

**2000 FEIS HAWAII
PUAINAKO STREET ~~EXPANSION~~ EXPANSION J
WIDENING 2 OF 2**

APR 23 2000
FILE COPY

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

TECHNICAL APPENDICES

Hawaii County Department of Public Works
Hawaii State Department of Transportation
Federal Highway Administration, Hawaii Division

April 2000

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Note: With the exception of Appendix A1, which has been included for continuity, only those appendices that present new, supplementary, or revised information are included in the Final EIS. Appendices that were not revised subsequent to the Draft EIS are not included. Readers interested in unrevised appendices may consult the Draft EIS. The following is a list of appendices not included in the Final EIS:

Appendix C:	Vertebrate Fauna Report
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Appendix E1:	Archaeological Inventory Survey, Hunt and McDermott 1993
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Appendix G:	Traffic Report
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**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A1 (4 parts)

Comments by Agencies, Organizations, and Individuals Pre- Draft EIS

INDEX TO CORRESPONDENCE

Correspondence relating to the Project is arranged by major topic, under which individual items are arranged chronologically. A reference number is assigned to each item to assist the reader in locating documents. Abbreviations are footnoted.

Notice of Intent to Prepare the EIS (NOI), Published in the Federal Register Thursday, January 12 1995

Section 404, Wetlands

R.H. Jyo (US-COE¹) to M.N. Nishida (O. & A.²) 8/22/95
D. Kiyosaki (DPW³) to LTC R.H. Graves (US-COE) 7/23/96
R.C. Hargrave (US-COE) to D. Kiyosaki (DPW) 8/5/96
R.C. Hargrave (US-COE) to D. Kiyosaki (DPW) 9/10/96
D. Kiyosaki (DPW) to Chief of Operations, US-COE 3/31/97
M.H. Bartholomew (EPA⁴) to R.M. Suzuki (USDOT⁵) 6/11/98
J.J. Naughton (NOAA⁶) to R.M. Suzuki (USDOT)

K. Hayashida (HDOT⁷) to A.Y. Wong (USDOT) 6/17/98
G.P. Young (US-COE) to R.M. Suzuki (USDOT) 6/18/98

W. Wiltse (EPA) to R.M. Suzuki (USDOT) 6/19/98

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Concur with NEPA Purpose and Need, etc.:
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Section 7, Endangered Species

D. Kiyosaki (DPW) to B. Harper (USFWS⁸) 3/11/96
D. Kiyosaki (DPW) to M.G. Buck (DPW) 3/11/96
B. Harper (USFWS) to D. Kiyosaki (DPW) 6/10/96
D. Kiyosaki (DPW) to B. Harper (USFWS) 8/2/06
B. Harper (USFWS) to D. Kiyosaki (DPW) 12/15/97

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Endangered Fauna, But May Affect Fauna in
Kaumana Cave

Section 106 and Section 4(f)

Section 106

D. Hibbard (DLNR-SHPD⁹) to B. Choy
(Office of Environmental Quality Control) 3/11/93

D. Hibbard (DLNR-SHPD) to D. Kiyosaki (DPW) 9/23/93

Comments on Inventory Survey Report
Contained in 1993 DEIS
Unable to Complete Review of

¹ U.S. Army Corps of Engineers

² Okahara and Associates

³ County of Hawaii Department of Public Works

⁴ U.S. Environmental Protection Agency

⁵ U.S. Department of Transportation

⁶ U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration

⁷ Hawaii State Department of Transportation

⁸ U.S. Fish and Wildlife Service

⁹ Hawaii State Department of Land and Natural Resources - State Historic Preservation Division

D. Hibbard (DLNR-SHPD) to M. Larish (HHAC¹) 1/20/94
D. Hibbard (DLNR-SHPD) to D. Kiyosaki (DPW) 5/20/94
D. Hibbard (DLNR-SHPD) to D. Kiyosaki (DPW) 7/20/94
R. Smith (DPW) to D. Hibbard (DLNR-SHPD) 1/5/95

A: D. Wilson (DLNR) to M. Nishida (O & A) 9/22/95

D. Kiyosaki (DPW) to P. Burns (HHAC) 12/19/95

J. Robbins (SCS) to P. McCoy (DLNR-SHPD) 1/25/96

D. Hibbard (DLNR-SHPD) to R. Spear (SCS) 2/28/96

D. Hibbard (DLNR-SHPD) to J. Robbins (SCS) 3/22/96

S. Lee (DLNR-DLM²) to P. Burns (HHAC) 7/3/96

S. Lee (DLNR-DLM) to County of Hawaii
Historic Preservation Division, DPW 7/3/96

D. Kiyosaki (DPW) to S. Lee (DLNR-DLM) 7/11/96

D. Hibbard (DLNR-SHPD) to D. Kiyosaki (DPW) 7/15/96

D. Kiyosaki (DPW) to D. Hibbard (DLNR-SHPD) 7/8/98

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D. Kiyosaki (DPW) to G. Yoshida (DPR) 6/23/98

D. Kiyosaki (DPW) 6/23/98 to C.E. Unoki (DLNR-DLM) 6/23/98

G. Yoshida (DPR³) to D. Kiyosaki (DPW) 6/26/98

C.E. Unoki (DLNR-DLM) to D. Kiyosaki (DPW) 3/7/98

Comments in Response to EISPN and NOI: Other Correspondence

M. Wilson (DLNR) to M.N. Nishida (O & A) 10/5/95

J. Harrigan-Lum (HDOH⁴) to "Those Persons Requesting
Comments on Land Use Documents 12/14/94
Who May be Contacted for Comment

G. Gill (OEQC⁵) to D. Kiyosaki (DPW) 8/7/95

S. Nakamura (USDA)⁶ to D. Kiyosaki (DPW) 8/8/95

D. Kiyosaki (DPW) to "Resident" 8/15/95

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Concerning Oral History Information

Review of 1993 Inventory Survey

Review of Revised 1993 Inventory Survey

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Comments on Revised 1996 Inventory Survey

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Comments on Revisions to 1996 Inventory

Survey

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Request for information concerning

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Kaumana Cave Park Site

No Section 4(f) Impacts to State Lands

¹ Ho'oiikaika Hawaiian Awareness Club

² Department of Land and Natural Resources-Division of Land Management

³ County of Hawaii Department of Parks and Recreation

⁴ State of Hawaii Department of Health

⁵ Office of Environmental Quality Control

⁶ United States Department of Agriculture

W.G. Carvahlo (Hawaii County Police Department)
to Ron Terry (Geometrician) 8/15/95

H.M. Aizawa (DOE)¹ to M. Nishida (O & A) 8/29/95

W.G. Carvahlo (Hawaii County Police Department)
to M. Nishida (O & A) 8/29/95

D. Kiyosaki (DPW) to J. Iwata (HDOT) 8/29/95

L. Miike (HDOH) to M. Nishida (O & A) 9/12/95

M. Nishida (O & A) to M. Larish (HHAC) 9/20/95

P.M. Hamamoto (HDOT) to

Ron Terry (Geometrician) 9/20/95

V. Golustein (HCPD)² to M. Nishida (O & A) 10/22/95

M. Wilson (DLNR) to M. Nishida (O & A) 9/22/95

M. Wilson (DLNR) to M. Nishida (O & A) 10/5/95

J. Jenner (DOE) to W. Moore (O & A) 2/24/96

Response to Request for Traffic Accident
Information

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Response to EISPN

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Comments on EISPN

Response to Comments on EISPN

Response to Request for Traffic Accident

Comments on Revised Preparation Notice

Comments on EISPN

Additional Comments on EISPN

Thank-you letter for talking to parents at
Waiakea Elementary School

¹ State of Hawaii Department of Education

² Hawaii County Planning Department

application in person at the Blue Grass Airport.

Issued in Memphis, Tennessee, on January 5, 1995.

Peggy S. Kelley,

Manager, Airports District Office, Southern Region

[FR Doc. 95-698 Filed 1-11-95; 8:45 am]
BILLING CODE 4910-13-M

Federal Highway Administration

Environmental Impact Statement: Hawaii County, HI

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project in Hawaii County, Hawaii.

FOR FURTHER INFORMATION CONTACT: Michael A. Cook, Division Administrator, Federal Highway Administration, Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850. Telephone: (808) 541-2700.

SUPPLEMENTARY INFORMATION: The FHWA in cooperation with the Hawaii Department of Transportation and the County of Hawaii Department of Public Works will prepare an environmental impact statement (EIS) for a proposed widening and extension of a portion of Hawaii State Highway 2000, Puainako Street. The proposed project will provide a highway connection between the Saddle Road (State Highway 200) and State Highway 11. The project entails (1) realignment and widening of the existing Puainako Street from 2 to 4 lanes; and (2) construction of a 2-lane (future 4-lane), 4.6-mile extension of Puainako Street from Komohana Street, in a westerly direction, to Country Club Road in Kaunana.

The purpose of this project is to improve arterial traffic flow of the State Highway System by providing a direct link between the existing Puainako Street (Highway 2000) and the Saddle Road (Highway 200) and to alleviate congested and unsafe traffic conditions on Kaunana Drive. Alternatives being evaluated, include the "no project" alternative and two alternative alignments.

Notice describing the proposed action and soliciting comments will be sent to appropriate Federal, State and local agencies and to private organizations and citizens who have expressed interest in this project. Interagency scoping meetings will be held as required.

To ensure that the full range of issues relating to the proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments and questions concerning the proposed action should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205 Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Michael A. Cook,

Division Administrator, Honolulu, Hawaii.

[FR Doc. 95-786 Filed 1-11-95; 8:45 am]
BILLING CODE 4910-22-M

Environmental Impact Statement: Williamson and Travis Counties, Texas

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an Environmental Impact Statement will be prepared for a proposed new location highway project in Williamson and Travis Counties, Texas.

FOR FURTHER INFORMATION CONTACT: John Mack, P.E., Federal Highway Administration, Room 850, Federal Building, 300 East 8th Street, Austin, Texas 78701. Sharon Barta, P.E., Advanced Project Development Engineer, Texas Department of Transportation, P.O. Box 15426, Austin, Texas 78761-5426.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Texas Department of Transportation (TxDOT), will prepare an Environmental Impact Statement (EIS) on a proposal to construct the northern segment of State Highway 130, an approximately 138.4 kilometer (86 mile) controlled access highway to be located parallel to and east of Interstate 35 and the urbanized areas Austin, San Marcos, and New Braunfels in Central Texas. The northern segment (Segment A) of the proposed State Highway 130 extends from the junction of Interstate 35 and State Highway 195 north of Georgetown in Williamson County, Texas, to U.S. Highway 200 east of Austin in Travis County, Texas. The length of the project varies, depending on the selected alternative, from approximately 43.5 kilometers (27.0 miles) to 45.9 kilometers (28.5 miles). The proposed action is intended to provide improved access and increased mobility to

urbanized areas in the proposed corridor; help support planned business and residential growth in various areas throughout the project corridor; provide needed freeway access from surrounding areas to the proposed Austin Bergstrom International Airport; provide an alternative route to drivers desiring to bypass the central business areas of Austin, Round Rock, Georgetown, San Marcos, and New Braunfels, thereby relieving existing congestion on Interstate 35.

Alternatives to the proposed action to be discussed in the EIS consist of (1) taking no action; and (2) improving existing roadways in the urbanized areas of Williamson and Travis Counties. The build alternatives include multiple alternative alignments along new location rights-of-way connecting Interstate 35 to U.S. Highway 290.

Impacts caused by the construction and operation of State Highway 130 will vary according to the alternative alignments utilized. Generally, impacts would include the following: Transportation impacts (construction detours, construction traffic, and mobility improvement); air and noise impacts from construction equipment and operation of the roadway; water quality impacts from construction areas and roadway stormwater runoff; impacts to waters of the United States including wetlands from right-of-way encroachment; and impacts to residents and businesses due to potential relocations.

Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State, and local agencies, and to private organizations and citizens who have previously expressed interest in the proposal. A Major Investment Study is being completed in compliance with the Intermodal Surface Transportation Efficiency Act. Public meetings were held on October 25, 1994, at Everett Williams Elementary School in Georgetown, Texas, and on October 27, 1994, at Manor High School in Manor, Texas, at which public comments on the proposed action and alternatives were requested. In addition, a public hearing will be held after publication of the Draft EIS. Public notice will be given of the time and place of the hearing. The Draft EIS will be available for public and agency review and comment prior to the public hearing.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be

CORRECTION

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

RECEIVED AS FOLLOWS

application in person at the Blue Grass Airport.

Issued in Memphis, Tennessee on January 5, 1995.

Peggy S. Kelley,

Manager, Airports District Office, Southern Region

[FR Doc. 95-698 Filed 1-11-95; 8:45 am]

BILLING CODE 4910-13-M

Federal Highway Administration

**Environmental Impact Statement:
Hawaii County, HI**

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project in Hawaii County, Hawaii.

FOR FURTHER INFORMATION CONTACT: Michael A. Cook, Division Administrator, Federal Highway Administration, Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850. Telephone: (808) 541-2700.

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(Catalog of Federal Domestic Assistance Program Number 20.205 Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Michael A. Cook,

Division Administrator, Honolulu, Hawaii.

[FR Doc. 95-786 Filed 1-11-95; 8:45 am]

BILLING CODE 4910-22-M

**Environmental Impact Statement:
Williamson and Travis Counties, Texas**

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

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**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A1

Comments by Agencies, Organizations, and Individuals Pre- Draft EIS

Part 1: Section 404, Wetlands Correspondence



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



REPLY TO
ATTENTION OF

August 22, 1995

Planning Division

Mr. Masahiro Nishida, P.E.
Okahara and Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

Dear Mr. Nishida:

Thank you for the opportunity to review and comment on the Environmental Impact Statement and Revised Preparation Notice (EISRPN) for the Puainako Street Widening and Extension Project, Hawaii. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Based on the information presented in the EISRPN dated August 3, 1995, a site visit, and additional information obtained from Grant Gerrish (subconsultant to Okahara & Associates), we have determined that waters of the U.S. will be impacted by either of the proposed alternative routes; therefore, a DA permit will be required. Please contact Ms. Kathy Dadey of our Regulatory Branch at (808) 438-9258 for further information and refer to file number P095-132.

b. The flood hazard information presented on page 16 of the EISRPN is correct.

Sincerely,

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

Stephen K. Yamashiro
Mayor

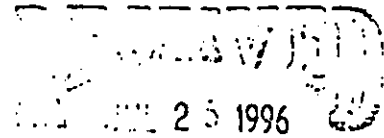


Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 969-7138

July 23, 1996



OKAHARA & ASSOC., INC.
940 1000

LTC RALPH H GRAVES DISTRICT ENGINEER
US ARMY CORPS OF ENGINEERS HONOLULU DISTRICT
BUILDING 230
FORT SHAFTER HI 96858

ATTN: KATHLEEN DADEY OPERATIONS DIVISION

SUBJECT: APPLICATION FOR DEPARTMENT OF ARMY PERMIT FOR PUAINAKO STREET
EXTENSION AND WIDENING PROJECT HILO HAWAII

The County of Hawaii, Department of Public Works requests the issuance of an Army Permit as prescribed by Section 404 of the Clean Water Act for the above project.

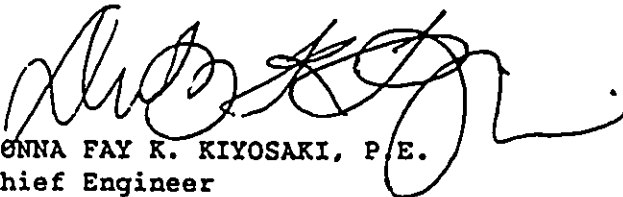
An application information dossier has been prepared by our consultant, Okahara and Associates, Hilo. This dossier has been submitted under separate cover directly to Kathleen Dadey, Environmental Engineer, Operation Division.

Our points of contact are:

County of Hawaii, Department of Public Works:
Donna Fay K. Kiyosaki, P.E., Chief Engineer
25 Aupuni Street, Hilo, Hawaii 96720
(808) 961-8321

Okahara and Associates:
Masahiro Nishida, P.E., Engineering
200 Kohola Street, Hilo, Hawaii 96720
(808) 961-5527

Grant Gerrish, Wetlands Consultant
Box 282, Laupahoehoe, Hawaii 96764
(808) 962-6957


DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

RY:mlm

cc: ~~Okahara & Associates, Inc.~~

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AUG-06-96 TUE 09:26

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

REPLY TO
ATTENTION OF

August 5, 1996

Operations Branch

Ms. Donna F. Kiyosaki
Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

This is to inform you that we received your July 23, 1996 request for authorization to discharge dredged or fill material into waters of the United States in Hilo, County and State of Hawaii and have determined that your application is complete.

We are currently processing the application and propose to authorize the work under the Corps Nationwide permit (NWP) authority at 33 CFR 230 Appendix A, Paragraph B.26 (NWP # 26, Headwaters and Isolated Waters Discharges).

File Number 9500100132 has been assigned to this project. Please refer to this number in any future correspondence. If you have further questions regarding this matter, feel free to call Kathleen Dadey of my staff at 438-9258, extension 15.

Sincerely,

Rosemary C. Hargrave
Rosemary C. Hargrave
Acting Chief, Operations Branch

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages 1

To BILL MOORE	From R. HARGRAVE
Dept/Agency 9340162	Phone # 438-0030
Fax # 961-5529	Fax # 438-4060

NSN 7340-01-317-740

8/6/96
TO: NEB

FK: R. HARGRAVE

329-1006

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REPLY TO
ATTENTION OF

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

September 10, 1996

SEP 2 1996

COMMUNICATIONS INC.

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Operations Branch

Ms. Donna F. Kiyosaki
Chief Engineer
Department of Public Works
25 Aupuni Street
Hilo, HI 96720

Dear Ms. Kiyosaki:

This is in response to your application for a Department of the Army (DA) permit for discharge of dredged or fill material associated with widening and extending Puainako Street, Hilo, County and State of Hawaii.

Based on the information you provided, we have determined that roadway Alignment 1, as well as either Alignment A or B, can be authorized by the Corps Nationwide permit (NWP) authority at 33 CFR 230 Appendix A, Paragraph B.26 (NWP #26, Headwater and Isolated Water Discharges) and no further Department of the Army processing is necessary. In accordance with the Environmental Protection Agency's Section 404(b)(1) Guidelines at 40 CFR 230, a preliminary alternatives analysis indicates that Alignment 2 may not be authorized under Section 404 of the Clean Water Act because a practicable alternative (i.e., Alignment 1) exists that appears to have less adverse impacts on the aquatic ecosystem, without having other significant adverse environmental consequences.

The DA permit will be valid only after you obtain a Section 401 Water Quality Certification, or waiver thereof, from the State Department of Health and a Coastal Zone Management Federal Consistency Determination, or waiver, from the Office of State Planning. Until these approvals, or waivers, are received, we are issuing you a "Provisional Nationwide Permit" for the proposed work.

If the state issues the certifications or waivers, this authorization will take effect from the latter issuance date and will remain valid until the nationwide permit is modified, reissued, or revoked. All of the nationwide permits are scheduled to be modified, reissued or revoked prior to January 21, 1997. At that time, you are responsible for consulting with this office to confirm that your project still complies with the specifications and conditions of NWP #26, including changes or revisions. Please note that if you commence, or are under contract to commence the proposed activity before the date that NWP #26 is modified or revoked, you will have 12 months from the date of the modification or revocation to complete the activity under the existing terms and conditions. If the state denies either approval for the proposed project, then this NWP will be denied without prejudice.

Attached are excerpts from the regulations which include the conditions of the NWPs for your information and compliance. In addition, we are adding the following special conditions:

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1. You must provide adequate drainage, through the use of culverts or other systems, in the stream channels and wetland areas.
2. Significant earth-moving activities must occur only during periods of no or low rainfall. You must make every effort to conduct construction activities during the "dry season" (May through September).
3. You shall conduct construction activities in a manner as to minimize and control erosion and sedimentation. You must install silt containment devices, as appropriate, and revegetate any exposed or excavated banks as soon as practicable.
4. Fill and other construction materials must be clean, uncontaminated and be free of deleterious substances, including toxic chemicals, debris, and fine-grained material.
5. You must take particular care to ensure that no petroleum products, trash or other debris enter the water.
6. No construction or excavated materials shall be stockpiled in the aquatic environment.
7. You must submit a written final compliance report to this office within two months of completion of the authorized project. The final report must include, as appropriate, description of the construction activities, discussion(s) of any deviations from the proposed project design and the cause of these deviations, results of environmental monitoring, discussion(s) of any necessary corrective action, and photographs documenting the progress of the permitted work.

File Number 950100132 has been assigned to this project. Please refer to this number in any correspondence with us. Feel free to contact Ms. Kathleen A. Dadey of my staff at (808) 438-9258, extension 15 if you have any questions.

Sincerely,


Rosemary C. Hargrave
Acting Chief, Operations Branch

Enclosures

Copy Furnished (w/o encl.):

U.S. Fish and Wildlife Service, Honolulu, HI
DBEDT, CZM Program Office, Honolulu, HI
Department of Health, Clean Water Branch, Honolulu, HI
State Department of Land and Natural Resources, Honolulu, HI
County of Hawaii Department of Public Works, Hilo, HI
Department of Planning, County of Hawaii, Hilo, HI
Okahara and Associates, Hilo, HI
Y.K. Hahn and Associates, Hilo, HI
Dr. Grant Gerrish, University of Hawaii at Hilo, Hilo, HI

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GENERAL CONDITIONS: The following general conditions must be followed in order for any authorization by a nationwide permit to be valid:

1. *Navigation.* No activity may cause more than a minimal adverse effect on navigation.
2. *Proper maintenance.* Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.
3. *Erosion and siltation controls.* Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date.
4. *Aquatic life movements.* No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to impound water.
5. *Equipment.* Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.
6. *Regional and case-by-case conditions.* The activity must comply with any regional conditions which may have been added by the division engineer and any case specific conditions added by the Corps.
7. *Wild and Scenic Rivers.* No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the National Park Service and the U.S. Forest Service.
8. *Tribal rights.* No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
9. *Water quality certification.* In certain states, an individual state water quality certification must be obtained or waived.
10. *Coastal zone management.* In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived.
11. *Endangered species.* No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or critical habitat

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might be affected or is in the vicinity of the project and shall not begin work on the activity until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

12. *Historic properties.* No activity which may affect Historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR 325, appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the listed, or eligible for listing, in the National Register of Historic Places by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places.

13. In issuing Nationwide permit authorizations, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future operations undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activities authorized by a Nationwide permit.
- d. Damage claims associated with any future modification, suspension, or revocation of this permit.

14. In addition, you are advised that:

- a. Nationwide permits do not obviate the need to obtain other Federal, State or local authorizations required by law.
- b. Nationwide permits do not grant any property rights or exclusive privileges.
- c. Nationwide permits do not authorize any injury to the property or rights of others.
- d. Nationwide permits do not authorize interference with any existing or proposed Federal project.

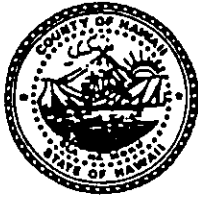
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Section 404 Clean Water Only Conditions

In addition to the General Conditions, the following conditions apply only to activities that involve the discharge of dredged or fill material and must be followed in order for authorization by the nationwide permits to be valid:

1. Water supply intakes. No discharge of dredged or fill material may occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.
2. Shellfish production. No discharge of dredged or fill material may occur in areas of concentrated shellfish production, unless the discharge is directly related to a shellfish harvesting activity authorized by Nationwide permit #4.
3. Suitable material. No discharge of dredged or fill material may consist of unsuitable material (e.g., trash, debris, car bodies, etc.) and material discharged must be free from toxic pollutants in toxic amounts.
4. Mitigation. Discharges of dredged or fill material into waters of the United States must be minimized or avoided to the maximum extent practicable at the project site (i.e., on-site), unless the District Engineer has approved a compensation mitigation plan for the specific regulated activity.
5. Spawning areas. Discharges in spawning seasons must be avoided to the maximum extent practicable.
6. Obstruction of high flows. To the maximum extent practicable, discharges must not permanently restrict or impede the passage of normal or expected high flows or cause the relocation of the water (unless the primary purpose of the fill is to impound waters).
7. Adverse impacts from impoundments. If the discharge creates an impoundment of water, adverse impacts on the aquatic system caused by the accelerated passage of water and/or the restriction of its flow shall be minimized to the maximum extent practicable.
8. Waterfowl breeding areas. Discharges into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.
9. Removal of temporary fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

March 31, 1997

CHIEF OF OPERATIONS
DEPARTMENT OF THE ARMY
US ARMY ENGINEER DISTRICT HONOLULU
OPERATIONS BRANCH
FT SHAFTER HAWAII 96858-5440


File Number: 950100132

SUBJECT: REQUEST REAUTHORIZATION LETTER OF NATIONWIDE PERMIT
(NWP) #26 FOR PUAINAKO STREET EXTENSION AND WIDENING
PROJECT, HILO, HAWAII

The Department of the Army authorized the above referenced construction at Puainako Street in your letter of September 10, 1996. In accordance with that letter, we are requesting that your office notify the County of Hawaii that our Provisional Permit has been reauthorized, following the reissuance of NWP #26 in January, 1997, and of any changes to the conditions of our permit.

Application procedures are under way or have been completed for Water Quality Certification and for Coastal Zone Management Consistency Determination. Construction is scheduled for fiscal 1998.

Please contact our environmental consultant, Grant Gerrish, at (808) 962-6622 if you have any questions.


DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

cc: ENG
Ron Terry
Grant Gerrish
Okahara & Associates, Inc.

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JUN-15-98 06:35 FROM: FED HIGHWAY

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PAGE 2/2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

June 11, 1998

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JUN 18 1998

HAWAII DIVISION

Richelle M. Suzuki
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Boulevard, Room 3202
Honolulu, Hawaii 96850

Dear Ms. Suzuki:

The Environmental Protection Agency has reviewed the information provided in your letter dated April 22, 1998, concerning the proposed Puainako Street Extension and Widening Project. Your letter requested our concurrence on the following items pursuant to the NEPA/404 Integration Process for Surface Transportation Projects in the State of Hawaii Memorandum of Understanding (MOU). In that letter your agency indicated that the preliminary preferred alternative would impact approximately 0.75 acres of wetlands which meets the eligibility criteria for a U.S. Army Corps of Engineers Nationwide 26 Permit under Section 404 of the Clean Water Act. The other alternative alignment to be evaluated in the DEIS would impact approximately 7.3 acres of wetlands, and would require an individual Corp permit under Section 404 of the Clean Water Act:

- NEPA purpose and need/404 basic and overall project purpose;
- Criteria for alternative selection;
- Project alternatives to be evaluated in the draft EIS; and
- Preliminary preferred alternative.

In conformance with the NEPA/404 MOU, we are pleased to concur with the information provided by the FHWA concerning the overall project purpose and need; criteria for alternative selection; the project alternatives to be evaluated within the DEIS; and designation of a preliminary preferred alternative for the Puainako Street Extension and Widening Project.

We appreciate your efforts in providing information in keeping with the NEPA/404 MOU. I look forward to reviewing the Draft Environmental Impact Statement/Report. Should you have any questions, please contact me at (415) 744-1522.

Sincerely,

A handwritten signature in black ink that reads "Mark H. Bartholomew".

Mark H. Bartholomew
Life Scientist

cc: ACOE (George Young)
FWS (Brooks Harper)
HDOT (Kazu Hayashida)

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JUN-15-98 08:35 FROM: FED HIGHWAY

ID: 808 541 2704

PAGE 1.2



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

RECEIVED
JUN 18 1998
HAWAII DIVISION

June 16, 1998

Richelle M. Suzuki
Transportation Engineer
U. S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd, Room 3202
Honolulu, Hawaii 96850

Dear Ms. Suzuki:

The National Marine Fisheries Service (NMFS) has reviewed the Draft EIS and Alternatives Analysis for the Puainako Street Extension and Widening Project, South Hilo, Hawaii. We offer the following comments for your consideration.

NMFS believes the proposed project will have a minimal impact on those resources under our jurisdiction. Therefore, at this time, we will not participate in the project evaluation under the Memorandum of Understanding (MOU) between our two agencies.

We appreciate the opportunity to review the proposed project. Should you have any questions, please contact me (973-2940) at our Pacific Islands Area Office in Honolulu.

Sincerely,

John J. Naughton
Pacific Islands Habitat Coordinator

*pls send a copy
to Bill I lost
his fax #.*

OPTIONAL FORM 90 (7-90)

FAX TRANSMITTAL

of pages = 2

To <i>RAN TORRY</i>	From <i>Richelle</i>
Dept/Agency	Phone # <i>973-2940</i>
Fax #	Fax # <i>541-2704</i>

NSN 7540-01-317-7368 5009-101 GENERAL SERVICES ADMINISTRATION



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10:00 341 2704

PAGE

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

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

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JUN 17 1998
HAWAII DIVISION

IN REPLY REFER TO:
HWY-PA
2.9655

JUN 17 1998

Mr. Abraham Y. Wong
Division Administrator
U. S. Department of Transportation
Federal Highway Administration
Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Puainako Street Extension and Widening Project
NEPA - Section 404 Integration Process

Pursuant to our meeting of May 5, 1998 and our review of the project's alternative analysis report, we concur with the NEPA purpose and need/404 basic and overall project purpose, the criteria for alternative selection, and the alternatives to be evaluated in the draft EIS.

We also concur on the designation of Upper Puainako Alignment 1 connecting to Lower Puainako B as the preliminary preferred alternative for this project.

Thank you for coordinating this effort among the signatory agencies.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages = 1

To <i>RON TURRY</i>	From <i>Rubelle</i>
Dept/Agency	Phone # <i>521-2530</i>
Fax #	Fax #

NSN 7540-01-217-7288

5099-101

GENERAL SERVICES ADMINISTRATION

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FROM : GEOMETRICIAN
JUN-25-98 14:22 FROM: FED HWA1 PHONE NO. : 9825831

JUN. 25 1998 03:27PM F2



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-544C

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JUL 23 1998

REPLY TO
ATTENTION OF

June 18, 1998

Operations Branch

ENGINE DIVISION
XC: ch/mn

Ms. Richelle M. Suzuki
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Boulevard, Room 3202
Honolulu, Hawaii 96850

OPTIONAL FORM 99 (7-93)

FAX TRANSMITTAL

of pages 2

To	RON TERRY	From	Richelle
Dept/Agency		Phone #	541-2530
Fax #		Fax #	

NBN 7540-01-317-7288 5089-101 GENERAL SERVICES ADMINISTRATION

Dear Ms. Suzuki:

I am writing this letter regarding Puainako Street Extension and Widening Project located in Hilo, Hawaii. The Memorandum of Understanding (MOU) for Surface Transportation Projects in the State of Hawaii applies to the project and the Corps will be a cooperating agency.

Although a Department of the Army (DA) permit under the Nationwide Permit #26 has already been issued for Alternative 1, (which has been identified as the least damaging practicable alternative), the preliminary draft environmental impact statement indicates that other alternatives will have to be reviewed. Therefore, should the preferred alignment be other than alternative 1, the Corps will process a DA permit application for that alignment.

Furthermore, the Corps concurs that the information provided on the overall purpose and need for the project as well as the information in the draft 404 (b) (1) alternatives analysis is adequate.

Should you have any questions on this matter you may call Ms. Lolly Silva of my staff at 438-9258, extension 17. Please refer to file number 980000226.

Sincerely,

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

Copies furnished:

U.S. Fish and Wildlife Service, Honolulu, Hawaii
U.S. Environmental Protection Agency, Honolulu, Hawaii

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FROM : GEOMETRICIAN
JUN-25-98 14:22 FROM FED HWY

PHONE NO. : 9825831

ID:008 11 2704

JUN. 25 1998 03:27PM
PAUL



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

REGION IX PACIFIC ISLANDS CONTACT OFFICE
P. O. BOX 50003
HONOLULU, HAWAII 96850

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JUN 22 1998

HAWAII DIVISION

June 19, 1998

Richelle Suzuki
Federal Highways Administration
PO Box 50206
Honolulu, HI 96850

Dear Ms. Suzuki:

This letter is to confirm our phone conversation today regarding the alternatives for the Puainako Street Extension and Widening, South Hilo. I have received a map showing locations of streams and potential wetlands for upper Puainako alternatives. Based on this information, EPA supports the latest revised Alternative Alignment #1 which minimizes stream crossings and channelization. We look forward to reviewing any new information on wetlands impacts for Alternative Alignment #1 in the Draft Environmental Impact Statement.

Please call me at (808)541-2752 if you have further questions.

Sincerely,

A handwritten signature in cursive script that reads "Wendy Wilse".

Wendy Wilse, Ph.D.
Pacific Islands Contact Office

cc: David Carlson
George Young

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A1

Comments by Agencies, Organizations, and Individuals Pre- Draft EIS

Part 2: Section 7, Endangered Species Act Correspondence

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Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 969-7138

March 11, 1996

Brooks Harper, Field Supervisor
Pacific Islands Office
U.S. Fish & Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Harper:

Subject: Puainako Street Extension and Widening Project
City of Hilo, South Hilo, Hawaii Island

The County of Hawaii Department of Public Works in cooperation with the State Department of Transportation and the Federal Highways Administration (FHWA) is proposing to improve Puainako Street within the City of Hilo. The project involves the widening of the existing Puainako Street between Kilauea Street and Komohana Street to a four-lane highway. Puainako Street would also be extended from Komohana Street to County Club Road in Kaumana to provide a linkage with Saddle Road as it enters Hilo.

The Department of Public Works is coordinating the preparation of an Environmental Impact Statement (EIS) for this project. As part of the preparation of the Draft EIS, the following reports have been completed:

- *Vegetation and Wetland Habitat Report* prepared by Dr. Grant Gerrish
- *Kaumana Cave Report* prepared by Dr. Fred Stone; and
- *Invertebrate Fauna Report* prepared by Maile Kjargaard

We are transmitting these reports for your information and review. We are in the process of completing the draft EIS for publication. Accordingly, your timely review of these reports would be greatly appreciated.

Please feel free to call me or Dr. Ron Terry, our environmental consultant, at 982-5831 if you have any questions on this matter

Sincerely,

Donna K. Kiyosaki, Chief Engineer

attachment

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Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 969-7138

March 11, 1996

Michael G. Buck, Administrator
Department of Land and Natural Resources
Division of Forestry and Wildlife
Kalanimoku Building, Room 325
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Harper:

Subject: Puainako Street Extension and Widening Project
City of Hilo, South Hilo, Hawaii Island

The County of Hawaii Department of Public Works in cooperation with the State Department of Transportation and the Federal Highways Administration (FHWA) is proposing to improve Puainako Street within the City of Hilo. The project involves the widening of the existing Puainako Street between Kilauea Street and Komohana Street to a four-lane highway. Puainako Street would also be extended from Komohana Street to County Club Road in Kaumana to provide a linkage with Saddle Road as it enters Hilo.

The Department of Public Works is coordinating the preparation of an Environmental Impact Statement (EIS) for this project. As part of the preparation of the Draft EIS, the following reports have been completed:

- *Vegetation and Wetland Habitat Report* prepared by Dr. Grant Gerrish
- *Kaumana Cave Report* prepared by Dr. Fred Stone; and
- *Invertebrate Fauna Report* prepared by Maile Kjargaard

We are transmitting these reports for your information and review. We are in the process of completing the draft EIS for publication. Accordingly, your timely review of these reports would be greatly appreciated.

Please feel free to call me or Dr. Ron Terry, our environmental consultant, at 982-5831 if you have any questions on this matter.

Sincerely,

Donna K. Kiyosaki, Chief Engineer

attachment



United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

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RECEIVED
JUN 14 1996

OLYMPIAN ASSOCIATION, INC.
FIELD OFFICE

JUN 10 1996

Ms. Donna K. Kiyosaki
County of Hawaii
Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-7138

Dear Ms. Kiyosaki:

On April 18, 1996, we received your letter dated March 11, 1996, transmitting three reports prepared for the Draft Environmental Impact Statement (DEIS) for the Puainako Street Extension and Widening Project. The reports we received were:

- o *Vegetation and Wetland Habitat Report* by Dr. Grant Gerrish
- o *Kaumana Cave Report* by Dr. Fred Stone; and
- o *Vertebrate Fauna Report* by Maile Kjargaard.

(Incidentally, the *Vertebrate Fauna Report* was incorrectly identified as an *Invertebrate Fauna Report* in your cover letter, dated March 11, 1996.)

We offer the following comments on the reports:

The *Vegetation and Wetland Habitat Report* provides sufficient information to make a determination of whether any listed plant species or stream habitats may be affected by the proposed extension and widening of Puainiko Street. However, the *Kaumana Cave Report* and the *Vertebrate Fauna Report* were not as thorough.

The *Kaumana Cave Report* does an excellent job of explaining the value of different sections of the cave as educational, geological, and cultural sites. However, the report does not specify exactly which cave invertebrate species are found in each portion of the cave. The report refers only to the existence of "rich" or "abundant" endemic cave species, depending upon the exact location within the cave. Except for Table 1, which lists all the native invertebrates in the cave, the report lacks an exact description of what species in which area may be affected by the proposed road extension and widening. Table 1 should also be referenced, even if this data was collected during this study. In addition, this table should also serve as a

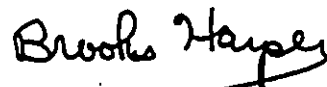
literature review to indicate that no other invertebrates are known or were known from this cave. In other words, we are left to assume that this is a complete and exhaustive list of the cave invertebrates. If this is so, it should be stated.

The conclusion of the *Vertebrate Fauna Report* is that 'io (*Buteo solitarius*) and the Hawaiian hoary bat (*Lasiurus cinereus semotus*) are the only listed species that are likely to occur in the vicinity of the proposed road extension and widening. While we don't necessarily disagree with this conclusion, the presence of 'io nests in the vicinity of the proposed road extension and widening may have been dismissed too quickly. The author of this report did not conduct a site visit and relied on either old data or the botanical survey crew for information. The results of a survey conducted by a qualified ornithologist to document the presence or absence of 'io nesting in the vicinity of the proposed road extension and widening would be important information to include in the DEIS.

In general, the reports lacked necessary references. For example, in the *Vegetation and Wetland Habitat Report* on page 13, under the heading Rare or Endangered Plants, there is no reference to which Fish and Wildlife list the author is referring to. While we assume it is the most recent available, we have no way of knowing if the list the author used is current. As mentioned previously, Table 1 in the *Kaumana Cave Report* should be referenced. Finally, a better map of the vicinity of the proposed road extension and widening would have assisted the review of the reports.

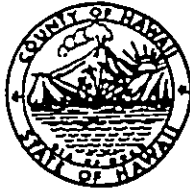
Thank you for the opportunity to review these reports. We look forward to reviewing the DEIS when it is completed. If you have any questions, please contact our Fish and Wildlife Biologist Scott Johnston at 808/541-3441 (fax: 808/541-3470).

Sincerely,



Brooks Harper
Field Supervisor
Ecological Services

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 969-7138

August 2, 1996

Brooks Harper, Field Supervisor
Ecological Services
U.S. Fish and Wildlife Service
Pacific Island Region
P.O. Box 50088
Honolulu, Hawaii 96850

Dear Mr. Harper:

Thank you for your letter of 10 June 1996, in which you discussed your review of the *Vegetation and Wetland Habitat Report*, *Kaumana Cave Report*, and *Vertebrate Fauna Report*, which were prepared as part of the Draft Environmental Impact Statement (DEIS) for the Puainako Street Extension and Widening Project.

Subsequent to our receipt of this letter, one of our consultants, Dr. Ron Terry, discussed the comments related to Kaumana Cave and Hawaiian hawks with Scott Johnston of your staff. The purpose was to determine the tasks that remain in order to complete the DEIS. We would like to address the subjects individually:

Kaumana Cave

As discussed with Mr. Johnston, the County of Hawaii has been concerned with impacts to Kaumana Cave since the project's inception. Kaumana Cave is a world-class geological feature that supports a diverse and outstanding assemblage of Hawaii's cave fauna. Despite the importance of the cave, little of a systematic nature was available in the literature. For this reason, Dr. Fred Stone was consulted to furnish a description of the resources and evaluate potential effects if the roadway were to pass above or very close to the cave. Subsequent to some original concepts, which would have placed the roadway above the cave, the County directed the consulting engineers to design the road the stay as far as possible from the cave.

One of the objectives that has guided project design since has been avoidance of Kaumana Cave. An accurate survey of the cave was conducted in order to meet this objective. The attached figure shows a plan view of the relationship between Alignment 1 of the Upper

* See Fig 3-1 in EIS

Brooks Harper
August 2, 1996
Page No. 2

Portion and the course of the cave, showing that the roadway as designed approaches no closer than 5 m (16 ft) and generally maintains a much greater distance from the cave. The inset in the upper left of the figure illustrates a profile section of the area of closest approach. The roof of the cave in this area varies from 5-6 m (16-20 ft) beneath the surface.

We are confident that no impacts to Kaumana Cave will occur with the present design. The roadway is distant enough to ensure no structural effects, and the vegetation above and surrounding the cave (within a minimum distance of 5 m at one point - in most areas the buffer will be far greater) will be left entirely intact.

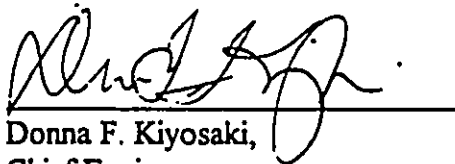
For this reason, as our consultant discussed with Mr. Johnston, we feel that further research and description of Kaumana Cave is not necessary at this point. We understand that your agency is basically satisfied with the environmental documentation up to this point, but may have further comments or recommendations upon receiving the Draft EIS for the project. We would also welcome a visit by your or your staff to the project site.

Survey for Hawaiian Hawk Nests

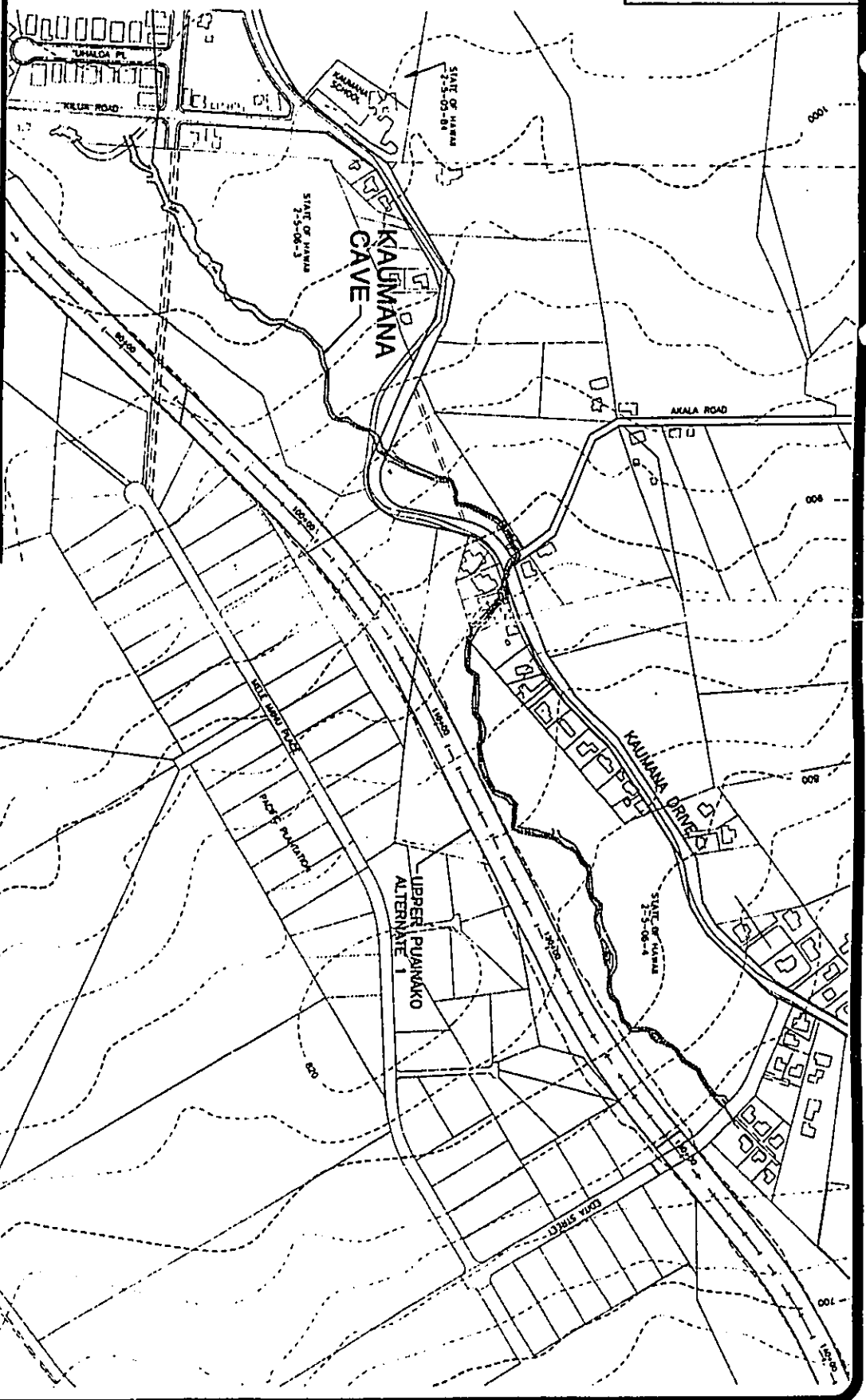
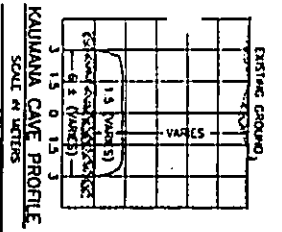
Mr. Johnston suggested to our consultant that although the current report would suffice for the purposes of the Draft EIS, a supplemental survey should be done by an ornithologist before construction. He stated that the survey should be conducted during the winter/spring nesting season in order to verify the presence or absence of hawk nests in the project corridor. This would assist your agency in determining impacts and mitigation measures in case any nests require relocation. The County of Hawaii will comply with this request and will contract with an ornithologist. We would welcome further coordination with your agency as to timing and other details of the survey. Please contact [redacted] the DPW staff at 961-8327, or Dr. Terry at 982-5831, if you would like to accompany our consultants during the survey.

Again, thank you for your careful review of our pre-EIS documents for the project.

Sincerely,


Donna F. Kiyosaki,
Chief Engineer

cc: Okahara & Associates

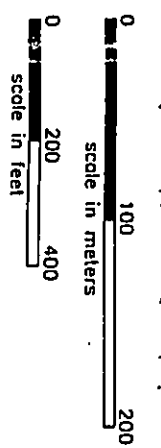


TITLE
KAUMANA CAVE

PROJECT
**PUAHAKO STREET EXTENSION
HILO, HAWAII**

FIGURE
3-1

DATE
7/5/96



9100311A

91003 102514 21



United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

DEC 15 1997

OKAHEA

In Reply Refer To: CMC

Donna Fay Kiyosaki
County of Hawaii
Department of Public Works
25 Aupuni Street, room 202
Hilo, Hawaii 96720-4252

DEC 15 1997

Re: Puainako Widening and Extension Environmental Impact Statement, Determination of Potential Threatened and Endangered Species

Dear Ms. Kiyosaki:

The U.S. Fish and Wildlife Service (Service) has received your November 3, 1997, letter requesting information about threatened or endangered species that might be affected by the Puainako Rd. widening and extension project. The purpose of this project is to alleviate congested and unsafe traffic conditions on Kaumana Drive by providing a direct link between Saddle Road and State Highway 11. The project sponsors are the Federal Highway Administration, The State of Hawaii Department of Transportation, and the County of Hawaii Department of Public Works.

The Service has reviewed the provided information as well as other information contained in our files, including maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program. To the best of our knowledge, there are no species currently listed as endangered, threatened, or candidates directly within the project site. The federally endangered Hawaiian hawk (*Buteo solitarius*) and the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) are known from the general vicinity and may occur at the project site. However, the Service believes that the proposed project is not likely to adversely affect either of these species because of the project's location and previous disturbance.

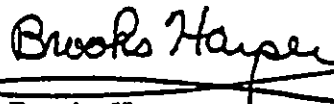
However, it is our responsibility to bring an important matter to your attention. According to our understanding of the project, the proposed route will pass over a subterranean lava tube (Kaumana Cave) known to support a unique native invertebrate community. In particular, this cave system is home to a native arthropod in the genus *Oliarus*, family Cixiidae. This plant hopper is endemic to the Kaumana cave system and is, thus, found nowhere else in the world. It has been brought to our

attention that *Oliarus sp. n.* may be described as a new species this coming year. Upon description, this species may become a candidate for listing under the U.S. Endangered Species Act (ESA). Additionally, this cave is home to another endemic cricket in the Genus *Caconemobius* that may warrant federal protection following publication of its description.

The Service strongly recommends that you take this into consideration while planning the route of the proposed road. Preservation of habitat is critical to these species' survival, and any altering of the forest above this cave may significantly affect the likelihood of survival of these species.

If you have questions or comments, please contact our Program Coordinator for Interagency Cooperation, Ms. Margo Stahl or Fish and Wildlife Biologist Christina Crooker at (808) 541-3441.

Sincerely,



Brooks Harper
Field Supervisor
Ecological Services

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A1

Comments by Agencies, Organizations, and Individuals Pre- Draft EIS

Part 3: Section 106 and Section 4(f) Correspondence

JOHN WAHNE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

KEITH AHLE, CHAIRPERSON
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AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

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CONSERVATION AND
RESOURCES ENFORCEMENT

CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT

STATE PARKS

WATER AND LAND DEVELOPMENT

LOG NO. 9548.

DOC NO.:9309ks12

September 23, 1993

Ms. Donna Fay K. Kiyosaki, P.E.
Chief Engineer
County of Hawaii Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

SUBJECT: *Review of "Archaeological Inventory Survey, Pu'ainako Street Extension Project, Lands of Waiakea, Kukuau 1 and 2, and Ponahawai, South Hilo District, Island of Hawai'i". Report by Hunt and McDermott (July 1993) Multiple Ahupua'a, South Hilo, Island of Hawai'i*
TMK: Multiple

Thank you for submitting for our review the subject report which we received on August 18, 1993. Unfortunately, at present, we cannot complete our review as we have not as yet received copies of plan maps of individual features and profiles of excavation units. Our office requires this information in inventory survey reports in order for us to review and evaluate (1) adequacy of site/feature recordation and coverage, (2) site/feature functional determination, and (3) site significance assessment. This set of information need not be formally illustrated; copies of eligible and cleaned-up field notes showing feature and site plan maps, locations of test excavation units, and test excavation unit wall profiles will suffice.

We informed Dr. Terry Hunt on September 21, 1993, of the situation and he has stated that he will be forwarding the necessary documents to us at once. We will complete our review of the report soon after receipt of the documents.

If your office should have any further questions in the interim, please contact Kanalei Shun at 587-0007.

Sincerely,


DON HIBBARD, Administrator
State Historic Preservation Division

c: ✓ Masahiro Nishida, P.E., Okahara & Associates, Inc.
Dr. Terry Hunt, University of Hawai'i at Manoa Department of Anthropology
Lynne Lee, Office of Hawaiian Affairs
Michael Larish, Ho'okaika Research Committee

KS:III

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SEP 28 1993

OKAHARA & ASSOC., INC.
FIELD OFFICE

JOHN WAIHEE
GOVERNOR OF HAWAII



COPY

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

LEITH AILE CLARIFERAN
BOARD OF LAND AND NATURAL RESOURCES

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DONNA L. MANAKI

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ENVIRONMENTAL AFFAIRS

CONSERVATION AND
RESOURCE ENFORCEMENT

CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

January 20, 1994

Mr. Michael Larish
Ho'oikaika Secretary
34 Mala'ai Road
Hilo, Hawaii 96720

LOG NO: 10594 ✓
DOC# 01RC22

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FEB 02 1994

Dear Mr. Larish:

OKAHARA & ASSOC., INC.
HILO OFFICE

SUBJECT: Puainako Road
Waiakea, South Hilo, Hawaii

This is just a reminder that the oral history information on traditional cultural places in or near the project area which your group is gathering should be submitted to our office by the end of this month. This was the date which was agreed upon by all parties at the end of our November 22, 1993, field trip. Upon reviewing your group's findings, we will then rapidly prepare our findings regarding the survey and the sites that have been found.

Thank you.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Don Hibbard".

DON HIBBARD, Administrator
State Historic Preservation Division

KS:amk

c: Riley Smith, Dept. Public Works, County of Hawaii

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FORM NO. 10
TO BE FILLED BY THE APPLICANT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813

94014

KRITHI AILR, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

MEMBER

JOHN P. KEENE, JR. II
DONALD HANAKI

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HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

May 20, 1994

Ms Donna Fay K Kiyosaki, Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720

LOG NO. 11667
DOC NO 9404RC02

Dear Ms. Kiyosaki

SUBJECT Pu'ainako Realignment/Extension (County Public Works) --
Review of Archaeological Inventory Survey
Waiakea, South Hilo, Hawai'i

This review letter comments only on the findings of the archaeological inventory survey for this project

We must preface this review by noting that an interim report was at one point made available with the Draft EIS in early 1993 (Hunt 1992, Interim Report: Archaeological Inventory Survey, Puainako Street Extension Project.). This report indicated prehistoric sites were present, including religious structures. Our office sent this report back for revision as it needed more information on completeness of survey coverage, more complete site descriptions, and justifications for site interpretations (3/11/93 Hibbard to Choy, OEQC). The report was revised in July 1993 (Hunt & McDermott 1993, Archaeological Inventory Survey, Pu'ainako Street Extension Project.), site maps and profiles were submitted in October 1993 at our request (9/23/93 Hibbard), and a letter report on survey work makai of Kawili street was submitted in November 1993 (as a follow-up to a November fieldcheck with DLNR). Collectively, these items are the revised report. In revising the report, the authors did extensive historical and oral historical research, looked at reports on similar types of archaeological sites that had been found in the Hilo area and on Hawai'i Island, and did more fieldwork (detailed mapping and test excavations) They concluded that they had been wrong in their prior interpretations. They concluded that no house or religious sites were present, and that all the structures were plantation-era in age. They have been emphatic in requesting that their interpretations in the interim report are no longer sound, and it is important that this be clear. Unfortunately, much confusion has resulted from the release of the interim report.

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D. Keyonaki
Page 2

We believe that the survey has adequately covered the project area (the two alternate 120-foot wide corridors), finding all of the archaeological historic sites -- totaling 13 (11 noted in the July 1993 report and 2 in the November 1993 letter report). Ca. 90 structures are within these sites, in the corridors or immediately nearby (1993-90) -- 35 seaward of Komohana Street and 53 inland. Our office was concerned if there were native Hawaiian traditional cultural places within the project area. (Such places were associated with traditional uses over 50 years ago, such as specific gathering areas, pools associated with deities, etc.). The UH Hilo awareness club Ho'oikaika believed that this possibility existed. Our office believed that it was extremely important to conduct oral historic work to try to determine if such traditional cultural places were present. Time was allowed for Ho'oikaika to talk to knowledgeable elderly members of the community between November 1993 and January 1994. Only one informant was found with oral information on the area. This informant (M. Kealoha) had been told by her mother that a village was in the area (11/23/93 Ho'oikaika letter to Gov. Waihee, App. B). However, in our discussions with Ho'oikaika, the location could not be refined down to a specific area; it appears to refer to the general area around and above the current UH Hilo campus. The same is true for the general place name of Kalanakama'a which was noted by Kepa Maly in a PHRI report of a nearby area. Thus, we have been unable to specifically locate any traditional places in the project area.

The survey report has done an unusually thorough background review of settlement patterns of the ahupua'a and project area. It is clear that in precontact times the project lay within a general dry land agricultural area which extended from near the shore up to the 1,500 foot elevation. Scattered houses and adjacent gardens and tree groves were present in older and ash-derived soils, and possibly in younger rockier soils such as those in the project area. In the 1880s, these lands were cultivated for sugarcane by the Waiakea Mill -- with pasture higher up on newer flows -- and after 1918 homesteaders grew cane and sold it to the mill. At this time, the report clearly documents through maps, historical documents, and oral interviews (including with Hawaiians) that the cane lands had stone collected and piled into clearing mounds and that railroad beds, water tanks and ramps to the railroad also likely had stone foundations. Evaluations of other archaeological reports which had found clearing mounds indicated that mounds were faced and often had a central depression. The background section of the report predicted that it was unlikely that prehistoric Hawaiian ruins would be found because precontact field ruins would not be substantial and because extensive land alteration by cane cultivation and by moving of stones into clearing piles would have moved and removed any prehistoric stone-work that would have been present.

The site descriptions are acceptable, with the addition of site maps and excavation profiles and the November 1993 letter report, with the understanding that the report needs to be revised so that the descriptions are clear to all. The following revisions are needed:

- 1 Better site location maps are needed. The site borders are extremely hard to see on the location maps in the report (Figs. 10-13). The topo lines and other lines are equally as bold as the sites. The maps need revision to clearly show site borders.

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D. Kiyosaki
Page 3

2. Incorporate the profiles and site maps into the report (e.g., an appendix). Both the profiles and feature maps are quite good. The field maps submitted in October 1993 need to be tidied up slightly, so there is one map of each site which shows the site's borders, its features, and the corridor boundaries. Currently, we have maps for all features, but we are lacking site maps showing the relative location of features to each other for four sites (18911, 18914, 18915, 18917). Please include those maps.
3. The interpreted function of each of the features is given in Table 2 (pp. 96-98). These interpretations also need to be placed under each feature's description in the text, so the reader can see what the feature is being interpreted as, as the reader is reading the text.
4. Full descriptive information on the 2 sites found makai of Kawaili Street needs to be included (with site maps).
5. We would also appreciate a better quality photo of Figure 9 (p. 32), and perhaps a blow-up so the mounds can be even better seen.
6. On pages 90-92. Some minor clarifications are needed, so the layman can read the justification as to why these are plantation-era sites and clearly understand it. We, with our archaeological staff, can understand what is meant, but a more clear version would be useful for the public. We would recommend that (a) on page 90, it be explained what is meant by "no internal structure" within the features, (b) on p. 92 (top), also describe the similar sites found in Goodfellow (1991) and Goodfellow & Fager (1992), and (c) on p. 92, para. 2, note that the informants for the Kohala information were Hawaiians (as we understand was the case).

