines, manholes, collector lines, and reconnection of laterals will be separated into seventeen work zones. Construction at each zone will range between two and five months. After work is completed in each work zone, microtunneling equipment and other heavy equipment used for collector sewer line and lateral reconnections will move to the next work zone. Thus, the main impacts (e.g.; noise, dust, traffic, utility service disruption) to residences and businesses will last only while the work zone is immediately adjacent to their property.

1. Periodic noise from construction equipment such as backhoes, trucks, compactors, pumps, generators and pavers will impact residents and businesses near the project site. Installation of the sewer line by microtunneling will require continuous effort and will also affect noise levels. These impacts will be reduced by applying current techniques and methods such as noise reducing mufflers. The Contractor shall observe and comply with Public Health Regulations Title 11, Chapters 42 and 43 regarding noise control for Oahu. The Contractor shall install sheet piling used to fortify access pits using vibratory methods, and shall restrict these activities to the daylight hours to minimize adverse effects on residents and businesses in the neighborhood. Noise generated from bypass pumps operating at night shall be moderated by using an enclosed housing unit. A Community Noise Variance application has been filed with the Department of Health which would allow 24-hour a day, 7 days a week operation of bypass pumps and emergency tunneling. The contractor shall be directed to use quieter ancillary equipment such as settling tanks in lieu of vibrating screens or hydrocyclones. The contractor will be required to follow Best Management Practices in the plans and specifications including housing units, noise barriers and/or insulation to control noise levels at all times.



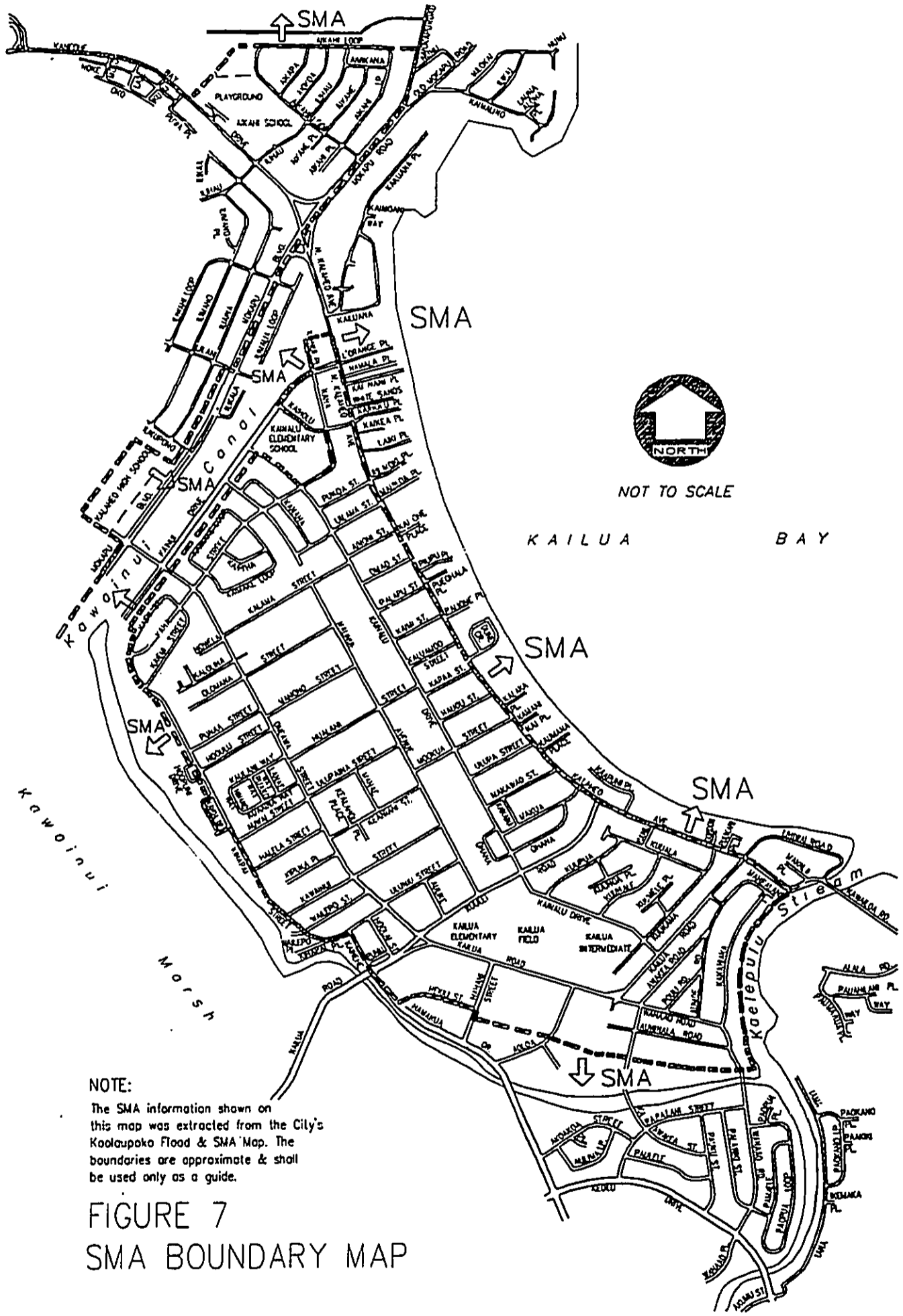
EXTRACTED FROM PANELS  
60 & 90 OF 136 - CITY & COUNTY OF  
HONOLULU FLOOD INSURANCE RATE MAP,  
SEPT. 4, 1987

Prepared for:  
DEPARTMENT OF DESIGN & CONSTRUCTION  
DIVISION OF INFRASTRUCTURE DESIGN  
AND ENGINEERING

KALAHEO AVENUE  
RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
FLOOD HAZARD MAP



ParEn, Inc.  
dba Park Engineering  
Engineers, Surveyors, Planners  
**FIGURE 6**



NOTE:  
 The SMA information shown on this map was extracted from the City's Koolapoko Flood & SMA Map. The boundaries are approximate & shall be used only as a guide.

FIGURE 7  
 SMA BOUNDARY MAP

2. Dust nuisance shall be controlled by the Contractor by using measures such as water sprinkling, and limiting the area being worked on at any one time. The work shall be in conformance with the Air Pollution Control Standards and Regulations of the Department of Health. The Contractor shall be responsible for proper maintenance of all construction equipment and vehicles to minimize pollutant exhaust emissions.

3. Traffic passing through the project site will be disrupted, as vehicles will be diverted around work areas such as jacking and receiving pits and open trenches for interceptor lines and sewer laterals. Parking will be restricted on both sides of the street where applicable during construction. Traffic control by police officers and/or trained construction flagmen will moderate traffic congestion. The Contractor shall provide advance notice to Aikahi and Kainalu Elementary Schools whenever construction will affect traffic flow at these schools is anticipated.

4. Utility service for water, gas, electric and telephone may be disrupted during construction activities. Utility services to Aikahi and Kainalu Elementary Schools is not expected to be affected by the project. The Contractor shall protect all existing utilities within the project area during construction.

5. The Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities and take all necessary precautions for the protection, convenience and safety of the public. Residents may be inconvenienced in terms of driveway access and other road frontage usage (mail, deliveries, refuse collection) when construction is directly fronting their lots.

6. Some roadways shall be blocked during certain construction periods and are specified in the construction traffic control plans. During these periods, the Contractor shall provide adequate clearance in or adjacent to construction zones, to allow emergency vehicles to enter and exit the area during emergency situations. The Fire and Police Departments shall be apprised of these areas.

7. Dewatering will be required to provide dry work areas in microtunneling jacking & receiving pits and some open trenched areas along the proposed alignment. An appropriate filtering system following the requirements set forth in a Department of Health approved National Pollutant Discharge Elimination System permit will be used by the Contractor. All groundwater taken out of excavated areas shall be routed through sediment settling box(es). The filtering system will be designed to settle out solids from the groundwater prior to its discharge into nearby drainage structures and Kawainui Canal. The existing drainage structures identified near the site are along Aikahi Loop, Mokapu Road, North Kalaheo Avenue near the canal and along Kakahiaka Street. The Contractor shall ensure that effluent exiting the sediment settling box is in compliance with appropriate water quality criteria and the conditions of the NPDES General Permit by

monitoring the discharge. This system will minimize the discharge of pollutants into the ocean.

8. Open excavations shall be properly sheeted and braced by the Contractor to make it safe and secure from possible slides, cave-ins and settlement. The sheet pilings shall extend sufficiently deep to stabilize excavated trench walls and reduce seepage of groundwater into the excavations. Existing adjacent improvements and structures shall be properly supported with beams, struts or underpinning to fully protect it from damage.

9. Proper disposal of spoils generated from the microtunneling operation shall be the responsibility of the microtunneling contractor.

10. Proper disposal of hot water used during the CIPP curing process shall be the responsibility of the contractor conducting the rehabilitation operation. The water and any other waste materials generated during the pipe rehabilitation process shall be disposed of in an environmentally safe manner in accordance with applicable State and County requirements. A designated area within the Kapaa Landfill is available for use as a "wet-out" site for the vacuum impregnation process. The Contractor shall adhere to the requirements in specification section 505 - "Cured In Place Pipe" of the contract documents. These requirements include not interfering with landfill operations, controlling the odors, not impacting the existing heiau and restoring the site after completion of the work.

11. Proper disposal of hydrotesting water used for testing new sewer and water lines shall be the responsibility of the Contractor. Discharging of hydrotesting water shall be subject to water quality criteria and conditions set forth in an NPDES General Permit reviewed and approved by the Department of Health. The Contractor shall also obtain a permit from the City to discharge effluent into their storm drain system. Chlorinated hydrotest effluent may be discharged into the City's wastewater collection system, upon receiving approval from the Department of Environmental Services.

B. Long term impacts. The long term impact of this project is positive considering the current condition of the sewer system. There are no long term negative impacts associated with the implementation of this project.

## VIII. ALTERNATIVES CONSIDERED

Several alternatives were considered as part of the improvement plan for correcting the regional problems of the Kailua wastewater collection system. Two alternatives for the Keolu Drive area (KK06 system) and three alternatives for the Kalaheo Avenue area (KK01 system) were studied by Akinaka and Associates in their "*Final Environmental Assessment for the Kalaheo Avenue Relief Sewer*", August 1995. These alternatives are summarized below.

A. Alternative 01-01 involves replacement of the existing trunk sewer from the Kailua Heights WWPS force main to the Kailua WWTP (approximately 17,200 lineal feet of 33-inch to 72-inch RCP) by open trenching. This replacement alignment goes along Aikahi Loop, Mokapu Road, North and South Kalaheo Avenue, Kailua and Aumoe Roads. In addition, downstream of the Kailua Heights WWPS approximately 300 lineal feet of the 14-inch force main would be replaced with a larger 18-inch force main. Construction cost for this alternative would total \$55.4 million.

B. Alternative 01-02 involves rehabilitation of approximately 17,400 lineal feet of 24-inch to 66-inch sewer line by Cured-in-Place pipe (CIPP) lining along Kalaheo Avenue, Wanaao, Aumoe and Kailua Road. A relief line consisting of approximately 17,000 lineal feet of 42-inch to 60-inch RCP would also be installed as part of this alternative. This relief line would intercept branch flows directed to the existing sewer line on Kalaheo Avenue. Downstream of the WWPS up to 900 lineal feet of 14-inch force main would be repaired as needed. Total construction cost for this alternative amount to \$63.7 million.

C. Alternatives 01-03 and 01-03M consist of several major projects. One segment involves rehabilitation of up to 14,600 lineal feet of sewer trunk line on Kalaheo Avenue, Mokapu Boulevard and Aikahi Loop by CIPP pipe lining. Upstream of the Kailua Heights WWPS the gravity sewer line on Aumoe and Kailua Road (approximately 2,500 lineal feet of 36-inch pipe) would be replaced. Downstream of the WWPS approximately 900 lineal feet of 14-inch force main would be replaced. The last and most expensive portion of this alternative involves installation of approximately 20,600 lineal feet of 30-inch to 60-inch RCP sewer line along Kainalu Drive. The construction cost for the Kainalu Drive relief line is estimated at \$47 million if installed by open trenching and \$35.5 million if installed by microtunneling. Total construction cost for alternative 01-03 amounts to \$66.2 million (Kainalu relief installed by open trenching). Installation of the Kainalu relief line by microtunneling would reduce the cost of alternative 01-03M by \$11.5 million resulting in a total construction cost of \$54.7 million.

D. Alternative 06-02 involves the rehabilitation of up to 4,300 lineal feet of sewer line along Keolu Drive and Wanaao Road to the Kailua Heights WWPS. Approximately 4,200 lineal feet of relief sewer would also be installed along the existing trunk line by open trenching. Construction cost for this alternative amounts to \$6.7 million.

E. The no action alternative was not considered practical because of the deteriorated condition of the sewer system. Studies indicating the system is inadequate have been confirmed as evidenced by overflows, the need for emergency pumping, and a recent trunk line break of the Kalaheo Interceptor Sewer.

