DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
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HONOLULU, HAWAII 96813
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JEREMY HARRIS
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DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-670

September 17, 1999

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact (FONSI) for
KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
TMK: 4-3-75, 76, 78, 79 & 80
Kailua, Oahu, Hawaii

The City and County of Honolulu Department of Design and Construction (DDC) is the proposing agency and accepting authority for the above project. DDC has reviewed and responded to comments received during the 30-day public comment period for the Draft Environmental Assessment (EA) of the project which began on May 23, 1999.

DDC has determined that this project will not have significant environmental effects and is issuing a notice of determination of a FONSI. Please publish this notice in the October 8, 1999 OEQC Environmental Notice. We have enclosed a completed OEQC Publication Form and four copies of the Final EA.

A. Identification of Proposing Agency and Accepting Authority

Department of Design and Construction, City and County of Honolulu

B. Brief Description of Proposed Action

The proposed project consists of rehabilitating approximately 3,350 feet of existing deteriorated 48-inch Kainui Drive Trunk Sewer in Kailua, Oahu, Hawaii (Tax Map Keys: 4-3-75, 76, 78, 79 and 80). The rehabilitation includes inserting a 45.5-inch

cured-in-place pipe (CIPP) liner from Kaha Street to Oneawa Street. The project will also rehabilitate the interiors of 9 existing deteriorated sewer manholes.

C. Determination and Reasons Supporting the Determination

After completing an assessment of the potential environmental effects of the proposed project, reviewing comments from the public, governmental agencies and interested parties, and evaluating the Significance Criteria, Section 12 of Hawaii Administrative Rules Title 11, Chapter 200, Environmental Impact Statement Rules, the proposing agency does not anticipate any significant impacts on the environment. A **Finding of No Significant Impact** has been determined for the project with the reasons supporting this determination discussed below.

1. The proposed action will not involve an 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 Zoning Maps and the Department of Design and Construction's design standards and will not curtail beneficial uses of the environment in the area. 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 344, 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 and all applicable State policies, goals, and guidelines. No long-term environmental conflicts are foreseen.

4. The proposed action will not 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 $4.5 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 not substantially affect public health. Rehabilitation of the existing severely deteriorated Trunk Sewer will prevent collapse of the ground above, impedment or stoppage of wastewater flow, damage to overlying and upstream structures and severe disruptions to surface traffic and access to residential units along Kainui Drive. The proposed action will prevent future wastewater spills, will improve environmental conditions and represents a public health benefit. The short term negative impacts associated with construction activities such as noise, dust, exhaust emissions, odor, damaged roadways, bypass piping and diversion pumping, and traffic congestion will be mitigated by measures included in the project plans and specifications.

6. The proposed action does not have a secondary impact. By rehabilitating the severely deteriorated existing Trunk Sewer, growth and development in conformance with the existing development plan can continue. Population, traffic, and public facilities may be indirectly affected by this project.

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 have very little effect on the environment and will not involve a commitment for larger actions.

9. The proposed action does not substantially affect rare, threatened or endangered species, or its 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 City and State rules, regulations and permit requirements and 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, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. The proposed project is not located in an environmentally sensitive area. Although the project is in the Special Management Area, it is not defined as "development" and is exempt from the requirements of a Special Management Area Permit. The northern portion of the project site is located outside the 500-year flood plain. The southern portion of the project is within the 500-year flood plain, in areas of 100-year flood with average depths of less than 1-foot or with drainage areas of less than 1 square mile, and areas protected by levees from 100-year flood. 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 City or State plans or studies. The Trunk Sewer rehabilitation will be installed below the ground surface of an established roadway.

13. The proposed action will not require substantial energy consumption, except for energy consumed for the installation of CIPP liner into the existing Trunk Sewer, reconnecting existing sewer lines and laterals and rehabilitating existing sewer manholes. After the rehabilitation work is completed, the Trunk Sewer will operate by gravity and will not require any external energy.

D. Supplementary Information

The Final Environmental Assessment (EA) for the proposed project and the results of the coordination and consultation undertaken with affected governmental agencies and interested parties are attached to support the notice of determination of a FONSI. The Final EA is part of the environmental review process to meet the requirements of Chapter 343, HRS.

E. Name, Address and Phone Number of Contract Person for Further Information

Mr. Carl Arakaki
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
(808) 523-4671

Very truly yours,

FOR RANDALL K. FUJIKI
Director

cc: Shimabukuro, Endo & Yoshizaki, Inc.

1999-10-08-OA-FEA

FINAL ENVIRONMENTAL ASSESSMENT
FOR
KAINUI DRIVE TRUNK SEWER RECONSTRUCTION

Kailua, Oahu, Hawaii
Tax Map Keys: 4-3-75, 76, 78, 79 and 80

This Document is prepared pursuant to Chapter 343, HRS.

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

Responsible Official: _____ 9.14.99
FOR Randall K. Fujiki, Director — Date

Prepared by

Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816

September 1999

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I. SUMMARY

A. GENERAL INFORMATION

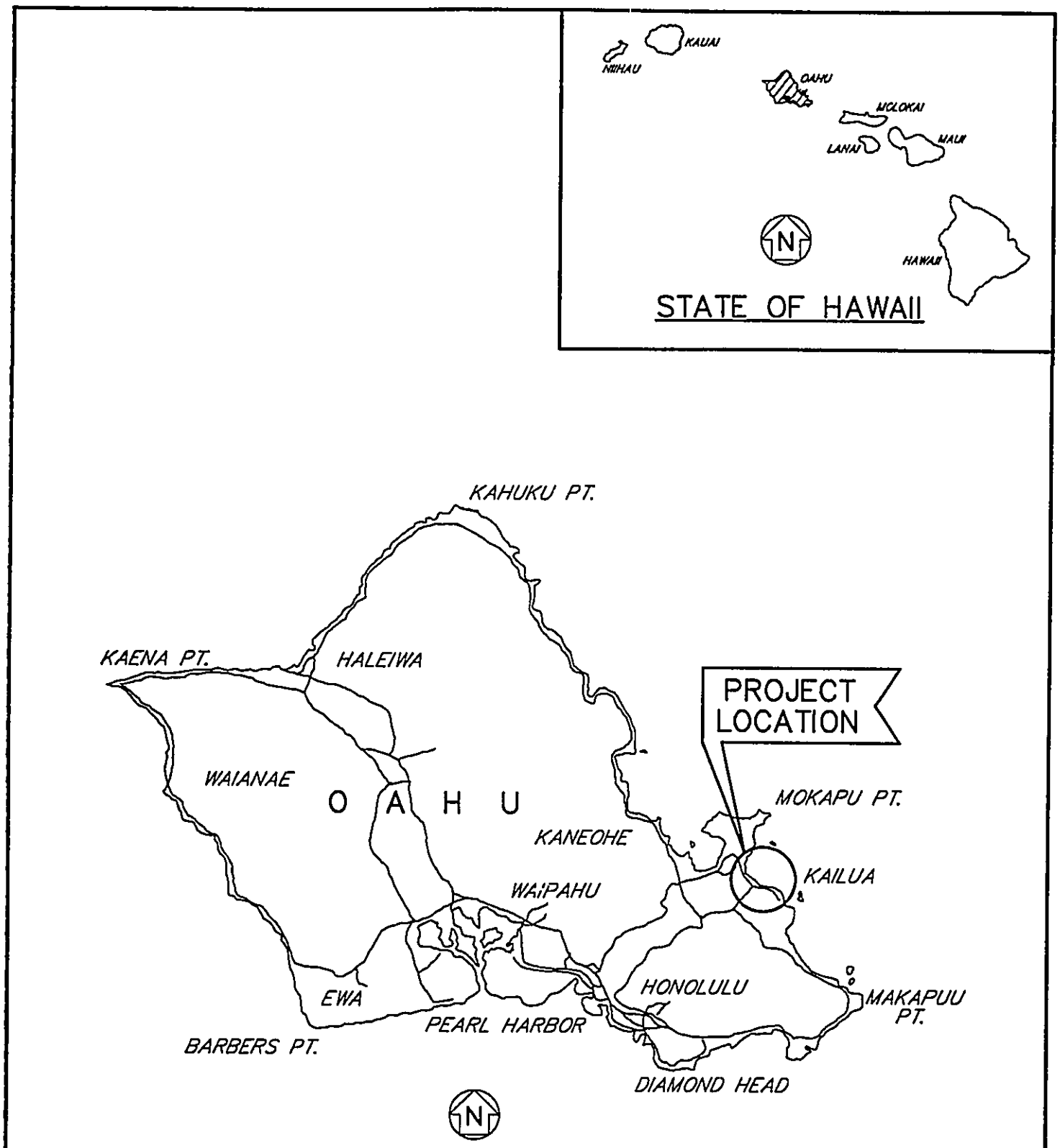
The City and County of Honolulu Department of Environmental Services proposes to correct widespread hydraulic and structural problems with its Kailua area's wastewater system. In December 1997 the City hired Shimabukuro, Endo & Yoshizaki, Inc. to prepare a preliminary engineering report for reconstruction/rehabilitation of the wastewater system's Kainui Drive Trunk Sewer. The report dated November 1998 included discussions on the alternatives considered for the corrective action and a recommendation of the most cost-effective solution for the reconstruction/rehabilitation by cured-in-place pipe (CIPP) lining. Besides rehabilitation by CIPP lining, other alternatives considered included reconstruction by excavation and replacement, rehabilitation by sliplining/insertion, and reconstruction by microtunneling.

The City endorsed the rehabilitation by CIPP lining alternative because hydraulic analysis indicated that the rehabilitated sewer line would be capable of handling the projected future peak flows and construction would be performed with minimal disruptions to surface traffic, activities, and improvements at the least cost. This alternative involves rehabilitating approximately 3,350 feet of the existing 48-inch gravity Kainui Drive Trunk Sewer from Sewer Manhole (SMH) 0100 at Kaha Street to SMH 1000 at Oneawa Street with 45.5-inch CIPP lining and rehabilitating nine (9) existing sewer manholes. Land use approvals from the City and the State are not required.

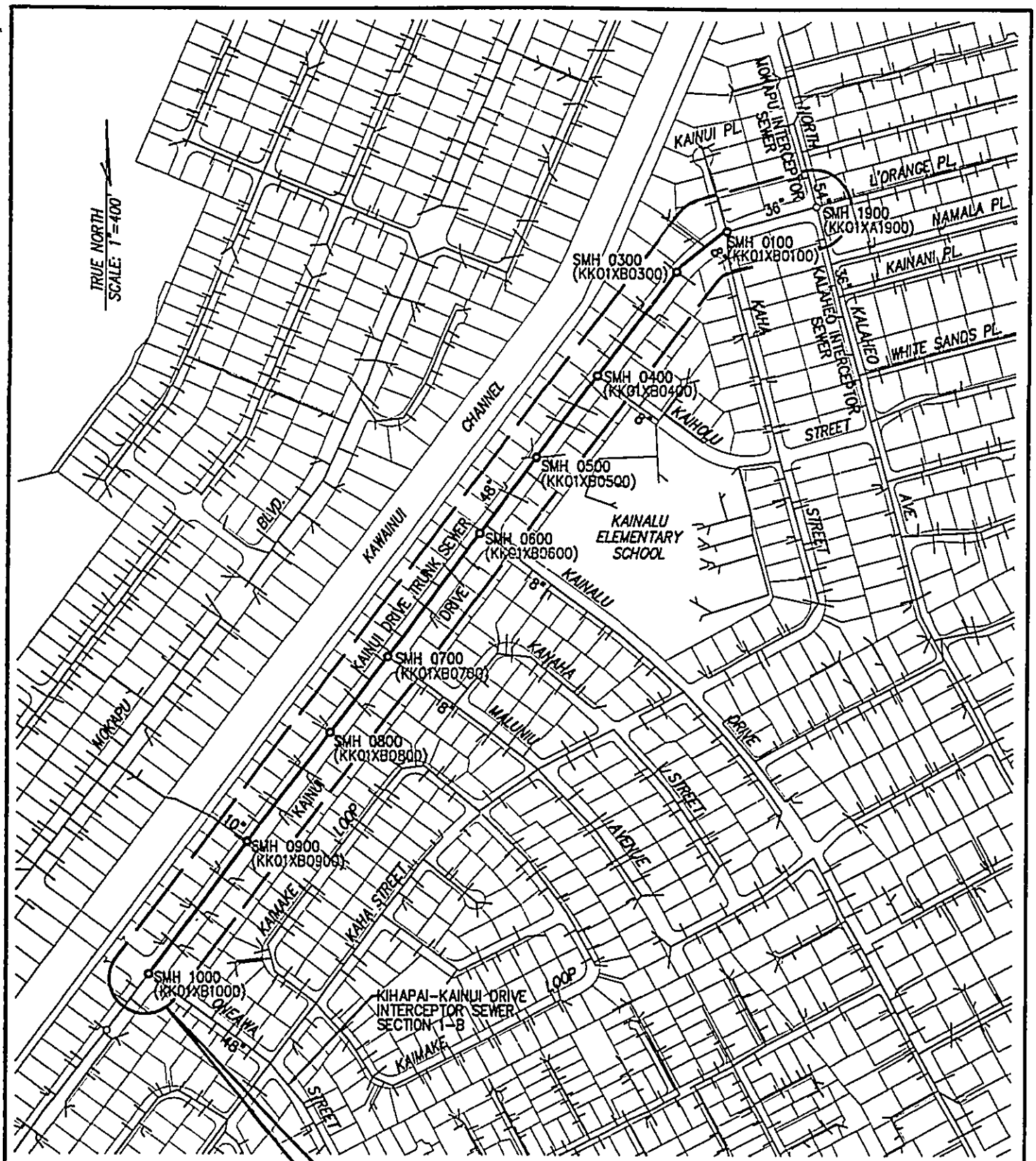
This Final Environmental Assessment (EA) has been prepared pursuant to Chapter 343, HRS. It describes the project and the affected environment and discusses proposed actions, potential environmental impacts and proposed mitigation measures. After review of the Draft EA by various governmental agencies, other interested organizations and individuals was completed and following a formal 30 days comment period, the proposing and approving agency, the Department of Design and Construction, has concluded that the project will have no significant impact on the environment and has determined a **Finding of No Significant Impact.**

B. ENVIRONMENTAL ASSESSMENT INFORMATION

Proposing and Approving Agency:	Department of Design and Construction City & County of Honolulu
Responsible Official:	Randall K. Fujiki, Director
Contact Person: Phone Number:	Carl Arakaki, Project Engineer 523-4671
Prepared by:	Shimabukuro, Endo & Yoshizaki, Inc. 1126 12th Avenue, Room 309 Honolulu, Hawaii 96816 Contact: Howard K. Endo (737-1875)
Project Name:	Kainui Drive Trunk Sewer Reconstruction
Project Description:	Rehabilitation of about 3,350 lineal feet of existing 48-inch trunk sewer on Kainui Drive from SMH 0100 at Kaha Street to SMH 1000 at Oneawa Street with 45.5-inch CIPP liner. The rehabilitated sewer will connect downstream to an existing 36-inch rehabilitated sewer at SMH 0100 and upstream to an existing 48-inch sewer at SMH 1000.
Project Location:	Kailua, Oahu, Hawaii (See Figures 1 and 2)
Tax Map Key:	4-3-75, 76, 78, 79, and 80
Land Area:	Not Applicable (within City road right-of-way)
State Land Use:	Urban
Land Owner:	City and County of Honolulu
County Zoning:	Kainui Drive — Residential, R-10 Residential, R-7.5
Special Designations:	Special Management Area, but project not defined as "development" and is exempt. Flood Hazard Areas Zone X — Area Outside 500-Year Flood Plain Zone X — Area of 500-Year Flood Protected by Levees from 100-Year Flood
Estimated Construction Cost:	$4,500,000



PREPARED FOR:	KAINUI DRIVE TRUNK SEWER RECONSTRUCTION KAILUA, OAHU, HAWAII LOCATION MAP	sey ENGINEERS Shimabukuro, Endo & Yoshizaki, Inc. Civil & Structural Engineers	FIGURE 1
DEPARTMENT OF DESIGN AND CONSTRUCTION			



PREPARED FOR:	KAINUI DRIVE TRUNK SEWER RECONSTRUCTION KAILUA, OAHU, HAWAII		FIGURE
DEPARTMENT OF DESIGN AND CONSTRUCTION	PROJECT SITE PLAN	sey ENGINEERS Shimabukuro, Endo & Yoshizaki, Inc. Civil & Structural Engineers	2

C. PARTIES CONSULTED

1. Pre-Assessment Consultation

Prior to preparing the Draft Environmental Assessment (EA), the agencies, organizations, and utilities listed below from the master list provided by OEQC were consulted by letter on November 23, 1998. Also, all residents of parcels adjoining Kainui Drive from Kaha Street to Oneawa Street were consulted by letter on November 23, 1998. Substantive comments were received from parties marked below with an asterisk (*) and the comments were incorporated into the Draft EA as appropriate. Copies of substantive comment letters and conversations are included in Appendix D.

Federal:
U.S. Army Corps of Engineers, Pacific Ocean Division**
U.S. Department of Interior, Fish and Wildlife Service**

State of Hawaii:
Department of Business, Economic Development and Tourism (DBEDT)
DBEDT Office of Planning
Department of Land and Natural Resources (DLNR)**
DLNR Historic Preservation Division* **
Department of Education* **
Department of Health* **
Office of Hawaiian Affairs*
Representative Cynthia Thielen
Senator Whitney Anderson

City & County of Honolulu
Department of Environmental Services**
Department of Planning & Permitting**
Department of Design & Construction
Department of Parks & Recreation**
Department of Facility Maintenance**
Department of Transportation Services* **
Fire Department**
Council Member Steve Holmes

Utility:
Honolulu Board of Water Supply**
Hawaiian Electric Company
The Gas Company
GTE Hawaiian Telephone
Oceanic Cable**

Community Groups/Businesses/Etc.
Kailua Neighborhood Board*
Kailua Urban Design Task Force*
Kailua-Kancohe-Kahaluu Facilities Plan Steering Committee
Kailua Chamber of Commerce
Hawaii's Thousand Friends
Sierra Club, Hawaii Chapter
Residents along Kainui Drive (94)

2. Draft EA Review

Copies of the Draft EA were provided to the same agencies, organizations, and individuals listed above and to residents along Kainui Drive who responded to the request for pre-assessment consultation. The list was supplemented to include parties who may be impacted by the project and who, during the pre-assessment consultation process, requested to receive copies of the Draft EA for their review and comment. These additional parties are listed below. Comments were received from parties on the lists with a double asterisk (**) and the comments have been incorporated into the Final EA as appropriate. Copies of comment letters to the Draft EA and responses to the letters are included in Appendix E.

State of Hawaii:
Department of Accounting and General Services**
Department of Transportation
University of Hawaii Environmental Center
State Senate
State House of Representatives
Kailua Public Library
Kainalu Elementary School

City & County of Honolulu
Police Department**
Honolulu City Council

Individuals
Kurt Teves
Michael Lutche
Gary Gardetto

II. PROJECT CHARACTERISTICS

A. PROJECT DESCRIPTION

The City and County of Honolulu Department of Environmental Services (ENV) proposes to rehabilitate approximately 3,350 feet of the existing Kainui Drive Trunk Sewer from SMH 0100 at Kaha Street to SMH 1000 at Oneawa Street. The Trunk Sewer is located in Kailua, Oahu, Hawaii as shown on Figures 1 and 2.

The Kainui Drive Trunk Sewer was constructed in May 1968 as the City's Department of Public Works Kihapai-Kainui Drive Interceptor Sewer Section 1-A Job Number 43-66. The gravity sewer line consists of 48-inch unlined reinforced concrete Class IV pipe, except for the first segment between Sewer Manhole (SMH) 1900 and SMH 0100 which consists of a 36-inch fiberglass reinforced plastic (FRP) pipe inserted in the latter part of 1997 into the existing 42-inch unlined reinforced concrete Class IV pipe. The Trunk Sewer has nine reinforced concrete sewer manholes and 31 chimneys tapping the top of the Trunk Sewer to provide service connections to adjacent properties.

The Trunk Sewer connects downstream to the 54-inch Mokapu Interceptor Sewer along North Kalaheo Avenue at SMH 1900. The 48-inch Kihapai-Kainui Drive Interceptor Sewer Section 1-B along Oneawa Street connects to the upstream end of the Trunk Sewer at SMH 1000.

Sliplining of the first segment of the Trunk Sewer between SMH 1900 and SMH 0100 was attempted to rehabilitate that portion of the Trunk Sewer. TV investigations conducted in February 1998 have demonstrated that the portion of the Trunk Sewer upstream of SMH 0100 to SMH 1000 is severely deteriorated and must be reconstructed/rehabilitated immediately. Structural failure is imminent and could cause collapse of the ground above, impede or stop the flow of wastewater, cause wastewater spills, damage to overlying and upstream structures, and seriously disrupt surface traffic and access to the residential units along Kainui Drive.

The Preliminary Engineering Report (PER) prepared for the project by Shimabukuro, Endo & Yoshizaki, Inc. (SEY) dated November 1998 discussed Trunk Sewer reconstruction and rehabilitation alternatives and recommended cured-in-place pipe (CIPP) lining for rehabilitation of the 48-inch Trunk Sewer. ENV concurred with the recommendation. See Appendix A for preliminary CIPP plans.

B. TECHNICAL CHARACTERISTICS

1. Wastewater Flows

The wastewater design flows for this project were provided by the Department of Design and Construction (DDC). See Table 1. The wastewater flows were generated using the DDC Design Standards methodology of static accumulation for both existing (1996) and anticipated future development based on the Development Plan of the Department of Planning and Permitting (DPP). The DDC Design Standards were modified by 1) using a modified Babbit Curve for the peaking factor ($3/P^{0.2}$) from the City's Infiltration and Inflow (I/I) Study of Kailua and 2) using modified I/I factors for calculating peak flows based on the I/I Study.

TABLE 1

EXISTING AND FUTURE WASTEWATER DESIGN FLOWS,
TRIBUTARY AREAS AND EQUIVALENT POPULATIONS
FOR KAINUI DRIVE TRUNK SEWER

Design Flow/ Tributary Area/Equivalent Population	Wastewater Flow (mgd)	
	Existing	Future
Average Design Flow Downstream at SMH 1000	3.78	4.89
Peak Design Flow Downstream at SMH 1000	18.18	20.66
Tributary Area Upstream of SMH 1000	1,373 acres	1,490 acres
Equivalent Population Upstream of SMH 1000	38,006	49,064
Average Design Flow Upstream at SMH 0100	3.98	5.09
Peak Design Flow Upstream at SMH 0100	19.06	21.53
Tributary Area Upstream of SMH 0100	1,481 acres	1,598 acres
Equivalent Population Upstream of SMH 0100	39,891	50,959
Average Design Flow Upstream at SMH 1900	4.03	5.14
Peak Design Flow Upstream at SMH 1900	19.27	21.73
Tributary Area Upstream of SMH 1900	1,506 acres	1,623 acres
Equivalent Population Upstream of SMH 1900	40,346	51,414

The tributary area upstream of SMH 1000 consists of Coconut Grove, the mauka half of Enchanted Lakes, Pohakupu, Olomana, and Maunawili. The existing 1,373 acre tributary area upstream of the Kainui Drive Trunk Sewer accounts for more than 90 percent of the flow in the Trunk Sewer. The tributary area downstream of SMH 1000 (along the Kainui Drive Trunk Sewer) is only 133 acres. This area with an equivalent population of 2,340 is fully developed and no increase in wastewater flow is anticipated from this area.

2. Hydraulic Analysis

Hydraulic analysis was performed in the PER for the CIPP lining of the Kainui Drive Trunk Sewer using gradually varied flow analysis based on Manning's formula to evaluate the non-uniform flow characteristics. This type of analysis was necessary because of the varied slopes (mild to adverse) of the Trunk Sewer. The analysis was performed using the future peak design flow upstream at SMH 0100 of 21.53 mgd for a CIPP liner I.D. of 45.5 inches.

The profile of the hydraulic grade line along the Trunk Sewer is presented in Appendix A. The gradual varied flow analysis demonstrated that open channel flow will prevail in the Kainui Drive Trunk Sewer at the future peak design flow of 21.53 mgd, except in the last 35 feet near SMH 1000. The hydraulic grade line would rise less than 0.02 feet above the top of pipe at SMH 1000.

In summary, the gradually varied flow analysis demonstrated that open channel flow will prevail for more than 99 percent of the Trunk Sewer at the future peak design flow of 21.53 with velocities exceeding 2.9 fps. Open channel flow conditions would likely occur for the entire Trunk Sewer because peak design flow decreases with distance upstream in the Kainui Drive Trunk Sewer and the conditions and duration for peak design flow occurrence are minimal.

3. Cured-in-Place Pipe Lining

Cured-in-place pipe (CIPP) rehabilitation is a trenchless method which will install a 45.5-inch I.D. flexible resin impregnated fabric tube in the existing deteriorated 48-inch pipeline using hydrostatic inversion, air inversion, or mechanically

pulling with a winch and cable after wastewater has been bypassed around the section of sewer line to be rehabilitated. The fabric tube will be manufactured at the factory to custom fit the cross section of the deteriorated pipe. The tube skeleton will consist of a non-woven needled polyester felt intermixed with one or more of the following materials: woven polyester, woven fiberglass, chopped fiberglass and other woven fibers. This skeleton will be impregnated with a liquid thermosetting resin immediately prior to installation at the installer's wet-out facility or at the jobsite. The CIPP liner will be designed for a fully deteriorated host pipe.

Installation by hydrostatic inversion is the most common procedure and begins after wastewater has been bypassed from the sewer line as illustrated in Figure 3. The fabric tube is securely attached to the end of the inversion elbow and then the inversion standpipe is filled with water. The pressure of the water column is used to push and expand the wet-out fabric inside out, termed inversion, and forward into the deteriorated pipe to conform to the shape of the pipe interior as more inversion tube is fed into the standpipe. The water level in the standpipe is maintained at a constant level to ensure continual and steady insertion of the tube within the deteriorated pipe. After the tube is fully inserted, hot water heated to 120°F to 150°F is circulated through the pipe for 10 to 12 hours to cure (harden) the thermosetting resin. Following curing of the liner, the ends and service chimney connections are cut and sewer service to this rehabilitated section of the sewer line restored. The fabric cures to form a slightly smaller diameter rigid pipe within the deteriorated pipe with no joints or seams and a smooth interior surface.