The survey report concluded that these archaeological remains were all plantation era in age, dating between 1880-1950. This conclusion was based on (1) a match of feature types found (faced mounds, railroad bed with ties, ramps) with those anticipated from historical research; (2) finding historic artifacts in several features (Site 18,915, Feature D with fencing wire running under it, p. 57, and Feature E, with strapping iron under the stones, p. 58; Site 18,919, Features E and M with fencing wire embedded in them, pp. 72, 75); (3) finding the surface architecture to not be similar to prehistoric housing or agricultural features (lack flat house pavings and are not rounded mounds which are typical of prehistoric agricultural features), rather being similar to plantation era sites found on Hawaii Island (faced rectangular, oval and irregular-shaped mounds with interior depressions; vertical high facings); and (4) finding no prehistoric subsurface remains associated with the structures in 5 test excavations. Our staff -- three of our archaeologists with extensive Hawaiian experience -- have visited the project area several times and inspected the structures. We agree that, for the structures makai of Komohana Street, the structures' architecture and types fit historic-era types and not prehistoric types. The architecture facings are strikingly uniform, indicating the features were built roughly at the same time. Also, among these features are ramped structures and faced mounds with internal depressions which are solely historic-era in type. Thus, we believe that the report's conclusion that the structures makai of Komohana Street are plantation-era structures is sound.

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D. Kiyomaki
Page 1

A recent fieldcheck (April 8, 1994) by two of our staff of the sites in the corridors mauka of Komohana Street found the architecture to be somewhat different from the makai areas. Smaller mounds and greater use of modified outcrops were present. Although it is likely that these features are also historic -- features had embedded wire in them (18919, E and M) and excavation of 3 features found no evidence of prehistoric use -- our staff believes that the possibility exists that some of these structures could have seen prehistoric use and that further testing is needed to clarify this point, prior to our finalizing significance evaluations. Thus, we recommend additional testing in this area.

Ho'okaika expressed several concerns about the archaeology of this project, and these need to be addressed. We have tried to address all their concerns.

1. Age of the Structures. Ho'okaika noted that 3 volcanic glass pieces were found in the excavation of Feature H in site 18,915 and thought that these might show the structure was prehistoric. However, the excavation report clearly shows that these items came from a soil layer (IIb) which was present before the structure was built (p. 60).

Ho'okaika also noted a prehistoric date found in the excavation at a highly similar structure in a project makai along Kawaili Street, excavated by the PHRI archaeological firm, and they stated that this indicated that the structures could be prehistoric (1/24/94 Ho'okaika to Cordy & Shun of DLNR). We have reviewed that project's report (Maly, Walker and Rosendahl 1993. Archaeological Inventory Survey, Waiakea Cane Lots, Portion of Parcel 6. PHRI ms 1370-122993.) and have spoken with Maly and Rosendahl on this matter. The excavation at site 19431, Feature A, found the charcoal in soils which were present before the structure was built (Layer II), while the structure clearly came later (Layer I). The date from the charcoal, AD 1393-1489, is prehistoric, and it likely reflecting Hawaiian cultivation at that time. But, the surface structure clearly comes later.

The Hunt & McDermott report emphasized that some remains of prehistoric use of the area still might survive, but it "may be discovered (almost "at random") with subsurface test excavations" (p. 94). We agree. It is important to note that we believe -- as do Hunt & McDermott -- that Hawaiian agricultural use and perhaps habitation and even religious use of these lands once occurred. All researchers who have worked in this area make this point. But, alteration of the land surface in sugarcane times was severe, with loose stones placed in clearing mounds. If Hawaiian architectural structures (houses, field walls, religious structures, etc.) were present, they clearly were dismantled, and the stones moved into the plantation-era structures which are found on the surface today. Some older soils might be preserved under the plantation structures, or might be in rare, deep soil areas in the open. These older soils might contain a few artifacts or food remains (or similar objects). Also, tilled and disturbed soils are likely to contain some of these objects -- witness the occasional artifact finds in cane fields today and in the past. However, intact older soils will be few and will be found only by accident. The volcanic glass finds in the soils under Feature H of site 18,915 is such a case. So is the charcoal under Feature A, site 19431, further down Kawaili Street. The 4 other test units in this project, the 2 other tests in the PHRI project down Kawaili Street, and 3 test units excavated in similar sites makai of Komohana Street in another project (Borthwick, Collins, Folk & Hammatt 1993. Archaeological

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D. Kurosaki
Page 5

Survey and Testing of Lands Proposed for Research and Technology Lots at the University of Hawaii at Hilo. Cultural Surveys Hawaii ms.) found no soils with prehistoric remains. These bits of older prehistoric remains are significant information, but they are not associated with the surface structures, their locations are impossible to predict, and they will be rare. Thus, to us, the age of the surface structures seem to clearly be plantation-era in your project areas makai of Komohana Street. As noted above, some additional testing in the sites inland of Komohana Street is still needed to clarify their age, although they are most likely historic.

2. Representatives of Excavation Sampling. Several Ho'oikaika letters have expressed the concern that more excavations are needed, that not enough excavation has been done to date the sites (8/3/93 to Schutte & Council; 10/23/93 to Gov. Waihee; 11/23/93 to Gov. Waihee, p. 3, 12/8/93 to Gov. Waihee; 3/4/94 to Cordy). Many of these statements reflect discussions that we had with M. Larish of Ho'oikaika. We noted to him that we were concerned that relatively few excavations had been done, given ca. 90 structures. We said that we were considering asking for more excavations. We did not promise this point; however, we always cautioned that decisions would depend on a full review. 7 test units have now been excavated in these types of structures in three nearby projects makai of Komohana Street. The results are negative in linking the structures to prehistoric age. Indeed, the architectural evidence shows that the architecture of the structures in this part of the project is strikingly uniform (a pattern associated with building at roughly the same time). The style -- high, vertical faces -- is generally a historic-era trait, except when found in larger religious structures. Some of the project's structures are clearly historic -- the ramps and the vertically faced mounds -- based on comparisons with other sites found on Hawai'i Island. Also, the fact that historic material is embedded under stones in some of these structures supports a historic-era age. The evidence is overwhelming that these are plantation era structures. Thus, we cannot in good faith ask for additional excavations in the areas makai of Komohana Street. Mauka of Komohana Street, 3 tests have been dug in the ca. 53 structures, again with negative results linking the structures to prehistoric age. Also, in this area historic artifacts are embedded in two of the features. However, the slightly different appearance of these features from those makai of Komohana Street does leave open the possibility of prehistoric use. We are asking that the sample size of testing be increased in this part of the project area to evaluate this concern. The consulting archaeologist needs to consult with our office prior to beginning the work. (If the applicant and Ho'oikaika wish to work out an agreement to pursue additional test excavations in the makai area, that is acceptable. We recommend that they be limited to structures in the Puna-side corridor alternative, because as will be seen, we are recommending that sites in the Hamakua-side corridor alternative be preserved regardless, and these sites should not be damaged.)

3. Ho'oikaika (3/4/94, p. 2) argued that they overlaid the old railroad map with the archaeological site map, and it did not yield a fit between site 18,915, Feature B (interpreted by Hunt and McDermott as the railroad bed) and the old map. Ho'oikaika suggests Feature B might be an irrigated taro lo'i. The old maps are not accurate enough to blow them up and match them with the archaeological sites, such an approach is not accurate. Feature B fits the traits of a railroad bed -- linear, with stone facing on one side. And it has railroad ties on it. It does not match a lo'i

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D. Kiyosaki
Page 6

pattern -- a rectangular walled enclosure with an entry canal. We must conclude that the report's interpretation is accurate for Feature B. And, the old railroad map does show a railroad bed in this immediate vicinity.

4. Ho'oikaika thought that several structures might be house platforms, based on flat surfaces and brief inspections by others. Our staff checked each of these structures, and they clearly were not prehistoric house platforms. Surfaces were not even, and architectural styles of facings were historic and matched historic structures found elsewhere on the island.

5. Ho'oikaika also noted that one platform (Feature A, Site 18914) had 5 depressions that might be post-holes, had a water-worn stone (pohaku) that indicated Hawaiian religious associations and had an adjacent faced pool. They suggested that this might be a heiau -- ipu 'o Lono (an agricultural shrine), as Kamakau indicated such heiau were common (11/23/93 letter to Gov. Waihee). We checked the possible postholes (noted as such in the report, p. 50, and considered to be possibly from a water tank). It appeared that these were not post-holes, as the holes do not go straight down, but stray off at angles which would not match a post-hole. The architectural style of this structure is the same as that of the other structures in the area and also seems to be historic based on vertical height. We cannot explain the pohaku. It might have simply been one of the stones collected from the surrounding prehistoric terrain, and it may be from a natural context (stream-bed) or from a Hawaiian religious context. Alternatively, it could have been placed on this structure after plantation-era use. We were concerned that the faced pool might be a remnant of the prehistoric Hawaiian landscape, as a traditional cultural place, and we urged Ho'oikaika to check this concern with their informants. They were unable to find any information on this pool, however. We must conclude that Feature A is plantation-era in age. The pohaku might well be remnant of a religious pohaku from prehistoric times. If this is the case, the pohaku would have traditional cultural significance as an object. The structure, however, is clearly historic in age and it would not have traditional cultural significance. (It might now have modern cultural significance, due to association with the pohaku. But the historic preservation laws under which we operate do not allow for consideration of modern cultural significance.)

In sum, we agree with the report that all the structures makai of Komohana Street are plantation-era in age. Additional testing is needed in the sites mauka of Komohana Street to see if some prehistoric use is likely. There is clearly not intact ruins of a prehistoric Hawaiian agricultural village in the project area. (The sites mauka of Komohana Street are agricultural if some are prehistoric in age.) Nor are there structures which are graves or irrigated taro fields (lo'i).

We will not conclude significance evaluations of the sites until the additional testing is complete. But, we can make some comments at this time. The report suggests that all the sites are significant solely for their information content (criterion D of the Hawaii Register of Historic Places). We do disagree with this point for some of the sites makai of Komohana Street. Some of these sites are clearly excellent examples of their type (criterion C) -- of plantation era clearing mounds, railroad beds and ramps and perhaps water tank platforms. We believe -- based on field inspections -- that sites 18914 and 18915 in Alignment A (the Hamakua-side) contain excellent

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D. Kiyonaka
Page 7

examples of these types. If your agency agrees, please have the report so revised or advise us so in writing. If you disagree, we need to meet and resolve this point.

Also, we will not complete evaluation of the mitigation recommendations until the additional testing is complete. But we have some initial comments. The report suggests that all the significant sites could be mitigated through archaeological data recovery. We disagree with this point. If the project occurs in this area, we recommend that sites 18914 and 18915 be preserved for several reasons. One, we believe that they are excellent examples of their type, which have yet to be preserved in Hilo district. Two, Ho'oikaika has advocated that much of this area be used as an UH Hilo educational preserve -- to educate students in botany (it is a rare forested enclave in town and at UH Hilo), in archaeology (it does have the good examples of plantation-era field sites), and in cultural matters. It is our understanding that the UH Hilo administration has supported this view. We also think it is an excellent idea. Not only are plantation-era sites present, but it is an excellent setting to point out that this was once a Hawaiian landscape -- one that has been altered -- a suitable lesson in itself for the Hilo district. It makes the student value those prehistoric landscapes that remain in the Hilo area -- of which there are relatively few that vitally need identification and protection. In sum, if our view that sites 18914 and 18915 be preserved is accepted, then the northern alignment becomes unfeasible makai of Komohana Street, which means other sites in that alignment also would be preserved (e.g., sites 18917 and 18913). Additionally, it means that all sites and land area north of the southern alignment would be preserved. This would include the locations where three pohaku have been found. Again, if the southern alignment is used, then all the lands to the north could be placed in a preserve, should UH Hilo be willing to set-up such a preserve. This area includes many of the structures that were found. Sites in the southern corridor (Puna-side) would then undergo data recovery. The scope of work (data recovery plan) for the data recovery work should focus on clarifying the function of the specific types of plantation-era structures and on handling the chance find of some prehistoric items in soils underlying and predating the structures. Again, these comments are only tentative and do not cover sites mauka of Komohana Street. We need to review the additional testing results from those sites and then finalize our comments on mitigation.

We understand that in a 2/28/94 meeting at the UH Hilo, it was stated that cutting-grading might extend outside the 120-foot corridor area. We must emphasize that this letter (Chapter 6E review) applies only to the existing corridor. If more area would be proposed for additional road construction use, an addendum survey report will be needed. If more area is not needed and if the Hamakua-side corridor is not used, then the preservation plan for the sites to the north must see a fence along the north edge of the Puna-side 120-foot corridor, to ensure that construction would not extend out of the approved project area. This point would also apply to any other project elements that have not been considered yet and that might cover other land areas -- such as equipment storage areas, turn-around areas, etc. All these are project elements and must undergo Chapter 6E, HRS, review.

We realize that this review may not please either party -- the County or Ho'oikaika. Indeed, we have already received some rather pointed comments. We would like, however, to thank both for

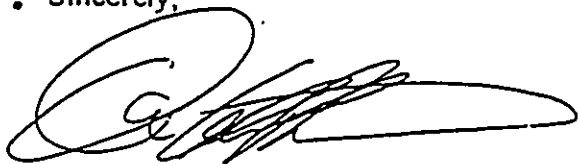
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D. HIBBARD
Page 3

their patience. To Ho'oiikaika, we would like to thank them for their vigilance. Our office truly values community participation and concerns about the historic preservation process. We are committed to identifying Hawaiian historic sites -- archaeological and traditional cultural places -- and to giving equal importance to oral information from knowledgeable kupuna. And we are committed to actively preserving representative examples of archaeological sites and to preserving sites of cultural sensitivity. In this case, the evidence overwhelmingly indicates to us that the surface structures makai of Komohana Street are plantation-era in age. The sites mauka of Komohana Street also seem likely to be historic in age, but further testing is needed to evaluate this point. Also, despite efforts of Ho'oiikaika and Hunt & McDermott, no oral histories were found identifying specific traditional cultural places within the project area. We do not doubt that there was prior Hawaiian use of the area, and we believe that Hawaiian artifacts, including Pohaku, will be found here and there on altered landscapes throughout Hilo. These objects have value! And it is important to our office that they be recorded with locational information, be preserved and be valued. We hope that the idea of an educational preserve here comes to fruition. We also hope that other valuable prehistoric Hawaiian sites in Hilo and Puna receive equal attention and concern by community groups and the UH Hilo. There are few such areas left in Hilo. Potential areas need to be checked in a working partnership with community groups and UH Hilo's Anthropology Department and our office. Such areas might include Onomea, Malua, Hakalau, the shoreline just north of the Puna border, and the upland forests. Archaeological survey and oral historical work with knowledgeable kupuna to identify such places is needed before development plans are proposed for these areas. Also, known sites need rigorous protection. Kahuwai in Puna is the sole example of a large windward village left on Hawaii, and fortunately Bishop Estate is working to preserve it. They are considering community and UH Hilo Anthropology partnerships to help their efforts. Other sites exist in Puna, not so far from the Hilo area.

As a last point, we are asking (1) that the report be revised (as noted above), (2) that additional tests be done in sites mauka of Komohana Street and findings be included in the revised report (or an addendum), and (3) that the County respond to our point on significance evaluations. These steps can be done right away. We will await the revised report and the result of the test excavations.

Sincerely,



DON HIBBARD, Administrator
State Historic Preservation Division

RC.amk

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D. Kiyosaki
Page 9

PS. Just prior to finalizing this letter, Ho'oikaika submitted us a brief interview record (L. Araujo) in which it was stated that the individual's uncle told him that there was an "old village around U H in Hilo". We will follow up with this informant, but at this point, the location is not fixed to the project area, and again, the archaeological evidence shows no remnants of such a village surviving cane cultivation in the project area.

c: Ho'oikaika, c/o M Larish (34 Mala'ai Rd., Hilo 96720)
W. Moore
T. Hunt, Dept Anthropology, University of Hawaii at Manoa
C. Severance, Dept. Anthropology, University of Hawaii at Hilo
V. Goldstein, Planning Dept., County of Hawaii
J. Waihee, Governor, State of Hawaii (ref. 94:666835)

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Donna Kiyosaki	Form	R153 C- 2
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	PHONE #	587 0749
	FAX #	



STATE OF HAWAII

July 10 1994 DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SIXTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813

Donna Kay Kiyosaki, Chief Engineer
Department of Public Works
County of Hawaii
25 August Street, Room 202
Hilo, Hawaii 95720-4252

Dear Ms. Kiyosaki:

SUBJECT: Review of Revised Archaeological Inventory Survey Report for Palainako Street Extension
Waiaken, South Hilo, Hawaii

DEPARTMENT OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN F. KEFFELER II
DONAL L. HANAKA

AGRICULTURE DEVELOPMENT PROGRAM

AQUATIC RESOURCES CONSERVATION AND

ENVIRONMENTAL AFFAIRS CONSERVATION AND

RECREATION ENFORCEMENT CONVEYANCES

FORESTRY AND WILDLIFE HISTORIC PRESERVATION

DIVISION

LAND MANAGEMENT STATE PARKS WATER AND LAND DEVELOPMENT

LOG NO: 12245

DOC NO: 9407RC21

This review responds to your letter of June 24, 1994, which submitted the revised report for our review (Hunt & Mc Dermott 1994, Archaeological Inventory Survey Palainako Street Extension Project). The revisions were made in response to our letter to you of May 20, 1994. That letter had requested additional test excavations in sites inland of Komohana Street, and these excavations were done and are documented in this revision. Our letter had also requested other revisions.

Our requested revisions have been met, with a few minor exceptions. Figure 13 still does not clearly show the borders of the sites. It needs revision to show site borders, which could be done by stippling as in Figure 12 or with bold lines. Also, several plan maps and profiles in the appendix are too faint and better copies need to be submitted (maps for 18911, Features B-D, I, J; 18912; 18916, Features A-B; and profiles for 18915, Feature H; 18919, Features AA, R, Q, A-1, B, G, E, O). Also, Table 2 needs to be revised for Features B and F of site 18914, as their function in the text is considered to be possible loading ramps. With the understanding that replacement pages will be submitted, we can finalize our review at this time.

As noted in our May 20, 1994, letter, we believe that the survey has adequately covered the project area (the two alternate 120-foot wide corridors), finding all of the archaeological historic sites -- totaling 13 sites. No native Hawaiian traditional historic places have been specifically identified in the project area. The site inventory portions of the report -- background sections, site and feature descriptions, and test excavations -- are well documented. The report concludes that all the archaeological features were plantation era in age, dating between 1830-1950. Based on the background research, the site architecture, the artifacts found in association with the structures on the surface and in test excavations, similar structures found elsewhere, and our several fieldchecks of the area's structures, we agree that the structures are historic era in age -- clearly not fitting prehistoric era types of structures.

We do disagree with some of the significance evaluations. The report proposes two sites as being "no longer significant" (18913, 18920), as the sites were significant solely for their information

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Donna Hiyosaki
Page 2

content and had reasonable amounts of this information collected in the survey. We find this evaluation acceptable. The other 11 sites are all listed as significant solely for their information content. However, in our May 20, 1994, letter we indicated that we thought two sites (18914, 18915) also were excellent examples of their type, meeting criterion C of the Hawaii Register of Historic Places (excellent examples of plantation era clearing mounds, railroad beds and ramps and perhaps water tank platforms). We still believe that criterion C applies to these two sites. This point needs resolution. If your agency would agree with our evaluation, either the report could be revised now (Table 2) or a letter could be sent to our office agreeing with this evaluation. If your agency would disagree, then a consultation meeting would be needed to try to resolve this disagreement.

Given these findings, we conclude Alignment A (the Hamaqua-side alignment) should not be used in the area between Konoana Street and Kawili Street. The sites in that alignment section should be preserved. This would also be compatible with the UH Hilo education preserve for botany, archaeology and cultural matters that Ho'okulika has proposed and which apparently the UH Hilo administration is supporting or is seriously considering. It would also not impact the areas where the pihole (regarded as traditional cultural objects) have been found (not in their original site context). If Alternative B is selected in this area, a fence should be placed along the north edge of the 120 foot corridor to ensure that construction would not extend out of the approved project area, thus enabling preservation of all sites, terraces, and plants to the north. Within Alignment B, the significant historic sites would need to undergo data recovery. We recommend the scope of work (data recovery plan) should focus on clarifying the function of the specific types of plantation-era structures and on handling the chance find of some prehistoric items in soils underlying and predating the structures. Such a recommended approach -- use of Alignment B with data recovery of its sites and fencing to protect sites to the north -- would lead to a "no adverse effect" determination for significant historic sites.

Should Alignment B be selected, the next step in the Chapter 6E compliance process would be submittal of the archaeological data recovery plan (scope of work) for sites in the alignment and a protection plan (fence) for sites outside the corridor. Submittal would be to our Division for approval.

Sincerely,


Don H. Hibbard, Administrator
State Historic Preservation Division

RC:jk

c: T. Hunt, Dept. Anthropology, University of Hawaii at Manoa
Ho'okulika, c/o M. Larish (34 Mala'ai Rd., Hilo 96720)
W. Moore

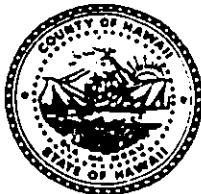
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AUG 16 1994

OKAHARA & ASSOC., INC.
HILO OFFICE

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91003

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Riley W. Smith
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 969-7138

January 5, 1995

MR DON HIBBARD ADMINISTRATOR
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET 6TH FLOOR
HONOLULU HI 96813


SUBJECT: REVISED ARCHAEOLOGICAL INVENTORY SURVEY REPORT
Pu'ainako Street Widening and Extension Project
Waiakea, South Hilo, Island of Hawaii

This is a response to your review of the Revised Archaeological Inventory Survey Report for the Pu'ainako Street Widening and Extension Project prepared by Hunt and McDermott.

In your review, there was some disagreement with the significance evaluations with respect to Sites No. 18914 and 18915. More specifically, you concluded that these two sites were excellent examples of plantation era clearing mounds, railroad beds and ramps and perhaps water tank platforms and therefore, were consistent with Criterion C of the Hawaii Register of Historic Places.

Please be informed that, upon consultation with our archaeologist, we do not have any objections to the determination that sites 18914 and 18915 are "excellent examples of their type" and should be rated as "C" in accordance with the Significance Criteria Codes. Furthermore, in accordance with your recommendation, every effort shall be made to preserve these two sites and to minimize disturbance to other sites which are not in the final alignment for the Pu'ainako Street Project.

Thank you for your attention to this matter. Please call me if you have any questions or require any further information.


RILEY SMITH
Deputy Chief Engineer

cc: State DOT, Highways Division
University of Hawaii at Hilo
Okahara & Associates, Inc.
Terry Hunt, Ph.D.

BENJAMIN J. CAYETANO
Governor of Hawaii



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

REF: OCEA: TES

P. O. Box 621
Honolulu, Hawaii 96809

File No.: 96-089

--X: WILSON 9/22/95
YH
Chairperson
MICHAEL D. WILSON
Board of Land and Natural Resources

Deputy Director
GILBERT COLOMA-AGARAN

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Aquatic Resources
Boating and Ocean Recreation
Bureau of Conveyances
Conservation and Environmental Affairs
Conservation and Resources Enforcement
Forestry and Wildlife
Historic Preservation
Land Management
State Parks
Water and Land Development

Mr. Masahiro Nishida, P.E.
Vice President
Okahara & Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

SEP 22 1995

Dear Mr. Nishida:

SUBJECT: Environmental Impact Statement Preparation Notice
(EISPN): Puainako Street Widening and Extension, South
Hilo, Hawaii, TMK: various

We have reviewed the EISPN information for the subject project transmitted by your letter received on August 15, 1995, and have the following comments:

Division of Historic Preservation

Our Historic Preservation Division's (HPD) comments that the EISPN states that additional archaeological surveys will be undertaken of the newly delineated corridors and the results compared with those obtained in the first survey. HPD will need to review these surveys as part of the historic preservation compliance process. HPD also anticipates that the results of all acceptable survey reports will be summarized in the Draft EIS.

We will forward any comments from our Division of Land Management as they become available.

We have no other comments to offer at this time. Thank you for the opportunity to comment in this process.

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

Aloha,

Gilbert Coloma-Agaran
MICHAEL D. WILSON

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SEP 22 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

91007/92014

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

WLM
YH

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 969-7138

December 19, 1995

MR PAULO BURNS
PO BOX 13
MT VIEW HI 96771

SUBJECT: PUAINAKO STREET EXTENSION AND WIDENING

Thank you for your recent road alignment inquiry on behalf of Ho'oikaika and congratulations for hiring an archaeologist to conduct an independent study of the area. We encourage and support an independent investigation in the belief that a fully informed public is in the best interest of the community.

By a copy of this letter, I am referring your inquiry to Okahara and Associates, project consultants, for an appropriate response and the reason(s) for same.

It is my belief that neither the State nor the County has selected or indicated a preferred alignment at this time. However, I do believe that the consultant(s) have recommended the Puna-side alignment, based on the least impact to archaeological and historical features, among other considerations.

We appreciate your continued interest in the project.

DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

RKY:ctc

COPY
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IN

cc: ✓ Okahara & Associates



January 25, 1996

Dr. Patrick McCoy
State Historic Preservation Division
33 N. King St. 6th Floor
Honolulu, Hawaii

Subject: Requested Revisions of Draft Report: *An Inventory Survey of the Puainako Street Realignment/Extension Project Expanded Corridor, Waiākea, Kūkaū 1 and 2, and Pōnahawai, South Hilo District, Island of Hawai'i*

Dear Pat:

Thank you for your immediate and thorough review of the above report. We concur with the requested revisions outlined in Dr. Hibbard's letter dated January 2, 1996. The attached report (January 1996) has been revised in the following manner:

Introduction

Page 2, Figure 1: A new figure has been drafted to show the general location of the project in the Hilo region with better clarity (a more detailed project location is shown on Figure 2).

Page 3, Figure 2: a new figure has been drafted to show different road alternates and the location of the project in relation to existing roads and Waiākea High School.

Page 19 (now pg. 23), Figure 9 (now Figure 10): figure re-drafted to show 300-foot width of project corridor.

Previous Archaeology

Page 6, para. 4 (now pg. 7, para. 4): extra space between T.G. and Thrum has been removed.

Page 6, para. 6 (now pg. 8, para. 1): Kumukahi spelling corrected

Page 10, para. 1 (now pg. 11 para. 1): two additional sites accounted for in *mauka* portion of project.

Survey Results

Page 18, para. 3 (now pg. 19, para. 3): statement added that an attempt was made to relocate all of the previously identified sites - but three sites were not found.

Page 18 (now pg. 19), page 36 (now pg. 35) and Table 1: the feature "a,b,c" designations have

been discarded from Site 18919, resulting in a total of 22 newly identified features (after splitting Site 18919 into two sites, see below)

Figure 10 (now Figure 11): the cross-section has been reversed. The circular structure is square in cross-section because it has vertical sides and a flat surface (?)

Page 27 (now pg. 28): para. 8, last sentence has been completed

Page 30 (now pg. 31): para. 2, terrace changed to platform

Figure 15: outer limits of Hunt and McDermott survey area have been delineated using a dashed line (also added to Figure 18 - Site 20681).

Figure 16, page 34-44 (now pg. 35-40 and pg. 43-47): Site 18919 has been separated into two sites. Features 1-10 and 33-38 comprise a new site (Site 20681) and Feature 11-32 supplement Site 18919. Text has been changed throughout the report and in Table 1 to account for the additional site.

Discussion and Conclusions

Page 47, para. 1 (now pg. 49) number of sites changed to account for additional site (Site 20681). Page 49, para. 3 includes a brief discussion of Site 20681.

Initial Significance and Recommendations

Page 50-52 (now pg. 53-56): Site 20681 assessment added to text and Table 1 & 2 as being significant for information content (significance criteria D) and recommended for data recovery.

Recommendations

Page 51-52 (now 53-56): new figure drafted (Figure 23) to show: (1) "closeup map of the Komohana and Kawili bounded area"; (2) "300-foot corridors"; (3) "site boundaries"; (4) UH Housing area; and (5) existing roads.

The site boundaries on Figure 23 were primarily established using Hunt and McDermott's site/feature locations shown in their Figure 13 (1994:41). Using these feature locations, the new features identified by SCS at sites 18912 and 18914 were plotted. One site (Site 18911) is not entirely shown or is unclear on Hunt and McDermott's Figure 13. In this instance the site description of Site 18911 provided general bearings (eg., north, southwest) and distances between the features, which were utilized to plot the site boundaries on the present report's Figure 23. There is always a sense of uncertainty when attempting to modify or summarize another archaeological firm's work. Therefore, we have added the recommendation (pg. 56) that the sites in the project corridor be accurately located by professional land surveyors prior or during the data recovery work.

Sincerely,

Jennifer Robins
Scientific Consultant Services

cc. Y. Haun

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



COPY

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
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February 28, 1996

Dr. Robert Spear
Scientific Consultant Services, Inc.
711 Kapiolani Boulevard, Suite 777
Honolulu, Hawaii 96813

RECEIVED LOG NO: 16593 ✓
MAR 1 1996 DOC NO: 9602PM21

OKAHARA & ASSOC., INC
HILO OFFICE

Fr Bob Yanabu
xc ma

Dear Dr. Spear:

**SUBJECT: Revised Report: "An Inventory of the Puainako Street
Realignment/Extension Project Expanded Corridor, Waiakea,
Kukuau 1 and 2, and Ponahawai
South Hilo District, Island of Hawai'i" (Robins and Spear 1996)**

Thank you for your letter of January 25, 1996 with the two copies of the revised report.

Your letter, containing brief descriptions of how you responded to each of the comments in our review letter of January 2, 1996 is much appreciated; it makes it easier to review the revisions. All of our comments have been addressed to our complete satisfaction and the report is now accepted.

We now find the site descriptions to be acceptable. Also, we are in agreement with the significance evaluations for all 14 sites, 13 of which were previously identified. We do have a few questions still on the mitigation recommendations.

1. If you are recommending Alternative B, then would not all the sites fully in Alternative A be recommended for preservation -- including 18917? If this area becomes a preserve, there is no need to data recover the site. If this is the case, please revise and send us replacement pages.

2. We also recommend that a fence be erected along the edge of Alternate B (on the side near Alternate A) from Komohana Street to Kawili Street. This will ensure that mechanized

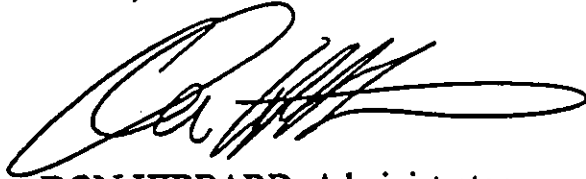
equipment will not stray outside the corridor and into the proposed educational preserve, where such equipment might inadvertently damage the historic sites and flora and topography. Would you agree?

3. Related to your Figure 23. Will Alternate B result in the condemnation and destruction of existing houses along Puainako Street? It would seem so based on your map. Has the inner border of Alternate B (near Alternate A) moved nearer Alternate A, or has it remained in the same location? This will impact how much land is available for the educational preserve.

4. Last, is your Alternate B recommendation also that of your client?

You can send us the response to items 2-4 in a letter. Item 1 probably will need revision of the report. When we see your response, we can then take steps to finalize our comments on mitigation.

Aloha,



DON HIBBARD, Administrator
State Historic Preservation Division

PM:amk

c: Donna Kiyosaki, Hawaii County Department of Public Works

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
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March 22, 1996

Ms. Jennifer Robins
Scientific Consultant Services, Inc.
711 Kapiolani Boulevard, Suite 777
Honolulu, Hawaii 96813

LOG NO: 16765 ✓
DOC NO: 9603PM14

Dear Ms. Robins:

**SUBJECT: Final Report: "An Inventory of the Puainako Street
Realignment/Extension Project Expanded Corridor
Waiakea, Kukuau 1 and 2, and Ponahawai
South Hilo District, Island of Hawai'i" (Robins and Spear 1996)**

Thank you for your letter of March 7, 1996 with the 5 replacement pages for the subject report and other information obtained from Okahara & Associates.

In our letter of February 28, 1996 we noted that your survey coverage was adequate and that we believe all sites were found and adequately described. We had one minor disagreement with your significance evaluations and recommended mitigation treatments for all 14 historic sites in the proposed road corridor, which includes two alternative alignments designated Alternatives A and B. You have now revised your analysis, and we agree with your recommendations. Ten sites are significant for the information they contain, and two sites are also significant as excellent examples of a site type. Two sites are regarded as "no longer significant" because all of the information they contain has been adequately documented. Thus, 12 significant sites were identified. You recommend selection of the Alternative B Corridor, and with this recommendation 7 sites would be data recovered and 2 need no further work. Alternative A would not be utilized, and the 3 sites in that corridor will be preserved. With this mitigation commitment, we agree that the project will have "no adverse effect" on significant historic sites.

We also note Okahara & Associates letter which states that even with a wider corridor, the border of Alternative B encroaches no farther towards Alternative A (and may be farther away). This is encouraging, because if UH Hilo sets aside the remainder of the area into a botanical/cultural preserve, as discussed in initial concerns about this project, no additional land will be lost in the Alternative A area by this widening of the corridor.

We do recommend that to ensure construction does not encroach out of the Alternative B alignment, construction fencing (for example, 6 foot high plastic fencing) be temporarily erected during construction along the Alignment A side of the B corridor. Okahara & Associates' letter indicates that they thought we meant stone or cement retaining walls should be built. That is not the case. However, based on experience, if construction fencing is not erected, it is quite possible that the sites and the potential botanical/cultural preserve area could be damaged.

If you have any questions please contact Patrick McCoy (587-0006).

Aloha,



DON HIBBARD, Administrator
State Historic Preservation Division

PM:amk

c. Donna Kiyosaki, Hawaii County Department of Public Works

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT

P. O. BOX 936
HILO, HAWAII 96721-0936

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WATER AND LAND DEVELOPMENT

July 3, 1996

Paulo Burns
Ho'oikaika Hawaiian Awareness Club
P.O. Box 13
Mt. View, HI 96771

Dear Mr. Burns:

Thank you for the recent letter on behalf of the Ho'oikaika Hawaiian Awareness Club, your interest with cultural values is to be commended. Realizing that we have a very short time before July 15, we have referred your request for comment to the County of Hawaii, Public Works Department and the Historic Preservation Division.

We will be pleased to be in touch with you as soon as responses are received.

Very truly yours,

A handwritten signature in black ink, appearing to read "Sam Lee".

Sam Lee
District Land Agent

c: Hawaii Land Board Member
Dean Y. Uchida, Administrator
COH/Public Works
Historic Preservation Div. ✓

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT

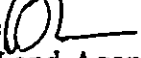
P.O. BOX 938
HILO, HAWAII 96721-0938

July 3, 1996

61103
X2 411

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT


TO: Historic Preservation Division
County of Hawaii, Dept. of Public Works

FROM: Sam Lee 
District Land Agent

SUBJECT: Ho'oikaika Hawaiian Awareness Club Request for Right-of-Entry for the Proposed Puainako Street Extension, Hilo, Hawaii

Please review and provide us with your comments on Ho'oikaika's attached request. Please forward your response before July 15, 1996.

c: Hawai'i Land Board Member
Dean Y. Uchida, Administrator
Paulo Burns


JUL 10 1996

OKUMURA ASSOCIATES, INC.
HILO OFFICE

RECEIVED AS FOLLOWS

JUN 31 2 36 PM '95

RECEIVED
DIVISION OF
LAND MANAGEMENT
HILLS, HAWAII

Hooikaika Hawaiian
Awareness Club
c/o Paulo Burns
P.O. Box 13
Mt. View Hi. 9677

7-290-XC-HNL

This letter is in regard to getting a Right-of-Entry to do Archaeological Studies on historical sites on the state land that is planned for the Pū'aināto widening and extension project. There is much concern by Hawaiian, Kupuna, Community members and historians that there needs to be more research done on this area before a highway is put over it. Hooikaika a non-profit club with UH, has gotten a grant from OHA to do an independent study of the archaeological sites that are located in the highlighted area of the provided map. We would like the archaeologist

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to be able to do the work
anytime between July 15 and
November 15. They will only
be working for approximately
2 weeks straight but were
not sure exactly what date so
were requesting a right-of-entry
from July 15 - November 15.
The name of the archaeological
firm is Garcia & Associates.
Their insurance coverage plan
is also included in this letter.
We really appreciate your
help and hope that the community
concerns can be addressed
in this matter.

Mahalo
Paulo Burns

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ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)
06/14/96

PRODUCER

Flinn Gray & Herterich
3600 W Bayshore, Suite 200
P O Box 10036
Palo Alto, CA 94303

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY A Atlantic Mutual

COMPANY B

COMPANY C

COMPANY D

INSURED

Garcia & Associates
3152 Paradise Drive
Tiburon, CA 94920-1205

BM

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

DESCRIPTION	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT <input checked="" type="checkbox"/> EXCLUDES <input checked="" type="checkbox"/> Eng. Prof. Llab	432300758	12/22/95	12/22/96	GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000 PERSONAL & ADV INJURY \$ 1,000,000 EACH OCCURRENCE \$ 1,000,000 FIRE DAMAGE (Any one fire) \$ 100,000 MED EXP (Any one person) \$ 5,000
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	432300758	12/22/95	12/22/96	COMBINED SINGLE LIMIT \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE \$
	GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EACH ACCIDENT \$ AGGREGATE \$
	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE \$ AGGREGATE \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY THE PROPRIETOR/PARTNERS/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL	400707910	12/22/95	12/22/96	WC STATUTORY LIMITS OTHER EL EACH ACCIDENT \$ 1,000,000 EL DISEASE - POLICY LIMIT \$ 1,000,000 EL DISEASE - EA EMPLOYEE \$ 1,000,000
	OTHER				

SECTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS
RE: Evidence of Insurance Coverage Only

CERTIFICATE HOLDER

Hooikaika Club
Attn: Paula Burns
Box 13
Mountain View, CA 96771

CANCELLATION: 30 Day Notice for Non-Payment of Premium

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

[Signature]
ACORD CORPORATION 1988

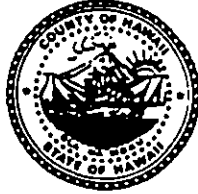
RD 253 (1/95)

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Figure 1. Approximate location of project area. USGS 7.5' Honolulu, HI Quad. (1983).

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 969-7138

July 11, 1996

MR SAM LEE LAND AGENT
HAWAII DISTRICT OFFICE
DIVISION OF LAND MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
PO BOX 936
HILO HI 96721-0936

91007

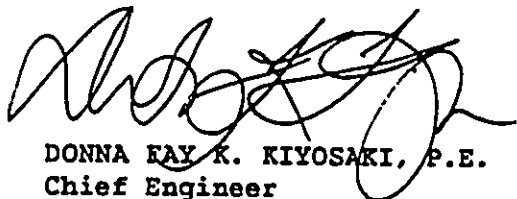
**SUBJECT: HO'OIKAIKA HAWAIIAN AWARENESS CLUB REQUEST FOR RIGHT-OF ENTRY
FOR THE PROPOSED PUAINAKO STREET EXTENSION
WAIAKEA, SOUTH HILO, HAWAII**

Thank you for the opportunity to review and comment on Ho'oikaika's request to conduct archaeological studies within the project's proposed corridor.

We have no objection to the club's request provided that the investigation does not result in any irretrievable damages or losses to the historical sites. The club's request does not specify what type and how intensive the investigation will be. Because we are interested in the preservation and security of these sites, we wish to review the archaeologist's contractual scope of work with the club as quickly as possible.

Additionally, we request timely receipt of work progress and copies of any data, reports and findings pertinent to the archaeological studies.

We appreciate the opportunity to provide input and are grateful for your continued cooperation and assistance.


DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

xc: Planning Director
Okahara & Associates

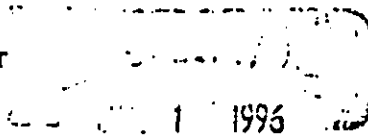
BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

July 15, 1996

Ms. Donna Fay K. Kiyosaki, Chief Engineer
County of Hawaii
Department of Public Works
25 Aupuni Street
Hilo, Hawaii 96720



CICHERO & ASSOC., INC.
HILO OFFICE

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
OLBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND

RESOURCES ENFORCEMENT
CONVEYANCES

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION

DIVISION

LAND MANAGEMENT

STATE PARKS

WATER AND LAND DEVELOPMENT

LOG NO: 17646

DOC NO: 9607PM12

Dear Ms. Kiyosaki:

**SUBJECT: Puainako Street Realignment/Extension Project -- Summary of the
Current Status in the Historic Preservation Process
Waiakea, Kukuau 1 and 2, and Ponahawai, South Hilo, Hawaii Island**

This is in response to a request from Ron Terry for a short letter summarizing the results of the several archaeological surveys of the proposed Puainako Street realignment/extension in terms of the number of sites identified, their significance evaluations, and recommended mitigation treatments. Our detailed official reviews have already been submitted, and they should be read by anyone interested in the historic preservation concerns for this project. This is just a summary update.

We have concluded that the two archaeological inventory surveys of the proposed project area (Hunt and McDermott 1993, and Robins and Spear 1996) adequately covered the project area, finding a total of 14 sites. These reports acceptably described the sites and interpreted their function and age.

The sites' significance have been evaluated. Two of the 14 sites are regarded as "no longer significant" because they were significant solely for their information content and adequate and reasonable amounts of that information were recovered during the survey. The other 12 sites are considered significant. Of these 12 sites, a total of 10 are significant for their information content only. The other 2 sites (18914 & 18915) are significant for both their information content and as excellent examples of a site type (late 1800s-early 1900s sites associated with sugarcane cultivation).

Ms. Donna Fay K. Kiyosaki
Page Two

Finally, we initially emphasized that sites 18914 and 18915, at least, needed to be preserved. These are within Alignment A. Thus, we agreed with with the recommendation in the latest survey report (Robins and Spear) that Alignment B be selected. If this is the case, mitigation work would be needed -- archaeological data recovery of 7 sites in Alignment B and preservation of the five sites found in Alignment A (preserved "as is"). Since there seems to be a desire to have a UH Hilo botanical/cultural preserve in this area, it is important that construction work not extend beyond the border of Alignment B (towards Alignment A). Thus, we have recommended that temporary plastic fencing be erected along the north edge of Alignment B between Komohana and Kawili Streets -- to ensure that such a preserve area and the sites in Alignment A and beyond are not adversely affected.

With Public Works' commitment to undertake the mitigation measures described above, we believe that the proposed realignment project will have a "no adverse effect" on significant historic sites.

To ensure that the commitment is carried out, a detailed mitigation plan (scope of work) for archaeological data recovery work will need to be approved by our office. And prior to construction, we will need to verify that the construction plastic fencing is in place and that the data recovery fieldwork has been completed successfully.

If you have any questions please contact Patrick McCoy (587-0006).

Sincerely,



for DON HIBBARD, Administrator
State Historic Preservation Division

PM:jk

c: ✓ Okahara and Associates
Dr. Robert Spear, SCS
Ron Terry

41003/2014

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

mn, CH

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

July 8, 1998

MR DON HIBBARD ADMINISTRATOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET 6TH FLOOR
HONOLULU HI 96813

ATTENTION: PAT McCOY

SUBJECT: PUAINAKO WIDENING AND EXTENSION ENVIRONMENTAL IMPACT STATEMENT (EIS)

This letter follows up on discussions and field trips involving Marc Smith and Pat McCoy of your Division and Ron Terry, a representative of Okahara & Associates, our consulting engineers for the project.

As background, your office in 1996 approved the conclusions that no significant historic sites were present, based on two archaeological inventory survey reports on the proposed extension that were conducted in 1993 (Hunt and McDermott) and 1996 (Robins and Spear). The inventories covered a study corridor 300 feet in width surrounding the proposed centerline.

One of the Alternative Alignments under consideration for the project, Alignment #1, has been shifted slightly in order to satisfy concerns of the U.S. Environmental Protection Agency (EPA) concerning intermittent stream crossings (see attached map- please note that a copy was supplied to Mr. Smith). On June 29, 1998, Dr. Terry accompanied Mr. Smith in the field to point out the areas where the revised alignment deviates from the original one. Over most of the length of the shift, there would appear to be extremely little likelihood of affecting significant historic sites. The reasons for this are:

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07/08/98 WED 14:40 FAX 808 9818630

PUBLIC WORKS

2002

Mr. Don Hibbard, Administrator
July 8, 1998
Page 2

- 1) The new alignment is entirely or mostly within the 300-foot corridor in which the consulting archaeologists performed an intensive ground survey, finding no sites;
- 2) The substrate is either 1881 lava flow or former sugar-cane land, on which significant historic sites are not expected and were not found during our original inventory.

Part of the revised alignment near Pamoho Place extends into an area that was not previously surveyed, on a substrate that is neither 1881 lava flow nor old sugar land.

We are planning to authorize an inventory survey of the portion of the alignment near Pamoho Place identified on the attached map. We are requesting your concurrence that the scope of such survey is adequate field investigation concerning the potential for historic sites in the proposed realignment. We would appreciate a reply at your earliest convenience so that we may begin the survey. If you have any questions or require additional information, please call my office at 961-8321, or Dr. Terry at 982-5831. We thank you for your timely assistance in this matter.


Donna Fay K. Kiyosaki, P.E.
Chief Engineer

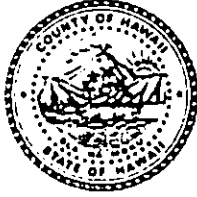
Attachments: 1 map

cc: Masa Nishida, Okahara & Associates
via fax 961-5529 (no attachments)

Ron Terry, Y.K. Hahn & Associates
via fax 982-5831 (no attachments)

Post-It® Fax Note	7671	Date	7/8/98	# of pages	2
To	Masa Nishida Ron Terry	From	DPW		
Co/Dept.		Co.			
Phone #		Phone #			
Fax #	961-5529 982-5831	Fax #			

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

June 23, 1998


CHARLENE UNOKI HAWAII DISTRICT LAND AGENT
DIVISION OF LAND MANAGEMENT
HAWAII STATE DEPARTMENT OF LAND AND NATURAL RESOURCES
P O BOX 936
HILO HAWAII 96721-0936

**SUBJECT: PUAINAKO STREET WIDENING AND EXTENSION
ENVIRONMENTAL IMPACT STATEMENT (EIS)
DETERMINATION OF PRESENCE OF SECTION 4(F) RESOURCES**

As part of performing the EIS for the project, we are also complying with laws contained in 49 U.S.C., Section 303 and 23 U.S.C. 138, commonly referred to as Section 4(f). This law requires that all actions or projects undertaken by agencies of the U.S. Department of Transportation or its agents ensure that special efforts are made to protect public parks and recreation lands, wildlife and waterfowl refuges, and historic sites.

We are asking for your assistance in obtaining a written determination from your Division about the use and designation of the State lands through which the various alternative alignments for the project pass. Specifically, we need to know whether any of these lands have recreation as their primary purpose or whether any wildlife or waterfowl refuges are present. Project location maps from the EIS are attached for your reference.

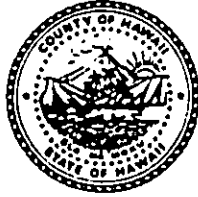
Robert Yanabu of my staff will be coordinating the EIS process. Please call him at (808) 961-8327 or myself at (808) 961-8321 if you have any questions. You may also wish to call William L. Moore, with the consulting engineers for the project, Okahara & Associates, at (808) 935-0311.


DONNA FAY K. KIYOSAKI, PE
Chief Engineer

Attachment

cc: R. Yanabu
Richelle Suzuki, Transportation Engineer, FHWA
Okahara & Associates

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

June 23, 1998

GEORGE YOSHIDA DIRECTOR
HAWAII COUNTY PARKS AND RECREATION DEPARTMENT
25 AUPUNI STREET
HILO, HAWAII 96720

SUBJECT: PUAINAKO STREET WIDENING AND EXTENSION
ENVIRONMENTAL IMPACT STATEMENT (EIS)
DETERMINATION OF PRESENCE OF SECTION 4(F) RESOURCES

As part of performing the EIS for the project, we are also complying with laws contained in 49 U.S.C., Section 303 and 23 U.S.C. 138, commonly referred to as Section 4(f). This law requires that all actions or projects undertaken by agencies of the U.S. Department of Transportation or its agents ensure that special efforts are made to protect public parks and recreation lands, wildlife and waterfowl refuges, and historic sites.

We are asking for your assistance in obtaining a map that illustrates the boundaries of Kaumana Cave County Park and a determination from your Department as to whether the project would in any way adversely impact use of this recreational area. Project location maps from the EIS are attached for your reference.

Robert Yanabu of my staff will be coordinating the EIS process. Please call him at (808) 961-8327 or myself at (808) 961-8321 if you have any questions. You may also wish to call William L. Moore, with the consulting engineers for the project, Okahara & Associates, at (808) 935-0311.

A handwritten signature in black ink, appearing to read "Donna Fay K. Kiyosaki".

DONNA FAY K. KIYOSAKI, PE
Chief Engineer

Attachment

cc: R. Yanabu
Richelle Suzuki, Transportation Engineer, FHWA
Okahara & Associates

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF LAND MANAGEMENT
PO BOX 335
HILC. HAWAII 96721-6335

ADMINISTRATIVE SERVICES
AGRICULTURE
NATIVE RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
NATURAL RESOURCES
CONSERVATION
FORESTRY AND WILDLIFE
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

July 2, 1998

Donna Fay Kiyosaki, Chief Engineer
County of Hawaii
Department of Public Works
25 Aupuni Street
Hilo, Hawaii 96720

SUBJECT: State lands located in the vicinity of the proposed Puainako Street widening and extension project, Waiakea, Hawaii.

Dear Ms. Kiyosaki:

This letter responds to your request of June 25, 1998, for a determination from the Land Division as to whether any of the State lands through which the proposed Puainako Street widening and extension project impacts public parks and recreation lands, wildlife and waterfowl refuges and historic sites. To the best of my knowledge, none of the State lands have any of the features mentioned. Therefore, your project would have no significant impact on the State lands.

Should you have any questions, please call my office at 974-6203.

Sincerely,


Charlene E. Unoki

xc: Hawaii BM
Support Services


COUNTY OF HAWAII
DEPARTMENT OF PARKS & RECREATION

25 Aupuni Street, Rm 210
Hilo, Hawaii 96720
Phone (808) 961-8311 *** Fax (808) 961-8411

MEMORANDUM

Date: June 26, 1998

To: Donna Kiyosaki, Chief Engineer

From: George Yoshida, P&R Director 

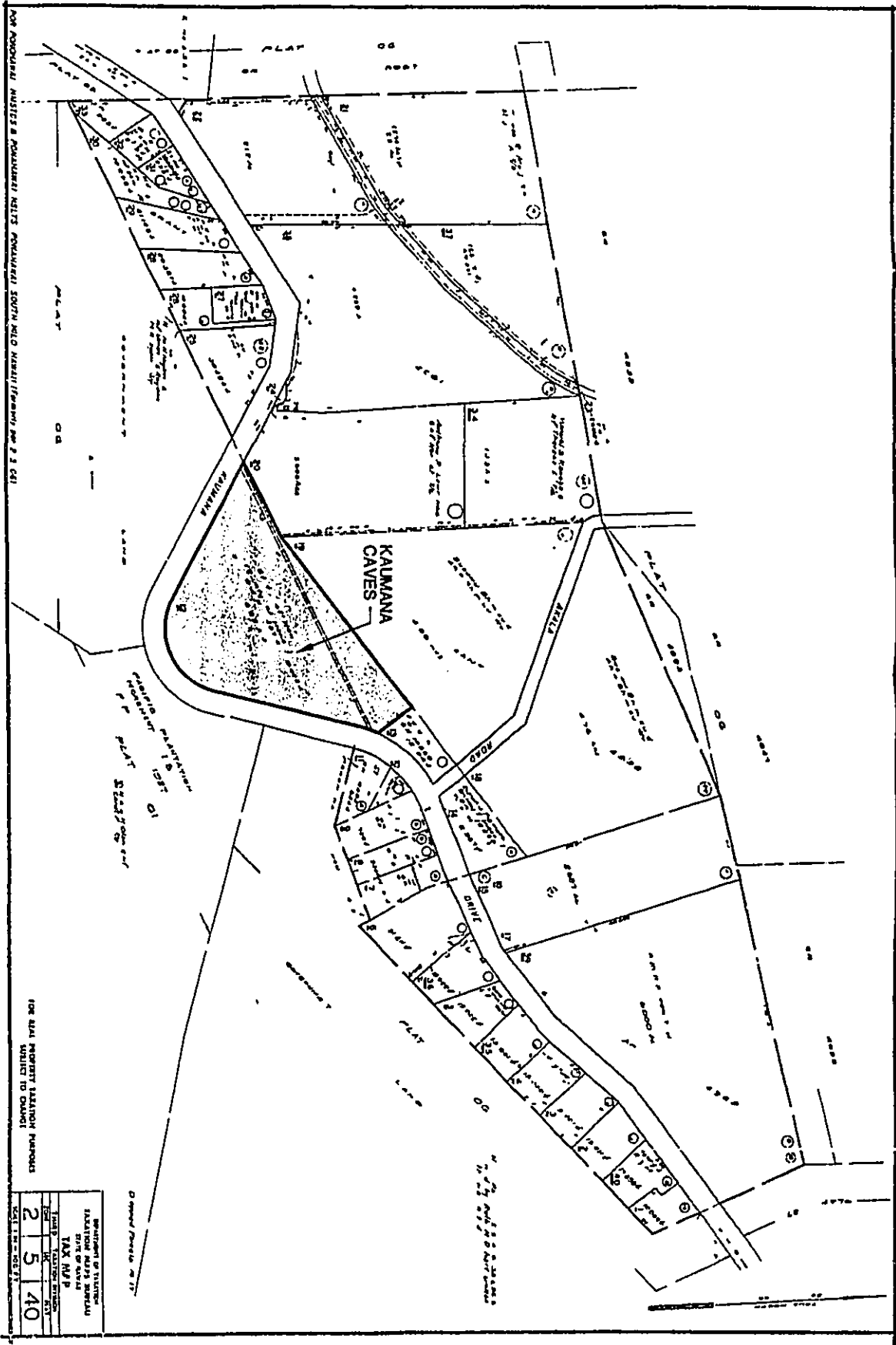
Re: Puainako Street Extension-EIS
Determination of Presence of Section 4(F) Resources

The proposed extension is not anticipated to adversely impact the Kaumana Cave park site.

Although the County has maintained the Kaumana Cave park site for decades, an executive order was never issued by the State. An inquiry to the Hawaii District Land Management office has confirmed this.

Other than a tax map key designation, we have no boundary description of the site. Perhaps your survey section can provide this information.

With regard to jurisdiction over the site, I will meet with Mayor Yamashiro to determine whether the site should be retained or returned to the State.



NOT APPROVAL. ANALYSIS & CONSTRUCTION HELD. CONSULTED SOUTH ISLAND. KAIMAMA DRIVE. MAP 2.1.041

FOR REAL PROPERTY VALUATION PURPOSES
SUBJECT TO CHANGE

DEPARTMENT OF THE TREASURY LAND REVENUE TAX MAP	
2	5 40

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A1

Comments by Agencies, Organizations, and Individuals Pre- Draft EIS

**Part 4: Comments in Response to EISPN & NOI;
Other Correspondence**

BENJAMIN J. CAYI TANO
Governor of Hawaii



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. Box 621
Honolulu, Hawaii 96809

REF:OCEA:TES

File No.: 96-089a

Chairperson
MICHAEL D. WILSON
Board of Land and Natural Resources

Deputy Director
GILBERT COLOMA AGARAN

Aquaculture Development
Aquatic Resources
Boating and Ocean Recreation
Bureau of Conveyances
Conservation and Environmental Affairs
Conservation and Resources Enforcement
Forestry and Wildlife
Historic Preservation
Land Management
State Parks
Water and Land Development

Mr. Masahiro Nishida, P.E.
Vice President
Okahara & Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

OCT 5 1995

Dear Mr. Nishida:

SUBJECT: Environmental Impact Statement Preparation Notice
(EISPN): Puainako Street Widening and Extension, South
Hilo, Hawaii, TMK: various

The following are our additional comments on the subject project which supplement those previously forwarded by our letter of September 22, 1995:

Commission on Water Resource Management

The Commission on Water Resource Management's (CWRM) staff comments that based on the information provided, it appears that a Stream Channel Alteration Permit (SCAP) pursuant to Section 13-169-50, Hawaii Administrative Rules will be required before the project can be implemented.

We have no other comments to offer at this time. Thank you for the opportunity to comment in this process.

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

Aloha,

Michael D. Wilson
MICHAEL D. WILSON

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OCT 06 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



LAWRENCE MIKE
DIRECTOR OF HEALTH

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

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APR 21 1995

RECEIVED
MAY 05 1995

please refer to:

OKAHARA, & ASSOC., INC.

December 14, 1994

OKAHARA & ASSOC., INC.
HILO OFFICE

TO: Those Persons Requesting Comments on Land Use Documents
FROM: June Harrigan-Lum, Manager *June Harrigan-Lum*
Environmental Planning Office
SUBJECT: Temporary Discontinuance of Land Use Reviews

Because of the lack of funds and resources this year, we are not able to hire someone to coordinate our 1995 legislative activities. As a result, we are using one of our existing staff members to do this work on a full time basis during the legislative session.

The legislative coordinator selected, Mr. Art Bauckham, is also the person who was coordinating the land use reviews and responses. Therefore, starting on January 1, and continuing until May 1, 1995, the Environmental Planning Office (EPO) will not be accepting any land use documents for coordinated replies.

If you would like staff in a specific branch or office (for instance, the Wastewater Branch) to comment on your proposal, you are welcome to contact the staff directly. A list of the Branch/Office names are attached for your reference. If you have already sent a copy of the document to the EPO, and you wish to have us send it to a specific branch, you may call 586-4337 and ask the clerical staff to send it to the appropriate branch. Please describe the document and the date of your cover letter.

Remember, on May 1, 1995 we will again start preparing coordinated responses throughout the Environmental Health Administration.

Thank you for your cooperation and patience in this matter.

Ref: Environmental Impact Statement (EIS) for a proposed extension of a portion of Hawaii State Highway 2000, Puainako Street and Saddle Road (Highway 200) and alleviate congested and unsafe traffic conditions on Kaumana Drive

Branches and offices in the Environmental Health Administration

Hazard Evaluation and
Emergency Response-----586-4249

Environmental Planning Office--586-4337

Clean Air Branch-----586-4200

Clean Water Branch-----586-4309

Safe Drinking Water Branch-----586-4258

Office of Solid Waste Mgt.-----586-4240

Hazardous Waste Branch-----586-4226

Wastewater Branch-----586-4294

Noise and Radiation Branch-----586-4701

Sanitation Branch-----586-8000

Litter Control Office-----586-8400

Food and Drug Branch-----586-4725

Vector Control Branch-----831-6767

BENJAMIN J. CAYETANO
GOVERNOR



GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4186
FACSIMILE (808) 586-7462

August 7, 1995

Ms. Donna Fay Kiyosaki
Hawaii Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

Subject: Environmental Impact Statement Preparation Notice for Puainako Street
Widening and Extension Project, South Hilo

Please include the following in the draft environmental impact statement:

1. A clear map of the island showing the project location; and
2. The project cost showing the amount of state or county funds.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Gill".