F. Various alternatives evaluated during conceptual, preliminary and interim planning phases were presented and discussed in detail in the KKK FAC Plan. A summary of the final four alternatives proposed for FAC Plan is contained in Section V.B. of this FEA.

#### IX. FUNDING

Based on the proposed alignment, the construction cost for this project is estimated at about \$36.2 million. The City and County of Honolulu will provide the funds for this project. The project will not require direct assessments from the residents being served by these improvements. A preliminary breakdown of the construction costs is contained in Appendix B.

X. DETERMINATION, FINDINGS AND REASONS TO SUPPORT THE DETERMINATION

A. This Revised Final Environmental Assessment is part of the environmental review process which meets the requirements of Chapter 343, HRS. After completing an assessment of the potential environmental effects of the proposed project and consulting with government agencies and interested parties, the proposing agency does not anticipate any significant impacts. This document constitutes an **Finding of No Significant Impact (FONSI)** with reasons supporting this determination discussed below:

1. The proposed action does not involve any irrevocable commitment to loss or destruction of any natural or cultural resource. There appears to be no cultural resources associated with the project site. The project site has been substantially altered from its natural condition.

2. The proposed action does not curtail the range of beneficial uses of the environment. The proposed project is consistent with the City's General Plan and the Department of Design and Construction's design standards and will not curtail beneficial uses of the environment in the area. The City's reorganization recently reassigned the duties of the Department of Wastewater Management to the Department of Design and Construction. The proposed project will be compatible with the uses of the surrounding area.

3. The proposed action does not conflict with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 343, HRS, and any revisions thereof and amendments thereto, court decisions or executive orders. The proposed project is consistent with the State's Land Use Plan which is in concert with all applicable policies, goals and guidelines. No long-term environmental conflicts are foreseen.

4. The proposed action will substantially affect the economic or social welfare of the community or state. The economy will be affected by short-term, construction related activities. Cash infusion of approximately \$36.2 million during the construction phase will be the primary short-term economic impact. Upon completion of the project, the economic situation should return to the pre-existing condition.

5. The proposed action will correct inadequacies in the sewer system, reduce the existing odor problem and prevent future spills. This action will improve environmental conditions which have the potential for substantially affecting public health. The short term negative impacts associated with construction activities such as noise, dust, exhaust emissions, odor, damaged roadways and traffic congestion will be mitigated as described in section VII.



6. The proposed action does not have a secondary impact. The project will allow the area's wastewater collection system to adequately handle flows generated during peak wet weather conditions. Once permanently in-place, it will have no effect on traffic and public facilities.

7. The proposed action does not involve a substantial degradation of environmental quality. The existing physical qualities of the surrounding areas will be preserved.

8. The proposed action is individually limited and cumulatively does not have a considerable effect upon the environment or involve a commitment for larger actions. The proposed action, either individually or cumulatively, will not have a considerable effect on the environment, nor will it involve a commitment for larger actions.

9. The proposed action does not substantially affect rare, threatened or endangered species or habitats. There are no known rare, threatened or endangered species or habitat associated with the project site.

10. The proposed action does not detrimentally affect the air or water quality or ambient noise levels. Short term impacts on air and water quality, as well as noise may occur during the construction period, but will be mitigated by normal construction practices and will be regulated by project plans, specifications and City inspectors.

11. The proposed action does not affect an environmentally sensitive area such as a flood plain, tsunami zone, or erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. The proposed project is not located in an environmentally sensitive area. Although most of the project site is not located within a flood plain, the segment along Kailua and Aumoe Road borders the 500-year flood plain and has been known to flood because of inadequate drainage facilities. The project is not located on unique geologically hazardous lands. It is also not expected to have any significant adverse impacts on fresh or coastal waters.

12. The proposed action does not affect scenic vistas and viewplanes identified in county or state plans or studies. The sewer line will be installed below the ground surface of established roadways.

13. The proposed action will require substantial energy consumption for the installation of the main trunk lines and connecting sewer lines and laterals. Energy consuming construction equipment such as backhoes, trucks, compactors, pavers, by-pass and dewatering pumps, generators and microtunneling jacking equipment will be used for these operations. After the installation is complete, the sewer line will operate by gravity and will not require any external energy.

XI. REFERENCES

- 1) Final Environmental Assessment for the Kalaheo Avenue Relief Sewer, Akinaka and Associates, August 1995.
- 2) Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, Soil Conservation Service, August 1972.
- 3) Sewer Rehabilitation and Infiltration & Inflow Minimization Plan - Preliminary Cost-effectiveness Assessment, Fukunaga & Associates, December 1995.
- 4) Flood Insurance Rate Map (FIRM), panel 60.
- 5) Islandwide Sewer Adequacy Study (Kailua). City & County of Honolulu, September 1986.
- 6) Geotechnical Engineering Exploration - New Sewer Line Along Aumoe Road and Kailua Road and Existing Sewer Line Along Kalaheo Avenue, PSC Associates, Inc., October 1995.
- 7) Geotechnical Engineering Exploration - Kalaheo Avenue Rehabilitated Sewer, Kailua, Oahu, Hawaii, PSC Associates, Inc., October 1998.
- 8) Preliminary Engineering Report and Cost Estimate for Kalaheo Avenue Relief Sewer. Akinaka and Associates, December 1994.
- 9) Kailua-Kaneohe-Kahaluu Facilities Plan. Wilson Okamoto and Brown & Caldwell, September 1998.

# APPENDIX A

COPIES OF CORRESPONDENCES  
RECEIVED DURING THE PREPARATION OF THE  
FINAL ENVIRONMENTAL ASSESSMENT

**FEDERAL:****Date comments received**

Dept of Army - Operations Branch	July 17, 1998
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**STATE OF HAWAII:**

Dept of Accounting and General Services	July 16, 1998
Department of Education	July 16, 1998
Dept of Land and Natural Resources-Land Division	July 22, 1998
Dept of Land and Natural Resources-SHPD	July 28, 1998
Department of Transportation	July 11, 1998
Office of Environmental Quality Control	July 7, 1998
Office of Hawaiian Affairs	July 17, 1998

**CITY AND COUNTY OF HONOLULU:**

Department of Environmental Services	August 6, 1998
Planning Department	August 4, 1998
Department of Planning and Permitting	July 23, 1998
Department of Transportation Services	August 7, 1998
Fire Department	October 29, 1998
Police Department	July 23, 1998

UTILITY:	Date comments received
Board of Water Supply	July 17, 1998
The Gas Company	July 30, 1998
GTE Hawaiian Telephone	July 22, 1998
Hawaiian Electric Company	July 16, 1998

COMMUNITY GROUPS / BUSINESSES:	
Kalapawai Store	June 29, 1998



DEPARTMENT OF THE ARMY  
U. S. ARMY ENGINEER DISTRICT, HONOLULU  
FT. SHAFER, HAWAII 96813-5400

PLAT TO  
ATTENTION OF

July 17, 1998

Operations Branch

Mr. Kenneth Sprague  
Department of Wastewater Management  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sprague:

This letter is written in regards to your request for an extension to permit NW94-058, for the Kalahao Avenue Reconstructed Sewer Project located in Kailua, Oahu.

According to our files, our letter dated October 21, 1994 addressed the time extension of your permit. Since then the Nationwide Permits (NWP's) expired and were reissued on December 13, 1998 with no significant modifications that would affect your proposed project authorized under NW#3. Therefore, the authorization under NW94-058 is extended until July 31, 2000. The general conditions attached to the original permit are made a part of this permit extension.

Furthermore, since micro-tunneling will be the method of installation for the 48" sewer line, a Section 401 Water Quality Certification will not be required. However, please ensure that the contractor uses best management practices when proceeding with the construction activity at the Kawaiuli Drainage Channel.

Should you need additional information, you may call Ms. Lilly Silva at (808) 438-9258, extension 17. Due to a change in our database, a new file number has been assigned to this project. Please refer to file number 980000215 in any future correspondence.

Sincerely,

George P. Young, P.E.  
Chief, Operations Branch

Copy Furnished:

Clean Water Branch, Environmental Management Division,  
State Department of Health, P.O. Box 3378, Honolulu, HI 96801  
Office of Planning, CZM Program Office, P.O. Box 2359, Honolulu,  
Hawaii 96804  
Mr. Derrick Eifalan, P&E, Inc., dba Park Engineering, 567 South  
King Street, Suite 300, Honolulu, Maui-Hawaii 96813-3036

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-4841 • FAX: (808) 522-4547



JEREMY HARRIS  
MAYOR

RANDALL K. FUJINO, MA  
DIRECTOR  
ROLAND D. LIBBY, JR., MA  
COUNTY ENGINEER

IDEC 99-048

March 19, 1999

Mr. George P. Young, P.E.  
Chief, Operations Branch  
U.S. Army Engineer District, Honolulu  
Fort Shafter, Hawaii 96858-5440

Attention: Ms. Lolly Silva

Dear Mr. Young:

Subject: Kalaheo Avenue Reconstructed Sewer

Kailua, Oahu, Hawaii

TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23, 27  
File # 280000215

Thank you for your letter, dated July 17, 1998 approving an extension for permit NW94-058. The final plans for the Kalaheo Avenue Reconstructed Sewer calls for installation of about 3,366 feet of 66-inch gravity sewer by microtunneling, from the Kailua Wastewater Treatment Plant (WWTP) to the intersection of Mokapu Boulevard and Kaneohe Bay Drive. At that intersection the new 66-inch line will connect to an existing 54-inch sewer line planned for rehabilitation by a Cured-In-Place-Pipe (CIPP) process. It will extend about 1,865 feet along North Kalaheo Avenue and under the Kawaiwi Drainage Canal, terminating at the North Kalaheo Avenue-Kainui Drive intersection. At that point, it connects to about 11,850 feet of new 48-inch replacement sewer, installed by microtunneling and extends to the terminus of the force main for the Kailua Heights Wastewater Pump Station (WWPS).

Although no work shall be done in the bed or banks of Kawaiwi Drainage Canal, the Contractor shall be required to adhere to Best Management Practices (BMPs) during rehabilitation of the existing 54-inch sewer line beneath the canal. These BMPs are specified in Section 501 Rehabilitation Sewer Line of the contract specifications.

Mr. George P. Young, P.E.  
Page 2  
March 19, 1999

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

  
RANDALL K. FUJINO  
Director

cc: ParEn Inc.

84-1111-1  
COMMUNICATIONS  
SECTION



STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P.O. BOX 111, HONOLULU, HAWAII 96810

LETTER NO (E)1144.8

JOSEPH HAYES  
MAYOR

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

658 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 521-4341 • FAX: (808) 521-1517



RAVIVALLI K. FUJIKI, AIA  
DIRECTOR  
ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

March 19, 1999

IDEC 99-049

JUL 16 1998

ParEn, Inc.  
dba Park Engineering  
567 South King Street  
Suite 300, Kawaiahao Plaza  
Honolulu, Hawaii 96813-3036

Attention: Mr. Derrick Elfalan, Project Manager  
Gentlemen:

Subject: Revised Draft Environmental Assessment for  
Kalaheo Avenue Reconstructed Sewer Project  
Formerly Kalaheo Avenue Relief Sewer  
Kailua, Oahu, Hawaii

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

If you should have any questions, please contact Mr. Ronald Ching  
of the Planning Branch at 586-0490.

Sincerely,  
  
GORDON MATSUOKA  
Public Works Administrator

RC/ET:jy

Mr. Gordon Matsuoka  
Public Works Administrator  
Department of Accounting and General Services  
P.O. Box 119  
Honolulu, Hawaii 96810

Attention: Mr. Ronald Ching

Dear Mr. Matsuoka:

Subject: Kalaheo Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii

IMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80, & 83, 1-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated July 16, 1998 regarding the Revised Draft Environmental  
Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. We appreciate your efforts in  
reviewing the document. Your letter will be included in the Final EA.

If you have any comments or questions, please contact Mr. Glenn Oldia, Project Engineer, at  
527-5829.

Very truly yours,

RANDALL K. FUJIKI  
Director

cc: ParEn Inc.



RODOLPH J. CASTRINO  
COMMISSIONER



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2140  
HONOLULU, HAWAII 96840

ALFRED K. SUGA  
Interim Superintendent

OFFICE OF THE SUPERINTENDENT

July 16, 1998

Mr. Derrick Eifalan  
Project Manager  
ParEn, Inc.  
567 South King Street, Suite 300  
Honolulu, Hawaii 96813

Dear Mr. Eifalan:

Subject: Kalaeo Avenue Reconstructed Sewer Project  
Revised Draft Environmental Assessment

The proposed project will be in close proximity to Aikahi Elementary and Kainalu Elementary Schools. The Department of Education requests that advance notice be given whenever construction will affect traffic flow or utility services at the schools. Notices should be provided to:

Ms. Roberts Tokumaru, Principal  
Aikahi Elementary School  
281 Ilihu Street  
Kailua, Hawaii 96734

Ms. Frances Wong, Principal  
Kainalu Elementary School  
165 Kaihulu Street  
Kailua, Hawaii 96734

We have no other comments to offer at this time.