The Trunk Sewer exhibits one change in direction with a deflection of approximately 15° at SMH 0300. See Appendix A. This change in direction can be accommodated by the CIPP liner. With liner insertion performed in two directions and limited to approximately 600 feet inversions in each direction, the number of inversion locations is predicted to be four (at SMH 0300 mauka at Kaha Street, SMH 0500 mauka at Kaiholu Street, SMH 0700 at Maluniu Street, and SMH 0900 mauka of Maluniu

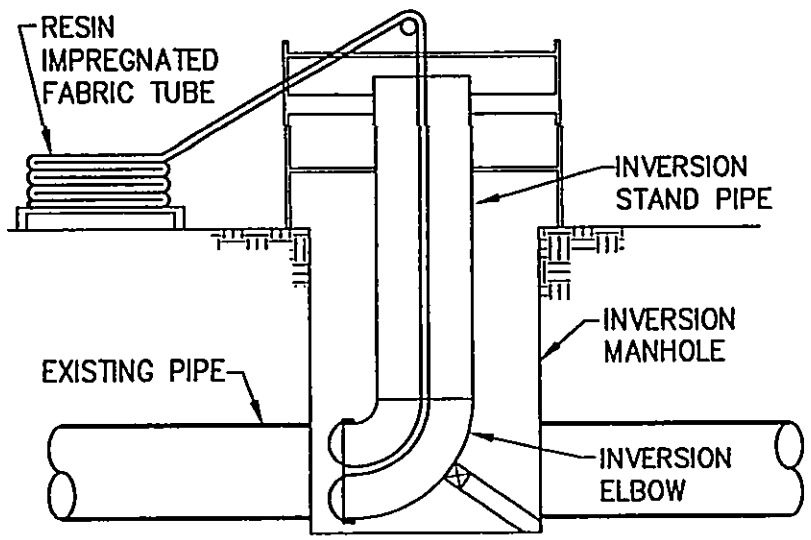
PREPARED FOR:
DEPARTMENT OF DESIGN AND CONSTRUCTION

KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
KAILUA, OAHU, HAWAII

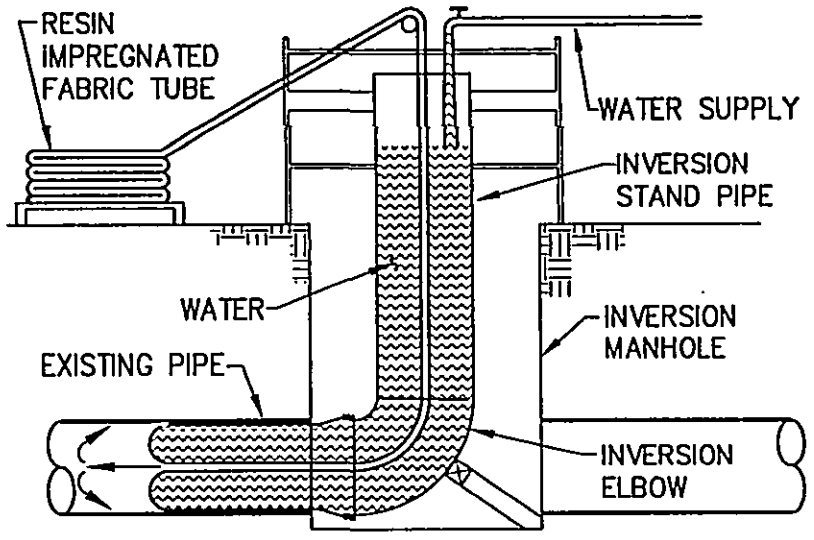
CURED-IN-PLACE PIPE LINING

sey ENGINEERS
Shimabukuro, Endo & Yoshizaki, Inc.
Civil & Structural Engineers

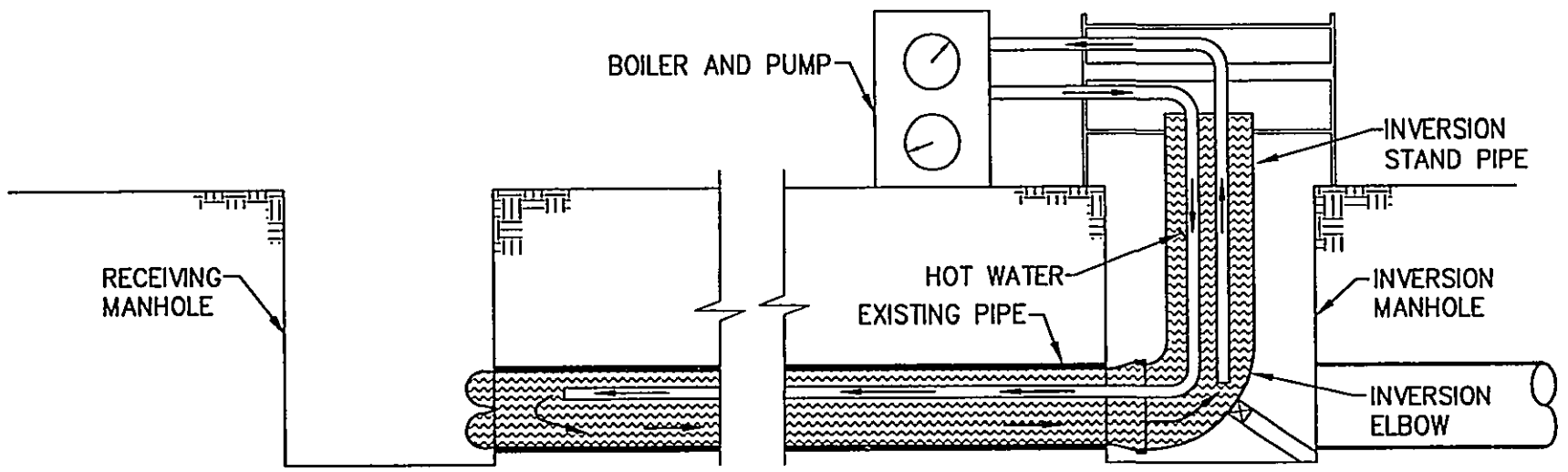
FIGURE 3



STEP 1: RESIN IMPREGNATED FABRIC TUBE ATTACHED TO END OF INVERSION ELBOW.



STEP 2: INVERSION STAND PIPE FILLED WITH WATER TO PUSH AND EXPAND TUBE INSIDE OUT & FORWARD IN THE DETERIORATED PIPE.



STEP 3: HOT WATER IS CIRCULATED THROUGH THE DETERIORATED PIPE AFTER THE TUBE HAS BEEN INSTALLED FROM MANHOLE TO MANHOLE TO CURE THE THERMOSETTING RESIN.

Street) with eight CIPP inversions. CIPP installation and curing for each inversion will be continued until curing is completed and is estimated to take 24 to 48 hours.

4. Service Chimney Reconnections

The exact location and number of existing service chimney connections shall be determined by TV inspections and field measurements prior to CIPP rehabilitation. After installation of CIPP liner, service chimney connections shall be re-identified and confirmed by measurement. CIPP dimples are the usual signs of service connections, but accurate measurements from known reference points shall always be made to confirm their locations.

Chimney reconnections shall be performed by physical entry into the Trunk Sewer by personnel without excavation. Workmanship is generally better when reconnection is performed by a man trimming the opening of the chimney with a cutting device from inside the sewer line versus by television camera and remote control cutting devices. Remotely cutting chimney openings from two-dimensional TV views require sophisticated equipment and a highly skilled operator. Chimney openings shall be cut to not less than 95% but not more than 100% of its original size. All confined space requirements shall be adhered to.

5. Manhole Rehabilitation

Minor groundwater infiltration exist at six of the nine manholes (SMHs 0100, 0300, 0400, 0600, 0700 and 0900). Since the manholes are structurally adequate, the minor leaks and cracks will be spot repaired with chemical grout or fast-setting waterproof cement plug, and all nine manholes will be coated with a cementitious material to fill deteriorated concrete surfaces and irregularities and finished with a protective chemical coating of epoxy applied to protect the manholes from further corrosive damage. Existing manhole rungs will be removed from all manholes because of unsafe conditions, except at SMH 0100 where the manhole rungs are safe.

C. SOCIO-ECONOMIC CHARACTERISTICS

The preliminary estimated construction cost of the CIPP rehabilitation project is about $4.5 million in 1999 dollars. See Appendix B. The labor costs associated with a sewer rehabilitation project of this magnitude will provide a positive economic impact on the construction industry. The growth and development of the business and residential communities in the tributary area upstream of the Kainui Drive Trunk Sewer are the main long-term positive socio-economic effects of this project.

Short term negative effects will be experienced by residents adjacent to Kainui Drive during the sewer line rehabilitation and are discussed in the following Section III. Motorists traveling on Kainui Drive will be rerouted around the work areas. There will be no long term negative effects.

The project construction is scheduled to begin in mid 2000, is estimated to continue for 6 months and should be completed in late 2000. The actual CIPP rehabilitation work is expected to last roughly 2 months and should occur during the middle of the construction period.

Funding will be provided by the City and County of Honolulu. The project will not require direct assessments from the residents being served by the Trunk Sewer rehabilitation.

D. ENVIRONMENTAL CHARACTERISTICS

Temporary disruptions to the environment will occur due to construction activity such as trenching and dewatering for access into the inversion manholes and for bypass piping of the Trunk Sewer and sewer laterals. Traffic will be impacted by lane closures and detours. Operation of construction equipment will temporarily effect dust, noise, and exhaust emission levels. Some short-term increase in odors may result during the CIPP inversion process when the fabric tube is impregnated with thermosetting resin. Because the project is entirely within City streets, the normal working hours will be between 8:30 a.m. and 3:30 p.m., Monday through Friday unless otherwise permitted by the Department of Transportation Services. Environmental impacts caused by the project will be mitigated by complying with applicable City, State and Federal standards, guidelines and permit requirements. See Section IV.

III. DESCRIPTION OF AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

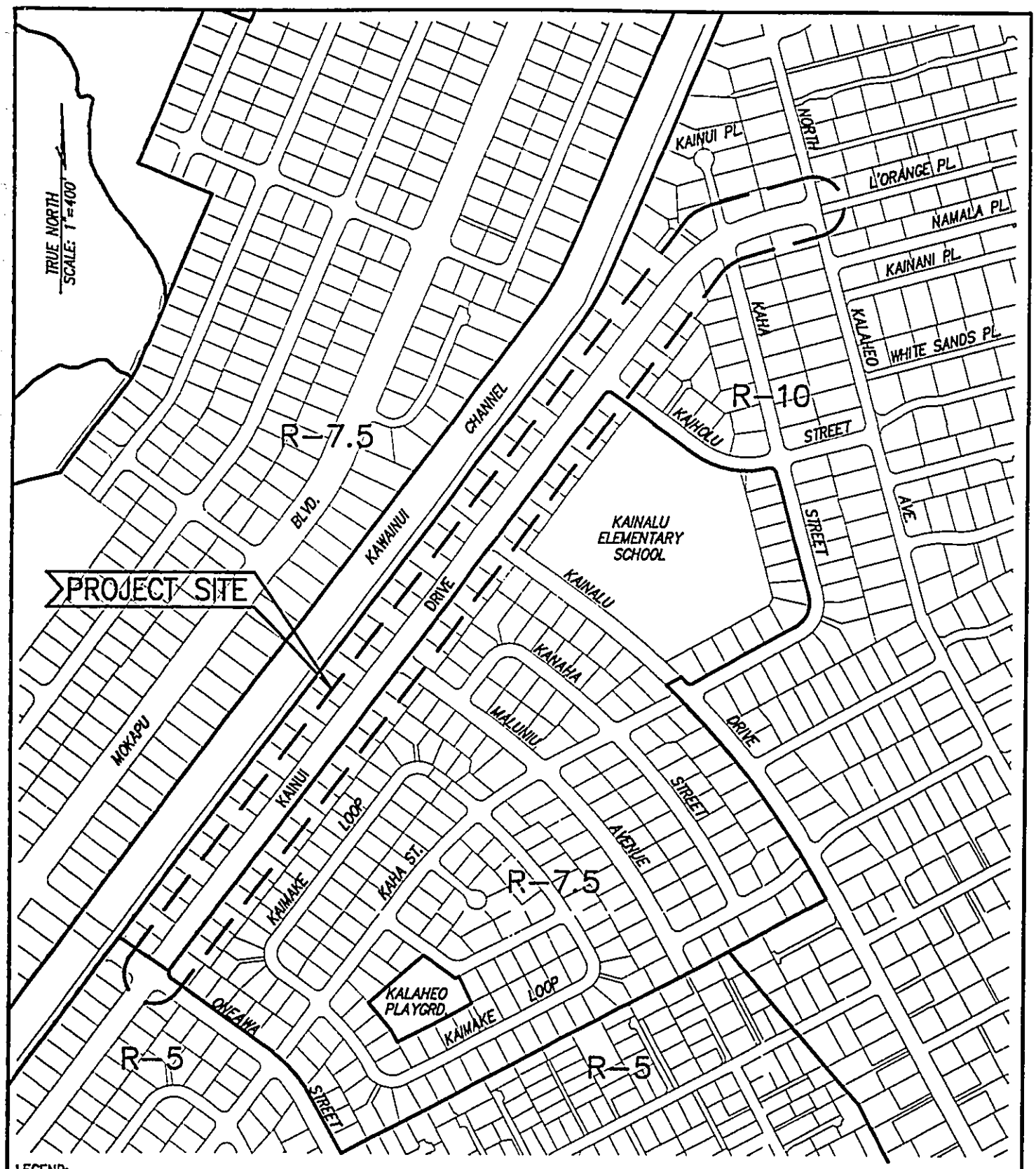
A. EXISTING SITE AND LAND USE

The Kainui Drive Trunk Sewer is located in City and County of Honolulu road right-of-way designated as Tax Map Keys 4-3-75, 76, 78, 79, and 80. Residential parcels with dwelling units occupy adjacent lots. Most of the parcels are zoned residential district R-10. The portion of the parcels on the makai side of Kainui Drive between Kaiholu Street and Oneawa Street are zoned residential district R-7.5. See Figure 4.

The existing Trunk Sewer route on Kainui Drive is within the Special Management Area. See Figure 5. But this project is not defined as "development" by DPP and is exempt as a repair and maintenance of underground sewer line project pursuant to Section 25-1.3 [2][D], Chapter 25, Revised Ordinances of Honolulu. A Special Management Area Permit will not be required for construction of the project.

The entire project area is within the State Land Use District Urban and no change in that designation is required. According to the Federal Emergency Management Agency's Flood Insurance Rate Map, Panel 60 of 135, the project site lies within Zone X. The northern portion is in an area determined to be outside the 500-year flood plain and the southern portion is within areas of 500-year flood, in areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 100-year flood. See Figure 6 for Flood Hazard Map.

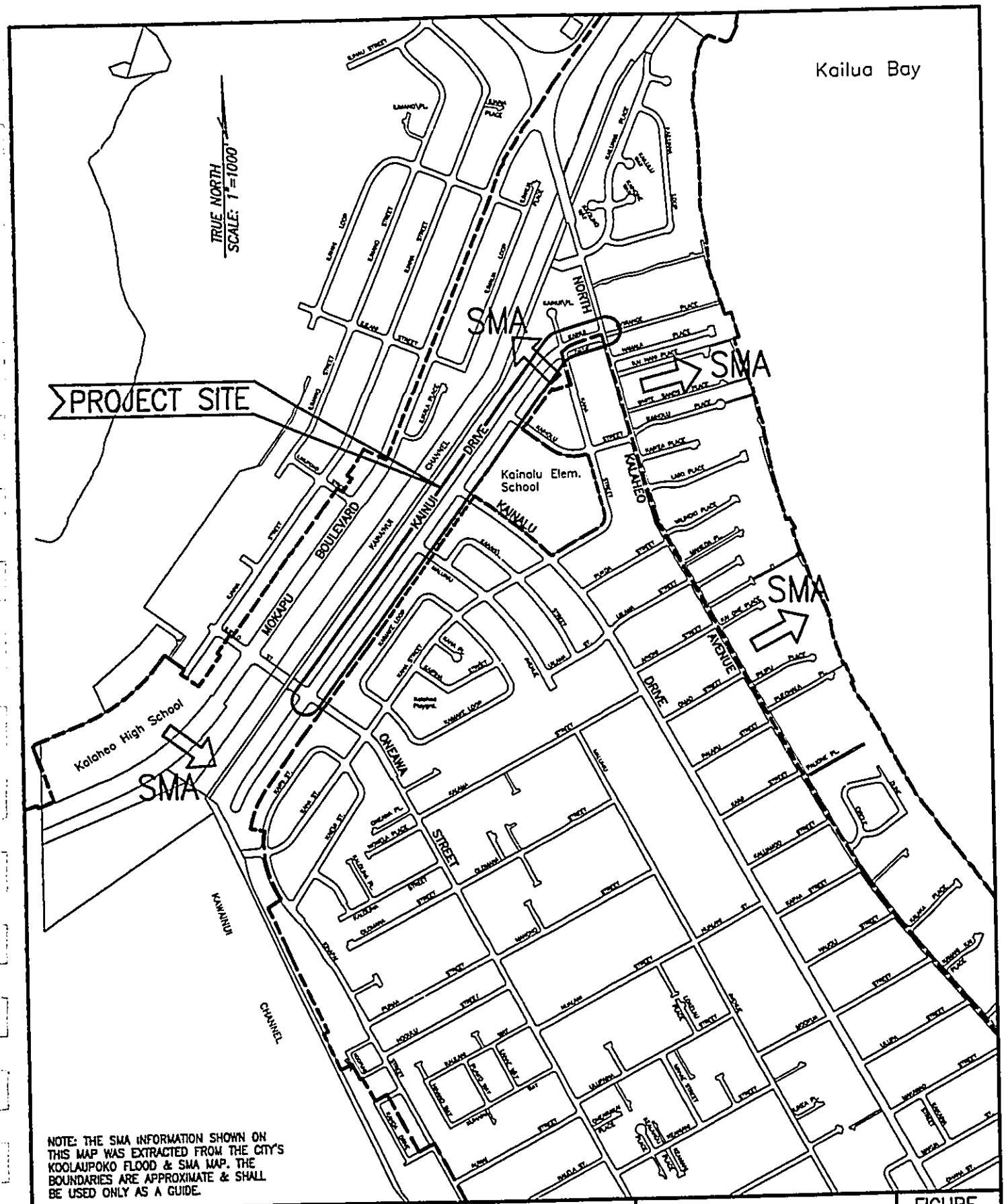
There will be no long-term interference with any existing or proposed land use of adjacent properties. During construction, residents will be inconvenienced in terms of access to and from their driveways to adjoining roadways and road frontage usage (mail, deliveries, parking) may be occasionally hampered by trenching, paving, construction materials deliveries, etc. During one of the CIPP inversions, work will extend into the City's 8-feet wide sewer easement across property at 951 Kainui Drive, tax map key 4-3-78:87. The contractor will be required to minimize disruptions to the



LEGEND:

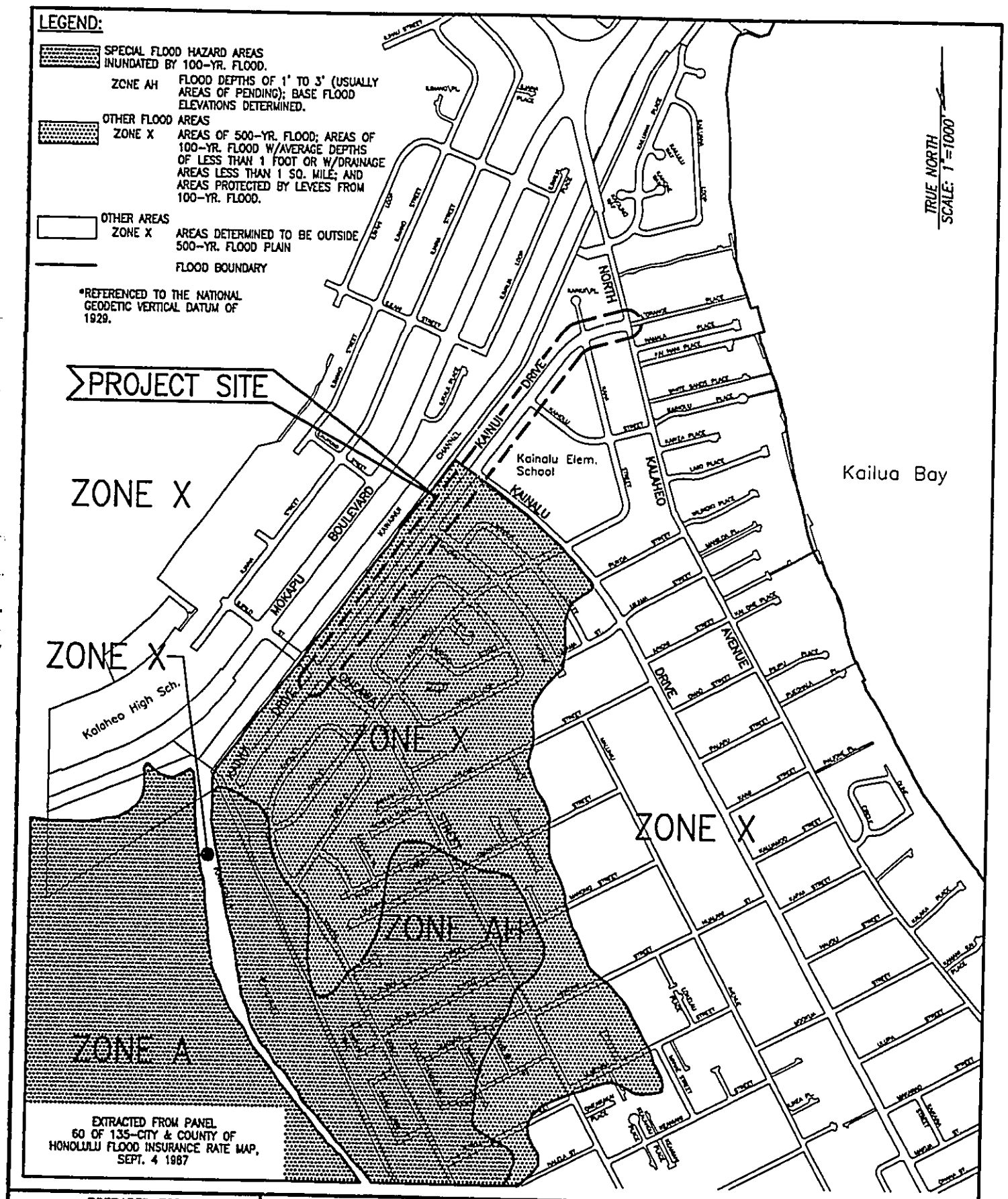
R-5	RESIDENTIAL DISTRICT (5,000 SF MIN. LOT)
R-7.5	RESIDENTIAL DISTRICT (7,500 SF MIN. LOT)
R-10	RESIDENTIAL DISTRICT (10,000 SF MIN. LOT)

PREPARED FOR: DEPARTMENT OF DESIGN AND CONSTRUCTION	KAINUI DRIVE TRUNK SEWER RECONSTRUCTION KAILUA, OAHU, HAWAII CITY ZONING	sey ENGINEERS Shimabukuro, Endo & Yoshizaki, Inc. Civil & Structural Engineers	FIGURE 4



NOTE: THE SMA INFORMATION SHOWN ON THIS MAP WAS EXTRACTED FROM THE CITY'S KOOLAUPOKO FLOOD & SMA MAP. THE BOUNDARIES ARE APPROXIMATE & SHALL BE USED ONLY AS A GUIDE.

PREPARED FOR: DEPARTMENT OF DESIGN AND CONSTRUCTION	KAINUI DRIVE TRUNK SEWER RECONSTRUCTION KAILUA, OAHU, HAWAII SMA BOUNDARY MAP	sey ENGINEERS Shimabukuro, Endo & Yoshizaki, Inc. Civil & Structural Engineers	FIGURE 5



PREPARED FOR:	KAINUI DRIVE TRUNK SEWER RECONSTRUCTION KAILUA, OAHU, HAWAII		FIGURE
DEPARTMENT OF DESIGN AND CONSTRUCTION	FLOOD HAZARD MAP	sey ENGINEERS Shimabukuro, Endo & Yoshizaki, Inc. Civil & Structural Engineers	6

residents and perform work in accordance with a City approved construction schedule and traffic control plan and the terms of the sewer easement.

B. TOPOGRAPHY AND SOILS

The existing Trunk Sewer route varies in elevation from 6 to 8 feet above mean sea level. The ground along Kainui Drive is relatively flat and slopes up and down to provide low points for surface drainage collection.

A geotechnical investigation of the existing Trunk Sewer route was completed in 1998 by Pacific Geotechnical Engineers. Four exploratory borings were drilled to depths of 30.5 and 46 feet. Alluvium was encountered at the bottom of the three makai borings. This alluvium is probably part of the alluvial layer exposed along the slopes of Oneawa Hills, north of the Kawainui Channel. The lower part of the alluvium encountered in the borings contained coralline material, indicating a transition between the alluvial and marine environment. The alluvium was overlain by granular back reef, or lagoonal deposits. The remaining boring located near Oneawa Street encountered lagoonal deposits instead of alluvium. This boring may have been located too far away from the buried slopes of Oneawa Hills to encounter the alluvium. This boring was possibly located where the underlying alluvium had been removed by erosion then replaced with lagoonal deposits. The lagoonal deposits in all of the borings were overlain by coralline dune and beach sands and fill materials to the ground surface. Groundwater was encountered near mean sea level.

In general, relatively poor subsurface conditions, consisting of weak and compressible lagoonal deposits, were encountered in the borings at the approximate invert elevations of the existing Trunk Sewer.

The proposed project will have little effect on existing soils and topography since trenching will be minimal. Some trenching for access into the inversion manholes and for bypass piping of the Trunk Sewer and sewer laterals will be necessary and backfill material will be required.

C. CLIMATE AND AIR QUALITY

The climate of the Kailua area is characterized by the persistence of trade winds, a strong gradient of increasing rainfall from the coast to the mountains, a concomitant gradient from sunny coastal areas to persistent cloudiness over nearby mountain crests, equable temperatures from day to day and season to season, and the infrequency of severe storms. Northeasterly trade winds prevail throughout the year, although their average frequency varies from more than 90 percent during the summer to only 50 percent in January. Average temperature is 75° F. Annual rainfall in the project area averages about 50 inches per year. Heavy rains occur mainly between the months of November through April.

Air quality in Windward Oahu is generally very good due to the lack of stationary sources of pollutants and the effects of the tradewinds. During periods of light or calm winds, however, "hot spots" where air pollutants may exceed short-term standards can occur in areas of traffic congestion. Such areas do not exist near the project area.

Exhaust emissions during construction would be generated from vehicles and construction machinery. Fugitive dust will be generated during trenching activities and as a result of vehicular traffic.

Impacts due to exhaust emissions will be minimized by keeping all equipment properly tuned and maintained, as well as by minimizing unnecessary idle time. The contractor will be required to comply with Hawaii Administrative Rules (HAR) Title 11 Department of Health (DOH) Chapter 60.1 Air Pollution Control which contains restrictions on visible emissions from motor vehicles and fugitive dust generation.

To reduce fugitive dust emissions, the area being worked on at any time shall be limited to the inversion manhole vicinity and exposed surfaces will be kept well watered whenever feasible. Wet cutting or dry cutting with other dust control measures will be required for asphaltic concrete pavements. Requirements to minimize fugitive dust emissions and erosion from trenching, stockpiling and other operations will be included in the project specifications to mitigate dust problems to the adjacent residences and nearby Kainalu Elementary School.

D. WATER RESOURCES

There are no fresh water streams within a mile of the existing Trunk Sewer route and no impacts are expected to any surface freshwater resources.

The Trunk Sewer is close to the shore of Kailua Bay. During construction, there is the potential for transport of storm runoff sediment from the Kainui Drive drainage system to the Kawainui Channel to Kailua Bay. Adherence to the City's Grading Ordinance, prompt paving and revegetation, and possibly scheduling work during expected dry weather months would reduce sediment delivery to the Bay. Also, due to the high water table at the project area, dewatering will be required during construction of access into the inversion manholes and the bypass piping of the Trunk Sewer and sewer laterals. At least 30 days prior to the start of construction the contractor will be required to file a Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit pursuant to HAR Title 11 DOH Chapter 55 Water Pollution Control with the DOH Clean Water Branch, employ best management practices and comply with the requirements of the General Permit regarding discharge of dewatered effluent.

Because the quality of the discharge of dewatered effluent is unknown at this time, the method of treatment and disposal of dewatered discharge is uncertain and must be developed by the contractor. The common practice of pumping discharge to a nearby sediment settling box(es) to settle out solids and discharging the desilted effluent to an existing City drainage system on Kainui Drive to Kawainui Channel should be permitted subject to approval of contractor's means, methods, techniques and/or sequence of procedures for dewatering. 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. If this option is not acceptable to the City and DOH, the more costly option of treating the discharge onsite and/or offsite prior to discharge must be considered. In any event, the contractor will be required to file an NOI and comply with the requirements of the NPDES General Permit.

Hot water may be used during the CIPP curing process. It will not contain any pollutants and will be disposed of by the contractor at ambient temperature in an environmentally safe manner in accordance with applicable Federal, State and City rules and regulations.

E. FLORA AND FAUNA

The project site is within an urbanized City road right-of-way developed for residential uses. No native habitat exists there. The introduced grasses, shrubs, and trees which prevail in the area provide some degree of habitat for the typical array of exotic birds and mammals that one would expect at this coastal area and in this type of environment throughout the island. No candidate, endangered or threatened plant or animal species are known to exist on the site or use the site as habitat.

The Kainui Drive roadside is landscaped with grasses and trees found typically in residential areas of Oahu. The median strip between the mauka and makai bound lanes is heavily planted with coconut trees, a few Norfolk pines and grass. Although portions of the median may be used by the contractor for work-related activities such as materials storage, temporary above ground bypass piping, etc., the impact caused by these CIPP rehabilitation related activities will be minimal. No existing plants will be removed and any plants, grassed area and surface improvement damaged by construction shall be restored by the contractor to the original or better condition. Meticulous requirements for the restoration of the Kainui Drive median strip and roadside will be incorporated into the project specifications.

F. ARCHAEOLOGICAL AND HISTORICAL SITES

The Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD) records indicate there are no known historic sites at the Trunk Sewer location on Kainui Drive. The SHPD and the Office of Hawaiian Affairs believes that the Kailua sand berms along the shoreline and vicinity within the Kailua's ahupua'a contain significant historical burial sites. However, the existing Trunk Sewer

project is entirely within established Kainui Drive away from the shoreline and the area has already been disturbed when the existing road was constructed. If significant sites including human burials are uncovered during construction, the contractor will be required to stop work and contact the SHPD at 692-8015. A qualified archaeologist and a Hawaiian cultural expert recognized within the Hawaiian community for his/her cultural expertise shall be retained by the contractor to determine if any historic sites are present. If historic sites are found, the archaeologist and the Hawaiian cultural expert shall gather sufficient information to evaluate their significance and submit the findings to the SHPD. If burial remains are found, the O'ahu Island Burial Council at DLNR will be contacted. A mitigation plan will be developed, if required, and approved by the SHPD prior to continuing with construction activities.