Gary Gill
Director

GG/NH:kk

c: Masahiro Nishida, Okahara & Associates

COPY
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IN 21003



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P. O. Box 50004
Honolulu, HI
96850-0001

August 8, 1995

Donna K. Kiyosaki
Department of Public Works
25 Aupuni St., Room 202
Hilo, HI 96720-4252

→ Attn: Ron Terry, Okahara & Associates

Subject: Puainako Widening and Extension Project

Enclosed is the Farmland Conversion Impact Rating for the Puainako Widening and Extension Project. We completed our portion of the form and are returning it as you requested.

Saku Nakamura

Saku Nakamura
Asst. State Soil Scientist

Enclosure

The Natural Resources Conservation Service
formerly the Soil Conservation Service, works
hand-in-hand with the American people to
conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

RECEIVED AS FOLLOWS

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request		July 24, 1995	
Name Of Project Puainako Widening and Extension		Federal Agency Involved		Dept. of Transportation	
Proposed Land Use Highway		County And State		State of Hawaii, County of Hawaii	
PART II (To be completed by SCS)		Date Request Received By SCS		8/1/95	
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form).				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Major Crop(s) Sugarcane, Macnuts, Coffee, Beef		Farmable Land In Govt. Jurisdiction Acres: 727,700 %28		Acres Irrigated 12,899	Average Farm Size 358 Ac
Name Of Land Evaluation System Used State of Hawaii, LESA		Name Of Local Site Assessment System None		Date Land Evaluation Returned By SCS 8/8/95	
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		76.9	85.2		
B. Total Acres To Be Converted Indirectly		-0-	-0-		
C. Total Acres In Site		76.9	85.2		
PART IV (To be completed by SCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		7.7	8.5		
B. Total Acres Statewide And Local Important Farmland		-0-	-0-		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		.001	.001		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		19.3	15.8		
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		81	82		
PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or a local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected		Date Of Selection		Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Reason For Selection					

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 969-7138

August 15, 1995

Dear Resident:

Subject: Puainako Street Widening and Extension Project

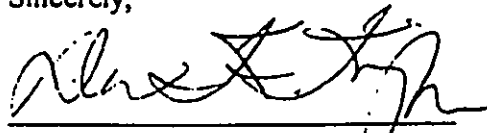
The County of Hawaii and the State of Hawaii are planning to widen and realign Puainako Street between Kilauea and Komohana Street, with construction to begin as early as 1997. The County of Hawaii has contracted the firm of Okahara & Associates to design the roadway and prepare an Environmental Impact Statement.

The house that you own and/or live in has been identified as a structure that may potentially be displaced by the project. If you or your tenants are displaced from this house as a direct result of the project, you or your tenants are entitled to relocation advisory services and financial compensation, as specified in the federal and state laws, regulations and guidelines.

In order to explain the details of the project, inform you of the relocation assistance that may be available to you or your tenants, and gather needed information about your household and/or your tenants household, we are inviting you to attending a meeting on September 11, 1995 (Monday) at 6:30 P.M. at the University of Hawaii at Hilo Campus Center, Room 313.

Please call Masa Nishida of Okahara & Associates at 961-5527 to confirm your attendance or to make alternative arrangements

Sincerely,

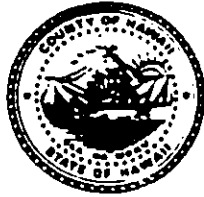


Donna K. Kiyosaki, Chief Engineer

RECEIVED
AUG 14 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

Stephen K. Yamashiro
Mayor



Wayne G. Carvalho
Police Chief

James S. Correa
Deputy Police Chief

County of Hawaii
POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-2702

August 15, 1995

Mr. Ron Terry, Ph.D.
Geo Metrician
HCR 9575
Keaau, Hawaii 96749

Dear Mr. Terry:

We received your letter of July 24, 1995, requesting statistical information on the number of traffic accidents at the following locations for the past five years:

Kaumana Drive between Country Club Drive
and Komohana Street: 139

Komohana Street between Waiianuenu Avenue
and Puainako Street: 102

Puainako Street between Kilauea Avenue
and Komohana Street: 332

Should you require further assistance, please contact Lieutenant Ernest E. Correia of our Traffic Services Section at (808) 961-2225.

Sincerely,

Wayne G. Carvalho
WAYNE G. CARVALHO
POLICE CHIEF

JNE:wlc

Benjamin J. Cayetano
GOVERNOR

HERMAN M. AIZAWA, PH.D.
SUPERINTENDENT



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

OFFICE OF THE SUPERINTENDENT

August 29, 1995

Mr. Masahiro Nishida, P.E.
Okahara & Associates, Inc.
200 Kohola St.
Hilo, Hawaii 96720

Dear Mr. Nishida:

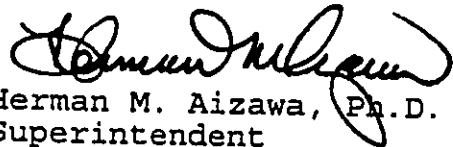
SUBJECT: Environmental Impact Statement
Puainako Street Widening and Extension

We have reviewed the subject revised preparation notice. The Department of Education (DOE) is concerned that the proposed Puainako Street widening and extension may impact schools in the area. (Waiakea High, Waiakea Intermediate, and Waiakea Elementary)

The DOE will require that mitigating measures be implemented by the developer to minimize disruptions caused by noise, dust, and traffic during the construction period. If noise and dust levels exceed Department of Health standards, we will require the developer to install air-conditioning for those classrooms being impacted by this project at no cost to the DOE.

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

Sincerely,


Herman M. Aizawa, Ph.D.
Superintendent

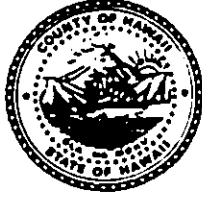
HMA:jml

cc: A. Suga
P. Bergin, Hawaii

RECEIVED
SEP 1 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

Stephen K. Yamashiro
Mayor



Wayne G. Carvalho
Police Chief

James S. Correa
Deputy Police Chief

County of Hawaii
POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-2702

August 22, 1995

Mr. Masahiro Nishida
Vice President
Okahara & Associates
200 Kohola Street
Hilo, Hawaii 96720

RECEIVED
AUG 25 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

Dear Mr. Nishida:

We appreciate the opportunity to review the revised Environmental Impact Statement for the Puainako Street widening and extension received by us on August 14, 1995.

Although our recommendations on the proposed alternative design options are not being sought at this time, it would be helpful if, at some point, those options described in Section 2.5.2 could be graphically displayed.

Sincerely,

Wayne G. Carvalho
WAYNE G. CARVALHO
POLICE CHIEF

EO:esk

Stephen K. Yamashiro
Mayor



Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 969-7138

August 29, 1995

JERRY IWATA, MANAGER
RIGHT-OF-WAY BRANCH
HIGHWAYS DIVISION
HAWAII STATE DEPARTMENT OF TRANSPORTATION
888 MILILANI STREET, SUITE 502
HONOLULU, HAWAII 96813

Dear Mr. Iwata:

This letter is to confirm that Monday, September 11, is the date for the meetings between a representative of your agency and the residential property owners, business owners and church officials affected by the Puainako Street Widening project.

The schedule we have arranged is as follows:

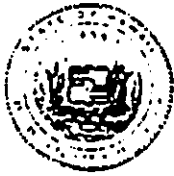
- o 1:00 PM: Meeting with business owners (Kai Store and T. Kouchi) at Okahara and Associates office (200 Kohola Street; 961-5527).
- o 4:00 PM: Meeting with Kinoole Baptist Church Board of Directors, at church (1815 Kinoole Street; 959-8012).
- o 6:30 PM: Meeting with residents, at the University of Hawaii at Hilo Campus Center Room 313.

Thank you for your help in providing relocation assistance information to the community members potentially affected by the project. In the week prior to the meeting we would like to discuss the format of the presentations and any arrangements necessary for the meetings. Would you please contact Masahiro Nishida at (808) 961-5527 at your convenience?

Sincerely,

DONNA FAY K. KIYOSAKI
CHIEF ENGINEER

BENJAMIN J. CAYETANO
DIRECTOR OF HEALTH



LAWRENCE MIIKE

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

PLEASE REPLY TO THIS OFFICE

September 12, 1995

93-016(A)/epo

Mr. Masahiro Nishida, P.E.
Okahara & Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

Dear Mr. Nishida:

Subject: Environmental Impact Statement (EIS)
Revised Preparation Notice
Puainako Street Widening and Extension
Between Kilauea Avenue and Country Club Road
Hilo, Hawaii

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer in addition to our comments of March 11, 1993, which were incorporated into the Final EIS.

Sincerely,


Lawrence Miike
Director of Health

RECEIVED
SEP 20 1995

OKAHARA & ASSOC., INC.
HILO OFFICE



Okahara & Associates, Inc.
ENGINEERING CONSULTANTS

September 20, 1995
Letter No. 43847
Reference No. 92014

Mr. Michael Larish, Chair
Hokikaika Research Committee
University of Hawai'i
34 Mala'ai Road
Hilo, Hawai'i 96720

Dear Mr. Larish:

Thank you for responding to our request for information as we prepare the federal Environmental Impact Statement (EIS) for the Puainako Extension and Widening Project.

Each of the issues that you have carefully commented upon will be discussed in depth in the EIS. In response to your questions and specific areas of concern:

- Laws and rules governing the federal EIS process are contained in the National Environmental Policy Act (NEPA - 42 U.S.C. 4321-4347) and in the regulations implementing this act (23 CFR 770-772; 40 CFR 1500-1508). These resources are available through your public and university libraries.
- A public meeting will be held after publication of the Draft EIS. Notice of this meeting will be provided to all interested parties. In the meantime, we welcome input from yours and other concerned citizen groups.
- Additional archaeological inventory was conducted as a result of minor design changes. Research is still ongoing. Your comments regarding archaeology have been forwarded to the consulting archaeologists. The Draft EIS will discuss the new findings. Coordination with the State Historic Preservation Division continues.
- We would be interested in obtaining a copy of your interviews with kupuna and others with knowledge of land use patterns and traditions in the proposed corridor. Please contact Masa Nishida at 961-5527.


Donald K. Okahara, P.E. • Masahiro Nishida, P.E. • Terrance Nago, P.E. • Glenn Suzuki, P.E. • Nancy E. Burns, P.E.
200 KOHOLA ST. • HILO, HI 96720 • (800) 961-5527 • FAX (808) 961-5529
215 NORTH NIMITZ HWY. STE 212 • HONOLULU, HI 96817 • (808) 524-1224 • FAX (808) 521-3151
1355 MAJALU STREET BAY 68 • KAILUA KONA, HI 96740 • (808) 329-1221 • FAX (808) 329-1006

September 20, 1995
Letter No 43847
Reference No. 92014
Page 2

- o The implications of the Mohouli Street extension will be discussed in the Draft EIS.
- o Road safety is a primary concern of the project and indeed one of the fundamental purposes for this project. The subject will be fully discussed in the Draft EIS.
- o The County Department of Public Works and our consulting team has consulted officials at Waiakea Elementary and Intermediate Schools during the EIS process. This dialogue is ongoing.

Again, thank you very much for your comments on the EIS Notice of Preparation.

Sincerely,


Masa Nishida, P.E.
Hilo Office

RT/WLM:mq

BENJAMIN J. CAYETANO
GOVERNOR



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
BENJAMIN CAYETANO

IN REPLY REFER TO:

HWY-TS
2.7411

SEP 20 1995

Mr. Ron Terry
Phone/FAX No. 982-5831

Dear Mr. Terry:

Thank you for your letter of August 28, 1995, requesting accident data for the Puainako EIS.

<u>Roadway Segments</u>	<u># Accidents</u>
Kaumana Dr. (Country Club Dr. to Komohana St.)	93
Komohana St. (Waiianue Ave. to Puainako St.)	16
Puainako St. (Kilauea Ave. to Komohana St.)	58

These accident totals occurred in 1993, which is the latest complete year of data that we have.

The non-intersection accident rate for the county of Hawaii is 156.59 accidents per hundred million vehicle miles. The roadway segments that are located on Route 2000, a portion of Puainako St. and Kaumana Dr., and their corresponding non-intersection accident rates are given below:

On Puainako St. -	386.37
Kilauea Ave. to Kinoole St.	309.36
Kinoole St. to Iwalani St./Kawili St.	225.34
Iwalani St./Kawili St. to Komohana St.	
On Kaumana Dr. -	788.69
50' west of Hapuu Rd. to Country Club Dr.	

These non-intersection accident rates were calculated using 1992 average daily traffic (ADT) counts, which is the latest traffic summary data that we have available.

Further investigation may be needed to validate these values.

County road ADT counts are done by the counties, therefore without the ADT for the county road segments you requested, the accident rates cannot be computed.

Mr. Ron Terry

Page 2

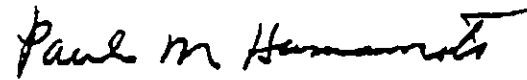
SEP 20 1995

HWY-TS
2.7411

Comparison of these road segments that you requested to similar functional classification roadways are not possible since there are no equivalent roadways on that island.

If there are any questions, please feel free to contact Jan Hosokawa at 587-2180.

Very truly yours,



PAUL M. HAMAMOTO
State Traffic Engineer

Stephen K. Yamashiro
Mayor



fx: u'lm 91003
YH

Virginia Goldstein
Director

Norman Olesen
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-9615

October 2, 1995

Mr. Masahiro Nishida, P.E.
Okahara & Associates, Inc.
200 Kohola Street
Hilo, HI 96720

Dear Mr. Nishida:

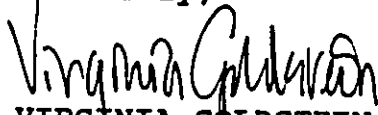
Environmental Impact Statement Revised Preparation Notice
for Puainako Street Widening and Extension
TMK: 2-2-various plats & parcels; 2-4-various plats &
parcels and 2-5-various plats & parcels

Thank you for your letter transmitting a copy of the Environmental Impact Statement Revised Preparation Notice for the Puainako Street Widening and Extension project. Please accept our apology for our delay in responding to your submittal.

We have reviewed the revised preparation notice and have no comments at this time. We will reserve our comments upon our receipt of the draft Revised Environmental Impact Statement for the proposed project.

Thank you for allowing our office to provide preliminary comments on the notice. Please contact Daryn Arai of this office should you have any questions.

Sincerely,


VIRGINIA GOLDSTEIN
Planning Director

DSA:mjs
LPuain01.dsa

xc: DPW-Engineering

RECEIVED
OCT 04 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

BENJAMIN J. CAYETANO
Governor



STATE OF HAWAII
DEPARTMENT OF EDUCATION
WAIAKEA ELEMENTARY SCHOOL
180 W. PUAINAKO STREET
HILO, HAWAII 96720-5399

21007/920
HERMAN M. AIZAWA, Ph. D
Superintendent
PATRICIA BERGIN
District Superintendent

February 24, 1996

Mr. William Moore
Okahara and Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

RECEIVED
FEB 27 1996

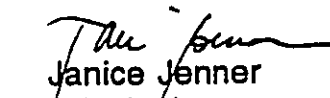
OKAHARA & ASSOC., INC.
HILO OFFICE

Dear Mr. Moore:

On behalf of the Waiakea Elementary School PTA, thank you very much for taking the time to talk to our parents about the proposed improvements to Puainako Street. Our parents appreciated your clear presentation about the changes proposed and the efforts being made to consider children's safety and traffic flow. We also appreciated your "hanging around" after the meeting to answer questions and explain your drawings. We received many positive comments, such as, "It was so nice the way he [Mr. Moore] explained things. Now I can see what's happening" and "It was really nice of him [Mr. Moore] to stick around and answer my questions."

We truly appreciated the time and effort you and Mr. Simeon put into your presentation.

Sincerely,


Janice Jenner
Principal

c: Mr. Masa Nishida, Okahara and Associates, Inc.

BENJAMIN J. CAYETANO
Governor of Hawaii



Chairperson
MICHAEL D. WILSON
Board of Land and Natural Resources

Deputy Director
GILBERT COLOMA-AGARAN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

REF: OCEA: TES

P. O. Box 621
Honolulu, Hawaii 96809

File No.: 96-089

Aquaculture Development
Aquatic Resources
Boating and Ocean Recreation
Bureau of Conveyances
Conservation and Environmental Affairs
Conservation and Resources Enforcement
Forestry and Wildlife
Historic Preservation
Land Management
State Parks
Water and Land Development

Mr. Masahiro Nishida, P.E.
Vice President
Okahara & Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

SEP 22 1995

Dear Mr. Nishida:

SUBJECT: Environmental Impact Statement Preparation Notice
(EISPN): Puainako Street Widening and Extension, South
Hilo, Hawaii, TMK: various

We have reviewed the EISPN information for the subject project transmitted by your letter received on August 15, 1995, and have the following comments:

Division of Historic Preservation

Our Historic Preservation Division's (HPD) comments that the EISPN states that additional archaeological surveys will be undertaken of the newly delineated corridors and the results compared with those obtained in the first survey. HPD will need to review these surveys as part of the historic preservation compliance process. HPD also anticipates that the results of all acceptable survey reports will be summarized in the Draft EIS.

We will forward any comments from our Division of Land Management as they become available.

We have no other comments to offer at this time. Thank you for the opportunity to comment in this process.

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

Aloha,

Gilbert Coloma-Agaran
MICHAEL D. WILSON

RECEIVED
SEP 22 1995

OKAHARA & ASSOC., INC.
HILO OFFICE

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A3

Comments and Responses to Draft EIS

INDEX TO COMMENT LETTERS

A total of 61 comment letters were received between the publication in the Hawaii State Office of Environmental Quality Control *Environmental Notice* of the Draft EIS on December 23, 1998, and the closing of the comment period on February 8, 1999, which was extended to February 23, 1999. In addition, commenters delivered ten letters at the public hearing. Several commenters requested extensions of the comment period, which were granted to each commenter making the request. Such commenters are noted by an asterisk in the list below. The information below lists all commenters. Each comment letter is reproduced afterwards, along with the response letter from the Chief Engineer of the Hawaii County Department of Public Works, the applicant agency under the Hawaii Environmental Policy Act. A summary of issues raised in written comments and/or at the public hearing held on January 19, 1999, is contained in Appendix A4.

Written Comments Received at the January 19, 1999 Public Hearing

Brian Shiroma 1340 Kilikina St. Hilo HI 96720	Hilton Unemori 505 Polulani Dr. Wailuku HI 96793	Shunichi Hatada 525-A Wainaku Ave. Hilo HI 96720-2215
M/M William R. Halm 312 Puainako St. Hilo HI 96720	Victoria Kai 615 Malae Pl. Hilo HI 96720	Mike Kilgore 75-5739 Alii Dr. Kailua-Kona HI 96745
Donald S. Medeiros Hawaii Operating Eng. Industry Stabilization Fund 1432 Middle St. Honolulu HI 96619	Paula Z. Helfrich Executive Director Hawaii Island Econ. Dev. Brd. 200 Kanoelehua Ave., St. 103-281 Hilo HI 96720	
Alan Novak 1414-C Mele Manu St. Hilo HI 96720	Beverly Papalimu 1053 Kaumana Dr. Hilo HI 96720	

Written Comments Received During the Draft EIS Comment Period

<u>Date Received</u>	<u>Commenter</u>	<u>Recipient</u>
1/5/99	Esther Ueda, Executive Officer Hawaii State Land Use Commission P.O. Box 2359, Honolulu HI 96804-2359	A. Wong, FHWA
1/7/99	Wayne Carvalho, Chief Hawaii County Police Department 349 Kapiolani St., Hilo HI 96720	B. Cayetano, Governor
1/7/99	Harry Kim, Administrator Hawaii County Civil Defense Agency 920 Ululani St., Hilo HI 96720	A. Wong, FHWA
1/21/99	Andrew Pickles 250 Edita Street, Hilo HI 96720	A. Wong, FHWA
1/22/99	Hansen Tsang 1629 Mele Manu St, Hilo HI 96720	A. Wong, FHWA

1/25/99	Bruce Anderson, Director of Health, Hawaii State DOH P.O. Box 3367, Honolulu HI 96801	B. Cayetano, Governor
1/25/99	David W. Blane, Director Office of Planning, Hawaii DBEDT P.O. Box 2359, Honolulu HI 96804	J. Sumada DPW
1/26/99	David W. Camacho Jr. 1414A Mele Manu St., Hilo HI 96720	A. Wong, FHWA
1/26/99	Douglas T. Shiro 1360 C. Mele Manu St., Hilo HI 96720	A. Wong, FHWA
1/27/99	Conrad Hokama 1992 Waianuenue Ave., Hilo HI 96720	A. Wong, FHWA
1/29/99	Roy C. Price, Vice Director of Civil Defense Hawaii State Dept./Defense 3949 Diamond Head Rd., Honolulu HI 96316-4495	J. Sumada DPW
1/29/99	Randall R. Kishimoto 1600 Mele Manu St. Hilo HI 96720	A. Wong, FHWA
2/2/99*	Terence N. Martin, Team Leader* Office of Environmental Policy Compliance Office of the Secretary U.S. Dept. of Interior Washington, D.C. 20240	A. Wong, FHWA
2/2/99	Tony Long 76 B Huaalani Dr. , Hilo HI 96720	J. Sumada, DPW
2/2/99	William P. Kalawaiianui P.O. Box 235, Kamuela HI 96743	J. Sumada, DPW
2/2/99	John & Doris Watanabe 1610 Mele Manu St., Hilo HI 96720	A. Wong, FHWA
2/2/99	Ronald H. Nagata 280 Ponahawai St., Hilo HI 96720	A. Wong, FHWA
2/2/99	Milton Murasaki, DDS 280 Ponahawai St., Hilo HI 96720	A. Wong, FHWA
2/3/99	Ken K. Nishimoto 403 Naniakea St., Hilo HI 96720	A. Wong, FHWA
2/3/99	Robert M. Atebara, 275 Ponahawai St., Hilo HI 96720	A. Wong, FHWA
2/3/99	Marilyn Nishimoto 354 Anela St., Hilo HI 96720	A. Wong, FHWA
2/4/99	James Y. Sadayasu 280 Ponahawai St., Hilo HI 96720	A. Wong, FHWA
2/4/99	Anne N. Sadayasu 280 Ponahawai St., Hilo HI 96720	A. Wong, FHWA
2/4/99	Jon E. Sadayasu 27-641 Kaieie Hmstd. Rd., Papaikou HI	A. Wong, FHWA
2/4/99	Chris J. Sadayasu 27-641 Kaieie Hmstd. Rd., Papaikou HI	A. Wong, FHWA
2/4/99	Alan J. Sadayasu 27-641 Kaieie Hmstd. Rd., Papaikou HI	A. Wong, FHWA
2/4/99	James T. Yagi 1320 Komohana St., Hilo HI 96720	A. Wong, FHWA
2/4/99	Jeanne E. Yagi 1320 Komohana St., Hilo HI 96720	A. Wong, FHWA
2/5/99	Ernest A. Sakamoto 275 Ponahawai St. #103, Hilo HI 96720	A. Wong, FHWA
2/5/99	William R. Downie	A. Wong, FHWA

2/9/99	Joan Sakaba 46 Melani St., Hilo HI 96720	A. Wong, FHWA
2/11/99	Raynard C. Soon, Interim Chair, Hawaii Dept. Of Hawaiian Home Lands P.O.Box 1879, Honolulu HI 96805	J. Sumada DPW
2/12/99	Virginia Goldstein, Director Hawaii Cty Planning. Dept. 25 Aupuni Street, Hilo HI 96720	A. Wong, FHWA
2/16/99	Gordon Matsuoka Hawaii State Dept. Of Accounting and General Services P.O. Box 119, Honolulu HI 967810	A. Wong, FHWA
2/16/99	Patricia Basilio 1762 Akolea Pl., Hilo HI 96720	A. Wong, FHWA
2/18/99*	William R. Halliday, Chair* Hawaii Chapter, Natl. Speleological Society 101 Aupuni St., #911, Hilo HI 96720	A. Wong, FHWA
2/19/99	Iain Coulson P.O. Box 1104, Keaau HI 96749	A. Wong, FHWA
2/22/99	Thomas & Amy Shiroma 992-A West Puainako St., Hilo HI 96720	A. Wong, FHWA
2/22/99	M/M Terence Yoshioka 1572 Mele Manu St., Hilo HI 96720	A. Wong, FHWA
2/22/99	Craig Yamamoto 1830 Haleokea St, Hilo HI 96720	A. Wong, FHWA
2/22/99	Thomas Pabila 374 Palakiko St., Hilo HI 96720	A. Wong, FHWA
2/22/99	M/M Robert Oka 2230 Kilauea Ave., Hilo HI 96720	A. Wong, FHWA
2/22/99	Debra S./Stanley K. Kaina Jr. 412 Puainako St, Hilo HI 96720	A. Wong, FHWA
2/23/99	Leslie Segundo Hawaii State Off. Of Envir. Quality Control 235 S. Beretania St., # 702, Honolulu HI 96813	J. Sumada DPW
2/23/99	Lenore Kozohara, c/o Kinoole Baptist Church 1815 Kinoole St., Hilo HI 96720	A. Wong, FHWA
2/23/99	Colin Kippen, Deputy Administrator Office of Hawaiian Affairs 711 Kapiolani Blvd., Honolulu HI 96813	J. Sumada DPW
2/24/99	Brian Y. Kajikawa 31 Aloalo St., Hilo HI 96720-5728	A. Wong, FHWA
2/24/99	Dora B. Sedeno RR3 Box 1161, Pahoa HI 96778	A. Wong, FHWA
2/24/99	M/M James D. Fujimoto 1946-H Kinoole St., Hilo HI 96720	A. Wong, FHWA
2/25/99	Timothy Johns, Chair Hawaii Board of Land & Natural Resources P.O Box 621, Honolulu HI 96809	A. Wong, FHWA
3/1/99	David Farrel, Chief, Federal Activities Office Region IX, US Environmental Protection Agency 75 Hawthorne St., San Francisco CA 94105-3901	A. Wong, FHWA
3/3/99	Carolyn J. Curley 13-3491 Luana Street, Pahoa HI 96778	A. Wong, FHWA
3/3/99	Mildred Arai 47 Uluwai St., Hilo HI 96720	A. Wong, FHWA
3/6/99	Asako Ebisusaki	A. Wong, FHWA

3/8/99	P.O. Box 4936, Hilo HI 96720 Paul G. LeMahieu, Ph.D., Supt. Of Education Hawaii State Dept. of Education	A. Wong, FHWA
3/8/99	P.O. Box 2360, Honolulu HI 96804 Donald K. Lau, Executive Director Housing and Comm. Dvpt. Corp. of Hawaii 677 Queen St., Suite 300, Honolulu HI 96813	A. Wong, FHWA
3/8/99	Willie R. Taylor, Director Office Of Env. Policy & Compliance Office of the Secretary U.S. Dept. of Interior Washington, D.C. 20240	A. Wong, FHWA
3/15/99	Robert A. McLaren, Interim Director Institute for Astronomy 2680 Woodlawn Drive, Honolulu HI 96822	A. Wong, FHWA
3/22/99	William R. Halliday, Chair Hawaii Chapter, Natl. Speleological Society 101 Aupuni St., #911, Hilo HI 96720	A. Wong, FHWA
3/25/99	David Jagnow, Conservation Chair National. Speleological Society 1300 Iris St. # 103, Los Alamos NM 87544	A. Wong, FHWA

A copy of the postcard below was mailed to all commenters in April 1999.

<p>Dear Sir or Madam:</p> <p>The Hawaii County Department of Public Works and the Hawaii Division of the Federal Highway Administration have received your written comment(s) sent in response to the <i>Puainako Street Extension and Widening Draft Environmental Impact Statement</i>. These agencies, along with our firm, are currently investigating the issues brought up during the comment period and will respond in detail to your comments in the near future. We appreciate and encourage your involvement in the Environmental Impact Statement process. If you have any questions, please call Mr Jiro Sumada or Mr Robert Yanabu of the Hawaii County Department of Public Works at (808) 961-8327, or me, Colin Hashiro, at (808) 961-5527.</p> <p>Sincerely,</p> <p>Colin Hashiro, Engineer Okahara & Associates 200 Kohola Street Hilo HI 96720</p>	<p>Commenter Name Commenter Address</p>
--	---

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

I AM FOR THIS PROJECT. I AM IN FAVOR ~~OF~~ FOR ALIGNMENT
B IN THE LOWER PORTION, I AM ALSO IN FAVOR FOR
ALTERNATIVE ALIGNMENT #2 IN THE UPPER PORTION.

I DO HAVE A REQUEST TO PROVIDE A ROAD AND OR AT LEAST

A GOOD RIGHT OF WAY TO MY PARENTS LOT (THOMAS SHIZOMA
TMK # 3-2-2-039-031) TO ~~CONNECT~~ CONNECT TO THE NEW

PUNAKO ST. THIS WOULD BE JUST ABOVE (MAUKA) ^PKONOHANA ST.

THIS WOULD BE AN ACCESS ROAD OF ABOUT 1000 FT FROM PUNAKO ST.

TO THESE LOT, PRESENTLY THEIR PROPERTY IS ZONED IN AGRICULTURE,
THESE PROPERTY INCLUDES 40 ACRES OF LAND LOCAL PROPERTY.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name BRIAN SHIZOMA
Address 1340 KILIKINA ST. Hilo, HI 96720
Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206,
300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. BRIAN SHIROMA
1340 KILIKINA ST.
HILO HI 96720


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *In favor of Alignment B and Alignment 2.* We take note of your preference.
2. *Access to TMK 3-2-2-039:031.* According to our review of records, none of the alignments proposed for the project border this parcel or interfere with legal access to it – which is through a straight-line extension of the existing Puainako Street - in any way. We understand that a separate project being undertaken by the County of Hawaii is likely to assist you in improving your access to the property. For your information, the Hawaii State Department of Transportation may allow properties that do border the alignment that is finally selected to access the road directly, depending on the particular situation. We hope this clarifies the situation for you. We take note of your preference.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

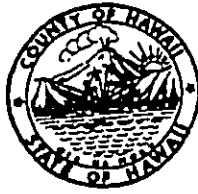
I am a property owner of parcels w/ TMK (3) 2-4-008-002, lot 10-A-1 and have a particular interest in this development. I am in favor of this project especially Alternative Alignment #2 Upper Portion because it passes closest to this parcel minimizing improvements that I would have to make for roads, water & utilities to utilize my property for planned agricultural enterprise and for other planned uses. The ag enterprise success would be substantially improved by its accessibility to the Hilo airport. This would allow new business & jobs to be created in the Hilo area. Please keep me informed of the timing & final alignments chosen.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Hilton Unenoni
Address 505 Polulani Dr., Wailuku, Hi. 96793
Representing HUMU, Inc.

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. HILTON UNEMORI
505 POLULANI DR
WAILUKU HI 96793


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *In favor of Alignment 2.* We take note of your preference.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer

2-11-99

PUBLIC COMMENT SHEET

**Puainako Extension and Widening Project
Public Hearing**

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

We have a property on the corner of
Puainako + Kynoolle Pt
Owned by Lotus Bakery Inc TMK 3-2-2-039-001
Yo of SHUNICHI HATAHA AREA 43,560 F
525-A Wainaku Ave
Hilo, HI 96720-2115

Note: At the hearing on July 20, 1998
at Haidara Elementary School Cafeteria
RE: The property facing the Puainako Street
about 20 feet was going to be taken away to
widen the Puainako Pt.
He requested that they should take away also on the
opposite side of the street since it don't have to remove
any improvements on their property.

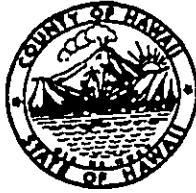
Note: on April 4, 1995 a Mr Moore was a speaker at luncheon of
the Rotary Club of Hilo at the Kamehameha Hotel. He mentioned that the projection was
40 feet

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name LOTUS BAKERY, INC 1/19/99
Yo SHUNICHI HATAHA
Address 525-A WAINAKU AVE
Representing HILO, HI 96720-2115

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. SHUNICHI HATADA
525-A WAINAKU AVE
HILO HI 96720-2215

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *Amount of right-of-way take on TMK 3-2-2-039-001.* The right-of-way take from your property will vary from about 30 to about 40 feet fronting Puainako Street, widening towards the mauka end. About 10 feet will also be acquired fronting Kinoole Street. As we have indicated in the past, two of the three structures on the property would be acquired along with the right-of-way. Please do not hesitate to contact our office, or our consultants Okahara & Associates (961-5527, attn: Colin Hashiro), if there are any further questions. We note that the schedule for acquisition is still several years in the future.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

*WE have lived thru 32 years and have
seen the traffic grow, the noise grow, and
at peak hours we are like hostages in
our driveway.*

*We were told in '77 that this project
was in the books for years and we were
wondering when if ever this could happen.*

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name MR & MRS Wm R Halm
Address 312 Puainako St.
Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206,
300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000


M/M WILLIAM R. HALM
312 PUAINAKO ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. We share your concern that a timely solution to the traffic problem in your area is of critical importance.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

**Puainako Extension and Widening Project
Public Hearing**

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

Concerns re: Lower portion puainako

① We have a propane tank @ 2010 Kilanui Ave and are
concerned about safety / barriers protecting tank from
the traffic. May I recommend that the Propane tank
location be placed on your map plans.

② Concerned about Kilanui / Puainako intersection;
traffic, auto accidents + school traffic in addition
to Prince Kuhio traffic.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Victoria Kai
Address 615 Mahe Pl. Hilo
Representing Kai store

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206,
300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. VICTORIA KAI
615 MALAE PL.
HILO HI 96720


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *Location of propane tank.* We have placed the tank on our design drawings, and it will be taken into consideration during final design. Our agency or the Hawaii State Department of Transportation will continue to coordinate with Kai Store as project plans for the Lower Portion advance.
2. *Kilauea/Puainako Intersection.* Among other goals, the project is intended to address existing and future traffic congestion and safety problems at this intersection. With the additional through and turn lanes planned as part of the project, the Level of Service will be much improved.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

I am in favor of extending Puainako.
I am not in favor of the way it
connects to 200. This should be
part of the Airport to Airport Tollway.
It should follow the south rim of the
Saddle and no money should be spent
on 200.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Mike Kilgore
Address 75-5739 Alii Dr, Honolulu HI 96740
Representing Industrial Interactions, Inc.

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206,
300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. MIKE KILGORE
75-5739 ALII DR.
KAILUA-KONA HI 96745

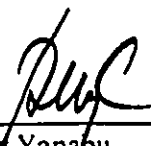
Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *Project should be designed as part of Airport to Airport Tollway, and should not connect to Saddle.* The route you discuss was considered as part of the Saddle Road project initial alternative evaluation in 1996. Issues of native ecosystems, lava hazard, and engineering difficulties led to its rejection and the adoption of the planned Saddle Road route. We have planned Puainako to intersect with the currently planned route.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer

HAWAII OPERATING ENGINEERS
INDUSTRY STABILIZATION FUND



*Uniting our strengths and working together
for a better tomorrow*

WILFRED S. NAKAKURA
Executive Adviser
Nakakura Construction Co., Ltd.

MARVIN KOGA
President
Mega Construction, Inc.

RON OSHIRO
President
Ron's Construction

ALVIN KOBAYASHI
President & COO
Oahu Construction, Ltd.

"A trust formed to
advance the concerns
of over 3,000 employees
represented by
Operating Engineers
Local Union No. 3
and over 300 employers
represented by the
General Contractors
Labor Association and
the Building Industry
Association of Hawaii"

January 19, 1998

Hawaii County -Department of Public Works
State of Hawaii -Department of Transportation
Federal Highway Administration

DON DOGER
Business Manager
Local #3

JERRY BENNETT
President
Local #8

PAT O'CONNELL
Vice President
Alternate Trustee
Local #8

ADRIAN KEOHOKALOLE
District Representative
Local #3

ALLAN L. PARKER
Administrator

DONALD MEDEIROS
Construction Resource
Specialist

PERRY ARTATES
Construction Resource
Specialist

Re: Support for the Puainako Extension & Widening Project

Good Evening!

I am Donald Medeiros, a resident of Hilo and I represent the Hawaii Operating Engineers Industry Stabilization Fund.

I come before you this evening in favor of the Puainako Extension and Widening Project, as it will provide a much needed link that would relieve congestion and consequently reduce accidents on this busy roadway.

Not only will this project make this a safer road to travel on, but also the \$50 million in construction and design work will be a big stimulus for our island's economy by providing jobs for all of us who live on this island.

I urge YOU to support this essential road improvement project.

Thank you,

Donald S. Medeiros

Donald S. Medeiros
Construction Resource Specialist

Cc: A. Parker

1432 Middle Street • Honolulu, Hawaii 96819
Phone: (808) 845-6221 / 847-2105 • Fax: (808) 847-8048



Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
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April 3, 2000

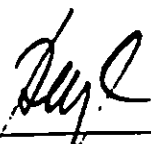
MR. DONALD S. MEDEIROS
HAWAII OPERATING ENG.
INDUSTRY STABILIZATION FUND
1432 MIDDLE ST.
HONOLULU HI 96619

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS, in which you stated that the project would help relieve traffic congestion and reduce accidents, as well as provide construction and design work for island workers.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer



**HAWAII
ISLAND
Economic
Development
Board**

January 19, 1999

Mr. Jiro Sumada, Deputy Chief Engineer
Hawaii County Department of Public Works
25 Aupuni St.
Hilo, Hawaii 96720

East Hawaii - Hilo
200 Kanoehua Ave.
Suite 103-281
Hilo, HI 96720
Ph (808) 966-5416/17
Fax (808) 966-6792

West Hawaii - Kona
First Federal Bldg.
75-5737
Kuakini Hwy. #207
Kailua-Kona,
HI 96740
Ph (808) 329-4713

Re: Puainako Extension and Widening project

Dear Mr. Sumada:

My name is Paula Helfrich and I am Executive Director of the Hawaii Island Economic Development Board (HIEDB). On behalf of the Board, and our many project participants, we appreciate the opportunity to offer comments on the Puainako Extension and Widening project on the Big Island.

We have served as the secretariat for the Saddle Road Task Force for four years and believe this project to be a vital link to the Saddle Road project. Not only will it provide jobs in construction and design work, it would greatly increase traffic efficiency for our road system. Traffic congestion and accidents on Puainako would decrease. Congestion, noise and accident rates on Kaumana Drive would be greatly relieved. And safety measures for Waiakea Intermediate and Elementary schools frontage would be greatly increased. We believe the impacts of the project to be minimal.

Thank you for the opportunity to submit these comments.

Yours sincerely,

Paula Z. Helfrich
Executive Director

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. PAULA Z. HELFRICH, EXECUTIVE DIRECTOR
HAWAII ISLAND ECONOMIC DEVELOPMENT BOARD
200 KANOELEHUA AVE., ST. 103-281
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS, in which you stated that the project would help relieve traffic congestion, reduce accidents, promote safer conditions at the Waiakea schools, provide construction and design work for island workers, and provide a vital link in the cross-island transportation system.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer

Allen Novak
1414-C Mele Manu St.
Hilo, Hawaii 96720

PUAINAKO EXTENSION PROPOSAL

1/19/99

Chaired Waimanalo Neighborhood Board Planning & Zoning Committee for 8 years.

Recognizes that development of Saddle Road and major transportation arteries, such as Puainako Extension, is inevitable.

Position:

Saddle Road will be to Hawaii Island what the Pali and Like Like have been to Oahu. Saddle Road will facilitate trans-island travel and commerce. Saddle Road will be the primary route of travel for commercial and private vehicles between East Hawaii and West Hawaii (from Waimea to Captain Cook).

The Puainako Extension is destined to divert traffic flow from the Hamakua Coast and serve a greater volume of traffic than now exists on Hwy. 19.

Responsible planning needs to allow for factors such as this future growth and utilization. Selection of the route for the Puainako Extension should be made with this in mind.

Recommendation:

Through the Pacific Plantations subdivision, the more southern (#2) alignment should be selected

Reasons:

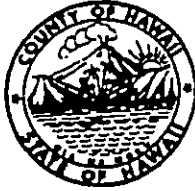
1. Safety - Alignment #1 passes through an area of Edita Street which is narrow and comes very close to a cluster of rental housing which has long existed on Edita Street. The homes are a group of single family dwellings which are of a size and rental value that appeals to young families with children. As a result there is, and will continue to be, a significant density of children living and playing in this area directly adjacent to alignment #1.

2. Disruption - Alignment #1 will produce a significant noise nuisance to the Pacific Plantations neighborhood day and night. Commercial hauling will occur early morning and at off hours, and create a disruption to the residents.

3. Encroachment - Alignment #1 encroaches onto the land occupied by the residences of myself and my neighbor. Judging from the map I have access to, the border of alignment #1 would come within feet or yards of the side of my house and occupy the area where my cesspool currently is located. It appears that portions of my neighbor's house rest on the area which has been designated for alignment #1. This would create extreme hardship and economic loss for both myself and my neighbor.

Solution: All of problems can be mitigated by selecting the southern (#2) alignment for the Puainako Extension. Alignment #2 is much better suited to handle the volume of traffic which is sure to occur in the future.

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. ALAN NOVAK
1414-C MELE MANU ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *Relationship of Puainako Street and Saddle Road, traffic mix and volumes.* The Saddle Road EIS analyzed the projected traffic mix and volumes on an improved Saddle Road, and determined that Highway 19 would continue to transport about 75 percent of automobile traffic, and higher proportions of truck traffic. However, we agree that a State Highway meeting modern design standards extending across the island will provide an important transportation artery.

2. *Noise, Safety, and Other Concerns with Alignment 1.* Your comments state that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians. For your information, although some right-of-way would be required for Alignment 1, our surveys indicate that no homes would be taken or approached closer than 40 feet by the edge of the right-of-way.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer

* She spoke privately on the tape

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

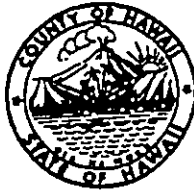
live ^{live} on Kaimama Drive have been working for this since 1967. We would hope that the upper portion - Alternative 1 or 2 be finished as soon as possible - We believe the lower portion could be done after the upper portion is finished - The traffic on Kaimama has 7 times the accidents elsewhere therefore it is time to do it - Enough talk & hearings -

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Beverly G. Papalunas
Address 1053 Kaimama DR Heli
Representing UKCC - Treas.

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. BEVERLY PAPALIMU
1053 KAUMANA DR
HILO HI 96720

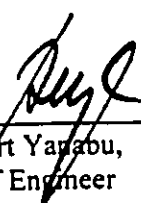
Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Project that you submitted at the January 19, 1999 public hearing for the EIS. The following is a detailed response to your individual comments.

1. *Finish Upper Portion as soon as possible*. We are moving forward towards final design of the Upper Portion of the project, and construction is expected to begin in the year 2000.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS



Robert Yanabu,
Chief Engineer

BENJAMIN J. CAYETANO
GOVERNOR



RECEIVED

JAN - 5 1999

ESTHER UEDA
EXECUTIVE OFFICER

HAWAII DIVISION

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION

P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

January 4, 1999

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
P.O. Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Environmental Impact Statement (DEIS) for
the Puainako Street Extension and Widening
Project, South Hilo District, Island of Hawaii

We have reviewed the DEIS for the subject project and confirm that the project, as represented on Figure S-1, is located within the State Land Use Urban and Agricultural Districts. We note that on page 6-2, paragraph 6.3, the Agricultural District is incorrectly referenced as "Agriculture."

We suggest that the Final EIS include a map showing the project in relation to the State land use districts.

We have no further comments to offer at this time. We appreciate the opportunity to comment on the subject DEIS.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

A handwritten signature in cursive script, appearing to read "Esther Ueda".

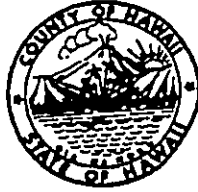
ESTHER UEDA
Executive Officer

EU:th

cc: OEQC
State Dept. of Transportation
Hawaii County Dept. of Public Works

FAX -

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 2, 2000

MS. ESTHER UEDA, EXECUTIVE OFFICER
HAWAII STATE LAND USE COMMISSION
P.O. BOX 2359
HONOLULU HI 96804-2359

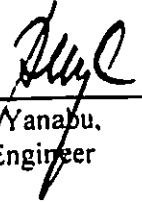
Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of January 4, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

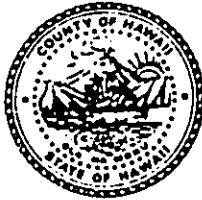
1. *Suggestion for map with State Land Use Districts in Final EIS.* The Final EIS has been expanded to contain a map of Land Use Districts in Figure 6-3..
2. *Correct District name is "Agricultural" not "Agriculture."* This has been corrected.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer

Stephen K. Yamashiro
Mayor



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JAN - 7 1999

HAWAII DIVISION

Wayne G. Carvalho
Police Chief

James S. Correa
Deputy Police Chief

County of Hawaii

POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-2702

January 5, 1999

The Honorable Benjamin J. Cayetano
Governor, State of Hawaii
c/o Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Governor Cayetano:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR PUAINAKO
STREET EXTENSION AND WIDENING PROJECT, SOUTH HILO
DISTRICT, ISLAND OF HAWAII

Staff reviewed the Environmental Impact Statement for the
above-referenced project.

The proposed Puainako Street extension in either alignment will
help to reduce vehicular traffic on roads that service the upper
Kukuau, Ponahawai, Kaumana, and Piihonua areas in South Hilo.

Thank you for the opportunity to comment on the alternative
alignment.

Sincerely,

WAYNE G. CARVALHO
POLICE CHIEF

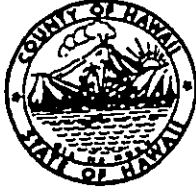

JAMES S. CORREA
DEPUTY POLICE CHIEF
ACTING POLICE CHIEF

CMC:lmg/lk

cc: Mr. Abraham Wong, Federal Highway Administration

FAXED
1/10/99
HI County
HWY-PA
R. Terry

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. WAYNE CARVALHO, CHIEF
HAWAII COUNTY POLICE DEPARTMENT
349 KAPIOLANI ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

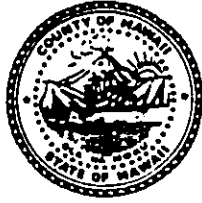
Thank you for your comment on the EIS contained in your letter of January 5, 1999, to Governor Cayetano and the Hawaii State Office of Environmental Quality Control in which you stated that the project would help reduce vehicular traffic on roads that service upper parts of Hilo. This is indeed one of the goals of the project.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

Stephen K. Yamashiro
Mayor



Harry Kim
Administrator
Bruce D. Butts
Assistant Administrator

County of Hawaii
CIVIL DEFENSE AGENCY
920 Ululani Street • Hilo, Hawaii 96720
(808) 935-0031 • Fax (808) 935-6460

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DEC 31 1998
HAWAII DIVISION

December 31, 1998

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850

DRAFT EIS FOR PUAINAKO STREET EXTENSION


3.1.4 Hydrology and Floodplains

Concerns

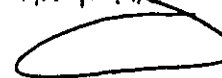
During sustained periods of heavy rains, the Alenaio Stream between Komohana and Kapiolani streets has caused major runoffs and problems to homes in the area. Any increase to the stream would potentially be destructive to several homes below Komohana Street. It is understood that this project may not affect Alenaio Stream.

General Comment

This project will be a major asset to traffic flow.


HARRY KIM, ADMNISTRATOR

dy

FAXED
11/21/98
By County
HWY-PA




Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. HARRY KIM, ADMINISTRATOR
HAWAII COUNTY CIVIL DEFENSE AGENCY
920 ULULANI ST.
HILO HI 96720


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of December 31, 1998, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Project should not be allowed to add runoff to Alenaio Stream.* All runoff derived directly or indirectly from the project will be diverted to drywells.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

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FEB 22 1999
HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

I am strongly in favor of the Puainako extension project. It will provide much better access to the Saddle Road and observatories, and keep traffic off Kaumana Rd.

I strongly support the effort to include underground utilities with this (and every other new road) project. All studies show that underground utilities are easier to maintain and repair, and cheaper over time. They exist and work on the Big Island. New roads provide an ideal opportunity to include underground conduits for all present and future needs (power, cable, fiber) and avoid dangerous poles and unsightly wires. Let's use this new millenium opportunity to get away from 1950's technology and preserve the natural vistas and beauty of our island.

On a personal level, I prefer alternative alignment 1 (northern) in the upper section. This is shorter, cheaper, and doesn't make through roads of Wilder and Edita Streets. If alignment 2 is chosen, I hope that speed bumps or other partial barriers will be included on these wide, flat and straight streets to prevent them becoming "drag-strips" through residential neighborhoods.

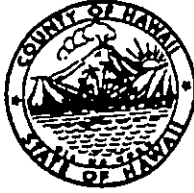
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name DR. ANDREW J. PICKLES, ASTRONOMER.
Address 250 EDITA ST, HILO HI 96720 (kaumana)
Representing Self.

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
1/22/99
HI COUNTY
HANA-DA R. TOR. 7

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000


MR. ANDREW PICKLES
250 EDITA STREET
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong, which we received on January 21, 1999. The following is a detailed response to your individual comments.

1. *Underground utilities.* There are currently no plans to install electrical transmission lines in the Upper Portion of the project. Where such lines in the Lower Portion (which are above ground) are to be relocated, standard above-ground poles and lines are planned.
2. *Preference for Alignment 1 so that Edita and Wilder may remain local streets.* We take note of your preference, and would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.
3. *Use of speed bumps.* Speed bumps are currently not permitted on County roads. DPW will consider, as determined by the actual traffic use patterns and incidents, stop signs, increased signage, and other measures that assist in calming traffic.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.



Robert Yanabu,
Chief Engineer

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FEB 22 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

PLEASE SEE ATTACHED

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name HANSEN TSANG
Address 1628 MELE MANU ST. HILO, HAWAII 96720
Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED

1/22/99
HI County
HWM-PA R. Wong

Hansen Tsang

1628 Mele Manu Street, Hilo, Hawaii 96720

Phone: (808) 961-5118

1/20/99

To: Mr. Abraham Wong, Division Administrator, Federal Highway
Administrator, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii
96850

From: Hansen Tsang, 1628 Mele Manu Street, Hilo, Hawaii 96720

Re: Comments for Puainako Street Extension and Widening Project

COMMENT:

I attended the public hearing for the Puainako Street Extension and Widening Project last night. I am starting to understand the impact of this project to our homes.

If Alternate Alignment #1 is chosen I am afraid that the noise increase in our subdivision (Pacific Plantation Subdivision which includes part of Edita Street and Mele Manu Street) will be tremendous. One of the reasons many of us bought into this subdivision was for its serenity and quietness. Alternate Alignment #1 will put a major roadway right at our backyards. Here are some of the points I came up with last night.

1) This road will be wide, straight and on an incline, since the road will be straight and wide, traffic will be traveling at great speed creating a lot of noise. Since the road is on an incline vehicle will have to "step on the gas" to go uphill creating a great amount of noise. Also vehicles will have to use "low gear" while going down hill. While using "low gear" helps in slowing down the vehicle this practice also keeps the RPM of the engine high creating a lot of noise. The bigger trucks will use their "Jacobs" brakes when going down hill. I am sure most of you have heard of the "Jacobs" brakes and how much noise they make.

2) A lot of commercial traffic prefer the Saddle Road because it is the shorter and less congested route to Kona. Currently Saddle Road is still sub-standard which discourages quite a lot of drivers from using it. Once Puainako Street project is in place both the commercial and private traffic volume will go up substantially. Many of the big trucks using Hamakua Coast Belt Highway will prefer the Puainako Extension. We will have big trucks going up and down our backyard day and night. Many of the fuel hauling drivers have to be on the road as early as 3:00 a.m..

3) No noise barrier planned. The environmental impact statement of this project acknowledged the noise impact on the lower portion of Puainako Street. The engineers are planning on putting up noise barriers around the existing homes. However I don't see any noise barriers for the Pacific Plantation Subdivision. The lower portion of the project will be in a more congested area. Due to the congestion, vehicles will be traveling at less speed. Speed limit for that area will probably be lower. There will also be two major intersections with traffic signals on the lower portion further

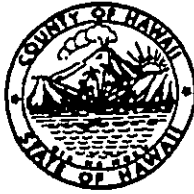
reducing vehicle speed. Reduced speed means reduced noise. Vehicles will reach their highest speed right next to the Pacific Plantation Subdivision both going up hill and down hill therefore the noise level will be the highest right at your backyards.

4) Safety - Alignment #1 will pass right through Edita Street where we normally access Kaumana Drive. We know how difficult it is to pull out of Edita Street onto Kaumana Drive because vehicles are coming down hill at great speed. Alignment #1 will have us pull into a major road with vehicles coming down at even greater speed.

Solution: All of the above problems can be mitigated by selecting the southern alignment #2 for the Puainako Street Extension.

I am not against this project. However I am not very fond of someone putting a high noise level roadway right in the back of our backyards either.

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. HANSEN TSANG
1629 MELE MANU ST
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of January 20, 1999 to Abe Wong of the Federal Highway Administration.

Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, there are unfortunately no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.


Robert Yanabu,
Chief Engineer

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



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

RECEIVED
JAN 25 1999
HAWAII DIVISION

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

In reply, please refer to

January 15, 1999

98-266/epo

TO: The Honorable Benjamin Cayetano
Governor, State of Hawaii
c/o Director, Office of Environmental Quality Control

FROM: Bruce S. Anderson, Ph.D., M.P.H. *Bruce S. Anderson*
Director of Health

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
Puainako Street Extension and Widening
Between Komohana Street and the Saddle Road
South Hilo, Hawaii

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

Noise Concerns

1. 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).
2. Heavy vehicles traveling to and from the project site must comply with the provisions of the Administrative Rules, Chapter 11-42, "Vehicular Noise Control for Oahu."

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111 1/25/99
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The Honorable Benjamin Cayetano
January 15, 1998
Page 2

98-266/epo

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.

Fugitive Dust

Construction activities must comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust.

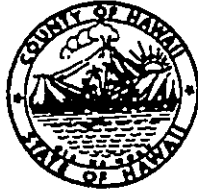
The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to:

- a. Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- b. Providing an adequate water source at the site prior to start up of construction activities;
- c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d. Controlling of dust from shoulders and access roads;
- e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f. Controlling of dust from debris being hauled away from project site.

If you have any questions regarding these issues on fugitive dust, please contact the Clean Air Branch at 586-4200.

c: NRB
CAB
Federal Hwy. Administration

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. BRUCE ANDERSON, DIRECTOR OF HEALTH,
HAWAII STATE DEPARTMENT OF HEALTH
P.O. BOX 3367
HONOLULU HI 96801


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of January 1, 1999, to Governor Cayetano regarding the following: 1) the contractor must obtain a noise permit and comply with rules and conditions of HAR 11-46-(various); 2) heavy vehicles must comply with HAR 11-42; 3) all construction activities must comply with HAR 11-60.1-33, pertaining to air quality concerns. Special Contract Requirements will be issued to all contractors that will ensure compliance with these rules.

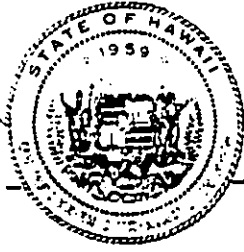
On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

Sincerely,



Robert Yanabu,
Chief Engineer



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

BENJAMIN J. CAYETANO
GOVERNOR
SEIJI F. NAYA
DIRECTOR
BRADLEY J. MOSSMAN
DEPUTY DIRECTOR

David W. Blane
DIRECTOR OFFICE OF PLANNING

OFFICE OF PLANNING

235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Tel.: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-7916

January 22, 1999

Mr. Jiro A. Sumada
Deputy Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252

Dear Mr. Sumada:

**Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency
Review for the Puainako Extension and Widening Project, South Hilo, County
of Hawaii**

The joint proposal by the County of Hawaii Department of Public Works, the State Department of Transportation and the Federal Highway Administration to widen, partially realign and extend Puainako Street in Hilo, has been reviewed for consistency with Hawaii's CZM Program. We concur with the CZM consistency determination that the activity is consistent to the maximum extent practicable based on the following conditions.

1. The Draft Environmental Impact Statement (DEIS), December 1998, which was submitted in support of the CZM consistency determination, serves as the informational basis for this review. We expect that the mitigation measures proposed in the DEIS (Chapter 4), particularly for floodplain encroachments, storm water runoff, minimizing disorientation of Newell's Shearwaters and Dark-rumped Petrels, avoiding impacts to nesting Hawaiian Hawks, and preserving historic resources, will be fully implemented. The CZM program shall be notified of substantive changes to the proposed actions and mitigation measures.
2. The project shall be in compliance with all requirements of the Commission on Water Resource Management, Department of Land and Natural Resources.

Mr. Jiro A. Sumada
Page 2
January 22, 1999

3. The project shall be in compliance with State water quality standards and requirements of the Department of Health.
4. Additional CZM federal consistency review is required in conjunction with the U.S. Army Corps of Engineers permit for work affecting wetlands. This CZM consistency concurrence does not cover the work affecting wetlands because specific Corps permit issues and mitigation will need to be evaluated. A CZM consistency determination specific for the work affecting wetlands should be submitted to our office in conjunction with the Corps permit application.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,



David W. Blane
Director
Office of Planning

- c: U.S. Army Corps of Engineers, Operations Branch
U.S. Fish and Wildlife Service, Pacific Islands Ecoregion
Department of Health, Clean Water Branch
Department of Land & Natural Resources,
Planning & Technical Services Branch
Commission on Water Resource Management
Planning Department, County of Hawaii
✓ Ron Terry, Ph.D.

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000


MR. DAVID W. BLANE, DIRECTOR
OFFICE OF PLANNING
HAWAII DBEDT
P.O. BOX 2359
HONOLULU HI 96804

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of January 22, 1999, to Jiro Sumada. We take note of your finding that the project is consistent with the Hawaii CZM program based on standard conditions and the mitigation listed in the EIS related to endangered species, archaeology, floodplains, and various permits.

We would note for the record that we have corresponded with your office concerning the new Alternative in the Upper Portion (Alternative 10 - see attached figure) that was developed subsequent to the Draft EIS, in response to environmental concerns. As we stated in our letter of February 9, 2000, this hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS. Your letter of February 16, 2000, stated your agreement that the modifications to the project did not alter the finding of consistency your office had made on January 22, 1999.