Sincerely,

*Alfred K. Suga*

Alfred K. Suga  
Interim Superintendent

AKS:hy

cc: OBS  
R. Tokumaru, Aikahi Elem.  
F. Wong, Kainalu Elem.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU  
600 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-5841 • FAX: (808) 523-5847



SEBASTIAN HARRIS  
MAYOR

RAYMOND K. FUJIKI, MA  
DIRECTOR  
ROLAND D. LIBERTY, JR., MA  
DEPUTY DIRECTOR

March 19, 1999

IDEC 99-050

Dr. Paul LeMahieu, Ph.D.  
Superintendent  
Department of Education  
P.O. Box 2360  
Honolulu, Hawaii 96804

Dear Dr. LeMahieu:

Subject: Kalaeo Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69-70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated July 16, 1998 regarding the Revised Draft Environmental Assessment (EA) for the Kalaeo Avenue Reconstructed Sewer. The following has been prepared in response to your comments:

The Contractor shall provide advance notice to Aikahi and Kainalu Elementary Schools whenever construction will affect traffic flow at the schools. No effect on the utility services at these schools is anticipated. The Final EA has been revised to include this provision.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

*Raymond K. Fujiki*  
RAYMOND K. FUJIKI  
Director

cc: ParEn Inc.



DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-5244 • FAX: (808) 522-5247



JEREMY HARRIS  
DIRECTOR

RANDALL K. FUJIKI, MA  
DIRECTOR  
ROLAND B. LIBBY, JR., MA  
DEPUTY DIRECTOR

IDEC 99-031

March 19, 1999

Mr. Dean Y. Uchida  
Administrator, Land Division  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Attention: Ms. Patti Miyashiro

Dear Mr. Uchida:


Subject: Kalahao Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 21 & 27

Thank you for your letter, dated July 22, 1998 (*LD Ref: KALAHAO.COM*) regarding the Draft Revised Environmental Assessment (EA) for the Kalahao Avenue Reconstructed Sewer. The following has been prepared in response to your comments:

The existing 54-inch portion of the project crossing beneath Kawaiui Drainage Canal will be rehabilitated using a trenchless, Cured-In-Place-Pipe process and will have no effect on the bed or banks of the Kawaiui Drainage Canal. The 66-inch and 48-inch replacement portion of the proposed sewer line will be installed by microtunneling and also have no effect on the bed or banks of the canal.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

  
RANDALL K. FUJIKI  
Director

cc: ParEn Inc.



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

July 28, 1998

Derrick Eifalan  
Project Manager  
Park Engineering  
Kawaihoo Plaza Suite 300  
567 S. King Street  
Honolulu, HI 96813

Dear Mr. Eifalan:

**SUBJECT:** Chapter 6E-8 Historic Preservation Review - Revised Draft Environmental Assessment (DEA) Kalaheo Avenue Reconstructed Sewer Project (Formerly Kalaheo Avenue Relief Sewer)  
Kaliua, Ko'olaupoko, O'ahu  
TMK: 4-2-4-3, 4-4

LOG NO: 21974 ✓  
DOC NO: 9807EJ29

ROBERT B. WATERS, CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY  
DIRECTOR

ADMINISTRATIVE SERVICES  
PROGRAM

AQUATIC RESOURCES  
CONSERVATION AND  
RESTORATION

ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESTORATION

RESOURCE IMPACTS  
ASSESSMENT

PLANNING AND  
DESIGN

LAND ACQUISITION  
PROGRAM

STATE PARKS  
DEPARTMENT

WATER AND LAND DEVELOPMENT  
PROGRAM

D. Eifalan  
Page 2

Section VI.F reiterates the SHPD concern that significant historic sites, including human burials, may be present along the corridor. However, in order to counter any inadvertent adverse effect on significant historic sites, we recommend that a written archeological monitoring plan be submitted to this office for review and acceptance prior to any ground disturbance. An archeological monitoring plan must contain the following eight specifications:

- 1) The kinds of remains that are anticipated;
- 2) Where in the construction area the remains are likely to be found;
- 3) How the expected types of remains will be treated, if found;
- 4) The archaeologist conducting the monitoring has the authority to halt construction in the immediate area of a find in order to carry out the plan;
- 5) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan;
- 6) What laboratory work will be done on remains that are collected;
- 7) A schedule for report preparation; and
- 8) Details concerning the archiving of any collections that are made. In addition, please include maps showing the location(s) of the proposed undertakings.

If you have any questions please call Sara Collins at 587-0013 or Elaine Jourdain at 587-0014.

Aloha,

Don Hibbard, Administrator  
State Historic Preservation Division

EJ:je

enc: SHPD log 7358

Thank you for the opportunity to review the revised DEA for the Kalaheo Avenue Reconstructed Sewer Project. The State Historic Preservation Office commented in 1993 to Alinaka & Associates on the project under its former name, the Kalaheo Avenue Relief Sewer, (see attached log 7358/9303JC02). Our comments at that time recommended archeological monitoring.

The current project proposes to correct problems with the existing Kaliua wastewater collection system by rehabilitating approximately 3,400 lineal feet of existing 66-inch and about 1,900 lineal feet of 54-inch sewer lines. Also planned for replacement are 9,400 lineal feet of 36-inch and 2,500 lineal feet of 24-inch sewer lines; a new replacement 48-inch line will be installed through micro-tunnelling. In addition, new service laterals, chimneys, sewer manholes, and smaller collector branch sewers will be installed.

Excavation will be conducted under existing roadways and near existing utility corridors. Archeological surveys have not been conducted previously along the length of the proposed reconstructed sewer project, however, based on historical and archeological information from similar areas within Kaliua, it is likely that significant historic sites will be found during ground disturbing activities for this project. The underlying sediments are beach sands which are known to contain human burials and other cultural deposits associated with traditional Hawaiian use of the area.

DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**  
650 SOUTH KING STREET, 2ND FLOOR  
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JEREMY HARRIS  
MAYOR

RANDALL K. FUJIKI, AIA  
DIRECTOR  
ROSLAND B. LAMPT, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-0052

March 19, 1999

Mr. Don Hibbard, Administrator  
State Historic Preservation Division  
Department of Land and Natural Resources  
555 Kakuhihewa Building  
601 Kamokila Boulevard  
Kapolei, Hawaii 96707

Attention: Ms. Sara Collins

Dear Mr. Hibbard:

Subject: Kalaheo Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii

TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated July 28, 1998 regarding the Revised Draft Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. The following statement is included in Section VI.F of the Final EA in response to your comments:

"To counter any inadvertent adverse effects on significant historic sites, a written archaeological monitoring plan shall be in place before the start of any ground disturbance. This plan must be reviewed and accepted by the SHPD. Specific requirements of the monitoring plan are contained in Appendix A (SHPD letter, Log No. 21974, dated July 28, 1998)."

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

  
FOR RANDALL K. FUJIKI  
Director

cc: ParEn Inc.

8640001.1 CAVEYANO  
GOVERNOR



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

August 11, 1998

Mr. Larry Matsuo  
Chief Executive Officer  
ParEn, Inc., dba park engineering  
Suite 300, Kawaiahao Plaza  
567 South King Street  
Honolulu, Hawaii 96813-3036

Attention: Mr. Derrick Elfalan  
Project Manager

Dear Mr. Matsuo:

Subject: Draft Environmental Assessment for the  
Kalaheo Avenue Reconstructed Sewer Project

Thank you for your letter of June 24, 1998, forwarding the subject draft environmental assessment.

The project is not anticipated to affect our State transportation facilities.

We appreciate the opportunity to review and comment.

Very truly yours,

*Kazu Hayashida*

KAZU HAYASHIDA  
Director of Transportation

cc: Mr. Kenneth E. Sprague, Department of Environmental Services

KAZU HAYASHIDA  
DIRECTOR  
DEPUTY DIRECTOR  
GENERAL COUNSEL  
GENERAL COUNSEL

IN REPLY REFER TO:  
STP 8.8728

JUDICARY SERVICES  
DIVISION

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-4584 • FAX: (808) 523-4587



March 19, 1999

RANDALL K. FUJIKI, MA  
DIRECTOR  
ROLAND D. LIBBY, JR., MA  
DEPUTY DIRECTOR

IDEC 99-053

Mr. Kazu Hayashida, Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

Subject: Kalaheo Avenue Reconstructed Sewer  
Kaaliua, Oahu, Hawaii

TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 22 & 27

Thank you for your letter, dated August 11, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. We appreciate your efforts in reviewing the document. Your letter will be included in the Final EA.

If you have any comments or questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

*Randall K. Fujiki*

FOR RANDALL K. FUJIKI  
Director

cc: ParEn Inc.

BENJAMIN J. CAVETANO  
DIRECTOR



STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

236 SOUTH KOLEKOLE STREET  
HONOLULU, HAWAII 96813  
TELEPHONE: (808) 586-4188  
FACSIMILE: (808) 586-4189

GARY GILL  
DIRECTOR

RECEIVED

98 JUL 14 AM 20

DEPT OF WASTEWATER MGMT  
DIV OF ENGR. & CONST

July 7, 1998

Mr. Kenneth Sprague  
Department of Wastewater Management  
650 South King Street  
Honolulu, Hawaii 96813

Attention: Glenn Okita

Dear Mr. Sprague:

Subject: Draft Environmental Assessment (EA) for Kalaheo Avenue Reconstructed Sewer Project, Kailua

We have the following comments to offer:

1. According to page 7 of the DEA, the city proposes to build an equalization tank near the Kailua Heights wastewater pump station to hold and control the release of peak wastewater flows. With the tank, the new sewer lines will be capable of handling future peak flows. The tank and sewer line projects should be treated as a single action (see 11-200-7, EIS Rules). Therefore, the EA should fully evaluate both the tank and sewer lines.
2. Library copy of draft EA: A new administrative rule, signed into law 8-31-96, requires the applicant of any environmental assessment to place a copy in the public library closest to the project site. If this has been completed, indicate the date of document placement. If not yet done, please arrange to have this done as soon as possible, requesting library staff to place the document on reserve.
3. Determination: A determination stating that an environmental impact statement will not be required is listed on page 1, *Executive Summary*, and on page 16, *Determinations, Findings & Reasons to Support the Determination*. The EIS law prohibits a Finding of No Significant Impact (FONSI) before the

Kenneth Sprague  
July 7, 1998  
Page 2

end of the 30-day public review period and prior to receipt, response and analysis of all written comments. For a draft EA the proper determination is anticipated FONSI.

4. Significance criteria #6: In the final EA fully describe and analyze the possible secondary impacts arising from implementation of this project. In your section on *Determinations, Findings & Reasons to Support the Determination* (page 17), please discuss this project in terms of possible secondary impacts through its elimination of growth restrictions on population, traffic and public facilities. The potential for substantial secondary growth impacts normally requires the preparation of an EIS for a project. The significance of impacts must be considered when making a final determination on the status of this environmental review.

5. Correspondence:

> In the final EA enclose copies of any letters received during the preconsultation period and your responses to them.

> The letter from DLU dated 6/9/98 regarding a Special Management Area exemption (referenced on page 4) is missing from the appendix. Please include it or a copy of your SMA use permit application in the final EA.

6. Community contacts: Notify the nearest neighbors or neighboring landowners of the proposed project, allowing them sufficient time to review the draft EA and submit comments.

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

Sincerely,

Gary Gill  
Director

c: Derrick Eftaian, ParEn

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

801 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-6884 • FAX: (808) 522-6477



SEBASTIAN HARRIS  
DIRECTOR

RAMON L. PULASKI, MA  
DIRECTOR  
ROLAND D. LEBBY, JR., MA  
DEPUTY DIRECTOR

IDEC 99-088

April 16, 1999

Mr. Gary Gill  
Page 2  
April 16, 1999

Paragraph 3

SECTION X - DETERMINATION, FINDINGS AND REASONS TO SUPPORT THE DETERMINATION.

For the RDEA, we acknowledge the proper determination of "Anticipated Finding of No Significant Impact" (FONSI).

Paragraph 4

The proposed project will involve replacement and rehabilitation of existing public facilities. By itself, the project will not allow expansion of the service area, change the function of the existing facility or permit significant new development or redevelopment. Accordingly, the proposed project should not be considered a major public facility and no change to the Development Plan Public Facilities Map (DPPFM) is recommended. Two sections of the Draft EA which implied that the project could be defined as a major public facility have been revised in the FEA and are described below.

SECTION V.D.2. SOCIO-ECONOMIC CHARACTERISTICS.

Replaced third sentence "The growth and development of business and residential communities in the area are the main long-term positive socio-economic effects of this project." with:

"The main long-term positive social impact of this project is the correction of inadequacies in the existing wastewater collection system allowing it to carry current peak wet weather wastewater flows. By correcting the problems of the system, the occurrence of odor problems and future spills will be significantly reduced."

SECTION X.A.6 DETERMINATION, FINDINGS AND REASONS TO SUPPORT THE DETERMINATION. Replaced paragraph with:

"The proposed action does not have a secondary impact. The project will allow the area's wastewater collection system to adequately handle flows generated during peak wet weather conditions. Once permanently in place, it will have no effect on traffic and public facilities."