G. RECREATIONAL ACTIVITIES

There are no public recreational facilities adjacent to the project area. Neither construction nor operation of the rehabilitated Trunk Sewer will hinder in any way public recreational programs or facilities or the use of nearby Kailua Bay.

H. UTILITIES

Both above ground and buried existing utility installations should not be affected by the proposed work, except for the project sewer lines. The existing Trunk Sewer and service laterals will require bypass and/or diversion pumping during the rehabilitation work. Impacts of bypass/diversion pumping will be mitigated as discussed in Subsection K. Coordination with all utilities (electrical, water, sewer, telephone, cable TV, and gas) will be performed during engineering design. Construction plans will be submitted to the utility companies for review. Also, the contractor will be required to verify utility locations, protect utilities during construction, and coordinate any temporary displacement required for his convenience during construction so as to ensure no interruption of utility services.

I. NOISE

The operation of construction equipment such as backhoes, trucks, compactors, and pavers will raise ambient noise levels in the project vicinity. Noise impacts may have direct and indirect effects on the residential units along Kainui Drive and the nearby Kainalu Elementary School. Sources of noise from CIPP operations include the boiler truck, submersible circulation pump, trailer mounted engine generator, and bypass pumps. The boiler truck will be used to heat up the water for curing the installed CIPP liner. No significant noise increase is anticipated from the boiler truck because it contains no moveable parts. The submersible circulation pump will be used to circulate the heated water within the inverted CIPP liner and will be housed below water at the bottom of the inversion manhole. No significant noise increase is anticipated from the pumps but contingency measures should be available to cover as much of the manhole opening as possible with acoustical attenuating material to reduce noise levels above ground. The engine generator, typically 60 kw with 56 dBA at 25 feet, will be used as an electrical source for lighting, the submersible circulation pump, and possibly the bypass pumps. The engine generator will be housed in an acoustical attenuation enclosure to reduce noise levels to acceptable standards of 45 dBA at all residences. Bypass pumps to divert wastewater around the work area will be quiet type housed in acoustical attenuation enclosures to reduce noise levels to acceptable standards.

Construction equipment and on-site vehicles or devices requiring an exhaust of gas or air will be equipped with mufflers. In addition, all construction-related vehicles traveling on roadways shall meet the vehicle noise level requirements set by HAR Title 11 DOH Chapter 42 Vehicular Noise Control for Oahu.

Along the Kainui Drive residential area and the nearby Kainalu Elementary School, the allowable noise level is 55 dBA at the property line during the day (7 a.m. to 10 p.m.) and 45 dBA at night (10 p.m. to 7 a.m.). Noise levels at Kainalu Elementary School should not exceed the allowable noise level. Noise levels along Kainui Drive will exceed the allowable levels for more than ten percent of the time within any twenty minute period. Thus, a Noise Permit will be required for construction activities from

DOH in accordance with the HAR Title 11 DOH Chapter 46 Community Noise Control. Required permit conditions for construction activities which the contractor must comply with include the following:

(1) *No permit shall allow any construction activities creating excessive noise when measured at or beyond the property line of the construction site for the hours before 7:00 a.m. and after 6:00 p.m. on weekdays.*

(2) *No permit shall allow construction activities creating excessive noise when measured at or beyond the property line of the construction site for the hours before 9:00 a.m. and after 6:00 p.m. on Saturdays.*

(3) *No permit shall allow construction activities which exceed the allowable noise levels on Sundays and holidays.*

The above conditions shall be enforced and violators penalized by the Director of DOH. If the above conditions can not be met, construction noise variance from HAR Title 11 Chapter 46 will be obtained by the contractor from DOH.

J. ODOR

Odor control has not been a problem with CIPP rehabilitation. The contractor will be responsible for odor mitigation on this project in accordance with applicable Federal, State and City regulations. The contractor will be required to monitor the surrounding area and minimize any odors that may occur due to the CIPP construction activities.

The average concentration of hydrogen sulfide (H_2S) from wastewater gases measured by a reference method shall not exceed thirty-five (35) micrograms per cubic meter of air (twenty five (25) parts per billion) in any one-hour period in accordance with HAR Title 11 DOH Chapter 59 Ambient Air Quality Standards. Odor scrubbers, fans, etc., will be provided to minimize H_2S odors, if required.

Odors will be generated by the CIPP process when the fabric tube is impregnated (wet-out) with thermosetting resin. The odor is not harmful to the public but may be objectionable to some residents along Kainui Drive. If necessary, an offsite staging area

could be provided to the contractor to house the wet-out facility to impregnate the fabric tube with thermosetting resin. ENV is prepared to provide a secured area approximately 50 feet by 150 feet for the offsite staging area to store toxic resins, specialized equipment, and liner. Possible sites for the offsite staging area include the ENV's Kailua Wastewater Treatment Plant (WWTP), Kaneohe Pretreatment Facility (PTF), and Kapaa Landfill with the Kapaa Landfill preferred because of its availability. The Kailua WWTP is closest to the project site but is not available for use. See Figure 7.

The route to transport the wet-out CIPP from the Kapaa Landfill to the project site is approximately two miles. The route from the Landfill would proceed on Quarry Road and continue onto Mokapu Boulevard to Oneawa Street before reaching the Kainui Drive project site. See Figure 7. Travel time is approximately 5 minutes.

The route from the Kaneohe PTF to the project site is approximately four miles. The route from the PTF would proceed on Kulauli Street to Puohala Street and continue makai on Kaneohe Bay Drive, Mokapu Saddle Road and Mokapu Boulevard turning right at the intersection with Oneawa Street before reaching the Kainui Drive project site. See Figure 7. Travel is approximately 10 minutes.

K. BYPASS PIPING

Bypass piping and/or diversion pumping of wastewater flows will be required around the CIPP rehabilitation work area from the upstream manhole to the downstream manhole for 24 to 48 hours to allow acceptable completion of the Trunk Sewer pipeline rehabilitation work. Additionally, bypass/diversion pumping (BDP) will be required to maintain and prevent backup of wastewater in service laterals connecting to the Trunk Sewer being rehabilitated and during manhole rehabilitation. BDP will include all power, primary and standby pumps, appurtenances, access pits, bypass piping, temporary plugs, etc. required to maintain existing wastewater flows and services.

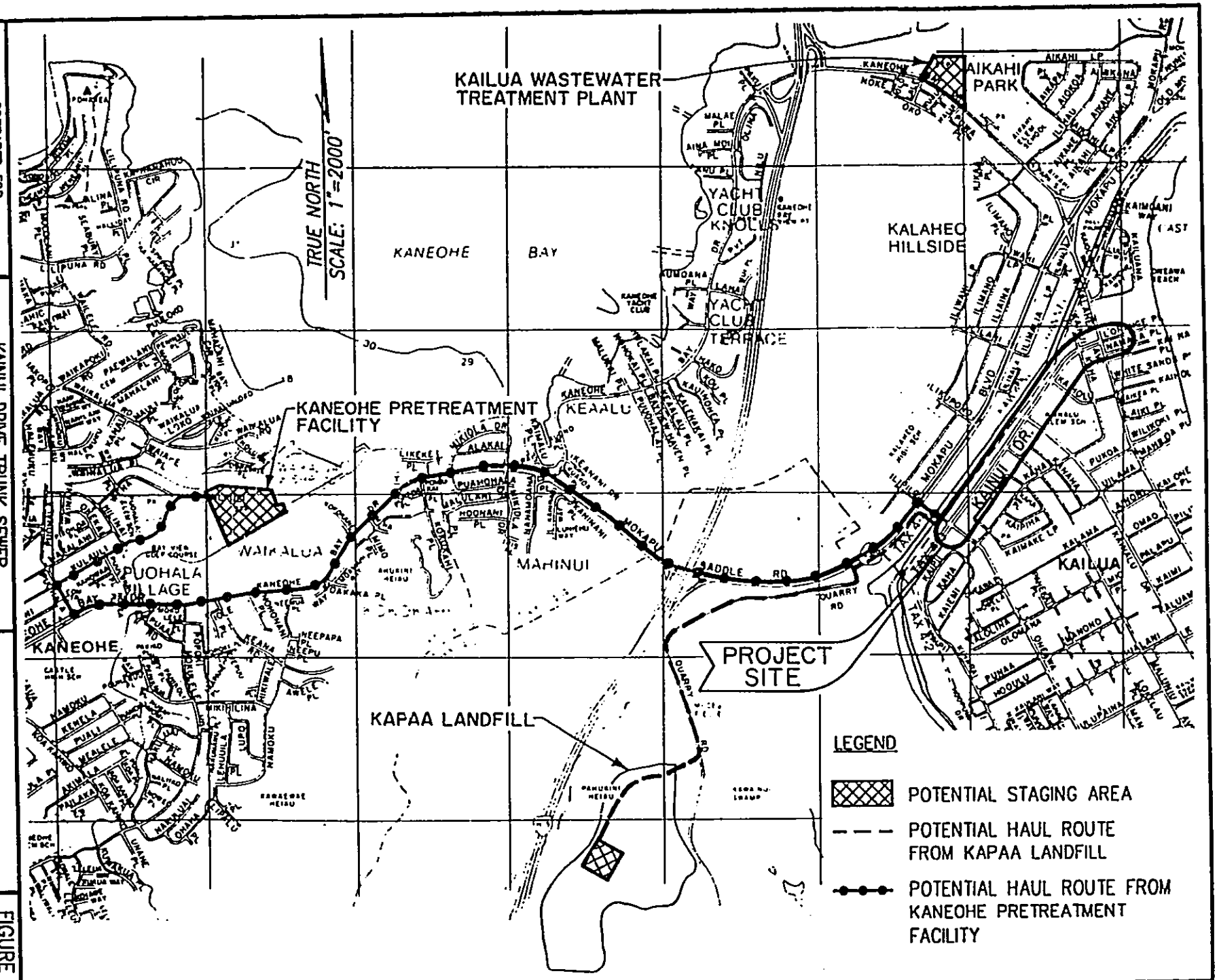
BDP shall be performed in such a manner as to not damage improvements in City streets and residential properties, disrupt traffic, create nuisance or hazards including excessive noise, and shall comply with all applicable Federal, State, and City laws, rules,

PREPARED FOR:

DEPARTMENT OF DESIGN AND CONSTRUCTION

KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
KAILUA, OAHU, HAWAII

POTENTIAL OFFSITE STAGING AREAS



Sey Shimabukuro, Endo & Yoshizaki, Inc.
Civil & Structural Engineers

FIGURE 7

and regulations. Sufficient measures shall be taken to prevent wastewater spills and damage from excessive sewer surcharging. All pumped wastewater shall be enclosed in pipe that is adequately protected from pedestrian and vehicular traffic and shall be redirected into the Trunk Sewer or the Mokapu Interceptor Sewer along North Kalaheo Avenue. Metal, HDPE, or PVC pipes, fittings, and manifolds shall be used for containing pumped wastewater flows.

Prior to commencement of BDP work, the contractor will be required to conduct a preconstruction site survey of the project site. The survey shall include photographs, videotapes and report of all improvements, including plants, signs and markings, at and adjacent to the project site which may be damaged by construction activities. A copy of the preconstruction site survey shall be provided to the City.

BDP piping shall be placed above ground in the median strip or next to the curb where possible with the approval of the City. Temporary underground trenches and surface ramps for BDP piping may be constructed across street intersections and driveways with the approval of DDC, DPP and Department of Transportation Services (DTS). All BDP equipment and piping shall be removed and the area restored to its original or better condition following the completion of each section of CIPP rehabilitation work. The City will evaluate the restoration work in accordance with the preconstruction site survey photographs, videotapes and report of the project site provided by the contractor.

At least 30 working days prior to the planned start of work, the contractor will be required to prepare and submit to the City a wastewater BDP plan that identifies bypass piping and diversion pumping locations, traffic detours, and lane closures. Contractor's plan for BDP and traffic detours shall be approved by the DDC, DPP and DTS and the public shall be notified by legal notice two weeks prior to start of traffic detours and commencement of BDP work. In addition, the contractor shall notify the ENV Division of Environmental Quality 12 days prior to the start of BDP work.

The contractor will be required to comply with the following requirements when performing wastewater flow BDP work:

- Continuously monitor the wastewater water surface elevation in manholes upstream and downstream of the project area or any location where flow is diverted or pumped to ensure compliance with the BDP conditions.
- No diversion shall be implemented during rainy weather.
- Wastewater flowing by gravity shall not be allowed to flow higher than the top of the crown of the sewer pipe at any manhole as a result of construction or diversion activities. In the event of an emergency, the contractor shall be capable of immediately removing all plugs or diversion plates and permit wastewater to flow through the bypassed lines. No diversion shall be implemented or left in place once the wastewater level reaches aforementioned limits.
- The segments of the Trunk Sewer through which wastewater will be diverted shall have been previously cleaned and video inspected by the contractor to the approval of the City.
- A test BDP shall be performed one day before beginning rehabilitation work. The test shall continue for 7 consecutive hours. Pumping equipment and piping shall be leak tested with potable water prior to the test. Leak testing shall be performed any time the BDP system is disassembled and/or reassembled or modified. No leaks in the diversion piping shall be permitted.
- High wastewater flow conditions will require the contractor to temporarily suspend work. Work that requires wastewater diversion shall be suspended until wastewater flow conditions allow for resumption of diversion activities.
- A contingency plan that outlines the precautions to be implemented should any part of the contractor's BDP fail to perform as planned and to prevent wastewater from entering the storm drain system shall be submitted to the City for approval.

- The DOH Wastewater Branch's Protocol for Wastewater Spills and spill reporting procedures shall be complied with and the ENV shall be notified in the event of a wastewater spill during bypass pumping.
- A complete standby pump back-up system shall be provided.

L. TRAFFIC

Driveways to properties adjacent to the work areas and portion of one lane of Kainui Drive will be closed to vehicular traffic during CIPP rehabilitation work, including BDP work. Satisfactory and safe access will be provided by the contractor to all properties as required by the Street Usage Permit from DTS. A minimum of four onsite-staging areas will be needed at the CIPP inversion manholes (possibly SMH 0500 mauka of Kaha Street, SMH 0300 mauka at Kaiholu Street, SMH 0700 at Malunui Street, and SMH 0900 mauka of Maluniu Street) for the truck/trailer that contains the impregnated fabric tube and control instrumentation and for other inversion equipment. An area approximately 15 feet by 150 feet will be required for each onsite staging area. The onsite staging areas will likely occupy the mauka bound single lane of Kainui Drive since the inversion manholes are located in this lane. Thus, closure of the mauka bound lane to traffic during the day at least four times for a period of about one week each during the CIPP inversion work is unavoidable. A 24-hour lane closure of Kainui Drive should not be required. A small coned off area surrounding the receiving manholes will also be required for completion of the CIPP process.

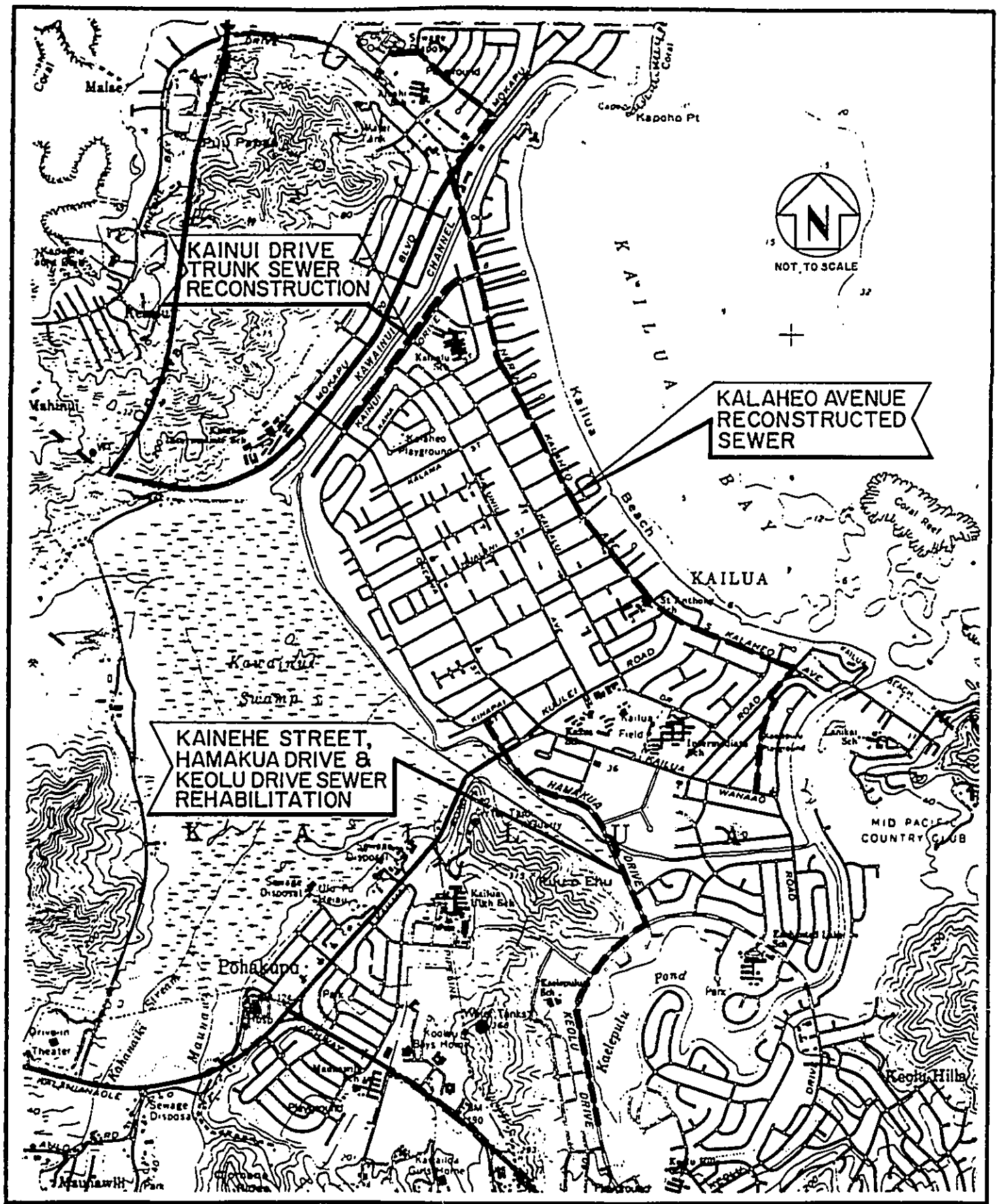
Vehicular access to and from Kainalu Elementary School will be impacted by the closure of Kainui Drive during the day. The School fronts Kaiholu Street and Kainalu Drive. See Figure 2. The access driveway to the School is located on Kaiholu Street. When CIPP inversion work is being performed from SMH 0300 and from SMH 0500 near the intersection with Kaiholu Street, the mauka bound lane of Kainui Drive will be closed to vehicular traffic. It may not be possible to provide vehicular access to the School and Kaiholu Street from the mauka bound lane of Kainui Drive during these inversions. Access can be provided from the makai bound lane of Kainui Drive. During

each of these inversions for a period of about one week, daytime traffic to and from the School and Kaiholu Street will be provided through Kalaheo Avenue, Kaha Street and Kainalu Drive.

Construction and traffic control plans (TCP) will be prepared during the design phase of this project to minimize disruptions and inconveniences to the residents and the public using Kainui Drive and shall be submitted to DPP Traffic Review Branch and DTS for review and approval. The TCP will be prepared by a licensed civil engineer qualified to prepare TCP. There are various methods of CIPP rehabilitation and BDP with different capabilities and specialized equipment making it difficult to predict accurately the locations of insertion manholes and requirements for surface storage space and BDP. Consequently, the contractor will be permitted to modify the TCP to suit his method of CIPP rehabilitation and BDP. Modifications by the contractor shall be prepared by a licensed civil engineer qualified to prepare TCP and shall be reapproved by the DDC, DPP and DTS prior to commencement of construction of the project.

The proposed Trunk Sewer rehabilitation work is anticipated to begin in mid 2000, take about 6 months to complete and should be finished by late 2000. The Kalaheo Avenue Reconstructed Sewer (Kalaheo Sewer) project is located on Aikahi Loop, Mokapu Boulevard, Kalaheo Avenue and Aumoe Road. See Figure 8. The portion along Kalaheo Avenue from Kainui Drive to Aumoe Road is scheduled to begin in mid 1999, take about 45 months to complete and should be finished by late 2002. If alternates are added to the Kalaheo Sewer project, the portion on Aikahi Loop, Mokapu Boulevard and Kalaheo Avenue to Kainui Drive may take an additional 12 months to complete and the project should be finished by late 2003.

The Kainehe Street, Hamakua Drive and Keolu Drive Sewer Rehabilitation (Kainehe-Hamakua-Keolu Sewer) project is located along these streets. See Figure 8. It is scheduled to begin in early 2001, take about 24 months to complete and should be finished by early 2003. Since the Kainehe-Hamakua-Keolu Sewer project is scheduled for construction after the completion of the Trunk Sewer project and is more than a mile from the project, construction of these projects should have no impact on each other.



PREPARED FOR:	KAINUI DRIVE TRUNK SEWER RECONSTRUCTION KAILUA, OAHU, HAWAII		FIGURE
DEPARTMENT OF DESIGN AND CONSTRUCTION	KAILUA SEWER PROJECTS	sey ENGINEERS Shimabukuro, Endo & Yoshizaki, Inc. Civil & Structural Engineers	8

Construction of the Trunk Sewer rehabilitation project will occur during the Kalaheo Sewer project reconstruction period. During construction vehicular traffic passing through both project sites will be disrupted and vehicles will have to be diverted around the roadway work areas of the projects. Vehicular traffic diverted from Kainui Drive will impact on vehicular traffic on Kalaheo Avenue and adjacent streets, and vice versa.

Standard City special provisions for traffic control will be included in the project specifications to control vehicular traffic during construction with requirements for the contractors of both projects to coordinate their work and traffic control plans during construction to minimize traffic disruptions to the public and construction disruptions to both projects. Appropriate signs and barriers will be required, and generally at least one lane will remain open during working hours (8:30 a.m. to 3:30 p.m.). Pedestrian traffic will be provided for the duration of construction. After working hours trenches will be covered with a non-skid bridging material and all lanes will be opened to traffic. Curing of CIPP will be performed with boiler truck parked off the Kainui Drive pavement near the inversion manholes until curing is completed. Off-duty police officers and/or trained construction flagmen will be provided for traffic control to improve traffic flow. The contractor will be required to obtain a Street Usage Permit from DTS prior to commencement of any work that will temporarily obstruct any portion of the roadway or sidewalk and comply with its requirements.

The Trunk Sewer contractor will be required to coordinate work during inversion with the Kainalu Elementary School administration and area residents and notify all affected residents along Kainui Drive, area residents, the Department of Education, the Kainalu Elementary School and Kalaheo High School administrations, the Kailua Neighborhood Board, emergency services (fire, police and ambulance), the general public, and DTS at least 2 weeks prior to commencement of CIPP rehabilitation work. The notification shall include the nature of the work, the construction schedule, of lane and street closures or detours, suggested alternate routes, the expected length of time of inconveniences, of any restrictions which may be imposed to complete the work and the contractor's phone number to be called to report traffic concerns.

IV. SUMMARY OF POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

A. SHORT TERM IMPACTS

The project is scheduled to begin in mid 2000, take approximately 6 months or 180 calendar days to complete, and should be finished by late 2000. During the construction period the following short term potential impacts are anticipated:

1. During construction, access to and from driveways to adjoining roadways and road frontage usage (mail, deliveries, parking) may be occasionally hampered by trenching, paving, construction materials deliveries, etc. During one of the CIPP inversions work will extend into the City's 8-feet wide easement across property at 951 Kainui Drive, tax map key 4-3-78:87. Disruptions will be mitigated by requiring the contractor to perform work in accordance with a City approved construction schedule and traffic control plan and the terms of the sewer easement. There will be no long term interference with any existing or proposed land use of adjacent properties due to the project.
2. The project will have minimal effect on existing soils and topography.
3. The contractor shall keep the project and surrounding area, including Kainalu Elementary School, free from dust nuisance with mitigative measures such as water sprinkling and limiting the area being worked on at any one time to the inversion manhole vicinity. The work shall be in conformance with HAR Title 11 DOH Chapter 60.1 Air Pollution Control. The contractor shall be required to provide proper tuning and maintenance of all construction equipment and vehicles to minimize pollutants from exhaust emissions.
4. No impacts are expected to any surface freshwater resources. The Trunk Sewer is close to the shore of Kailua Bay. During construction, there is the potential for transport of storm runoff sediment from the Kainui Drive drainage system to the Kawainui Channel to Kailua Bay. This will be

mitigated by requiring the contractor to comply with the City's Grading Ordinance, employ best management practices, and promptly repave and revegetate trenched areas to reduce sediment delivery to the Bay.

5. Dewatering will be required to provide dry work areas at excavations for access into inversion manholes and for bypass piping of the Trunk Sewer and service laterals. An appropriate dewatered effluent filtering system conforming to the requirements set forth in the NOI filed by the contractor for coverage under the NPDES General Permit in accordance with HAR Title 11 DOH 55 and best management practices shall be employed to control and reduce the discharge of pollutants to Kawainui Channel and to Kailua Bay. All groundwater taken out of excavated areas shall be routed through sediment settling box(es) prior to its discharge into the Kainui Drive drainage system and to Kawainui Channel. 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 will minimize the discharge of pollutants into Kailua Bay.

6. Hot water may be used during the CIPP curing process. The contractor shall be responsible for properly disposing of the water and any other waste materials generated during the Trunk Sewer rehabilitation work in an environmentally safe manner in accordance with applicable Federal, State and City rules and regulations.

7. The project will have no effect on flora and fauna since no threatened plant or animal species are known to exist at the project site. Any existing plants, grassed areas and surface improvements damaged by construction shall be restored by the contractor to original or better condition.

8. Archaeological or historic sites, including human burials, are not known to exist along the Kainui Drive project site, but if they are uncovered during construction, work will stop and the SHPD will be contacted at

692-8015. A qualified archeologist and a Hawaiian cultural expert will be retained and a mitigation plan will be developed and approved by SHPD prior to continuing with the work. If burial remains are found, the O'ahu Island Burial Council at DLNR will also be contacted.

9. No recreation programs or facilities will be hindered by the project.

10. Utility services for water, gas, electric, telephone, and cable TV should not be disrupted during construction activities. The contractor shall verify utility locations, protect utilities during construction and ensure no interruption of services of all existing utilities within the project area during construction.

11. Periodic noise from construction equipment such as backhoes, trucks, compactors, pumps, generators and pavers will impact residents near the project site and should not impact the nearby Kainalu Elementary School. Installation of the CIPP liner by hydrostatic inversion will require bypass piping and pumping which will affect noise levels. Noise impacts will be mitigated by applying current techniques and methods of sound attenuation and abatement such as noise reducing mufflers. The contractor shall obtain a Noise Permit from the DOH and observe and comply with HAR Title 11, DOH Chapters 42 and 46 regarding noise control to protect the public from the effects of noise from vehicular and construction activities. Restrictions on noise levels and operational hours of the noisiest equipment will minimize the impacts on the adjoining community. If it is not possible to meet the noise limits during night time or other restricted hours of operations, construction noise variance will be obtained by the contractor from DOH.

12. The contractor shall be responsible for odor mitigation on the project. Average concentration of hydrogen sulfide from wastewater gases shall be maintained below levels permitted by HAR Title 11 DOH Chapter 59 Ambient Air Quality Standards. Odor scrubbers, fans, etc., will be

provided to minimize odors, if required. If necessary, an offsite wet-out area will be provided by the ENV for the contractor to impregnate (wet-out) the fabric tube with thermosetting resin for the CIPP liner.

13. Bypass piping and/or diversion pumping of wastewater flows will be required around the CIPP rehabilitation work area from the upstream manhole to the downstream manhole for 24 to 48 hours to allow acceptable completion of the Trunk Sewer pipeline rehabilitation work. Additionally, BDP will be required to maintain and prevent backup of wastewater in service laterals connecting to the Trunk Sewer being rehabilitated and during manhole rehabilitation.

The contractor shall be required to perform BDP work in such a manner as to not damage improvements in City streets and residential properties, disrupt traffic, create nuisance or hazards including excessive noise, and shall comply with all applicable Federal, State, and City laws, rules, and regulations. Sufficient measures shall be taken to prevent wastewater spills and damage from excessive sewer surcharging.

Prior to commencement of BDP work, the contractor will be required to conduct a preconstruction site survey of the project. The survey shall include photographs, videotapes and report of all improvements, including plants, signs and markings, at and adjacent to the project site which may be damaged by construction activities. A copy of the preconstruction site survey shall be provided to the City.