We would also note that we have submitted to your office a separate request on March 14, 2000, for concurrence of CZM consistency associated with our application for a Department of the Army Permit for Dredge and Fill in the Waters of the U.S., which was accepted on March 15, 2000. We will continue to coordinate with your Office regarding the consistency of the permit with the CZM program.


Robert Yanabu,
Chief Engineer

✓
RECEIVED

JAN 26 1999

HAWAII DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

I would like to propose that the more southern alignment (#2) be selected for the upper portion of the Puainako Extension.

REASONS: (1) Safety - This highway will be situated in a residential district where there are children. (2) Noise will increase and there is no proposal for a barrier for the upper portion. (3) It doesn't make sense to build a second road close to and parallel to Kaumana Drive. (4) Alignment #2 will allow development of a different area of 1410

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name DAVID W. CAMACHO, JR., MD
Address 1414A MELE MANU ST.
Representing My family

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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2/11 4:00 PM
HAWAII DEPARTMENT OF TRANSPORTATION

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. DAVID W. CAMACHO JR.
1414A MELE MANU ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on January 26, 1999. The following is a detailed response to your individual comments.

1. *Noise, Safety, and Other Concerns with Alignment 1.* Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.


We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

2. *Stimulating Development.* Your letter favors selection of Alignment 2 because of perceived ability to stimulate development in Kaumana. In fact, this has never been a purpose of the project and therefore is not a criteria for selection. Subdivisions with existing zoning and permits will benefit from either alternative. Because Puainako is planned as a limited access road, future developments will probably not be allowed direct access to Puainako Street. The County of Hawaii and State of Hawaii must consider a number of factors when approving new development, and there are a number of constraints in the area.

3. *Alignment 1 is too close/parallel to Kaumana Drive.* Kaumana Drive is not well-suited to serving as a primary arterial because of its many driveways, short setbacks to buildings, lack of shoulders, curves and vertical alignment problems. The Puainako Street Extension would lack these deficiencies and could serve as the preferred route for inter-regional traffic, allowing Kaumana Drive to revert to a local

collector street. In this sense, all three Alternative Alignments are compatible with and complementary to Kaumana Drive.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.



Robert Yagabu,
Chief Engineer

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RECEIVED ✓

Jan 22 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

January 23, 1999

I prefer the construction of Alternative Alignment #2 for the upper portion of the Puainako Extension Project. As a resident of Pacific Plantation, I feel this route will have the least amount of traffic noise and road construction inconvenience for the area residents as compared to proposed route #1. Furthermore, Alternative Alignment #2 will be constructed through relatively unimproved lands so encroachment and disturbances upon existing building structures will be at a minimum. If Alternative Alignment #2 is selected, Edita Street should be extended to it to connect middle Kaumana to Waiakea.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Douglas T. Shiro

Address 1360 C Mele Manu Street, Hilo, HI 96720

Representing Self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
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R Terry

745,746,747

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. DOUGLAS T. SHIRO
1360 C. MELE MANU ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on January 27, 1999. The following is a detailed response to your individual comments.

1. *Noise, Safety, and Other Concerns with Alignment 1.* Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

2. *Edita Street Extension.* Although not part of this project, the Hawaii County Department of Public Works has considered future extension of Edita Street.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.



Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

**Puainako Extension and Widening Project
Public Hearing**

RECEIVED

FEB 22 1999

HAWAII DIVISION

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

I AM IN FAVOR OF THE PROJECT. IT WILL RELIEVE TRAFFIC COMING DOWN KAUMANA DRIVE AND BENEFIT THOSE LIKE US WHO LIVE OFF OF WAIANUENUE AVE. THE INTERSECTIONS AT KAUMANA / PUAINAKO AVE & KAUMANA DR. / WAIANUENUE AVE WILL EXPERIENCE LESS TRAFFIC, ESPECIALLY DURING SCHOOL & BUSINESS HOURS.

(PIIHONUA AREA)

ADDITIONAL CONSIDERATION SHOULD BE GIVEN TO STREETS THAT TIE IN TO THE NEW ROAD LIKE EDITAST & WILDERD.

THEY NEED TO BE DESIGNED TO HANDLE THE ADDITIONAL TRAFFIC AS PEOPLE USE THEM TO ACCESS THE NEW HIGHWAY.

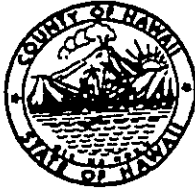
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name CONRAD HOLMANA
Address 1992 WAIANUENUE AVE HOLO HI 96720
Representing SELF

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. CONRAD HOKAMA
1992 WAIANUENUE AVE.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on January 27, 1999. The following is a detailed response to your individual comments.

1. *Reduction of Traffic.* Our traffic models agree with your prediction that the project will reduce traffic relative to the Build Alternative on a number of streets.
2. *Work on Edita Street and Wilder Road.* The project will include stop signs, reduced speed limits, and warning signs on and near these streets. Although not part of this project, the Hawaii County Department of Public Works recognizes that additional traffic on these streets will necessitate upgrades.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.



Robert Yanabu,
Chief Engineer

BENJAMIN J. CAYETANO
GOVERNOR

MAJOR GENERAL EDWARD V. RICHARDSON
DIRECTOR OF CIVIL DEFENSE

ROY C. PRICE, SR.
VICE DIRECTOR OF CIVIL DEFENSE



STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

January 27, 1999

Puainako ✓



PHONE (808) 733-4300
FAX (808) 733-4287

✓ [initials]
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RECEIVED
JAN 29 1999
HAWAII DIVISION

TO: Mr. Jiro Sumada, Deputy Chief Engineer
Hawaii County Public Works Department

FROM: Roy C. Price, Sr.
Vice Director of Civil Defense

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PUAINKO
STREET EXTENSION AND WIDENING PROJECT, SOUTH HILO DISTRICT,
ISLAND OF HAWAII, STATE OF HAWAII

We appreciate the opportunity to comment on the County of Hawaii, Puainako Street Extension and Widening Project, South Hilo, Hawaii.

While State Civil Defense (SCD) does not have negative comments specifically directed at this draft, we do have a proposal that the State and County should consider in this application. The petition area is vulnerable to natural hazards such as earthquakes, volcanic activity, and the threat of wind and torrential rainfall associated with tropical cyclones/hurricanes. This proposal entails that any future developers purchase and install outdoor warning sirens and that siting, design and construction of structures within the petition area address the types of natural hazards that present a threat to the lives and property of future residents/occupants of the area. Also transportation engineers must design and construct this roadway for use as a possible emergency evacuation route.

Just as parks, schools, fire hydrants, underground/overhead utilities and sidewalks are a planned, integral part of subdivisions and industrial areas, so must mitigation measures such as early warning and emergency warning systems and evacuation routes be planned for the safety of communities.

FXED
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R Terry

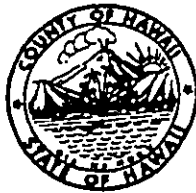
Mr. Jiro Sumada
January 27, 1999
Page 2

Our State Civil Defense planners and technicians are available to discuss this further if there is a requirement. Please have your staff call Mr. Norman Ogasawara of my staff at 733-4300.

c: ✓ Mr. Abraham Wong
Division Administrator
Federal Highway Administration
P. O. Box 50206, 300 Ala Moana Blvd.
Honolulu, Hawaii 96850

The Honorable Benjamin J. Cayetano
Governor, State of Hawaii
c/o Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. ROY C. PRICE
VICE DIRECTOR OF CIVIL DEFENSE
HAWAII STATE DEPT. OF DEFENSE
3949 DIAMOND HEAD RD.
HONOLULU HI 96316-4495


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of January 27, 1999, to Jiro Sumada. The following is a detailed response to your individual comments.

1. *Future Developers Should Install Warning Sirens.* The agencies responsible for this highway project do not have authority to impose requirements on developers, other than those related to highway access and operation.
2. *Road Should be Designed and Built for Use as Evacuation Route.* The roadway design is conformant with state highway standards, which are well-adapted for handling high volumes of traffic, such as could occur during a civil defense emergency, in an efficient and safe manner.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

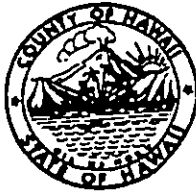
We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer

CORRECTION

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

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. ROY C. PRICE
VICE DIRECTOR OF CIVIL DEFENSE
HAWAII STATE DEPT. OF DEFENSE
3949 DIAMOND HEAD RD.
HONOLULU HI 96316-4495


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of January 27, 1999, to Jiro Sumada. The following is a detailed response to your individual comments.

1. *Future Developers Should Install Warning Sirens.* The agencies responsible for this highway project do not have authority to impose requirements on developers, other than those related to highway access and operation.
2. *Road Should be Designed and Built for Use as Evacuation Route.* The roadway design is conformant with state highway standards, which are well-adapted for handling high volumes of traffic, such as could occur during a civil defense emergency, in an efficient and safe manner.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer

RECEIVED

FEB 8 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

ALTERNATIVE #2, UPPER PORTION SHOULD BE CHOSEN FOR THE FOLLOWING REASONS:

SAFETY: COMMON SENSE TELLS YOU THAT A HIGH-SPEED ROADWAY SHOULD BE BUILT AS FAR AWAY FROM EXISTING HOMES AS POSSIBLE. THIS WILL HELP MINIMIZE BOTH PEDESTRIAN AND VEHICLE ACCIDENTS, AS WELL AS DAMAGE TO RESIDENTIAL PROPERTY AS A RESULT OF ACCIDENTS.

EXPANSION: CHOOSING ALTERNATIVE #2 WILL PROVIDE ROOM FOR EXPANSION IN THE FUTURE.

PRESERVE PROPERTY VALUES: IF ALTERNATIVE #1 GOES THRU, THERE WILL BE AN IMMEDIATE DROP IN VALUE OF PROPERTIES LOCATED BETWEEN EDITA STREET AND COUNTRY CLUB ESTATES. THIS WILL RESULT IN THE REDUCED COLLECTION OF TAXES. WHEREAS ALTERNATIVE #2 WILL MAKE MORE LAND ACCESSABLE TO DEVELOPERS. THEY WILL EXPAND THE PROPERTY TAX BASE.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Randall R. Kishimoto
RANDALL R. KISHIMOTO
Address 1600 MELE MANU STREET
Representing HILO, HAWAII 96720

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 8 1999
69757-21

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. RANDALL R. KISHIMOTO
1600 MELE MANU ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on January 29, 1999.

Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

Sincerely,



Robert Yanabu,
Chief Engineer

RECEIVED AS FOLLOWS



United States Department of the Interior

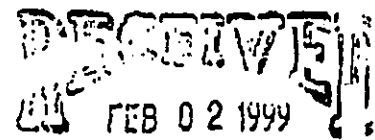
OFFICE OF THE SECRETARY
Washington, D.C. 20240



ER 99/68

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
P. O. Box 50206
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

JAN 28 1999



OKAHARA & ASSOC., INC.
HILO OFFICE

Dear Mr. Wong:

This is in regard to the request for the Department of the Interior's comments on the Draft Environmental Statement and Section 4(f) Evaluation concerning *Puainaka Street Extension and Widening*, South Hilo, Hawaii.

This is to inform you that the Department will have comments, but will be unable to reply within the allotted time as we have just received your partial transmittal of documents - - 1 document received on December 29, 1998, and "Box 2 of 2: 5 copies" received on January 21, 1999. To date, your box labeled "Box 1 of 2: 6 copies" has not been received. Please consider this letter as a request for an extension of time in which to comment on the project.

Our comments should be available by March 17, 1999.

Sincerely,

Terence N. Martin

Terence N. Martin
Team Leader, Natural Resources
Management
Office of Environmental Policy
and Compliance

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

Mr. Colin Hashiro
Okahara & Associates, Inc.
Engineering Consultants
200 Kohala Street
Hilo, Hawaii 96720

Post-it* Fax Note	7671	Fax Log No: 19984	Date	2-2-99	# of pages	2
To	Kan Terry	From	Colin Hashiro			
Co./Dept	Geometrica, Inc.	Co.	Okahara			
Phone #	982-6871	Phone #	961-6677			
Fax #		Fax #				



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
February 8, 1999

FILE COPY

IN REPLY REFER TO
HDA-HI

Mr. Terence N. Martin
United State Department of the Interior
Washington, D.C. 20240

Subject: Puainako Street Extension and Widening, South Hilo, Hawaii

Dear Mr. Martin:

Thank you for your letter dated January 28, 1999 which requested an extension of time to comment on the subject project. We apologize for the mixup in the shipment of EIS documents. We look forward to receiving your comments by March 17, 1999.

If you require more information or have any questions, please feel free to contact me at (808)541-2530.

Sincerely yours,

Richelle M. Suzuki, P.E.
Transportation Engineer

cc: Bob Yanabu, Hawaii County DPW
Colin Hashiro, Okahara & Associates, Inc.
Ken Au, HDOT, HWY-PA

FAXED
2/8/99
all cc's

PUBLIC STATEMENT REGISTRATION FORM

ON AGENDA
 NOT ON AGENDA

COUNTY COUNCIL
County of Hawaii
Hilo, Hawaii

OPPOSE
 SUPPORT

DATE 2/2/99

SPEAKER NO. _____

BILL/RESO./COMM./REPORT NO. _____

SUBJECT MATTER Puainako / Saddle Road

NAME Tony Long
(Please print clearly)

ADDRESS 76B Hualani Dr. PHONE 9351925

Hilo 96720

REPRESENTING SELF
(Please Indicate Whether Self or Organization)

Tony Long

February 1, 1999

Concept Design

County Council Members
25 Aupuni Street, Suite 209
Hilo, Hawaii 96720



78-B Hualani Dr.
Hilo, Hawaii 96720
(808) 935-1925

RE: Puainako / Saddle Road Extension.

RECEIVED
Title _____ By _____
Date 2/2/99
County Council / P. PC

Aloha,

My name is Tony Long, I own an Interior Design business called Concept Design.

The majority of my client's reside in the Waiakea and Kaumana District. I myself live in the Kaumana area, and my parent's own a rental home in the upper Kaumana district.

I have been subjugated by problems due to morning traffic. What would usually be a fifteen(15) to twenty(20) minute drive, ends up being a thirty (30) to forty five (45) minute drive. Promptness is very important to me. The Hilo community do not tolerate tardiness, especially when they are spending money to re-decorate their homes. I do not like using traffic as an excuse.

Homes located in the upper Kaumana area were once sold for 170,000 to 195,000. It is currently being sold for as low as 139,000 and below. Basically just giving these houses away.

Finding prospective tenants is sometime's difficult because of the winding road and traffic congestion on school days.

My sister and brother -in- law own the franchise for Avis Rent A Car here in Hilo. They are constantly afflicted with problems with our visitors getting into traffic accidents on the saddle road despite warnings. If you are involved in a traffic accident on Saddle road driving a rental car, you just bought yourself a brand new car, car insurance will not cover. Your responsibility adds on deaths, injuries, and damages incurred due to the accident.

I truly believe that this extension would drastically reduce traffic problems if the following occurs:

Comm. No. 243
File No. FND/CIP
Ref. To: Presented PC
Ref. Date 2-2-99

- 1) All Property owners involved will be compensated fairly.
- 2) All environmental concerns will be addressed and all problems resolved.
- 3) Pull over lanes for larger vehicles to use, and to safely allow traffic to overtake.
- 4) To allow visitors to sight see and take pictures safely.

Thank you for your time and I am now open for any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Tony Long", with a long horizontal flourish extending to the right.

Tony Long
Owner - Concept Design
Interior Designers.

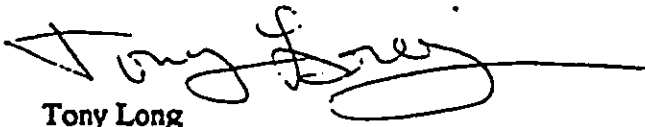
CORRECTION

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

- 1) All Property owners involved will be compensated fairly.
- 2) All environmental concerns will be addressed and all problems resolved.
- 3) Pull over lanes for larger vehicles to use, and to safely allow traffic to overtake.
- 4) To allow visitors to sight see and take pictures safely.

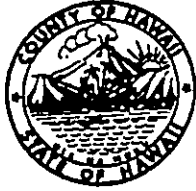
Thank you for your time and I am now open for any questions or comments.

Sincerely,



Tony Long
Owner - Concept Design
Interior Designers.

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. TONY LONG
76 B HUAALANI DR.
HILO HI 96720


Subject: Comment to Puainako Street Extension and
Widening Environmental Impact Statement (EIS)

Thank you for your comment on the Puainako Street Project that you submitted as part of your oral testimony to the Hawaii County Council on February 2, 1999. As the statement was forwarded to me, we have chosen to treat it as a comment letter on the EIS and are thus responding. The following is a detailed response to your individual comments.

1. *Traffic congestion and safety problems on Kaumana Drive.* We agree with your assessment, and addressing these problems is one of the major goals of the Puainako Extension and Widening project.

2. *Proper compensation, environmental concerns, passing lanes and scenic pullouts.* All relocation activities and right-of-way acquisition will be compensated fairly and will conform to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970 (P.L. 91-646). Environmental concerns have been addressed through the development and agency and public review of the Environmental Impact Statement process; an extensive list of mitigation measures have been developed and will be enforced as an integral part of the construction process. Passing lanes and scenic pullouts are not currently planned for the highway, as slopes are not steep enough to require passing lanes and no scenic viewpoints or visitor attractions are present along the route. We would note that the Saddle Road, which will extend beyond Puainako Street, will include these facilities.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.



Robert Yanabu,
Chief Engineer

PUBLIC STATEMENT REGISTRATION FORM

ON AGENDA
 NOT ON AGENDA

COUNTY COUNCIL
County of Hawaii
Hilo, Hawaii

OPPOSE
 SUPPORT

DATE 2-2-99

SPEAKER NO. _____

BILL/RESO./COMM./REPORT NO. Puainoa ext

SUBJECT MATTER Puainoa extns.

NAME William P. Kalawaiianui
(Please print clearly)

ADDRESS P.O. 235 PHONE 885-4131

Kamuela, HI 96743

REPRESENTING Self
(Please indicate whether Self or Organization)

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. WILLIAM P. KALAWAIANUI
P.O. BOX 235
KAMUELA HI 96743

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the Puainako Street project which, which you submitted as part of your oral testimony to the Hawaii County Council on February 2, 1999. In the written statement, you noted your opposition to the project.

Your views will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Yanabu", written over a horizontal line.

Robert Yanabu,
Chief Engineer

RECEIVED ✓

FEB - 2 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

Feb. 1, 1999

COMMENT OR STATEMENT

We the undersigned vehemently oppose to the construction of Alignment #1 of the proposed Puainako Extension where a major highway will run so close to our homes. The residents of Pacific Plantation paid premium prices for our properties because of the tranquility of this place. If the traffic noise gets to be unbearable, our only option would be to sell which would result in a huge monetary loss.

Why build such a highway so close to a populated area when there's an alternate route that can be built on mostly uninhabited land?

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name John K. Watanabe & Doris E. Watanabe
Address 1610 Mele Manu st. Hilo, Hi. 96720
Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 7 1999
6:15 PM

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. AND MRS. JOHN & DORIS WATANABE
1610 MELE MANU ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

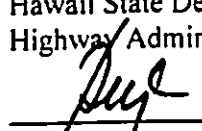
Thank you for your comment on the EIS contained in your letter of February 1, 1999 Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Noise, Safety, and Other Concerns with Alignment 1.* Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

2. *Stimulating Development.* Your letter favors selection of Alignment 2 because of perceived ability to stimulate development in Kaumana. In fact, this has never been a purpose of the project and therefore is not a criteria for selection. Subdivisions with existing zoning and permits will benefit from either alternative. Because Puainako is planned as a limited access road, future developments will probably not be allowed direct access to Puainako Street. The County of Hawaii and State of Hawaii must consider a number of factors when approving new development, and there are a number of constraints in the area.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.


Robert Yanabu.
Chief Engineer

RECEIVED

1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

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Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

From the 1/20/99 Puainako Extension and Widening Project Public Hearing, we understand that no lot will be land locked. Please clarify the access planned for properties TMK: 2-4-8:12 and 13:

Whether it is scheduled to be accessed:

- 1) Via an easement; or
- 2) Via a planned collector street within a public R.O.W.; or
- 3) Via a direct access to Alternate Route #2

Should Alternate Route #2 be selected, what is being planned for the remnants (why have them) of the agricultural zoned land between it and the subject property?

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Ronald H. Nagata *Ronald H. Nagata*

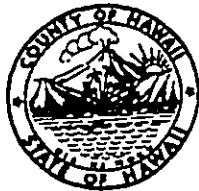
Address 280 Ponahawai St.

Representing JAS & Associates

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB 3 1999
CTV-ST-120

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. RONALD H. NAGATA
280 PONAHAWAI ST.
HILO HI 96720


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 2, 1999. Your letter asks us to clarify the access planned for TMK 2-4-8:12 & 13. According to our review of records, none of the alignments proposed for the project border these two parcels or interfere with their legal access in any way. For your information, Hawaii State Department of Transportation may allow properties that do border the alignment that is finally selected to access the road directly, depending on the particular situation. We hope this clarifies the situation for you.

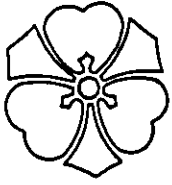
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Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

Sincerely,



Robert Yanabu,
Chief Engineer



Milton M. Murasaki, D.D.S., Inc.
280 Ponahawai Street, Suite 201
Hilo, Hawaii 96720
808.935.5488

RECEIVED

FEB - 2 1999

HAWAII DIVISION

February 1, 1999

Mr Abraham Wong
Division Administrator
Federal Highway Administration
P O Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong,

I am strongly in favor of the Puainako Extension and Widening Project.
I favor Alternative Alignment #2 for the Upper Portion because I believe that the increase in traffic would present additional traffic safety concerns if Alignment #1 were to be selected. Also, Alignment #2 will make previously inaccessible land available for agricultural use and/or real estate development. This may help our depressed East Hawaii economy. . .

Sincerely,


Dr. Milton M. Murasaki

FAXED
FEB - 3 1999
211-51-5621

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. MILTON MURASAKI, DDS
280 PONAHAWAI ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 3, 1999. The following is a detailed response to your individual comments.

1. *Noise, Safety, and Other Concerns with Alignment 1.* Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.

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Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.


Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

RECEIVED
FEB - 5 1999
HAWAII DIVISION

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

I am strongly in favor of the Puainako Extension and Widening Project.

I favor Alternative Alignment #2 for the Upper Portion because I believe that the increase in traffic would present additional traffic safety concerns if Alignment #1 is selected.

Also, Alignment #2 will make previously inaccessible land available for agricultural use and/or real estate development.

This should help our depressed East Hawaii economy.

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Name Ken K. Nishimoto
Address 403 Naniakea St. Hilo
Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 3 1999
8:57-87

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. KEN K. NISHIMOTO
403 NANIAKEA ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


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Robert Yanabu
Chief Engineer

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FEB - 3 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

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Name ROBERT M. ATEBARA, DMD

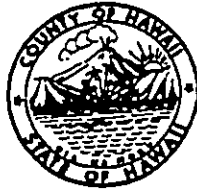
Address 275 POUAHAWAI ST. HILO

Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 3 1999
L. H. WONG

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. ROBERT M. ATEBARA,
275 PONAHA WAI ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

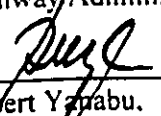
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Robert Yanabu,
Chief Engineer

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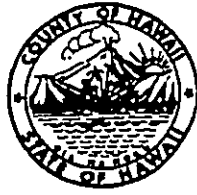
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Name MARILYN NISHIMOTO
Address 354 ANELA ST. HILO, HI 96720
Representing Self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
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674 57 2024

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

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25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. MARILYN NISHIMOTO
354 ANELA ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

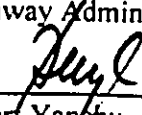
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Puainako Extension and Widening Project
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HAWAII DIVISION

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Name James Y. Sadayasu
Address 280 Ponahawai Street Hilo, HI 96720
Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
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677.577.21

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

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25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. JAMES Y. SADAYASU
280 PONAHAHAWAI ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
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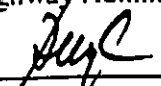
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Address 280 Ponahawai Street Hilo, HI 96720
Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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FEB - 8 1999
27-57-21

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Mayor



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County of Hawaii
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April 3, 2000

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280 PONAHAWAI ST.
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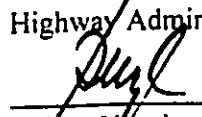
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Address 27-641 Kaieie Homestead Road Papaikou, HI 96781
Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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679.51-21

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. JON E. SADAYASU
27-641 KAIEIE HOMESTEAD RD
PAPAIKOU HI 96781

Subject: Comment to Puainako Street Extension and Widening
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HAWAII

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Address 27-641 Kaieie Homestead Road Papaikou, HI 96781
Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. CHRIS J. SADAYASU
27-641 KAIEIE HMSTD. RD
PAPAIKOU HI 96781

Subject: Comment to Puainako Street Extension and Widening
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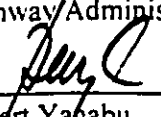
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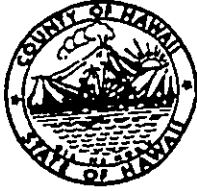
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Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 8 1999

Stephen K. Yamashiro
Mayor



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County of Hawaii
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(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

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PAPAIKOU HI 96781

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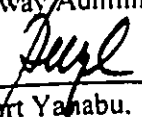
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Robert Yanabu.
Chief Engineer

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FEB - 4 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

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Name JAMES T. YAGI
Address 1320 KONDHANA ST HILO, HI
Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 8 1999
CTH-57-01

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. JAMES T. YAGI
1320 KOMOHANA ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

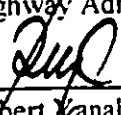
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Robert Yanabu.
Chief Engineer

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HAWAII DIVISION

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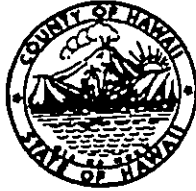
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Name Jeanne E. Yagi
Address 1320 Komehana Street Hilo,
Representing self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 8 1999

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

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1320 KOMOHANA ST.
HILO HI 96720

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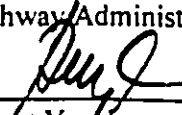
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Robert Yanabu,
Chief Engineer

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Name Ernest A. Sakamoto
Address 275 Ponahawai St. #103
Representing JAS & Associates

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. ERNEST A. SAKAMOTO
275 PONAHAWAI ST. #103
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
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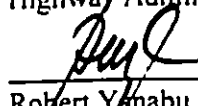
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Robert Yanabu,
Chief Engineer

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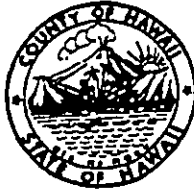
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Name William R. Downie
Address 366 KUKUAU ST
Representing RESIDENT OF HILO -

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB - 8 1999

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
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25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

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366 KUKUAU ST.
HILO HI 96720

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Robert Yanabu,
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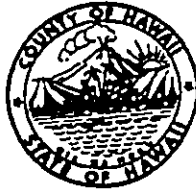
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Name Jean Sakaba
Address 96 Melani Street, Hilo, Hawaii 96720
Representing Self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
2/11/99
BY
STATE
DMM

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. JOAN SAKABA
46 MELANI ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


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Chief Engineer

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P O BOX 1879
HONOLULU, HAWAII 96805

RAYNARD C. SOON
INTERIM CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

February 9, 1999

RECEIVED
RECEIVED
FEB 11 1999
HAWAIIAN HOMES COMMISSION
DIVISION

Mr. Jiro A. Sumada, Deputy Chief Engineer
County of Hawaii
Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252

Dear Mr. Sumada:

Subject: Puainako Street Extension and Widening Project, Draft
Environmental Impact Statement, South Hilo, Hawaii,
Dated December, 1998

Thank you for the opportunity to review the subject application.
The Department of Hawaiian Home Lands has no objection to the
extension and widening of Puainako Street between Kilauea Avenue
and Saddle Road.

If you have any questions, please call Daniel Ornellas at
586-3836.

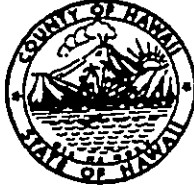
Aloha,

for
Daniel Ornellas
Raynard C. Soon, Interim Chairman
Hawaiian Homes Commission

FAXED
HWY-PA
2/11/99

COPY

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. RAYNARD C. SOON, CHAIRMAN
HAWAII DHHL
P.O. BOX 1879
HONOLULU HI 96805


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of February 9, 1999, to Jiro Sumada in which you stated that your Department has no objection to the proposed project.

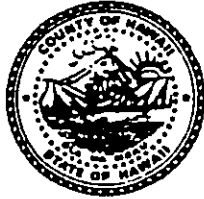
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Sincerely,


Robert Yanabu,
Chief Engineer

Stephen K. Yamashiro
Mayor



Virginia Goldstein
Director

Russell Kokubun
Deputy Director

County of Hawaii

PLANNING DEPARTMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-8742

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FEB 12 1999

HAWAII DIVISION

February 8, 1999

MEMORANDUM

TO: Jiro Sumada, Deputy Chief Engineer
Department of Public Works

FROM: VIRGINIA GOLDSTEIN
Planning Director

SUBJECT: Draft Environmental Impact Statement for the Proposed Puainako Street Extension and Widening Project, South Hilo, Island of Hawaii

Thank you for your memorandum dated December 18, 1998, accompanied by a copy of the above-described draft environmental impact statement (DEIS) for our review and comment.

We have completed our review and have no objection to the information contained within the DEIS and its preliminary conclusions and findings. More specifically, the information recited within Section 6-Relationship to Other Policies and Land Use Plans, is accurate. The construction of either proposed alignments of the Puainako Street extension will be in conformance with the requirements of the County of Hawaii General Plan and Zoning Code. However, since a preferred alignment must ultimately be selected, we would prefer the following alignments for the reasons as stated:

Lower Alignment (makai of Komohana Street)

We recommend the selection of Alignment A for the simple reasons that unlike Alignment B, it will result in less disturbance to existing residences along Puainako Street, reduce the area of contact with the Waiakea Flood Control channel, and avoid a crossing of Komohana Street at the channel.

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Jiro Sumada, Deputy Chief Engineer
Department of Public Works
Page 2
February 8, 1999

Upper Alignment (mauka of Komohana Street to Kaumana Drive)

We recommend the selection of **Alignment #2**, which better compliments a General Plan Course of Action for the South Hilo District to realign the Saddle Road [Puainako Street extension]. The General Plan also stated that "*Limited access control* [to the Puainako Street extension] *is recommended with intersections at the major cross arterials serving the various areas of the city.*" Alignment #2 will best achieve this goal by being situated along an alignment which does not encourage connection with non-arterial roadways from subdivisions along Kaumana Drive.

Alignment #1 would appear to function as an alternative roadway to Kaumana Drive due to its close proximity and connection to residential areas situated along Kaumana Drive. An example of this is the proximity of Alignment #1 to the Pacific Plantation Subdivision in Kaumana. Alignment #1 will traverse between this subdivision and Kaumana Drive, effectively severing this subdivision from the rest of the Kaumana community. Noise generated from Alignment #1 is also expected to have an adverse impact to the residents of Pacific Plantation Subdivision and nearby houseslots. We have kept in mind the higher purpose of this roadway, which will ultimately connect to the Saddle Road to provide a limited-access, cross-island connection between East and West Hawaii.

Finally, we do have one comment to make regarding the structure and content of the DEIS. There must be greater discussion of the benefits and disadvantages of the various alignments if a proper selection by the various agencies and public is anticipated. The analysis of the Lower Alignments provided sufficient information for us to make an informed decision. Discussion of the advantages and disadvantages of the Upper Alignments was minimal. Our decision to support Alignment #2 was based more on assumption than a careful and studied analysis. We hope that this will be remedied in the Final Environmental Impact Statement when the recommendations of the public and governmental agencies are considered and a final selection of the alignments are made.

Jiro Sumada, Deputy Chief Engineer
Department of Public Works
Page 3
February 8, 1999

Thank you for allowing our office the opportunity to comment. Please feel free to contact me or Daryn Arai of my staff should you have any questions.

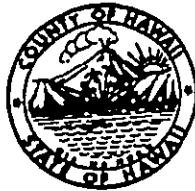
DSA:gp
f:\wp60\Ch343\1999\LPuain01.dsa

c: Governor, State of Hawaii
c/o Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

✓Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206
Honolulu, HI 96850

OEQC

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

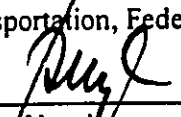
MS. VIRGINIA GOLDSTEIN, DIRECTOR
HAWAII COUNTY PLANNING DEPARTMENT
25 AUPUNI STREET
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of February 8, 1999, to Jiro Sumada. The following is a detailed response to your individual comments.

- 1. Planning Department's preference for Alignment A.* Alignment A contains archaeological sites that have been determined by the SHPO to require preservation in place. In compliance with a federal law informally referred to as Section 4(f), all actions or projects undertaken by agencies of the U.S. Department of Transportation must undergo evaluation to determine if there is a feasible and prudent alternative to the use of such sites (among other resources). If such an alternative exists, it must be selected to avoid use of Section 4(f) resources. Our Section 4(f) evaluation, which is contained in Chapter 5 of the EIS, concludes that a feasible and prudent alternative to such use does exist in Alignment B, and therefore Alignment A may not be selected. For details, please refer to Chapter 5.
- 2. Preference for Alignment 2.* While there are some advantages to the fewer connections to arterial roads offered by Alignment 2, this also restricts its utility to collect traffic from Kaumana and thus fulfill its function. We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.
- 3. More Discussion of Advantages/Disadvantages of Alternative Alignments.* Table S-2 contains two pages of detailed comparisons of the various alignments. Section 2.6 of the Final EIS advances a preferred alternative and contains an extensive discussion of the rationale for the choice.

Again, thank you for your comments. They will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.


Robert Yanabu,
Chief Engineer



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FEB 10 1999

PLANNING DIVISION

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BENJAMIN J. CAYETANO
GOVERNOR

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

LETTER NO (P) 1080.9

FEB 12 1999

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P. O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Environmental Impact Statement (EIS) for
Puainako Street Extension and Widening Project
South Hilo District, Island of Hawaii

We reviewed the subject draft EIS sent by the County of Hawaii,
Department of Public Work's December 18, 1998 letter.

The project will not impact on any of our existing or proposed
facilities. However, given the project's impact on Waiakea
Schools complex and its close proximity to the University of
Hawaii, Hilo campus and Hawaii Community College, we suggest
continued consultation with the Department of Education and the
University of Hawaii, respectively, throughout the duration of
the project.

In the future, when actions described by Environmental Assess-
ments, Environmental Impact Statement Preparation Notices,
Environmental Impact Statements, Plan Review Use, etc., do not
impact on specific Department of Accounting and General Services'
plans or facilities, we, for work reasons, will not provide a "no
comments" or a "good planning principles" type of response. But,
since we are still interested in knowing what is going on
planning-wise in our State, we would still appreciate the oppor-
tunity to review all such documents.

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

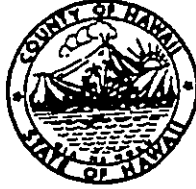
Sincerely,

GORDON MATSUOKA
Public Works Administrator

RC/ET:jy
c: OEQC
County of Hawaii, Dept. of Public Works

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2/12/99

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630


April 3, 2000

MR. GORDON MATSUOKA
HAWAII STATE DEPT. OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119
HONOLULU HI 967810

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of February 12, 1999, to Abe Wong of FHWA, in which you stated that the project will not impact existing or proposed facilities. You recommended continual coordination with the University of Hawaii at Hilo, Hawaii Community College, and the Waiakea Elementary, Intermediate and High Schools. Subsequent to the publication of the EIS we have continued our discussions with these schools to ensure that our planning efforts are coordinated and that their concerns about the project are being addressed.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

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FEB 16 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

(Yes) No
(Please Circle One)

COMMENT OR STATEMENT

I would like to put my vote
in for Alignment # 2 upper
portion

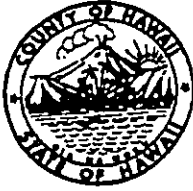
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Patricia Basilio
Address 1762 Akolea Place
Representing Hilo, HI 96720

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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570K
ETC

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. PATRICIA BASILIO
1762 AKOLEA PL.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 16, 1999, in which you stated a preference for Alignment 2.

Your comment will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer

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FEB 18 1999

HAWAII DIVISION

101 Aupuni Street #911
Hilo, HI 96720

13 February 1999

Mr. Abraham Wong, District Administrator
Federal Highway Administration
PO Box 50206
Honolulu, HI 96850

Dear Mr. Wong: re: FHWA-HI-EIS-98-01-0 (Puianako)

No unit of the National Speleological Society was supplied with a copy of the Draft Environmental Impact Statement at the time of its publication last December, nor notified of the meeting in Hilo about that Draft.

Immediately on hasty preliminary review of the text and appendices of this DEIS on belated discovery of its existence February 9, it became apparent that it contains serious problems and misstatement from the standpoint of speleology. Some of these are indicated on the enclosed initial review. They are serious enough and complex enough that they cannot be properly considered by concerned speleologists in time for appropriate response by the stated date of 22 February.

Mr. Ron Terry, DEIS consultant, has informed me that he has arranged an extension until 15 March 1999 with your office, for comments by the National Speleological Society and other concerned speleologists. This letter is to request written confirmation of this extension.

Please send this confirmation to the following:

Mr. David Jagnow
Conservation Chairman, National Speleological Society
1300 Iris, #103
Los Alamos, NM 87544

Hazel Medville
Chairman, Hawaii Speleological Survey of the National Speleological Society
Reston, VA 20191 ←

Ron Terry
c/o Okahara and Associates Inc.
200 Kohola St.
Hilo, HI 96720

and myself.

Sincerely yours,

WR Halliday

William R. Halliday, Chairman
Hawaii Chapter of the National Speleological Society
cc: above plus ACCA

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WTCY
LWY
ET

(6 pages)

Initial Review of THE PUAINŪKO STREET EXTENSION AND WIDENING
DRAFT ENVIRONMENTAL IMPACT STATEMENT AND SECTION 401(f) EVAL-
UATION (FHWA-HI-EIS-98-01-0)

William R. Halliday
Chairman, Hawaii Chapter of the National Speleological Society

Introduction

On reviewing January 1999 issues of Hawaii Tribune-Herald (Hilo) on February 9, 1999 I found that the above Draft EIS had been published in December 1998, with a public meeting held in Hilo in January 1999. Immediate review of a copy of the DEIS in the Hilo Public Library revealed that no unit of the National Speleological Society was on the list for a copy of the DEIS or for notice of the meeting.

Comments on the DEIS were said to be due at FHA offices in Honolulu by 22 February 1999. The DEIS was more than three inches thick including numerous technical appendices. Even hasty preliminary reading revealed serious problems from the speleological standpoint.

The firm which prepared the DEIS (Okhara and Associates, Inc., Hilo) cooperated by immediately making two copies for review; one is being sent to David Jagnow, NSS Conservation Chairman, in New Mexico. I consulted twice with Mr. Jagnow by phone, and also received a helpful telephone call from Mr. Ron Terry, the consultant who evidently actually prepared the draft. I read to him the primary issues specified below, which he acknowledged as valid issues, and provided some additional information. At his suggestion, I am meeting next week with a group involved in the preparation of the DEIS, prior to discussion of the problem with the Executive Committee of the Hawaii Chapter of the National Speleological Society on 18 February 1999. Mr. Terry volunteered to obtain an extension of the comment period from 22 February to 15 March 1999. This has not yet been confirmed.

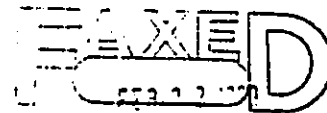
There has been no input to either internal organization of the National Speleological Society from its Hawaii Caves Conservation Task Force on this matter.

Primary Issue #1

An incorrect and misleading assertion that protection of Kaumana Cave (and possibly other caves) from this proposed project is a "resolved issue".

Primary Issue #1a

Omission of the fact that a related unresolved issue is whether known caves in Road Alignment #1 (the seemingly preferred alternative) are individual caves or part of Kaumana Cave.



Discussion: (1) Kaumana Cave is the best-known and most important physical feature in this project area. In Appendix A-1, Section 7, a letter of 8/2/96 from the Chief Engineer of Hawaii County acknowledges that Kaumana Cave "is a world-class geological feature that supports and supports a diverse and outstanding assemblage of Hawaii's cave fauna". As indicated below, proposed Road Alignment #1 does not comply with technical recommendations in Appendix D for the mapped section below the main entrance, and there is no consideration of the unmapped section above Kilua Street.

As indicated in Appendix D (p.2), the road project should be no closer than "50 to 100 feet" from Kaumana Cave. If the partial map in this DEIS is to be believed, the seemingly-preferred Road Alignment #1 is less than 20 feet from the part of the cave upslope from Edita Street. Other caves or parts of Kaumana Cave are documented within this alignment upslope from Kilua Street (p. 3-2 and 4-1). The environmental impact studies for this DEIS have completely omitted the cave or caves in this part of Road Alignment #1.

(2) On page S-15 and p. 7-3, protection of Kaumana Cave and supposed other caves mentioned on page 3-2 and p. 4-1 is not included in lists of "Unresolved Issues". Neither is clarification of resources and values of the cave or caves in Alignment #1 upslope from Kilua Street. Both are "Unresolved Issues".

(3) Kaumana Cave and/or other caves mentioned on pages 3-2 and 4-1 as being in Alignment #1 are not part of the selection criteria used to select potential alternative road routes.

Primary Issue #2

An incomplete, misleading and perhaps unreliable map supposedly showing Kaumana Cave and its relationship to surface features and road alignments.

Discussion: (1) Reliance on this map has led to unfortunate misconceptions, e.g., "further research and description of Kaumana Cave is not necessary at this point" (Chief Engineer letter 8/2/96 cited above, in Appendix A-1 section 7.

(2) In Appendix D, extensive sections of Kaumana Cave, with many entrances, are described in the area upslope from the mapped section. Some of the supposed additional caves mentioned on pages 3-2 and 4-1 probably are part of this unmapped section of Kaumana Cave. None of these entrances to Kaumana Cave are plotted on any of the maps in the DEIS, nor any entrance to any other cave within Road Alignment #1 (p. 3-2).

(3) Incomplete transit or theodolite mapping was the basis for the partial Kaumana Cave map used throughout the DEIS. In the hands of experienced, especially skilled cave mappers, such techniques can yield accurate results, but in less experienced

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hands, low and/or narrow passages present major technical problems to persons using these techniques. Conventional cave mapping techniques can and do produce more accurate results in some cases.

In the case of the mapped section of Kaumana Cave, no determination of accuracy by closure error, verification by cave radio, or drill holes was documented. Nevertheless, it is asserted that "further research and description of Kaumana Cave is not necessary" purely because the transit or theodolite survey was performed by "professional surveyors" (and because it supposedly showed a minimum distance of 16 feet between the cave and proposed Road Alignment #1 in the section above Edita Street).

(4) The DEIS also wholly ignores the current remapping of the entire cave by the Hawaii Speleological Survey, with a detailed map of the section between Edita Street and Kilua Road already published (Halliday, 1997b). Copies of this map were supplied gratis to the county of Hawaii and to Okuhara and Associates, Inc. previously, and to the Hilo Lions Club which has had a special relationship with Kaumana Cave for almost 50 years (Halliday, 1997b). By telephone, Ron Terry expressed dismay at learning of this, and unawareness of the present whereabouts of these copies of the map.

This partial map was made by techniques normally more suitable for caves of this type than are transit or theodolite techniques. Two Sisteco compasses and cloth tape were used, with backsights and avoidance of rock likely to cause magnetic deviation). It is much more detailed, more extensive, and perhaps more accurate than those in the DEIS. In the absence of documentation of degree of accuracy, there is no basis for comparison of accuracies.

Remapping of the entire cave by Hawaii Speleological Survey teams under the leadership of Don Coons is expected in the near future.

At present neither map provides the needed assurance that Kaumana Cave is at least "50 to 100 feet" from proposed Road Alignment #1.

(5) Contrary to the DEIS's assertion that "the 1881 lava flow is known to contain many such lava tubes (as Kaumana Cave)" (p. 4-1), current files of the Hawaii Speleological Survey list no other caves in the 1881 flows in the area of this project.

Primary Issue #3.

An incorrect and seriously misleading assertion that lava tube caves in Hawaii only "have value as historic sites, recreation areas, or unique geologic features (p. 4-1)".

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Discussion: (1) This surprising assertion is internally contradicted in several parts of the DEIS (e.g., the sections on cave biology in Appendix D and in letters from the U.S. Fish and Wildlife Service in Appendix A-1). Yet it forms the basis for major sections of the DEIS's Executive Summary and the parts of the DEIS from which the Executive Summary was drawn. This includes the entirety of crucial Sections 1 and 2, and the criteria for evaluation of alternative routes. None contains any consideration of caves and their biological, geologic, and other well-known resources and values, even as "recreation areas, or unique geologic features".

Actually, Kaumana Cave has exceptional biological values documented in Appendix D and the letters of the U.S. Fish and Wildlife Service in Appendix A-1. It also is the leading spelean recreational resource in Hawaii and contains many geological resources and values. In its own right it is a significant historical feature, and it has hydrological features omitted from the DEIS.

(2) This assertion and the broad minimization of caves throughout the DEIS also are contradicted by the extensive recent literature on cave management in Hawaii and elsewhere, and of assessment of spelean resources and values (e.g., Halliday 1995) and on criteria for evaluation of environmental studies of areas containing caves (Halliday, 1997a).

Primary Issue #4

An especially dreadful incorrect assertion (p. 4-3) that it is appropriate to fill or collapse caves "which pose a structural hazard to the road" no matter how valuable the cave, its contents, and its environment.

Discussion: This is contradicted by the Policy on Cave Preservation of the National Speleological Society and by the recent speleological literature just cited.

Primary Issue #5

An incorrect assertion that environmental impact studies need not consider lava tube caves (1) not currently used for recreation, (2) not known to have been systematically explored, or (3) with unknown geological values (p. 4-1) (p. 4-1).

Discussion: This is contrary to many aspects of federal and state law, and to the Policy on Cave Preservation and the recent literature just cited.

Primary Issue #6

Aside from passing mention in Appendix D (which is dismissed in the bulk of the DEIS), there is no mention of the extraordinary conduit hydrology within and immediately beneath Kaumana Cave, nor mention of the scenic periodic spouting waterfalls a short



distance upslope from the main entrance, nor the illegal dumps in the cave containing hazardous and toxic wastes which threaten downslope water quality.

Discussion: These omissions cast doubt on the validity of the entire sections on hydrology.

Primary Issue #7

Although Kaumana Cave is the most important feature in or adjacent to proposed Road Alignment #1, there is a clear flavor throughout the draft of denigrating this and possibly other caves in or adjacent to the alignment.

Discussion: (1) The sections of the DEIS discussing the Hawaii State Plan wholly omit the sections of that plan which make it the policy of the state to protect natural features such as caves.

(2) Caves are wholly omitted from the sections on Affected Environment (e.g., p. S-6), Environmental Impacts (e.g., p. S-7 to 12) and relevant related sections.

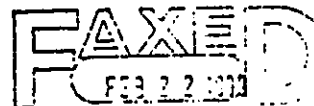
(3) Kaumana Cave is omitted from the index to the DEIS.

(4) The only listed speleological reference in the DEIS is a highly technical biological report, only partly relevant to these issues, despite the existence of an extensive recent literature broadly relevant to these issues.

General Comments

In my opinion, the map on page 1-2 and considerable sections of the text demonstrate a degree of prejudgment in favor of Road Alternative #1 which is likely to harm Kaumana Cave and possibly others said to be in its course. In my opinion, the National Speleological Society should oppose the present course of Road Alignment #1 in the strongest possible terms until it is clear that this proposed alignment (or a new route) is more than "50 to 100 feet" from any significant part of Kaumana Cave and/or other caves in its course.

Further, I suggest that the National Speleological Society offer the preparers of this DEIS the services of volunteer members of its Hawaii internal organizations at no cost, to (1) help determine the actual risk to this cave or group of caves and (2) to correct the many serious errors and misunderstandings relating to caves in this DEIS. One example of this might be in helping pinpoint the actual location of critical sections of the cave by joint use of cave radio. However, this should be entirely at the convenience of volunteer members of these internal organizations. It is not the fault of these internal organizations or their members that these problems were not resolved long ago.



These corrections could be in one of two forms: the Final EIS, or a Supplemental Draft EIS. The latter is preferable, because if the corrections somehow do not appear in the Final EIS, further options are greatly restricted, and are mostly legal in nature. If the corrections are to be in the Final EIS and not in a Supplemental DEIS, unassailable guarantees should be obtained.

It is a constructive beginning, however, that Mr. Ron Terry volunteered to assume the responsibility for postponing the February 22 deadline for comments to March 15, 1999. It is expected that this will be verified with Mr. Abraham Wong of the Federal Highway Administration in Honolulu.

Mr. Wong's e-mail address is: abraham.wong@FHWA.dot.gov

The above will be discussed with a group organized by Mr. Terry on February 16 and with the Executive Committee of the Hawaii Chapter of the National Speleological Society at its meeting on 18 February 1999.

William R. Halliday
Honorary President, Commission on Volcanic Caves of the
International Union of Speleology

References cited:

Halliday, William R. 1995. Resources, values, and management of Puna caves. Report # 19-01, Hawaii Speleological Survey of the National Speleological Society, 16 p. + 3.

Halliday, William R. 1997a. Resources, values, and hazards Hawaii caves and related karstic and pseudokarstic areas: guidelines for quality assurance in environmental assessments. Report # 97-01, Hawaii Speleological Survey of the National Speleological Society. 23 p.

Halliday, William R. 1997b. The Hilo Lions Club 1953 Kaumana Cave Expedition. Report #97-02, Hawaii Speleological Survey of the National Speleological Society. 6 p. + foldout map.

13 February 1999

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FEB 22 1999

101 Aupuni Street #911
Hilo, HI 96720

19 March 1999

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
PO Box 50206
Honolulu, HI 96850

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MAR 22 1999

HAWAIIAN DIVISION

Dear Mr. Wong:

re: Proposed Puainako Street
Extension and Widening

Thank you for the extension of the comment period on the above
Draft EIS until March 22, 1999.

I regret that I must inform you that the Hawaii Chapter of the
National Speleological Society finds the Draft EIS to be pro-
foundly and fundamentally flawed with regard to caves potentially
impacted by the process.

This conclusion was reached as a result of:

- 1) new field studies by several members of our chapter, includ-
ing hand-held laser surveys in Kaumana Cave
- 2) Determination of present ownership of what was found to be
William DeRody's Cave and obtaining permission for a hasty pre-
liminary investigation of it within the time limit for comments
- 3) historical research on William DeRody's Cave
- 4) meetings and telephone conferences with Okahara and Associates
and with Robert Shirai of Island Surveys, Inc., with review of
data on that firm's survey instrument
- 5) telephone conferences with David Jagnow, Conservation Chairman
of the National Speleological Society, including his report of
independent field studies also performed in Kaumana Cave by the
President of the Cave Research Foundation
- 6) plotting of previously unused data in DEIS Appendix 4 on var-
ious maps
- 7) lengthy discussion at the Chapter's Executive Committee meet-
ing on 18 March 1999.

The vote of the Executive Committee on that date was unanimous on
the following points:

- 1) The Draft EIS does not comply with the requirements of the
federal legislation mandating the EIS process
 - a) It wrongfully asserts that the EIS process need not investi-

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gate caves not used for recreation, caves that probably have never been systematically explored, and/or caves with unknown geological values (4.1.1.1). This is contrary to federal statute.

b) Despite acknowledging that Kaumana Cave is a world-class feature and resource (HI County Engineer ltr 9/2/96, Appendix A-1, sec. 7), it incorrectly asserts that protection of the lower part of this cave is a "resolved issue", which it is not (omission from "Unresolved Issues", p. S-15).

Further, it consistently denigrates this and other affected caves and their protection from environmental impact by this proposal (e.g., Kaumana Cave is omitted from the index; nearly all relevant references and previous cave maps are omitted from the text and from the list of references; this and other caves are omitted from Criteria for Selection among alternate routes; William DeRody's Cave is dismissed without inventory of features, resources, values and hazards; caves are entirely omitted from the sections on Affected Environment and Environmental Impacts (S-6, S-7); the section of the Hawaii State Environmental Policy promoting the protection of natural resources like caves is omitted (HRS ch. 344 [2]); there is no mention of seasonal scenic spouting waterfalls in Kaumana Cave, nor the unlawful dumps in it containing toxic and/or hazardous waste in an area which seasonally floods completely, thus contaminating ground water, and much more)

c) It incorrectly asserts that lava tube caves in Hawaii may only have value "as historic sites, recreation areas, or unique geologic features". Literature to the contrary (including relevant commercial value as a show cave) is omitted from the reference list.

d) It inappropriately asserts that if a cave "poses a structural hazard to the road, appropriate actions will be taken to produce a structurally sound surface for construction" (4.1.1.3). (By merely labelling the action of filling and/or collapsing a cave "appropriate", federal requirements of the EIS process could be circumvented readily).

e) It incorrectly asserts that "lava tube caves are common in east Hawaii" and therefore are unlikely to have "unique" geological values (4.1.1.1), and "the 1981 lava flow is known to contain many such lava tubes, including Kaumana Cave" (4.1.1.1). Such statements reflect profound misunderstandings of the fundamental difference between lava tubes (common) and lava tube caves (uncommon), and also the major differences between lava tube caves in different lavas.

f) Without acceptable explanation, it ignores the conclusions of its consultant (Appendix D) on the need for a 50 to 100 foot buffer zone around lower Kaumana Cave, to protect:

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- 1) the cave's structural stability (Appendix D, p. 7 para 1)
- 2) hypogean fauna

The former was confirmed by our members' field investigation.

2) Further regarding Kaumana Cave:

- a) Kaumana Cave is overwhelmingly the most important natural resource in the study area, and the Draft EIS should have been centered around its protection. Instead, it was dismissed, with the incorrect assertion that no further studies were needed (HI County Engineer ltr 8/2/96, Appendix A-1, sec. 7).
- b) Alternative Alignment #1 is less than 25 feet from much of lower Kaumana Cave. This is unacceptable. As cited above, the roadway must be at least 50 feet from the cave.
- c) There is uncertainty about the reliability of the data on which the actual distance between the cave and Alternative Alignment #1 was calculated. The survey instrument was of satisfactory accuracy, and the skill of the operator is unquestioned. However, handwritten Island Survey, Inc. data show no survey leg less than 50 feet whereas our field studies measured distances between their station "tacks" as 40.1, 45.0, and 30.0 feet in sinuous sections of the cave. Further, some of the tacks are in such constricted locations that, even if telescoping tripod legs were used, data automatically entered into the instrument's computer may not have been reliable.
- d) There is no consideration of the conduit hydrology of and immediately beneath Kaumana Cave. This should have been studied long ago and included in the Draft EIS.

Therefore it is the chapter's conclusion that:

- A) Alternate Alignment #1 must be moved to an alignment at least 50 feet from any part of Kaumana Cave, AND
- B) A minimum 50-foot buffer zone between the cave and the roadway must be confirmed by cave radio and drill holes before any construction is started, OR
- C) Alternately, Alternate Alignment #1 must be abandoned.

3) Further regarding William DeRody's Cave:

- a) The Draft EIS was gravely in error in dismissing the significance of what we found to be William DeRody's Cave. It is a beautiful cave and has both geological and commercial values, the latter for potential public display as a "show cave" like Ka Eleku Cave on Maui and Kula Kai

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MAR-22-99 15:05 FROM: FED HIGHWAY

Cavern in Kau. Its leading geological values are complex sequences of features laid down by shiny pahoehoe flows. It also clearly is a conduit for flood waters.

b) This cave extends to and beneath the wide drainage ditch intended as the roadbed for the part of the proposed road located between alternative routes at each end of the project. Much of its upslope end contains massive rockfall at and near this drainage ditch. Our preliminary survey showed that there may be as little as two feet of lava flow remaining between the bottom of this drainage ditch and the top of the cave. As a result, the cave must be bridged, without causing additional rockfall.

Construction here, however, will be hazardous and thus may be unlawful under provisions of OSHA and NIOSH.

It is our intention to request detailed mapping of this cave in the next few weeks by the Hawaii Speleological Survey.

c) Historical data obtained by a chapter member revealed a previous survey of this cave, undertaken by a neighbor who was concerned about conduit flow of water through the cave to a downslope wetland apparently not included in the Draft EIS. Also he reported hearing of a geophysical mapping of the cave by someone at University of Hawaii-Hilo. "Tacks" of the former still are visible in the floor of the cave.

d) In any event, construction activities above and near this cave must protect its geological and commercial values and avoid additional rockfall within it. Also they must protect workmen from special hazard, and avoid altering the natural conduit flow of water through it. One way or another, engineering procedures at this site must be subject to public review before finalization of the EIS.

* * *

In conclusion, therefore, this Draft EIS contains so many serious omissions and errors that additional public review of corrective measures is essential prior to finalization of the EIS. If no simpler corrective action subject to public review is possible, the Hawaii Chapter of the National Speleological Society finds that a Supplemental Draft EIS covering the above points is needed.

Adopted by unanimous vote of the Executive Committee of the Hawaii Chapter of the National Speleological Society 18 March 1999.

William R. Halliday

William R. Halliday
Chairman, Hawaii Chapter of the National Speleological Society

RECEIVED AS FOLLOWS



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50208
Honolulu, HI 96850
February 18, 1999

Fax 1 pg 27

IN REPLY REFER TO
HDA-HI

Mr. William R. Halliday, Chairman
Hawaii Chapter of the National Speleological Society
101 Aupuni Street #911
Hilo, HI 96720

Subject: Pualako Street Extension and Widening, South Hilo, Hawaii

Dear Mr. Halliday:

Thank you for your letter dated February 13, 1999 which requested an extension of time to comment on the subject project. This letter is to confirm an extension for comments by the National Speleological Society and other concerned speleologists to March 15, 1999.

If you require more information or have any questions, please feel free to contact me at (808)541-2530.