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

Attention: Ms. Nancy Heinrich

Dear Mr. Gill:

Subject: Kalaheo Avenue Reconstructed Sewer  
Final Environmental Assessment (FEA)

Kailua, Oahu, Hawaii  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated July 7, 1998 containing comments for the Revised Draft Environmental Assessment (RDEA). The FEA has been revised in response to your comments with paragraph(s) from your letter underlined below, and the revised section of the FEA in bold.

Paragraph 1

SECTION V - PROJECT DESCRIPTION.

This section was revised to include sections summarizing the alternatives evaluated during various planning phases and describes how this project fits in with the regional facilities plan. This evaluation has been fully documented in the *Kailua-Kareoke-Kahala Facilities Plan* (KKK FAC Plan) by Wilson Okamoto and Brown and Caldwell, September 1998.

Paragraph 2

A copy of the RDEA was forwarded to the reserve section of the Kailua Public Library on March 3, 1999.



Mr. Gary Gill  
Page 3  
April 16, 1999

Paragraph 5

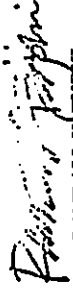
**APPENDIX A - COPIES OF CORRESPONDENCES RECEIVED DURING THE PRECONSULTATION PERIOD.** Copies of letters received and responses are included in this appendix, including the SMA exemption letter from Department of Planning and Permitting dated July 23, 1998.

Paragraph 6

Interested Kailua residents and businesses were informed of the project at a Kailua Neighborhood Board meeting on September 3, 1998. Other public informational meetings are planned, prior to and during the construction phase, to keep the residents informed of various aspects of the project such as: Traffic Impacts and the proposed Traffic Control Plan and Noise Impacts. A copy of the RDEA has also been submitted to the Kailua Public Library for public review. Residents and other interested individuals shall be kept abreast of future project developments by the Contractor.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

  
RANDALL K. SURKKI  
Director

PHONE (808) 594-1886

FAX (808) 594-1865



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPITOLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

July 17, 1998

Mr. Derrick Elfalan  
Project Manager  
Park Engineering  
567 South King Street, Suite 300  
Honolulu, HI 96813

Subject: Revised Draft Environmental Assessment (RDEA) for Kalaheo Avenue  
Reconstructed Sewer Project, Kailua, Island of Oahu

Dear Mr. Elfalan:

Thank you for the opportunity to review the Revised Draft Environmental Assessment (RDEA) for Kalaheo Avenue Reconstructed Sewer Project, Kailua, Island of Oahu. The City & County of Honolulu is planning to correct widespread hydraulic and structural problems with the Kailua area's wastewater system.

The Office of Hawaiian Affairs (OHA) has reviewed the RDEA and has no concerns at this time to the proposed improvements. These improvements will occur within the roadway project site and apparently have no adverse impacts on nearby natural resources or urban settlements. Furthermore, these improvements will significantly increase the capacity of the sewer line to handle future peak flows.

However, OHA urges the City & County of Honolulu to cease work and seek immediate consultation with Hawaiian organizations in the likelihood that archaeological resources are uncovered during reconstruction.

Letter to Mr. Derrick Elfalan  
July 17, 1998  
Page 2

Please contact Colin Kippen (594-1938), LNR Officer, or Luis Manrique (594-1758), should you have any questions on this matter.

Sincerely yours,

Handwritten signature of Colin Kippen.

Rapdall Ogata  
Administrator

Colin Kippen  
Officer,  
Land and Natural  
Resources Division

cc: Board of Trustees  
OEQC

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-5264 • FAX: (808) 523-5267



RANDALL K. FUJIKI, AIA  
DIRECTOR  
ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-034

March 19, 1999

Mr. Randall Ogata, Administrator  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Suite 500  
Honolulu, Hawaii 96813

Attention: Mr. Colin Kippen, LNR Officer

Dear Mr. Ogata:

Subject: Kalahao Avenue Reconstructed Sewer  
Kaliua, Oahu, Hawaii

TMK: 1-4-2-1B TO 20, 1-4-3-11 TO 30, 69, 70, 75, 80 & 83, 1-4-4-2 TO 5, 11, 23 & 27

Thank you for your letter, dated July 17, 1998 indicating no concerns at this time for the Revised Draft Environmental Assessment (EA) for the Kalahao Avenue Reconstructed Sewer. The following has been prepared in response to your comments:

A written archaeological monitoring plan shall be in place before the start of any ground disturbance as recommended by the State Historic Preservation Division (SHPD). If any unidentified archaeological resources are uncovered during construction, the Contractor will immediately cease work in the area and notify the SHPD. The SHPD shall notify OHA if the remains encountered are determined to be Hawaiian.

We hope these comments adequately address your concerns for this project. If you have any further questions, please Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

  
FOR RANDALL K. FUJIKI  
Director

cc: ParEn Inc.

DEPARTMENT OF ENVIRONMENTAL SERVICES  
CITY AND COUNTY OF HONOLULU  
850 SOUTH KING STREET  
HONOLULU HI 96813



JEREMY HANNO  
Mayor

KENNETH E. SPRAGUE  
Director

CHERYL E. DRUMMA-SIPE, ESQ.  
Deputy Director

ENV 98-150

August 6, 1998

Mr. Derrick Eifalan  
Project Manager  
Park Engineering  
587 South King Street, Suite 300  
Honolulu, Hawaii 96813

Dear Mr. Eifalan:

Subject: Revised Draft Environmental Assessment (RDEA)  
Kalaeo Avenue Rainfall Saver  
TANK-Vardous

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

1. Change the former Department of Wastewater Management to Department of Environmental Services wherever applicable.
2. Section IV: construction dewatering and hydrotesting discharge permits from the Department of Planning and Permitting are required if discharge from such activities enters City drainage system.
3. Section VII.A.4: the RDEA should also mention the inconvenience to refuse collection resulting from the construction activities.
4. The RDEA should address the impact of "wet-out" area for the cured-in-place-pipe (CIPP) process.
5. Page 3: the Alkali Park residents should also be consulted.
6. Page 7: the estimated 43.5 mgd does not match the flow rate used in the Facility Plan.

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

Sincerely,

*Chak K. Ofunwo-Sun*  
KENNETH E. SPRAGUE  
Director

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-4641 • FAX: (808) 522-4547



JEFFREY HARRIS  
MAYOR

RANDALL K. FUJIKI, MA  
DIRECTOR  
ROLAND D. LIBBY, JR., MA  
DEPUTY DIRECTOR

IDEC 99-055

March 19, 1999

MEMORANDUM

TO: DR. KENNETH E. SPRAGUE, DIRECTOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES

FROM: RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: KALAHEO AVENUE RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2  
TO 5, 11, 23 & 27

Thank you for your letter, dated August 6, 1998 regarding the Revised Draft Environmental Assessment (EA) for the Kalahao Avenue Reconstructed Sewer. The following has been prepared in response to your comments:

1. Department of Wastewater Management has been changed to Department of Environmental Services in the Final EA, where applicable.
2. Discharge of construction dewatering and hydrotesting effluent will be controlled by National Pollutant Discharge permits which will be reviewed and approved by the Department of Health. Separate discharge permits shall be obtained from the City's Departments of Planning and Permitting and Environmental Services for controlling discharge of groundwater and hydrotesting effluent into the municipal storm drain system.
3. Section VII.A.5 mentions the inconvenience to refuse collection caused by the construction activities.
4. The impact on the "Wet-out" area from the CIPP process is addressed in Section VII.A.10.

Dr. Kenneth E. Sprague  
Page 2  
March 19, 1999

5. Various aspects of the project including its purpose, description, construction methods and schedule were presented to Aikahi Park residents at a Kailua Neighborhood Board meeting on September 3, 1998. In addition, a public hearing will be held on April 8, 1999 at Aikahi Elementary to allow interested individuals to express concerns related to the Noise Variance Application for the project. Residents and other interested individuals shall be kept abreast of future project developments by the Contractor.

6. The estimated 43.5 mgd stated in the Final EA was derived using the HYDRA flow model (Fukunaga and Associates, *Sewer Rehabilitation and Infiltration & Inflow Minimization Plan (Second Year) Preliminary Cost Effectiveness Assessment-Preliminary Basin Reports*, December 1995). The 41.5 mgd flow rate shown in the Facility Plan was derived using the Sewer Flow Analysis System, or SFAS flow model (Wilson Okamoto / Brown & Caldwell, *Kailua-Kaneohe-Kahalaui Facilities Plan*, September 1998). The higher flow rate of 43.5 mgd was used as a conservative estimate of future peak flows.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

cc: ParEn Inc.

PLANNING DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

610 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813-2017  
PHONE: (808) 525-4933 • FAX: (808) 525-4930



JEREMY HARRIS  
08-1008

PATRICIA T. OMSB  
CHIEF PLANNING OFFICER  
DONELL HARRIS  
DEPUTY CHIEF PLANNING OFFICER

GW 7/98-1323

August 4, 1998

Mr. Derrick Elfalan, Project Manager  
ParEn, Inc. dba Park Engineering  
567 South King Street, Suite 300  
Honolulu, Hawaii 96813

Dear Mr. Elfalan:

Revised Draft Environmental Assessment for the Kalaheo Avenue  
Reconstructed Sewer Project, Kailua, Oahu, Hawaii.

TMK: 4-2-18, 19 & 20, 4-3-11, 12, 14, 69 & 70, 4-4-2, 3, 4, 5, 11, 23 & 27

We have reviewed the cited Revised Draft Environmental Assessment (RDEA). This project is proposed to rehabilitate 1,875 lineal feet (LF) of existing 54-inch sewer and 3,389 LF of existing 66-inch sewer and to replace 9,349 LF of existing 36-inch sewer and 2,481 LF of existing 24-inch sewer with a new 48-inch replacement sewer.

The proposed project may be inconsistent with the Development Plan Public Facilities Map (DPPFM) for Koolauoko, in that the DPPFM does not depict a symbol for the project. The DPPFM shows general locations of proposed major public facilities. Section 24-1.2(2)(D), ROH, defines, in part, major facilities as those involving replacement or renovations to existing facilities which would permit significant new development or redevelopment.

Section V.C.2 (page 9) of the RDEA states that the "growth and development of business and residential communities in the area are the main long-term positive socio-economic effects of this project." Furthermore, Section X.6 (page 17) of the RDEA states that "the restriction to growth and development in conformance with the existing development plan will be eliminated." Both of these statements indicate that this proposed project could be defined as a major public facility per Section 24-1.2, ROH.

The DPPFM may need to be amended to include the appropriate symbol for this project if it allows significant new development or redevelopment. The EA should address this concern.

Mr. Derrick Elfalan, Project Manager  
ParEn, Inc. dba Park Engineering  
August 4, 1998  
Page 2

We also offer the following comments which you may wish to consider in preparing the Final Environmental Assessment (FEA) for this project.

1. Section IV.A, page 4: In the FEA, this list may need to be revised to indicate the need for a DPPFM amendment.
2. Section V.A, page 7: This paragraph indicates the installation of an equalization tank at the Kailua Heights Wastewater Pump Station (which is not part of this proposed project) is a prerequisite to the capability of the rehabilitated and replaced sewer lines to handle future peak loads. The FEA should indicate how future peak loads will be handled for the areas served by the subject lines if an equalization tank is not installed at the Kailua Heights WWPS.
3. Section V.C.1, page 9: The penultimate sentence of this paragraph states that by-passing of sewer flows will be required during the rehabilitation portion of the project. The FEA should discuss (a) how the by-pass will be accomplished, and (b) any potential impacts of the by-pass.
4. Section VI.F, page 11: This paragraph states that if the contractor finds any significant historical sites, a qualified archaeologist will be contacted. The FEA should discuss how the contractor will monitor the microtunneling process to assure that any significant historical sites that may be encountered will be detected and identified.
5. Section VII.A.4, page 12: This paragraph notes that residents and others attempting to access sites adjacent to the project site will be inconvenienced. The FEA should discuss steps that will be taken to mitigate such inconvenience and, for example, to assure continuous ability to deliver emergency services.
6. Section X.A.2, page 16: This paragraph notes that the proposed project is consistent with the General Plan and with the Department of Wastewater Management's design standards. The FEA should explicitly indicate that the proposed project is not consistent with provisions of the existing Development Plan for Koolauoko. Furthermore, the City's recent reorganization

Mr. Derrick Elfalan, Project Manager  
ParEn, Inc. dba Park Engineering  
August 4, 1998  
Page 3

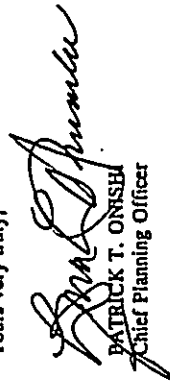
eliminated the Department of Wastewater Management and reassigned its duties within the new organizational structure; the FEA should indicate which portion of the City's new organizational structure is now responsible for promulgating and maintaining design standards applicable to this project.