BDP piping shall be adequately protected from pedestrian and vehicular traffic and shall be placed above ground in the median strip or next to the curb where possible with the approval of the City. Temporary underground trenches and surface ramps for BDP piping may be

constructed across street intersections and driveways with the approval of DDC and DPP.

To mitigate inconvenience to the public, at least 30 working days prior to the planned start of work, the contractor shall be required to prepare and submit to the City a wastewater BDP plan that identifies bypass piping and diversion pumping locations, traffic detours, and lane closures. Contractor's plan for BDP and traffic detours shall be approved by the DDC, DPP and DTS and the public shall be notified by legal notice two weeks prior to start of traffic detours and commencement of BDP work.

Following the completion of each section of CIPP rehabilitation work, the contractor shall remove all BDP equipment and piping and the area shall be restored to its original or better condition. The City will evaluate the restoration work in accordance with the preconstruction site survey photographs, videotapes and report of the project site provided by the contractor.

14. Traffic passing through the project site will be disrupted as vehicles will be diverted around the Kainui Drive work areas such as CIPP liner inversion and receiving manholes and open trenches for bypass piping and diversion pumps of the Trunk Sewer and service laterals. Parking will be restricted on both sides of the street during construction where applicable. Traffic control plans will be prepared during the design phase by a licensed civil engineer and will be submitted to DPP Traffic Review Branch and DTS for review and approval. Traffic through the construction work areas during the various construction phases will be controlled by police officers and/or trained construction flagmen to minimize disruptions and inconveniences and to improve traffic flow. Pedestrian traffic will be provided for. The contractor will be required to obtain a Street Usage

Permit from the DTS prior to commencement of and work that will temporarily obstruct any portion of the roadway or sidewalk and comply with its requirements.

Vehicular access to and from Kainalu Elementary School will be impacted by the closure of Kainui Drive during the day. The access driveway to the School is located on Kaiholu Street. When CIPP inversion work is being performed from two manholes near the intersection with Kaiholu Street, the mauka bound lane of Kainui Drive will be closed to vehicular traffic. It may not be possible to provide vehicular access to the School and Kaiholu Street from the mauka bound lane of Kainui Drive during these inversions. Access can be provided from the makai bound lane of Kainui Drive. During each of these inversions for a period of about one week, daytime traffic to and from the School and Kaiholu Street will be provided through Kalaheo Avenue, Kaha Street and Kainalu Drive.

During construction vehicular traffic passing through the Trunk Sewer rehabilitation project and the Kalaheo Sewer reconstruction project sites will be disrupted and vehicles will have to be diverted around the roadway work areas of the projects. Vehicular traffic diverted from Kainui Drive will impact on vehicular traffic on Kalaheo Avenue and adjacent streets, and vice versa. Provisions for traffic control will be included in the project specifications to control vehicular traffic during construction with requirements for the contractors of both projects to coordinate their work and traffic control plans during construction to minimize traffic disruptions to the public and construction disruptions to both projects.

15. The contractor shall coordinate work during the inversion with the Kainalu Elementary School administration and area residents and inform the public of the proposed project at least 2 weeks prior to commencement of

CIPP rehabilitation work. The contractor will be required to notify all affected residents along Kainui Drive, area residents, the Department of Education, the Kainalu Elementary School and Kalaheo High School administrations, the Kailua Neighborhood Board, emergency services (fire, police and ambulance), the general public and DTS of the nature of the work, the construction schedule, of lane and street closures or detours, suggested alternative routes, the expected length of time of inconveniences, of any restrictions which may be imposed to complete the work and the contractor's phone number to be called to report traffic concerns.

B. LONG TERM IMPACTS

The long term impact of this project is positive. The severely deteriorated existing Trunk Sewer's structural integrity will be restored and the threat of imminent failure and associated disruptions to the existing environment will be removed. There are no long term negative impacts associated with the implementation of this project.

V. ALTERNATIVES CONSIDERED

A. GENERAL

Several alternatives were considered to reconstruct/rehabilitate the Kainui Drive Trunk Sewer. The "no action" and "delay action" alternatives were considered but omitted since the Trunk Sewer is severely deteriorated and structural failure is imminent. An immediate positive action is required. The sliplining/insertion (S/I) alternative was considered but removed from consideration because hydraulic analysis indicated that the minimum inside diameter (I.D.) required for S/I rehabilitation within the existing 48-inch Trunk Sewer is 44.5 inches to convey the future peak design flow of 21.53 mgd with open channel flow. This slight reduction in pipe I.D. eliminated the S/I rehabilitation since the maximum size pipe that can be inserted into the existing 48-inch diameter pipe would be a 42-inch diameter I.D. pipe. Two alternatives which merit consideration for the project are the reconstruction by excavation and replacement alternative and the reconstruction by microtunneling alternative.

B. EXCAVATION AND RECONSTRUCTION ALTERNATIVE

Excavation and replacement (E&R) is the most common and traditional method of pipeline reconstruction where the damaged pipeline is removed or properly abandoned and a new pipeline placed in the same, parallel, or new alignment using open cut construction techniques. A trench is first excavated and shored, then the new pipeline is installed, and finally the trench and pipeline is backfilled and restored. Pipe replacement materials include traditional materials with or without inside lining such as reinforced concrete, clay and ductile iron, and newer plastic materials such as polyvinyl chloride, high density polyethylene, and fiberglass reinforced plastic.

The primary advantages of this method is the experience and knowledge of local Hawaii contractors on the use of traditional open cut construction techniques. Trenchless technologies are still evolving and local contractors experienced in trenchless methods are limited. The major disadvantage of the E&R method is that trenches must be excavated for the new pipeline along the entire route causing long disruptions of

surface traffic and access to adjacent residences and facilities. Trench dewatering will be required limiting the work area to numerous short sections. Dewatering Permit for discharging into the City's storm water system from the DPP and NPDES Permit for discharges associated with construction activity dewatering from DOH will be required.

Air and noise pollution will be created during construction by the E&R method. Exhaust emissions will be generated from vehicles and construction equipment. Fugitive dust will be generated during trenching activities and as a result of vehicular traffic. Ambient noise levels in the project vicinity will be raised by the operation of construction equipment such as backhoes, trucks, compactors, and pavers and will impact the residential units along Kainui Drive.

The allowable noise level is 55 dBA at the property line during the day (7 a.m. to 10 p.m.) and 45 dBA at night. A noise permit will be required from DOH since noise levels will exceed the allowable levels for more than ten percent of the time within any twenty minute period.

The E&R reconstruction method is normally selected when the structural integrity of the pipe is severely deteriorated (i.e., missing pipe sections, huge cracks, and severe corrosion), significant misalignment has occurred (deep sags), additional pipe capacity is needed, and disruptions to surface traffic and facilities operations are not critical. When the pipeline is severely deteriorated or misaligned, trenchless rehabilitation methods may not be able to restore the structural strength of the pipeline or restoration would result in an unacceptable reduction in pipe diameter and loss of pipeline capacity. Under these circumstances the E&R method is preferred.

Preliminary alignment of the E&R sewer line is shown in Appendix C. The preliminary alignment is parallel and offset approximately 11 feet away from the existing Trunk Sewer closer to the outer mauka edge of pavement. An alignment on the makai bound lane was not selected because of the added difficulties of reconnecting existing sewer laterals and branches and the need to remove the many coconut trees within the median strip of Kainui Drive.

The proposed E&R sewer line begins at reconstructed SMH 0100 and proceeds mauka parallel to the existing sewer line. The E&R sewer line would end at SMH 1000. SMH 0100 would be reconstructed to allow entry of the new 48-inch sewer line.

Gradually varied flow analysis was performed for the PER to evaluate the transition from supercritical flow in the pipe segment between SMH 1900 and SMH 0100 to subcritical flow in the reconstructed Kainui Drive Trunk Sewer (SMH 0100 to SMH 1000). The analysis demonstrated that open channel flow will prevail in the reconstructed Trunk Sewer with maximum depth flow less than 3.6 feet at SMH 1000.

Poor soil conditions (weak and compressible lagoonal deposits) exist along the proposed invert of the sewer line as discussed in the Final Letter Report by PGE. A 12-inch crushed rock pipe bedding and at least three feet of overexcavation and subbedding material below the new pipeline is proposed to provide proper support for the sewer line. Final thicknesses will be determined during the design phase. Excavations would range in depth from 19 feet to 23 feet below existing grades.

E&R will be difficult as an overall method of sewer reconstruction for the Trunk Sewer project because of: 1) poor soil conditions, 2) deep excavations along the entire route, 3) dewatering limiting work area to numerous short sections, 4) disruptions to vehicular traffic, 5) disruption of surface access to residential units along Kainui Drive, and 6) lengthy construction duration. Heavy equipment such as backhoes and dump trucks will be required for digging and removal of excavated material and installing of sheet piles to construct the open cut. These construction activities and storage of equipment at the jobsite will seriously disrupt existing traffic patterns and access to properties resulting in reduced vehicular and pedestrian safety. The portion of the mauka bound lane at the construction work area will require closure and rerouting of traffic. Delays and disruptions of Kainui Drive traffic can not be avoided but should be minimized to reduce inconvenience to motorists and residents.

E&R method preliminary estimated construction cost is $11,200,000 and will take about 18 months to complete.

C. MICROTUNNELING ALTERNATIVE

Microtunneling is a remotely controlled, guided pipe jacking process that provides continuous support of the excavated face. A tunnel is drilled by the microtunneling machine from a jacking pit to a receiving pit along a predetermined path. The microtunneling machine is pushed through the earth using hydraulic jacks carefully mounted and aligned in the jacking pit. The pipeline is installed by continuously joining and pushing pipe sections behind the advancing microtunneling machine. Close tolerances in line and grade of ±1 inch for pipelines such as gravity sewers can be maintained by means of sophisticated guidance and control systems.

In soft soils, soil improvements must be provided to support the microtunneling head during the tunneling process, reduce mixed face conditions, and improve the soils below the pipe to improve its long-term settlement performance.

As the microtunneling machine advances, excavated soil is crushed and the spoils mixed into a slurry and pumped to the surface by a recirculation piping system. The muck is discharged into a separator system at the surface where it is filtered and the effluent is pumped into a slurry mixing tank. Admixtures, bentonite or polymer based material which is non-hazardous and will not impact the environment are usually added to the effluent and the recharged slurry injected back to the head of the boring machine to facilitate the drilling, stabilize the excavation, and lubricate the pipe as it pushed into the tunnel.

Microtunneling requires a jacking pit at the leading end of the pipeline and at each change in alignment and change in pipe size, and a receiving pit at the terminal end. The jacking pit must be long enough to accommodate one standard pipe length and jacking equipment. Typical dimensions of jacking pits are 10 to 12 feet wide and 25 feet long. The receiving pit must be long enough to recover the microtunneling machine. Typical dimensions of exit pits are 10 to 12 feet wide by 15 feet long.

The primary advantages of microtunneling are the elimination of excavation and dewatering along the entire pipeline route, reduced disruption to traffic and surface activities as compared to the E&R method, and the non-disturbance of subsurface

utilities along the installed pipeline. The major disadvantages are excavations and dewatering are required for the jacking pit, receiving pit and all connecting sewer laterals, disruptions to vehicular traffic and to surface access to residential units in the vicinity of the jacking and receiving pits, limitations to straight runs of 500'± feet without intermediate jacking stations, line and grade accuracy of ±1-inch may be significant for large diameter, flat sloped gravity sewers, soft soils must be improved, the need for a highly-skilled crew of 4 to 8 persons, and lengthy construction duration.

Microtunneling is normally selected when a new line is required in a developed, highly congested area with numerous underground utilities and when the existing sewer line is severely deteriorated such that other trenchless rehabilitation methods are not applicable or the reduction in rehabilitated pipeline diameter by S/I or CIPP would decrease the hydraulic capacity of the pipeline below acceptable limits.

Preliminary alignment of the microtunneled sewer line is shown in Appendix C. The proposed alignment, slope, and pipe size are the same as the E&R sewer line as both alternatives are new sewer lines.

The Kainui Drive Trunk Sewer to be reconstructed by microtunneling (SMH 0100 to SMH 1000) exhibits one major change in direction with one straight run exceeding 3,000 feet. There is no change in pipe size along the run and pipe slope is constant. With microtunneling performed in two directions at a jacking pit for maximum drives of 500 feet in each direction, the minimum number of jacking pits required for this project would be four and the minimum number of receiving pits would be five. One of the receiving pits would be at Oneawa Street. Jacking pits are preliminarily estimated to be at least 12 feet by 25 feet and receiving pits are preliminarily estimated to be at least 11 feet by 14 feet. Surface space required for microtunneling equipment is estimated to occupy one vehicular lane for approximately 150 feet.

Heavy equipment such as backhoes and dump trucks will be required for digging and removal of excavated material and installing of sheet piles to construct the jacking and receiving pits. These construction activities and storage of equipment at the jobsite during microtunneling will seriously disrupt existing traffic patterns and access to

properties resulting in reduced vehicular and pedestrian safety. The portion of the mauka bound lane at the construction work area will require closure and rerouting of traffic. Delays and disruptions of Kainui Drive traffic can not be avoided but should be minimized to reduce inconvenience to motorists and residents.

No wastewater bypass would be needed as the existing Kainui Drive Trunk Sewer can remain in service until the new sewer line is complete. However, dewatering would be required at all jacking and receiving pit locations and at service lateral connection pits excavated below the water table.

Soil improvement will probably be required along the sewer line and behind the walls of the pits to enhance the poor soil conditions at the project site. Soil improvement is needed to control soil and groundwater pressures at the face of the tunnel and pipe and into pits during excavation and dewatering; control soil movements above the tunnel or pipe if the construction induces ground settlements; provide support for the microtunneling head during the tunneling process to maintain required line and grade; reduce mixed face conditions; improve passive resistance behind the thrust block in jacking pits; and improve soils below a pipe to improve its long-term settlement performance. Potential soil improvement techniques include jet grouting, compaction grouting, and permeation grouting, with jet grouting probably being the most feasible technique.

Microtunneling method preliminary estimated construction cost is $12,000,000 and will take about 18 months to complete.

D. CONCLUSIONS

The E&R alternative for the Kainui Drive Trunk Sewer reconstruction/ rehabilitation will require extensive open cut excavation and occupy large areas during construction. The E&R method will severely disrupt surface traffic and access to residential units along Kainui Drive, has a preliminary estimated cost of $11,200,000, and will take about 18 months to complete. The E&R alternative should not be considered for the project.

The microtunneling alternative will require extensive space for a minimum of four jacking pits (min. 12'± W by 25'± L) and five receiving pits (min. 11'± W by 14'± L) as well as surface staging areas at each jacking pit of approximately one lane wide by 150 feet long for a control cabin, slurry tank, piping system, pipes, and excavated soils. Surface traffic and access to residential units along Kainui Drive will be severely disrupted by these pits. The microtunneling method preliminary estimated cost is $12,000,000 and will take about 18 months to complete. The microtunneling alternative should not be considered for the project.

Rehabilitation by CIPP shall be considered first choice for the project. CIPP rehabilitation work is the most commonly used trenchless method in Hawaii. The primary advantages of the CIPP method are the minimizing of excavation for the sewer line rehabilitation and relatively quick installation time. Minimal digging will reduce disruptions to surface traffic, activities and improvements when compared to the other alternatives. However, wastewater must be bypassed from the portion of sewer line being rehabilitated during CIPP installation and curing. Some digging for bypass piping will be required.

The CIPP method will cause the least disruption and impact on the Kainui Drive surface environment and the least disruption to traffic and access to parcels along Kainui Drive. It will cause the least inconvenience to residents and to street users. Rehabilitation by CIPP preliminary estimated cost is $4,500,000 and will take about 6 months to complete.

VI. DETERMINATION AND JUSTIFICATION

This Final Environmental Assessment is part of the environmental review process to meet the requirements of Chapter 343, HRS. After completing an assessment of the potential environmental effects of the proposed project and consulting with governmental agencies and interested parties, the proposing agency does not anticipate any significant impacts on the environment. A **Finding of No Significant Impact** has been determined for the project with the reasons supporting this determination discussed below.

1. The proposed action will not involve an 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 Zoning Maps and the Department of Design and Construction's design standards and will not curtail beneficial uses of the environment in the area. 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 344, 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 and all applicable State policies, goals, and guidelines. No long-term environmental conflicts are foreseen.

4. The proposed action will not 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 $4.5 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 not substantially affect public health. Rehabilitation of the existing severely deteriorated Trunk Sewer will prevent collapse of

the ground above, impedment or stoppage of wastewater flow, damage to overlying and upstream structures and severe disruptions to surface traffic and access to residential units along Kainui Drive. The proposed action will prevent future wastewater spills, will improve environmental conditions and represents a public health benefit. The short term negative impacts associated with construction activities such as noise, dust, exhaust emissions, odor, damaged roadways, bypass piping and diversion pumping, and traffic congestion will be mitigated by measures included in the project plans and specifications.

6. The proposed action does not have a secondary impact. By rehabilitating the severely deteriorated existing Trunk Sewer, growth and development in conformance with the existing development plan can continue. Population, traffic, and public facilities may be indirectly affected by this project.

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 have very little effect on the environment and will not involve a commitment for larger actions.

9. The proposed action does not substantially affect rare, threatened or endangered species, or its 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 City and State rules, regulations and permit requirements and 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, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. The proposed project is not located in an

environmentally sensitive area. Although the project is in the Special Management Area, it is not defined as "development" and is exempt from the requirements of a Special Management Area Permit. The northern portion of the project site is located outside the 500-year flood plain. The southern portion of the project is within the 500-year flood plain, in areas of 100-year flood with average depths of less than 1-foot or with drainage areas of less than 1 square mile, and areas protected by levees from 100-year flood. 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 City or State plans or studies. The Trunk Sewer rehabilitation will be installed below the ground surface of an established roadway.

13. The proposed action will not require substantial energy consumption. Energy will be consumed for the installation of CIPP liner into the existing Trunk Sewer, reconnecting existing sewer lines and laterals and rehabilitating existing sewer manholes. Energy consuming construction equipment such as backhoes, trucks, compactors, pavers, bypass and dewatering pumps, generators and CIPP equipment will be used for these operations. Substantial energy will not be consumed. After the rehabilitation work is completed, the Trunk Sewer will operate by gravity and will not require any external energy.

VII. APPROVALS AND PERMITS REQUIRED

Approvals and permits will be required by DDC for the rehabilitation of the Kainui Drive Trunk Sewer by CIPP. The required approvals and permits include the following:

1. Street Usage Permit from City DTS.
2. Trenching Permit from City DPP.
3. Notice of Intent for Coverage Under the National Pollutant Discharge Elimination System General Permit for discharges associated with construction activity dewatering from the State DOH and City ENV.
4. Permit to Discharge Effluent into the City and County Separate Storm Sewer System from the City DPP.
5. Construction Dewatering Permit for Discharging into the City and County Separate Storm Sewer System from the City DPP.
6. Community Noise Control Permit and Construction Noise Variance, if required, from State DOH.
7. Approval of Plans from Directors, City ENV, City DDC and City DPP.
8. Approval of Plans from Chief, Engineering Branch, Honolulu Board of Water Supply.
9. Approval of Plans from Chief, Environmental Health Division, State DOH.

VIII. REFERENCES

1. Department of Public Works, November 15, 1966. As-Built Plan for Kihapai-Kainui Drive Interceptor Sewer Section 1-A Job No. 43-66.

2. Insituform Technologies, February 2, 1998. Videotapes (2) of Kainui Drive Trunk Sewer.

3. Insituform Technologies, February 2, 1998. TV Inspection Reports, SEY Engineers, Kailua, Hawaii.

4. Insituform Technologies, February 2, 1998. Manhole Inspection Reports, SEY Engineers, Kailua, Hawaii.

5. Pacific Geotechnical Engineers, Inc., April 29, 1998. Final Letter Report Geotechnical Consultation Services During Preliminary Report Phase, PGE Job No. 1875-010 Kainui Drive Sewer Reconstruction.

6. Pacific Geotechnical Engineers, Inc., July 30, 1998. Addendum to Final Letter Report Geotechnical Consultation Services During Preliminary Report Phase. Kainui Drive Sewer Reconstruction.

7. ControlPoint Surveying, Inc., March 25, 1998. Topographic Survey Map, Kailua/Kainui Drive Reconstructed Sewer.

8. City and County of Honolulu, December 31, 1997. Kainui Drive Trunk Sewer Reconstruction Consultant Services Contract No. F60228.

9. Department of Wastewater Management, October 13, 1997. Transmittal of Memo from Tim Steinberger to Guy Inouye dated October 8, 1997, Existing and Future Flow Analysis dated August 20, 1997 and Maps of Tributary Areas, Kainui Drive Trunk Sewer Reconstruction.

10. Shimabukuro, Endo & Yoshizaki, Inc., November 1998. Kainui Drive Trunk Sewer Reconstruction Preliminary Engineering Report.

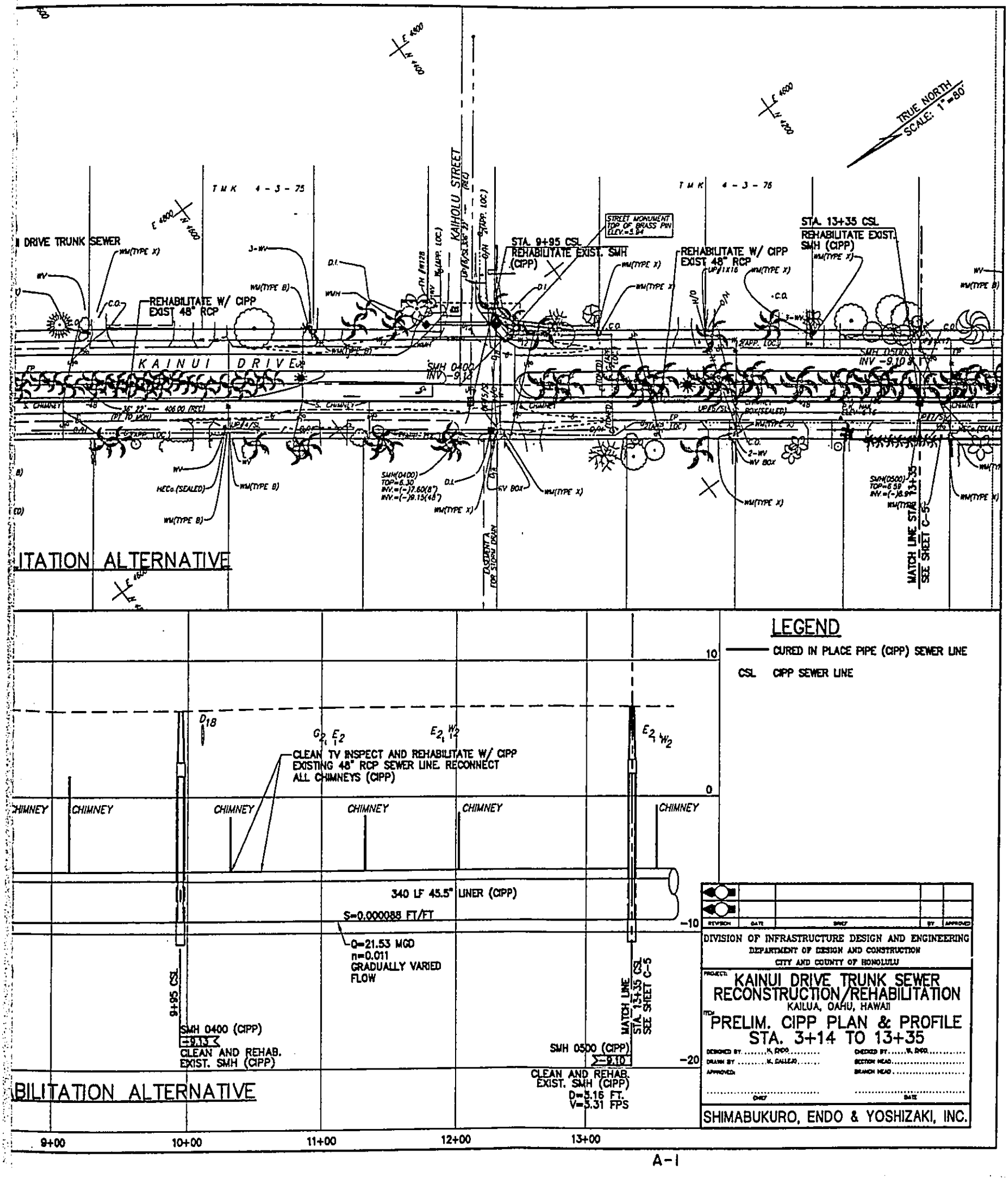
11. City and County of Honolulu, Geographic Information System Data Base.

12. Department of Health, Wastewater Branch, Revised September 1995. Protocol for Sewage Spills.

13. Department of Planning and Permitting, September 17, 1998. Memo from Jan Naoe Sullivan, Director DPP, to Randall K. Fujiki, Director DCC, with finding of Special Management Area exempt.