Sincerely yours,

A handwritten signature in cursive script that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

cc:

Mr. David Jagnow
Conservation Chairman, National Speleological Society
1300 Iris, #103
Los Alamos, NM 87544

Ms. Hazel Medville
Chairman, Hawaii Speleological Survey of the National Speleological Society

Reston, VA 20191

Mr. Ron Terry
c/o Okahara and Associates Inc.
200 Kohala St.
Hilo, HI 96720

RECEIVED
FEB 19 1999

OKAHARA & ASSOC., INC.
HILO OFFICE

Stephen K. Yamashiro
Mayor



Robert K Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

WILLIAM R. HALLIDAY, CHAIR
HAWAII CHAPTER, NATIONAL SPELEOLOGICAL SOCIETY
101 AUPUNI ST., #911
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comments on the EIS contained in your letters of February 13 and March 19, 1999, to Abe Wong of FHWA. Given your great concern for Kaumana Cave, we would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids a close approach to any known portions of Kaumana Cave. The environmental impacts of this new Alternative, which has been advanced as the Recommended Alternative - are discussed in the Final EIS.

We would also like to introduce our comments by explaining our position regarding caves and road construction. Our field experience and discussions with the U.S. Geological Survey (USGS) clearly indicate that lava tube caves – defined here as lava tubes that afford human entry - are indeed very common on pahoehoe surfaces. Caves are an integral aspect of the geological landscape. In a sense, caves are like ridges or valleys. If roads are to be built on pahoehoe surfaces, many, many caves will be crossed, just as many ridges or valleys will be crossed. It is not practical to even attempt to avoid impacts to all caves. We have relied on the USGS, the U.S. Fish and Wildlife Service (USFWS), the State Historic Preservation Division (SHPD), and organizations such as your to help us identify whether a particular cave has important geological, biological, cultural, recreational or other resources that require special study and, perhaps, avoidance or mitigation measures.

As a result of public and agency input during this and other recent EIS's, we have attempted to refine the process to getting information and making better decisions concerning caves. We believe that our treatment of Kaumana Cave is an example of this. We commissioned a very accurate survey of the cave and made every effort not only to avoid crossing the cave but also to maintain an adequate buffer around it, even though the cave has been crossed and altered by many other construction projects. This level of effort and expense cannot be expended on every cave that is encountered. During project planning, it is simply not practical to identify, much less map and inventory, every cave that could potentially underlie the surface.

We understand your deep appreciation for lava tube caves, and we are sincere in our attempt to avoid needless damage to caves and to seriously investigate caves with high resource values. The perceived impact to Kaumana Cave was one of the reasons that led us to develop Alternative 10 after the Draft EIS was published. Also, partly as a result of your input, we have refined our construction mitigation measures to include more agency and citizen consultation if caves are inadvertently discovered during

construction. We believe that we have accomplished a reasonable solution that accommodates the resources caves may offer and the practicalities of road construction. Please accept our comments below in the spirit of good faith and compromise with which they are offered.

The following is a detailed response to your individual comments

Letter of February 13, 1999

Comment No. 1 (Primary Issue No. 1): EIS incorrectly asserts that Kaumana Cave is a resolved issue.

Response: Kaumana Cave is in all likelihood a long system with many branches. However, the accessible portions of the cave have been mapped and are regularly used and visited. Dozens of roads, farms, homes and other facilities have built over it and in many places probably collapsed or otherwise altered the cave. At a minimum, this has occurred on Kaumana Drive (twice), at Edita Street, Uhaloa Street, and Wilder Road. We have endeavored from the start of the project to avoid these sections of Kaumana Cave. The sections of Kaumana Cave that are near the project have been carefully analyzed, and we have determined that the project will not impact the cave. The USF&WS and USGS concur with this conclusion, provided the proposed mitigation measures are implemented. The impacts to the known portions of Kaumana Cave have been further addressed by the selection of Alternative 10 as the recommended Alternative. As far as we are concerned, this issue has been completely resolved.

Comment No. 2 (Primary Issue No. 1a): Road Alignment 1 does not comply with the technical recommendation in Appendix D.

Response: In relation to the mapped portions of Kaumana Cave, we have maintained an adequate buffer of a minimum of 15 feet, and for the vast majority of the proposed route, far more. We would note that Kaumana Cave is already crossed in several places by roadways, and is in some places even collapsed. The recommendation of the cave fauna consultant to maintain a 50-foot buffer around the cave was only a recommendation. There is no structural reason to maintain this magnitude of buffer. We consulted with the U.S. Fish and Wildlife Service concerning the buffer size, and they agreed that, given appropriate mitigation specified in the EIS, a 15-foot buffer is appropriate, if Alignment 1 were selected.

Comment No. 3 (Primary Issues No. 1a): There is no consideration of the unmapped section above Kilua Street.

Response: The "upslope areas" of Kilua Street are not intersected by Alignment 1 or any other proposed alignment.

Comment No. 4 (Primary Issues No. 1a): Protection of Kaumana Cave is not included in lists of "Unresolved Issues".

Response: See Response to Comment No. 1

Comment No. 5 (Primary Issue No. 1a) Kaumana Cave has not been considered in the selection criteria.

Response: Kaumana Cave has been a very important criterion in Alternative development, road design, and criteria for selection of the Recommended Alternative; in fact, it is one of the reasons that Alignment 10 has been Recommended. We do not find a reference to caves in Chapter 344 (2), and in any case we do not see any substantial destruction of any natural resource, including caves, resulting from this project. Concerning the inventory

of resources in Kaumana Cave, the commenter is reminded that an EIS is not meant to be encyclopedic. All of this information was considered, but detailed discussion is inappropriate in the Puainako EIS, as the project is *avoiding* any sections of Kaumana Cave that contain these resources or problems.

Comment No. 6 (Primary Issue No. 2): Maps of Kaumana Cave are unreliable; cave not fully mapped or discussed in EIS; various resources ignored.

Response: The County of Hawaii and FHWA stand by the accuracy of survey, which was done according to highest professional standards. The survey *was closed*, and the results show a high degree of accuracy. We mapped sections that had the potential to be impacted by the project.

Comment No. 7 (Primary Issue No. 2): Appendix D describes areas upslope of Kilua Street which are not mapped.

Response: See response to Comment No. 3. In that the known section of Kaumana Cave above Kilua Street is not in the vicinity of the project area, no mapping was undertaken. There is no need to detail or discuss resources in an EIS that will not be affected.

Comment No. 8 (Primary Issue No. 2): The EIS ignores the current remapping of the entire cave by Hawaii Speleological Survey.

Response: See response to comment No. 6. We received your map and checked it against our findings. We note that there is very close correspondence. Again, we stand by our survey, and we so no need for further mapping.

Comment No. 9 (Primary Issue No. 3): EIS incorrectly asserts that lava tube caves in Hawaii may only have value as historic sites, recreation areas, or unique geological features; caves not considered in alternative criteria selection; hydrological features omitted.

Response: The EIS did not make this assertion that caves have only these values. Kaumana Cave has been considered throughout alternative formulation and comparison, as the extensive discussion it has received clearly indicate. Concerning the inventory of resources in Kaumana Cave, the commenter is reminded that an EIS is not meant to be encyclopedic. All potentially affected resources of Kaumana Cave were adequately considered in the EIS.

Comment No. 10 (Primary Issue No. 4): It is incorrect to assert that it may be appropriate to fill or collapse caves, no matter how valuable the cave.

Response: The EIS did not make this assertion, nor is this the policy of DPW or FHWA.

Comment No. 11 (Primary Issue No. 5): The EIS incorrectly asserted that EIS's need not study caves that are not currently used for recreation, not known to have been explored, or without unique geological value.

Response: The EIS did not make this assertion, nor is this the policy of DPW or FHWA.

Comment No. 12 (Primary Issue No. 6): No mention of features inside Kaumana Cave, including hydrologic conduits, spouting waterfalls, or toxic wastes, etc.

Response: These features would not affect, nor would they be affected by, the project, and it is unnecessary to mention them. Again, the EIS is not meant to be encyclopedic.

Comment No. 13 (Primary Issue No. 7): Kaumana Cave and caves in general are denigrated throughout the EIS.

Response: Kaumana Cave, which has been determined through consultation with individuals, agencies and organizations to be an important lava tube cave, is extensively evaluated and discussed in the EIS. Other caves are undoubtedly present in the project area, but there is no evidence that any offer any unique values that would suffer as a result of the project. Kaumana Cave has been a very important criterion in Alternative development, road design, and criteria for selection of the Recommended Alternative; in fact, it is one of the reasons that Alignment 10 has been Recommended. In addition, appropriate mitigation measures have been developed in consultation with USF&WS and USGS to minimize potential impacts to any cave. These mitigation measures will be incorporated into the project's Record of Decision.

Comment No. 14 (General Comment No. 1): Predisposition in favor of Alignment 1.

Response: Again, we would note that Alignment 10 has been advanced as the Recommended Alternative.

Comment No. 15 (General Comment No. 1): NSS offers help to correct errors of EIS and re-map the cave.

Response: We appreciate the offer. However, for the purposes of the EIS, no further mapping of Kaumana Cave is required. Again, we stand by our survey and the EIS in general. We see no need for a Revised Draft EIS.

Letter of March 19, 1999

Comment No. 16 (Issue 1a): EIS wrongfully asserts EIS need not investigate caves used for recreation, caves that have not been explored, and/or caves with unknown geological value.

Response: We are unaware of the federal statute(s) you refer to. The principal problem is that caves are an integral and extremely common feature on pahoehoe landscapes, even though they are often very difficult to investigate. Ascertaining whether they are present, much less mapping and systematically evaluating their resources, is often an infeasible task, and one that is rarely justified given their widespread distribution. Where caves with outstanding resource are known or discovered, we are committed to their protection. The Final EIS contains additional measures for evaluating caves that are uncovered during construction, including consultations with the U.S. Geological Survey, the U.S. Fish and Wildlife Service.

Comment No. 17 (Issue 1b): EIS asserts that Kaumana Cave is not an unresolved issue.

Response: See response to Comment No. 1.

Comment No. 18 (Issue 1b): The EIS denigrates caves by omitting them from index and criteria for selection.

Response: For your information, Kaumana Cave and other references to caves have been added to the index for the Final EIS, as has discussion of the Sunrise Estates Cave you refer to as "William DeRody's Cave". Kaumana Cave has been a very important criterion in Alternative development, road design, and criteria for selection of the Recommended Alternative; in fact, it is one of the reasons that Alignment 10 has been Recommended.

Comment No. 19 (Issue 1b): There is lack of proper attention to William DeRody's Cave (sic).

Response: See response to Comment No. 18.

Comment No. 20 (Issue 1b) There is no mention of Chapter 344, HRS.

Response: We do not find a reference to caves in Chapter 344 (2), and in any case we do not see any substantial destruction of any natural resource, including caves, resulting from this project.

Comment No. 21 (Issue 1b): There is no mention of features inside Kaumana Cave, including hydrologic conduits, spouting waterfalls, or toxic wastes, etc.

Response: Concerning the inventory of resources in Kaumana Cave, the commenter is reminded that an EIS is not meant to be encyclopedic. All of this information was considered, but detailed discussion is inappropriate in the Puainako EIS, as the project is *avoiding* any sections of Kaumana Cave that contain these resources or problems.

Comment No. 22 (Issue 1c): EIS incorrectly asserts that lava tube caves in Hawaii may only have value as historic sites, recreation areas, or unique geological features.

Response: The EIS did not make this assertion. Again, the reader is reminded that an EIS is not meant to be encyclopedic.

Comment No. 23 (Issue 1d) EIS inappropriate asserts that if a cave poses a structural hazard, it may rightfully be collapsed.

Response: In the time since the Draft EIS was published, we have coordinated with the U.S. Geological Survey (USGS), the State Historic Preservation Division (SHPD), the U.S. Fish and Wildlife Service in order to create a process that will help evaluate any resources of caves that are inadvertently discovered during construction. The EIS now explicitly states that we will coordinate with these agencies, as well as your organization, if lava tube caves are discovered. The EIS now also states that if the cave is determined to pose a structural hazard to the road or related features, appropriate actions will be taken to produce a structurally sound surface for construction, such as collapse, bridging, structural modification, or some combination of these. The selection of these measures will of course depend upon the value of the cave's resources.

Comment No. 24 (Issue 1e): EIS incorrectly asserts that lava tube caves are common in East Hawaii.

Response: We respectfully disagree with your assessment. We would also note that based on our field experience, we would estimate that there are many thousands of lava tube caves in East Hawaii alone.

Comment No. 25 (Issues 1f): The 50-100 foot buffer around Kaumana Cave that was recommended by the faunal consultant was rejected without reason.

Response: See response to Comment No. 2. There is no structural reason to maintain this magnitude of buffer. We consulted with the U.S. Fish and Wildlife Service concerning the buffer size, and they agreed that, given appropriate mitigation specified in the EIS, a 15-foot buffer is appropriate.

Comment No. 26 (issue 2a): The EIS should have been centered around the protection of Kaumana Cave.

Response: Kaumana Cave has been a very important criterion in Alternative development, road design, and criteria for selection of the Recommended Alternative: in fact, it is one of the reasons that Alignment 10 has been Recommended. However, other factors have and will continue to play an important part in the selection of the final alignment.

Comment No. 27 (Issue 2b): Alternative Alignment 1 is unacceptably close to Kaumana Cave.

Response: See response to Comment Nos. 2 and 25.

Comment No. 28 (Issue 2c): The survey of Kaumana Cave between Edita Street and the County Park opening used techniques that may not be accurate – thus cave may not be accurately mapped in this section.

Response: See response to comment No. 6.

Comment No. 29 (Issues 3a, b, c and d): EIS "gravely in error" in dismissing "William DeRody's Cave" [sic]; mapping details and unlawful construction.

Response: The County of Hawaii and its consultants have investigated the resources offered by the cave based on a field visit, a description of the cave provided by the U.S. Geological Survey, consultation with the U.S. Fish and Wildlife Service, and additional information from cavers. We believe that enough information has been gathered to conclude that this cave does not offer any significant and unique value for biology, geology, recreation, or drainage/hydrology. It is important to note that the cave is nearly blocked by collapses, presumably from excavation of a drainage canal, adjacent to the proposed right-of-way. Considering all factors, we believe that even under the worst case scenario of collapsing the cave, any losses to valuable cave resources would be minimal. During final engineering for the road, the subsurface geology will be thoroughly investigated and the proper measures will be taken to ensure the safety of the road during construction and use. This may consist of grading with no structural modifications, surface structural modifications, or collapse and filling of the cave in the area underlying the roadway. The cave will not be needlessly collapsed. If collapse is considered, then the idea of a culvert for human passage will be considered. We do not agree with your assessment that construction would be unlawful under the provisions of OSHA and NIOSH. We would note that the owner has repeatedly refused to allow us further access to the cave, and that there are no known public accesses to the cave. In the year that has passed since your letter, we have not received any maps of the cave or further communications from your organization. If your organization wishes, we will continue to communicate with you during the remaining design and construction periods.

Comment No. 30: Assertion that additional public review of EIS or a Supplemental Draft EIS is necessary.

Response: We believe that the EIS complies with the requirements of NEPA and Chapter 343, HRS with respect to its treatment and discussion of caves in general and Kaumana Cave in particular. The EIS is not meant to be encyclopedic, but should provide a reasonable discussion of resources and the project's potential impact thereon.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration. I again thank you for your comments.



Robert Yamabu,
Chief Engineer

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FEB 19 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

The proposal has attractions ONLY in the context of the perpetuation of the Car Culture.

There are alternatives to 'Build' and 'No-Build' which ought to receive consideration.

A more appropriate use of this HUGE amount of money would, in my opinion, be in the provision of a functional public transport system, and in educational and enforcement activities. PTO.

PLEASE TURN OVER - A FULLER JUSTIFICATION IS GIVEN OVERLEAF

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name IAIN COULSON

Address PO Box 1104 KEAAU HI 96749

Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
41677
HW
RT

Submission to the Puainako Extension and Widening Project
=====

I submit that the problems to be solved by the proposal are generated by the Car Culture, and that the proposed solution merely perpetuates that Culture and exacerbates the problems arising therefrom.

Two of the problems adjudged to be solved by the Project were :

1. SAFETY - The old winding, upper road causes accidents. I submit that :
 - Big Island road accidents are more likely to be caused by drink, drugs, speed and poorly maintained vehicles. The road between Keeau and Pahoa, for instance, even before the current bypass work, is wide and straight, and therefore fast; and people kill themselves on that road with appalling regularity. A slower winding road might cause accidents, but a straight, fast (and steep, and wet) new road in Kaumana will make more of them fatal.
 - Alternative Solution - Education and Enforcement. I submit that :
 - a fraction of the estimated Project cost of \$64M spent on education and enforcement of existing regulations governing car maintenance and driving whilst intoxicated would alleviate these problems.
2. CONGESTION.
 - A rush hour in Hilo has become a fact of life, it seems, but only because of the dominance of the Car Culture and the absence of a sensible public transport system.
 - Alternative Solution - Public Transport. I submit that :
 - \$64M would buy enough buses, bus stops, maintenance and staff to relieve congestion just as easily, especially around the schools. Provision of a safe, reliable public transport system would increase the quality of life for everyone, and reduce both pollution (a laudable goal of the Extension proposal) and the dependency of the Island upon imported oil.
3. Additionally : The Lower Puainako widening work would reduce the 'green' content of the vicinity of the school, as the Car Culture does everywhere it is allowed to flourish. The lives of students and of all who live in the vicinity will be diminished. Hilo is fast losing its greenery to shopping malls and wider roads. This does not improve the quality of life for Hilo residents. Crossing town becomes progressively harder - the solution for any individual becomes . . . a car ! : the Car Culture assures its own dominance by depriving people of alternatives. The cycle of more roads and more cars must be broken.
4. Additionally : Although it was stated that the roads were not part of a plan to allow access to new lands, it is inevitable that the land straddling the upper extension will become developed. Without a public transport system, and in a perpetuated Car Culture, the residents of these new developments will only add to the traffic on Waianuenue/Puainako - the 'solution' perpetuates the problem.

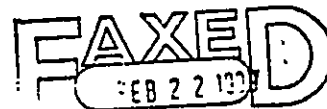
Conclusion

The proposal has attractions ONLY in the context of the perpetuation of the Car Culture. There *are* alternatives to 'Build' and 'No-Build' which ought to receive consideration.

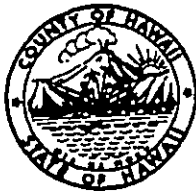
A more appropriate use of this HUGE amount of money would, in my opinion, be in the provision of a functional public transport system, and in educational and enforcement activities.

Respectfully

Iain Coulson P.O.Box 1104 Keaau Hawaii 96749



Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. IAIN COULSON
P.O. BOX 1104
KEAAU HI 96749

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 19, 1999. The following is a detailed response to your comments.

- 1. Accidents not caused by bad roads but by alcohol, etc.* While we recognize that many factors play a role in accidents, Hawaii accident data clearly reveal that improved roads are a key factor in reducing accidents. For example, improvements between the 8 and 18 mile markers on Saddle Road were followed by a marked decrease in accident rates. The FHWA has a proactive policy of expenditure for education and enforcement, but this is part of a separate mission and does not alleviate the problems addressed in the EIS. Specifically, the Federal Highway Administration and National Highway Traffic Safety Administration fund programs that are administered by the Hawaii Department of Transportation with the overall objective of reducing the number and severity of accidents and decreasing the potential for accidents on all highways. The funds for these programs emphasize education and enforcement on campaigns such as Under Age Drinking and Driving (Zero Tolerance), Young Adult Drinking and Driving (18-25 years), Speed Management, Police DUI Road Blocks, Designated Drivers, Red Light Running, and Pedestrian and Bicycle Safety. The Hawaii Department of Transportation also works with the Department of Health and Education, the State Judiciary, the Governor's Highway Safety Council, the County Traffic Safety Councils, Safe Community coalitions, Mother's Against Drunk Driving, the county police departments and prosecutors, and numerous private sector organizations to combat driver behavior that causes traffic crashes and results in deaths and injuries on Hawaii's highways.
- 2. Public transportation should be substituted for proposed project.* The EIS evaluated mass transit for its potential to address part or all of the purpose and need of the project in Chapter 2, and determined that it was not a viable option.
- 3. Widening of Lower Portion will reduce attractiveness and hurt pedestrian/bicycle transport.* Wider streets may be perceived as more attractive or less attractive, depending upon such factors the nature of the landscaping on the median and roadsides and the tastes of those who view the street. The project will include bike lanes and sidewalks and will considerably improve safety conditions for both pedestrians and bicycles.
- 4. Alternative 2 will lead to inappropriate development.* The Puainako Extension has not been planned in order to stimulate land development in Kaumana. Subdivisions with existing zoning and permits will benefit from either alternative. Because Puainako is planned as a limited access road, future developments will probably not be allowed direct access to Puainako Street. The County of Hawaii and

State of Hawaii must consider a number of factors when approving new development, and there are a number of constraints in the area.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

RECEIVED
FEB 22 1999
HAWAII DIVISION

February 15, 1999

Mr. Abraham Wong
U.S. Dept. of Transportation
Federal Highways Administration
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850

SUBJECT: REQUEST FOR ACCESS TO LOT TMK 3-2-4-022-031
IN CONJUNCTION WITH THE PUAINAKO STREET EXTENSION
AND WIDENING PROJECT

Dear Mr. Wong:

We have been following the Puainako Street Extension Project Hearings and progress since the early 1960s, and we think the project is moving along well as presented at the January 19, 1999 meeting held at the University of Hawaii-Hilo.

We have just one request to ask of this project. Our lot is highlighted on the enclosed map of the proposed project: it is completely LANDLOCKED. Please make a simple access available to our lot so that we can finally be freed.

Thank you.

Sincerely,

Thomas T. Shiroma

Thomas T. Shiroma
992-A West Puainako St.
Hilo, HI 96720

Amy T. Shiroma

Amy T. Shiroma

FAXED
FEB 22 1999
HCRY
HWY
ET

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630


April 3, 2000

MR. AND MRS. THOMAS & AMY SHIROMA
992-A WEST PUAINAKO ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 15, 1999. Your letter asked that the project provide road access to 2-4-022:031, as the parcel is otherwise landlocked. According to our review of records, none of the alignments proposed for the project border this parcel or interfere with legal access to it - which is through a straight-line extension of the existing Puainako Street - in any way. We understand that a separate project being undertaken by the County of Hawaii is likely to assist you in improving your access to the property. For your information, the Hawaii State Department of Transportation may allow properties that do border the alignment that is finally selected to access the road directly, depending on the particular situation. We hope this clarifies the situation for you.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

SENT BY:Nakamoto/Yoshioka HILO; 2-22-99 ; 12:32 ; Nakamoto/Yoshioka-

8085412704:# 1/ 2

FACSIMILE TRANSMITTAL

DATE: February 22, 1999 TIME: 12:50 p.m.

TO: Mr. Abraham Wong
Division Administrator
Federal Highway Administration
300 Ala Moana Boulevard, P.O. Box 50206
Honolulu, Hawaii 96850

FROM: TERENCE T. YOSHIOKA

RE: Puainako Extension and Widening Project

Your
Facsimile No. (808) 541-2704

Our Facsimile
Callback No. (808) 935-3872

Number of pages being transmitted, including this cover page 2
MESSAGE:

Attached is the Public Comment Sheet for the Puainako
Extension and Widening Project.

If there are any problems receiving this transmittal, please call
(808) 961-0641 and ask for LORRAINE. Thank you.

FAX COVER NOTICE OF CONFIDENTIALITY

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PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

As residents of the Pacific Plantation Subdivision, our lot (i.e. TMK: 3-2-5-61-50) will practically abut ALternative Alignment #1 of the Puainako Street Extion and Widening Project which will, also, bisect Edita Street, the entrance to our subdivision; we selected the Pacific Plantation Subdivision for the serenity afforded by its relative isolation and rural atmosphere. I would speculate that this was the probable motivation of most of our fellow lot owners. We did so because we prized the quiet and solitude of our neighborhood.

Our Peace will be lost forever if ALignment #1 is selected. The noise generated by the increase traffic will be, literally, in our back yard. Whereas, we are now oblivious to any traffic on Kaumana Drive, if Alignment #1 is selected, we will be constantly impacted, at all hours of the day, by the traffic of commuters, hunters, delivery trucks and military personnel.

in addition, we will face the increase risk of traffic traveling at higher speeds when trying to emerge from Edita Street. As it is, most drivers exceed the posted speed limit when traveling down Kaumana Drive. With the wider and straighter extension to travel on, they will be more likely to increase their speed and make it much more dangerour to emerge from Edita Street.

As Alignment #2 does not appear to adversely effect as many lot owners, we strongly urge you to favorably consider that alignment for the extension.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Mr. and Mrs. Terence T. Yoshioka
Address 1572 Male Manu Street, Hilo, Hawaii 96720
Representing Self

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB 22 1999
11:47 AM

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 - Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. AND MRS. TERRENCE YOSHIOKA
1572 MELE MANU ST.
HILO HI 96720


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received in February of 1999. The following is a detailed response to your individual comments.

1. *Noise, Safety, and Other Concerns with Alignment 1.* Your letter states that you would prefer to see Alternative Alignment 2 implemented because of noise, safety, and other concerns in the Edita Street area. As we stated in the EIS, unfortunately there are no feasible and reasonable measures that can mitigate for noise impacts for homes at Sunrise Estates and Pacific Plantations. Alignment 2 would have the advantage of locating the actual highway farther from residences but would increase traffic on large sections of Edita Street and Wilder Road, which would not occur with Alignment 1. There is thus a tradeoff. The agencies responsible for this project agree that with appropriate speed limits, crosswalks, stop signs, and warning signs near intersections, either Alternative Alignment would provide a safe highway for motor vehicles, bicyclists, and pedestrians.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.


Robert Yanabu.
Chief Engineer

RECEIVED

FEB 22 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

THIS PROJECT IS GOOD FOR THE
COMMUNITY AS A WHOLE.

MY CONCERN IS HOW THE 4 LANES
OF TRAFFIC WILL IMPACT MY
ABILITY TO WORSHIP IN THE
PRESENT BUILDING AT KINEOLE
BAPTIST CHURCH.

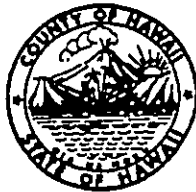
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name CRAIG YAMAMOTO
Address 1830 HALECKEA ST. 96820
Representing MY FAMILY OF 5

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB 22 1999
HAWAII
WWM
RT

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. CRAIG YAMAMOTO
1830 HALEOKEA ST
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

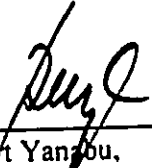
Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 22, 1999. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of

this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanbu,
Chief Engineer



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FEB 22 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

*To reduce the impact of noise when church services
is held, I propose that FHWA pay or build a sound
BARRIER^{wall} along the boundary facing both streets
with address and service schedules sign on wall. I/We
also install a central air-condition system
which includes changing all Jalousie windows
to sound proofing windows.)
By building a wall, A/C is needed because it
would affect cross air ventilation thru the
church.*

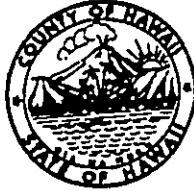
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Thomas Pabla
Address 379 Palakiko St. Hilo, HI 96720
Representing member of Kimoole Baptist Church

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
FEB 22 1999
HCT
HWL
RT

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. THOMAS PABILA
374 PALAKIKO ST.
HILO HI 96720

Dear Mr Pabila:

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 22, 1999. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

A handwritten signature in black ink, appearing to read "R. Yanapa", written over a horizontal line.

Robert Yanapa,
Chief Engineer

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FEB 22 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

— STATEMENT ATTACHED —

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name MR. & MRS. ROBERT OKA
Address 2230 KILAUEA AVE. HILO, HI 96720
Representing KINOOLE BAPTIST CHURCH (MEMBERS)

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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FEB 22 1999
HAWAII
DIVISION

2/19/99

Mr. Abraham Wong, Division Administrator
Federal Highway Administration,
P.O. Box 50206
300 Ala Moana Boulevard,
Honolulu, HI 96870

Dear Sir:

Inasmuch as we are for progress & we support any effort by our government to improve the needs of the general public, we must have the recognition that the Puainako street widening project will mean the loss not only of Church property, but the use of the sanctuary as a place of public worship for those who wish to come to worship God. The practical use of the Kinoole Baptist Church building as a House of Worship will be destroyed by the fact that the close proximity of the traffic & noise will make it untenable for the sanctuary to be used as a House of Worship. In order to plan for the future the Federal Highway Administration must assure us of the alternatives of adequate compensation so that we can continue to have the Kinoole Baptist Church as a viable place of worship. You must also recognize the fact that this property & buildings were developed & built over a span of over 50 years by the selfless giving of tithes & offerings by people who saw the need to have this edifice built.

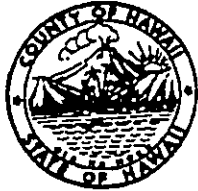
Your serious consideration of our plight will be greatly appreciated by the members & friends of the Kinoole Baptist Church.

Yours truly,

Mrs. & Mrs. ROBERT OKA

FAXED
FEB 22 1999

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. AND MRS. ROBERT OKA
2230 KILAUEA ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 22, 1999. The following is a detailed response to your individual comments.

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conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

February 16, 1999

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
P.O. Box 50206
300 Ala Moana Boulevard
Honolulu, HI 96850

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FEB 22 1999

HAWAII DIVISION

To Whom It May Concern,

SUBJECT: PUAINAKO EXTENSION AND WIDENING PROJECT

Please accept this as my written statement to the above mentioned project. I, as a residential home owner of 412 W. Puainako Street, am in favor of the proposal to widen and extend Puainako Street. However, I would like to express my concerns regarding the different alignment plans available for this project.

On Tuesday, January 19, 1999 at 7:00 pm., I attended the public hearing held regarding this proposed project at the University of Hawaii at Hilo Campus Center Rm. 306 & 307. I found this meeting to be very informational. During the written question period, I had a chance to submit my questions to the staff members available for that purpose. My questions were directed to Mr. Colin Hashiro of Okahara & Associates. My questions were as follows:

1. What is the distance from the proposed Alignment A and the existing Puainako Street?
2. What is the distance from the proposed Alignment B and the existing Puainako Street?
3. Would safety/sound barriers be provided with either or both of the Alignments?

The answers given to me at the hearing were as follows:

1. Alignment A will be located 450 feet from the existing Puainako Street.
2. Alignment B will be located 150 feet from the existing Puainako Street.
3. Yes. Safety/sound barriers would be provided with both of the Alignment proposals.

From the information given to me, I would like to express my choice of the Alignment combinations available for this project.

Due to the closeness of the existing Puainako Street and the boundaries of my property, I feel the safest and best choice is to select Alignment A for the lower portion, connecting to Alignment #2 of the upper portion.

412 W. PUAINAKO STREET
HILO, HI 96720

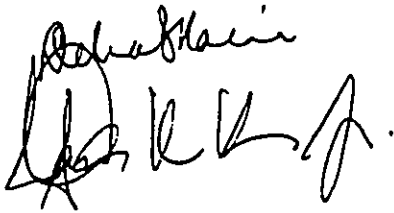
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FEB 22 1999
HI DIV
JWW
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February 19, 1999

According to the Tax Map Key of my property, the length of the property is 150 feet. If Alignment B is implemented as the new extension and widening route of Puainako Street, it would in effect put myself as well as my surrounding neighbors, directly between two main streets. Because my property length is only 150 feet, both the existing Puainako Street and the new Alignment B would be at both edges of my property. In talking with my neighbors, they are in agreement that this would put us in a very inconvenient situation. I believe that the increased noise levels that would occur with a four lane street directly behind our homes would have adverse effects to our private lives. Also taken into concern is the safety factors of a four lane street. Additional lanes tends to lead drivers to believe that a faster speed is necessary because of the clear roads ahead.

These are the reasons I state for my choice of Alignment A. I feel that if the extension is placed at the 450 feet from the existing Puainako Street, it would not affect my family or neighbors as much, and would also alleviate the traffic congestion that exists on Puainako Street at this time, which is a major concern for all.

Sincerely,



Debra S. Kaina
Stanley K. Kaina, Jr.

FAXED
FEB 22 1999
41 07
HM
ET

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000


MS. DEBRA S. AND MR. STANLEY K. KAINA JR.
412 PUAINAKO ST
HILO HI 96720

Subject: **Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)**

Thank you for your comment on the EIS contained in your February 15, 1999 letter to Abe Wong of FHWA, in which you stated that you favored Alignments A and 2, because otherwise your home will be adversely affected by noise.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

BENJAMIN J. CAYETANO
SECRETARY



xc CH
fr WLM
RT
GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH KURETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE: (808) 596-4105
FACSIMILE: (808) 596-4188

RECEIVED
FEB 23 1999

February 22, 1999

OKAHARA & ASSOC. INC.
HONOLULU, HI

Jiro Sumada, Deputy Chief Engineer
Department of Public Works
25 Aupuni Street, #202
Hilo, HI 96720

Attn: Robert Yanabu

Dear Mr. Sumada:

Subject: Draft Environmental Impact Statement (EIS) for Puainako Street Extension and Widening, Hilo

We have the following comments to offer:

Funding: The total project cost is given as \$62.65 to \$67.234 million. Please indicate Federal, state and county shares of this amount.

Historic perspective: An historic perspective of the Hilo region is required. Please include it in the final EIS.

Figure 3-4 legend: The map notations for *Hydrandeps* and for *Lava Flows* both appear as rectangular unfilled boxes. In the final EIS please correct this so that the two are distinguishable from one another.

Cumulative impacts: In addition to the projects analyzed in section 4.67, include in the analysis several area projects not listed:

- ▶ Lanakila Homes (11/97 final EA)
- ▶ Hilo Judiciary Complex (3/97 FEIS)
- ▶ DHHL Scattered Houselots (10/97 final EA)

99

11:05

808 961 3329

OKAHARA & ASSOC. --- RON TERRY

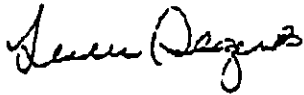
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Jiro Sumada
February 22, 1999
Page 2

Unresolved issues . . . The issue of business and residence displacements remains an unresolved issue, please include its discussion in this section. If it is no longer an unresolved issue, indicate the final resolution in the section on impacts.

Please call Nancy Heinrich at 586-4185 if you have any questions.

Sincerely,



fr Gary Gill
Interim Director

c: Ron Terry, Ph.D.

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. LESLIE SEGUNDO
HAWAII STATE OEQC
235 S. BERETANIA ST., SUITE 702
HONOLULU HI 96813

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comments on the EIS contained in your February 22, 1999 letter to Jiro Sumada of the Hawaii County Department of Public Works. The following is a detailed response to your individual comments.

- 1. EIS should break down funding by federal, state and county portions.* Section 1.3 of the EIS has been modified to state that the State and/or County will be responsible for 20 percent of the funding and the federal government will fund the remaining 80 percent. The relative contributions of the State and County have not yet been determined.
- 2. EIS should include a historic perspective for Hilo region.* Section 3.3.2 now contains a brief treatment of Hilo's history in order to provide an enlarged context for social and historic site impacts. "Hilo Bay has been an important site of settlement, agriculture and trade since well before European contact in 1778. Fishponds and taro fields occupied the low areas between the Wailoa and Wailuku Rivers. Several villages were present within the makai portions of what is now Hilo, and farming took place on the upper slopes. During the century following contact, Hilo's harbor destined it for a central position in the sandalwood, missionary, whaling and sugar plantation phases in Hawaii's history. A thriving Western town developed east of the Wailuku River, and sugar plantations spread across the uplands, occupying virtually all areas with reasonably suitable soil. In the meantime, native Hawaiians were decimated by disease and their far-flung settlements were slowly abandoned. Planters brought in laborers from Asia, the Americas and Europe, leading to the cosmopolitan population for which Hawaii is famous. In 1881, a lava flow was poised to divide Hilo in half but finally stopped after penetrating what were then the outskirts of the city. Hilo's population grew slowly but steadily during the early 20th century as sugar cane became the dominant industry of the island and Hilo came to serve as the commercial and administrative center. Plantation "camps" were built in various areas to house workers who serviced the canefields and mills. The second half of the 20th century saw a diversification of the agricultural base and an expansion of economic activities in Hilo, notably servicing the growing tourism industry in West Hawaii and the University of Hawaii at Hilo. Suburbs radiated out along the major roads leading south and northwest, and also clustered in the mauka areas of the city. The sugar industry collapsed in the 1990's, exacerbating a statewide economic slump."
- 3. Figure 3-4 legend should be corrected so that Hydrandeps and Lava Flows can be distinguished.* On some copies of the Draft EIS, Figure 3-4 was copied too light and thus the soil types were less distinguishable. This has been amended in the Final EIS.

4. *EIS should include the Lanakila Homes, Hilo Judiciary Complex, and DHHL Scattered Households projects in discussion of cumulative impacts.* Consideration of these projects, along with other projects subsequently proposed for East Hawaii, has been added to the discussion in the Final EIS. We would note that only the DHHL project has the potential to produce effects relevant to the discussion of cumulative impacts.

5. *Answer whether residential and business displacements are an unresolved issue or not.* The actual procedure of acquiring property and relocating residences and businesses is not undertaken until a project is approved, funded, and underway. All activities are required to be conducted in strict conformance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. In the EIS, FHWA simply identifies potentially impacted properties. The issue of displacements is therefore not an unresolved issue.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

RECEIVED ✓

FEB 23 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

As a member of Kinohiwa Baptist Church I am deeply concerned about the effect the development would have on our worship services. I understand the road would be practically at the doorway of our sanctuary! The noise from the traffic would definitely be a disturbance to us worshippers. Moreover, much need parking space would be taken away.

Thank you for this opportunity to comment. I pray that a reasonable and satisfactory solution can be found.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Lenore Kozdram
Address 40 Kinohiwa Baptist Church, 1815 Kinohiwa St., Hilo, HI 96720
Representing Kinohiwa Baptist Church

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
3/23
5:14 PM
RT

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. LENORE KOZOHARA
C/O KINOOLE BAPTIST CHURCH
1815 KINOOLE ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 23, 1999. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

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Robert Yanabu,
Chief Engineer

PHONE (808) 594-1888

FAX (808) 594-1865



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

RECEIVED

FEB 23 1999

HAWAII DIVISION

February 22, 1999

EIS#269

Mr. Jiro Sumada
Deputy Chief Engineer
County of Hawaii
Public Works Department
25 Aupuni Street, Room 109
Hilo, Hawaii 96720

Re: Draft Environmental Impact Statement for Puainako Street Extension and Widening Project South Hilo District, Island of Hawaii

Dear Mr. Sumada:

Thank you for the opportunity to review the draft Environmental Impact Statement for the Puainako Street extension and widening project at South Hilo District, Island of Hawaii. The Office of Hawaiian Affairs (OHA) has the following concerns.

We note that no cultural analysis or impact statement was done for this project. Therefore, no information on the possible existence of access, gathering and religious rights in the project area is currently available to the project proponents. Recent State Court decisions require the consideration of Native Hawaiian rights in the planning and permitting process. Since the Environmental review process is one of the first steps in gathering and evaluating information pertinent to a project, we strongly urge the County to review access, gathering and religious practices in the project area and include of their findings in the environmental documents.

We know that in prehistoric times the Hilo area was a center of Hawaiian population. We can reasonably assume that gathering and religious practices were established in the area. Many trails existed which allowed residents to move from one area to another gathering those resources that were essential for daily living.

FAXED
2/24/99 HMP
R-L

Mr. Jiro Sumada, Deputy Chief Engineer
County of Hawaii
Public Works Department
February 22, 1999
Page two

Notwithstanding current ownership or modern usage, traditional gathering and religious practices are likely to have continued and exist today. It is essential that those practices be identified and accommodated in the project review.

We suggest that you require the preparation of a cultural impact statement for this project. We further suggest that a Hawaiian cultural expert be chosen to work on the statement. That expert should be someone who is recognized within the Hawaiian community for his/her cultural expertise. The concerns of the community will not be addressed if the cultural impact statement contains information and analysis provided solely by a person whose knowledge of Hawaiian culture is limited to a study of archaeology or anthropology.

We urge you to supplement the DEA with this cultural analysis. Subsequently, if it is determined that gathering or religious rights still exist within the project area, that a formal acknowledgement of those rights be included in the final environmental documents. Finally, we suggest that a system of accommodating the continued practice of those rights must be included in the project plans.

If you have any questions, please contact Lynn Lee, EIS Planner at 594-1936.

Sincerely,



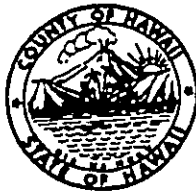
Colin Kippen
Deputy Administrator



C. Sebastian Aloit
Land and Natural Resources Division Officer

cc: Office of Hawaiian Affairs' Board of Trustees
Governor, State of Hawaii, Office of Environmental Quality Control
Abraham Wong, Federal Highway Administration
OHA East Hawaii Community Affairs Office

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. COLIN KIPPEN,
DEPUTY ADMINISTRATOR
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BLVD.
HONOLULU HI 96813

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your February 22, 1999 letter to Jiro Sumada of the Hawaii County Department of Public Works. In your letter, you requested that the Final EIS should contain a cultural impact assessment by a qualified practitioner to determine whether access for gathering or religious practices will be affected. We have taken this suggestion and the Final EIS contains new information in Appendices E3 and E4, as well as discussion of the findings in Section 3.3.6.2 of the main text, which summarizes the results of several studies, including work by Kepa Maly. We would note that FHWA has concluded that no Traditional Cultural Properties (TCPs) or other important cultural sites (e.g., gathering areas) are present within the project area or would in some other way be affected by project activities. This is based on the fact that: a) during all consultations, archaeological field work, and interviews, no groups or individuals have made specific claims or offered specific knowledge regarding the presence of such resources; b) none of the archaeological sites identified within the project area have been identified or suggested as traditional cultural places; and c) historic research and oral historic interviews and consultations have failed to reveal the presence of any traditional sites occurring within the project area. All archaeological sites have been securely identified as temporally and culturally associated with historic sugar cane cultivation in the area.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

SEE ATTACHED SHEET

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name BRIDEN Y. KANIKAWA, D/A, DEACON
Address 31 MOONO ST. UNO, UNOHI 96720
Representing KINOOLA BAPTIST CHURCH

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

Kinoole Baptist Church
1815 Kinoole Street
Hls, HI 96720
(808) 959-8012 *(P&P) 959-3177 (Fax)*

BRIAN Y. KAJIKAWA - DESIGNER
Architecture & Planning
31 Aloalo Street
Hilo, Hawaii 96720-5728
Phone: (808)959-8083 Fax: (808) 959-1898

MEMORANDUM

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FEB 24 1999

HAWAII DIVISION

February 21, 1999

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

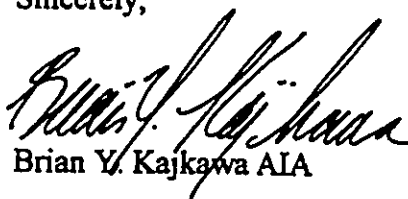
Dear Mr. Wong,

I am writing this as an Architect, and secondly as a Deacon of the Kinoole Baptist Church. As an Architect I am happy that this new 4-lane (Super) Highway is going in cause it will help with traffic, and create some new jobs for our bad economy, however as a Deacon of the Church, I am sad cause this will new highway will compound the noise level even greater, and create a hazardous condition at our church. Presently we are experiencing a lot of traffic noise during worship from cars, trucks, motorcycles and emergency vehicles. We also have an after school program, and with a new 4-lane highway next to our doorsteps, this is asking for some terrible accident to happen.

Because of this new highway, we are entertaining the idea of creating a new worship chapel away from the heavy traffic noise that comes with it. In doing so we would need to demolish several building. All of this will but a burden on our members to reach into their pockets to provide for the new worship chapel.

I know that this is a selfish request on my part, but, I believe that because we will be loosing a lot of our property that we will also be properly compensated for our losses and inconveniences that will be occurring with this new 4-lane (Super) Highway.

Sincerely,


Brian Y. Kajikawa AIA

FAXED
2/24 HWT-D
MLTY
RT

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. BRIAN Y. KAJIKAWA
31 ALOALO ST.
HILO HI 96720-5728

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

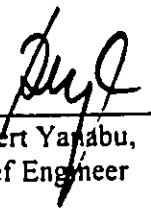
Thank you for your comment on the EIS contained in your letter of February 21, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands

conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

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FEB 24 1999

HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

Will interfere with church services

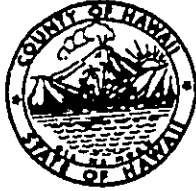
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Donna B. Seiler
Address RR 3 Box 1161 Paho, HI 96778
Representing KINOOLE BAPTIST CHURCH MEMBER -

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. DORA B. SEDENO
RR3 BOX 1161
PAHOA HI 96778

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on February 24, 1999. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

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Robert Yanou,
Chief Engineer

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

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HAWAII DIVISION

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Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

I think the 4-lane highway is a good idea.
It'll relieve traffic, and give an alternate route
in and out of Kaunama. The only concern I
have is for our church antidorium and youth
building. Once construction is done, we'll probably
lose use of both buildings. I know sound will
be a factor but also the safety for our members
and especially the children.

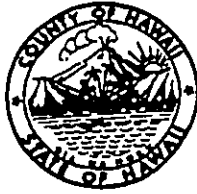
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Name MR & MRS JAMES D FUJIMOTO
Address 1946-H KINOOLE ST, HILO 96720
Representing KINOOLE BAPTIST CHURCH

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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HI CITY
RT

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. AND MRS. JAMES D. FUJIMOTO
1946-H KINOOLE ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

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Robert Yangou,
Chief Engineer

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 821
HONOLULU, HAWAII 96809

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FEB 25 1999

HAWAII DIVISION

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

FEB 24 1999

Ref: PS:EH

Mr. Abraham Wong, Administrator
Federal Highways Administration
P.O. Box 50206
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Environmental Impact Statement (DEIS)
Puainako Street Extension, Hilo, Hawaii

We have reviewed the subject DEIS and offer the following comments for your consideration.

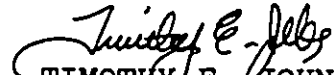
If the proposed project alters the bed or banks of a stream channel, the proposed project may require a stream alteration permit from the Commission on Water Resources Management. We also recommend that the consultant check with the State Department of Health to review whether a Section 401 permit is required.

The Land Division advises that the list of State owned Tax Map Keys and the list of properties impacted by the proposed project and included in the document needs to be further researched and corrected. The clarifications regard the jurisdiction of these State owned parcels by various government agencies. Further, there are several State and private owned parcels above Komohana Street that border unimproved portions of the Puainako Extension that was previously designated on the tax maps. The access to these parcels becomes a practical problem above the Waiakea Flood Control drainage way. Appropriate access points to the project should be planned for State and privately owned parcels or remnants. They also have identified that due to lack of detail, it is not clear as to whether the access to State owned properties are adversely impacted by the project. Reasonable access should be insured for affected parcels. Should you have any questions regarding State owned parcels, please contact Harry Yada, of the Hawaii District Branch Office, at 974-6203.

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2/25/99

Thank you for the opportunity to comment on the subject matter.

Very truly yours,


TIMOTHY E. JOHNS,
Chairperson

c.c. OEQC
CWRM
HDLO
Engineering Branch

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. TIMOTHY JOHNS, CHAIR
HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O BOX 621
HONOLULU HI 96809


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of February 24, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Need for SCAP and Section 401 Permits.* The EIS discusses these permits in Sections 4.1.3-4.
2. *Discussion of TMK ownership and access needs to be updated and corrected.* Please be informed that the Tax Map Key and List of Owners for Affected Properties, Appendix M) was intended to be a preliminary guide to provide general information as to the parcels that may be impacted by the Puainako Street Widening and Extension Project. Consequently, we did not indicate the specific agency charged with management of the State owned lands in all cases. This appendix has been updated and corrected for the Final EIS. We have been consulting with all affected State and County agencies involved in the management of State-owned lands in the area, including your Division of Land Management, the University of Hawaii at Hilo, the State Department of Education, the Housing and Community Development Corporation of Hawaii (HCDCH), and the County Department of Water Supply.

Appropriate access points will be provided to all remnant parcels that are created by the implementation of this project. These access points will be determined during the final design process. The design team will continue to coordinate with the Hawaii District Land Agent to ensure appropriate accesses are provided to the State lands impacted by this project.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.


Robert Yanabu,
Chief Engineer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

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FEB - 1 1999

HAWAII DIVISION

FEB 22 1999

Mr. Abraham Wong
Hawaii Division Administrator
U. S. Department of Transportation - FHWA
300 Ala Moana Blvd, Room 3-306
Honolulu, Hawaii 96850

Dear Mr. Wong:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement for the **Puainako Street Extension and Widening, South Hilo, Hawaii (DEIS)**. Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

The Federal Highway Administration (FHWA) proposes to widen Puainako Street (Lower Portion) between Kilauea Avenue and Komohana Street and also to extend Puainako Street (Upper Portion) from Komohana Street to Saddle Road (State Highway 200). A "No Build" alternative and a "Build" alternative with two alignments each for the Upper Portion (Alignments 1 & 2) and Lower Portion (Alignments A & B) of Puainako Street are presented in the DEIS. Although the DEIS states throughout that there is only one Build alternative with four (4) alignments, in the correct terminology there are 4 Build alternatives (Alignment A & 1, Alignment A & 2, Alignment B & 1, Alignment B & 2).

Because FHWA has not designated a Preferred Alternative, we have assigned a rating of EC-2 (Environmental Concerns, Insufficient Information) to all of the "Build" alternatives. Attached is an explanation of our rating system. In reviewing the DEIS, we find that the discussions of impacts to wetlands, wetlands mitigation measures and growth-inducing impacts are deficient. The proposed mitigation for Alignment 1 consisting of Best Management Practices during construction is not considered compensatory mitigation. The proposed project will facilitate an increase in growth throughout the area. The potential impacts caused by this growth should be discussed in greater detail and should include the impacts due to past and future projects. The DEIS also failed to provide a sufficient discussion of the indirect and cumulative impacts caused by each of the proposed alternatives and future planned development. Please refer to the attached comments for a more detailed discussion of issues and recommendations.

We appreciate the opportunity to review this DEIS. Please send a copy of the Final Environmental Impact Statement (FEIS) to this office at the same time it is officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 744-1584, or have your staff contact David Carlson at (415) 744-1577.

Sincerely,



David Farrel, Chief
Federal Activities Office

Attachments: 1) Rating Summary
2) Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

NEPA

Although the DEIS did not identify FHWA's preferred alternative, there are numerous incidents where it appears that one alternative/alignment is favored over the others. For example, Section 2.3.2.1.2 states that Alignment B "occupies a corridor that has been identified for several decades as the ultimate location of Puainako Street." This statement seems prejudicial in favor of Alignment B over Alignment A. Also, Section 2.3.2.2 states that the "objective of the Upper Portion of the Project is to link the realigned Puainako Street..." This presupposes that Puainako Street will be realigned (Alignment A or B) and eliminates the "No Build" alternative in which the existing Puainako Street is linked to Kaumana Drive at Country Club Drive. Statements such as these should be removed from the FEIS.

In addition, the Purpose and Need (Section 1) and the Alternatives (Section 2) are confusing and do not provide adequate justification for the proposed alignments. For example, Section 1.3, Project Description, Cost and Schedule, states that Puainako Street would be widened from two to four lanes. However, it is not until Section 4.3.9.1 that the reason for widening Puainako Street becomes clear; namely, that the creation and use of the upper portion would add traffic to the lower portion and that the improvements to lower portion are necessary in order to absorb the added traffic.

WETLANDS

Under the heading, *Impacts to Biological Function*, the statement is made that "no known unique biological resources or faunal relationships are associated with the wetland areas or intermittent stream channels and banks." A wetland does not have to be "unique" to be a biological resource with important functions and values. Although wetlands that are dominated by "alien species" may not be considered as valuable as wetlands that provide habitat for endangered and/or native species, they should not be discounted lightly. They may provide an opportunity for enhancement or revegetation with native species as part of a mitigation measure.

Also, under the heading, *Impacts to Hydrologic Function*, *Alignment 1*, the statement is made that "culverts proposed as part of the drainage plan will mitigate impacts to hydrologic function of this wetland." More explanation is needed concerning the hydrologic impact to the wetland west of Wilder Road and how the proposed culvert will lessen this impact. It should also be noted that culverts are not considered mitigation measures.

Additionally, the impact on the wetland near Uhaloa Street needs to be detailed.

Alignment 2 would impact a significant area of wetlands (7.19 acres). The "enhancement activities" proposed for mitigation, including water storage areas, swales, and sediment retention basins, are essential to the road construction project and will be required to mitigate for floodplain impacts. Wetlands mitigation must offset the loss of wetlands habitat in acreage and function. Compensatory mitigation involves the acquisition, restoration, preservation, dedication or some combination to avoid reducing the reach and extent of the nations waters.

The DEIS states that Alignment 1 would require a Nationwide Permit with mitigation consisting principally of Best Management Practices (BMPs) (Section 4.2.2.3). While it is essential to use BMPs for highway construction, and they will be required as permit conditions, BMPs are not adequate as mitigation to offset the loss of acreage and function of wetlands. The FEIS should identify options for compensatory mitigation for Alignment 1, such as identifying an area outside of the proposed right-of-way (ROW) that would benefit from the enhancement steps proposed below for Alignment 2.

FLOODPLAINS

It is suggested in, *Encroachments on Floodplains: Mitigation Measures, Item 2*, that flood storage volumes may be replicated in areas where it is necessary to fill floodways to construct the roadway embankment. It is unclear what is meant by this statement or how and where this will be done. The procedures that will be used to replicate flood storage volumes should be described in greater detail.

A description of the types of drainage structures that will be used appears in Section 4.1.3.2, Comparison Among Alternatives, *Upper Portion: Alignment 1 vs 2*. The FEIS should identify where the various culverts and other structures will be used.

CUMULATIVE IMPACTS

Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions. The discussion of cumulative impacts in the DEIS seems to imply that if any impacts are caused by the proposed project, they will be mitigated to the point where no cumulative impacts would occur. However, given the number of projects listed in Table 4-12, it is uncertain if mitigation measures will be sufficient to maintain the integrity of the environment. There appears to be a high potential for substantial loss of habitat, loss of wetlands, fragmentation,

decline in water quality, erosion, flooding, and more. Several examples follow.

Water Quality (p. 4-68) - It is stated that new developments are now required to incorporate BMPs to reduce erosion and discharge. The types of BMPs that will be used to reduce these impacts should be specified. The section goes on to say that better permit conditions and monitoring have led to decreases in sediment and sewage pollution in Hilo Bay. Data should be provided that documents these conditions.

Floodplains (p. 4-70) - This section does not discuss the cumulative impacts to floodplains but states that the permitting process provides strict regulation and is generally sufficient to avoid adverse impacts to floodplains. The text should provide greater detail on how these permits regulate "activities with the potential to adversely affect floodplains."

Wetlands (p. 4-71) - This section does not discuss the cumulative effects of past, present and future projects and how they have and/or will impact wetlands. If two or three projects have impacts on the same wetland area, even though each project is mitigated, it may not compensate for the loss of a continuous wetland area. This type of cumulative impact should be discussed.

Growth Induction (p. 4-71) - The proposed project will undoubtedly facilitate growth in the surrounding area. Even though the growth has been planned (as stated in Section 4.5, Growth-Inducing Impacts), it does not mean there are no impacts, including cumulative impacts. It is to be expected that growth may have the most effect on the environment, especially in a concentrated area such as the proposed project area.

NOISE MITIGATION

At the bottom of page 4-15, it is stated that "future noise impacts were estimated for all existing residences, residences under construction, and public-use structures along all alternative alignments." For several of the Build alternatives (lower portion east of Kawili Street, upper portion: alignments 1 & 2), the cost of building noise mitigation barriers exceeds the "feasible and reasonable" cost of \$35,000 per affected residence. It is unclear from the text whether both existing and future residences were factored into the calculation of these costs, or if the calculations were based solely on the number of existing residences. For example, the text states on page 4-31 that Alignment 1 would increase noise levels at "existing residences northeast of the Edita Street crossing...at existing and future residences of the new Pacific Plantation Subdivision, and at

future residences on the upper portion of Sunrise Estates Subdivision" and that a total of 39 homes would be impacted. As shown on Figures 4-1d through 4-1g, these "39 residences" appear to be existing homes. In any case there seems to be a lot of room for future expansion. It is recommended that the FEIS clearly differentiate between existing and future residences and which were used to calculate mitigation costs. It should also be noted whether noise barriers will be considered in the future as proposed subdivisions are built.

WATER QUALITY

The permanent pollution control measures proposed by HDOT as mitigation for water quality impacts are good. Some of these control measures will require ongoing maintenance, e.g. cleaning of basins and dry wells, mowing of roadsides. The FEIS should describe who will be responsible for ongoing maintenance and how proper maintenance (mowing rather than herbicide use) will be assured.

GENERAL CONCERNS/DISCREPANCIES

- The tables and text in Section 1.4.3, Current Traffic Conditions, discuss the Level of Service (LOS) provided by the current roadway. LOS is defined as the volume to capacity ratio. While the current and projected traffic volumes are provided, the carrying capacity of the current roadway or the projected capacity after the completion of the proposed project have not been provided. (This information could not be located in Appendix G either.) The carrying capacity of the roadway in its current and future conditions needs to be provided to determine if the proposed project will meet the anticipated demand.
- The figures are not consistent throughout the DEIS. For example, Figure 3-1 shows the residential area, Mele Manu Place, just south of Alignment 1. This development appears on some maps and not on others. Likewise, Sunrise Estates is shown on Figure 4-1d, but not on Figure 4-1a. Both of these subdivisions appear on Figures 3-2, 3-4 and 3-6. The future Kupulau Road and Mohouli Street extensions are depicted on Figures 1-1, 2-1, and 4-1a, but not on Figures 3-2, 3-4 and 3-6. While it is understood that all details cannot be shown on each map, it would be helpful if a common footprint would be shown on maps of the same scale. This would facilitate cross referencing the various project impacts and how they may or may not interact with each other and with existing or future developments.

• Section 4.1.1.3, Mitigation (for Geology and Geological Hazards) states on page 4-3 that "if the cave poses a structural hazard to the road or related features, appropriate actions will be taken to produce a structurally sound surface for construction." The FEIS should give examples of the actions that can be taken.

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
February 17, 2000

IN REPLY REFER TO
HEC-HI

David Farrel, Chief
Federal Activities Office
Region IX, US EPA
75 Hawthorne St.
San Francisco CA 94105-3901

Dear Mr. Farrel:

Subject: Comment to Puainako Street Extension and Widening
Environmental Impact Statement (EIS)

Thank you for your comments on the Draft EIS dated February 22, 1999. We would first note that a new Alternative in the Upper Portion (Alternative 10 -- see attached figure), was developed subsequent to the Draft EIS in response to environmental concerns. This hybrid of alignments reduces noise and wetland impacts and avoids the mapped and visited portions of Kaumana Cave. This new route will be advanced as the Recommended Alternative in the Final EIS.