7. Section X.A.4, page 16: The last sentence of this paragraph states that upon completion of the proposed project, "the economic situation should return to the pre-existing condition." This statement conflicts with the statement in Section V.C.2 (page 9), quoted above, which indicates long-term growth and development will be the main positive socio-economic benefits of the project. The FEA should (a) resolve the conflict in these statements, (b) should provide an analytical discussion of the long-term growth and development that will be enabled by the proposed project, and, in light of the Finding of No Significant Impact (FONSI), (c) should discuss why that long-term growth and development should not be considered significant impacts of the proposed project.

8. Section X.A.6, page 17: This paragraph states the proposed project will cause current restrictions to growth and development to be eliminated, and that population, traffic and public facilities may be indirectly affected by the proposed project. In light of the FONSI, the FEA should discuss why these effects should not be considered significant impacts of the proposed project.

If you should have any questions or concerns regarding this subject, please do not hesitate to contact Gordon Wood of the Planning Department staff at 527-6073.

Yours very truly,

  
PATRICK T. ONISH  
Chief Planning Officer

PTO:lh

c: Kenneth Sprague, Director  
Department of Environmental Services

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**  
160 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813  
Phone: (808) 525-4111 • Fax: (808) 527-4715



JEREMY HARRIS  
DIRECTOR

JAN NAOE SULLIVAN  
DIRECTOR  
LORETTA K. CHEE  
DEPUTY DIRECTOR

98-04712 (DT)  
98 EA Comments Zone 4

July 23, 1998

Mr. Derrick Elfalan, Project Manager  
ParEn, Inc. dba Park Engineering  
Kawaiahao Plaza, Suite 300  
567 South King Street  
Honolulu, Hawaii 96813-3036

Dear Mr. Elfalan:

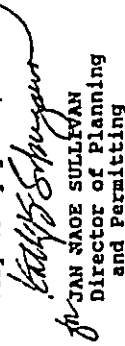
Revised Draft Environmental Assessment (EA)  
Kalaheo Avenue Reconstructed Sewer Project  
Tax Map Keys: 4-2-18, 19, 20;  
4-3-11, 12, 14, 69, 70; and  
4-4-2-3, 4, 5, 11, 21, and 27

We have the following comments regarding the proposal to rehabilitate and replace the existing sewer line:

1. The proposed project is within the Special Management Area (SMA), but is not defined as "development" and is therefore exempt from Chapter 25, Revised Ordinances of Honolulu under Section 25-1.3(2)(B)(D).
2. The SMA boundary map is incorrect in Figure 5 of the EA. The Final EA should show the correct boundary line. Please see the enclosed SMA boundary map.

Thank you for the opportunity to comment. If you have any questions regarding this letter, you may contact Ms. Dana Teramoto of our staff at 523-4648.

Very truly yours,

  
JAN NAOE SULLIVAN  
Director of Planning  
and Permitting

JNS:am  
Encl.

98EA04712.dft

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-6541 • FAX: (808) 522-6547



JEREMY HARRIS  
LAWYER

RAMON K. FUJIKI, AIA  
DIRECTOR  
ROLAND D. LARRY, JR., AIA  
COUNTY DIRECTOR

March 19, 1999

IDEC 99-064

MEMORANDUM

TO: MS. JAN NAOE SULLIVAN, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

FROM: *Ramon K. Fujiki*  
RAMON K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: KALAHEO AVENUE RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2  
TO 5-11-23 & 27

Thank you for your letter, dated July 23, 1998 regarding the Revised Draft Environmental Assessment (RDEA) for the subject. The following has been prepared in response to your comments:

Page 5 in the Final Revised EA has been revised to reflect exemption of Chapter 25, Revised Ordinances of Honolulu Special Management Area requirements.

The SMA Boundary Map, Figure 7 has been revised to show the correct boundary line.

We also received comments from the former Planning Department in a letter dated August 4, 1998 (GW 7/98-1323). The Final Environmental Assessment (FEA) has been revised in response to comments in the Planning Department letter. The paragraph(s) from that letter are underlined below with the revised FEA section in bold.

**Paragraph(s) 2 through 4**

The proposed project will involve replacement and rehabilitation of existing public facilities, but should not be considered a major public facility. By itself the project will not allow expansion of the service area, change the function of the existing facility or permit significant new development

Ms. Jan Naoe Sullivan  
Page 2  
March 19, 1999

or redevelopment. Accordingly, the proposed project should not be considered a major public facility, is consistent with the Koolaupoko Development Plan Public Facilities Map (DPPFM), and no change to the DPPFM is recommended. Two sections of the FEA have been revised to clarify this and are described in the following paragraphs:

**SECTION V.D.2. SOCIO-ECONOMIC CHARACTERISTICS**

Replaced third sentence "The growth and development of business and residential communities in the area are the main long-term positive socio-economic effects of this project." with:

"The main long-term positive social impact of this project is the correction of inadequacies in the existing wastewater collection system allowing it to carry current peak wet weather wastewater flows. By correcting the problems of the system, the occurrence of odor problems and future spills will be significantly reduced."

**SECTION X.A.6 DETERMINATION, FINDINGS AND REASONS TO SUPPORT DETERMINATION**

Replaced paragraph with:

"The proposed action does not have a secondary impact. The project will allow the area's wastewater collection system to adequately handle flows generated during peak wet weather conditions. Once permanently in place, it will have no effect on traffic and public facilities."

Paragraph 5, Item 1

**SECTION IV.A. APPROVALS**

No change to this section is required for the reasons stated above.

Paragraph 5, Item 2

**SECTION V.A. BACKGROUND**

Revised fourth paragraph to read:

"The Kailua WWTP Influent Pump Station currently has a hydraulic capacity of 18 mgd. The existing treatment process consists of primary and secondary treatment with sludge handling capability. To adequately handle an estimated 45 mgd, the City is evaluating the feasibility of installing equalization storage facilities in the Kailua area to hold and control the release of wastewater flows during peak wet weather conditions. After evaluating the alternatives, the recommended choice was to use the existing 36-inch line (planned for



Ms. Jan Naoe Sullivan  
Page 3  
March 19, 1999

future rehabilitation) and a new 60-inch sewer line along Waiaso and Kailua Roads as in-pipe storage facilities. If a 40% reduction in I/I by rehabilitation methods, and approval of a 2-year design storm to size the storage facility can be achieved, in-pipe storage would result in lower construction costs and less environmental and community impacts when compared with other alternatives.

Details of the evaluation are contained in the Kailua-Kaneohe-Kahaluu Facilities Plan and summarized in the next section."

**Paragraph 5, Item 3.(a) and 3.(b)**

**SECTION V.D.1. TECHNICAL CHARACTERISTICS**

The last paragraph of this section describes how the bypass operation shall be used during the project and how potential impacts shall be minimized.

"Bypassing of wastewater flows will be required during the project to assure no interruption of sewage service. The Contractor will provide and operate temporary facilities including plugs, pumps and other equipment necessary to intercept sewage flow before it reaches the work area, carry it past his work area and return it to the existing sewer at a point downstream. Where bypass pumping is required, work shall be done in a manner which does not damage private or public property or create a nuisance or public menace. The Contractor shall take measures to prevent excessive sewer surcharging and shall not dump or allow sewage flow on private property, gutters, streets, sidewalks or storm sewers. The bypass lines will be installed above ground except at driveway and street crossings. At driveway and street crossing locations the lines shall be installed at shallow depths in order to minimize impacts to traffic flow. Noise generated by bypass pumps shall be in compliance with applicable noise level restrictions or shall be dampened by enclosing pumps in noise attenuating housing units. Specific requirements that the Contractor must adhere to while conducting bypass operations are contained in Section 209 "Sewer Flow Control and Temporary Bypassing" of the contract specifications."

**Paragraph 5, Item 4**

**SECTION VI.F. HISTORIC SITES AND ARCHAEOLOGICAL RESOURCES** has been revised to include the requirement to have a monitoring plan in place by the Contractor before any ground disturbance (including microtunneling) operations start, to assure that any significant historical sites that may be encountered shall be detected and identified.

Ms. Jan Naoe Sullivan  
Page 4  
March 19, 1999

**Paragraph 5, Item 5**

**SECTION VII.A. IMPACTS DURING CONSTRUCTION.** Paragraph 5 has been revised to include measures to mitigate inconvenience to residents and pedestrians attempting to access sites adjacent to the project site.

In addition, the Contractor shall be required to provide adequate clearance in or adjacent to construction zones, to allow emergency vehicles to enter and exit the area during emergency situations. Paragraph 6 of this section has been revised accordingly. The Police and Fire Departments have been informed of the proposed traffic control plans (letters included in Appendix A). The Contractor shall coordinate his work with Police and Fire Departments as well as refuse and emergency services.

**Paragraph 5, Item 6**

The proposed project is consistent with the City's existing General Plan and Development Plan, as well as the *DESIGN STANDARDS OF THE DEPARTMENT OF WASTEWATER MANAGEMENT* which serves as a guide in planning for wastewater facilities and design of sewers. With the City's elimination of the Department of Wastewater Management, responsibility for promulgating and maintaining these design standards is now shared by the Department of Design and Construction (DDC) and the Department of Environmental Services.

**Paragraph 5, Item 7**

**SECTION X.A.4 DETERMINATION, FINDINGS AND REASONS TO SUPPORT DETERMINATION**

As stated earlier, section V.D.2 was revised to delete "long term growth and development" as the main positive socio-economic benefit of the project. The correction of inadequacies in the existing wastewater collection system and the reduction of odor problems and future spills replaced the growth and development benefit. Thus, section X.A.4 which states that upon completion of the project, "the economic situation should return to the pre-existing condition," is no longer in conflict with section V.D.2.

**Paragraph 5, Item 8**

**SECTION X.A.6 DETERMINATION, FINDINGS AND REASONS TO SUPPORT DETERMINATION**

As stated earlier, this section was revised. After project improvements are permanently in place, no significant growth in population and development of the area, or indirect effect on traffic and public facilities is expected.

Ms. Jan Naoe Sullivan  
Page 5  
March 19, 1999

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer at 527-5829.

cc: ParEn Inc.

DEPARTMENT OF TRANSPORTATION SERVICES  
CITY AND COUNTY OF HONOLULU  
PACIFIC PARK PLAZA • 711 KAPOLAHU BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813  
PHONE: (808) 523-4333 • FAX: (808) 523-4730



JEREMY HARRIS  
SENIOR  
PLANNER

CHERYL D. SOON  
DIRECTOR  
JOSEPH M. MADALA, JR.  
DEPUTY DIRECTOR

August 7, 1998

TSP 6/98-03921R

Mr. Derrick Elifalan  
Project Manager  
ParEn Inc.  
Suite 300, Kawaiahao Plaza  
567 South King Street  
Honolulu, Hawaii 96813-3036

Dear Mr. Elifalan:

Subject: Kalaheo Avenue Reconstructed Sewer Project  
In response to your June 24, 1998 letter, the Revised Draft Environmental Assessment for the subject project was reviewed. Although we have no comments to offer on the document prepared, we ask that this department be notified when construction commences. We can then alert Oahu Transit Services - Paratransit of the construction activity.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation System Planning Division at 527-6976.

Sincerely,

CHERYL D. SOON  
Director

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU  
650 SOUTH KING STREET, 3RD FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-4541 • FAX: (808) 523-4547



JEREMY HARRIS  
SENIOR  
PLANNER

RANDALL K. FUJIKI, AIA  
DIRECTOR  
ROLAND D. LEBRY, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-036

March 19, 1999

MEMORANDUM

TO: MS. CHERYL D. SOON, DIRECTOR  
DEPARTMENT OF TRANSPORTATION SERVICES

ATTN: MS. FAITH MIYAMOTO

FROM:   
RANDALL K. FUJIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: KALAHEO AVENUE RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2  
TO 5, 11, 23 & 27

Thank you for your letter, dated August 7, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. The following has been prepared in response to your comments:

Specification Section 157 - *Work on City Streets* of the contract documents contain a provision that the Contractor shall notify Oahu Transit Services two (2) weeks prior to construction, informing them of the location, scope of work, proposed closure of any street or traffic lanes and the need to relocate any bus stop.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5879.

cc: ParEn Inc.



**ParEn, Inc. dba park engineering**  
 3475 Kuaehoa Place O. 347 South King Street, Honolulu, Hawaii 96813-2008 O Telephone (808) 531-1618 O FAX (808) 534-1864  
**HONOLULU, FIRE DEPARTMENT**  
 F1 \_\_\_\_\_ F2 \_\_\_\_\_  
 Oct 21 3 39 PM '98

October 20, 1998

Chief Attilio Leonard  
 Honolulu Fire Department  
 3375 Koaepaka Street Suite H-425  
 Honolulu, HI 96818-1869

Gentlemen,

Subject: Kalaheo Avenue Sewer Line Reconstruction Project  
 Contract No. F29434 (A)

Transmitting herewith, for your review, information and comments, one (1) set of construction plans (Sheets 1-23 & 39-62) for the above mentioned project.