APPENDIX A

PRELIMINARY CIPP PLAN & PROFILE



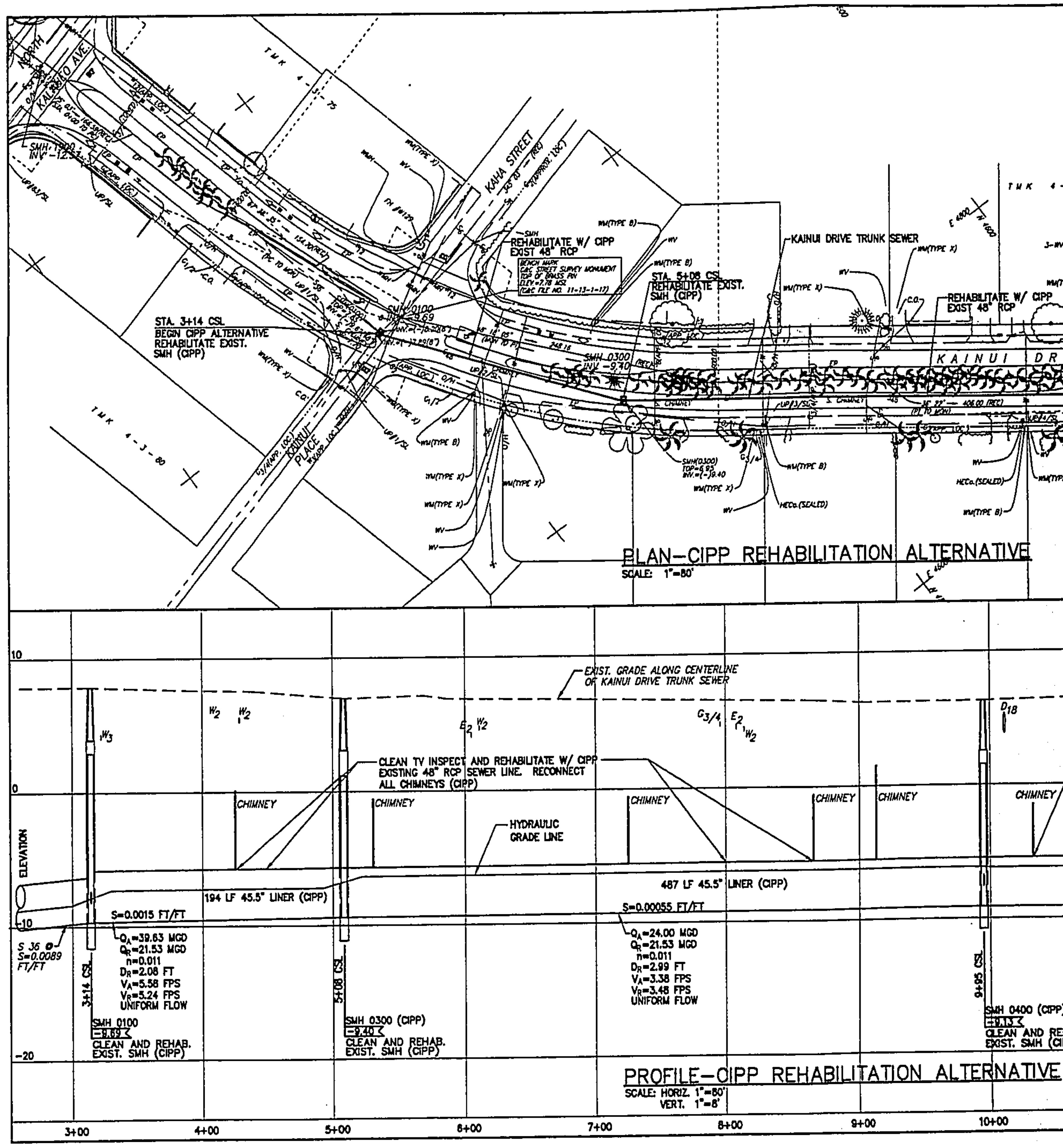
DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

PROJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION/REHABILITATION
KAILUA, OAHU, HAWAII

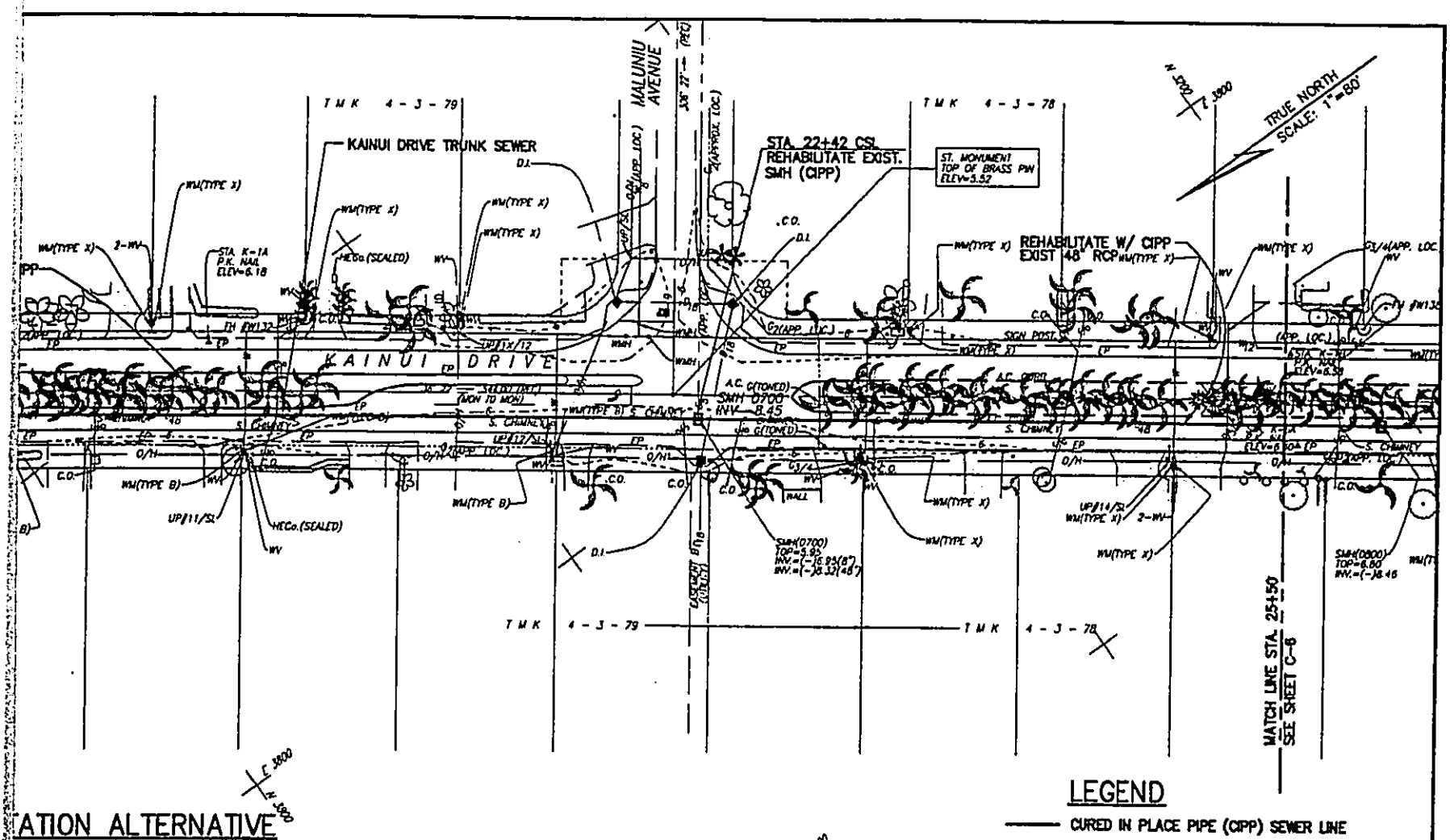
ITEM: PRELIM. CIPP PLAN & PROFILE STA. 3+14 TO 13+35

DESIGNED BY ..... N. ENDO ..... CHECKED BY ..... N. ENDO .....
DRAWN BY ..... M. CALLAO ..... SECTION HEAD .....
APPROVED: BRANCH HEAD .....
CHIEF DATE

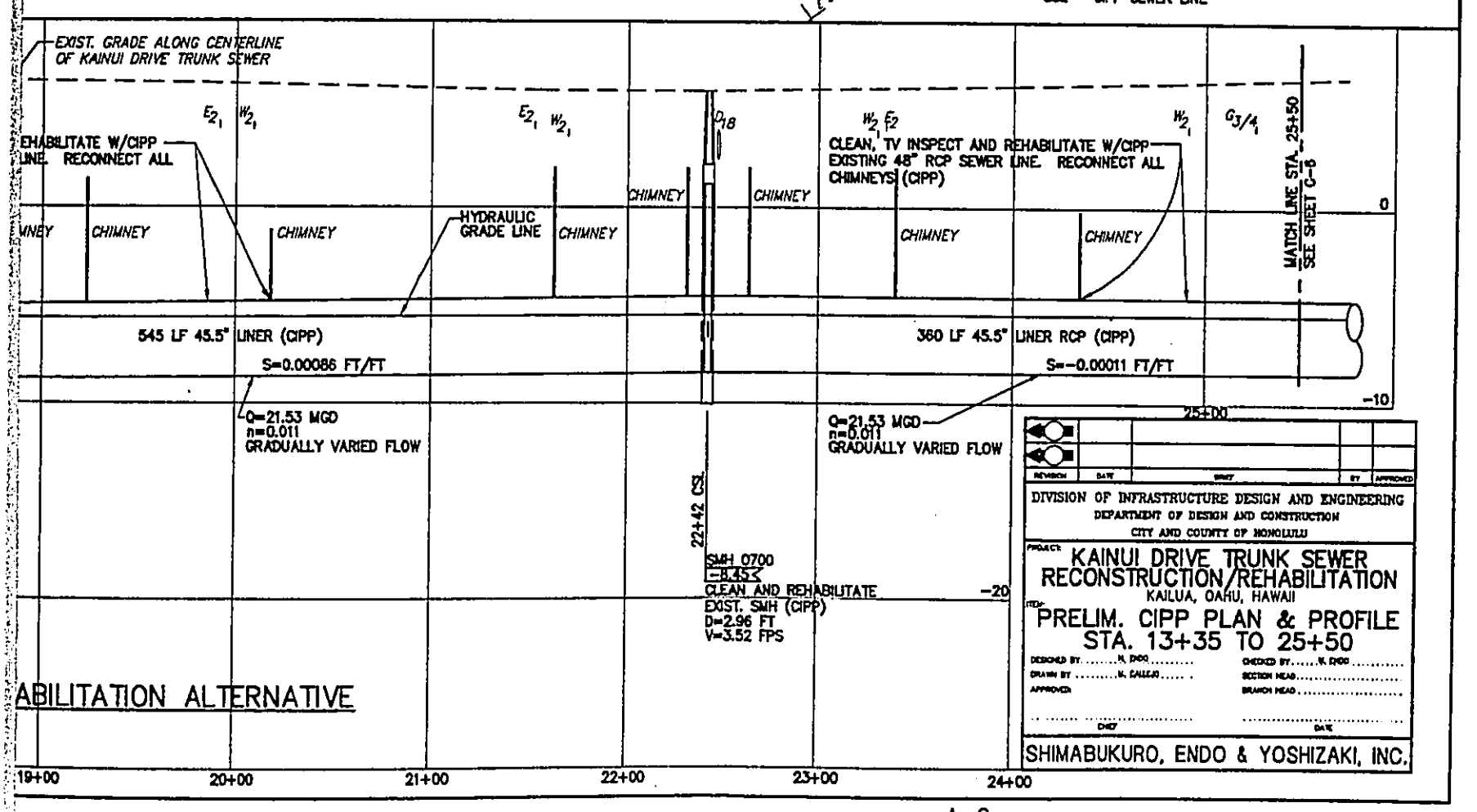
SHIMABUKURO, ENDO & YOSHIZAKI, INC.



KAHA STREET
KAINUI DRIVE TRUNK SEWER
REHABILITATE W/ CIPP EXIST 48" RCP
STA. 5+08 CSL REHABILITATE EXIST. SMH (CIPP)
STA. 3+14 CSL BEGIN CIPP ALTERNATIVE REHABILITATE EXIST. SMH (CIPP)
SMH 0300 INV -9.40
KAINUI DR
KAINUI PLACE
PLAN-CIPP REHABILITATION ALTERNATIVE
SCALE: 1"=80'
EXIST. GRADE ALONG CENTERLINE OF KAINUI DRIVE TRUNK SEWER
CLEAN TV INSPECT AND REHABILITATE W/ CIPP EXISTING 48" RCP SEWER LINE. RECONNECT ALL CHIMNEYS (CIPP)
CHIMNEY
HYDRAULIC GRADE LINE
ELEVATION
194 LF 45.5" LINER (CIPP)
487 LF 45.5" LINER (CIPP)
S=0.0015 FT/FT
S=0.00055 FT/FT
S 36 S=0.0089 FT/FT
QA=39.63 MGD QR=21.53 MGD n=0.011 DR=2.08 FT VA=5.58 FPS VR=5.24 FPS UNIFORM FLOW
QA=24.00 MGD QR=21.53 MGD n=0.011 DR=2.99 FT VA=3.38 FPS VR=3.48 FPS UNIFORM FLOW
SMH 0100 -9.69 CLEAN AND REHAB. EXIST. SMH (CIPP)
SMH 0300 (CIPP) -9.40 CLEAN AND REHAB. EXIST. SMH (CIPP)
SMH 0400 (CIPP) -9.13
PROFILE-CIPP REHABILITATION ALTERNATIVE
SCALE: HORIZ. 1"=80' VERT. 1"=8'
3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00



TATION ALTERNATIVE



ABILITATION ALTERNATIVE

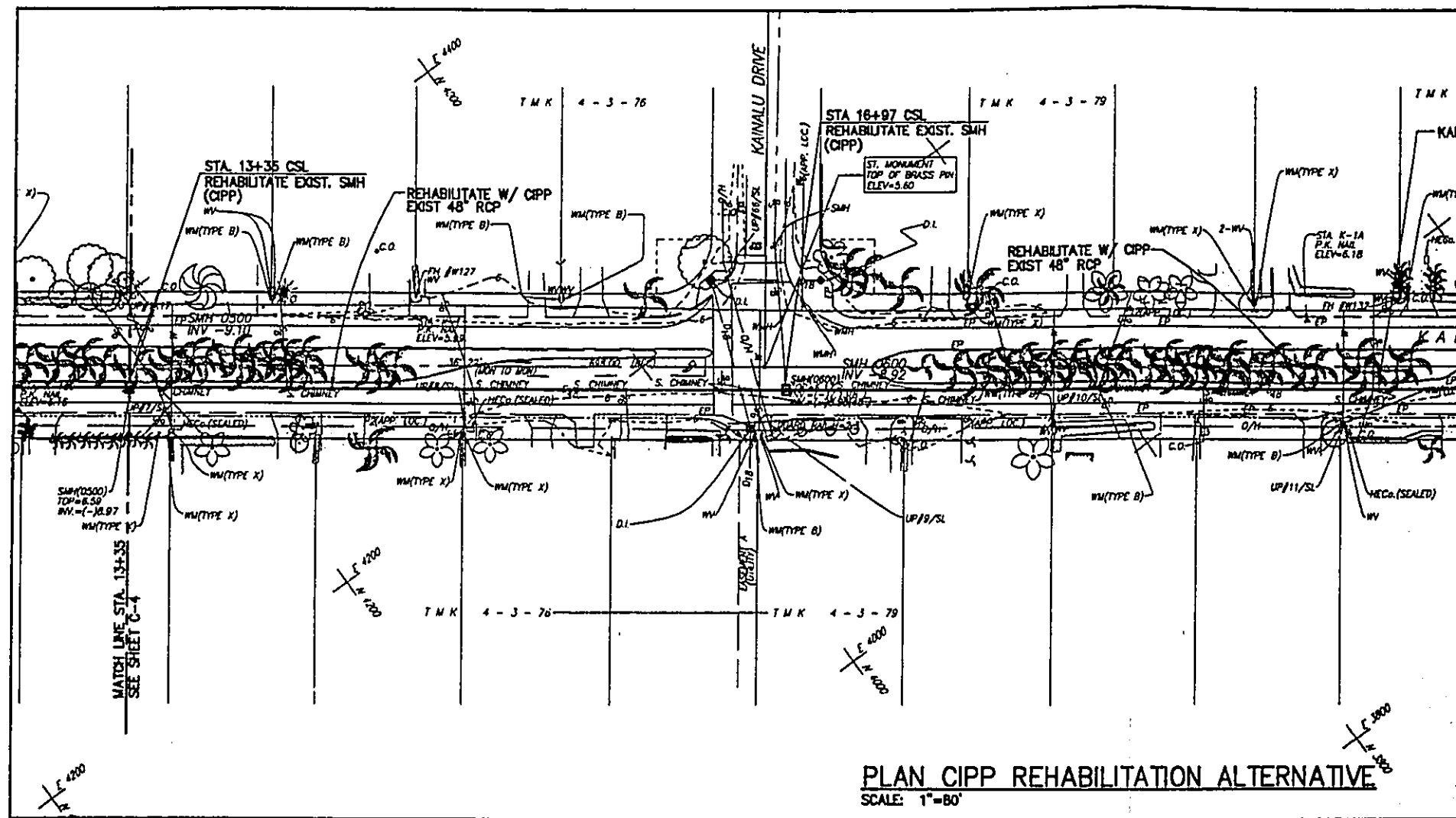
DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

PROJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION/REHABILITATION
KAILUA, OAHU, HAWAII

TITLE: PRELIM. CIPP PLAN & PROFILE STA. 13+35 TO 25+50

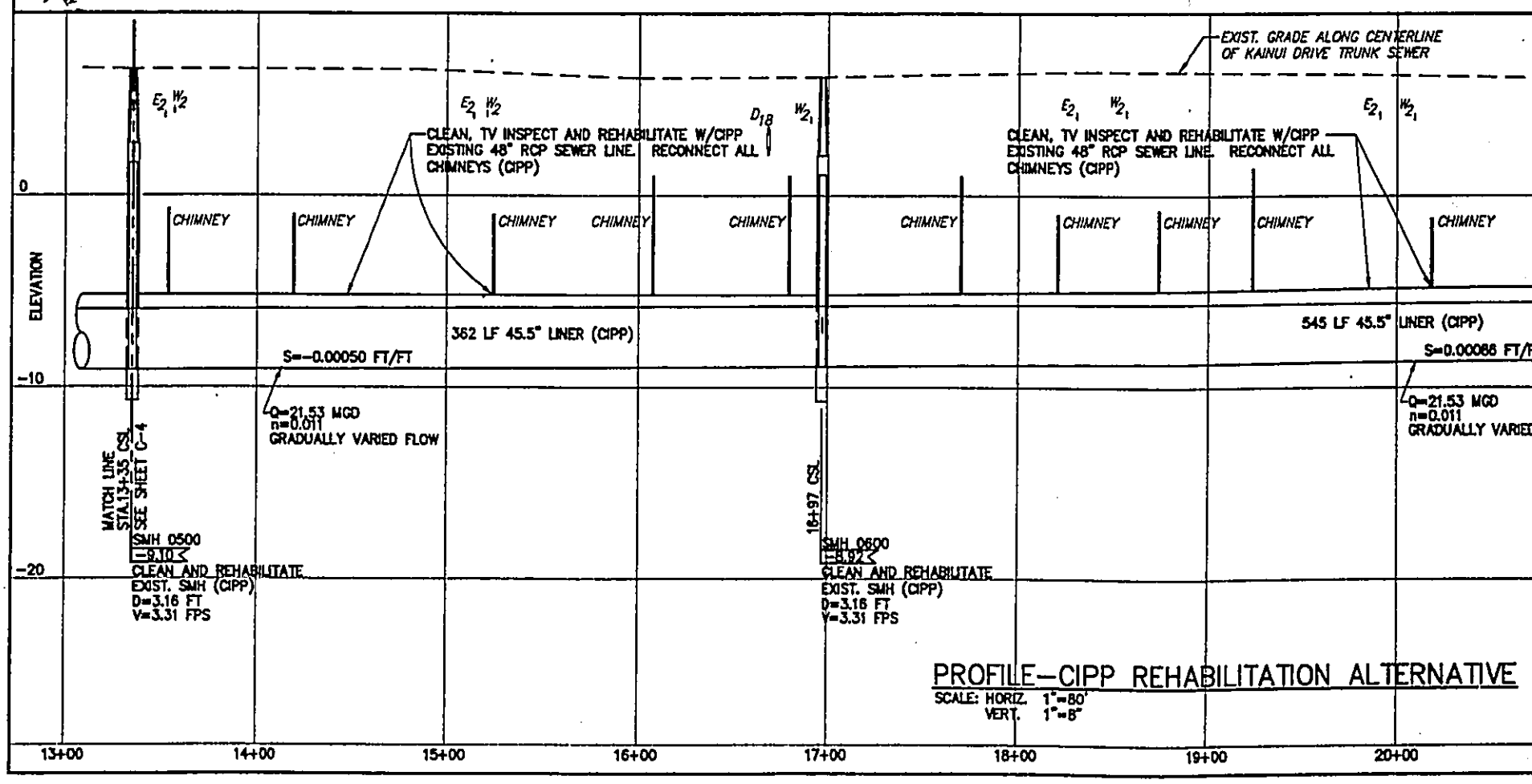
DESIGNED BY ..... N. ENDO ..... CHECKED BY ..... N. ENDO .....
DRAWN BY ..... M. CALLEJO ..... SECTION HEAD .....
APPROVED BRANCH HEAD .....
CHIEF DATE

SHIMABUKURO, ENDO & YOSHIZAKI, INC.



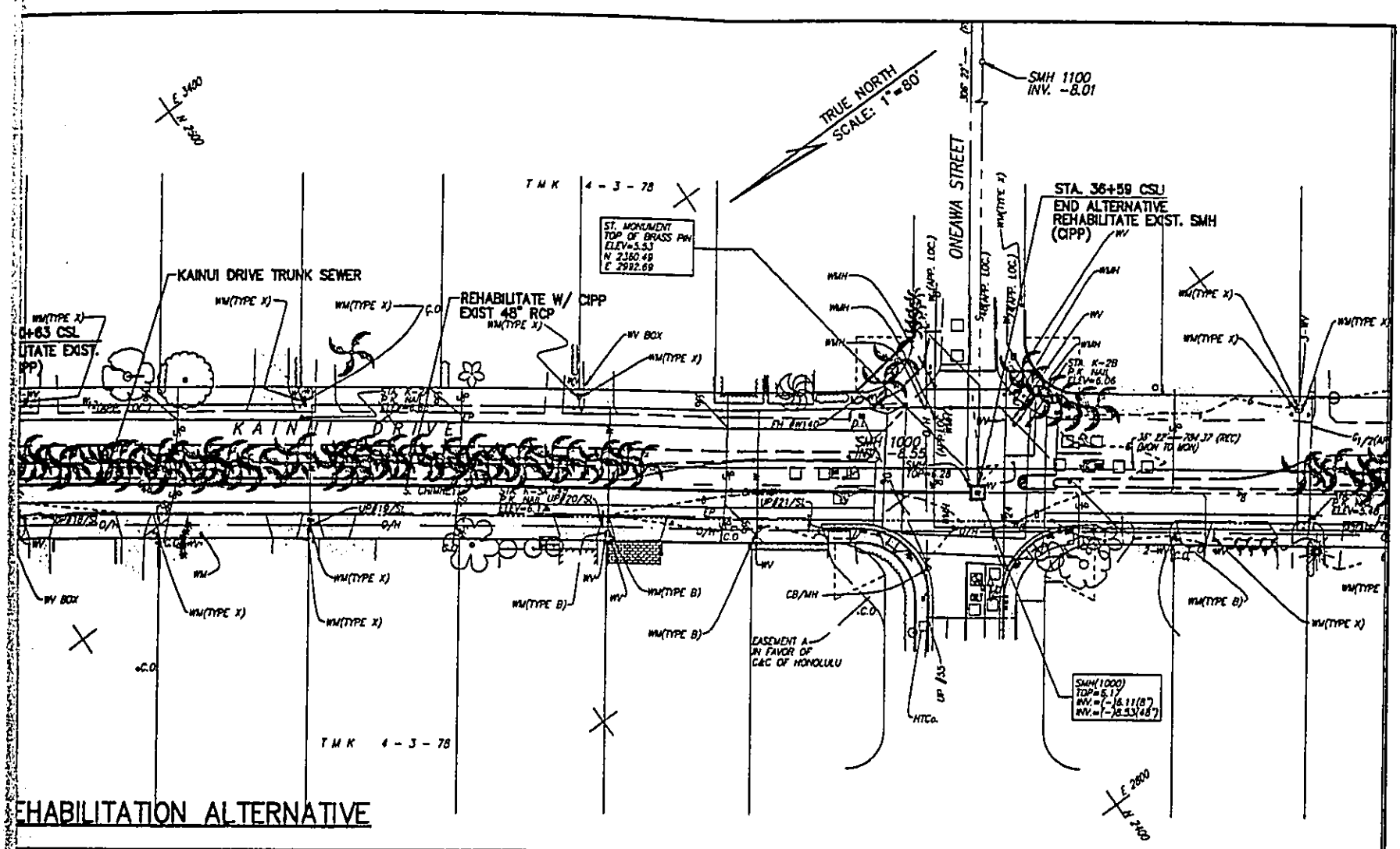
PLAN CIPP REHABILITATION ALTERNATIVE

SCALE: 1"=80'

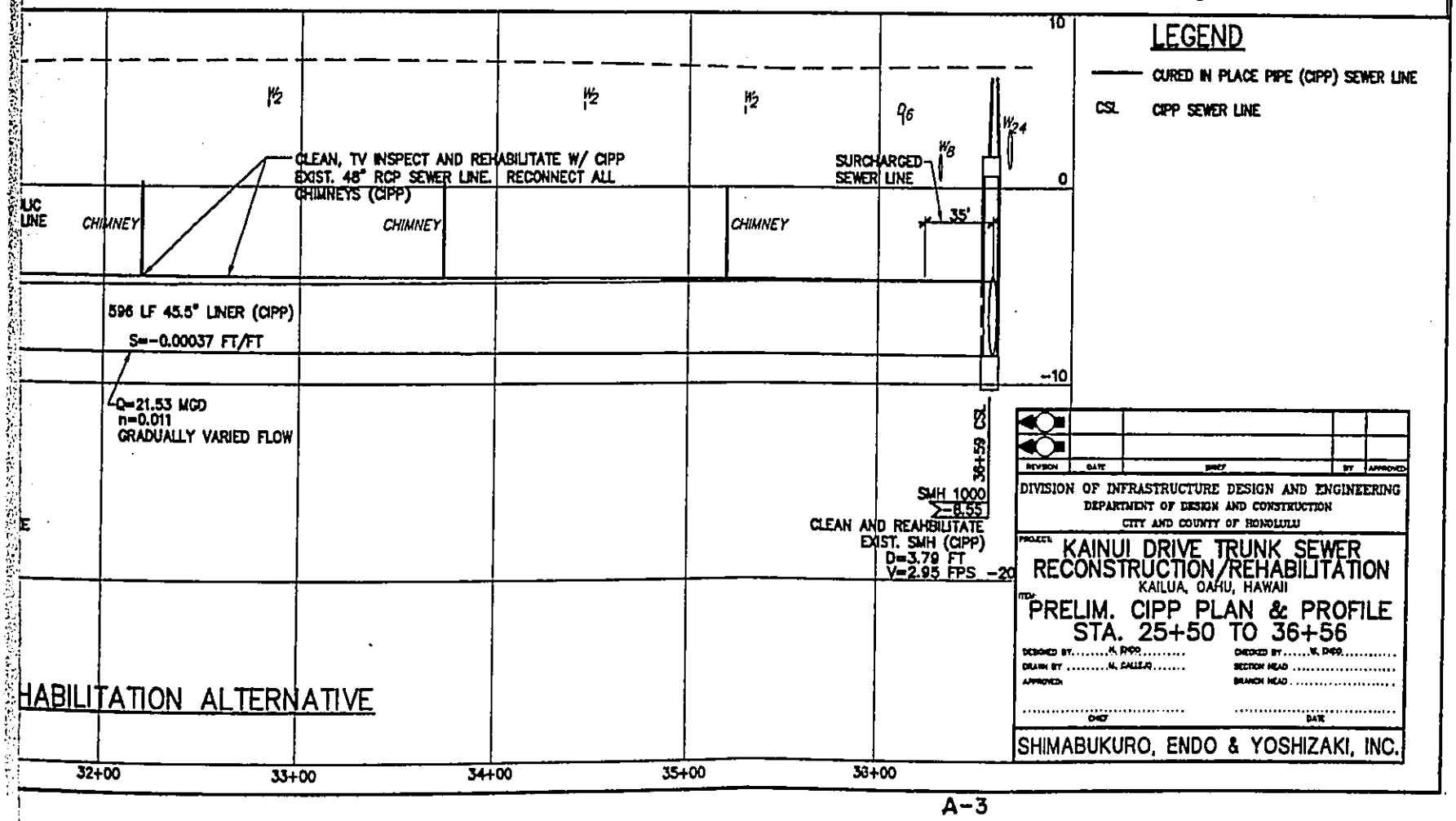


PROFILE—CIPP REHABILITATION ALTERNATIVE

SCALE: HORIZ. 1"=80'
VERT. 1"=8'



REHABILITATION ALTERNATIVE



LEGEND

CURED IN PLACE PIPE (CIPP) SEWER LINE

CSL CIPP SEWER LINE

REVISION	DATE	BRIEF	BY	APPROVED

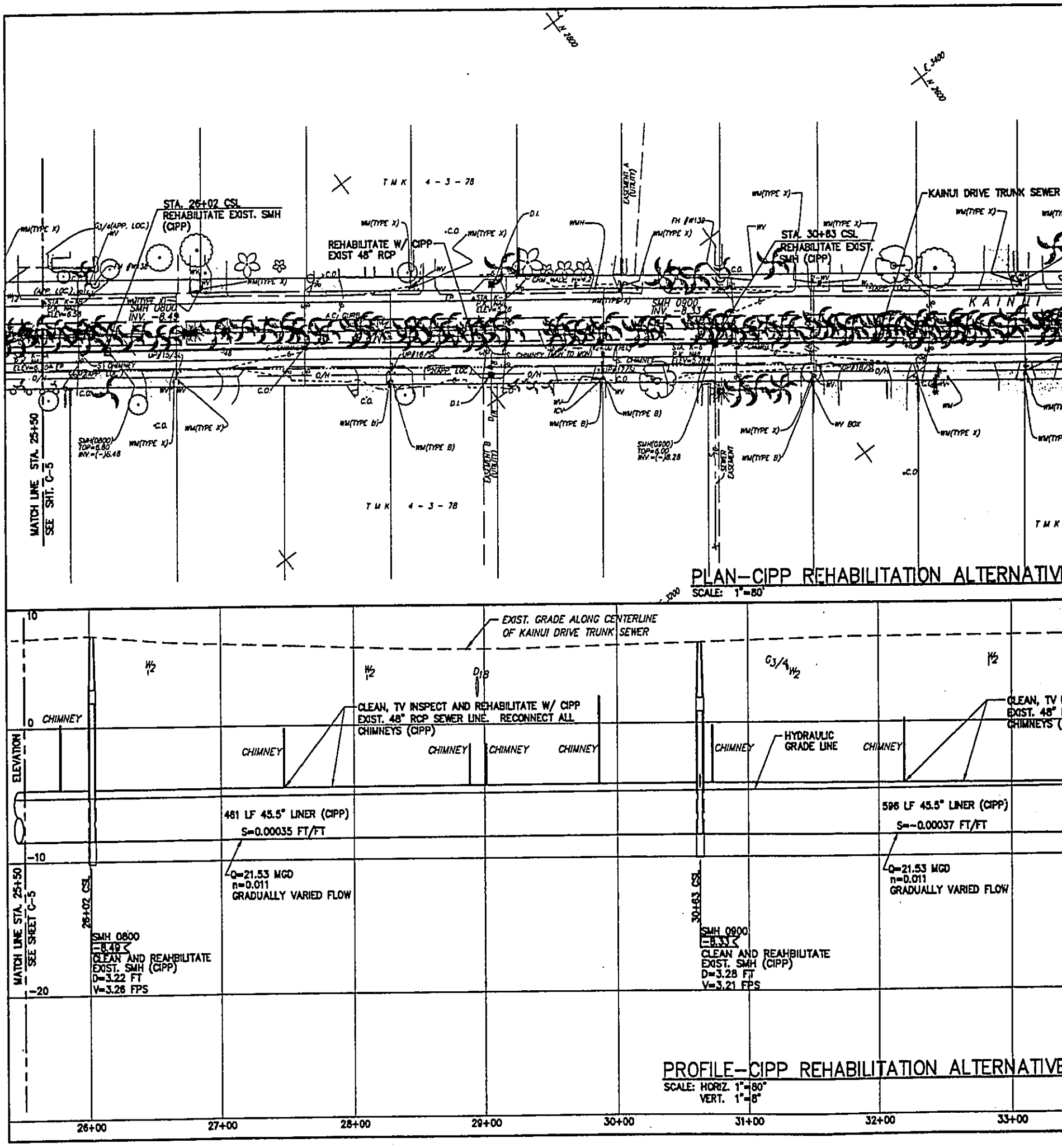
DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

PROJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION/REHABILITATION
KAILUA, OAHU, HAWAII

TITLE: PRELIM. CIPP PLAN & PROFILE STA. 25+50 TO 36+56

DESIGNED BY ..... M. PPO ..... CHECKED BY ..... M. PPO .....
DRAWN BY ..... M. CALLEJO ..... SECTION HEAD .....
APPROVED ..... BRANCH HEAD .....
..... DATE ..... DATE

SHIMABUKURO, ENDO & YOSHIZAKI, INC.