1. *Comment that the EIS seems to favor Alignment 1 or Alignment 2.* The instances supplied in your comments were not intentionally meant to favor one alignment over another. The first instance states a fact concerning the mapping of the Alignment 1 corridor on numerous Hilo plans and we have chosen not to change it in the Final EIS. However, we made some changes to the second instance that you cited. It now reads "The objective of the Upper Portion of the Project is to connect with the Lower Portion of Puainako at Komohana Street and with Kaumana Drive at County Club Drive." We have changed any statement that seems to favor one alignment over the other in the Final EIS.
2. *Comment that Purpose and Need section does not explain why Lower Portion of Puainako Street requires widening.* The purpose has been clarified to read the following "2) to alleviate congested and unsafe traffic conditions on the existing Puainako Street and Kaumana Drive." Also sections 1.4.2 through 1.4.6 discuss in detail, how existing traffic produces congestion and safety problems on the Lower Portion of Puainako Street. These sections also discuss how future traffic levels without the proposed project (i.e., with no widening and no Upper Portion) will worsen congestion and safety.
3. *Comment that just because wetlands are not unique and harbor invasive alien species does not mean they should be discounted.* The purpose of explicitly stating that the wetlands of the Upper Portion do not have value from the standpoint of native species conservation is to properly discuss their function. We have revised the discussion in response to your comment concerning "unique" relationships.
4. *Comment culverts are not considered mitigation measures.* We have engaged in substantial additional coordination with the Hawaii office of your agency since publication of the Draft EIS as part of the NEPA 404 Memorandum of Understanding (MOU) integration process. The collaborative effort at re-evaluating the functions and values of the wetlands and mitigation

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necessary to compensate for the loss of the wetlands has been concluded with the mutual agreement of all parties. An in-lieu fee will be established and spent on an offsite wetlands enhancement program. The specific site has not been selected, however, we have received a proposal to enhance the bogs of the Mauna Loa rainforest which looks promising. We are working with all resource agencies to find a site that is mutually agreeable.

5. *Comment that more discussion is required concerning how culverts will mitigate impacts to hydrological functions of the wetland west of Wilder Road.* The discussion of the role of drainage facilities in replacing the functions performed by the converted wetlands is more extensively discussed in Section 3.2.2.3 of the Final EIS on a wetland-by-wetland basis.
6. *Comment that the impact to the wetland west of Uhaloa Road needs to be detailed.* Impacts to this wetland are more extensively discussed in Section 4.2.2.1 of the Final EIS. We would note that Alternative 10, which is advanced in the Final EIS as the recommended Alternative, avoids any impact to this wetland.
7. *Comment that procedures that will be used to replicate flood storage volumes should be discussed in EIS.* Sections 3.2.2.3 and 4.2.2.3 of the Final EIS contain a discussion of this issue.
8. *Comment that Final EIS should identify culvert locations.* The Final EIS contains a figure illustrating proposed culvert locations.
9. *Comment that the discussion of cumulative impacts to water quality should include data that document the reported decreases in sediment and sewage pollution in Hilo Bay.* The EIS team consulted with the U.S. Natural Resources Conservation Service, the University of Hawaii at Hilo, and the Hawaii County Department of Public Works to reach this conclusion. The statement was made based on the fact that the vast majority of sediment pollution in Hilo Bay was a result of sugar cane cultivation, which ceased during the mid-1990s. Until 1992, about 12,000 acres of land in the Hilo area were planted to cane (Source: Hawaii County Data Book). Each winter storms would pile up thousands of cubic yards of bagasse (cane debris) and sediment on the beach at Hilo Bay. Sugar cane cultivation ceased entirely in the mid-1990s. Despite the substitution of other crops over some of the sugar land and a modest but continual expansion of construction in the Hilo area, all authorities agree that sediment pollution has substantially decreased since that time. In terms of sewage pollution, according to the Hawaii County Department of Public Works, the number of total accounts in Hilo has increased from 2,968 in 1987 to 3,338 in 1999. In the same period, the quantity of treated water has increased from 3.91 million gallons per day (mgd) to 6.22 mgd (Hilo Wastewater Treatment and Conveyance Facilities, Final EIS, 1989; Hawaii County DPW Wastewater Division service records, 1999). The great majority of the growth is a result of the implementation of the master plan for the Hilo Wastewater Treatment Facility, which has provided sewer mains for Keaukaha Hawaiian Homes, Waiakea House Lots, Old Waiakea Mill, and the Ainako area. Sewer facilities for a number of other neighborhoods in Hilo are in progress or planning. With the very substantial improvements in sewerage and the marked decrease in sediment entering Hilo Bay, there is thus a strong presumption that water quality in Hilo Bay has increased. Unfortunately, the scale of study required to revisit the conclusions of the 1991 University of Hawaii at Hilo study is very large and there is no funding or any current plans to accomplish this. Nevertheless, we maintain that these conclusions are reasonable. This does not, of course, relieve the highway agencies from making

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every effort to minimize non-point source pollution during the construction and operation of the highway.

10. *Comment that the discussion of cumulative impacts to floodplains should provide greater detail on how permits regulate activities with the potential to adversely affect floodplains. A discussion of this has been added to Section 4.6 of the Final EIS.*
11. *Comment that the discussion of cumulative impacts should include wetlands. Consideration of wetlands was included in the discussion of cumulative impacts in Section 4.6 of the Final EIS, both within the text description and in Table 4-12.*
12. *Comment that the discussion of cumulative impacts that will result from growth induction is inadequate because it assumes that since growth facilitated by the project is already planned, such impacts do not require discussion. It is important to note that there are no subdivisions in construction or planning that require the Project in any manner. The Puainako Street Extension (as well as other road projects) may give certain subdivisions an advantage over others in terms of their rate of infill, but any additions in these areas will be countered by corresponding losses in the rate of growth of other subdivisions. A discussion of this has been added to Section 4.6 of the Final EIS.*
13. *Comment that the EIS should make a better distinction about whether existing or future residences are factored into the cost-per-benefited residence of the noise mitigation walls, and should also discuss whether noise barriers will be considered in the future as proposed subdivisions are built. The Final EIS now explicitly states in Section 4.1.6.1 that it is FHWA policy that only existing homes or lots with a current, active building permit are factored in for calculation of both impacts and benefits, and that the need for noise barriers will not be periodically re-evaluated by FHWA after the construction of the roadway.*
14. *Comment that the FEIS should describe who will be responsible for maintenance of water quality mitigation measures such as mowing and cleaning of dry wells and basins. The Final EIS now states that the State of Hawaii, Department of Transportation, Highways Division, will have this responsibility in all sections of the roadway for which it has assumed responsibility under the State Highway system, and that the County of Hawaii, Department of Public Works, will have this responsibility for all other areas.*
15. *Comment that the EIS should include information on the "carrying capacity" of the road in order to determine if the proposed project will meet the anticipated demand. Section 4.3.9 of the Draft and Final EIS contains a full analysis of the capacity and Level of Service that the road exhibits now and will exhibit in the future with and without improvements.*
16. *Comment that Final EIS should improve maps by providing consistent base maps and more labels to allow better interpretation. The maps have been made more consistent by including all important streets and place names on every map. In regard to the number of map bases, given the broad range of different resources that require mapping, we have found it necessary to maintain the three different map bases.*

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17. *Comment that the Final EIS should specify how caves that pose a structural hazard will be modified to provide a structurally sound surface for road construction. The Final EIS now explains that this can be achieved by collapsing and filling, by structural modifications, by complete bridging, or by some combination of these methods.*

Thank you for your detailed comments on the Draft EIS. We hope that our responses satisfy your concerns, and we believe that the additional information supplied for the EIS as a result of your request has helped to produce a document that will enable a better decision and project.

If you have any questions, please call me at (808)541-2700 ext. 311.

Sincerely yours,



Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure

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HAWAII DIVISION

PUBLIC COMMENT SHEET

**Puainako Extension and Widening Project
Public Hearing**

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes No
(Please Circle One)

COMMENT OR STATEMENT

While the road improvement is important, the project takes a huge portion of the parking area for Konohe Baptist Church for both regular services and special events. I also have some concerns about the noise increase with traffic increase. It is my hope that Konohe Baptist will be adequately compensated for these inconveniences, so they can rectify these problems.

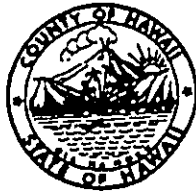
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Carolyn J. Curley
Address 13-3491 Luana St. Pahoa, HI 96778
Representing Konohe Baptist Church - Hilo

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

FAXED
42191
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R10M

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. CAROLYN J. CURLEY
13-3491 LUANA STREET
PAHOA HI 96778

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on March 3, 1999. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands

conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yangou,
Chief Engineer

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HAWAII DIVISION

PUBLIC COMMENT SHEET

**Puainako Extension and Widening Project
Public Hearing**

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

I am in favor of this proposal but I am also concerned because it is so close to my church and it is going to interfere with our worship service. The noise that comes from the traffic especially by the fire trucks and ambulance. The 2 lanes that is put into our church yard will be terrible for our worship service.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name Michael Arsi
Address 47 Uluwai St. Hilo, Hawaii
Representing Kinsale Baptist Church.

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MS. MILDRED ARAI
47 ULUWAI ST.
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on March 3, 1999. The following is a detailed response to your individual comments.

1. *Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.* We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

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Robert Yanabu,
Chief Engineer

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HAWAII DIVISION

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

2

COMMENT OR STATEMENT

Since comments are welcome in spite of the deadline, I am sending my comments. The extension and widening project will greatly affect Kimoia Baptist Church. We will experience lack of parking space and traffic noise, plus access to the church will be greatly hampered. I pray that the above-mentioned will be considered as you continue making plans.

Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name ASAKO EBISUZAKI
Address P.O. BOX 4936
Representing HLO

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206, 300 Ala Moana Boulevard, Honolulu, Hawaii 96850

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MS. ASAKO EBISUSAKI
P.O. BOX 4936
HILO HI 96720

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter to Abe Wong of FHWA, which we received on March 6, 1999. The following is a detailed response to your individual comments.

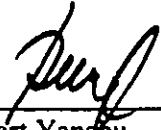
1. Traffic, noise and loss of parking will impact the churches in the Lower Portion; suggestion to build noise wall or install air-conditioning at Kinoole Baptist Church.

We have attempted to reduce noise, parking and access impacts and provide for additional mitigation while still maintaining an acceptable design. A redesign of the highway between Kinoole Street and Kilauea Avenue shifted the travel lanes about 6 feet to the south, reducing the take of land from the church. Combined with a redesign of the sidewalk, this shifted the traffic lane nearest the church about 10 feet further away. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored. The FHWA and HDOT are in the process of revising their policy regarding the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. These agencies adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences. This model has been applied to Kinoole Baptist Church, and is presented in Appendix K2 and summarized in Section 4.1.6.2 of the Final EIS. The result is that noise reduction measures costing more than \$35,000, such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and they are expected to be built, or to be considered as part of damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Your comments will be taken into consideration by the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration.

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Robert Yanabu,
Chief Engineer

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BENJAMIN J. CAYETANO
GOVERNOR



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

RECEIVED
MAR - 8 1999
HAWAII DIVISION

HERMAN M. AIZAWA, Ph.D.
Paul G. LeMahieu, Ph.D.
Superintendent

OFFICE OF THE SUPERINTENDENT

March 3, 1999

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
P. O. Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Puainako Street Extension and Widening Draft EIS

The Department of Education (DOE) has reviewed the subject draft environmental impact statement and provides comments as noted below. Note that due to our late receipt of the documents, we were given a deadline of March 15, 1999 to provide comments.

1. The project involves substantial modification to access points into and out of Waiakea Intermediate and Waiakea Elementary Schools as well as to circulation patterns within the schools. We emphasize the need to maintain adequate access and circulation into and out of the schools at all times during construction.

If possible, we recommend that construction of the new access driveways be scheduled during the summer months to minimize disruption to students, parents, and other users of Puainako Street in the vicinity of the schools.

2. The location of utilities on the school campuses should be verified to ensure compatibility with the proposed road layout.
3. We understand that the DOE will not incur any costs related to these improvements since they are part of the overall road project.
4. The Waiakea Intermediate School administration raises the following comments and questions:
 - a. The proposed driveway should provide a connection to the access road leading to the back of the campus.

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AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Mr. Abraham Wong
Page 2
March 3, 1999

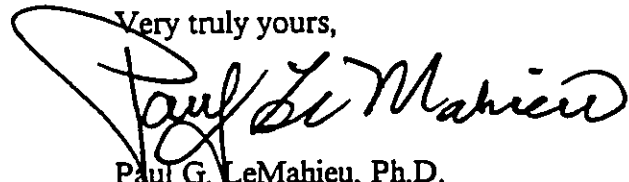
- b. The two-lane driveway is a safety concern if students will need to cross through traffic.
 - c. The one-lane connector between the intermediate and elementary schools will cause too much congestion during peak hours.
 - d. The Administration Building is not air-conditioned. Therefore, noise abatement during construction should be considered.
 - e. How will the school's existing bus ramp be affected?
 - f. Will the existing parking next to the Administration Building be affected by the proposed plan?
5. We recommend that a project representative schedule a meeting with the principals of Waiakea Elementary and Waiakea Intermediate Schools so that these and any other specific questions and concerns can be resolved.

We request that all future correspondence on this project be sent to our Facilities Branch who will coordinate the DOE's response. The contact person is:

Mr. Lester Chuck, Director
Facilities and Support Services Branch
809 8th Avenue
Honolulu, Hawaii 96816

Thank you for the opportunity to respond. If you have any questions, please call Mr. Sanford Beppu at 733-4862.

Very truly yours,



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

PLeM:hy

cc: A. Suga, OBS
Waiakea Elementary School
Waiakea Intermediate School

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

April 3, 2000

MR. PAUL G. LEMAHIEU, PH.D.
SUPT. OF EDUCATION
HAWAII STATE DEPT. OF ED.
C/O MR LESTER CHUCK, DIRECTOR
FACILITIES AND SUPPORT
SERVICES BRANCH
809 8TH AVE.
HONOLULU HI 96816


Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of March 3, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Concern about access patterns to Waiakea schools during construction.* The responsible highway agencies are committed to working with the Department of Education (DOE) and individual schools to ensure that inconvenience is minimized. The contractor will be required to maintain access
2. *Concern that project engineers verify location of school utilities and ensure compatibility.* The agencies will require the contractors to do so.
3. *Verification that DOE will not incur costs.* The DOE will not be liable for any costs associated with highway construction or mitigation.
4. *Permanent access at Waiakea Schools, including connection to access road at back of campus; safety issues related to two-lane driveways; number of lanes connecting schools; bus ramp layout; and parking at Administration Building.* The responsible agencies will continue to work with the school to ensure that satisfactory parking, drop-off, and access are accomplished as part of the project. The designs presented in the Draft EIS were conceptual; we will work closely with DOE and the individual schools during the final design stages.
5. *Noise abatement during construction at Administration Building.* We propose temporary air conditioning for this building during the construction phase, at project expense.
6. *Request for meeting with project representatives and Waiakea Schools personnel.* We have re-initiated contact with Lester Chuck of your agency and are continuing to coordinate with him and school officials.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yatabu,
Chief Engineer

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BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
HOUSING AND COMMUNITY DEVELOPMENT CORPORATION OF HAWAII
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

March 3, 1999

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MAR - 8 1999
HAWAII DIVISION

DONALD K.W. LAU
EXECUTIVE DIRECTOR

SHARYN L. MIYASHIRO
EXECUTIVE ASSISTANT
99:PEO/0666

Mr. Abraham Wong
Division Administrator
Federal Aviation Administration
P.O. Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong:

Re: Draft Environmental Impact Statement for the Proposed Puainako Street
Extension and Widening Project, South Hilo District

We apologize for the late response on the subject draft EIS. Our comments are as follows:

The Housing and Community Development Corporation of Hawaii (HCDCH) administers three public housing projects in the vicinity of the lower Puainako Street widening/extension project. Kauhale O' Hanakahi is a 20-unit federal low-rent project built in 1997 (TMK: 2-4-52:01); Lokahi is a 30-unit State rental project built in 1962 (TMK: 2-4-52:por 20); and Punahale Homes is a 128-unit federal low-rent project built in 1967 (TMK: 2-4-52:22).

We are concerned with possible short-term and long-term noise impacts resulting from the project. To what extent are the projects impacted and, if applicable, what are the proposed mitigation measures?

Again, we apologize for the late response and thank you for the opportunity to comment.

Sincerely,


Donald K.W. Lau
Executive Director

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Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. DONALD K. LAU, EXEC. DIRECTOR
HOUSING AND COMMUNITY DEV. CORP. OF HAWAII
677 QUEEN ST., SUITE 300
HONOLULU HI 96813

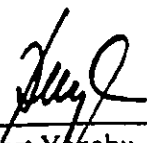
Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of March 3, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Concern about long- and short-term noise impact at HCDCH's rental facilities.* An acoustic analysis was performed for the EIS that studied noise impacts that would occur due to the traffic projected to use the road in the 2020. The analysis determined that no substantial noise increases, nor increases that would approach or exceed the Noise Abatement Criteria (for residential areas, 66 decibels on the A-weighted scale), would occur to the rental facilities you list in your letter. Construction will cause temporary noise during construction hours, but a Construction Noise Permit will be issued by the Department of Health, which will propose abatement measures such as portable barriers, construction hour limitations, and equipment limitations as necessary. If you would like more details, we would be happy to discuss it with you.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240



ER-99/68

MAR 4 1999

Mr. Abraham Y. Wong
Division Administrator
Federal Highway Administration
Prince Jonah Kuhio
Kalaniana'olaha Federal Building
Post Office Box 50206
Honolulu, Hawaii 96850

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MAR 4 1999

HAWAII DIVISION

Dear Mr. Wong:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental Impact Statement/Section 4(f) Evaluation for the Puainako Street Extension and Widening, South Hilo, Hawaii County, Hawaii.

Section 4(f) Evaluation Comments

We concur that there is no prudent and feasible alternative to the proposed project, if project objectives are to be met. We also agree with the State Historic Preservation Officer's (SHPO) selection of Alignment B as the Preferred Alternative.

However, we do not believe that all possible planning has been done to minimize harm to archeological sites which may be affected by the proposed project. In his letter of July 15, 1996, the SHPO indicates that mitigation work would be needed to recover archeological data for seven sites in Alignment B and that construction work not extend beyond the border of Alignment B (towards Alignment A) to ensure that the desired UH Hilo botanical/cultural preserve in the project area and the sites in Alignment A and beyond are not adversely affected. The SHPO recommends that a detailed mitigation plan (scope of work) for archeological data recovery work be approved by his office and that the data recovery fieldwork is completed successfully. We agree with the SHPO's request and recommend that details of the mitigation plan be included in the Final Section 4(f) Evaluation.

Environmental Statement Comments

We have been advised by the U.S. Fish and Wildlife Service (FWS) that the Environmental Statement adequately describes the fish and wildlife resources of the project area and fully analyzes the potential effect of the different alternatives. The proposed measures to mitigate impacts to native ecosystems, including Kaumana Cave, are adequate. We are pleased that a Memorandum of Agreement will be developed between the Federal Highway Administration and the FWS as part of the Record of Decision to guarantee implementation of the proposed mitigation measures.

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Summary Comments

The Department of the Interior has no objection to Section 4(f) approval of this project by the Department of Transportation, providing that details of the mitigation plan discussed above for archeological sites are included in the Final Section 4(f) Evaluation.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc: Mr. Kazu Hayashida
Director, State Department
of Transportation
Highways Division
869 Punshowl Street
Honolulu, Hawaii 96720

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ID:808 541 2704

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PAGE 2/8



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
February 17, 2000

IN REPLY REFER TO
HEC-HI

Willie R. Taylor, Director
Office of Environmental Policy & Compliance
Office of the Secretary
U.S. Dept. of Interior
Washington, D.C. 20240

Dear Mr. Taylor:

Subject: Comment to Puainako Street Extension and Widening
Environmental Impact Statement (EIS)

Thank you for your comment on the Draft EIS dated March 4, 1999. We would first note that a new Alternative in the Upper Portion (Alternative 10 – see attached figure), was developed subsequent to the Draft EIS in response to environmental concerns. This hybrid of alignments reduces noise and wetland impacts and avoids the mapped and visited portions of Kaurama Cave. This new route will be advanced as the Recommended Alternative in the Final EIS.

In regards to your comment that a *mitigation plan for data recovery* be approved by the SHPO and that the details of the mitigation plan be included in the Final Section 4(f) evaluation, we are currently discussing with the SHPO, whether sufficient archaeological work has been done to obviate data recovery. As the Section 4(f) analysis basically dictated, Alignment B has been selected as part of the Recommended Alternative. Therefore, no archaeological sites that are recommended for preservation will be adversely impacted, directly or indirectly. A preservation plan focused on protecting sites during construction is currently in development for the sites in Alignment A. We would note that the University of Hawaii has assumed responsibility for the State land on which Alignment A is located and will also be responsible for preservation of the sites after construction. We have coordinated with the University and they are aware of the sites and have taken incorporated the sites in their long-term plans for the area. The Final EIS contains a Final Section 4(f) analysis.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

If you have any questions, please call me at (808)541-2700 ext. 311.

Sincerely yours,

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure



University of Hawaii at Manoa

Institute for Astronomy
2680 Woodlawn Drive • Honolulu, Hawaii 96822
Telex: 723-8459 • UHAST HR

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MAR 15 1999
HAWAII STATE

Office of the Director

March 10, 1999

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
P. O. Box 50206
Honolulu, HI 96850

Dear Mr. Wong:

Re: Puainako Street Extension and Widening Project

I am writing to comment on the proposed Puainako Street Extension and Widening Project. We are strongly in favor of this improvement.

Staff from the Institute for Astronomy and from other observatory organizations based in University Park in Hilo travel to the Mauna Kea summit every day. The proposed extension will provide a much safer and less tortuous route to the Saddle Road. In the last few years, several of our staff have been involved in vehicle accidents on Kaumana Drive. We find the lower part of Kaumana Drive to be particularly dangerous, especially in rainy conditions.

We would also urge you to consider at this time an improvement to the Saddle Road just beyond the proposed extension. Near the 8-mile mark, close to the large water tank, is a very sharp turn at the bottom of a steep incline. There have been many accidents here (several involving University staff), most of which occur in rain. We find this to be the most dangerous turn on the Saddle Road. We believe a realignment of this corner is part of the proposed Saddle Road improvement and wonder if it could possibly be achieved earlier by making it part of the Puainako extension?

Sincerely yours,

Robert A. McLaren
Interim Director

RAM:nll

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MAR 15 1999
3/15/99

AN EQUAL OPPORTUNITY EMPLOYER

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. ROBERT A. MCLAREN,
INTERIM DIRECTOR
INSTITUTE FOR ASTRONOMY
2680 WOODLAWN DRIVE
HONOLULU HI 96822

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)

Thank you for your comment on the EIS contained in your letter of March 10, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *Suggestion to improve sharp turn in Saddle Road near 8-mile mark as part of Puainako Extension project.* The project's western limit is approximately 2 miles east of the 8-mile marker on the Saddle Road, and there are no plans to improve roadways outside of the project limits. For your information, the federal-aid Saddle Road Improvements Project, for which a Final EIS and a Record of Decision have already been issued, does address deficiencies on this portion of the Saddle Road. Please contact the State Department of Transportation, Highways Division, for more information

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.

We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 - see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.



Robert Yanabu,
Chief Engineer

NATIONAL
SPELEOLOGICAL
SOCIETY, INC. **NSS**
DEDICATED TO THE EXPLORATION, STUDY AND CONSERVATION OF CAVES

1300 Iris Street #103
Los Alamos, NM 87544
(PHONE & MANUAL FAX) 505-662-0553
djagnow@roadrunner.com

RECEIVED
MAR 25 1999
CIVIL DIVISION

Mr. Abraham Wong
Division Administrator
Federal Highway Administration
PO Box 50206
Honolulu, HI 96850

March 22, 1999

Re: Proposed Puainako Street Extension and Widening

Dear Mr. Wong:

Thank you for extending the public comment period on the above Draft EIS topic until today, March 22, 1999.

The National Speleological Society (NSS) is a non-profit organization affiliated with the American Association for the Advancement of Science. It was founded for the purpose of advancing the study, conservation, exploration, and knowledge of caves. In addition, the Society collects and publishes information relating to speleology in this country and in all parts of the world. The Society encourages protection and conservation of caves and provides contact with thousands of serious explorers and scientists in the United States and foreign countries.

On behalf of the nearly 12,000 members of the NSS, I wish to lend my full support to the conclusions expressed by the Hawaii Chapter of the National Speleological Society in the letter from Dr. William R. Halliday, dated March 19, 1999. There is no need to restate their conclusions at this time other than to say we feel the Draft EIS contains so many serious omissions and errors that additional public review and corrective measures are essential prior to finalization of the EIS.

Most importantly, no road work should occur over either Kaumana Cave (see Appendix D, Kaumana Cave Report by Dr. Fred Stone) nor over William DeRody's Cave until the exact location of the cave (relative to any road work) is precisely determined. Frank Reid's radio location equipment is currently in Hawaii. It is relatively easy to take this loop antenna into the cave at the location closest to the proposed roadway; beam a signal straight up (and locate it precisely on the surface); then turn the antenna at a 45° angle (and locate that point on the surface). Within minutes, you will know the precise location of the cave, and the distance between the two points measures the exact depth to the loop antenna. By measuring

AFFILIATED WITH THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

the ceiling height in the cave (above the antenna), and subtracting that from the distance, you can calculate the exact thickness of basalt overburden above the cave. This also allows you to construct a precise profile of the cave at that point, showing the cave relative to surface features. It also allows for more precise engineering calculations which otherwise would be less precise or not even possible.

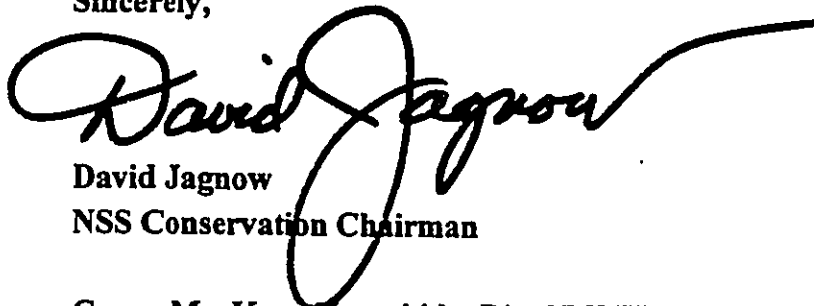
Two recent teams of cavers feel the overburden above Kaumana Cave may be only 10' to 15', and possibly as little as 2' at one place above William DeRody's Cave. I would hate for you to lose a \$400,000 D-9 Caterpillar bulldozer down a hole, and have it cost you \$150,000 to salvage and repair the machine. And even worse, in our opinion, would be the permanent destruction of that portion of a very important lava tube.

IF it proves necessary to cross one of these lava caves, and the overburden is insufficient to support the roadbed, the tube can be bridged with steel girders that are supported by and anchored to footings on both sides of the lava tube. Such a structure can minimize the stress on the roof of the cave, and minimize the possibility of catastrophic collapse.

I urge you to work with Dr. William R. Halliday and the Hawaii Grotto, NSS, as well as Dr. Fred Stone, University of Hawaii at Hilo, to determine the precise location of these lava caves prior to starting any construction. I don't see that drill holes are necessary to confirm the location of these lava tubes. The radio locations will confirm the location within a few inches.

Please mail me a copy of the Final EIS on this project, and keep me informed as to your decisions relative to these two lava caves. Please call on me or any of our NSS members if you need any expertise or assistance on this project.

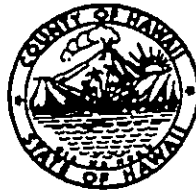
Sincerely,



David Jagnow
NSS Conservation Chairman

Cc: Mr. Kazu Hayashida, Dir. SDT Highways Division
Mr. Jiro Sumada, Deputy Chief Engineer, Hawaii County DPW
Dr. William R. Halliday, Hawaii Grotto, NSS
Dr. Fred Stone, University of Hawaii at Hilo
Doug Medville, NSS AVP

Stephen K. Yamashiro
Mayor



Robert K. Yanabu
Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

April 3, 2000

MR. DAVID JAGNOW, CONSERVATION CHAIR
NATIONAL SPELEOLOGICAL SOCIETY
1300 IRIS ST. # 103
LOS ALAMOS NM

Subject: Comment to Puainako Street Extension and Widening
Draft Environmental Impact Statement (EIS)


Thank you for your comment on the EIS contained in your letter of March 22, 1999, to Abe Wong of FHWA. The following is a detailed response to your individual comments.

1. *No road work should be done over Kaumana Cave until its exact location is determined.* The County of Hawaii and FHWA stand by the accuracy of survey, which was done according to highest professional standards. We would also like to inform you that a new Alternative in the Upper Portion (Alternative 10 – see attached figure) was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment reduces noise impacts and wetlands conversion and avoids impacting the known sections of Kaumana Cave. The environmental impacts of this new Alternative - which has been adopted as the Preferred Alternative for the Upper Portion - are discussed in the Final EIS.

2. *No road work should be done over De Roddy's Cave until its exact location is determined.* The County of Hawaii and its consultants have investigated the resources offered by the cave based on a field visit, a description of the cave provided by the U.S. Geological Survey, consultation with the U.S. Fish and Wildlife Service, and additional information from cavers. We believe that enough information has been gathered to conclude that the cave does not offer any significant and unique value for biology, geology, recreation, or drainage/hydrology. It is important to note that the cave is nearly blocked by collapses, presumably from excavation of a drainage canal, adjacent to the proposed right-of-way. Considering all factors, we believe that even under the worst case scenario of collapsing the cave, any losses to valuable cave resources would be minimal. During final engineering for the road, the subsurface geology will be thoroughly investigated and the proper measures will be taken to ensure the safety of the road during construction and use. This may consist of grading with no structural modifications to the cave, surface structural modifications, or collapse and filling of the cave in the area underlying the roadway.

3. *If it is necessary to cross either Kaumana or DeRoddy's cave, then steel girders anchored to footings on both sides of the lava tube.* No Alternative will cross Kaumana Cave; concerning DeRoddy's Cave, see previous response.

On behalf of the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the U.S. Department of Transportation, Federal Highway Administration, I again thank you for your comments.



Robert Yanabu,
Chief Engineer

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**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A4

Public Hearing Publicity, Materials and Transcript

Summary of Issues Raised at Public Hearing and in Written Comments

A public hearing, attended by more than 100 persons, was held at the University of Hawaii at Hilo on January 19, 1999 (transcript of hearings at end of this appendix). The following summarizes the principal issues raised in comments received at the hearing and also in the written comments that were received during the comment period. The issues are presented in order of the frequency with which the issue was raised, with the most commonly cited issues first.

Noise (and Related Traffic Problems) at Pacific Plantations Subdivision. Although the issue was not raised in the public hearing, a number of written comments were received on this topic. Most stated support for the Project but opposition to the selection of Alignment 1, and preference for Alignment 2. The primary objection was noise, as the Draft EIS stated that although many homes would be impacted by a noise increase of 15 dBA or more, feasible and reasonable mitigation was not possible. The lead agencies attempted to resolve this (and other problems) by designing a hybrid alignment of 1 and 2 (named Alignment 10) that would retain the best features of both and minimize adverse impacts. This route, which eliminated noise impacts to Pacific Plantations Subdivision and caused no additional noise impacts, has been advanced as the Recommended Alternative in the Final EIS.

Noise, Loss of Right-of-Way and Access Restrictions at Kinoole Baptist Church. Testifiers at the public hearing and a number of comment letters objected to the project's impacts on the church. One of the major objections was the finding that because noise mitigation walls that could reduce sound levels by at least 5.0 L_{eq} were judged to cost greater than \$35,000 (and were in any case infeasible because of access considerations), no noise mitigation measures would be offered to the church. Additionally, they expressed concern that the combination of loss of parking, decrease in access and internal circulation efficiency, and noise impacts would combine to render the church unusable. In response to these concerns, the project sponsor agencies attempted to reduce impacts to the greatest extent practicable and explore alternative mitigation. The first effort led to a reduction in the right-of-way between Kinoole Street and Kilauea Avenue of about 2 m (6 ft.), which combined with a redesign of the sidewalk shifted the traffic lane nearest the church about 3 m (10 ft.) away from the church. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored, using a model that has been adopted by FHWA and HDOT for determining whether the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. This model has been applied to Kinoole Baptist Church, with results that noise reduction measures costing more than \$35,000 (up to a ceiling of \$290,500), such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost far less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and

feasible, and the State intends to construct them, or consider damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected.

Impact to Caves. In written comments, two members of speleological organizations raised concerns about impacts to caves in general and, in particular, to Kaumana Cave (the main opening of which is a County Park) and a newly discovered cave in the Sunrise Estates subdivision. The commenters stated that insufficient consideration was given to the value of lava tube caves in the EIS, that the mapping of Kaumana Cave was inaccurate, and that other caves would be adversely impacted by the Project and were not receiving adequate consideration. The lead agencies and consultants met with the Hawaii Speleological Survey to gain more information on these concerns. They then consulted with the U.S. Geological Survey and the U.S. Fish and Wildlife Service to gain their recommendations about assessing the value of caves, impacts to them, and mitigation, if necessary. The result of the coordination has been to determine that lava tube caves have been adequately considered (with the addition of the discussion of the cave in Sunrise Estates to the Final EIS), that Kaumana Cave was accurately mapped, and that, in most cases, impacts to caves would be very minor, because they are widespread in the pahoehoe flows of the island of Hawaii are rarely uniquely valuable. Mitigation measures related to caves presented in the Draft EIS have been refined. These state that if a lava tube cave is encountered, all construction with the potential to impact the lava tube will immediately cease, and appropriate personnel in the Hawaii County Department of Public Works will be contacted. These personnel will contact State Historic Preservation Division, the USGS and the USFWS to determine whether historic sites or burials are present, and whether the lava tube has special geological or biological value that merits investigation and data collection. Organizations with an interest in lava tube caves will also be consulted.

Coordination with Public Schools and the University of Hawaii. Several agencies requested additional coordination with these schools in order to ensure that the final roadway design satisfies the schools' requirements for access and parking and causes minimum inconvenience during construction. The project representatives met with the affected schools and agencies and have scheduled further coordination during final design in order to meet these goals.

Access to Nearby Properties. Several commenters had questions concerning whether the Project could provide better access to their properties, which were near, but did not border any alignment of the project. They were informed via letter that, in general, only properties that actually border the alignment or would have their access to the property interfered with by the Project in some way would be potentially provided access directly on the highway. Such properties may be allowed by the Hawaii State Department of Transportation to access the road directly, subject to review and possible conditions

Insufficient Information Concerning Wetlands. The U.S. Environmental Protection Agency expressed concerns in written comments that the wetlands in the project area were discounted in the Draft EIS because they are not unique, harbor invasive alien species, and are often the result of human interference with topography and/or drainage systems. Furthermore, they requested additional information on the hydrologic functions

and values of the wetlands, and a discussion of cumulative impacts of wetlands loss. These concerns have been fully addressed through expansion of consideration of wetlands in the Final EIS, including a program of compensatory mitigation

Impacts to State of Hawaii Land Parcels. The Hawaii State Department of Land and Natural Resources (DLNR) expressed concerns regarding impacts to State properties that might be deprived of useful function or experience restricted access. Project representatives met with DLNR to discuss the properties on a case-by-case basis.

Address Cultural Impacts of Project The Office of Hawaiian Affairs requested that cultural impacts be addressed. This agency, and other Native Hawaiian Organizations that it has identified in subsequent meetings, have been reconsulted as part of expanded Section 106 consultation.

must be filed by providing the original and the number of copies provided by the Commission's regulations to: The Secretary, Federal Energy Regulatory Commission, 888 First Street, NW, Washington, DC 20426. An additional copy must be sent to Director, Division of Project Review, Federal Energy Regulatory Commission, at the above-mentioned address. A copy of any notice of intent, competing application or motion to intervene must also be served upon each representative of the Applicant specified in the particular application.

D2. Agency Comments—Federal, state, and local agencies are invited to file comments on the described application. A copy of the application may be obtained by agencies directly from the Applicant. If an agency does not file comments within the time specified for filing comments, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

David P. Boergers,

Secretary.

[FR Doc. 98-34080 Filed 12-23-98; 8:45 am]
BILLING CODE 6717-01-M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 2000-010]

Power Authority of the State of New York; Notice of Meeting To Discuss Settlement for Relicensing of the St. Lawrence—FDR Power Project

December 18, 1998.

The establishment of the Cooperative Consultation Process (CCP) Team and the Scoping Process for relicensing of the St. Lawrence—FDR Power Project was identified in the NOTICE OF MEMORANDUM OF UNDERSTANDING, FORMATION OF COOPERATIVE CONSULTATION PROCESS TEAM, AND INITIATION OF SCOPING PROCESS ASSOCIATED WITH RELICENSING THE ST. LAWRENCE—FDR POWER PROJECT issued May 2, 1996, and found in the Federal Register dated May 8, 1996, Volume 61, No. 90, on page 20813.

The CCP Team will meet January 26-28, 1999 to commence negotiations on ecological and local issues. The meeting will be conducted at the New York Power Authority's (NYPA) Robert Moses Powerhouse, at 10:00 a.m., located in Massena, New York.

If you would like more information about the CCP Team and the relicensing

process, please contact any one of the following individuals:

Mr. Thomas R. Tatham, New York Power Authority, (212) 468-6747, (212) 468-6272 (fax); EMAIL: Ytathat@IP3GATE.USA.COM
Mr. Bill Little, Esq., New York State Dept. of Environmental Conservation, (518) 457-0986, (518) 457-3978 (fax); EMAIL: WGLittle@CW.DEC.State.NY.US
Dr. Jennifer Hill, Ms. Patti Leppert-Slack, Federal Energy Regulatory Commission, (202) 219-2797 (Jennifer), (202) 219-2767 (Patti), (202) 219-0125 (fax); EMAIL: Jennifer.Hill@FERC.FED.US
EMAIL: Paricia.LeppertSlack@FERC.Fed.US

Further information about NYPA and the St. Lawrence—FDR Power Project can be obtained through the Internet at <http://www.stl.nypa.gov/index.html>. Information about the Federal Energy Regulatory Commission can be obtained at <http://www.ferc.fed.us>.

David P. Boergers,

Secretary.

[FR Doc. 98-34076 Filed 12-23-98; 8:45 am]
BILLING CODE 6717-01-M

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-5498-2]

Environmental Impact Statements; Notice of Availability

RESPONSIBLE AGENCY: Office of Federal Activities, General Information (202) 564-7167 OR (202) 564-7153.

Weekly receipt of Environmental Impact Statements Filed December 14, 1998 Through December 18, 1998 Pursuant to 40 CFR 1506.9.

EIS No. 980510, FINAL SUPPLEMENT, NOA, Atlantic Sea Scallop, Placopecten Magellanicus, (Gmelin), Fishery Management Plan (FMP), Updated and Additional Information, Amendment No. 7, Due: January 25, 1999, Contact: Kathi Rodrigues (978) 281-9300.

EIS No. 980511, FINAL SUPPLEMENT, NOA, AK, Groundfish Fishery of the Bering Sea and Aleutian Islands Area and Groundfish of the Gulf of Alaska, Implementation of Groundfish Total Allowable Catch Specifications and Prohibited Species Catch Limits Under the Authority of the Fishery Management Plans, AK, Contact: Steven Pennoyer (907) 586-7221. Under § 1506.10(d) of the Council on Environmental Quality Regulations for Implementing the Procedural

Provisions of the National Environmental Policy Act the US Environmental Protection Agency has Granted a 30-Day Waiver for the above EIS.

EIS No. 980512, FINAL EIS, AFS, CA, Desolation Wilderness Management Guidelines Revisions for the Eldorado National Forest and the Lake Tahoe Basin Management Unit (LTBMU), Limits of Acceptable Change (LAC), Eldorado County, CA, Due: January 25, 1999, Contact: Daina Erickson (530) 622-5061.

EIS No. 980513, FINAL EIS, USN, PA, Naval Air Warfare Center Aircraft Division (NAWCAD) Warminster, Disposal and Reuse, Bucks County, PA, Due: January 25, 1999, Contact: Kurt C. Frederick (610) 595-0728.

EIS No. 980514, DRAFT EIS, DOE, SC, Savannah River Site Spent Nuclear Fuel Management Plan, Implementation, Aiken County, SC, Due: February 08, 1999, Contact: Andrew R. Grainger (803) 725-1523.

EIS No. 980515, DRAFT EIS, DOE, TN, NY, IL, NM, Spallation Neutron Source (SNS) Facility Construction and Operation, Implementation and Site Selection, Oak Ridge National Laboratory, Oak Ridge, TN; Argonne National Laboratory, Argonne, IL; Brookhaven National Laboratory, Upton, NY; and Los Alamos National Laboratory, Los Alamos, NM, Due: February 08, 1999, Contact: David Wilfert (800) 927-9964.

EIS No. 980516, FINAL SUPPLEMENT, UMC, CA, Sewage Effluent Compliance Project, Updated and Additional Information, Implementation, Lower Santa

Margarita Basin, Marine Corps Base Camp Pendleton, San Diego County, CA, Due: January 25, 1999, Contact: Vickie Taylor (619) 532-3007.

EIS No. 980517, DRAFT EIS, FHW, HI, Puainako Street Extension and Widening, Traffic Circulation Improvements, Funding, South Hilo, Hawaii County, HI, Due: February 22, 1999, Contact: Abraham Wong (808) 541-2700.

EIS No. 980518, FINAL EIS, IBR, CA, Central Valley Project, Municipal and Industrial Water Supply Contracts under Public Law 101-514 (Section 206), Sacramento County Water Agency and San Juan Water District, City of Folsom, Sacramento County, CA, Due: January 25, 1999, Contact: Cecil Lesley (916) 989-7221.

EIS No. 980519, FINAL EIS, AFS, AZ, Windmill Range Allotment Management Plan, Cattle Grazing Use, Implementation, Coconino National Forest, Mormon Lake, Peaks and Sedona Ranger Districts, Coconino

and Yavapai Counties, AZ. Due: January 25, 1999. Contact: Mike Hannemann (520) 774-1147.

Dated: December 21, 1998.

William D. Dickerson,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 98-34132 Filed 12-23-98; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[FRL-6204-9]

Underground Injection Control Program; Hazardous Waste Land Disposal Restrictions; Petition for Reissuance of an Exemption—Class I Hazardous Waste Injection Wells, E. I. du Pont de Nemours & Co., Inc. (DuPont)

AGENCY: Environmental Protection Agency.

ACTION: Notice of final decision on the exemption reissuance.

SUMMARY: Notice is hereby given that a petition for the reissuance of an exemption to the land disposal restrictions under the 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act has been granted to DuPont, for the Class I injection wells located at the Orange, Texas facility. As required by 40 CFR part 148, the company has adequately demonstrated to the satisfaction of the Environmental Protection Agency by petition and supporting documentation that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This final decision approves the recompletion of Well No. 3 (WDW-54) and the relocation of Well No. 11 (WDW-282). As required by 40 CFR 148.22(b) and 40 CFR 124.10, a public notice was issued on September 29, 1998. The public comment period closed on November 13, 1998, and no comments were received. This decision constitutes final Agency action and there is no Administrative appeal.

DATES: This action is effective as of December 11, 1998.

ADDRESSES: Copies of the exemption reissuance and all pertinent information relating thereto are on file at the following location: Environmental Protection Agency, Region 6, Water Quality Protection Division, Source Water Protection Branch (6WQ-S), 1445 Ross Avenue, Dallas Texas 75202-2733.

FOR FURTHER INFORMATION CONTACT:

Philip Dellinger, Chief, Ground Water/ UIC Section, EPA—Region 6, telephone (214) 665-7165.

Russell L. Bowen,

Acting Director, Water Quality Protection Division (6WQ).

[FR Doc. 98-34149 Filed 12-23-98; 8:45 am]

BILLING CODE 6560-50-M

ENVIRONMENTAL PROTECTION AGENCY

Proposed Implementation Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and Regional Haze Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of extension of comment period.

SUMMARY: The EPA is hereby extending by 22 days, the closing date of the public comment period regarding EPA's notice of availability published November 27, 1998 at 63 FR 65593. The original comment period was to close on December 28, 1998. The new closing date will be January 19, 1999.

DATES: Comments. All comments regarding EPA's notice of availability issued on November 27, 1998 must be received by EPA on or before close of business January 19, 1999.

ADDRESSES: Comments should be submitted (in duplicate, if possible) to: Air and Radiation Docket and Information Center (6101), Attention: Docket No. A-95-38, Category IV-I, U.S. Environmental Protection Agency, 401 M Street SW, Room M-1500, Washington, DC 20460, telephone (202) 260-7548, between 8:00 a.m. and 4:00 p.m., Monday through Friday, excluding legal holidays. A reasonable fee may be charged for copying. Comments and data may also be submitted electronically by following the instructions under SUPPLEMENTARY INFORMATION of this document. No confidential business information (CBI) should be submitted through e-mail.

FOR FURTHER INFORMATION CONTACT: For general questions on the document or for specific questions and comments on the ozone portion of this guidance, contact Mr. John Silvasi, U.S. EPA, MD-15, Research Triangle Park, NC 27711, telephone (919) 541-5666, e-mail address "silvasi.john@epa.gov"; for specific questions and comments on the PM portion of this guidance, contact Mr. Larry Wallace, U.S. EPA, MD-15, Research Triangle Park, NC 27711, telephone (919) 541-0906, e-mail address "wallace.larry@epa.gov"; and

for specific questions and comments on the regional haze portion of this guidance, contact Mr. Rich Damberg, U.S. EPA, MD-15, Research Triangle Park, NC 27711, telephone (919) 541-5592, e-mail address "damberg.rich@epa.gov".

SUPPLEMENTARY INFORMATION: The purpose of this guidance is to set forth EPA's current views on the issues identified above. These issues will be addressed in future rulemakings as appropriate, e.g., actions approving or disapproving SIP submittals. In those rulemakings, EPA plans to propose to take a particular action based in whole or in part on its views of the relevant issues, and the public will have an opportunity to comment on EPA's interpretations during the rulemakings. When EPA issues final rules based on its views at that time, those views will be binding on the States, the public, and EPA as a matter of law.

Electronic Availability—A World Wide Web (WWW) site has been developed for overview information on the NAAQS and the ozone, PM, and regional haze implementation process. The Uniform Resource Location (URL) for the home page of the web site is <http://ttnwww.rtpnc.epa.gov/implement>. The proposed implementation guidance can be accessed through this web site in a table entitled "Major Action Items to Reinvent Ozone and PM NAAQS and Regional Haze Implementation." The URL for the table is <http://ttnwww.rtpnc.epa.gov/implement/actions.htm>. For assistance with these web sites, the TTN Helpline is (919) 541-5384. For those persons without electronic capability, a copy of the proposed implementation guidance may be obtained from Ms. Tricia Crabtree, U.S. EPA, MD-15, Air Quality Strategies and Standards Division, Research Triangle Park, NC 27711, telephone (919) 541-5688.

The official record for this proposed guidance, as well as the public version, has been established under docket number A-95-38 (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:00 a.m. to 4:00 p.m., Monday through Friday, excluding legal holidays. The official proposed rulemaking record is located at the address in ADDRESSES at the beginning of this document. Electronic comments can be sent directly to EPA at: A-and-

Hawaii Notices

DECEMBER 23, 1998

The project will consist of drilling, casing, and testing a new 26-inch diameter exploratory well to replace the existing exploratory well (No. 3857-01), which was not completed. The new exploratory well will be constructed in accordance with the "Hawaii Well Construction and Pump Installation Standards" as revised on January 23, 1997. Other site improvements subject to test results may include site grading for the installation of a reservoir, pumps, and a control building. New onsite A.C. paving will also be provided. The project site, located 200 feet east of Mamalahoa Highway, is owned in fee by the Department of Water Supply. Funding for the proposed project is by DWS funds. The estimated cost is \$1.1 million.

Draft Environmental Impact Statements

(3) Puainako Street Extension and Widening

District: South Hilo
TMK: 2-2, 2-4, 2-5 (var. plats and parcels)
Applicant: County of Hawaii, Dept. of Public Works
25 Aupuni Street
Hilo, Hawaii 96720
Contact: Jiro Sumada (961-8321)

Approving Agency/Accepting Authority: Governor, State of Hawaii
c/o Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Consultant: Okahara & Associates
200 Kohola Street
Hilo, Hawaii 96720
Contact: Ron Terry (982-5831)

Public Comment
Deadline: February 8, 1999
Status: DEIS First Notice pending public comment.
Address comments to the applicant with copies to the approving agency or accepting authority, the consultant and OEQC.

Permits Required: Sec. 404, CZM consistency, NPDES, SCAP, highway excavation, grading & grubbing, subdivision permit

The project would widen, partially realign, and extend Puainako Street (State Highway 2000) in Hilo along the 1.5 mile section between Kilauea Avenue and Komohana Street.

Improvements to vertical grade yielding satisfactory sight distances and upgrades to intersections, including two new traffic signals, would occur. Puainako Street would also be extended approximately 4.5 miles between Komohana Street and the Saddle Road near Country Club Drive. The project would improve traffic circulation of the State Highway system and adjacent streets by directly linking Puainako Street and the Saddle Road (State Highway 200). It would alleviate congested and unsafe traffic conditions on Puainako Street and Kaumana Drive. Alternatives include the No-Build Alternative and two alternative alignments for segments of both the Lower Portion and the Upper Portion (which are divided by Komohana Street). Substantial improvements in safety levels, travel times, circulation efficiency and air quality are expected relative to the No-Build Alternative. Other impacts include noise, five residential relocations, dredge and fill in a small area of wetlands, and construction-phase disturbance.

This project is done in cooperation with the State Department of Transportation and the Federal Highway Administration.

National Environmental Policy Act (NEPA)

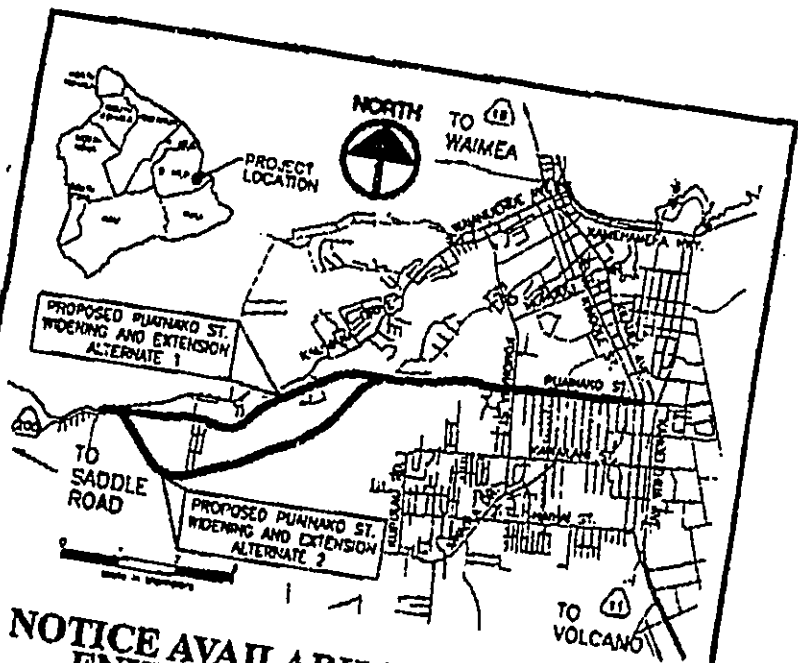
(4) Pohakuloa Training Area Installation of A Water Distribution and Storage System (Draft EA)

District: Hamakua
Approving Agency/Accepting Authority: U.S. Army Garrison, Hawaii
Pohakuloa Training Area
Contact: Scott Henderson (969-1966)

Public Comment
Deadline: January 22, 1999

The U.S. Army Garrison, Hawaii proposes to install a small water storage and distribution system to support an environmental field project at Pohakuloa Training Area, Island of Hawaii. A DEA has been prepared to analyze the potential environmental consequences of installing two 2,500 gallon water tanks, approximately 20,000 feet of main water supply line, approximately 34,000 feet of lateral branch lines, and approximately 67,500 feet of feeder line in the Kipuka

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NOTICE AVAILABILITY OF DRAFT ENVIRONMENTAL IMPACT STATEMENT AND PUBLIC HEARING

The Hawaii County Department of Public Works (DPW), in cooperation with the State Department of Transportation, Highways Division (DOT) and the Federal Highway Administration (FHWA) announce the availability of a draft Environmental Impact Statement (EIS) for the proposed Puainako Extension and Widening Project in South Hilo, Hawaii County. Notice is hereby given that the draft EIS has been distributed as required by the National Environmental Policy Act of 1969 and Chapter 343 Hawaii Revised Statutes. The draft EIS identifies and assesses the environmental and social impacts that could result from the project. The project would widen Puainako Street to four lanes east of Komohana Street and extend it 7.3 km (4.5 miles) as a two-lane highway between Komohana Street and the Saddle Road (State Highway 200). The formal public and agency review period for this draft EIS has begun.

To ensure that all significant issues are identified and the full range of issues related to this project are addressed, comments and suggestions are invited from all interested parties. Two sets of project alignment alternatives are being considered. Public and agency input will be used in evaluating the alternative alignments addressed in the draft EIS and in selecting the preferred alignment alternative, which will be stated in the final EIS. The period for receipt of comments closes on February 8, 1999. Written comments on the project and draft EIS will be accepted up to and including February 8, 1999. If you wish to comment, please mail or deliver any comments you may have to the following addresses:

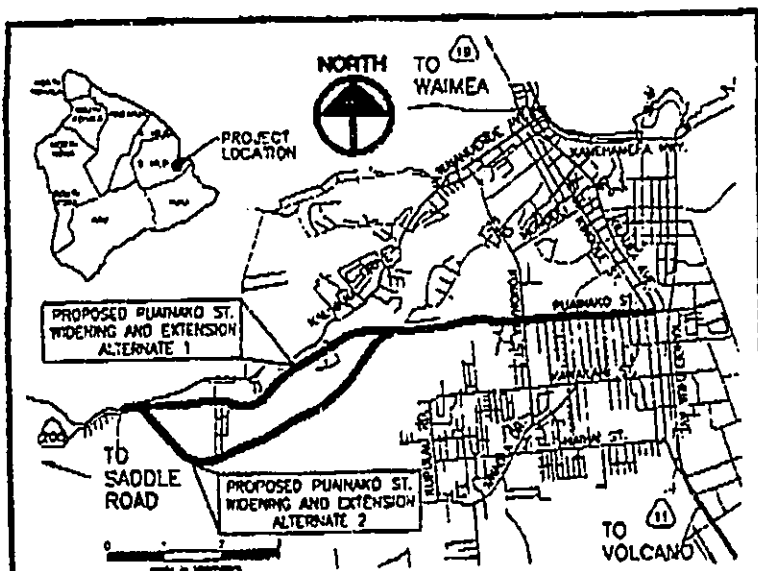
Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850

and
Governor, State of Hawaii
C/o of Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

CORRECTION

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

RECEIVED AS FOLLOWS



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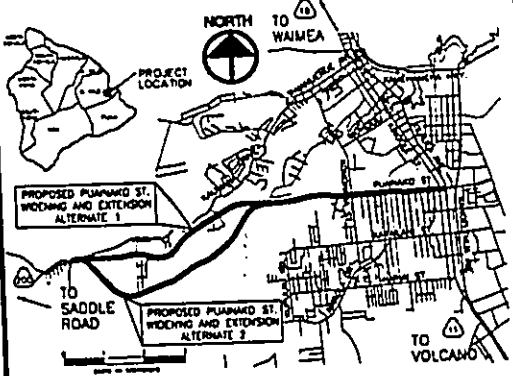
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NOTICE

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Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850
and
Governor, State of Hawaii
C/O of Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

All written comments should be legible and include your name (individual and/or organization) and return address.

Maps, drawings and other pertinent information including written comments received as a result of coordination with other governmental agencies are available for inspection at the following location:

Hawaii County Department of Public Works,
25 Aupuni Street
Hilo, Hawaii 96720

In addition, copies of the draft EIS are available for public review and copying at the following locations:

University of Hawaii Hilo Campus Library 200 W. Kawili Street Hilo, Hawaii	Hawaii State Library (Main Branch) Reference Desk 47 South King Street Honolulu, Hawaii
Hilo Public Library 300 Waiianuenue Avenue Hilo, Hawaii	State Office of Environmental Quality Control 235 South Beretania Street, Suite 702 Honolulu, Hawaii
University of Hawaii at Manoa Hamilton Library 2550 The Mall	Kaunua-Kona Public Library 75-140 Hualalai Road Kaunua-Kona, Hawaii
State of Hawaii Department of Transportation Highways Division Planning Branch 600 Kapiolani Blvd, Room 304	U.S. Department of Transportation Federal Highway Administration Highway Division 300 Ala Moana Boulevard Room 3202 Honolulu, Hawaii

State of Hawaii
Department of Transportation
Hawaii District Office
50 Makala Street
Hilo, Hawaii

Notice is also hereby given that the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the Federal Highway Administration will hold a public hearing on the proposed Pualako Extension and Widening Project on January 19, 1999, at 7:00 PM at the University of Hawaii at Hilo, Campus Center Room 306-307. The purpose of this meeting is to present the Pualako project, answer questions and solicit oral and written comments from those who have an interest in the project. The public hearing will discuss the alignment alternatives, environmental effects, relocation assistance programs, and tentative schedules for right-of-way acquisition and construction. Interested persons will be heard particularly with reference to the social, economic impact of the proposed alternatives. The public is invited to attend. Persons unable or not desiring to appear at the hearing may file signed statements presenting their views on the project. Such statements should be submitted on or before February 22, 1999. Comments received by mail will receive the same evaluation as oral comments made at the public hearing.