Sincerely yours,  
 ParEn, Inc. dba Park Engineering

*Derrick Elfaen*  
 Derrick Elfaen, P.E.  
 Project Manager

Enclosure

Postnet Fax No.:	7871	Date:	10/21/98	Page:	1
To:	Derrick Elfaen	From:	Richard Soo		
Company:	ParEn, Inc.	City:	Honolulu		
Phone #:		Fax #:	576-5994		

October 28, 1998

To: Derrick Elfaen - ParEn, Inc. dba Park Engineering  
 From: Richard Soo - Fire Plans/Permits

Will road hydrants be accessible for Fire Dept. use during this project? Will any road ways off of Kalaheo Ave. be blocked for emergency response during this projects? If so, identify roads and maximum length of blockage.

Richard Soo - 8521-4187 Fax#527-5897

ENGINEER SURVEYOR PLANNER

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 521-5561 • FAX: (808) 521-5567



JENNIFER HARRIS  
MANAGER

RAHOUILL K. FURUKI, AIA  
DIRECTOR  
ROLAND D. LEBRY, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-057

March 19, 1999

MEMORANDUM

TO: MR. ATTILIO K. LEONARDI, FIRE CHIEF  
HONOLULU FIRE DEPARTMENT

ATTN: CAPTAIN RICHARD SOO  
FIRE PLANS & PERMITS

FROM: *[Signature]*  
RAHOUILL K. FURUKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: KALAHEO AVENUE RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2  
TO 5, 11, 23 & 27

Thank you for reviewing our construction plans sent on October 1998. The following replies are provided in response to your questions:

All fire hydrants along the proposed sewer alignment will be accessible for Fire Department use except temporarily at the following two places where the existing hydrants will be relocated.

- 1) Existing hydrant #W60: Near the entrance to Kailua Beach Park, South Kalahao Ave. - Lihikai Rd. intersection (near proposed sewer manhole 42, shown on sheet 20)
- 2) Existing hydrant #W92: Near Aumoe Rd. - Mahealani Pl. intersection (near proposed sewer manhole 46, shown on sheet 21)

In most cases all roadways along the proposed sewer alignment shall be accessible for emergency response vehicles. However, in several places the routes may be blocked or partially blocked by portable concrete barriers around excavated pits.

Mr. Attilio K. Leonard  
Page 2  
March 19, 1999

These areas are summarized on the next page and illustrated on the enclosed plan sheets.

Location	Max. length of blockage	Alternative Route	Const. plan sheet nos.
Aikahi Loop - Aikapa St. Intersection	135 feet	Aikahi Loop via Alokos St.	6, 43
North Kalahao Ave. - Kaimii-L'Orange Intersection	110 feet	Mokapu Blvd. - Kaneohe Bay Drive	11, 49
North Kalahao Ave. - Palapa St.	190 feet	Kainalu Drive - Omsao or Kaimii St.	14, 53

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Enclosures

cc: ParEn Inc.

POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU  
801 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96813 - AREA CODE (808) 929-3111



JEREMY HARRIS  
MAYOR

LEE D. DONOHUE  
CHIEF  
WILLIAM B. ELARI  
MICHAEL CARVALHO  
DEPUTY CHIEF

OUR REFERENCE CS-DL

July 23, 1998

Mr. Derrick Elfalan  
Project Manager  
ParEm, Inc.  
Kawaiahao Plaza, Suite 300  
567 South King Street  
Honolulu, Hawaii 96813-3036

Dear Mr. Elfalan:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Kalaheo Avenue Reconstructed Sewer Project, TMK: 1-4-2-18, 19 & 20, 1-4-3-11, 12, 14, 69 & 70, 1-4-4-2, 3, 4, 5, 11, 23 & 27.

This project will have an impact on police services. We have noted that anticipated problems with construction dust and noise have been addressed. This should minimize relative calls for police service.

However, we are concerned with traffic disruptions and parking bans around the construction route, which will impact the flow of vehicles and pedestrians as well as have an impact on their safety. We have noted your statement that police officers and/or trained construction flagmen will moderate traffic congestion. We would advise that Acting Major Harry Auld of District 4 be contacted at 235-7621 regarding the construction schedule and to discuss any need for special duty officers.

If there are any questions, please call me at 529-3175.

Sincerely,

LEE D. DONOHUE  
Chief of Police

By *[Signature]*  
JAMES FERIA  
Assistant Chief  
Administrative Bureau

cc: Acting Major Harry Auld  
District 4

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

60 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 521-4344 • FAC: (808) 521-4547



SENDER'S ADDRESS  
DATE

RANDALL K. FURUKI, AIA  
DIRECTOR  
ROLANDO D. LUSTY, JR., AIA  
DEPUTY DIRECTOR

Lee D. Donohue  
Page 2  
March 19, 1999

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

IDEC 99-058

March 19, 1999

MEMORANDUM

TO: LEE D. DONOHUE, CHIEF OF POLICE  
HONOLULU POLICE DEPARTMENT

ATTN: JAMES FEMIA, ASSISTANT CHIEF

FROM: RANDALL K. FURUKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: KALAHEO AVENUE RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
TRM: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2  
TO 5.11.23 & 27

cc: ParEn Inc.

Thank you for your letter, dated July 23, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. We share your concerns about project impacts on traffic flow, parking and pedestrian safety near the proposed construction site. In response to your comments we offer the following responses:

Section VII.A.5. of the FEA has been revised to include measures to mitigate inconvenience to residents and pedestrians attempting to access sites adjacent to the project site. The following statement has been added to the section: "The Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities and take all necessary precautions for the protection, convenience and safety of the public."

Section 213 - "Traffic Control" of the contract specifications direct the Contractor to notify the Honolulu Police Department of construction work in progress and the blocking or complete closure of any street during construction. The information you provided will be passed on to the Contractor, who shall be responsible for coordinating the construction schedule and discussing the need for any special duty officers with Major Harry Auld, or his representative.

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERTMANA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-8100  
FAX (808) 533-2714



July 17, 1998

JEREMY HARRIS, Mayor  
EDDIE FLORES, JR., Chairman  
FORREST C. MALPHEM, Vice Chairman  
KAZUHIKASHIWA  
JIM M. LYMAN  
JOYANTHAN K. SHIMAZAKI, PhD  
BARBARA HUI STANTON  
CHARLES A. STED  
BROOKS H. YUEN  
Acting Manager and Chief Engineer

Mr. Derrick Eifalan  
ParEn, Inc.  
dba Park Engineering  
Kawaiahao Plaza, Suite 300  
567 South King Street  
Honolulu, Hawaii 96813-3036

Dear Mr. Eifalan:

Subject: Your Transmittal of June 24, 1998 of the Revised Draft Environmental Assessment for the Kalaeo Avenue Reconstructed Sewer Project, Kailua, Oahu

Thank you for the opportunity to review the revised Draft Environmental Assessment for the proposed sewer main reconstruction project.

We have no objections to the proposed project. The construction plans should be submitted to our Engineering Branch for review and approval. In addition, Board of Water Supply approved reduced pressure principle backflow prevention assemblies will be required after all fire hydrants and water meters used during construction activities.

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

Very truly yours,

*Brooks H. Yuen*  
FOR  
BROOKS H. YUEN  
Acting Manager and Chief Engineer

cc: Department of Environmental Services  
Office of Environmental Quality Control

DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 523-5844 • FAX: (808) 523-5847



RANDY K. PUIKI, MA  
DIRECTOR  
ROLAND D. LIBBY, JR., MA  
DEPUTY DIRECTOR

IDEC 99-0059

March 19, 1999

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER  
BOARD OF WATER SUPPLY

ATTN: MR. BARRY USAGAWA

FROM: *Brooks H. Yuen*  
FOR RANDY K. PUIKI, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: KALAEHO AVENUE RECONSTRUCTED SEWER  
KAILUA, OAHU, HAWAII  
TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2  
TO 5.11.23 & 27

Thank you for your letter, dated July 17, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaeo Avenue Reconstructed Sewer. Construction plans have been submitted for review and approval during the design phase of the project. The Contractor shall be informed that BWS approved reduced pressure principle backflow prevention assemblies shall be required after all fire hydrants and water meters used during construction. Your letter will be included in the Final EA.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

cc: ParEn Inc.



**THE GAS COMPANY**  
Citizens Energy Services

July 30, 1998

ParEn, Inc.  
567 South King Street, Suite 300  
Honolulu, Hawaii 96813-3036

Gentlemen:

Subject: Kalaheo Avenue Reconstructed Sewer Project  
Formerly Kalaheo Avenue Relief Sewer

Please be advised that The Gas Company maintains underground utility gas mains in the project vicinity, which serves commercial and residential customers in the area and is interconnected with the utility network in Kaitua. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.

Thank you for the opportunity to comment on the Revised Draft Environmental Impact Statement. Should there be any questions, or if additional information is desired, please call me at 594-5574.

Very truly yours,

*Keith K. Yamamoto*

Keith K. Yamamoto  
Supervisor, Engineering

ESY:ar  
98-196

DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**

620 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-1544 • FAX: (808) 522-4247



JEREMY HARRIS  
MAYOR

RANDALL K. FUJIKI, MA  
DIRECTOR  
ROLAND D. LAMPT, JR., MA  
DEPUTY DIRECTOR

IDEC 99-060

March 19, 1999

Mr. Keith K. Yamamoto  
Supervisor, Engineering  
The Gas Company  
515 Kamakoe Street  
Honolulu, Hawaii 96843

Dear Mr. Yamamoto:

Subject: Kalaheo Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii

TMS: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated July 30, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. The underground gas mains near our proposed sewer alignment and the latest gas notes provided by your office have been included in our construction plans. Your letter will be included in the Final EA.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Ohtia, Project Engineer, at 527-5829.

Very truly yours,

*Randall K. Fujiki*  
FOR RANDALL K. FUJIKI  
Director

cc: ParEn Inc.

THE GAS COMPANY  
515 Kamakoe Street Honolulu Hawaii 96813  
PO Box 3033 Honolulu Hawaii 96813-3033  
Telephone 808 522 3000 / Facsimile 808 524 6333 Sales

**GTE Hawaiian Tel**  
**Beyond the call**

GTE Hawaiian Telephone Company Incorporated  
P.O. Box 2200 - Honolulu, HI 96841 - 809 548-4511

July 16, 1988

ParEn, Inc.  
Dbm Park Engineering  
Attn: Mr. Eifalian  
567 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Eifalian

Subject: KALAEHO AVENUE RECONSTRUCTED SEWER PROJECT  
FORMERLY KALAEHO AVENUE RELIEF SEWER  
KAILUA, OAHU, HAWAII

We have reviewed the revised draft environmental assessment for the Kalaheo Avenue Reconstructed Sewer Project and have no comments to offer.

Thank you for the opportunity to review and comment on this project.

Sincerely,

*Jon M. Uyehara*

Jon M. Uyehara  
Manager, Access Design & Construction

cc: file

DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**

830 SOUTH KING STREET, 2401 FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (809) 522-0444 • FAX: (809) 522-0447



SENIOR MANAGER  
MAILBOX

RANDALL K. FUJIKI, AIA  
DIRECTOR  
ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-061

March 19, 1999

Mr. Jon M. Uyehara  
Manager, Access Design and Construction  
GTE Hawaiian Telephone  
P.O. Box 2200  
Honolulu, Hawaii 96841

Dear Mr. Uyehara:

Subject: Kalaheo Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii

TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80, & 83, 1-4-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated July 16, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. The locations of underground telephone lines near our proposed sewer alignment, provided by your office have been included in our construction plans. Your letter will be included in the Final EA.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

*Randall K. Fujiki*  
for RANDALL K. FUJIKI  
Director

cc: ParEn Inc.

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

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-5541 • FAX: (808) 522-5877



ERNEST HARRIS  
MAYOR

RAIMUND K. FURUKAWA  
DIRECTOR  
ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-062

March 19, 1999

Mr. Scott W.H. Seu, P.E.  
Manager, Environmental Department  
Hawaiian Electric Company, Inc.  
P.O. Box 2750  
Honolulu, Hawaii 96840-0001

Dear Mr. Seu:

Subject: Kalaheo Avenue Reconstructed Sewer  
Kaliua, Oahu, Hawaii

TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69, 70, 75, 80 & 83, 1-4-4-2, 10, 5, 11, 21 & 27

Thank you for your letter, dated July 22, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. We appreciate your efforts in reviewing the document. Your letter will be included in the Final EA.

During the design phase every effort was made to avoid any known facilities in the area, and construction plans were submitted to HECO for review and comments. Should any work on HECO's underground or overhead facilities be required, the Contractor shall call appropriate telephone numbers specified in the *HECO NOTES* provided by your office and incorporated into the plans.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,

RAIMUND K. FURUKAWA  
Director

cc: ParEn Inc.



Scott W.H. Seu, P.E.  
Manager  
Environmental Department

Mr. Derrick Elifalan  
ParEn, Inc.  
300 Kawalahao Plaza  
587 South King Street  
Honolulu, HI 96813

Dear Mr. Elifalan:

Re: Kalaheo Avenue Reconstruction Sewer Project

Thank you for the opportunity to comment on the June 1998 revised draft EA for the Kalaheo Avenue Reconstruction Sewer Project, as proposed by the Department of Wastewater Management, City and County of Honolulu. We have reviewed the subject document and have no comments at this time.