STA. 26+02 CSL
REHABILITATE EXIST. SMH (CIPP)
REHABILITATE W/ CIPP
EXIST 48" RCP
STA. 30+63 CSL
REHABILITATE EXIST. SMH (CIPP)
KAINUI DRIVE TRUNK SEWER
T M K 4 - 3 - 78
MATCH LINE STA. 25+50
SEE SHT. C-5
SMH 0800
INV. -8.49
SMH 0900
INV. -8.33
SMH(0800)
TOP=6.80
INV.=(-)6.48
SMH(0900)
TOP=6.00
INV.=(-)8.28
SEWER EASEMENT
EASEMENT A (UTILITY)
EASEMENT B (UTILITY)
WV BOX
PLAN-CIPP REHABILITATION ALTERNATIVE
SCALE: 1"=80'
EXIST. GRADE ALONG CENTERLINE OF KAINUI DRIVE TRUNK SEWER
CHIMNEY
HYDRAULIC GRADE LINE
CLEAN, TV INSPECT AND REHABILITATE W/ CIPP EXIST. 48" RCP SEWER LINE. RECONNECT ALL CHIMNEYS (CIPP)
481 LF 45.5" LINER (CIPP)
S=0.00035 FT/FT
Q=21.53 MGD
n=0.011
GRADUALLY VARIED FLOW
596 LF 45.5" LINER (CIPP)
S=-0.00037 FT/FT
Q=21.53 MGD
n=0.011
GRADUALLY VARIED FLOW
26+02 CSL
SMH 0800
=8.49
CLEAN AND REAHBILITATE EXIST. SMH (CIPP)
D=3.22 FT
V=3.26 FPS
30+63 CSL
SMH 0900
=8.33
CLEAN AND REAHBILITATE EXIST. SMH (CIPP)
D=3.28 FT
V=3.21 FPS
ELEVATION
10
0
-10
-20
26+00
27+00
28+00
29+00
30+00
31+00
32+00
33+00
PROFILE-CIPP REHABILITATION ALTERNATIVE
SCALE: HORIZ. 1"=80'
VERT. 1"=8'

APPENDIX B

PRELIMINARY
CONSTRUCTION COST ESTIMATES

SUMMARY OF PRELIMINARY CONSTRUCTION COST ESTIMATES

Item of Work	Cured-in-Place Pipe (CIPP) Lining	Excavation & Replacement (E&R) New Alignment	Microtunneling
Cleaning & Prelim. TV Inspection	$35,000	---	---
Kainui Drive Trunk Sewer Reconstruction/ Rehabilitation	$4,350,000	$11,135,000	$12,045,000
Manhole Rehabilitation	$81,000	---	---
Post TV Inspection	$15,000	$15,000	$15,000
Total Conceptual Estimated Cost	$4,481,000	$11,150,000	$12,060,000
SAY	$4,500,000	$11,200,000	$12,000,000

See Sheets B-2 thru B-4 for Estimated Costs

A. Cleaning & Preliminary TV Inspection

	Quantity	Unit Cost	Total
1. Mobilization/Demolition		L.S.	$3,000
2. Cleaning/Remove Obstructions	3,350 LF	$4.00	13,400
3. Preliminary TV Inspection	3,350 LF	3.00	10,050
4. Dump Fees		L.S.	2,000
5. Miscellaneous Work		L.S.	6,500
		TOTAL	$34,950
		SAY	**$35,000**

B. Cured-in-Place Pipe (CIPP)

	Quantity	Unit Cost	Total
1. Mobilization/Demobilization		L.S.	$200,000
2. Cleaning	3,350 LF	15	$50,250
3. 48" CIPP	3,350 LF	700	$2,345,000
4. Bypass Pumping		L.S.	$1,000,000
5. Reinstate Chimneys	31 EA	1,500	$46,500
6. Miscellaneous Work		L.S.	$700,000
		TOTAL	$4,341,750
		SAY	**$4,350,000**

C. Manhole Rehabilitation

	Quantity	Unit Cost	Total
Clean interior surface. Apply cementitious and protective chemical coatings. Remove rungs.	9 EA	$9,000	$81,000

D. Post TV Inspection

	Quantity	Unit Cost	Total
1. Mobilization/Demobilization		L.S.	$2,000
2. Post TV Inspection	3,350 LF	$3.00	10,050
3. Miscellaneous Work		L.S.	2,400
		TOTAL	$14,450
		SAY	**$15,000**

E. Excavation and Replacement (E&R)
New Alignment

	Quantity	Unit Cost	Total
1. Mobilization/Demobilization		L.S.	$150,000
2. Trench Excavation			
48" Diameter Sewer Pipe	16,500 CY	300	4,950,000
3. 48" Diameter Sewer Pipe	3,350 LF	800	2,680,000
4. Chimney and Lateral Connections	31 EA	15,000	465,000
5. Bypass Pumping		L.S.	300,000
6. Sewer Manholes	9 EA	50,000	450,000
7. Sewer Manhole Reconstruction (0100)	1 EA	40,000	40,000
8. Restoration	3,000 SY	100	300,000
9. Miscellaneous Work		L.S.	1,800,000
		TOTAL	$11,135,000

F. Microtunneling

		Quantity	Unit Cost	Total
1.	Mobilization/Demobilization		L.S.	$250,000
2.	Microtunneling	3,350 LF	1,000	$3,350,000
3	48" Diameter Sewer Pipe	3,350 LF	400	$1,340,000
4.	Jacking Pits	4 EA	200,000	$800,000
5.	Receiving Pits	5 EA	150,000	$750,000
6.	Chimneys and Laterals	31 EA	15,000	$465,000
7.	Sewer Manholes	9 EA	50,000	$450,000
8.	Sewer Manhole Reconstruction	1 EA	40,000	$40,000
9.	Soil Improvement	12,500 CY	200	$2,500,000
10.	Bypass Pumping		L.S.	$300,000
11.	Miscellaneous Work		L.S.	$1,800,000
			TOTAL	$12,045,000

APPENDIX C

PRELIMINARY EXCAVATION & REPLACEMENT
AND
MICROTUNNELING ALTERNATIVES
PLAN & PROFILE

TRUE NORTH
SCALE: 1"=80'

TMK 4-3-75

TMK 4-3-76

KAINUI DRIVE

KAINUI DRIVE TRUNK SEWER

KAIHOLU STREET

STREET MONUMENT TOP OF BRASS PIN ELEV.=5.94

SMH 0400 INV=-9.15

SMH 0500 INV=-9.10

NEW 48" SEWER LINE (E&R,MICRO)

STA. 9+95 EMSL
NEW SMH 0400A AND 8" CONN. TO SMH 0400 (E&R,MICRO) INV=-9.45

SMH(0400) TOP=6.30 INV.=(-)7.60(8") INV.=(-)9.15(48")

NEW 48" SEWER LINE (E&R,MICRO)

STA. 13+35 EMSL
NEW SMH 0500A (E&R,MICRO) INV=-9.34

SMH(0500) TOP=6.59 INV.=(-)8.9

MATCH LINE STA. 13+35
SEE SHEET C-2

EASEMENT FOR STORM DRAIN

RECONSTRUCTION ALTERNATIVES

LEGEND

EXCAVATION AND REPLACEMENT (E&R) OR MICROTUNNELING (MICRO) SEWER LINE

EMSL E&R OR MICROTUNNELING SEWER LINE

10
0
-10
-20

CHIMNEY

NEW 48" SEWER LINE AND CHIMNEYS (E&R, MICRO)

340 LF NEW 48" SEWER LINE (E&R, MICRO)

S=0.00034 FT/FT

9+95 EMSL

SMH 0400A
-9.45
NEW SMH (E&R, MICRO)
D=2.75 FT
V=2.8 FPS

SMH 0500A
-9.34
NEW SMH (E&R, MICRO)
D=2.9 FT
V=2.8 FPS

9+00 10+00 11+00 12+00 13+00

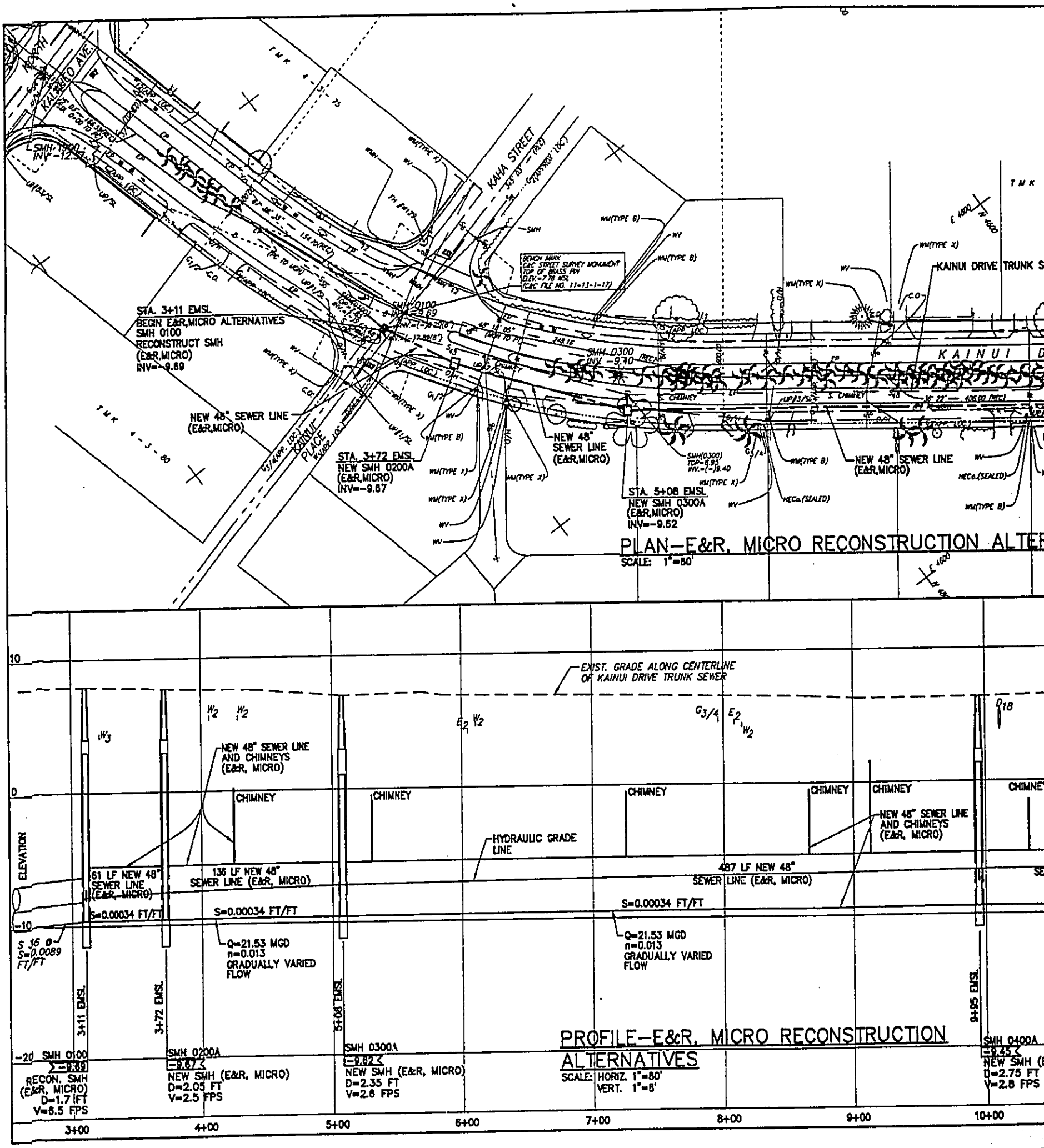
DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

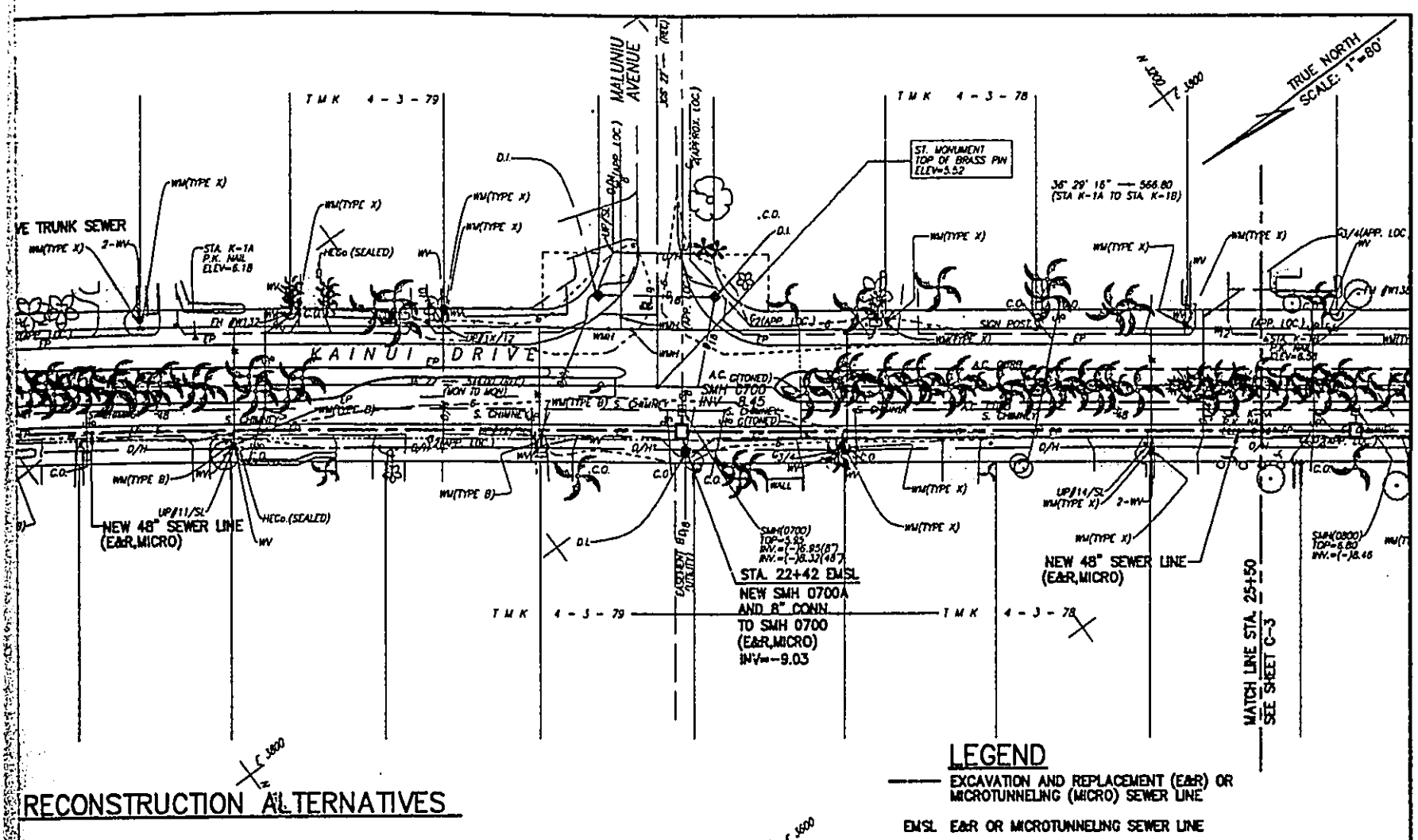
PROJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION/REHABILITATION
KAILUA, OAHU, HAWAII

ITEM: PRELIM. E&R, MICRO PLAN & PROFILE, STA. 3+11 TO 13+35

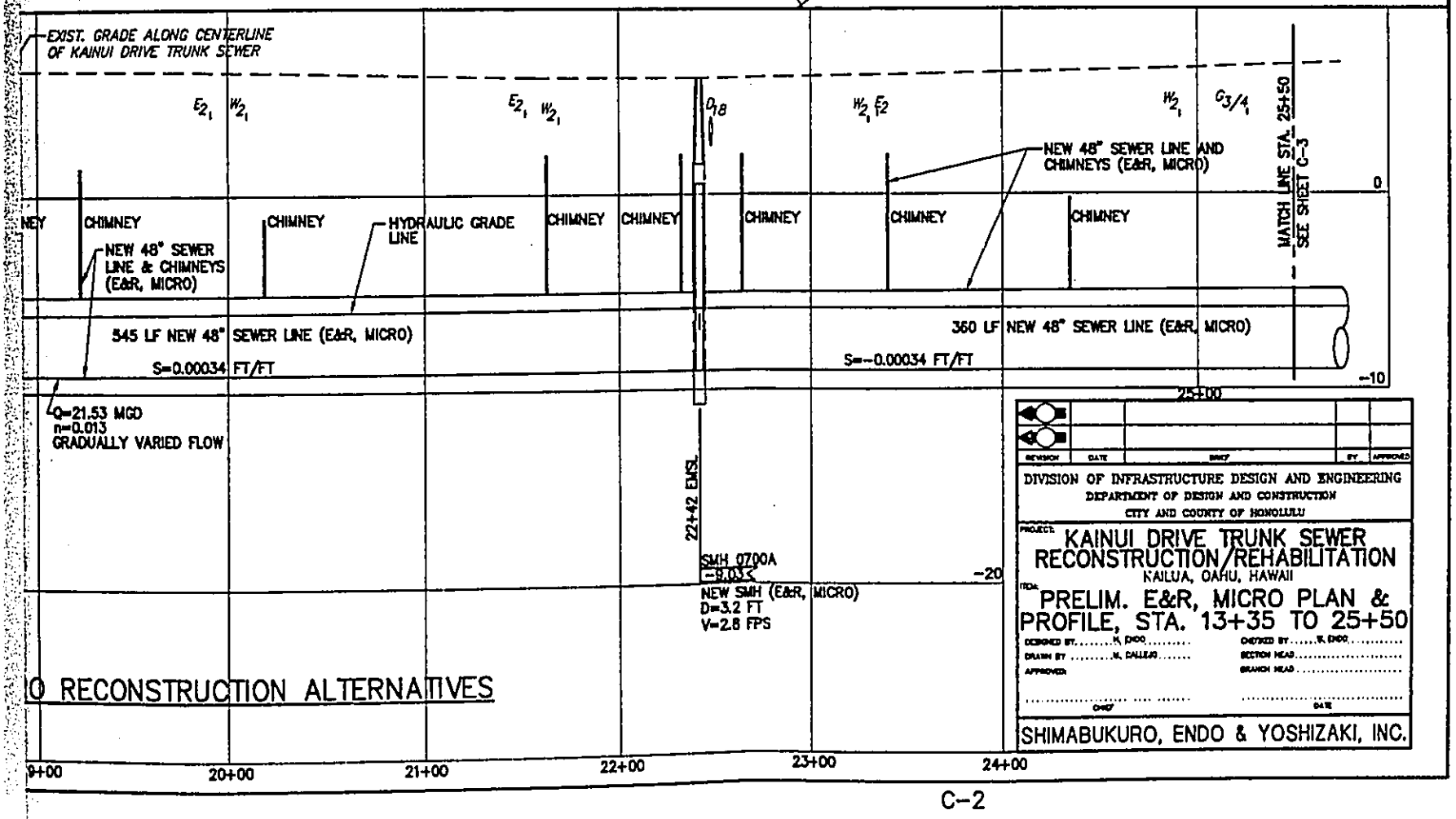
DESIGNED BY ..... H. ENDO ..... CHECKED BY ..... H. ENDO .....
DRAWN BY ..... M. SALLEA ..... SECTION HEAD .....
APPROVED BRANCH HEAD .....
CHIEF DATE

SHIMABUKURO, ENDO & YOSHIZAKI, INC.


KALANIO AVE.
KAHA STREET
KAINUI PLACE
KAINUI DRIVE TRUNK S
TMK 4-3-75
TMK 4-3-80
SMH 0100 INV -12.5
BENCH MARK
C&C STREET SURVEY MONUMENT
TOP OF BRASS PIN
ELEV.=7.78 MSL
(C&C FILE NO. 11-13-1-17)
STA. 3+11 EMSL
BEGIN E&R,MICRO ALTERNATIVES
SMH 0100
RECONSTRUCT SMH
(E&R,MICRO)
INV=-9.69
SMH 0100
-9.69
SMH 0300
INV -9.40 (RECAP)
NEW 48" SEWER LINE
(E&R,MICRO)
STA. 3+72 EMSL
NEW SMH 0200A
(E&R,MICRO)
INV=-9.67
NEW 48" SEWER LINE
(E&R,MICRO)
STA. 5+08 EMSL
NEW SMH 0300A
(E&R,MICRO)
INV=-9.62
NEW 48" SEWER LINE
(E&R,MICRO)
PLAN-E&R, MICRO RECONSTRUCTION ALTE
SCALE: 1"=80'
EXIST. GRADE ALONG CENTERLINE
OF KAINUI DRIVE TRUNK SEWER
NEW 48" SEWER LINE
AND CHIMNEYS
(E&R, MICRO)
CHIMNEY
HYDRAULIC GRADE
LINE
61 LF NEW 48"
SEWER LINE
(E&R, MICRO)
136 LF NEW 48"
SEWER LINE (E&R, MICRO)
487 LF NEW 48"
SEWER LINE (E&R, MICRO)
S=0.00034 FT/FT
Q=21.53 MGD
n=0.013
GRADUALLY VARIED
FLOW
S 36 Ø
S=0.0089
FT/FT
3+11 EMSL
3+72 EMSL
5+08 EMSL
9+85 EMSL
SMH 0100
-9.69
RECON. SMH
(E&R, MICRO)
D=1.7 FT
V=6.5 FPS
SMH 0200A
-9.67
NEW SMH (E&R, MICRO)
D=2.05 FT
V=2.5 FPS
SMH 0300A
-9.62
NEW SMH (E&R, MICRO)
D=2.35 FT
V=2.6 FPS
SMH 0400A
-9.45
NEW SMH (E&R, MICRO)
D=2.75 FT
V=2.8 FPS
ELEVATION
10
0
-10
-20
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
PROFILE-E&R, MICRO RECONSTRUCTION
ALTERNATIVES
SCALE: HORIZ. 1"=80'
VERT. 1"=8'



RECONSTRUCTION ALTERNATIVES



RECONSTRUCTION ALTERNATIVES

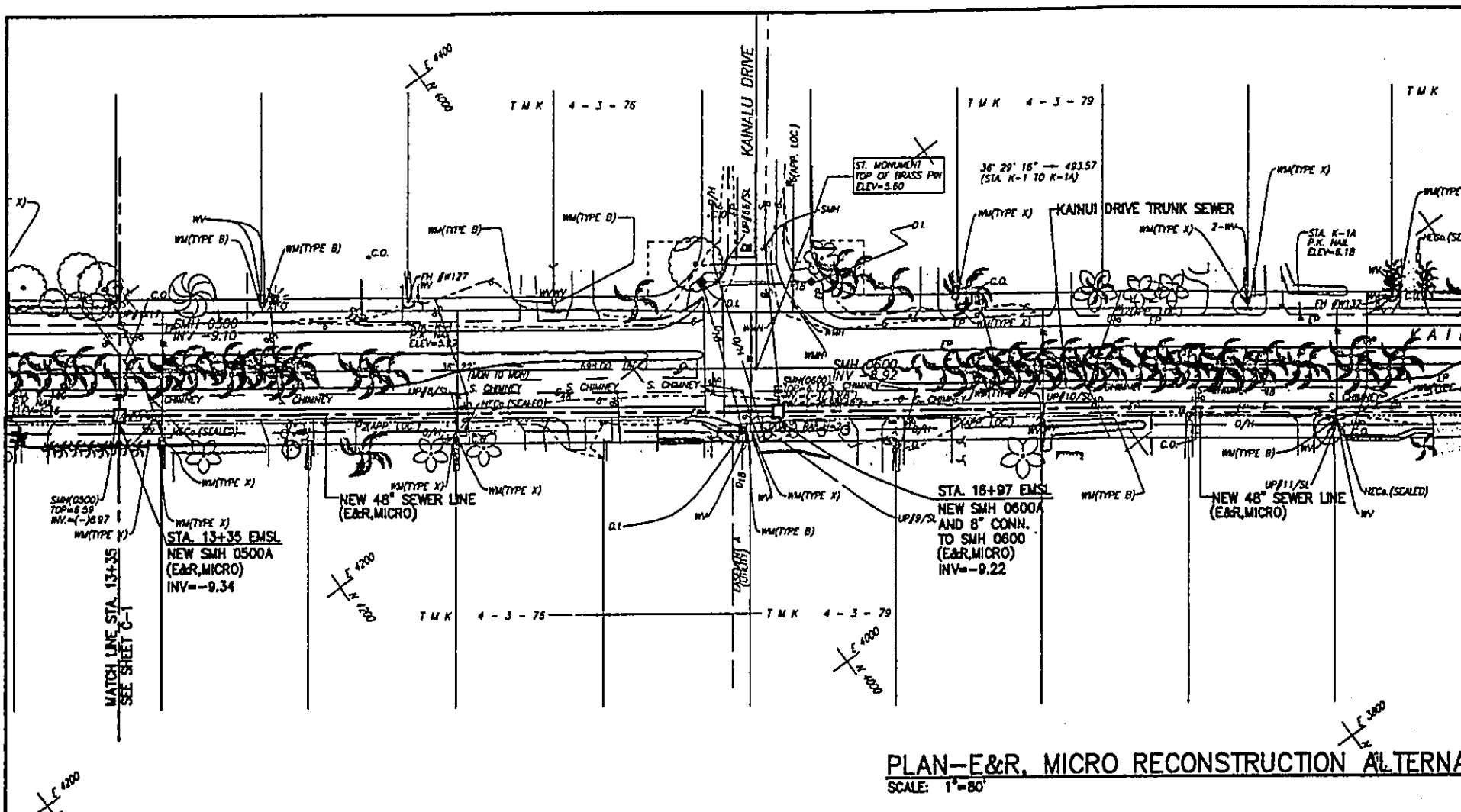
DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

PROJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION/REHABILITATION
KAILUA, OAHU, HAWAII

TITLE: PRELIM. E&R, MICRO PLAN & PROFILE, STA. 13+35 TO 25+50

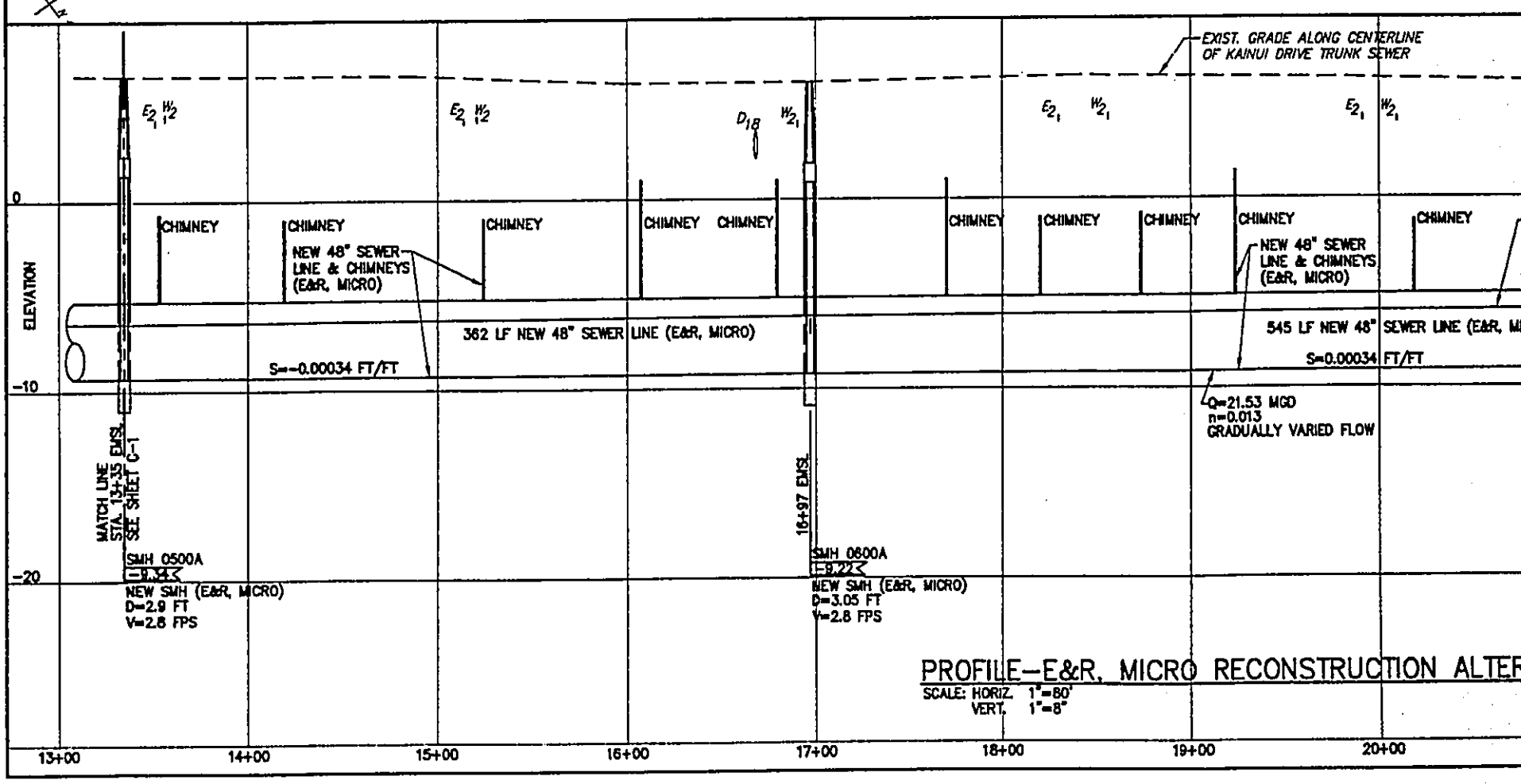
DESIGNED BY ..... N. ENDO ..... CHECKED BY ..... N. ENDO .....
DRAWN BY ..... M. CALLEJO ..... SECTION HEAD .....
APPROVED BRANCH HEAD .....
CHIEF DATE

SHIMABUKURO, ENDO & YOSHIZAKI, INC.