Jiro Sumada, Deputy Chief Engineer
Hawaii County Department of Public Works
(112221-Hawaii Tribune-Herald: December 20, 1998; January 10, 1999)

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Hilo, Hawaii

Hawaii State Library (Main Branch)
Reference Desk
478 South King Street
Honolulu, Hawaii

Hilo Public Library
300 Waiianuenu Avenue
Hilo, Hawaii

State Office of Environmental
Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii

University of Hawaii
at Manoa
Hamilton Library
2550 The Mall
Honolulu, Hawaii

Kailua-Kona Public Library
75-140 Hualalai Road
Kailua-Kona, Hawaii

State of Hawaii
Department of
Transportation
Highways Division
Planning Branch
600 Kapiolani Blvd.,
Room 304
Honolulu, Hawaii

U.S. Department of Transportation
Federal Highway Administration
Highway Division
300 Ala Moana Boulevard Room 3202
Honolulu, Hawaii

State of Hawaii
Department of Transportation
Hawaii District Office
50 Makaala Street
Hilo, Hawaii

Notice is also hereby given that the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the Federal Highway Administration will hold a public hearing on the proposed Puainako Extension and Widening Project on January 19, 1999, at 7:00 PM at the University of Hawaii at Hilo, Campus Center Room 306-307. The purpose of this meeting is to present the Puainako project, answer questions and solicit oral and written comments from those who have an interest in the project. The public hearing will discuss the alignment alternatives, environmental effects, relocation assistance programs, and tentative schedules for right-of-way acquisition and construction. Interested persons will be heard particularly with reference to the social, economic impact of the proposed alternatives. The public is invited to attend. Persons unable or not desiring to appear at the hearing may file signed statements presenting their views on the project. Such statements should be submitted on or before February 8, 1999. Comments received by mail will receive the same evaluation as oral comments made at the public hearing.

Jiro Sumada, Deputy Chief Engineer
Hawaii County Department of Public Works

(Hon. Adv.: Dec. 20, 1998; Jan. 10, 1999)

(A-50723)

FAX MEMORANDUM

TO: Richelle Suzuki, FHWA Transportation Engineer FAX 541-2704
Bob Yanabu, Hawaii County DPW FAX 961-8630
Colin Hashiro, Okahara & Associates FAX 961-5529

FROM: Ron Terry

The press release below was faxed to the various Big Island media on January 17, 1999.

FOR IMMEDIATE RELEASE

January 17, 1999

CONTACT: Ron Terry, Okahara & Associates 982-5831
Robert Yanabu, Hawaii County Department of Public Works 961-8327

The Hawaii County Department of Public Works (DPW) will be holding a public hearing for the proposed Puainako Street Extension and Widening project on Tuesday, January 19, 1999, at 7:00 PM, in Campus Center 306-307 at the University of Hawaii at Hilo. The project would widen Puainako Street to four lanes east of Komohana Street and extend it 4.5 miles between Komohana Street and the Saddle Road. The DPW, in cooperation with the State Department of Transportation, Highways Division and the Federal Highway Administration, released a Draft Environmental Impact Statement (EIS) for the project on December 23, 1998. The draft EIS identifies and assesses the environmental and social impacts that could result from the project.

The purpose of this public hearing is to discuss the results of the EIS, to present the planning that has taken place on the proposed project to date, and to receive information from the public about concerns or issues related to the project. The public will have the opportunity to present testimony and to ask questions about the project.

Those who cannot attend the hearing but wish to ask questions or submit comments may mail or deliver their questions or comments to one or both of the following addresses any time on or before February 8, 1999:

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Governor, State of Hawaii, c/o
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

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OKAHARA & ASSOC.

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HAWAII TRIBUNE-HERALD

December 29, 1998

Draft study details options for Puainako Street extension

By Hunter Bishop
Tribune-Herald

As many as five homes could be removed for the proposed extension of Puainako Street to Saddle Road, according to a draft environmental report for the project.

The lower portion of the proposed \$67 million project would entail widening the right-of-way to the north of Puainako Street from Kilauea Avenue to the Waiakea School complex, and realigning the portion from the Kawili Street intersection to Komohana Street to run behind the homes that now front Puainako Street.

The new version of Puainako Street would have four lanes between Kilauea Avenue and Komohana Street, including dual sidewalks

and bicycle lanes.

Puainako Street then would be extended as a two-lane road about 4.5 miles west from Komohana Street to Saddle Road (also known as State Highway 200 or Kaumana Drive) at the six-mile marker near Country Club Drive.

The project is designed to provide a direct link from Puainako Street to Saddle Road and alleviate congested and unsafe traffic conditions

See PUAINAKO,
Page 10

PUAINAKO: Draft study details extension options

From Page 1

on Puainako Street and Kaumana Drive, according to the draft Environmental Impact Statement completed earlier this month.

Traffic engineering studies cited in the report indicate that portions of Puainako Street are already severely congested with higher-than-average accident rates, and that the narrow, curving two-lane Kaumana Drive, which currently carries all traffic from Upper Kaumana and Saddle Road into Hilo, has an accident rate more than five times the county average.

Two possible routes for both the upper and lower portions of the project are identified in the report to alleviate the traffic problems.

Both proposed designs for the lower portion would necessitate the removal of five houses between Kilauea Avenue and the Waiakea School complex, and the taking of some of the schools' property.

Most of the existing intersections in the lower portion would be widened, and more traffic lights and some turn restrictions would be created.

Between the Kawili Street intersection and Komohana, the proposed new route would go behind the existing houses.

Alternative 'A' would be farther from the houses and avoid crossing Komohana Street at the flood control channel. Alternative 'B', which has been on the drawing board for sev-

eral decades, runs directly behind the homes.

The upper portion of the Puainako extension would branch into two alternatives just mauka of Sunrise Estates. The first would be the more direct route, but it could impact more archaeological and geological sites, including Kaumana Cave. The second option passes farther south along a more circuitous route.

No sensitive species or ecosystems would be affected by the project, according to the report. But loss of at least 14 archaeological sites could be lessened by taking data from the sites prior to construction. An archaeological report recommends the longer alignment 'B' since it would

cross fewer significant sites than alternative 'A'.

The project, according to its current time line, would be completed in 2001. The preferred alignment for the project will be identified in the final version of the EIS.

In the meantime, public comments will be taken in writing and at a public meeting to be held at 7 p.m. Jan. 19 in the Campus Center Room, 305-307 at the University of Hawaii at Hilo, 200 W. Kawili St., Hilo.

The deadline for written comments on the draft EIS is Feb. 22. Written comments should be addressed to Abraham Wong, Federal Highway Administration, P.O. Box 50206 Honolulu 96850.

Post-it® Fax Note

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Date	12/29/98	Page #	1
To	Ron Terry	From	DKC
Co. Dept.		Co.	Okahara + Assoc.
Phone #		Phone #	961-5527
Fax #	982-5831	Fax #	

FOR YOUR INFORMATION

**PUBLIC HEARING
PUAINAKO EXTENSION AND WIDENING DRAFT EIS
FORMAT AND SCHEDULE**

Date and Time: Tuesday, January 19, 1999: 7:00 PM
Place: University of Hawaii at Hilo, Campus Center 306-307

- I. **Opening:** (1 minute)
- II. **Introduction:** Jiro Sumada, Hawaii County Dept. of Public Works. (3 minutes)
- III. **Purpose of Hearing and Background:** Bill Moore, Okahara & Associates (15 minutes)
- IV. **Project Description:** Colin Hashiro, Okahara & Associates (15 minutes)
- V. **Project Impacts and Mitigation:** Ron Terry, Okahara & Associates (10 minutes)
- VI. **Recess to Exhibit Stations:** Hearing Recorder is available to take individual comments. Turn in Comment Sheets or Question cards at any Station. (40 minutes)
- VII. **Oral Testimony Period:** Individuals will be called in order of registration. Allotted time limit will be announced. Please state your name and place of residence before proceeding with your statement. (Open)
- VIII. **Written Question Period:** Questions will be taken in the order received. Similar questions will be grouped for response. (Open)
- IX. **Adjournment:** Further questions can be answered and Comment Sheets turned in at Exhibit Stations.

NOTICE

The purpose of this Public hearing is to receive written information and oral testimony from the citizens to guide the further development of the proposed project and to answer questions about the project's development to this point. All information received, regardless of the form, will be considered in the development of the project. All persons must have equal opportunity to be heard or to submit written comments. In order that all persons can be heard in the time allotted, please observe the following guidelines: 1) limit your presentation to the time limit for individual testimony; 2) allow persons speaking to complete their statement without interruption; 3) consider using the Comment Sheet if someone has already presented your information or concern in their testimony; and 4), note your questions and either complete a Question Card and hand it in or ask a specialist at the Exhibit Stations during the recess.

MAHALO

QUESTION CARD

*Puainako Extension and Widening Project
Public Hearing*

NAME: _____

ADDRESS: _____

REPRESENTING: _____

QUESTION: _____

*****<Fold & Tear>*****

QUESTION CARD

*Puainako Extension and Widening Project
Public Hearing*

NAME: _____

ADDRESS: _____

REPRESENTING: _____

QUESTION: _____

PUBLIC COMMENT SHEET

Puainako Extension and Widening Project
Public Hearing

Your comments and suggestions will assist in the responsible development of the highway project under consideration at this Public Hearing. Space is provided below to write out any comment you may wish to make. Please hand in your statement during this meeting or, if you prefer, mail to the address printed below. Although comments are welcome throughout the project development process, we would like to receive your initial comments by February 22, 1999, in order to ensure they are considered in the Final Environmental Impact Statement.

Are you generally in favor of this proposal?

Yes / No
(Please Circle One)

COMMENT OR STATEMENT

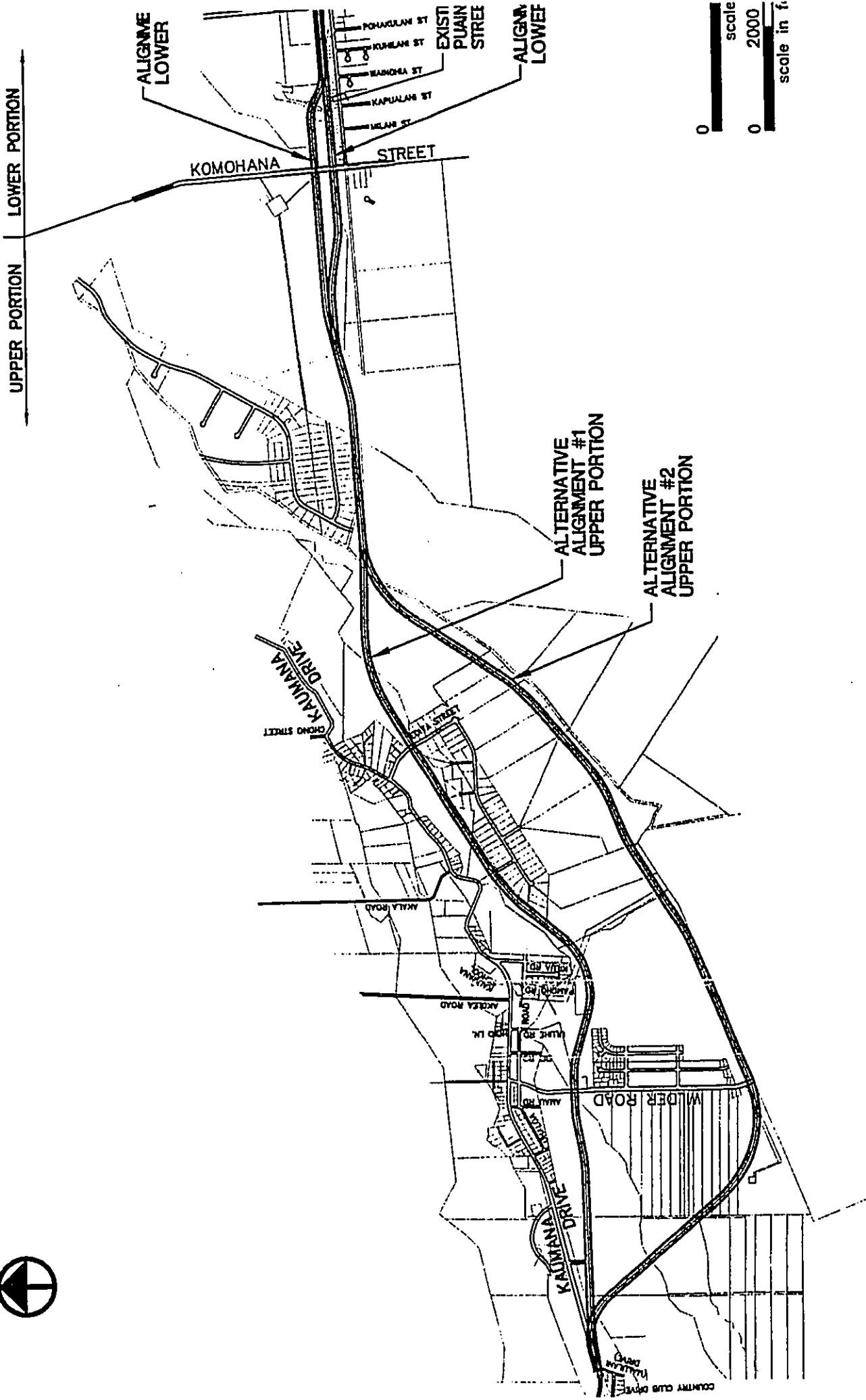
Notice: Copies of all comments provided are available to the public under the Freedom of Information Act. This will include names, addresses, and any other personal information provided with the Comments. Your comments will be considered with or without the following optional information (please print):

Name _____

Address _____

Representing _____

Mailing Address: Mr. Abraham Wong, Division Administrator, Federal Highway Administration, P.O. Box 50206,
300 Ala Moana Boulevard, Honolulu, Hawaii 96850



PUAINAKO STREET EXTENSION AND WIDENING PROJECT

PROJECT DESCRIPTION, PURPOSE AND NEED

The Project would widen to four lanes and partially realign Puainako Street (State Hwy. 2000) between Kilauea Avenue and Komohana Street. Sidewalks and bicycle lanes would be built on both sides of the street. Puainako Street would be extended as a two-lane road with paved shoulders for 4.5 miles between Komohana Street and Saddle Road (State Hwy. 200) near Country Club Drive. The Project's purposes are to improve arterial traffic flow of the State Highway system by providing a direct link between the existing Puainako Street and the Saddle Road, and to alleviate congested and unsafe traffic conditions on Puainako Street and Kaumana Drive. The Project has been a part of the Hawaii County General Plan since 1967.

Currently, insufficient lanes and unsatisfactory alignments produce severe traffic congestion at peak hours and higher than normal accident rates on Puainako Street and Kaumana Drive. Traffic engineers calculate a substantial worsening of these conditions if improvements such as the proposed Project are not made.

The Federal Highways Administration (FHWA) and the Hawaii State Department of Transportation are serving as joint lead agencies to prepare an Environmental Impact Statement (EIS) in compliance with federal and State requirements, with the assistance of the Hawaii County Department of Public Works. The accepting authorities for the EIS are the Hawaii Division Administrator of FHWA and the Governor of Hawaii.

ALTERNATIVES UNDER CONSIDERATION

Alternative 1: The No-Build Alternative. The No-Build Alternative assumes very limited improvements to Puainako Street, including widening shoulders and consideration of traffic signals at Komohana Street and the Waiakea School Complex.

Alternative 2: The Build Alternatives. (See map) The project corridor consists of a Lower Portion, along Puainako Street between Kilauea Avenue and Komohana Street; and an Upper Portion, between Komohana Street and Kaumana Drive near the Country Club Drive Intersection. Each portion contains a set of two alternative alignments for part of the route. The Lower Portion has Alignments A and B, and the Upper Portion has Alignments 1 and 2. Four distinct combinations of these alignments are possible.

COST AND SCHEDULE

The Project would cost an estimated \$62.650 to \$67.234 million, depending on the combination of alignments chosen. This total includes right-of-way acquisition, engineering and construction. If approvals are obtained in a timely manner, Project design is proposed to begin in 1999. Construction would begin in 1999 and would be finished in the year 2001.

AFFECTED ENVIRONMENT AND IMPACTS

In its lower end the project area has residential uses intermixed with schools, churches and businesses. The mauka areas contain vacant land with some natural vegetation (especially on the 1881 lava flow) and also low-density residential and agricultural uses. A number of intermittent streams drain the gentle slopes. No threatened or endangered plant species are present, but the endangered hawk and bat can be found, as they are throughout the island.

The environmental effects would be mostly beneficial (better air quality, decreased traffic congestion, less energy consumption, and safer roadways for motorists, pedestrians, and bicycles) but partially adverse (relocation of at least five households; construction impacts; and loss of native vegetation, a small area of wetlands, and some archaeological features related to the sugar plantations). Some impacts, such as changes in noise levels, are mixed. Adverse impacts will be avoided or reduced through mitigation measures.

This material prepared under supervision of the Hawaii County Department of Public Works - January 1999.

Plans for Puainako extension discussed

□ More than 100 turn out for meeting, and none opposed project

By Dave Smith
Tribune-Herald

A plan to extend Puainako Street to meet Saddle Road was subjected to its first public scrutiny in years Tuesday night and appeared to pass with flying colors.

More than 100 people were on hand at the meeting at the University of Hawaii at Hilo, and none of the dozen people who either commented or asked questions about the project opposed it.

In fact, one of the Hilo residents who will be most heavily affected by the plan to widen, partially realign and extend Puainako Street told the project's planners that the changes are decades overdue.

"I've been waiting 40 years for Puainako improvements," said Tsukasa Inoue.

Inoue lives in one of the five homes between Kilauea Avenue and the Waiakea School complex that planners say must be removed. He said plans for Puainako improvements have been discussed since the 1960 tsunami, and he hopes that the improvements will finally become a reality.

"I'm 80 now and I can't wait another 20 years," Inoue said.

Tom Shiroma, who also will lose some property to the project, said just as it did when Puainako was first developed in the 1950s his family would be willing to participate in the project — as long as the condemnation payments are fair.

See PLANS,
Page 12

PLANS: Street extension draws favorable remarks

From Page 1

Allen Novak, a resident of the upper Kaumana area, asked planners to consider one route alternative that he said would be quieter because it runs further from homes in Kaumana.

He said that route would also avoid having the new extension run over his septic tank and his neighbor's wall.

Bobby Jean Leithead-Todd, the County Council member representing the district to be affected, said the extension has been "at the top of the list" of topics discussed by residents during her door-to-door visits.

She said besides the expected improvements in overall traffic and safety, residents say the extension is needed to handle the extra traffic expected when improvements being studied for Saddle Road are completed.

She said the 1984 eruption of Mauna Loa, which sent lava flows into the upper areas of Kaumana, also showed residents that an escape route in addition to Kaumana Drive is needed.

The project involves the widening of Puainako from Kilauea Avenue to Komohana and its extension from that point to Saddle Road, also known as

State Highway 200 or Kaumana Drive, at the six-mile marker near Country Club Drive.

According to a preliminary environmental impact statement released last month, the project is designed to alleviate congested and unsafe traffic conditions on Puainako and Kaumana Drive while providing a direct link to Saddle Road.

Ron Terry, an environmental consultant to the project, said even with an expected increase in traffic the extension would improve both safety and air quality over today's levels

by allowing quicker and more efficient travel.

The \$67 million project is a joint effort of the Federal Highways Commission, state Department of Transportation and the county Department of Public Works.

If approved by the agencies as expected, construction would begin this year and be completed in 2001.

The final route for the project, which still must be determined, is to be contained in the final version of the EIS.

The deadline for comments to be considered in the EIS is Feb. 22.

PUBLIC HEARING REGISTRATION

PUAINAKO WIDENING AND EXTENSION PROJECT

NAME	ADDRESS (Street, City, State, Zip)	WILL YOU GIVE TESTIMONY? (Yes, No)
Mike Kilgore	75-5739 Alii Pl Hauka-Kona, HI 96740	Yes.
Daryl Arreda	297 Puuinake St Hale	No
Rose & Walt Watson	1094 APOLO PLMS, HILO HI 96720	No
Jim Sumner	DEPT. Public works	
Bill BILCHANTE	1362 KILAUEA AVE. HILO HI	NO
Lynn Nagata	1342 KILAUEA AVE	no
TERUICASA Iwaga	1994 KILAUEA AVE	both Yes
Pauline Yadao	1303 Waiulani St.	No
CLARETA Suzuki	25E PUAINAKO	NO
TAMMY ANTONIO	1498 KOMOHANA ST.	NO
Herbert Aoki	800 Kupuulua Rd.	No
Andrew Pickles	250 Editha St	
Glenn Ahuna	141 Mokuhi St.	No
Bernadette Shigeta	1560 Kaula	No

Note: This sheet will be used to compile a mailing list for this project and will become the official record of attendance for the Public Hearing Proceedings.

PUBLIC HEARING REGISTRATION
PUAINAKO WIDENING AND EXTENSION PROJECT

NAME	ADDRESS (Street, City, State, Zip)	WILL YOU GIVE TESTIMONY? (Yes, No)
Norman Yee	1905 Kilauea blvd 96726	No
Richard Myamoto	Pukaia St HSP, Puka	No
Donald McFarrier	50 WAINAMANA AVE	YES
Mark Chamberlain	HC-15175-Keanu 96749	NO
Jeani Withington	PO Box 4818, Hilo 96720	NO
HANSEN TSANG	1628 MELE MANU ST Hilo	No
Neva Tsang	1628 Mele Manu St Hilo	No
SHINICHI HAYASHI	525-A WAINAKU AVE. Hilo	NO
STANLEY TAMURA	90 ANAHAHO RD, Hilo	NO
STANLEY TAMURA	465 HAILI ST, Hilo	NO
IAN COULSON	PO BOX 1104 ICEAU	NO
DWAYNE PUKAI	71 WAINOHA ST. Hilo	NO
William Peter	717 Pukani St	NO
HOWARD HAYMORE	50 MAKAKA ST Hilo	NO

Note: This sheet will be used to compile a mailing list for this project and will become the official record of attendance for the Public Hearing Proceedings.

PUBLIC HEARING REGISTRATION

PUAINAKO WIDENING AND EXTENSION PROJECT

NAME	ADDRESS (Street, City, State, Zip)	WILL YOU GIVE TESTIMONY? (Yes, No)
Conrado Hokama	1992 Waihanueneue Rd Hilo	No
LIZ BAYLON	PO Box 754 Kona HI	No
Debra S. Kaina	412 W. Puainako Hilo	No
Jammi K Beals	140 Kuakohu Pl Hilo	No
GARY P. Beals	"	"
Jim Saagatu	280 Sonataway St Hilo	No
Tommy & Amy Shunoma	992 A W Puainako -	Yes - Tom
Kepō! Onoaha Moly	554 Keonoua St. Hilo	-
Kenny Wrehone	1251 Ainali. Hilo	-
Fred Gardenes	100 W Lanikaula St. Hilo	Yes
Abraham Kubor	348 Fanku Pl. Hilo	No
JAMES LEDNARD	1100 Analakoo Rd Hilo	YES.
Beverly G PAPA L. m y	105.3 KAUMANA DR Hilo	Yes
Mary Uyeda	P.O. Box 10502 Hilo HI	?

Note: This sheet will be used to compile a mailing list for this project and will become the official record of attendance for the Public Hearing Proceedings.

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PUBLIC HEARING REGISTRATION
PUAINAKO WIDENING AND EXTENSION PROJECT

NAME	ADDRESS (Street, City, State, Zip)	WILL YOU GIVE TESTIMONY? (Yes, No)
Steve Hunt	17-134 Palani St Kapahe HI	?
Nate Hunt	"	No
BARRY TANIGUCHI	50 E. PUAINAKO ST HILO	No
Wayne Youngerman	200 W. Puuiki St. HILO	No
Don Klop	1338 Konoan St	No
Paul Inohami	1815 Finkle St. HILO	No
Judy Bob Ottoro	857 Wilani Pl. HILO	No
Jeannette Fleura Harriet	355 Kalamazoo Ave	No
Ken & Luole Amund	Wilder Road	No
Hilton Anson	Wailuku Maui	No
Michael Shunlester	410 Melana Pl HILO	No
Dorothy Matsui	1021 Komohana St. HILO	No
Robert J. Brown	857 Wilani Pl HILO	No
Lydell Santiago	404 PUAINAKO ST.	No

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PUBLIC HEARING REGISTRATION
PUAINAKO WIDENING AND EXTENSION PROJECT

NAME	ADDRESS (Street, City, State, Zip)	WILL YOU GIVE TESTIMONY? (Yes, No)
Brian Shimomura	1340 Kiliaina St. Hilo, HI	No
B.J. Leithhead, Todd	118 Lukia	No
RICHARD HENDERSON	96 POB 5266 96720	No
Ron Furukawa	200W. Puainaka St., Hilo 96720	No
Helene Tajiri	310 Kipa St. Hilo 96720	No
Joe Lucas	105 Aihai St. Hilo 96720	No
ERNEST MBERGES	250 NANAKEA ST Hilo	NO
Allen Nouak	1414 C. Mede Meana St Hilo	Yes
Vickie Koi	615 Malae Pl. Hilo	No
Evelyn G. Tojashi	300 Paainaka St. Hilo	No
Frank Delury	330 Haalei Hilo	No
Matthew Ue	P.O. Box 1027, Hilo	No
JOHN L. PUBLICO	81 KAMUIKE ST. Hilo, HI. 96720	No
RAY PERALTA	1024 LANILIMA WAY Hilo HI	No

Note: This sheet will be used to compile a mailing list for this project and will become the official record of attendance for the Public Hearing Proceedings.



PUBLIC HEARING REGISTRATION

PUAINAKO WIDENING AND EXTENSION PROJECT

NAME	ADDRESS (Street, City, State, Zip)	WILL YOU GIVE TESTIMONY? (Yes, No)
Wynne Peralta	1024 Lanikae Way #116 Hilo 96720	No
Rick & Richard Towill	WILDER ROAD	No
Chambers, Susan	85 Akae St.	No
Margaret P. Blackner	239 Puainako Dr. Hilo	Yes - Written (comment sheet)
Chris Brilhante	1342 Kilanua Ave. Hilo	No
Dave Smith	#114	No

Note: This sheet will be used to compile a mailing list for this project and will become the official record of attendance for the Public Hearing Proceedings.

QUESTION CARD

**Puainako Extension and Widening Project
Public Hearing**

NAME: BRIAN SHIRAMA

ADDRESS: 1348 KILICINA ST.
Hilo, HI 96720

REPRESENTING: _____

QUESTION: CAN THERE BE ACCESS GIVEN TO LARGE PARCELS 40 ACRES
OF PROPERTY THAT ARE MAIKA (ABOVE) KONOHTA ST.
Approximately 1000 ft. TRAC # 3-2-2-039-031
997 A PUAINAKO ST.

QUESTION CARD

*Puainako Extension and Widening Project
Public Hearing*

NAME: GAIL INAMINE

ADDRESS: 1815 Kinross St.
Hilo

REPRESENTING: Kinross Baptist Church

QUESTION: The median strip in the portion fronting our church
will prevent left turns into our property. The entrance &
exit of ~~Kinross~~ Main roads are our main entry & ways.
Is it correct that entry into the church will only be going
up Puainako or going north on Kinross?

Will we also lose the use of the parking area at
the corner of Kinross & Puainako?

*****<Fold & Tear>*****

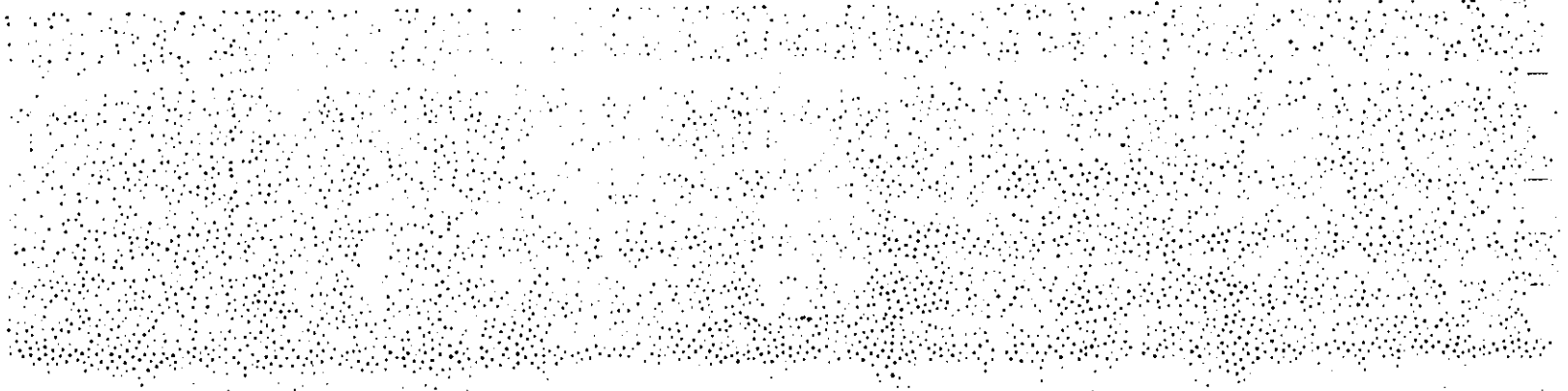
QUESTION CARD

*Puainako Extension and Widening Project
Public Hearing*

NAME: Darryl Arruda
ADDRESS: 247 Puainako St.

REPRESENTING: self

QUESTION: Are they going to open Pakukukasi St + Kabea St.
it's not a thru street.



*****<Fold & Tear>*****

QUESTION CARD

*Puainako Extension and Widening Project
Public Hearing*

NAME: Debra S. Kaina

ADDRESS: 412 W. Puainako St.

REPRESENTING: Resident

QUESTION: What is the distance between Alignment A
& the existing Puainako St, and the distance
between Alignment B & the existing Puainako St.?

Ave sound barriers proposed for both Alignments
A & B?

QUESTION CARD

*Puainako Extension and Widening Project
Public Hearing*

NAME: Ron Furukawa, vice principal
ADDRESS: Waiakea Intermediate School
200 W. Puainako St., Hilo HI 96720

REPRESENTING: _____

QUESTION: May I get a copy of "Waiakea School Complex,
Figure 2-2b, 10/26/98" map. Also, "Lower Puainako, Figure 2-2,
10/26/98."

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IN RE:)
)
PUAINAKO EXTENSION AND)
)
WIDENING PROJECT PUBLIC)
)
HEARING STATEMENTS)
)
ON 01/19/99)
-----)

PUAINAKO EXTENSION AND WIDENING PROJECT
PUBLIC HEARING
TAPE RECORDED

On Tuesday, January 19, 1999 at 7:00 p.m.

1 JIRO SUMADA: My name is Jiro Sumada.

2 I am the deputy chief engineer for
3 the Department of Public Works for the County of
4 Hawaii.

5 I would really like to thank
6 everybody for coming tonight.

7 We really appreciate you folks
8 willingness to spend time and get this
9 information firsthand so that we can share this
10 information with you and also receive your
11 comments.

12 With the assistance of the Hawaii
13 County Public Works and the Hawaii State
14 Department of Transportation, the Federal
15 Highways Administration is serving as the lead
16 agency to prepare an environmental impact
17 statement or EIS for the proposed Puainako
18 extension and widening project.

19 The EIS is being conducted in
20 compliance with the National Environmental Policy
21 Act of 1969 and Chapter 343 of the Hawaii Revised
22 Statutes relating to environmental impact
23 statements.

24 At this time I'd like to introduce
25 the public officials that are here tonight.

1 From the Federal Highways
2 Administration we have Sue Klekar. Sue, if you
3 could stand up. And Richelle Suzuki.

4 From the State Department of
5 Transportation we have Stan Tamura, Hawaii
6 district engineer.

7 From Public Works you have myself,
8 the deputy chief engineer. You have Bob Yanabu,
9 the project engineer for this project.

10 Also from the county we have
11 counselwoman Bobbie Jean Leithead-Todd.

12 The purpose of this public hearing is
13 to present what planning has taken place on the
14 proposed project to date and to receive
15 information from you about any considerations you
16 would like us to make in further development of
17 the project.

18 All the information whether submitted
19 in writing at this hearing through the mail or
20 expressed verbally in testimony tonight will be
21 given full and equal consideration in future
22 project decisions.

23 We are requesting that you submit all
24 written comments to the addresses provided in
25 your handout not later than February 22, 1999.

1 The purpose of tonight's public
2 hearing is to discuss the location and design of
3 the proposed Puainako extension and widening
4 project which extends from Kilauea Avenue to the
5 east to Country Club Drive intersection with
6 Kaumana Drive in the west.

7 The Puainako Street widening and
8 extension project was originally included in the
9 plan for metropolitan Hilo which was adopted by
10 the county counsel in 1961 as the general plan
11 for Hilo.

12 The proposed roadway was subsequently
13 included as part of the comprehensive general
14 plan for the County of Hawaii which was adopted
15 in 1969 and retained in the update which was
16 adopted in 1989.

17 This project is intended to link the
18 state highway system between Saddle Road Highway
19 200 and Kanoelehua Highway, Highway 11, to
20 address roadway deficiency along the existing
21 portions of Puainako Street, accommodate the
22 existing and anticipated future traffic
23 conditions in this corridor and provide an
24 alternate route to Kaumana Drive. No final
25 decision has been made to implement this project.

1 All alternatives presented here
2 today, including the no-action alternative, will
3 be studied further based on public comments
4 received at this meeting and by mail during the
5 comment period which ends on February 22, 1999.

6 A final decision will be made by the
7 Federal Highways Administration, the Hawaii
8 Department of Transportation and the County of
9 Hawaii after all comments have been received.

10 This public hearing is being held for
11 several reasons.

12 First, this is a means of informing
13 you of the plans that are being developed through
14 the Department of Public Works, the Federal
15 Highways Administration and the State Department
16 of Transportation.

17 This planning is being funded by the
18 County of Hawaii and the State of Hawaii.

19 The intent of discussions today is
20 for you to be completely informed so that you are
21 able to determine on a factual basis how you as a
22 property owner, motorist, business owner or other
23 interested citizen may be affected by the
24 proposed project.

25 Secondly, this public hearing is

1 being held so that the Federal Highways
 2 Administration, State Department of
 3 Transportation and the Department of Public Works
 4 and other federal, state and county agencies with
 5 whom they will consult may obtain facts not
 6 previously brought to our attention in connection
 7 with the location and design of the proposed
 8 project.

9 Lastly, this hearing is a requirement
 10 of the National Environmental Policy Act for any
 11 project which uses federal funds.

12 It is also in accordance with the
 13 State of Hawaii's environmental impact statement
 14 requirements contained in Chapter 343 of the
 15 Hawaii Revised Statutes.

16 Notice for today's public hearing was
 17 published in the Hawaii Tribune Herald, West
 18 Hawaii Today, the Honolulu Advertiser and the
 19 Honolulu Star Bulletin on December 20, 1998 and
 20 January 10, 1999.

21 I would like to turn the program over
 22 to our moderator for this evening, Mr. Bill Moore
 23 of William Moore Planning, who will review the
 24 agenda and format for tonight's public hearing.

25 Bill.

1 MR. MOORE: Thank you, Jiro.

2 Before I begin, I would like to just
3 -- a couple of logistics.

4 There are refreshments outside and
5 I'll not be insulted if you walk out and get some
6 while I speak. The other guys may be, but feel
7 free.

8 Secondly, rest rooms are outside the
9 doors and to your left by the elevator. So if
10 you need to go that's where things are.

11 I would like to review the agenda and
12 the format of the hearing with you tonight.

13 First of all Colin Hashiro, who I
14 would like to introduce, who is our project
15 engineer with Okahara & Associates, is the prime
16 consultant that will present an overview of the
17 project, its purpose and need and the
18 alternatives that are being considered.

19 Secondly, we will have Ron Terry.
20 Ron is our lead environmental scientist on the
21 project and will present an overview of the
22 impacts that are associated with the various
23 alternative routes and the mitigation that is
24 being proposed to offset these impacts.

25 Third, we will recess for about 30

1 minutes. I realize your agenda says 40. But we
2 will try to keep things a little tight. We will
3 try to get you home at a reasonable time.

4 We will recess for about 30 minutes
5 to give you an opportunity to visit the exhibit
6 stations for more detailed information or to ask
7 questions that you may have after the
8 presentations.

9 The exhibit stations again are the
10 project overview including social and
11 environmental impacts are the first table here.
12 Ron Terry will be handling that.

13 The project engineering including
14 drainage and the right-of-way is in this area and
15 Colin will be manning that table.

16 The archaeology and cultural
17 resources our consultant Bob Spear will be back
18 in the far table there.

19 The biology including flora and fauna
20 will be up in this corner. Our consultants on
21 the team are Grant Gerrish and Reggie David.

22 I would also like to recognize Sandy
23 Sawaki in the corner who is helping and everybody
24 from Okahara & Associates. We also have with us
25 helping Travis and Tracey. They are kind of

1 running around. So you know who people are.

2 Please note that during this recess,
3 this 30 minute recess, you may present verbal
4 testimony to our recorder. We'll have that set
5 up in the corner over here. This testimony will
6 be included in the official transcript of the
7 hearing.

8 During the recess you may also fill
9 out a question card at the exhibit stations or
10 return to the registration table to indicate that
11 you wish to testify.

12 You may also provide written comments
13 on the public comment sheet which is available at
14 the registration desk they handed out to you as
15 you came in.

16 As you can see there are many
17 opportunities to provide input on the project.

18 After the recess, we will reconvene
19 and receive your testimony or statements.

20 Immediately following your testimony,
21 we will have a question and answer session. You
22 may submit written questions. There are question
23 cards available at the registration table or at
24 the exhibit stations.

25 Following the question and answer

1 session the key members of the project team will
2 again be at the exhibit stations to follow-up
3 with any questions you may have or to provide you
4 with further information.

5 I would like to cover some of the
6 guidelines for the conduct of the public hearing.

7 First, the purpose of this hearing is
8 to solicit information on the project and to hear
9 your concerns.

10 The hearing is not a debate on the
11 proposed improvements nor is this hearing
12 intended to be a popular referendum either for or
13 against the project.

14 Further decisions on the project will
15 be made based on the full record including input
16 from this public hearing, the draft environmental
17 impact statement and written comments received by
18 February 22, 1999.

19 We do want to extend you every
20 opportunity to voice your concerns and to present
21 any new facts that the Federal Highways
22 Administration, Department of Transportation and
23 Department of Public Works and other consulting
24 agencies may not be aware of or had not fully
25 considered.

1 Second, we want to emphasize the
2 importance of your testimonies.

3 All proceedings of the hearing are
4 being recorded. Therefore, it is important that
5 all of your statements are clearly spoken into
6 the microphone that is set up there. Before
7 beginning your statement, please state clearly
8 your name, place of residence and any affiliation
9 you wish to make known.

10 Your testimony should be brief,
11 factual and courteous to those present. Please
12 stick to the subject matter of today's public
13 hearing which is the proposed Puainako Street
14 widening and extension project.

15 We ask that you be courteous to each
16 other and respect everyone's opinion and right to
17 be heard.

18 As moderator it will be my
19 responsibility to keep this hearing on track and
20 to make sure everyone who wants to speak has an
21 opportunity.

22 Third, all those who wish to testify
23 are asked to complete the hearing testimony form
24 which is actually your registration at the
25 registration desk. Indicate that you wish to

1 speak there.

2 Testimony will be received in the
3 order that you are signed in. The speakers will
4 be limited to five minutes so that everyone has
5 an opportunity to be heard.

6 Fourth, for those wishing to just ask
7 questions you may write your question on a
8 question card which is available at the
9 registration desk and the exhibit stations.

10 These question cards can be turned
11 into anyone at the registration desk or the
12 exhibit stations during the recess or actually
13 any time.

14 We will respond to these questions
15 after the testimony portion of the hearing is
16 completed.

17 We also want to bring your attention
18 to the subject of land acquisition and relocation
19 advisory assistance and relocation payments which
20 are authorized under federal and state laws.

21 Both of these are fully described in
22 the brochures entitled Your Rights and Benefits
23 as a Displaced Person and Acquiring Real Property
24 for Federal and Federal Aid Projects and
25 Programs.

1 Again these are available at the
2 registration station for those of you that may be
3 impacted by the widening or by the impact to be
4 relocated.

5 Questions concerning relocation
6 assistance and/or land acquisition may also be
7 answered by submitting them to the Hawaii County
8 Department of Public Works at 25 Aupuni Street in
9 Hilo.

10 The Hawaii Department of
11 Transportation Rights-of-Way Branch also has
12 information about land acquisition and relocation
13 and can be reached by phone at (808) 692--7327.
14 Or by toll free number 1-800-468-4644, extension
15 27327.

16 Before you write this down we have
17 this information available at the engineering
18 station. So you can get it there or come to see
19 me after the hearing or during the recess.

20 Some of you may be here to learn more
21 about the project and may not be ready to submit
22 statements today.

23 Federal Highways Administration, DOT
24 and DPWL will continue to accept written
25 statements through February 22, 1999.

1 The addresses for submitted written
2 statements are given on the information and on
3 the comment sheets available at the registration
4 table.

5 The addresses are also provided in
6 the draft environmental impact statement and the
7 public notices that appeared in the newspapers.

8 Following the public hearing the
9 Federal Highways Administration, Department of
10 Transportation and Department of Public Works
11 will evaluate the statements and information
12 presented today or submitted in writing prior to
13 February 22, 1999 together with the factual data
14 they have already received.

15 Further decisions concerning the
16 location, design and environmental mitigation for
17 this project will be taking into account all
18 factual data received through the public hearing
19 and written comment period.

20 Further project decisions will be
21 presented in the final environmental impact
22 statement which is scheduled for release in
23 mid-1999.

24 If you wish to be notified of further
25 development of this project, please be sure that

1 you have signed in and place your name and
2 address on the registration sheet. These sheets
3 will be used for a mailing list for notifying you
4 of further project developments.

5 I would also like to mention that all
6 the information developed, including statements
7 received during the public hearing and written
8 comments during the written comment period, will
9 be available upon request for public inspection
10 within two to three weeks of the conclusion of
11 the comment period of February 22, 1999.

12 This information will be available at
13 the Federal Highways Administration, the Hawaii
14 Department of Transportation and the County of
15 Hawaii.

16 At this time I would like to call on
17 Colin Hashiro to provide an overview of the
18 project.

19 Colin.

20 COLIN HASHIRO: First I'll discuss
21 existing connections and traffic.

22 The existing route, as shown on this
23 overhead, provides a very indirect connection in
24 the state highway system.

25 The route involves three two-lane

1 streets; Puainako Street, Komohana Street and
2 Kaumana Drive and is about 50 percent longer than
3 would be the case with the Puainako extension.

4 Furthermore, Puainako Street and
5 Kaumana Drive have hundreds of driveways and
6 dozens of street intersections which are less
7 than desirable for a state highway connection.

8 The current ratio of traffic volume
9 to capacity along several segments of Puainako
10 Street is currently so great during peak hours
11 that it produces severe traffic congestion in
12 several areas.

13 This occurs especially at the
14 intersections of Puainako with Kilauea Avenue and
15 Kinoole Street, in front of the Waiakea Schools
16 and at the Komohana Street intersection.

17 Traffic congestion is also bad along
18 Kaumana Drive particularly at the Komohana Street
19 intersection.

20 Traffic engineers calculate a
21 substantial worsening of level of service if no
22 improvements are made.

23 Accident rates along segments of
24 Puainako Street vary between 2.25 and 3.86 per 1
25 million miles of vehicle travel compared to the

1 Hawaii County average of 1.57.

2 On Kaumana Drive the accident rate
3 has been as great as 7.89 which is about five
4 times average.

5 These excessive accident rates are
6 influenced by congestion and unsatisfactory
7 vertical and horizontal alignments which could be
8 alleviated by the proposed project.

9 We began the project by looking at
10 any possible alternative that could meet the
11 goals of reducing traffic congestion and
12 increasing safety along the general route at the
13 same time providing a link in the state highway
14 connection between Volcano Highway and Saddle
15 Road.

16 In the lower portion the only
17 feasible alternative was via Puainako Street. We
18 examined widening the existing street for the
19 whole distance, but it was infeasible because of
20 the large number of driveways that would be left
21 many feet above or below the evened-out highway.

22 In the upper portion a number of
23 alternatives were examined as shown on the
24 overhead.

25 After study it was determined that

1 each had a number of drawbacks including more
2 disturbance to floodplains and farm land or
3 greater noise levels or taking of homes and
4 properties so they were dismissed.

5 We were left with two main sets of
6 alternatives. One was the no-build and the other
7 a build alternative with several alternative
8 alignments.

9 The no-build alternative assumes very
10 limited improvements to Puainako Street including
11 widening shoulders and consideration of traffic
12 signals at Komohana Street and the Waiakea School
13 complex.

14 This alternative would have the
15 advantage of not disturbing any new areas or
16 resources. It would have the disadvantage of not
17 providing a state highway link and not solving
18 congestion and accident problems.

19 As illustrated on the overhead the
20 proposed project would widen and partially
21 realign and extend Puainako Street.

22 The 1.5 mile section between Kilauea
23 Avenue and Komohana Street is called the lower
24 portion. Here it would be widened from two to
25 four lanes.

1 There would be a 120-foot
2 right-of-way that would also allow dual sidewalks
3 and bicycle lanes.

4 The vertical grade would be modified
5 to achieve sight distances by cutting and filling
6 in certain areas.

7 All the intersection would be
8 upgraded and two new traffic signals would be
9 installed.

10 Mauka of the the Waiakea School
11 complex Puainako Street would be routed north of
12 its current alignment and would go north of the
13 state housing project after it crosses Kawili
14 Street.

15 Mauka of Komohana Street -- which is
16 termed the upper portion -- Puainako Street would
17 be extended about 4.5 miles between Komohana
18 Street and the Saddle Road.

19 It would connect to the Saddle Road
20 at Country Club Drive or if the Saddle Road is
21 improved at the terminus of the improved road as
22 illustrated in the overhead.

23 Alternative 1 has been designated to
24 run through mostly state land between existing
25 and entitled subdivisions. It has also been

1 designed to avoid Kaumana Cave. It would include
2 several intersections with roads that connect to
3 Kaumana Drive.

4 Alternative 2 swings far to the south
5 of most existing and planned development in
6 Kaumana and has fewer links to Kaumana Drive.

7 The project would cost an estimated
8 62.650 to \$67.234 million, depending on the
9 combination of alignments chosen. This total
10 includes right-of-way acquisition, engineering
11 and construction.

12 If approvals are obtained in a timely
13 manner project design is proposed to begin in
14 1999.

15 Construction would begin in 2001 and
16 would be finished in the year 2002.

17 MR. MOORE: Thank you, Colin.

18 At this time I would like to
19 introduce Ron Terry who will present a summary of
20 the key social, economic and environmental
21 impacts of the proposed project that have been
22 identified at this time and a summary of the
23 mitigation measures being proposed to offset
24 those impacts.

25 Ron.

1 MR. TERRY: Thank you, Bill.

2 Let me get settled here. Thank you.

3 The project corridor connects the
4 Waiakea and upper Kaumana neighborhoods in Hilo.

5 In the early 20th Century much of the
6 project area had scattered farming and ranching.

7 Today the eastern or makai end of the
8 project area is low to medium density residential
9 intermixed with schools, churches and businesses.

10 The central and western areas contain
11 some vacant land with seminatural vegetation
12 along with low density residential and
13 agricultural uses.

14 Originally, the vegetation of most of
15 the project area was a forest of native Ohi'a
16 trees, ferns and other plants.

17 In the lower portion and parts of the
18 upper portion intense human activity has
19 destroyed the native vegetation almost entirely
20 especially in former sugar cane fields.

21 The present vegetation there is a
22 secondary forest dominated by alien trees and
23 ground cover.

24 Vegetation in the upper portion still
25 has some largely native areas.

1 No legally protected, threatened or
2 endangered plant species were found or would be
3 likely to be found in the project area.

4 I will now summarize the project on a
5 category by category basis beginning with impacts
6 to floodplains.

7 Alignments A and B each encroach once
8 on a floodplain and take up only a small amount
9 of floodplain area. A, 0.75 acres; B, 0.22
10 acres.

11 Greater numbers of floodplain
12 crossings and greater area of encroachment occur
13 in the upper portion.

14 Alignment 1 makes 6 floodplain
15 crossings with a total area of 5 and-a-half
16 acres, while Alignment 2 would involve 9
17 floodplain crossings with a total area of about 7
18 acres.

19 Through appropriate use of mitigation
20 measures, including drywells and crossing
21 structures, there would be no increase in flood
22 risk, contribution to incompatible development in
23 the flood zone or diminishing of natural
24 floodplain values.

25 Water quality would not be

1 substantially impacted by the project.

2 Minor impacts to ground water,
3 intermittent streams and coastal waters may occur
4 due to pollutants running off expanded pavement
5 surface. Considered in the context of the Hilo
6 region these would be insubstantial.

7 All increased pollution would be
8 within the absorption and assimilation capacity
9 of the surrounding land.

10 Mitigation would include planting
11 disturbed areas and unpaved shoulder areas to
12 absorb the filter runoff.

13 In terms of air quality no emission
14 concentrations exceeding federal air quality
15 standards would be expected from either
16 alternatives or any alignment within the build
17 alternative.

18 In fact, total emission increases
19 over present levels for hydrocarbons and carbon
20 monoxide are much worse under the no-build
21 alternative.

22 Nitrogen oxides would increase at
23 approximately the same rate under either the
24 build or the no-build alternatives.

25 Alignments B and 2 are a little less

1 preferable because of shorter setbacks from
2 residences.

3 State air quality standards for
4 carbon monoxide would be exceeded at several
5 intersections during peak hours, but the no-build
6 alternative produces more severe impacts.

7 Noise impacts are defined under
8 federal and state policy as increases that
9 approach or exceed the Federal Highways and State
10 Department of Transportation noise abatement
11 criteria or noise increases that substantially
12 exceed the existing levels.

13 Under the no-build alternative as
14 many as 100 homes might be impacted and none
15 would be mitigated.

16 The build alternative would also
17 produce impacts at a number of locations.

18 These would occur at four homes and
19 three church buildings between Kilauea Avenue and
20 Kinoole Street.

21 No reasonable and feasible mitigation
22 measures can mitigate these impacts.

23 Mauka of Kawili Street noise would
24 increase in the backyards of homes on the Hamakua
25 side of Puainako Street and decrease in the front

1 yards.

2 Because the noise increase in the
3 backyards would be mitigated by sound reduction
4 walls the net result would be to make these homes
5 quieter.

6 A total of 40 residences would be
7 impacted on Alignment A versus 61 on Alignment B.

8 In the upper portion Alignment 1
9 would impact a total of 39 homes. Noise would
10 impact 20 homes on Alignment 2.

11 Noise barriers that would be capable
12 of mitigating these impacts in all sections of
13 Alignment 1 and 2 would have a cost exceeding
14 \$100,000 per residence and are thus not
15 considered reasonable.

16 The project would destroy the
17 vegetation within the right-of-way.

18 No plant species listed or proposed
19 for listing as threatened or endangered is known
20 or is likely to occur in the project area.

21 No unique or high-diversity native
22 plant communities occur in the project area and
23 no plant community would be eliminated from the
24 region.

25 Construction and operation of this

1 project may lead to the spread of alien plant
2 species along the right-of-way. This will be
3 partially mitigated by requiring contractors to
4 minimize disturbed areas during construction
5 along areas with native vegetation.

6 Waters of the U.S. in the project
7 area consist of a number of intermittent stream
8 channels and wetlands.

9 The project would disturb between
10 0.68 acres and 7.19 acres of wetlands depending
11 on the combination of alignments.

12 There are very few impacts to the
13 biological and flood protection values provided
14 by these water features.

15 An application for a Department of
16 the Army permit for dredge and fill in the waters
17 of the U.S. is now being prepared and this
18 hearing is part of the process.

19 If Alignment 1 is selected a
20 nationwide permit is expected to be issued with
21 mitigation consisting mainly of best management
22 practices.

23 Alignment 2 would require an
24 individual permit and mitigation is not yet
25 specified.

1 Native animals are not abundant in
2 the project area. Three endangered bird species
3 and the endangered native bat may make some use of
4 the area. No nests or roosts of these species
5 appear to be present in any of the alternative
6 alignments.

7 Mitigation measures including a
8 pre-construction search for hawk nests and
9 restrictions on construction lighting and
10 permanent street lights will prevent impacts to
11 any of these animals.

12 As illustrated by the overhead the
13 project has been designed to avoid Kaumana Cave
14 and the special insect fauna it contains along
15 with its recreational scientific and educational
16 values.

17 As far as the socioeconomic
18 environment I'll first mention the consistency of
19 the project with planning.

20 The project has been a part of the
21 Hawaii County General Plan since 1967.

22 The project is consistent with the
23 current County General Plan 1989 and is
24 specifically listed on the facilities and land
25 use patterns allocation guide maps of the plan.

1 The project also conforms with all
2 other state and county plans.

3 The project does have socioeconomic
4 impacts.

5 Widening the existing Puainako Street
6 between Kilauea and Kawili Streets would
7 necessitate acquisition of five single-family
8 residential units along Puainako Street.

9 One home at the end of Wilder Road
10 would be displaced if Alignment 2 were chosen.

11 A relocation plan conforming to the
12 requirements of the Uniform Relocation Assistance
13 and Real Property Acquisition Policies of 1970
14 will be developed.

15 Public facilities would also be
16 impacted. About three acres of right-of-way
17 adjacent to the Waiakea School complex would be
18 required.

19 Driveways for the complex would be
20 redesigned and signals and crosswalks installed
21 for traffic and pedestrian safety.

22 No school facilities other than
23 access roads will be impacted by the project.

24 The project has been designed to
25 avoid Kaumana Cave County Park and the cave that

1 it accesses.

2 Archaeologists have identified 14
3 sugar cane related archaeological sites. Only
4 two are recommended for preservation by the State
5 Historic Preservation Division.

6 No matter which alignments are chosen
7 four sights in the lower portion would be
8 impacted.

9 Depending on which alignments are
10 selected a variable number of additional sites
11 would be impacted.

12 Five sites including the two
13 recommended for preservation would be impacted by
14 Alignment A.

15 Three sites would be impacted by
16 selecting Alignment B.

17 Alignments 1 and 2 each contain one
18 site.

19 The recommended mitigation is
20 preservation of the two sites in Alignment A and
21 data recovery at a portion of other sites.

22 Concerning traffic circulation and
23 congestion under the no-build alternative the
24 current circulation and safety problems would
25 continue and worsen as the overhead shows.

1 Any combination of build alignments
2 would improve traffic flow on the existing
3 Puainako Street, Komohana Street and particularly
4 Kaumana Drive.

5 As I stated before any combination of
6 build alignments would improve traffic flow on
7 the existing Puainako Street, Komohana Street and
8 particularly Kaumana Drive.

9 The accident rate may be expected to
10 decline with increases in road safety and traffic
11 level of service.

12 Safety and congestion would improve
13 at the Waiakea School complex.

14 In terms of energy improved traffic
15 flow and engine efficiency would result from the
16 build alternative.

17 Alignment 1 is shorter and would thus
18 involve the least consumption of energy for the
19 upper portion.

20 The build alternative would also
21 produce temporary impacts during construction.
22 Noise, air pollution and traffic congestion would
23 all rise during construction.

24 Air quality concerns would be
25 mitigated by a dust control plan.

1 Noise impacts can be reduced by the
2 portable noise barriers, low-noise heavy
3 equipment or other measures that will be
4 specified in the construction noise permit issued
5 by the State Department of Health.

6 Optimum scheduling can reduce impacts
7 related to noise, emissions, traffic and access.

8 To the extent practicable
9 construction work fronting the schools will be
10 scheduled during the summer.

11 The project is not expected to induce
12 growth, although it may facilitate the in-filling
13 of existing subdivisions and slightly accelerate
14 development plans for other areas with approved
15 zoning in upper Kaumana.

16 A number of other subdivisions exist
17 in areas within roughly the same distance to the
18 employment and shopping centers of Hilo.

19 No future residential subdivisions in
20 the project area would produce growth-inducing
21 impacts that are unanticipated or in conflict
22 with the project's needs and goals.

23 A number of permits at the federal,
24 state and county levels will be necessary.

25 A Section 404 permit would be

1 required from the United States Department of the
2 Army.

3 The consistency of the project with
4 the costal zone management policies of the
5 federal and state governments will be reviewed by
6 the Hawaii Coastal Zone Management Program.

7 The State Department of Health must
8 issue a national pollutant discharge elimination
9 system permit signifying approval of mitigation
10 measures for construction-related grading
11 impacts.

12 The State Department of Land &
13 Natural Resources must approve a stream channel
14 alteration permit for any work within identified
15 stream channels.

16 Hawaii County Department of Public
17 Works will issue permits for excavation of a
18 public highway, grading, grubbing and stockpiling
19 and a permit for outdoor lighting and permit for
20 electrical work.

21 The agency would also review designs
22 related to encroachment within designated
23 floodplains.

24 The Hawaii County Planning Department
25 will issue a permit for subdivision related to

1 highway parcel impacts.

2 And that's it.

3 MR. MOORE: Thank you, Ron.

4 We will now recess for approximately
5 30 minutes to give you an opportunity to review
6 the detailed information presented at the exhibit
7 stations and to ask questions of the project
8 representatives at those stations.

9 Again refreshments are available in
10 the lobby. The rest rooms are outside by the
11 stairway.

12 I would like to remind you -- excuse
13 me. Before we break I would like to remind you
14 that at any time during the recess you may
15 present a verbal statement to the recorder which
16 would be located by the television.

17 This will be included in the official
18 transcript of the hearing or you may wait for the
19 testimony portion of today's hearing. In either
20 case your statement will be part of the official
21 record.

22 Again during the recess you may fill
23 out a question card at the exhibit stations.

24 If you wish to testify, please
25 indicate so at the registration table if you

1 haven't already.

2 Again we will reconvene in 30 minutes
3 at approximately 8:15.

4 Thank you.

5 (Recess.)

6 TESTIMONY BY

7 MARY UYEDA

8 Good evening. This is my Mary Uyeda.

9 I'm a 15-year resident of Kaumana
10 City and work at Hilo Medical Center. And have
11 been an active community representative for the
12 past ten years.

13 I basically see this project as a go
14 and a go now. In other words, go with the
15 building alternative. Specifically looking at
16 building the upper section initially.

17 And I'm in favor of alternative
18 Alignment Number 1.

19 Ideally I'd be more in favor of even
20 improving the upper Saddle Road segment before
21 starting to join in this nice four-lane highway
22 into Kaumana Drive which will not facilitate that
23 kind of traffic, but let's stick with the limits
24 here.

25 Let's start with the upper alignment

1 and then go for the lower segment where I'm more
2 in favor of Alignment A.

3 With that said I need to support my
4 statements with the fact that Kaumana residents
5 have been waiting for road improvements for the
6 last 30 years.

7 Two unofficial surveys done of the
8 community over the last ten years have supported
9 road improvement as their top priority next to
10 parks and I just see no other alternative.

11 In fact I'd like to encourage
12 extension of Aukalea so that we could divert some
13 of the traffic around the community so people can
14 get going where they need to go. Of course that
15 means improving Aukalea next.