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,



WINNER OF THE EDISON AWARD  
FOR DISTINGUISHED INDUSTRY LEADERSHIP

**KALAPAWAI MARKET**  
306 SOUTH KALAHEO AVENUE  
KAILUA, HI 96734  
PHONE (808) 262-4359  
FAX (808) 261-8691

June 29, 1998

Park Engineering  
Attn: Mr. Derrick Elfalan  
567 S. King Street  
Honolulu, HI. 96813-3036

Dear Mr. Derrick Elfalan:

Subject: Kalaheo Ave. sewer reconstruction project

Thank you for sending me the Revised Draft Environmental Assessment for the above mentioned project. After reviewing the document and our brief conversation, I have to tell you that I have some serious concerns about how the project will impact my business.

The major areas of concern are (1) the location of the jacking pits, (2) the location of the receiving pits, (3) the construction schedule and (4) the traffic management plan around the work areas. With that in mind, I respectfully request a copy of your construction schedule including the location of the work areas and the traffic management plan. I would like to work with you on the traffic management plan to help minimize the economic loss for both myself and my employees.

I do recognize the importance of this work to the community and have no wish to slow or stop the progress of the project. But, I have a business that requires predictable and continual access by my customers as well as vendors. A project of this type has the potential to limit access through the work areas for extended times creating an economic loss that a small business can hardly afford.

In an effort to mitigate the potential losses, please provide me with the information I have requested, keep me advised and informed and I will do what I can to help you keep the project moving. I can be reached at the store at 262-4359. Thank you for your help.

Sincerely yours,



Don Dymond

DEPARTMENT OF DESIGN AND CONSTRUCTION  
**CITY AND COUNTY OF HONOLULU**

830 SOUTH KING STREET, 2ND FLOOR  
HONOLULU, HAWAII 96813  
PHONE: (808) 522-5541 • FAX: (808) 522-5477



RANDALL K. FUJIKI, AIA  
DIRECTOR  
ROLAND D. LIBBY, JR., AIA  
DEPUTY DIRECTOR

IDEC 99-063

March 19, 1999

JEREMY HARRIS  
MAYOR

Mr. Don Dymond  
Kalapawai Market  
306 South Kalaheo Avenue  
Kailua, Hawaii 96743

Dear Mr. Dymond:


Subject: Kalaheo Avenue Reconstructed Sewer  
Kailua, Oahu, Hawaii

TMK: 1-4-2-18 to 20, 1-4-3-11 to 30, 69-70, 75, 80 & 83, 1-4-4-2 to 5, 11, 23 & 27

Thank you for your letter, dated June 29, 1998 regarding the Draft Revised Environmental Assessment (EA) for the Kalaheo Avenue Reconstructed Sewer. We understand your concern about this project's impact on your business and others in the area and plan to work with you to minimize those impacts. As requested, a copy of the traffic control plans, including the location of work areas is enclosed for your review and feedback. The contractor's preliminary construction schedule has not yet been submitted; a copy of the schedule will be provided to you, upon our receiving it. Your letter will be included in the Final EA.

We hope these comments adequately address your concerns for this project. If you have any further questions, please contact Mr. Glenn Okita, Project Engineer, at 527-5829.

Very truly yours,



RANDALL K. FUJIKI  
Director

Enclosures

cc: ParEn Inc.

# APPENDIX B

## CONSTRUCTION COST ESTIMATE

Project: Kalaheo Reconstructed Sewer  
 Job No. W18-95  
 Bids Opened: 17-Dec-98

ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
BASIC BID ITEMS (48" SECTION)							
1	1	LS	Mobilization/Demobilization for 48-inch installation		700,000		1,300,000
2	11,850	LF	48" microtunneling pipe, in place complete	660	7,042,200		
2a	10,670	LF	48" microtunneling pipe, in place complete			905	9,656,350
3	10	EA	Jacking Pits for 48" pipe	85,000	850,000	150,000	1,500,000
4	11	EA	Receiving Pits for 48" pipe	50,000	550,000	140,000	1,540,000
5	17	EA	Intermediate Pits for 48" pipe	20,000	340,000	140,000	2,380,000
6	2	EA	Emergency Pits	25,000	50,000	160,000	320,000
7	7,700	CY	Unclassified Trench Excavation (M/T-Int.-Emerg. pits,oft lines,laterals,drain)	125	962,500	250	1,925,000
8	1,183	LF	6" VCP, (open trench), in place complete	70	82,810	33	39,039
9	5,880	LF	8" VCP (open trench), in place complete	75	441,000	35	205,800
10	111	LF	10" VCP (open trench), in place complete	80	8,880	42	4,662
11	37	LF	12" VCP (open trench), in place complete	110	4,070	46	1,702
12	65	LF	21" VCP (open trench), in place complete	125	8,125	160	10,400
13	7	LF	36" pipe (open trench), in place complete			250	1,750
14	86	LF	48" pipe (open trench), in place complete	300	25,800	500	43,000
15	1,180	LF	48" pipe (microtunnel SMH-49 to 52), in place complete			960	1,132,800
16	86	EA	Reconnect sewer laterals (open trench), in place complete	500	43,000	4,100	352,600
17	15	EA	SMH, type 2, constructed in M/T or Int. pits, in place complete	15000	225,000	36,000	540,000
18	19	EA	SMH, type 2, Drop constructed in M/T or Int. pits, in place complete	20,000	380,000	39,000	741,000
19	5	EA	SMH, type 2, Shallow Drop constructed in M/T or Int. pits, in place complete	18,000	90,000	51,000	255,000

**Project:** Kalaheo Reconstructed Sewer  
**Job No.:** W18-95  
**Bids Opened:** 17-Dec-98

ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
20	14	EA	SMH, type 3, reconstructed, in place complete	10,000	140,000	8,000	112,000
21	19	EA	SMH, type 3A, reconstructed, in place complete	8,000	152,000	9,000	171,000
22	2	EA	SMH, type 4, constructed in M/T pit, in place complete	20,000	40,000	61,000	122,000
23	1	EA	SMH no.11, special, constructed in M/T pit, in place complete	25,000	25,000	53,000	53,000
24	55	EA	SMH, Plain Precast, in place complete	6,000	330,000	8,400	462,000
25	7	EA	SMH, Shallow Drop Precast, in place complete	10,000	70,000	13,000	91,000
26	3	EA	SMH, Drop Precast, in place complete	13,000	39,000	9,200	27,600
27	10	EA	Chimney connections to new 48-inch sewer, in place complete	500	5,000	57,000	570,000
28	6	EA	Chimney connections to new 8-inch sewer, in place complete	500	3,000	12,000	72,000
29	1	LS	Water Relocation #3		8,900	34,000	34,000
30	1	LS	Water Relocation #4		6,400	38,000	38,000
31	1	LS	Water Relocation #5		8,300	38,000	38,000
32	1	LS	Water Relocation #6		8,200	40,000	40,000
33	1	LS	Water Relocation #7		12,000	48,000	48,000
34	1	LS	Water Relocation #8		5,400	34,000	34,000
35	1	LS	Water Relocation #9		15,000	66,000	66,000
36	1	LS	Water Relocation #10		12,600	60,000	60,000
37	1	LS	Water Relocation #11		6,400	40,000	40,000
38	1	LS	Water Relocation #12		7,200	44,000	44,000
39	1	LS	Water Relocation #13		6,400	42,000	42,000
40	1	LS	Water Relocation #14		8,100	48,000	48,000

Project : Kalaheo Reconstructed Sewer  
 Job No. W18-95  
 Bids Opened : 17-Dec-98

ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
41	1	LS	Water Relocation #15	7,600	7,600	56,000	56,000
42	1	LS	Water Relocation #16	37,000	37,000	122,000	122,000
43	1	LS	48-inch sewer line connection to ESMH at end of alignment	10,000	10,000	31,000	31,000
44	1	EA	8-inch sewer line connection to ESMH	10,000	10,000	6,000	6,000
45	15	EA	Plug existing 36" & 21" sewer	400	6,000	2,000	30,000
46	1	EA	Cut & plug existing 8" sewerline	50	50	500	500
47	40	EA	Cut & plug existing 6" sewerline	50	2,000	500	20,000
48	200	CY	Rock fill for soft spots	40	8,000	60	12,000
49	40	CY	Concrete, CL "B"	350	14,000	420	16,800
50	1	LS	By-pass of trunk lines and sewer laterals	440,000	440,000	250,000	250,000
51	1	LS	Traffic control - work area #6 (56 days)	21,280	21,280	3,300	3,300
52	1	LS	Traffic control - work area #7 (116 days)	44,080	44,080	6,500	6,500
53	1	LS	Traffic control - work area #8 (131 days)	49,020	49,020	5,500	5,500
54	1	LS	Traffic control - work area #9 (129 days)	49,020	49,020	8,700	8,700
55	1	LS	Traffic control - work area #10 (127 days)	48,260	48,260	8,300	8,300
56	1	LS	Traffic control - work area #11 (119 days)	45,220	45,220	8,800	8,800
57	1	LS	Traffic control - work area #12 (139 days)	52,820	52,820	8,700	8,700
58	1	LS	Traffic control - work area #13 (94 days)	35,720	35,720	8,100	8,100
59	1	LS	Traffic control - work area #14 (162 days)	61,560	61,560	8,400	8,400
60	1	LS	Traffic control - work area #15 (62 days)	23,560	23,560	7,000	7,000
61	1	LS	Traffic control - work area #16 (84 days)	31,920	31,920	8,200	8,200



Project : Kalaheo Reconstructed Sewer  
 Job No. W18-95  
 Bids Opened : 17-Dec-98

ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
62	1	LS	Traffic control - work area #17 (89 days)		33,820	7,800	7,800
63	1,740	LF	Cleaning & TV inspection of sewer laterals	50	87,000	7	12,180
64		Allowance	Chemical treatment of sewer laterals		80,000		80,000
65	7	EA	Abandon existing sewer manholes in place	2,000	14,000	2,500	17,500
66	1	LS	Pre-/Post-construction survey		10,000		46,000
67		Allowance	Days Archaeological monitoring				100,000
68		F.A.	Service cleanouts, in place complete		80,000		80,000
69		Allowance	Off-duty police officers		80,000		150,000
70	1	LS	Additional traffic control devices		30,000		30,000
71		Allowance	Hawaiian Electric relocation work		40,000		40,000
72		Allowance	Hawaiian Telephone relocation work		40,000		40,000
73		Allowance	Gas Company Invoice Relocation				40,000
0		Allowance	Relocation of additional water lines		150,000		150,000
75	1	LS	Field Office		10,000		100,000
<b>BASIC BID SUBTOTAL</b>					<b>14,364,215</b>		<b>25,680,983</b>

Project : Kalaheo Reconstructed Sewer  
 Job No. W18-95  
 Bids Opened : 17-Dec-98

ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
ADDITIVE NO. 1 ITEMS (66" SECTION)							
A1	1	LS	Mobilization/Demobilization for 66-inch installation	875,000		500,000	500,000
A2	3,366	LF	66" microtunneling pipe, in place complete	800	2,692,800	1,328	4,470,048
A3	4	EA	Jacking Pits for 66" pipe	100,000	400,000	195,000	780,000
A4	4	EA	Receiving Pits for 66" pipe	55,000	220,000	172,000	688,000
A5	1	EA	Intermediate Pit for 66" pipe	20,000	20,000	172,000	172,000
A6	2	EA	Emergency Pits	25,000	50,000	164,000	328,000
A7	3	EA	SMH, type 1, constructed in M/T or Int. pits, in place complete	20,000	60,000	36,000	108,000
A8	2	EA	SMH, type 1, Drop, constructed in M/T or Int. pits, in place complete	25,000	50,000	60,000	120,000
A9	2	EA	SMH, type 1, Double drop, constructed in M/T or Int. pits, in place complete	30,000	60,000	40,000	80,000
A10	5	EA	SMH, Plain Precast, in place complete	6,000	30,000	10,000	50,000
A11	5	EA	SMH, type 3, reconstructed, in place complete	10,000	50,000	8,000	40,000
A12	1	EA	SMH, type 3A, reconstructed, in place complete	-	-	6,400	6,400
A13	1	EA	SMH no. 1, special, in place complete	50,000	50,000	193,000	193,000
A14	1	EA	SMH no. 2, special, in place complete	25,000	25,000	50,000	50,000
A15	1	EA	SMH no. 10, special, in place complete	25,000	25,000	120,000	120,000
A16	1	EA	Abandon existing sewer manhole in place	2,000	2,000	2,500	2,500
A17	2	EA	DMH, special type A, in place complete	6,000	12,000	12,000	24,000
A18	1	LS	42-inch drain line, (open trench), connection to exist. DMH		5,000		3,700
A19	1	EA	Chimney connections to new 66-inch sewer, in place complete	500	500	59,000	59,000