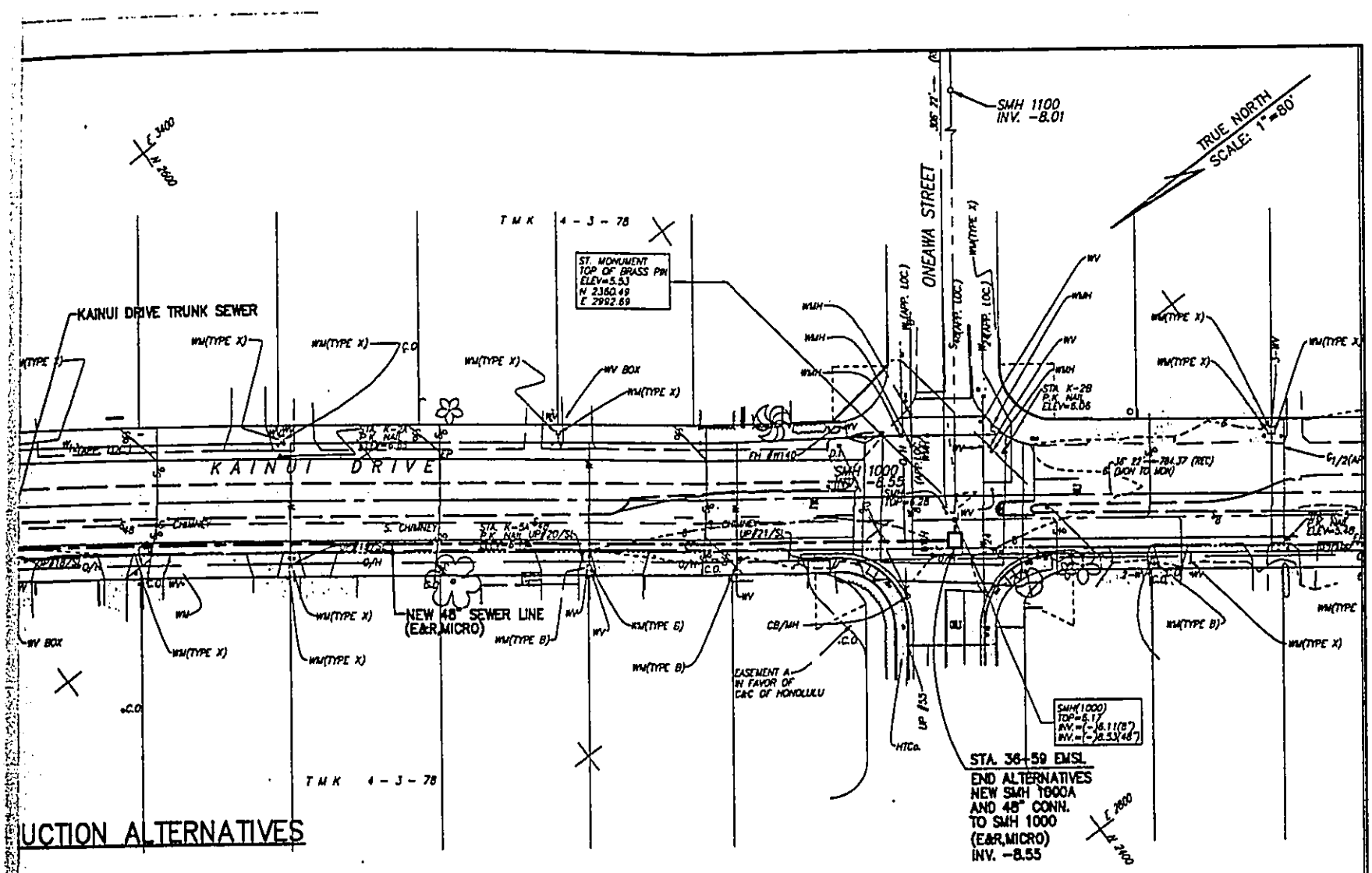
PLAN—E&R, MICRO RECONSTRUCTION ALTERNA

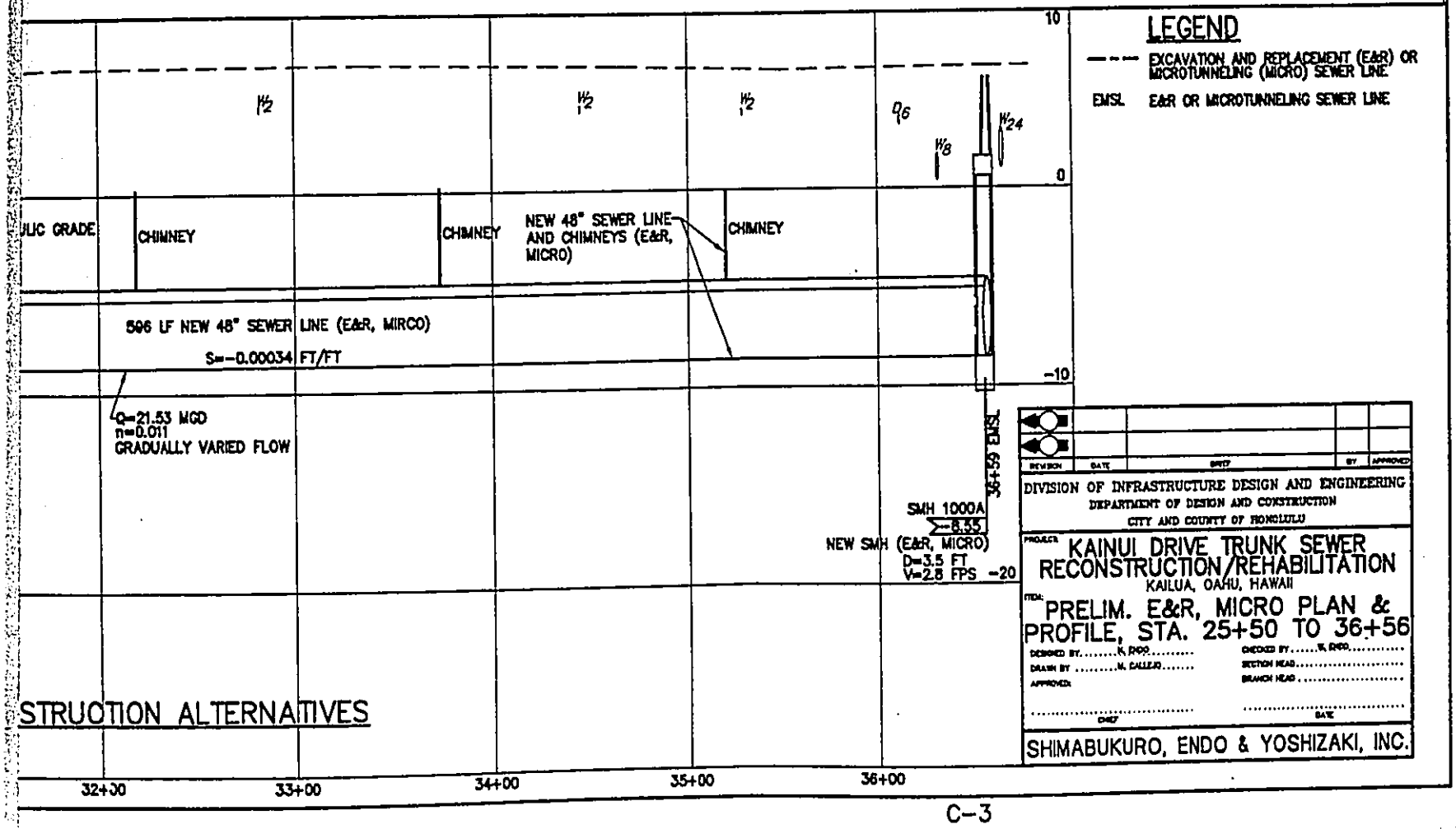
SCALE: 1"=80'



PROFILE—E&R, MICRO RECONSTRUCTION ALTER

SCALE: HORIZ. 1"=80'
VERT. 1"=8'





UCTION ALTERNATIVES

STRUCTION ALTERNATIVES

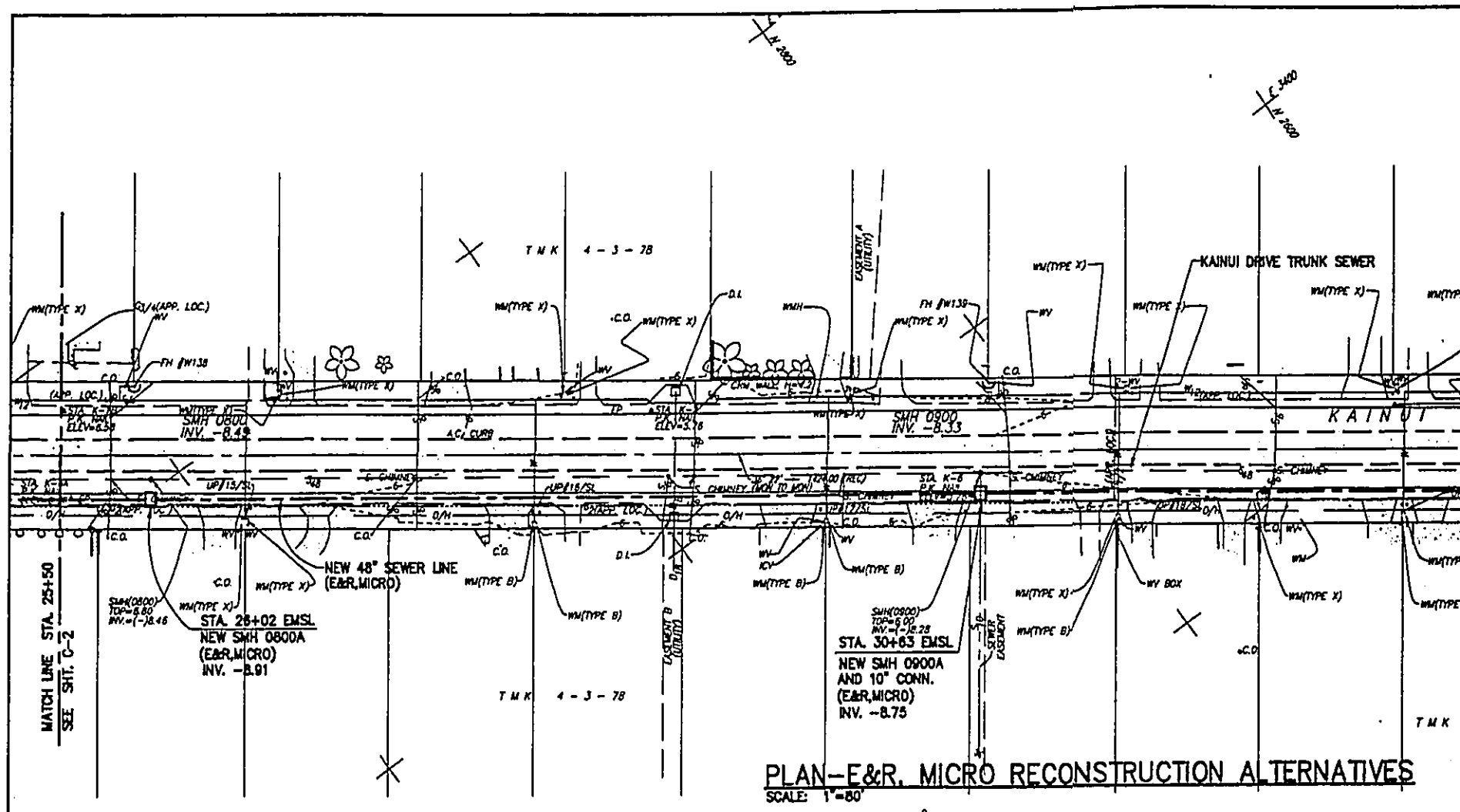
DIVISION OF INFRASTRUCTURE DESIGN AND ENGINEERING
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

PROJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION/REHABILITATION
KAILUA, OAHU, HAWAII

TITLE: PRELIM. E&R, MICRO PLAN & PROFILE, STA. 25+50 TO 36+56

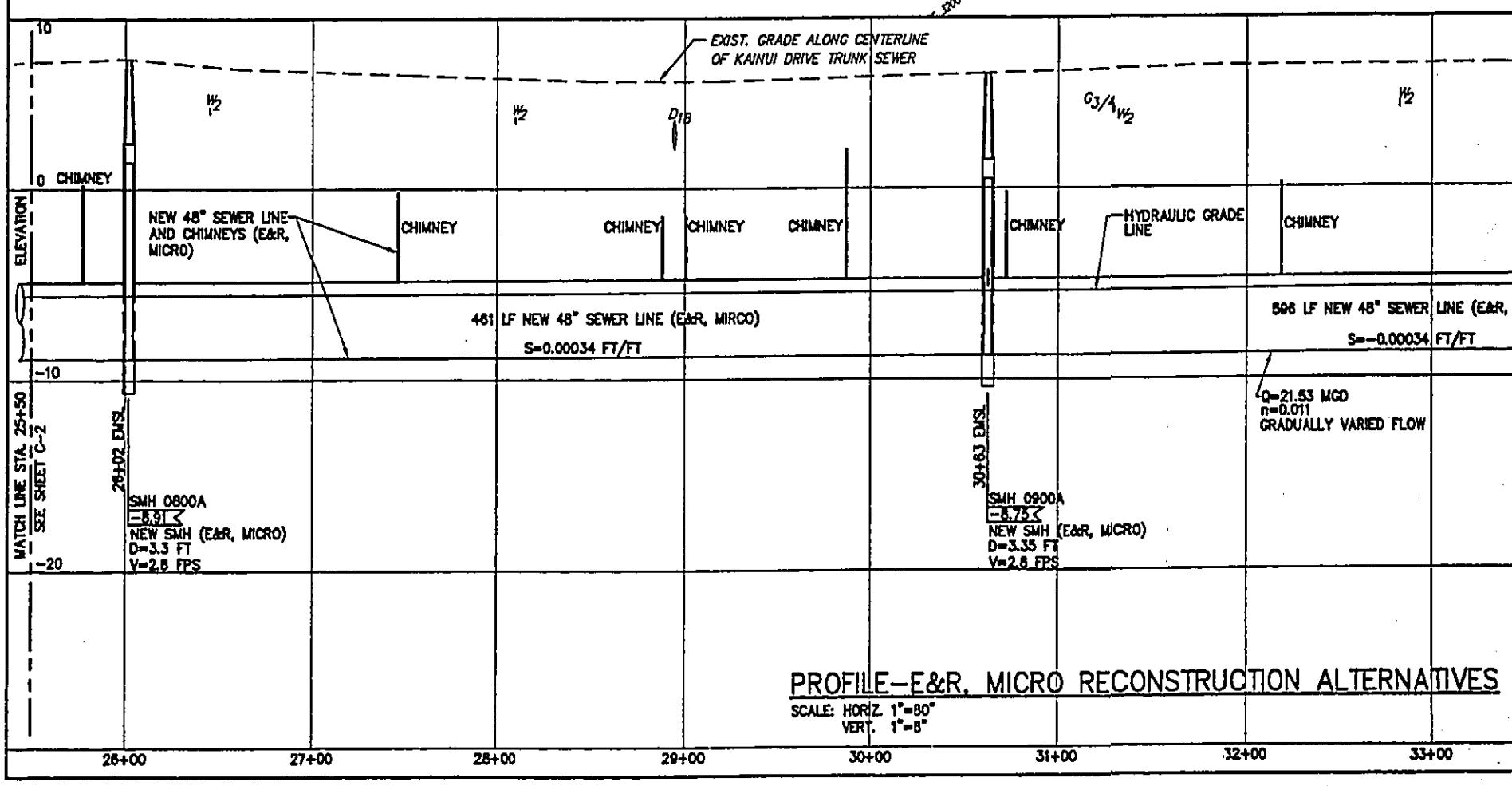
DESIGNED BY.....K. ENDO.....
DRAWN BY .....M. CALLEJO.....
APPROVED:
CHIEF
CHECKED BY.....K. ENDO.....
SECTION HEAD.....
BRANCH HEAD.....
DATE

SHIMABUKURO, ENDO & YOSHIZAKI, INC.



PLAN–E&R, MICRO RECONSTRUCTION ALTERNATIVES

SCALE: 1"=80'



PROFILE–E&R, MICRO RECONSTRUCTION ALTERNATIVES

SCALE: HORIZ. 1"=80'
VERT. 1"=8'

APPENDIX D

COPIES OF PRE-ASSESSMENT RESPONSES

sey
ENGINEERS

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil & Structural Engineers
1126 12th Avenue, Room 309, Honolulu, Hawaii 96816
Ph.: (808) 7371875 Fax: (808) 734-5516

MEMORANDUM

Date: February 28, 1999

To: Project File

From: W. K. Endo

Subject: Kainui Drive Trunk Sewer Reconstruction

1. Pre-assessment letters were sent to agencies, organizations, utilities, and residents of parcels adjoining Kainui Drive on November 23, 1998 notifying them of the proposed project and requesting pre-assessment comments regarding possible impacts due to the project. A list of parties consulted are included in Subsection IC1 of the Draft EA.

2. Thirty (30) agencies, organizations, and utilities were consulted and responses were received from eighteen (18) parties. Ninety-four (94) residents adjoining Kainui Drive were consulted and responses were received from three (3) residents.

3. Generally, the responses included comments on impacts from noise, dust, street closures, traffic detours, dewatering, human burials and restoration and request for prior public notification of construction and detour schedules.

4. Substantive responses were received from seven (7) parties. Copies of their letters and conversation are included in Appendix D of the Draft EA.

5. All responses received to the pre-assessment letter have been reviewed, evaluated and incorporated into the Draft EA as appropriate.

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

Paul G. LeMahieu, Ph.D.
SUPERINTENDENT

OFFICE OF THE SUPERINTENDENT

December 28, 1998

Mr. Wallace K. Endo, Vice President
SHIMABUKURO, ENDO & YOSHIZAKI, INC.
1126 12th Avenue
Honolulu, Hawaii 96816

Dear Mr. Endo:

SUBJECT: Kainui Drive Trunk Sewer Reconstruction Project

Thank you for the opportunity to comment on the subject project. The Department of Education (DOE) is concerned that Kainalu Elementary School may be impacted by this construction project. The DOE respectfully requests that mitigating measures be implemented to reduce noise and dust problems during the construction period so the educational environment is not compromised. Furthermore, vehicular traffic to ingress and egress the school from Kainui Drive be accessible during the peak morning and afternoon periods of a school day.

If the dust and noise problems exceed Department of Health standards, the DOE will request that the contractor install air-conditioning units and the necessary infrastructure for those classrooms being impacted at no cost to the DOE. The contractor should also inform the school administration of construction schedules and timelines so the parents and staff can be apprised and appropriate action taken during the construction period.

Should there be any questions, please call the Facilities Branch at 733-4862.

Very truly yours,

Paul G. LeMahieu
Superintendent of Education

PLeM:hy

cc: OBS
T. Pangilinan, WDO
F. Wong, Kainalu Elementary
R. Fujiki, Design & Construction Dept. C&C

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
RECEIVED
JAN 6 1999
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

December 22, 1998

Wallace K. Endo
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue
Honolulu, HI 96816

LOG NO: 22685 ✓
DOC NO: 9812EJ16

Dear Mr. Endo:

SUBJECT: **Chapter 6E-8 Historic Preservation Review -- Pre-Assessment Consultation for the Kainui Drive Trunk Sewer Reconstruction Project Kailua, Ko'olaupoko, O'ahu**
TMK: 4-3

Thank you for the opportunity to provide comment during preparation of the EA for this project. The City and County of Honolulu, Department of Environmental Sciences (ENV) is proposing to reconstruct/rehabilitate approximately 3350 feet of the existing Kainui Drive Trunk Sewer from SMH0100 to SMH1000. The project is necessary to reduce the potential for structural failure of the sewerline. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the subject parcels.

A review of our records shows that there are no known historic sites at the project location, although buried cultural deposits including human burials have been found along the shoreline and the sandy soils in the vicinity. Four methods of reconstruction/rehabilitation are being considered in the EA. According to you, the cured-in-place (CIPP) method appears to be the most appropriate for the project and is the preferred alternative. The CIPP method eliminates the need for excavation during rehabilitation except for some digging to bypass portions of the sewerline during installation and curing activities. We believe the CIPP method will result in minimal disturbance to the site area making it unlikely that historic sites would be found. We believe that the CIPP method would likely have "no effect" on historic sites. We would recommend that the following condition be attached to any permit approved for this project.

Condition:

In the unlikely event that historic sites, including human burials, are uncovered during routine construction activities, all work in the vicinity must stop and the State Historic Preservation Division must be contacted at 692-8015.

Alternately, if one of the other methods is selected, we would like to review those methods prior to beginning ground alteration in order to determine their effect, if any, on historic sites.

If you have any questions please call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
Historic Preservation Division

EJ:jk

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:

December 4, 1998

98-251/epo

SHIMABUKURO, ENDO
& YOSHIZAKI, INC.
RECEIVED
DEC 7 1998
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

Mr. Wallace K. Endo
Vice President
Shimabukuro, Endo &
Yoshizaki, Inc.
1126 12th Avenue
Honolulu, Hawaii 96816

Dear Mr. Endo:

Subject: Pre-Environmental Assessment Comments
Kainui Drive Trunk Sewer Reconstruction Project
Kailua, Oahu

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

Water Pollution

A National Pollutant Discharge Elimination System (NPDES) general permit is required for the following discharges to waters of the State:

a. Storm water discharges relating to construction activities, such as clearing, grading, and excavation, for projects equal to or greater than five acres;

b. Storm water discharges from industrial activities;

c. Construction dewatering activities;

d. Noncontact cooling water discharges less than one million gallons per day;

e. Treated groundwater from underground storage tank remedial activities;

f. Hydrotesting water;

g. Treated effluent from petroleum bulk stations and terminals; and

h. Treated effluent from well drilling activities.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 30 days prior to commencement of any discharge to waters of the State.

Any questions regarding these comments should be directed to Mr. Denis Lau, Branch Chief, Clean Water Branch at 586-4309.

Noise Concerns

Activities associated with the construction phase of the project must comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."

a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules as stated in Section 11-46-6(a).

b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers as stated in Section 11-46-6(b)(1)(A).

c. The contractor must comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit as stated in Section 11-46-7(d)(4).

Should there be any questions on this matter, please call Mr. Jerry Haruno, Environmental Health Program Manager of the Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Deputy Director for
Environmental Health

c: CWB
NR&IAQB

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

December 8, 1998

Mr. Wallace K. Endo
Vice President
Simabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue
Honolulu, Hawai'i 96816

PA #172

Re: Pre-consultation for the Preparation of a Draft Environmental Assessment for the Kainui Drive Trunk Sewer Reconstruction Project, Kailua, O'ahu

Dear Mr. Endo:

Thank you for the opportunity to comment on the Preparation of a draft Environmental Assessment (DEA) for the Kainui Drive Trunk Sewer Reconstruction Project at Kailua, O'ahu. The project includes the reconstruction of a portion of the Kainui Trunk Sewer line which begins at the intersection of Kainui Drive and North Kalaheo Avenue and proceeds along Kainui Drive under the mauka bound vehicular lane to the intersection of Kainui Drive and Oneawa Street.

The Office of Hawaiian Affairs' primary concern is for the cultural and historic resources as well as burial remains that may be found during excavation. We strongly suggest that the EA contain discussion and analysis by archaeologists as well as Hawaiian cultural experts.

Currently, there is considerable controversy between the Hawaiian community and contracted archaeologists. The dispute generally involves the interpretation of cultural sites found in the area. In order to avoid this controversy, we suggest that you contact a Hawaiian cultural expert to help prepare the environmental assessment for this projects. We strongly suggest that the expert should be a person who is recognized within the Hawaiian community for his/her cultural expertise. In addition, we urge you to involve the O'ahu Island Burial Council at the Department of Land and Natural Resources early in the process.

We look forward to receiving your draft environmental assessment. We will carefully review the document, especially as it pertains to cultural properties and make appropriate comments. If you have any questions, please contact Sebastian Aloot, Land and Natural Resource Division Officer or Lynn Lee, EIS Planner at 594-1936.

Sincerely,

Colin Kippen
Deputy Administrator

C. Sebastian Aloot
Acting Land and Natural Resources
Division Officer

cc: Board of Trustees

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA • 711 KAPIOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
PHONE: (808) 523-4529 • FAX: (808) 523-4730

JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

TPD11/98-06932R

December 9, 1998

Mr. Wallace K. Endo, Vice President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue
Honolulu, Hawaii 96816

Dear Mr. Endo:

Subject: Kainui Drive Trunk Sewer Reconstruction Project

In response to your November 23, 1998 letter, the following pre-assessment comments are provided:

1. In previous meetings with this department, Kailua residents have expressed concern regarding the heavy usage of Kainui Drive, especially after the opening of the H-3 Freeway. Therefore, any proposed changes to traffic flow due to project construction work (e.g., detours, reduction in laneage, etc.) along Kainui Drive should be discussed with area residents and the neighborhood board.

2. The evaluation of proposed sewer line reconstruction/rehabilitation methods should give consideration to the significant adverse traffic impact of road closures on residents of the area surrounding Kainui Drive. Methods that require road closures should be avoided if at all possible.

We look forward to reviewing the environmental assessment for the subject project. To facilitate this review, please provide this department with two copies of the document.

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

Sincerely,

Cheryl D Soon

CHERYL D. SOON
Director

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
Civil & Structural Engineers
1126 12th Avenue, Honolulu, Hawaii 96816
Ph: (808) 737-1875 Fax: (808) 734-5516

CONVERSATION CONFIRMER

BY: W.K. Endo

DATE: December 7, 1998

TIME: 1:30 p.m.

PROJECT: Kainui Drive Trunk Sewer Reconstruction JOB NO.: --

☒ TELEPHONE CALL

☐ OFFICE MEETING

☐ OTHER

CONVERSATION WITH: Terry Carroll

COMPANY: Member, Kailua Neighborhood Board

TEL. NO.: 262-8603 (534 Hooulu Street, Kailua)

SUBJECT:

1. T. Carroll received SEY pre-assessment consultation letter and wanted to know names of consultants working on the several sewer rehab projects in Kailua. A 12/3 newspaper article identified 3-4 projects. Mr. Carroll was referred to City DDC for the names of consultants.