**Project:** Kalaheo Reconstructed Sewer  
**Job No.** W18-95  
**Bids Opened:** 17-Dec-98

ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
A20	1	EA	Plug existing 27-inch sewer	400	400	900	900
A21	1	EA	Cut & plug existing 6" sewerlines	50	50	-	-
A21a	1	EA	Cut & plug existing 8" sewerline			500	500
A22	1	LS	18-inch connection to WWTP wet well		15,000		15,000
A23	4,300	CY	Unclassified Trench Excavation (MT-Int.-Emerg. pits,oft lines,laterals,drain)	125	537,500	170	731,000
A24	25	LF	27-inch VCP sewer line, (open trench), in place complete		-	150	3,750
A25	89	LF	18-inch VCP sewer line, (open trench), in place complete	120	10,680	60	5,340
A26	127	LF	8-inch VCP sewer line, (open trench), in place complete	75	9,525	21	2,667
A27	110	LF	42-inch RCP drain line, (open trench), in place complete	200	22,000	505	55,550
A28	89	LF	66-inch RCP sewer line (incl. (2) -22' radius, (open trench), in place complete	1,350	120,150	620	55,180
A29	1	LS	Water Relocation #1		14,700	68,000	68,000
A30	1	LS	Water Relocation #2		14,000	40,000	40,000
A31	1	LS	66-inch sewer line connection to WWTP wet well, in place complete		20,000	18,000	18,000
A32	1	LS	By-pass of trunk lines and sewer laterals		440,000	28,000	28,000
A33	1	LS	Traffic control - work zone #1 (42 days)		13,680	2,000	2,000
A34	1	LS	Traffic control - work zone #2 (62 days)		13,680	6,500	6,500
A35	1	LS	Traffic control - work zone #3 (87 days)		13,680	6,200	6,200
A36	1	LS	Traffic control - work zone #4 (70 days)		13,680	15,000	15,000
A37	1	LS	Relocation of Water Sampler Site		20,000	23,000	23,000
A38	200	CY	Rock fill for soft spots	40	8,000	60	12,000
A39	50	CY	Concrete, CL "B"	350	17,500	420	21,000

Project: Kalaeo Reconstructed Sewer  
 Job No. W18-95  
 Bids Opened: 17-Dec-98

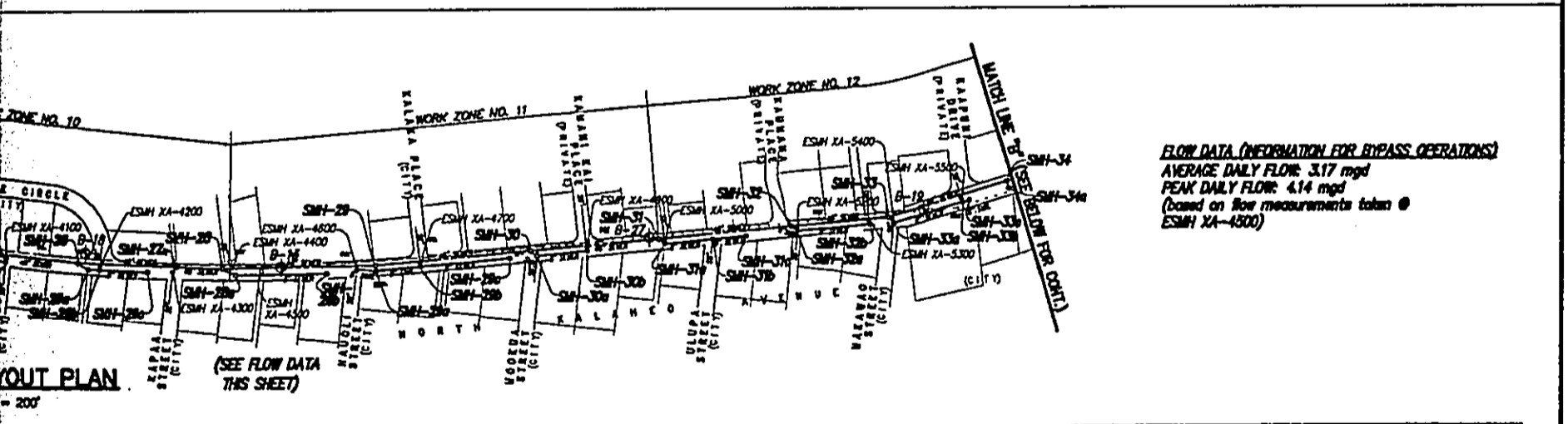
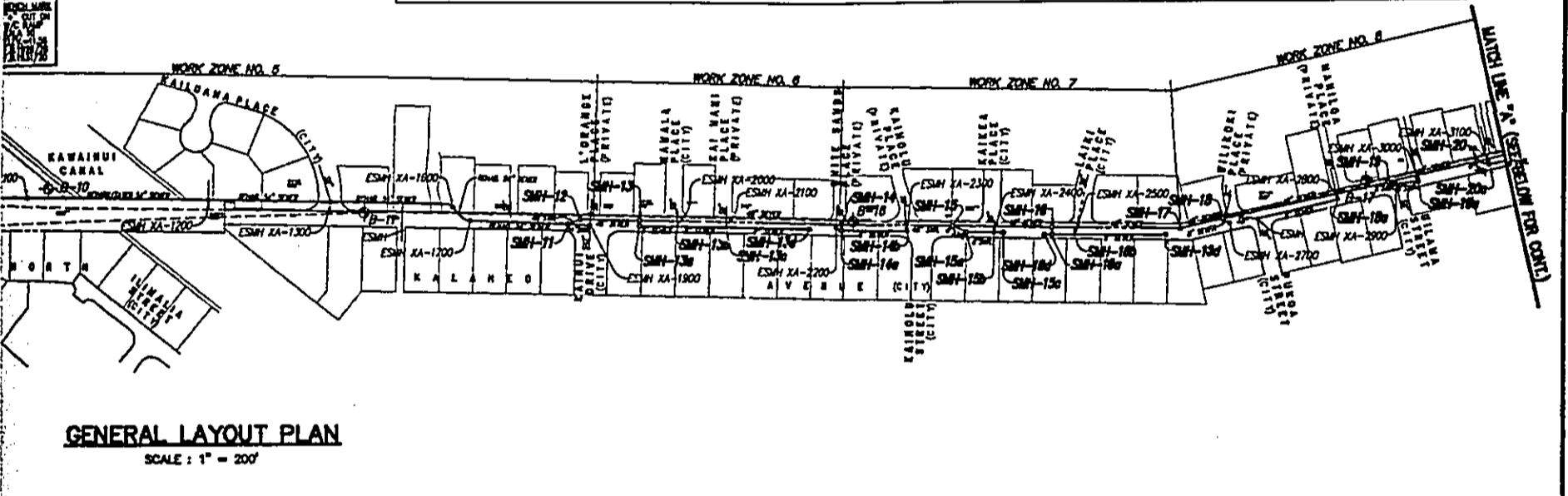
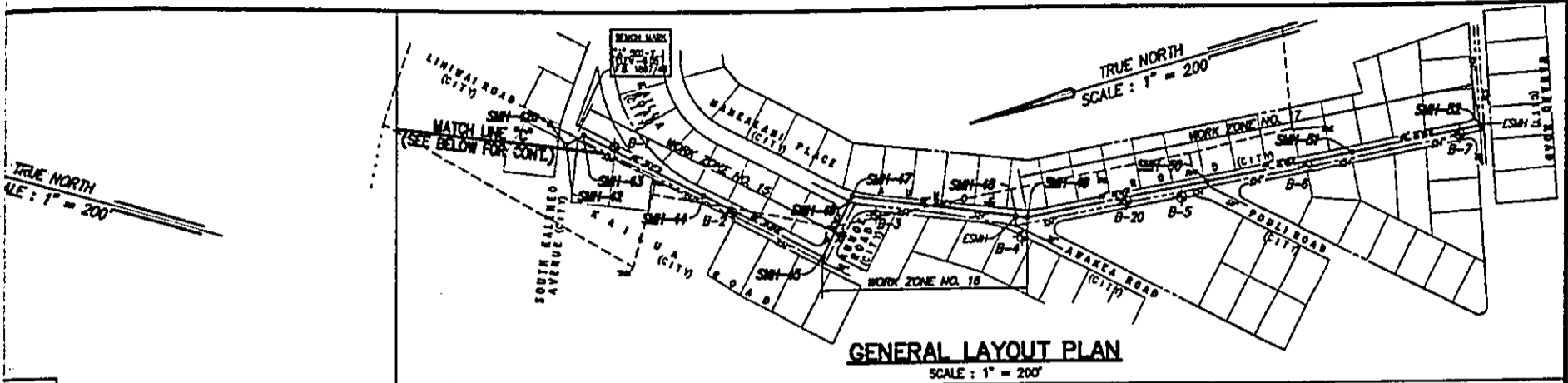
ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
A40	1	LS	Pre-/ Post construction survey		10,000	12,000	12,000
A41		FORCE ACCOUNT	Archaeological monitoring				40,000
A42		Allowance	Off-duty police officers		25,000		75,000
A43		Allowance	Additional Traffic Control Devices				25,000
A44		Allowance	Hawaiian Electric relocation work		40,000		20,000
A45		Allowance	Hawaiian Telephone relocation work		40,000		20,000
A46		Allowance	Gas Company relocation work				20,000
A47		Allowance	Relocation of additional water lines		150,000		40,000
<b>ADDITIVE #1 SUBTOTAL</b>					<b>6,196,525</b>		<b>9,156,235</b>

Project : Kalaheo Reconstructed Sewer  
 Job No. W18-95  
 Bids Opened : 17-Dec-98

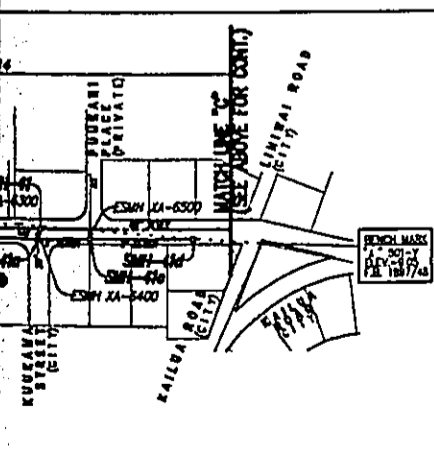
ITEM	QTY	UNIT	DESCRIPTION OF WORK	ParEn		Delta-Kinsel	
				Unit Cost	Totals	Unit Cost	Totals
ADDITIVE #2 (REHABILITATED 54" SECTION)							
B1	1	LS	Mobilization/Demobilization of rehabilitation equipment		125,000	62,000	62,000
B2	1,865	LF	54-inch sewer line, CIPP, in place complete	540	1,007,100	600	1,119,000
B3	6	EA	SMH rehabilitation	5,000	30,000	5,600	33,600
B4	12	EA	Reconnection of existing service laterals to rehab. 54-inch line	500	6,000	550	6,600
B5	1	LS	Bypass of sewer trunk & laterals in work zone #5 (rehabilitation work area)		60,000		120,000
B6	1	LS	Traffic control - work zone #5 (36 days)		13,680		30,000
B7		LS	Additional traffic control devices				25,000
B8			Allowance Off-duty police officers		10,000		10,000
			ADDITIVE #2 SUBTOTAL		1,251,780		1,406,200
			BASIC BID		14,364,215		25,680,983
			ADDITIVE #1		6,196,525		9,156,235
			SUBTOTAL ( BASIC & ADDITIVE #1)		20,560,740		34,837,218
			ADDITIVE #2		1,251,780		1,406,200
			TOTAL PROJECT COST	TOTAL	21,812,520		36,243,418

# APPENDIX C

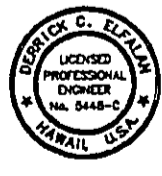
## GENERAL LAYOUT



**FLOW DATA (INFORMATION FOR BYPASS OPERATIONS)**  
 AVERAGE DAILY FLOW: 3.17 mgd  
 PEAK DAILY FLOW: 4.14 mgd  
 (based on flow measurements taken @ ESMH XA-4500)



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 \_\_\_\_\_  
 CHIEF, CIVIL ENGINEERING BRANCH, DPW  
 (FOR CONSTRUCTION 1/4" CITY S.D.R. ONLY)  
 \_\_\_\_\_  
 CHIEF, WATER REVENUE BRANCH, DPW



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 PERM. ENG. REG. NO. 5448-C

REVISION	DATE	BY	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING CITY AND COUNTY OF HONOLULU			
PROJECT: <b>KALAHEO AVENUE RECONSTRUCTED SEWER</b> KAILUA, OAHU, HAWAII TMS 4-2-18 TO 22 4-3-11 TO 24 84, 76, 78, 80 & 82 4-5, 2, 4, 6, 8, 10, 22 & 27			
ITEM: <b>Appendix C                  GENERAL LAYOUT (half-size)</b>			
DESIGNED BY:	DCI, GDM	CHECKED BY:	DCI
DRAWN BY:	DIT, AMN	SECTION HEAD:	
APPROVED:		BRANCH HEAD:	

JOB NO. W18-95