2. Mr. Carroll suggested that all residents along Kainui Drive be informed of the subject project. He was told that the pre-assessment letter sent to the Kailua Neighborhood Board was also sent to all residents along Kainui Drive and to other interested parties as suggested by State OEQC.

3. Mr. Carroll expressed concern over scheduling of all the projects construction. If 3-4 projects are scheduled for construction at the same time, traffic in Kailua will be severely impacted. He was told that the Kainui Drive sewer project construction is scheduled to begin in the summer of 2000 and will take about 6 months to complete. He was referred to City DDC for schedule of other projects construction.

ACTION:

SEY will include the impact of projects scheduling into the Draft EA. Kainehe Street, Hamakua Drive and Keolu Drive Sewer Rehabilitation and Kalaheo Avenue Reconstructed Sewer are the other two projects proposed in Kailua. Contractors of the projects will be required to coordinate work and traffic control plans to minimize traffic disruptions to the public and construction disruptions to each other.

DISTRIBUTION: Project file

Kailua Urban Design Task Force, Inc.

348 Dune Circle. Kailua. Hawaii 96734

Mr. Wallace K. Endo, Vice President
Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue
Honolulu,Hawaii 96816

December 2, 1998

Re: Kainui Dr. EA

Dear Mr. Endo:

Thank you for including us in the EA consultation. We have only the following comments:

a. Project management and alternative sewer line should stress the reduction of inconvenience to residents and street users. This is particularly true in the Kainui location since it was not that long ago that Kalaheo Ave. at Kainui was under construction for a long time and on occassion required detours.

b. Meticulous requirements for the restoration of the road's median strip following the work should be incorporated in the contract. City officials are quick to allow areas like the median strip to be used for staging areas, material storage, etc. and contractors are not known for avoiding work-related impacts on such areas. Consequently, complete and detailed restoration following completion of the work needs to be required. Possibly the installation of pipe lining will minimize impacts on the median strip.

Very truly yours,

Donald A. Bremner
Chairman

APPENDIX E

COPIES OF DRAFT EA CORRESPONDENCES

99-0545
Laverne

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-335

May 19, 1999

MEMORANDUM

From: TO:
MR. ROSS S. SASAMURA, DIRECTOR
DEPARTMENT OF FACILITY MAINTENANCE

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
KAILUA, OAHU, HAWAII, TMK: 4-3-75, 76, 78, 79 AND 80

The City and County of Honolulu's Department of Design and Construction (DDC) is proposing to rehabilitate portion of the Kainui Drive Trunk Sewer. Enclosed for your review and comments is the Draft Environmental Assessment (EA) for the Kainui Drive Trunk Sewer Reconstruction project. The Draft EA notice of availability will be published in the May 23, 1999 OEQC Environmental Notice. The Final EA will incorporate all comments with responses received during the 30-day public review period ending June 22, 1999. Please send original comments to:

Department of Design and Construction
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
ATTENTION: Mr. Carl Arakaki

Please send copies of the comments to the following:

Department of Planning and Permitting
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813
ATTENTION: Ms. Jan Naoe Sullivan

and

Shimabukuro, Endo & Yoshizaki, Inc.
1126 12th Avenue, Room 309
Honolulu, Hawaii 96816
ATTENTION: Mr. Howard K. Endo

May 19, 1999 We do not have any comments. If you have any questions, please call Laverne Higa at 527-6246.

Enclosure

Ross S. Sasamura, Acting Director and Chief Engineer
Department of Facility Maintenance

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-438

June 25, 1999

MEMORANDUM

TO: MR. ROSS SASAMURA, DIRECTOR
DEPARTMENT OF FACILITY MAINTENANCE

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your note of May 19, 1999 indicating that you have no comments on the subject Draft Environmental Assessment. Your comment will be incorporated into the Final Environmental Assessment.

Thank you for participating in the environmental review process.

If you have any questions, please contact Carl Arakaki at 523-4671.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 527-6663 • FAX: (808) 527-6675

JEREMY HARRIS
Mayor

KENNETH E. SPRAGUE, P.E., Ph.D.
Director

BARRY FUKUNAGA
Deputy Director

MAY 2 1 1999

ENV 99-64

MEMORANDUM

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

FROM: KENNETH E. SPRAGUE, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL SERVICES

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
TMK: 4-3-75,76,78,79 AND 80

We have reviewed the subject DEA and have no comments to offer at this time.

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

cc: Shimabukuro, Endo & Yoshizaki, Inc. ✓
(Howard K. Endo)

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-439

June 25, 1999

MEMORANDUM

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

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your memorandum of May 21, 1999 indicating that you have no comments on the subject Draft Environmental Assessment. Your comment will be incorporated into the Final Environmental Assessment.

Thank you for participating in the environmental review process.

If you have any questions, please contact Carl Arakaki at 523-4671.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

RECEIVED
'99 JUN 14 P2:20
DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

JUN 9 1999

(P)1411.9

99 JUN 14 AM 10:50
RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU

Mr. Carl Arakaki
City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Arakaki:

Subject: Kainui Drive Trunk Sewer Reconstruction
Draft Environmental Assessment (EA)
Kailua, Oahu, Hawaii

Thank you for the opportunity to review the subject Draft EA, which we received with your May 19, 1999, memorandum.

The proposed project does not affect any of our existing or proposed facilities. However, a concern is that the project's construction will intermittently impact traffic, and nearby Kainalu Elementary School and Kalaheo High School. As a result of the anticipated impacts, we suggest close and continued coordination with the Department of Education.

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

Sincerely,

GORDON MATSUOKA
Public Works Administrator

RC/ET:mo
c: OEQC
Mr. Howard Endo, Shimabukuro, Endo & Yoshizaki, Inc.

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-441

June 25, 1999

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

Dear Mr. Matsuoka:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 9, 1999 providing comments on the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

Your agency's concern that the project's construction will intermittently impact traffic and nearby Kainalu Elementary School and Kalaheo High School will be addressed by our design consultant. The design consultant and construction contractor will be directed to closely and continuously coordinate this construction impact with the Department of Education and the affected schools during preparation of the final construction documents and during construction, respectively.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JAMES E. GAFFNEY

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

June 3, 1999

Randall K. Fujiki
Department of Design and Construction
City and County of Honolulu
650 South King Street, 2nd Floor
Honolulu, Hawaii 96813
Attn: Carl Arakaki

LOG NO: 23543 ✓
DOC NO: 9906EJ04

Dear Mr. Fujiki:

SUBJECT: Chapter 6E-8 Historic Preservation Review -- Draft Environmental Assessment (DEA) for the Kainui Drive Trunk Sewer Reconstruction Project
Kailua, Ko'olaupoko, O'ahu
TMK: 4-3

We commented during the pre-EA phase of this project that a review of our records shows that there are no known historic sites at the project location, although buried cultural deposits including human burials have been found along the shoreline and the sandy soils in the vicinity. These comments are summarized in Section III F of the DEA with our complete response duplicated in Appendix D.

We believe that the CIPP method will result in minimal disturbance to the site area making it unlikely that historic sites would be found and that this project therefore would likely have "no effect" on historic sites. We also recommended that the following condition be attached to any permit approved for this project.

Condition:
In the unlikely event that historic sites, including human burials, are uncovered during routine construction activities, all work in the vicinity must stop and the State Historic Preservation Division must be contacted at 692-8015.

If you have any questions please call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
Historic Preservation Division

EJ:jk

c: Office of Environmental Quality Control, 235, S. Beretania St. Suite 207, Honolulu, HI 96813
Howard Endo, Shimabukuro, Endo & Yoshizaki, Inc., 1126 12th Avenue, Honolulu, HI 96816

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 2ND FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4566 • FAX: (808) 523-4567

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-442

June 25, 1999

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

Dear Mr. Hibbard:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 3, 1999 providing comments on the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

You have recommended that the following condition be attached to any permit approved for this project.

Condition:

In the unlikely event that historic sites, including human burials, are uncovered during routine construction activities, all work in the vicinity must stop and the State Historic Preservation Division must be contacted at 692-8015.

The above condition was summarized in Section IIIF of the Draft Environmental Assessment and our design consultant will be directed to include the condition in the final construction documents for compliance by the construction contractor.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org

JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF

WILLIAM B. CLARK
MICHAEL CARVALHO
DEPUTY CHIEFS

OUR REFERENCE CS-DL

June 15, 1999

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

ATTENTION: CARL ARAKAKI, PLANNING AND PROGRAMMING

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

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
KAINUI DRIVE TRUNK SEWER RECONSTRUCTION PROJECT
KAILUA, OAHU, HAWAII, TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for the opportunity to review the subject document. We have the following comments to offer.

During the construction phase of this project, calls for police service in the area will inevitably increase because of construction noise, dust, and traffic. However, once the project is completed, we do not anticipate any significant impact on police services.

If there are any questions, please call Lieutenant John Thompson of District 4 at 235-7621.

LEE D. DONOHUE
Chief of Police

By Eugene Uemura
EUGENE UEHURA
Assistant Chief
Support Services Bureau

cc: Ms. Jan Naoe Sullivan
Dept. of Planning and Permitting

Mr. Howard K. Endo
Shimabukuro, Endo & Yoshizaki, Inc.

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 2ND FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4566 • FAX: (808) 523-4567

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-440

June 25, 1999

MEMORANDUM

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

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 15, 1999 providing comments on the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

You have noted that during the construction phase of this project, calls for police service in the area will inevitably increase because of construction noise, dust, and traffic. However, once the project is completed, we do not anticipate any significant impact on police services.

Construction noise, dust and traffic are regulated by City and State rules, regulations and permit requirements. Our design consultant will be directed to include compliance with the above requirements by the construction contractor in the final construction documents to mitigate the adverse impacts of construction noise, dust and traffic.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

June 15, 1999

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

ATTN: CARL ARAKAKI

FROM: CLIFFORD S. JAMILE

SUBJECT: YOUR TRANSMITTAL OF MAY 19, 1999 REGARDING THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED KAINUI DRIVE TRUNK SEWER RECONSTRUCTION PROJECT, KAILUA, OAHU

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the proposed sewer project.

We have the following comments to offer:

1. The location of existing Board of Water Supply (BWS) waterlines should be indicated on the construction plans to insure the protection and integrity of our water system.

2. The construction plans should be submitted for our review.

3. If water is required during construction, all connections to the BWS system will require BWS approved reduced pressure principle backflow prevention assemblies.

If there are any questions, please contact Barry Usagawa at 527-5235.

cc: Jan Naoe Sullivan, Department of Planning and Permitting
Howard Endo, Shimabukuro, Endo and Yoshizaki

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) 523-4587

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-446

June 25, 1999

MEMORANDUM

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

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 15, 1999 providing comments on the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

Our design consultant will be directed to indicate the location of existing Board of Water Supply (BWS) waterlines on the construction plans to ensure the protection of BWS water system and to submit the construction plans for BWS review. If water is required during construction, the construction contractor will be required to make all connections to the BWS system with BWS approved reduced pressure principle backflow prevention assemblies.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 10TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4182 • FAX: (808) 523-4054

JEREMY HARRIS
MAYOR

WILLIAM D. BALFOUR, JR.
DIRECTOR

MICHAEL D. AHN
DEPUTY DIRECTOR

June 18, 1999

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

ATTENTION: CARL ARAKAKI

FROM: WILLIAM D. BALFOUR, JR., DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
KAILUA, OAHU, HAWAII, TMK: 4-3-75, 76, 78, 79 AND 80

We have reviewed the above-referenced document and find that the project will not have any affect on our recreation programs or facilities in the project area.

Thank you for the opportunity to review the draft EA.

Should you need further information, please contact Mr. Wilfred Ho, Windward Oahu District Manager, at 233-7300.

W. D. Balfour Jr.

WILLIAM D. BALFOUR, JR.
Director

WDB:cu
(99-123GT)

cc: Department of Planning and Permitting
✓ Mr. Howard K. Endo

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-445

June 25, 1999

MEMORANDUM

TO: MR. WILLIAM D. BALFOUR, JR., DIRECTOR
DEPARTMENT OF PARKS AND RECREATION

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your memorandum of June 18, 1999 indicating that you have reviewed the subject Draft Environmental Assessment and find that the project will not have any affect on your recreational programs or facilities in the project area. Your comment will be incorporated into the Final Environmental Assessment.

If you have any questions, please contact Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1375 KAPIOLANI STREET SUITE 412
HONOLULU HAWAII 96814-1699

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

May 25, 1999

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

FROM: JOHN CLARK, ACTING FIRE CHIEF

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
KAILUA, OAHU, HAWAII
TMK: 4-3-75, 76, 78, 79 AND 80
HFD INTERNAL NO. OL 99-099

We received your memorandum dated May 19, 1999, regarding the subject project's Draft Environmental Assessment. We do not foresee any significant environmental impact because of this project. The traffic plan for this project should be coordinated by the Department of Transportation Services personnel

Should you have any questions, please call Battalion Chief Charles Wassman of our Fire Prevention Bureau at 831-7778.

JOHN CLARK
Acting Fire Chief

JC/CW:bh

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 2ND FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4384 • FAX: (808) 523-4567

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-492

July 12, 1999

MEMORANDUM

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

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of May 25, 1999 providing comments on the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

Our design consultant will be directed to coordinate the traffic plan for the project with the Department of Transportation Services.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

RECEIVED
'99 JUN -7 A8:48
DESIGN & CONSTRUCTION
DIVISION OF
OFFICE OF THE SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

June 1, 1999

Mr. Randall K. Fujiki, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

ATTN: Carl Arakaki

Dear Mr. Fujiki:

Subject: Kainui Drive Trunk Sewer Reconstruction Draft EA

The Department of Education has no additional comments to add to its response dated December 28, 1998, which is contained in Appendix D of the subject draft environmental assessment.

Thank you for the opportunity to respond.

Very truly yours,

Paul G. LeMahieu, Ph.D.
Superintendent of Education

PLeM:hy

cc: A. Suga, OBS
G. Gill, OEQC
H. Endo, Shimabukuro, Endo & Yoshizaki, Inc.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

DC 99-514

PAUL G. LeMAHIEU Ph.D.
SUPERINTENDENT

RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU
99 JUN -7 AM 8:22

JEREMY HARRIS
MAYOR

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-486

July 12, 1999

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

Dear Dr. LeMehieu:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 1, 1999 indicating that the Department of Education has no additional comments to add to its response dated December 28, 1998, which is contained in Appendix D of the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

JUN 10 '99 12:14PM OCEANIC CABLEVISION 8066255888 P.1 1

Oceanic

Engineering and Design Department
200 Akamainui St.
Mililani, Hawaii 96789
(808) 625 – 2100
FAX (808) 625 – 5888

TO: CARL ARAKAKI

OFFICE# 523-4671

FAX# 523-4642

FROM: *LEONA L. PORTER*

OFFICE# 625-8457 E-mail : leonap@oceanic.com

DATE: June 10, 1999

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION

Number of pages including cover sheet: 1

Comments: THANKS FOR SENDING US INFORMATION OF YOUR TRENCH WORK.

OUR MAPS SHOW OUR DISTRIBUTION CABLE IS ALL ON THE UTILITY POLES ALL ALONG KAINUI RD.

YOUR PROJECT SHOULD NOT INTERFERE WITH THE POLES AND THE OVERHEAD CABLES. THERE WILL BE NO NEED TO SEND US ANY OTHER CORRESPONDENCE. MAHALO,

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) 523-4567

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-487

July 12, 1999

Ms. Leona L. Porter
Engineering and Design Department
Oceanic Cable
200 Akamainui Street
Mililani, Hawaii 96789

Dear Ms. Porter:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your E-mail of June 10, 1999 indicating that your maps show Oceanic distribution cables are all on utility poles on Kainui Drive and the proposed project should not interfere with the poles and overhead cables. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT, HONOLULU
FT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

June 15, 1999

Regulatory Branch

DESIGN & CONSTRUCTION
DIV OF
DESIGN

99 JUN 18 AM 7:58 RECEIVED
DESIGN & CONSTRUCTION
CIVISION OF
PLANNING & PROGRAMMING

RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU
99 JUN 18 AM 10:15

Mr. Randall K. Fujiki
Director
Department of Design & Construction
City and County of Honolulu
650 South king Street, 2nd Floor
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

This responds to your letter requesting review comments on the Draft Environmental Assessment (DEA) for the Kainui Drive Trunk Sewer Reconstruction, Kailua, Oahu, Hawaii.

Based on the information provided in the DEA, I have determined that the project will not require a Department of the Army permit. However, I recommend that best management practices be employed during construction to prevent potential discharges from entering waters of the U.S.

If you have any questions regarding this determination, please contact Mr. Peter Galloway of my staff at 438-9258, extension 15, and refer to File No. 990000337.

Sincerely,

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

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-488

July 12, 1999

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

Dear Mr. Young:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 15, 1999 providing comments on the subject document. Your comment as well as this response will be incorporated into the Final Environmental Assessment.

You have determined that a Department of Army permit is not required for the project. Pursuant to your recommendation, the design consultant will be directed to include in the construction documents the requirement that best management practices be employed during construction to prevent potential discharges from entering waters of the U.S.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

RECEIVED

'99 JUN 28 P3:19

DESIGN & CONSTRUCTION
DIVISION OF
PLANNING & PROGRAMMING

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

June 23, 1999

DC 99-561

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to
File

98-251A/epo

RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU
99 JUN 28 PM 12:37

Mr. Randall K. Fujiki, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 9th Floor
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: Draft Environmental Assessment
Kainui Drive Trunk Sewer Reconstruction
Kailua, Oahu
TMK: 4-3-75, 76, 78-80

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer at this time.

Sincerely,

GARY GILL
Deputy Director for
Environmental Health

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-490

July 12, 1999

Mr. Gary Gill
Deputy Director for Environmental Health
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Gill:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 23, 1999 indicating you have reviewed the subject document and have no comments to offer at this time. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

JUN 22 1999

In Reply Refer To: AAP

Mr. Randall K. Fujiki
Department of Design and Construction
City and County of Honolulu
650 S. King Street, 2nd floor
Honolulu, Hawaii 96813

99 JUN 23 PM 12:29
RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU

Re: May 1999 Draft Environmental Assessment for Kainui Drive Trunk Sewer Reconstruction, Kailua, Oahu, Hawaii

Dear Mr. Fujiki:

The U.S. Fish and Wildlife Service (Service) has reviewed the draft Environmental Assessment (EA) for the above referenced project. The project sponsor, the City and County of Honolulu Department of Design and Construction, proposes to reconstruct 3,350 lineal feet of an existing 48-inch trunk sewer along Kainui Drive. The rehabilitated sewer line will connect downstream to an existing 36-inch rehabilitated sewer at Sewer Man Hole (SMH) 0100 and upstream to an existing 48-inch sewer at SMH 1000. The Service offers the following comments for your consideration.

The document adequately describes the major fish and wildlife species and habitats existing at the proposed project site and adequately evaluates the potential impacts to those resources anticipated to result from the proposed project. The affected site occurs in an urban residential setting and lacks wetlands, freshwater streams, or federally listed species. Degradation of water quality will be minimized through project compliance with the City and County's grading ordinance and requirements of the Department of Health's National Pollutant Discharge Elimination System General Permit. No significant, project-related adverse impacts to fish and wildlife resources are expected to result from reconstruction of the Kainui Drive trunk sewer line. Therefore, the Service would concur with a Finding of No Significant Impact (FONSI) for the proposed project.

We appreciate the opportunity to comment on the proposed project. If you have questions or comments, please contact Fish and Wildlife Biologist Arlene Pangelinan by telephone at (808) 541-3441 or by facsimile transmission at (808) 541-3470.

Sincerely,

Robert P. Smith
Pacific Islands Manager

cc: DAR, Honolulu
CWB, Honolulu

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-489

July 12, 1999

Mr. Robert P. Smith
Pacific Islands Manager
Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-112
Honolulu, Hawaii 96813

Dear Mr. Smith:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 22, 1999 concurring with a Finding of No Significant Impact for the proposed project. Your comment as well as this response will be incorporated into the Final Environmental Assessment.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4414 • FAX (808) 527-6743

JEREMY HARRIS
MAYOR

JAN NAOE SULLIVAN
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

June 30, 1999

1999/CLOG-3327(DT)
'99 EA Comments Zone 4

MEMORANDUM

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

ATTN: MR. CARL ARAKAKI

FROM: JAN NAOE SULLIVAN, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR
KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
TAX MAP KEYS: 4-3-75, 76, 77, 78, 79 AND 80

We have reviewed the above Draft EA and have the following comments:

1. Construction and traffic control plans, as required for all work within the City's right-of-way, should be submitted to our Traffic Review Branch for review and approval. The traffic control plans should include incremental work for specific segments of the roadway during the various phases of construction.

2. Construction work which may need to occur outside of the normal working hours, should be coordinated with the City prior to submittal of construction plans.

3. As stated in our memo to your department dated September 17, 1998, the project is exempt from the requirements of Chapter 25, Revised Ordinances of Honolulu (Special Management Area).

Should you have any questions, please call Ms. Dana Teramoto of our Coastal Lands Branch at Extension 4648.

JAN NAOE SULLIVAN
Director of Planning
and Permitting

JNS:am

cc: Howard Endo, Shimabukuro, Endo & Yoshizaki, Inc.

posse doc no. 5429

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-485

July 9, 1999

MEMORANDUM

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

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of June 30, 1999 providing comments on the subject document. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

Our design consultant will be directed to submit construction and traffic control plans as required for all work within the City's right-of-way to your Traffic Review Branch for review and approval. The traffic control plans shall include incremental work for specific segments of the roadway during the various phases of construction. Construction work which may be needed outside of the normal working hours will be coordinated with the City prior to submittal of construction plans. The determination that the project is exempt from the requirements of Chapter 25, Revised Ordinances of Honolulu (Special Management Area) was summarized in Section IIIA of the DEA.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

'99 JUL -6 P1 :2

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HAWAII 96809

DESIGN
DIV.

RECEIVED
'99 JUL -7 P1:28

CONSTRUCTION
PLANNING

JUL 2 1999

AQUACULTURE DEVELOPMENT PROGRAM
WATER RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

99 JUL -6 PM 1:00
RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU

Ref:PS:EH

Mr. Randall K. Fujiki, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 2nd Floor
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: Kainui Drive Trunk Sewer Reconstruction
Draft Environmental Assessment (DEA)

We have reviewed the subject DEA and have no comments to offer regarding the matter.

Thank you for the opportunity to review the DEA document.

Very truly yours,

TIMOTHY E. JOHNS
Chairperson

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-491

July 12, 1999

Mr. Timothy E. Johns, Chairperson
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Johns:

Subject: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of July 2, 1999 indicating you have reviewed the subject document and have no comments to offer at this time. Your comments as well as this response will be incorporated into the Final Environmental Assessment.

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

Very truly yours,

RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA • 711 KAPOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
PHONE: (808) 523-4529 • FAX: (808) 523-4730

JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

July 13, 1999

TPDS/99-02461R

SHIMABUKURO, ENDO & YOSHIZAKI, INC.
RECEIVED
JUL 15 1999
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

MEMORANDUM

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

ATTN: CARL ARAKAKI

FROM: CHERYL D. SOON, DIRECTOR

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION

In response to your May 19, 1999 memorandum, the draft environmental assessment for the subject project was reviewed. The following comments are the result of this review:

1. Should a 24-hour lane closure be required (specifically on Kainui Drive), a traffic impact study should be conducted that addresses the project's impact on the surrounding roadway network. The additional traffic impact due to the Kalaheo Avenue Sewer project should also be addressed by this study. Traffic control plans (TCPs) should be developed based on the findings of the traffic impact study. Night time traffic visibility concerns should be addressed in the TCPs.

2. The second paragraph of Section L. Traffic (Page III-16) states that it may not be possible to provide vehicular access to Kainalu Elementary School and Kaiholu Street from the mauka bound lane of Kainui Drive during the inversion work. If this is the case, the contractor should closely coordinate with the school and area residents so that parents and other users can plan their travel routes accordingly.

3. The area neighborhood board, area residents, and the emergency services (fire, ambulance and police) should be notified prior to the implementation of any detours or street closures. We also ask that this department be notified so that we can then alert Oahu Transit Services of the construction activity.

4. The first complete paragraph on Page III-17 states that the contractor will be permitted to modify the TCP to suit the selected method of rehabilitation and that the modification shall be approved prior to commencement of construction. Due to the complexity of this project, the contractor should engage a consultant qualified to prepare TCPs, preferably a licensed civil engineer, thereby facilitating and expediting the City's review/approval of the TCPs. Subsequent revisions to approved TCPs should likewise be prepared by qualified individuals.

5. The first complete paragraph on Page III-19 states that police officers and/or flagmen will be provided for traffic control. It should be noted that only police officers can control/direct traffic at intersections. Flagmen only use hand-signaling devices (STOP/SLOW signs or flags) to control traffic through temporary traffic control zones.

6. To minimize complaints, each day's work zone(s) needs to be limited in scope to the extent it can be completed or viewed by the public as being worked on.

7. The contractor should designate a phone number that is to be used to report project traffic concerns. This would allow the contractor to address these concerns with minimal City staff intervention.

8. The listing of approvals and permits required on Page VII-1 should be corrected to state that the Street Usage Permit is issued by "City DTS", not "City DPP".

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

Cheryl D. Soon
CHERYL D. SOON

cc: Jan Naoe Sullivan, Department of Planning and Permitting
✓ Mr. Howard K. Endo, Shimabukuro, Endo & Yoshizaki, Inc.

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

RANDALL K. FUJIKI, AIA
DIRECTOR

ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

DCP 99-554

July 29, 1999

MEMORANDUM

TO: CHERYL D. SOON, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES (DTS)

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

SUBJECT: KAINUI DRIVE TRUNK SEWER RECONSTRUCTION
DRAFT ENVIRONMENTAL ASSESSMENT
TMK: 4-3-75, 76, 78, 79 AND 80

Thank you for your letter of July 13, 1999 providing comments on the subject document. Your letter was received after the 30 day comment period which ended on June 22, 1999. However, your comments as well as this response will be incorporated into the Final Environmental Assessment (FEA).

The following responses have been prepared to your comments:

1. A review of CIPP construction methods indicates that the project can be completed with procedures not requiring a 24-hour lane closure (specifically on Kainui Drive). Thus, a traffic impact study should not be required. To minimize disruptions to traffic flow, the design consultant will be directed to include in the construction documents traffic control plans (TCP) approved by the DPP Traffic Review Branch and DTS.

2. Since it may not be possible to provide vehicular access to Kainalu Elementary School and Kaiholu Street from the mauka bound lane of Kainui Drive during the CIPP inversion work, the design consultant will be directed to include in the construction documents the requirement that the contractor shall closely coordinate inversion work with the Kainalu Elementary School administration and area residents so that parents and other users can plan their travel routes accordingly.

3. The design consultant will be directed to include in the construction documents the requirement that the Kailua Neighborhood Board, area residents, and the emergency services (fire, ambulance and police) shall be notified by the contractor prior to the implementation of any detours or street closures. The contractor shall also be required to notify DTS so that Oahu Transit Services can be alerted of the construction activity.

4. The contractor will be permitted to modify the TCP prepared during the design phase to suit his selected method of rehabilitation and the modification shall be approved prior to commencement of construction. Due to the complexity of this project, the design consultant will be directed to engage a licensed civil engineer to prepare the TCP, thereby facilitating and expediting the City's review/approval of the TCP. The construction documents will include the requirement that subsequent revisions to the approved TCP by the contractor shall likewise be prepared by a licensed civil engineer.

5. Police officers and/or flagmen will be provided for traffic control. The design consultant will be directed to include in the construction documents a note that only police officers will control/direct traffic at intersections. Flagmen using hand-signaling devices (STOP/SLOW signs or flags) will be used only to control traffic through temporary traffic control zones.

6. The design consultant will be directed to include in the construction documents the requirement that to minimize complaints, each day's work zone(s) shall be limited in scope to the extent it can be completed or viewed by the public as being worked on.

7. The design consultant will be directed to include in the construction documents the requirement that the contractor shall designate a contractor's phone number that is to be called to report project traffic concerns to allow the contractor to address these concerns with minimal City staff intervention.

8. The listing of Approvals and Permits required for the project will be corrected in the FEA to state that the Street Usage Permit is issued by "City DTS," not "City DPP."

If you have further comments or concerns, please call Mr. Carl Arakaki at 523-4671. Thank you for participating in the environmental review process.

FOR RANDALL K. FUJIKI
Director

cc: OEQC
Shimabukuro, Endo & Yoshizaki, Inc.