16 But at this point my main concern is
17 close to Kaumana City where the upper portion
18 which would be a part of the Saddle Road project
19 hopefully will include E-3 alignment and get
20 moving on that before it's too late.

21 It appears that the federal monies
22 will go to the priorities of the Puakaloa camp
23 initially and hopefully E-3 will not be on the
24 bottom of their priority list.

25 Thank you for this opportunity and

1 good luck.

2 MR. MOORE: Thank you.

3 I would like to officially reconvene
4 the public hearing at this time.

5 As I indicated earlier each speaker
6 will have five minutes to give their statement.

7 If you cannot complete your statement
8 in that time we will allow you to come back after
9 the other people have spoken for an additional
10 two minutes.

11 At this time I would like to go over
12 the ground rules one more time before taking
13 testimony.

14 First speakers will be taken in the
15 order they signed up at the registration table
16 and only those signing up to testify will be
17 called.

18 Again you may sign up at any time
19 through the close of this session. So if
20 something comes up you can sign up at any time.

21 Speakers again will be limited to
22 five minutes so that everyone has an opportunity
23 to testify.

24 Please speak clearly into the
25 microphone. Your testimony will not be taken

1 from the floor.

2 These proceedings are being recorded
3 and a verbatim transcript will be prepared.

4 Please be brief and factual. Stick
5 to the subject matter and please be courteous.

6 Remember this is not a debate or a
7 referendum on the Puainako Street widening and
8 extension project.

9 For your information at this time we
10 have a total of seven people have signed up to
11 speak at this time.

12 I would like to call up Mike Kilgore.

13 We do have graphics. So if there is
14 any specific graphic that you would like to speak
15 to or use we'll get that up for you as well.

16 TESTIMONY BY

17 MIKE KILGORE

18 My name is Mike Kilgore. I'm here
19 from Kona. Kailua-Kona.

20 And looking at some of the features
21 on the proposal.

22 Is anybody here from the county civil
23 defense?

24 One of the things that I see in the
25 study is that civil defense hasn't actively been

1 addressed.

2 One of the problems with the proposed
3 roadway is that it connects back into Route 200.
4 And because of that Route 19, Route 200 and Route
5 11 all start in the floodplain.

6 If there is a storm and we have to
7 evacuate the city and the airport closes we need
8 to move everybody over to the other airport then
9 this will become the primary self-defense route
10 for the thing. For the movement of people out of
11 the city.

12 With all the street lights involved
13 and probably a failure of the record system then
14 the street lights become a problem as far as
15 civil defense also.

16 So I'm in favor of the project.

17 I want the project to go forward, but
18 if there is an extension I favor Alignment A in
19 the lower part. And look at the alternative 2 in
20 the upper part.

21 But I don't want the upper part to
22 come back in as an "S" into the Route 200.

23 It should go straight up and connect
24 in with the new road that comes in from the old
25 Plume Road.

1 And make that a proper city street
2 instead of bringing in this "S" that we'll always
3 have to live with for a longtime.

4 We should block off the intersections
5 in that respect.

6 One of the things that needs to be
7 addressed -- I had hoped that we could put figure
8 1-3 back up. It shows that side or the cut away
9 of the -- the one with the street. There is a
10 cut away of the street.

11 I think it was figure 1-3. And that
12 one shows three measurements on the sidewalks,
13 but the telephone poles and the electric poles
14 are in the sidewalk too.

15 One of the problems with having the
16 utilities hanging up in the air is that the storm
17 is going to knock them down.

18 So when we have the telephone poles
19 -- you can see it on the drawing. When we have
20 the telephone poles up the hurricane, the tsunami
21 is going to knock them down and it won't be
22 effective.

23 We should have the Public Works work
24 with the Department of Transportation, work with
25 the utilities to get all the lines buried down in

1 a proper bedway along that side of the roadway.

2 This -- if this system becomes part
3 of the crossover road then we want to carry all
4 the utilities underground and remove that
5 eyesight, remove the danger to traffic, slamming
6 of the cars into the telephone poles; all that
7 stuff.

8 We recently have been under
9 discussion of selling our telephone company. And
10 before they run away with the money we want them
11 to bury the telephone lines as a good respect to
12 our system because that is technology.

13 Of course the utilities say, well,
14 the land is so hard. The land is just as hard in
15 Waikoloa. So let's do that.

16 If we make this into a limited access
17 road and look at the future then we should have
18 overpasses instead of street lights. We should
19 have overpasses with cloverleaves. When the
20 street lights go out cloverleaves still work.

21 When the street light changes the
22 kids take off fast. You hear the squealing
23 noise. You hear all of that stuff. You don't
24 want that.

25 Of course our human desire to go

1 first always jams up the street lights even if we
2 have street lights.

3 So we want to see more limited access
4 and utilities underground and a connection other
5 than the "S" up on the upper side.

6 Thank you, very much.

7 MR. MOORE: Thank you, very much, Mr.
8 Kilgore.

9 Next I would like to call Tsukasa
10 Inoue.

11 TESTIMONY BY

12 TSUKASA INOUE

13 My name is Tsukasa Inoue. I live at
14 Puainako in Kilauea. 1994 Kilauea. My house is
15 directly in the way of this Puainako extension.

16 I have waited 48 long years for
17 Puainako improvement.

18 After the 1960 tidal wave Belt &
19 Collins made a general plan of Puainako Street
20 going all the way down to the airport.

21 If at that time they made the street
22 it would have cost only \$5 million. Today they
23 claim 62 or 67 million dollars.

24 We waited too along. And I waited
25 too long, 40 years.

1 My house was condemned. I could not
2 make any addition to the house for the last 40
3 years. This is the only way the county will give
4 me a permit.

5 They told me when it comes time for
6 appraise my house they are going to forget my
7 addition. But I have to pay the full price of my
8 permit. That's why my extension on my garage was
9 toned down by my son. That's the way how the
10 county works.

11 At that time our land was very cheap.
12 They could have bought our land very cheap, but
13 they condemned my land.

14 And I live at the corner. People
15 know corner lot is much expensive than the inner
16 lot.

17 You know, if you go down to the tax
18 office my corner lot they appraised that very low
19 because they wanted to cut down my land for
20 Puainako Street. That is not right.

21 You know, I'm happy that I don't have
22 to wait another 40 years before they make
23 Puainako Street a nice 2-lane and a sidewalk.

24 It is going to be wide enough. So
25 they're going to have a bicycle path and safe

1 enough for the school children to pass by.

2 You know, I've been living at this
3 Puainako area, Waiakea Camp 2, Kilauea all my
4 life; 80 years.

5 I've seen Kilauea and the pitch and
6 gravel road. We used to walk on the road on a
7 hot day and it used to burn our feet.

8 I've seen the concrete Kilauea Avenue
9 made by contractor Charlie Wills.

10 There was some, I don't know after
11 the depression. And then I seen Kanoelehua
12 built.

13 On the back part of Kanoelehua when
14 they came into Puainako Street and go up to Keau,
15 Pahala. That was a very noisy place. Think of
16 the big truck shifting the gear five, six times
17 before they can pick up speed. That's really for
18 about three or four years all that county see.

19 But the worse part is the 40 years I
20 have to wait for this Puainako Street.

21 You know, it could have been much
22 cheaper if they built the road about 20 years
23 ago.

24 You know, I didn't have any intention
25 of coming up here, but I'm very happy that they

1 are planning. Only planning to work on the road.

2 He didn't confirm that they are going
3 to make the road. Moore-boy, you better get it
4 going.

5 And Mr. Sumada over here I don't
6 blame him; he's not a chief engineer. We cannot
7 blame him, you know. But how nice to see
8 Puainako Street really built.

9 20 years, 40 years is a long,
10 longtime. I'm 80 now. I cannot wait another 20
11 years. So I'll be 100. I don't want to be 100
12 before I see the road. So I think the plan is
13 very good. And please, please let's see a new
14 road within five years.

15 And another thing all the people that
16 is affected by this road I would like to see the
17 chief engineer or whoever it is responsible to
18 get all these people and give us a fair price in
19 all our house, the houses that we are going to
20 lose or the land that they are going to acquire.

21 I cannot make any extra demand
22 because my land is very cheap. But I hope they
23 construct that road within five years. Their
24 schedule is year 2001. I hope I can see the day
25 when the road is completed.

1 Thank you, very much.

2 MR. MOORE: Thank you, Mr. Inoue.

3 We may ask you back to testify before
4 the counsel.

5 Next I would like to call Mr. Donald
6 Medeiros.

7 TESTIMONY BY

8 DONALD MEDEIROS

9 Good evening. I'm Don Medeiros a
10 resident of Hilo and I represent the Hawaii
11 Operating Engineers Industry Stabilization Fund.

12 I come before you this evening in
13 favor of the Puainako extension and widening
14 project as it will provide a much needed link
15 that will relieve congestion and consequently
16 reduce accidents on this busy roadway.

17 Not only will this project make this
18 a safer road to travel on, but also 50 million in
19 construction and design work will be a big
20 savings for our island's economy by providing
21 jobs for all of us who live on this island.

22 I urge you to support this essential
23 road improvement project.

24 Mahalo.

25 MR. MOORE: Thank you, Donald.

1 Next is Tom Shiroma.

2 TESTIMONY BY

3 TOMMY SHIROMA

4 First off I want to thank Mr. Bill
5 Moore, Mr. Jiro Sumada from the county.

6 Mr. Tsukasa Inoue can testify.

7 Mr. Bill Moore we've been at about
8 six meetings and he's very informative. He's
9 very gracious. And I think he help us a lot to
10 understand what it is.

11 So right now I go back to 19 -- early
12 1950 when we didn't have Kanoelehua Highway. We
13 never have Puainako.

14 I would say that we had some very
15 knowledgeable people. Mr. Frank Simaron, Mildred
16 Yamamoto, Mr. Aiona. Maybe you folks remember
17 the old-timers. They came over in the early
18 1950s to say -- the property owners my father had
19 a larger portion with ginger ti leaves. Mr. Hara
20 was the first owner where the KTA is and Mr.
21 (inaudible) our neighbor.

22 Total about five acres of land was
23 dedicated for the highway. You can just imagine
24 ten cents a square foot, but that was the going
25 price now. Now we didn't contest the county or

1 the state because when we explain it to them they
2 told us well, if you -- what is the alternative.
3 If they made Kahaopea Street. But if we don't
4 want to cut Kahaopea. Then because of the
5 terrain.

6 What happened is all this -- Mr.
7 Tamiamama, Mr. Hara and my father got together and
8 they said as long they pay us fairly we agree to
9 go along.

10 Now, you know, what it is today is
11 foresight what happens. We have KTA, beautiful
12 shopping center. We have the Puainako Town
13 Center. We have Liberty House, Safeway. Now
14 when Mr. Aikona and Dayton, over here, they have
15 the foresight. And not only that, you know.

16 Waiakea Elementary, Waiakea High
17 School and the university will be in this area.
18 That's why explaining to us the future of Hilo is
19 going to be here. Sure enough tidal wave came.
20 Two tidal waves. If Puainako and Kanoelehua was
21 not there what is Hilo today.

22 We have a first-class shopping center
23 in KTA. Puainako Town Center. Liberty House,
24 Safeway. I say that Hilo what it is is because
25 people sacrificed and they had the foresight to

1 think ahead of what Hilo would be. Mr. Tsukasa
2 can testify.

3 If (inaudible) is gracious enough
4 want to fair, willing to dedicate this land and
5 home for the extension and the improvements of
6 Puainako Street in a way for the future of Hilo
7 because of the university and the observatory and
8 for the Kona and because of the national interest
9 in Pohakuloa I would be very interested in the
10 development of the highway.

11 Thank you, very much.

12 MR. MOORE: Thank you, very much, Mr.
13 Shiroma.

14 Up next is Fred Galdones.

15 TESTIMONY BY

16 FRED GALDONES

17 Good evening, ladies and gentlemen.

18 I would like to commend those who
19 were responsible for putting this forum together.
20 They have done a very outstanding job, very
21 informative. And the setting is very conducive.
22 I would like to congratulate you on that.

23 My name is Fred Galdones. I am the
24 director for the International Longshore &
25 Warehouse Union better known as the ILWU.

1 And also I am the chairman of the Big
2 Island Labor Alliance made up of about 40 unions
3 on this island.

4 And we are in support of this project
5 and would like to see this project take place.

6 If it addresses very important, one
7 very important issue that we feel is very
8 important and that is safety.

9 The way the roads are lined up if
10 they will make Puainako and also the upper area
11 would be the Kaumana. Take away the winding road
12 on the Kaumana winding road.

13 The statistics shows the accident
14 rate is pretty high in Kaumana Road. That would
15 be addressed. That to us is a very important
16 issue. And because of that we are in support of
17 it.

18 Although there is some negative
19 impacts because of the alignment we feel that the
20 safety issue will overcome the negative impact
21 that is presented because of that.

22 Also the jobs that it's going to be
23 providing it will help the poor economic
24 development situation that this island is faced
25 with.

1 As you know our union had lost a lot
2 of workers because of the closure of the sugar
3 company. A lot of them are still unemployed.
4 This will help stimulate the economy. This would
5 also help provide jobs.

6 And hopefully it will improve the
7 standard of living for those who are unemployed
8 or who are minimally employed.

9 Another factor that I would like to
10 have the developers consider is those who are in
11 fact impacted by the alignment that they are
12 treated fairly.

13 Although there is certain regulations
14 within the law which says how the impacted
15 individuals and residents and businesses will be
16 handled I think we need to go one more step
17 beyond that and look at the personal side, the
18 emotional side because of the trauma that they
19 are faced with that they are treated fairly.

20 With that we would like to see it
21 move forward. And we are pledging our support.

22 MR. MOORE: Thank you, Mr. Galdones.

23 James Leonard.

24 TESTIMONY BY

25 JAMES LEONARD

1 Good evening. I've been asked to
2 present the testimony or comments from the
3 Japanese Chamber of Commerce & Industry of Hawaii
4 provided some comments to the draft EIS.

5 On behalf of the Japanese Chamber of
6 Commerce & Industry of Hawaii I would like to
7 express our support for this Puainako Street
8 extension and widening project and to offer the
9 following comments to the project's draft
10 environmental impact statement.

11 We note that the federal government
12 has expressed a commitment to fund the initial
13 increments of the planned Saddle Road
14 improvements which will improve the linkage
15 between east and west Hawaii.

16 The Japanese Chamber of Commerce &
17 Industry has previously expressed its support for
18 the Saddle Road project.

19 However, without the proposed
20 extension to Puainako Street the Saddle Road
21 improvements may serve to exacerbate the
22 difficult traffic conditions which currently
23 exist in the upper Kaumana area.

24 Therefore it's important that the
25 construction of a proposed extension proceed as

1 expeditiously as possible so as to proceed the
2 plan, the Saddle Road improvements.

3 In addition to serving as an
4 important adjunct to the planned Saddle Road
5 project the proposed extension and widening of
6 Puainako Street will provide a more efficient
7 linkage to the commercial center of Hilo at
8 Waiakea. A much needed alternative route for
9 residents of the upper Kaumana area.

10 The development of this roadway
11 segment will also provide substantial benefit to
12 the island economy providing an influx of
13 substantial federal funding and the creation of
14 significant construction related employment at a
15 time when our island economy is experiencing some
16 of the highest unemployment levels in the state.

17 I would like to commend your
18 department, the Department of Public Works, for
19 the extensive environmental, historical and
20 cultural study that has been conducted and used
21 in the planning for this project as well as the
22 considerable public involvement that has been
23 afforded throughout the planning process.

24 The department's responsiveness to
25 the environmental and social concerns is evident

1 in the draft EIS.

2 Again we want to express our support
3 for this project and to urge the department to
4 expedite the funding and construction of this
5 important improvement to our island
6 transportation system.

7 Sincerely Mike Miyahiro, President
8 Japanese Chamber of Commerce & Industry of
9 Hawaii.

10 Thank you.

11 MR. MOORE: Thank you, James.

12 Our next speaker is the last speaker
13 that is signed up so far.

14 Sandra, no one else has sign up?

15 Our last speaker then Mr. Allen
16 Novak.

17 TESTIMONY BY

18 ALLEN NOVAK

19 Thank you for the opportunity to
20 speak this evening.

21 I am Allen Novak. I live on Mele
22 Manu Street which is located in what is
23 considered the upper portion of the Puainako
24 extension area.

25 I have had the honor, if you will,

1 serving as the chair of the planning and zoning
2 committee for the Waimanalo Neighborhood Board on
3 Oahu for eight years which is actually quite a
4 careful body about development and changes in the
5 neighborhood.

6 So I had an opportunity to learn
7 quite a bit about what occurs in developments and
8 the planning process and how it can impact
9 neighborhoods.

10 And what's apparent is that I
11 recognize that the development of Saddle Road and
12 other major transportation arteries such as
13 Puainako extension are inevitable.

14 However, we do need to proceed with
15 careful planning to avoid future problems.

16 The Saddle Road will be to alignment
17 what the Pali and Likelike Highway have been to
18 Oahu in the future.

19 Saddle Road will facilitate
20 transisland travel and commerce.

21 Saddle Road will be the primary route
22 of travel for commerce and private vehicles
23 between east and west Hawaii.

24 By west Hawaii I mean all the way
25 from Waimea to Captain Cook.

1 It will be more efficient to go from
2 east to west to service all those areas.

3 So we're talking about a significant
4 diversion of traffic. Not just what's currently
5 occurring up Kaumana Road and older Saddle Road.
6 But what's currently going down the Hamakua coast
7 for the most part.

8 Plus there will be more feasibility
9 of transisland transportation.

10 So we're talking about multifold
11 increase in the volume of traffic through this
12 route. We have to be very careful about how we
13 plan it.

14 The Puainako extension is destined to
15 divert traffic flow from the Hamakua coast and
16 serve a greater volume of traffic than now exists
17 on Highway 19.

18 My recommendation and I'm going to
19 limit it to the upper portion which is my area of
20 concern.

21 My recommendation is that through the
22 Pacific Plantations area, that's the residential
23 area, the upper portion, that the more southern
24 route, the number 2 route be selected.

25 The reasons for this. First and

1 foremost safety.

2 Alignment 1 passes through an area on
3 Edita Street which is very narrow and comes very
4 close to a cluster of rental housing which has
5 long existed on Edita Street.

6 The homes are a group of single
7 family dwellings which are the size and rental
8 value that appeals to young families with
9 children.

10 As a result there is and will
11 continue to be a significant density of children
12 which reside and play in that area. It is
13 directly adjacent to Alignment 1.

14 Number two, disruption. Alignment 1
15 will produce a significant noise nuisance to the
16 neighborhood. This will be both day and night.

17 Commercial hauling will occur in the
18 early morning hours and off hours over this road.

19 It will create a disruption along
20 Alignment 1 which can be mitigated through
21 Alignment 2.

22 Encroachment. Alignment 1 also
23 encroaches onto land occupied by residences. My
24 land is one of those. And so is my neighbor.

25 Judging from the alignment, the

1 alignment map that I have looked at, the border
2 of Alignment 1 would come within 300 yards of my
3 side of the house and occupy where my cesspool is
4 currently located. So that creates a problem.

5 It also appears that it comes right
6 up to or even goes on top of a portion of my
7 neighbor's wall of his home. This would create
8 extreme hardship for myself and my neighbor both
9 economic problems determining the loss involved
10 in that.

11 Solution; if we're going to proceed
12 with this that these problems can be mitigated by
13 selecting Alignment Number 2 for the Puainako
14 extension.

15 Alignment Number 2 is much better
16 suited to handle the volume of traffic which is
17 sure to occur in the very near future.

18 And I thank you. I would like to
19 offer a copy, an outline of my presentation to
20 you and the counsel representative too.

21 MR. MOORE: We just have one more
22 speaker signed up.

23 I would like to call on counselwoman
24 Bobbie Jean Leithead-Todd.

25 TESTIMONY BY

1 BOBBIE JEAN LEITHEAD-TODD

2 I hadn't planned on speaking, but I
3 thought that since I'm wearing several different
4 hats here that I address first as a counsel
5 member representing the district.

6 When I've gone door to door the
7 Puainako extension has been on the top of the
8 list for improvements that people all along
9 Kaumana Drive and even subdivisions which access
10 Kaumana Drive have been asking for.

11 I have been raised on Kaumana Drive
12 myself and have witnessed many accidents and had
13 to drive past the sites where people have left
14 flowers to mark where people have died on Kaumana
15 Drive.

16 Another reason that people in the
17 upper Kaumana area have been asking for Puainako
18 is in I believe it was in 1984 when Maunaloa
19 erupted and at night you could see the rosy red
20 glow in the sky.

21 They were concerned about civil
22 defense and evacuation of the upper Kaumana area
23 and congestion on Kaumana Drive if they had to
24 evacuate quickly.

25 So a lot of people in the area have

1 been looking forward to Puainako as an
2 alternative evacuation route.

3 The other concern is that with the
4 current plans for Saddle Road and the
5 improvements on Saddle Road people are very
6 concerned that you cannot bring that traffic onto
7 the existing Kaumana Drive.

8 It is extremely difficult and
9 expensive to reengineer Kaumana Drive because of
10 the number of homes, the topography and the --
11 just if you have ever driven Kaumana Drive you
12 know that it is very difficult.

13 They would have to take a lot of
14 homes out and there are so many curves on it not
15 to mention the fact that you'd also have to
16 address a lot of drainage issues along Kaumana
17 Drive.

18 I am the past president a couple
19 terms ago of the upper Kaumana district counsel.

20 And when Mary Uyeda was our president
21 they had done a survey of the subdivisions in the
22 upper Kaumana area and Puainako extension was on
23 top of the list of one of the items that people
24 in the upper Kaumana area would like to see done.

25 I'm also the past president of the

1 Kaumana Country Club and Pohakalani Neighborhood
2 Association known to most of you as Kaumana
3 Gentry.

4 This is one of the top priorities for
5 our community. I haven't had an opportunity to
6 get feedback on which alignment they prefer.

7 Most people in my subdivision were
8 under the impression that the preferred alignment
9 was the one that was coming through.

10 And the concerns that they have
11 expressed is that they were concerned if it went
12 to the end of Wilder that it would have an impact
13 on the subdivision.

14 But I think it's kind of the opposite
15 of the concern of the people in the Edita area.

16 If you live in the Mele Manu area you
17 probably want the road on Alternative 2, the
18 southern route.

19 If you live in my subdivision you
20 probably prefer the alignment that is closer to
21 Kaumana Drive. And for some of the same reasons.

22 Without a park in the area a lot of
23 kids use Wilder Drive to play football. So we,
24 you know, can live with that. But it's a concern
25 in the community.

1 But I think if you had to ask people
2 that we aren't going to get into a fight over the
3 alignment. We just want to have it done. We've
4 been waiting a longtime.

5 When I was a little girl we were
6 talking about it. And I now have children older
7 than I was when we were first talking about this
8 route.

9 So I'm hoping and it's on the mayor's
10 agenda to lobby at the state legislature for the
11 state funding for the CIP.

12 MR. MOORE: Thank you, counselwoman
13 Leithead-Todd.

14 That concludes the public testimony
15 portion. That concludes the public testimony
16 portion of tonight's proceeding.

17 At this point we will get into the
18 written questions. So this is your last
19 opportunity to submit written questions.

20 At this time I would like to turn the
21 meeting back over to Jiro Sumada.

22 JIRO SUMADA: There have been four
23 questions submitted.

24 If at any time you have other
25 concerns or questions, please feel free to fill

1 out a form and turn it into anyone at the
2 registration table.

3 We have one question from Darryl
4 Arruda, 297 Puainako Street representing himself.

5 Are they going to open Pohakalani
6 Street and Nohea Street? It's not a through
7 street.

8 My understanding is that this project
9 does not effect those two particular streets.

10 I don't know if on the general plan
11 what the overall scheme is, but as far as the
12 department is concerned there are no plans to
13 open up those two particular streets at this
14 time.

15 Next we have a Debra Kaina, 412 West
16 Puainako Street representing herself, a resident.

17 What is the distance between
18 Alignment A and the existing Puainako Street and
19 the distance between Alignment B and the existing
20 Puainako Street?

21 Anybody from the county (inaudible).

22 Is there anybody from the design team
23 that can answer that one?

24 While he's doing that Debra has
25 another question.

1 Are there sound barriers proposed for
2 both Alignments A and B?

3 (Unknown speaker): Yes.

4 JIRO SUMADA: So, Debra, I don't know
5 if you are still here.

6 Colin, how are you doing? We don't
7 want to put pressure on you.

8 We'll come back to you.

9 Ron Furukawa, Vice-Principal of
10 Waiakea Intermediate School.

11 May I get a copy of the Waiakea
12 School complex figure 2-26 and also the lower
13 Puainako figure 2.28?

14 I think it is just a request. If Mr.
15 Furukawa is still here we'll get something for
16 you.

17 And then the last one is from a Gail
18 Inamine, 1815 Kinoole Street representing the
19 Kinoole Baptist Church.

20 The median strip in the portion
21 fronting our church will prevent left turns into
22 our property. The entrance and exit off of
23 Puainako are our main entryways.

24 Is it correct that the entry on the
25 church will only be going up Puainako or going

1 north on Kinoole?

2 Colin, we expect you to do two things
3 at once.

4 Can you answer that one.

5 COLIN HASHIRO: Okay. As far as the
6 first question Alignment B is approximately 150
7 feet from the existing Puainako.

8 Alignment A is approximately 450 feet
9 from the existing Puainako Street.

10 As far as this one we are looking at
11 using permissive U-turns on some of the
12 intersections to make it a little more convenient
13 for people to get to where they want to go. So
14 we are looking at that at this point.

15 JIRO SUMADA: Gail has another
16 question.

17 Will we also lose the use of the
18 parking area at the corner of Kinoole and
19 Puainako?

20 COLIN HASHIRO: We are not
21 anticipating you losing that.

22 I don't believe we go that far into
23 your property.

24 JIRO SUMADA: And then the last
25 question is from a Brian Shiroma, 1340 Kiliaina

1 Street.

2 Can there be an access given to large
3 parcels 40 acres of property that are mauka above
4 Pumanhana approximately 1,000 feet tmk
5 3-2-2-039031. And there is three dashes.

6 MR. MOORE: In general we cannot.
7 landlock a parcel. So that's something we need
8 to look at the specifics on.

9 If there is no other access then an
10 access shall be granted.

11 If not I think that's something that
12 needs to get worked out from the land acquisition
13 process.

14 JIRO SUMADA: Does that answer the
15 questions for those folks that submitted
16 questions adequately?

17 Are there any other written questions
18 that people may have? Okay.

19 This concludes the question and
20 answer portion of the hearing.

21 We would like to thank you, very much
22 for your presence here today and your
23 participation in this public hearing.

24 We invite you to browse, to stay and
25 browse through the exhibit stations after the

1 close of the hearing to address any final
2 question.

3 At this time I would like to
4 recognize or thank the project team for
5 organizing tonight's meeting and for their hard
6 work.

7 I think it was a very professionally
8 done presentation and exhibits that the public
9 could have a chance to talk with the speakers up
10 front. I think it was a job well done. So,
11 please accept my congratulations.

12 Again I would like to remind all of
13 you that written comments will continue to be
14 accepted until February 22, 1999.

15 And I declare this public hearing to
16 be closed.

17 Thank you, very much.

18 (End of tape-recorded hearing.)
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STATE OF HAWAII)
) ss:
CITY & COUNTY OF HONOLULU)

I, PHILIP M. ROSENBERG, CSR 178, Notary Public, State of Hawaii, hereby certify:

That on Wednesday, February 17, 1999 one cassette tape of a public hearing held on January 19, 1999 was delivered from Okahara & Associates, Inc., Hilo office to Ralph Rosenberg Court Reporters;

That the tape-recorded hearing was taken by me in machine shorthand and was thereafter reduced to typewriting by computer-aided transcription; that the foregoing represents, to the best of my ability, a full, true and correct transcript of said tape-recorded hearing.

I further certify that I am not attorney for any of the parties hereto, nor in any way concerned with the cause.

Dated: February 22, 1999

Philip M. Rosenberg

Notary Public, State of Hawaii

My commission expires: 7-8-2000

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX A5

**Agency Correspondence Subsequent to Close of
Draft EIS Comment Period**

INDEX TO APPENDIX A5 CORRESPONDENCE

Abbreviations:

AHCP	Advisory Council on Historic Preservation
CZM	Hawaii State Coastal Zone Management Program
DPW	Hawaii County Department of Public Works
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FHWA	U.S. Department of Transportation, Federal Highway Administration
HDOT	Hawaii State Department of Transportation (Highways Division)
KBC	Kinoole Baptist Church
LEDPA	Least Environmentally Damaging Practicable Alternative
NEPA/404 MOU	Memorandum of Understanding integrating the National Environmental Policy Act with Section 404 of the Clean Water Act
O&A	Okahara & Associates
OHA	Hawaii State Office of Hawaiian Affairs
SCS	Scientific Consultant Services, Inc. (Section 106 Consultants)
SHPD	Hawaii State Historic Preservation Division
US-COE	U.S. Army Corps of Engineers.
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

<u>DATE:</u>	<u>FROM:</u>	<u>TO:</u>	<u>SUBJECT:</u>
May 10, 1999	R. Suzuki, FHWA	D. Swanson, USGS	Cave issues
June 11, 1999	R. Suzuki, FHWA	D. Carlson, EPA	Alt. 10
June 28, 1999	D. Swanson, USGS	R. Suzuki, FHWA	Reply to cave letter
Aug. 16, 1999	R. Suzuki, FHWA	D. Swanson, USGS	Meet at Sunrise Cave
Nov. 9, 1999	R. Suzuki, FHWA	R. Smith, USFWS	Sunrise Cave
Dec. 21, 1999	P. Henson, USFWS	R. Suzuki, FHWA	Reply to Sunrise letter
Dec. 30, 1999	R. Suzuki, FHWA	R. Smith, USFWS	NEPA/404 MOU
Dec. 30, 1999	R. Suzuki, FHWA	G. Young, USCOE	NEPA/404 MOU
Dec. 30, 1999	R. Suzuki, FHWA	W. Wiltse, EPA	NEPA/404 MOU
Dec. 30, 1999	R. Suzuki, FHWA	K. Hayashida, HDOT	NEPA/404 MOU
Jan. 20, 2000	R. Yanabu, DPW	C. Yamamoto, KBC	Noise mitigation
Feb. 3, 2000	M. Dega, SCS	R. Ogata, OHA	Section 106
Feb. 9, 2000	R. Yanabu, DPW	D. Blane, CZM	CZM Consistency
Feb. 15, 2000	R. Suzuki, FHWA	G. Young, USCOE	LEDPA concurrence
Feb. 15, 2000	R. Suzuki, FHWA	R. Smith, USFWS	LEDPA concurrence
Feb. 15, 2000	R. Suzuki, FHWA	W. Wiltse, EPA	LEDPA concurrence
Feb. 16, 2000	D. Blane, DBEDT	R. Yanabu, DPW	CZM Consistency
Feb. 23, 2000	R. Suzuki, FHWA	G. Young, USCOE	FEIS Review
Feb. 23, 2000	R. Suzuki, FHWA	R. Smith, USFWS	FEIS Review
Feb. 23, 2000	R. Suzuki, FHWA	W. Wiltse, EPA	FEIS Review
Mar. 6, 2000	R. Suzuki, FHWA	M. Naber, AHCP	Notif. of Adverse Effect
Mar. 9, 2000	G. Young, USCOE	R. Suzuki, FHWA	FEIS/LEDPA concurr.
Mar. 10, 2000	P. Henson, USFWS	R. Suzuki, FHWA	FEIS/LEDPA concurr.
Mar. 14, 2000	R. Yanabu, DPW	D. Blane, CZM	404 CZM Consistency
Mar. 14, 2000	R. Suzuki, FHWA	D. Hibbard, SHPD	Section 106 concurr.
Mar. 15, 2000	G. Young, USCOE	B. Meyers, O&A	Receipt of 404 Applic.
Mar. 23, 2000	M. Naber, AHCP	R. Suzuki, FHWA	Section 106 fulfilled
Mar. 24, 2000	W. Wiltse, EPA	R. Suzuki, FHWA	FEIS/LEDPA concurr.
April 6, 2000	R. Suzuki, FHWA	D. Hibbard, SHPD	Section 106 concurr.
April 6, 2000	D. Hibbard, SHPD	R. Suzuki, FHWA	Section 106 concurr.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
May 10, 1999

FILE COPY

IN REPLY REFER TO
HDA-HI

Don Swanson, Scientist in Charge
United States Geological Survey
Hawaiian Volcano Observatory
Hawaii National Park, HI 96718-0051

Dear Mr. Swanson:

Subject: Puainako Street Extension and Widening Project

As you are aware from, our discussions with you and members of your staff, the County of Hawaii in cooperation with the State Department of Transportation and the Federal Highway Administration (FHWA) has prepared a Draft EIS for the Puainako Street Extension and Widening project.

Among the comment letters our team has received from members of the public are those attached, from Dr. William Halliday and David Jagnow, of the International Speleological Survey. As these letters concern resources that are part of your agency's expertise, we would appreciate your appraisal of the issues contained in the letter.

We would like to explain to you our treatment of the issue of caves. The Hawaii County Department of Public Works, with the assistance of the firm Okahara & Associates, has been responsible for preliminary engineering and preparing the EIS. They have made diligent efforts during the course of the EIS and preliminary design to avoid degrading the integrity of the intact portion of Kaumana Cave between Kilua Road and Edita Street. We recognize that this portion of Kaumana Cave is a well-visited and valuable geological, biological, and recreational resource. As part of the EIS, we commissioned the first total station survey of Kaumana Cave, which produced a map with the degree of accuracy needed to ensure that our engineers could re-design the road to keep the edge of its right-of-way no closer than about 16 feet from the cave. In addition, in consultation with the U.S. Fish and Wildlife Service, we have agreed to mitigation measures that will educate the public about the cave and fund research on potential impacts to cave biota from highway construction.

However, this portion of Kaumana Cave is not the only lava tube cave in the area under and near the right-of-way. Other caves were observed by crews of the Hawaii County Department of Public Works, still others have been reported from residents and cave enthusiasts, and it is almost certain that additional caves or cave portions are yet undiscovered. While we would theoretically like to inventory and protect every instance of each natural resource in the area, our analysis indicates that it would be extremely difficult to avoid impacting all caves found in the area. Our reasoning is as follows:

Identification of caves that pass under the right-of-way is highly problematic. From our understanding of Hawaiian geology, lava tubes are extremely widespread, particularly in pahoehoe lava flows. Although those large enough to accommodate human entry, which Dr. Halliday refers to as *lava tube caves*, are just a fraction of all lava tubes, this is

still a considerable number. During an EIS study, most actual cave openings within the right-of-way will be noted and perhaps mapped by the surveyors, archaeologists and botanists performing reconnaissance in the corridor. However, many, and perhaps most, caves will not be visible from the surface. The crews of the Hawaii County Department of Public Works and their consultants have reported that numerous previously unseen lava tube caves are often unearthed when corridors are bulldozed. We recognize that there are geotechnical and other methods for locating caves prior to construction, but to utilize such techniques along the entire length of multiple project corridors (which can total thousands of acres, often in heavy brush) represents an enormous task. Would you agree with these assessments concerning the widespread distribution of lava tube caves and the practical difficulty of even approximately locating them?

Once identified, mapping of lava tube caves is very expensive. In order to determine if a project will impact a cave, it is first necessary to map it in three dimensions so that its position in the alignment and depth can be ascertained. The survey of Kaumana Cave, which is readily accessible and because of its size and geometry relatively amenable to survey, cost many thousands of dollars. If a number of other caves were identified, particularly if they were small, twisting, repeatedly blocked, and difficult to access, the costs could be astronomical. Would you agree that with the exception of unusual caves that represent an outstanding resource requiring preservation, it is generally infeasible to prepare detailed maps of the many caves that might be found along alternate highway routes?

Once identified and mapped, preservation of lava tube caves is problematic. Dr. Halliday has suggested before that lava tube caves lying sufficiently near the surface or otherwise in danger of collapse should be preserved through providing human sized culverts, structural supports, or safe and accessible entry ways on either side of the highway. Although this is theoretically feasible, it seems to us that it should only be considered when a cave of extraordinary value is being affected, one in which recreation is an important, regular use. In addition to the costs listed above, the cost of excavating and culvert replacement, and/or alternate cave access point creation could be exceedingly high. Would you agree that taking such extraordinary measures to preserve human access in lava tube caves is generally an unreasonable goal?

Lava tube caves are actually not rare, and indeed are sufficiently widespread that most caves should not be considered resources requiring preservation, given the expense involved. Although we value the resources offered by Hawaiian lava tube caves, it seems unreasonable to assume that most are not sufficiently unique or otherwise valuable enough to merit the extraordinary expense required to identify, map and preserve them. It does not seem prudent to expend the level of resources that would be necessary to map and preserve caves except under extraordinary circumstances. We believe this is true for the cave in Sunrise Estates referred to by Dr. Halliday as "De Roddy's Cave." Based on our evaluation and the reports of the cave we have received from geologists, there is no justification for calling this feature "unique." In any case, it is located on multiple private property holdings, whose owners, to our knowledge, do not wish to allow public entry. It seems a highly unlikely candidate for a "show cave". Would you agree that with the exception of Kaumana Cave, it is unlikely that any caves in the area qualify as resources worthy of the type of mapping and preservation measures requested by Dr. Halliday?

We wish to emphasize that in the case of Kaumana Cave, part of a County park which is used by scientists, students, hikers and others, as well as the site of an ecosystem or particular concern,

extraordinary measures to map and avoid were justified, and indeed were implemented. Doing so for each cave seems to us highly impractical and unreasonable.

However, we recognize that even if lava tube caves must be destroyed during road construction, the information that these caves can provide may be of use to geologists. We would like to have your opinion about mitigation measures, such as notifying your agency during construction when lava tube caves are encountered.

We very much appreciate your offer to provide a candid, professional opinion of both the reasonableness of the suggestions by Dr. Halliday and our evaluation of these suggestions.

I would welcome your call at (808)541-2700 (ext. 311). You may also wish to contact the chief scientist for the EIS, Ron Terry, at (808)982-5831. Thank you for your assistance in this matter.

Sincerely yours,



Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures: Halliday letter of March 19, 1999
Jagnow letter of March 22, 1999

cc: Jiro Sumada, DPW Hawaii County
Ron Terry, Okahara & Associates

FAXED
5/10/99

R. Terry - 982-5831



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
June 11, 1999

FILE COPY

IN REPLY REFER TO
HDA-HI

David Carlson, CMD2
Environmental Protection Agency
75 Hawthorn Street
San Francisco, CA 94105

RE: Puainako Street Extension and Widening Project
Alternative Alignment

In response to several public concerns that have been expressed in letters and public meetings, we are considering the study and development of a third alternative alignment in addition to the two presented in the Draft EIS.

The principal issue raised by the public is noise. The noise study, which was conducted during the development of the Draft EIS, shows that twelve existing homes (and perhaps as many as five future homes) located in Pacific Plantations Subdivision will be impacted by a rise in noise levels exceeding the State criterion of 15 decibels. Noise mitigation measures (noise walls) have been determined to be unreasonable here because the cost greatly exceeds the maximum allowed under the HDOT Noise Policy of \$35,000 per benefited resident.

The second concern relates to Kaumana Cave. The portion of the cave between Kilua Road and Edita Street is a well-visited and valuable geological, biological, and recreational resource. Project planning included a total station survey that produced a map with the degree of accuracy needed to ensure that the right-of-way would stay at least 5 m away from the cave. In addition, in consultation with the U.S. Fish and Wildlife Service, mitigation measures have been developed that will educate the public about the cave and fund research on potential impacts to cave biota from highway construction. However, there is still some public controversy concerning the proximity of the road to Kaumana Cave.

The third alignment would essentially be a hybrid of the first two, combining the eastern part of Alignment 2, the western part of Alignment 1, and a short linking section. Enclosed for your information is a map of the hybrid alignment. This alignment was explored during the scoping process, however it was dismissed because it seemed to entail impacts to land already entitled for development that outweighed any perceived benefit relative to the other alignments. Since that time, the land owner has expressed a willingness to accommodate this alignment through his development and the scale of impacts associated with Alignments 1 & 2 have been determined to be greater than originally estimated.

The use of the hybrid alignment would avoid noise impacts to these and any other homes in the

subdivision, and would not involve new noise impacts elsewhere. Also the Kaumana Cave would be avoided by the hybrid alignment. However, the hybrid alignment includes a connection link about 1.0 km long that has not yet been fully surveyed for environmental resources. This section appears to lack significant natural or cultural resources with the exception of an extent of wetlands. Initial evaluations indicate that the hybrid alignment would involve a loss of about 1.1 ha of wetlands, as opposed to 0.28 ha with Alignment 1 and 2.91 ha with Alignment 2.

In summary, we believe that the hybrid alignment appears to have the potential to involve the least overall environmentally damaging practicable alternative alignment and therefore are interested in conducting an environmental study to determine the effects on the natural and cultural resources. However, in the interest of saving tax payers money, we will not conduct the study if the Clean Water Act Section 404 does not allow the taking of more wetlands to avoid impacts to the Kaumana Cave and to reduce impacts to the neighborhood.

With the information provided, please let me know if it would be prudent for us to proceed with the study. If you have any questions, please feel free to give me a call at (808)541-2700 x 311.

Sincerely,



Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure

cc: Wendy Wiltse, EPA, Hawaii w/o enclosure
Ken Au, HDOT, HWY-PA w/o enclosure
Jiro Sumada, Hawaii County, DPW w/o enclosure
Lolly Silva, ACOE w/o enclosure



United States Department of the Interior

GEOLOGICAL SURVEY
Hawaiian Volcano Observatory
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Fax: (808) 967-8819 or 967-8890
E-mail: donswan@hvo-mail.wr.usgs.gov



RECEIVED

JUN 30 1999

HAWAII DIVISION

June 28, 1999

Richelle M. Suzuki
U.S. Department of Transportation
Federal Highway Administration
300 Ala Moana Blvd., Room 3-306
Box 50206
Honolulu, HI 96850

Dear Ms. Suzuki:

I want to apologize for replying to your letter so late. I will try to answer your questions, and my answers will be similar to those that I gave during the informal discussion in my office in April.

Identification of caves that pass under the right-of-way is highly problematic

Would you agree with these assessments concerning the widespread distribution of lava tube caves and the practical difficulty of even approximately locating them?

Yes, I would. Most shallow lava tube caves (using the definition of Dr. Halliday) can probably be located by ground geophysical surveys, but some cannot. In particular, those that are small though still large enough for human entry may be, for all intents and purposes, invisible to such surveys. A detailed right-of-way survey may well miss such small caves, as well as other smaller tubes that are too small for human entry. This is not to say that such a survey should not be done, in my opinion. Quite the contrary, I feel that a right-of-way survey should be mandatory, in order to determine if any large openings may be present in the subsurface. But the reality is that some caves can be missed, and that others can be only poorly located, particularly in highly vegetated or rugged terrain.

Once identified, mapping of lava tube caves is very expensive

Would you agree that with the exception of unusual caves that represent an outstanding resource requiring preservation, it is generally infeasible to prepare detailed maps of the many caves that might be found along alternate highway routes?

Here is a situation where I think the aid of cavers could be very beneficial. There is no doubt that underground mapping is more precise than surface surveys, and some cavers are very experienced at this. This would be the best way to determine the exact location of the caves. Since the cavers are apparently willing to do this mapping gratis or at very low cost, the financial drain on the project would be minimal. To me it seems that underground work is necessary before it can be determined whether a cave is unusual and might represent an outstanding resource. It should be understood that the cavers engaged to do the mapping must be highly qualified for the task and knowledgeable of the potential resources offered by a cave. A good set of guidelines for cave entry has been developed in Hawaii Volcanoes National Park. Following these guidelines, obtained from Cave Specialist Bobby Camara, would go a long way toward ensuring that the mapping and description would be of high quality and useful for making judgments about the geologic, biologic, and cultural resources of the cave. Many cavers are already aware of and support these guidelines.

Once identified and mapped, preservation of lava tube caves is problematic

Would you agree that taking such extraordinary measures to preserve human access in lava tube caves is generally an unreasonable goal?

Yes, I do, with the exception of unusual caves. But for this determination to be made, the cave should be known well enough to be able to determine if it is exceptional. Only rarely could such a designation be justified, since there are so many lava tubes of all sizes in pāhoehoe flows. From a geologic standpoint, HVO is willing to assess data on the caves and offer recommendations regarding whether the cave poses special qualities that should be preserved.

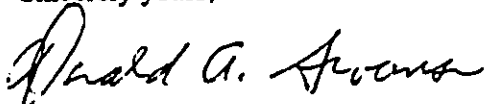
Lava tube caves are actually not rare, and indeed are sufficiently widespread that most caves should not be considered resources requiring preservation, given the expense involved

Would you agree that with the exception of Kaumana Cave, it is unlikely that any caves in the area qualify as resources worthy of the type of mapping and preservation measures requested by Dr. Halliday?

It probably is unlikely, but I don't think that "De Roddy's Cave" can be ruled out without some investigation. Examination so far by two HVO staff members suggests that there is no geologic feature that is so special that it requires preservation. I don't know about the cave's biologic or cultural resources. It is likewise unlikely—though possible—that any other lava tube caves in the area will be unusual.

As you point out in your letter, geologists can indeed use the presence and orientation of lava tubes (not only caves) to help understand how a particular lava flow was emplaced. Thus we would be delighted if we were informed whenever a moderately large lava tube was encountered. In general we could be at the Puainako Street Extension and Widening Project within a day or so after notification, and we could, in most cases, complete our examination within several hours or even less.

Sincerely yours,



Donald A. Swanson
Scientist-in-Charge

FAXED
7/15/99

Ron Army.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
August 16, 1999

FILE COPY

IN REPLY REFER TO
HDA-HI

Don Swanson, Scientist in Charge
United States Geological Survey
Hawaiian Volcano Observatory
Hawaii National Park, HI 96718-0051

Dear Mr. Swanson:

Thank you for your response letter of June 29, 1999 to our inquiry about environmental values and impact assessment related to lava tube caves in the Puainako Street Extension and Widening EIS.

Your letter advised that although preliminary examination by two Hawaii Volcano Observatory (HVO) staff members of the Sunrise Estates cave revealed no geologic features worthy of preservation, further investigation may be necessary. We would like to invite your agency to examine the cave in the company of our engineering consultants in order to assist us in making this determination.

If this is agreeable, would you please have your staff contact me, at (808) 541-2700 ext. 311, or Ron Terry at (808) 982-5831 to arrange a visit. Again, we very much appreciate your review of our concerns.

Sincerely yours,

Richelle M. Suzuki, P.E.
Transportation Engineer

cc: Jiro Sumada, DPW Hawaii County
Ron Terry, Okahara & Associates

FAXED
8/19/99

Bob Yanabus, HI County DE
Ron Terry



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
November 9, 1999

FILE COPY

IN REPLY REFER TO
HDA-HI

Robert P. Smith
US Fish and Wildlife
300 Ala Moana Blvd. Rm 3122
BOX 50088
Honolulu, HI 96850

Attn: Jeff Burgett

Dear Mr. Smith:

Subject: Puainako Street Extension and Widening Project
Sunrise Estates Cave

This letter is meant to continue our discussion regarding the lava tube cave that was recently uncovered in the Sunrise Estates subdivision. The cave passes under the alignment that is common to all alternatives under consideration for the project's Upper Portion (see attached map). The cave appears to belong to an approximately 1,000 year old lava flow that covers a large area in mauka Hilo. The portion of the cave accessible from the entry (which is located on property owned by William De Rooy) is a fairly short segment that is blocked by a collapsed upslope. The collapse appears to have been caused by construction of the drainage canal that runs parallel and directly adjacent to the proposed alignment. The downslope end of this segment may also be blocked. The cave was discovered in the mid-1990s when an opening was caused by bulldozer grading. This portion of the cave affected by the Puainako Extension does not appear to have ever been accessible and contains no cultural material, burials or bones of any type. The area overlying the cave is occupied by streets, residential lots, and a drainage canal.

The County of Hawaii and its consultants have investigated the resources offered by the cave based on a field visit, a description of the cave provided by Frank Trusdell of the U.S. Geological Survey, and additional information from William Halliday of the (private) Hawaii Speleological Survey. Further investigation of the cave has been prevented by the owner's refusal to allow further entry. We believe that enough information has been gathered to conclude that the cave does not offer any significant and unique value for geology, recreation, or drainage/hydrology.

In our previous discussion you indicated that it would be useful for evaluating the potential value of the cave for harboring native invertebrates if the vegetation above the cave were inventoried. The consultants for the project examined the vegetation during a recent field visit. They found that although a few remnant 'ohi'a trees and uluhe ferns were present, the area had been almost completely cleared during construction activities for the subdivision, streets and drainage canal, and the vegetation accordingly was highly disturbed. *Melastoma* and *Melochia* were dominant, and various alien weeds make up most of the rest of the vegetation. The attached photographs show the vegetation over the cave and are keyed to the attached map.

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I would welcome your call at 541-2700 (ext. 311). You may also wish to contact the chief scientist for the EIS, Ron Terry, at 982-5831. Thank your for your assistance in this matter.

Sincerely,

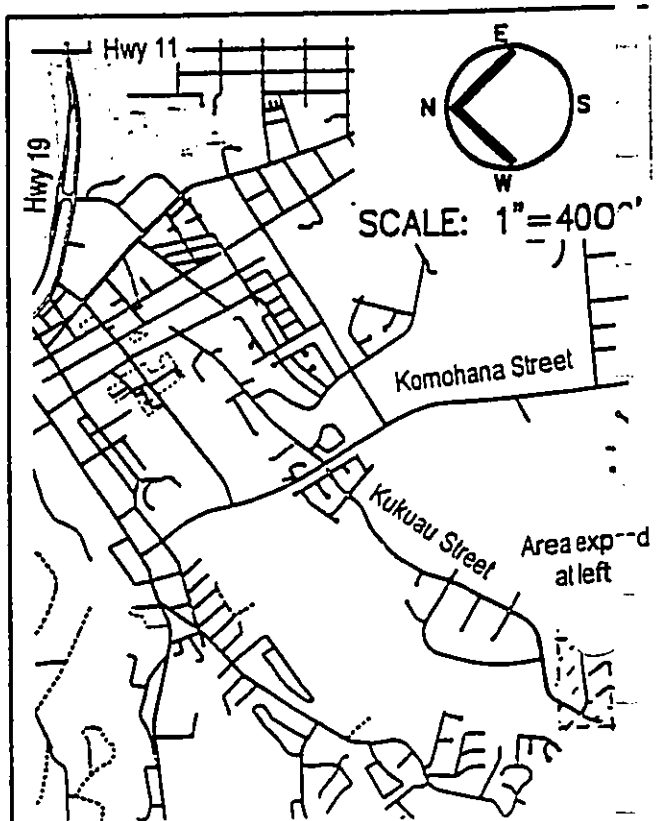
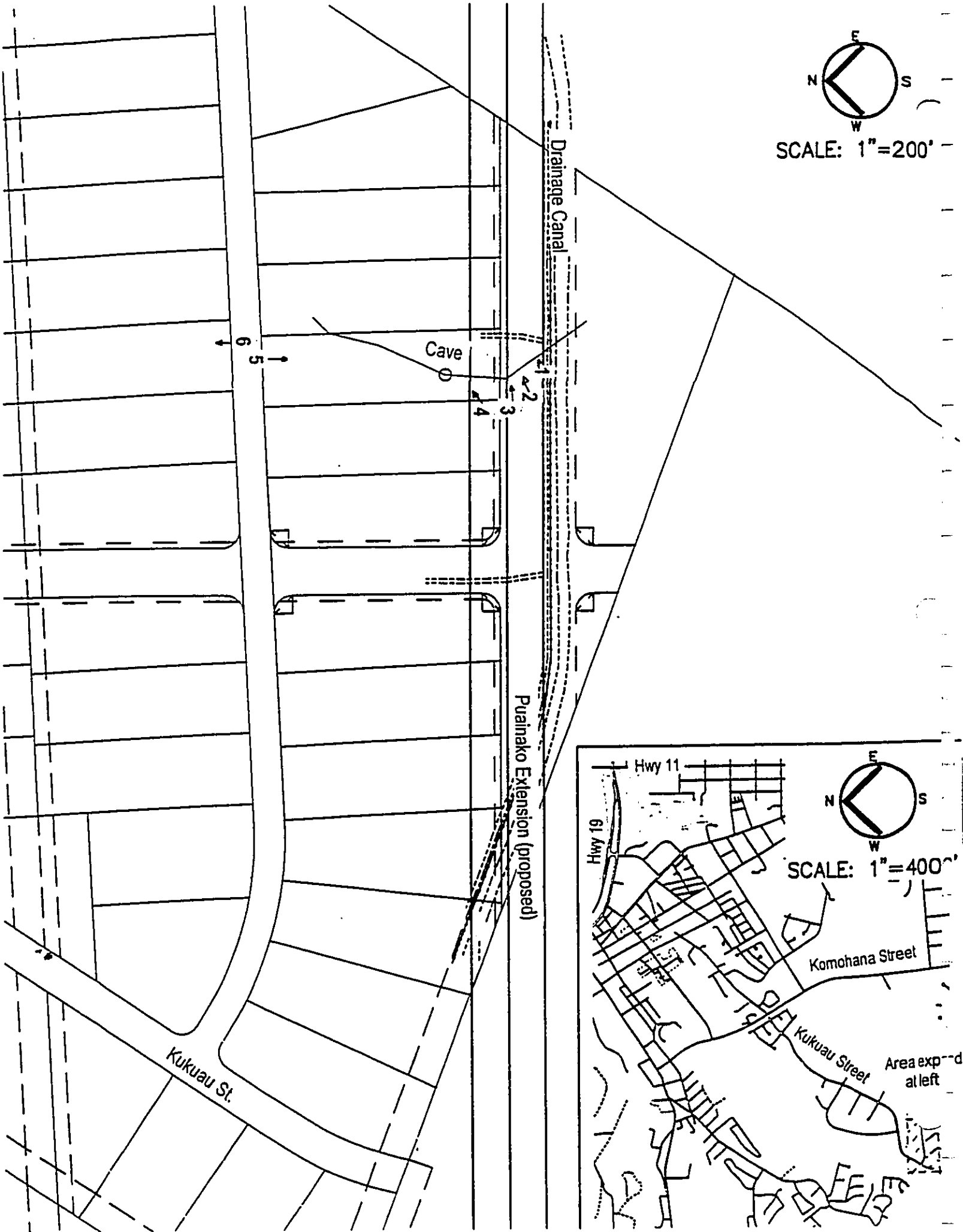
Richelle M. Suzuki

Richelle M. Suzuki
Transportation Engineer

Enclosures (Site Map and Photographs)

cc: Mr. Ken Au, HDOT, HWY-PA w/o enclosures
Mr. Robert Yanabu, Hawaii County, DPW
Mr. Ron Terry, Geo Metrician

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1. Looking east and makai along drainage canal, showing edge of semi-disturbed 'ohi'a forest which extends to south.



2. Looking east-northeast at north bank of drainage canal, showing molasses grass, uluhe, melochia and melastoma which constitute the vegetation over the cave.

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3. Looking east along north edge of drainage canal, providing another view of vegetation over the cave.



4. Closer to the De Rooy property, looking northeast, with sword ferns, uluhe, melastoma and a few 'ohi'as.

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5. Looking south from street across De Rooy property towards drainage canal. The viewer is looking along the approximate track of the cave, which extends from the street under the clearing in the center to the cleared portion of the lot in the back of the photo.



6. Looking north across street towards residences. The cave underlies the street and these residences.

Key to Sunrise Estates photographs:

1. Looking east and makai along drainage canal, showing edge of semi-disturbed `ohi`a forest which extends to south.
2. Looking east-northeast at north bank of drainage canal, showing molasses grass, uluhe, melochia and melastoma which constitute the vegetation over the cave.
3. Looking east along north edge of drainage canal, providing another view of vegetation over the cave.
4. Closer to the De Rooy property, looking northeast, with sward ferns, uluhe, melastoma and a few `ohi`as.
5. Looking south from street across De Rooy property towards drainage canal. The viewer is looking along the approximate track of the cave, which extends from the street under the clearing in the center to the cleared portion of the lot in the back of the photo.
6. Looking north across street towards residences. The cave underlies the street and these residences.



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

In Reply Refer To: JMB

DEC 21 1999

Richelle Suzuki
Federal Highway Administration
300 Ala Moana Blvd, Room 3-306
Box 50206
Honolulu, HI 96850

Re: Puainako Street Extension and Widening Project, Sunrise Estates Cave, Hilo, Hawai'i

Dear Ms. Suzuki:

The U.S. Fish and Wildlife Service (Service) has received your November 9, 1999 letter regarding the lava tube cave underlying the proposed road alignment within the Sunrise Estates subdivision. The photographs included in your letter were helpful in assessing the status of native vegetation above and adjacent to the cave. Also, we have discussed the cave with the U.S. Geological Survey personnel who briefly inspected it.

The invaded character of the existing native vegetation does not necessarily preclude a robust subterranean native fauna because scattered native trees can have extensive root systems supporting cave invertebrate communities. However, the short extent of the tube and the certainty of future vegetative change suggests that this cave has low resource value. While we concur that this short lava tube segment is not of sufficient uniqueness to warrant realignment or bridging during construction of the proposed road, we believe that useful information could be obtained through sampling of cave biota prior to any project-related disturbance. For example, several unique invertebrates are known from Kaumana Cave, but an accurate assessment of their distribution is hampered by lack of access to nearby lava tube caves.

For this reason, we recommend that the Sunrise Estates cave, and any caves that are discovered during the proposed road work, be considered biological resources requiring surveys for the purposes of data salvage. This would be similar to the practice of salvage archaeology, with a similar goal: to assess the importance of the site and to document all relevant features prior to disturbance.

We understand that access to the cave is currently blocked by the owner. If that situation changes, or if your agency or local government agencies gain access rights in the future, please contact the Service at your earliest convenience. We will organize and conduct a rapid salvage survey and distribute any biotic samples taken to researchers for curation and analysis.

The Service appreciates the opportunity to assist your agency in this project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Jeff Burgett at (808) 541-3441.

Sincerely,



Paul Henson
Field Supervisor
Ecological Services

cc: HDOT Highways
DPW, Hawaii County



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
December 30, 1999

IN REPLY REFER TO
HDA-HI

Robert Smith
US Fish and Wildlife
300 Ala Moana Blvd. Rm 3122
BOX 50088
Honolulu, HI 96850

Attn: Jeff Burgett

Dear Mr. Smith:

Subject: Puainako Street Extension and Widening Project
Information for January 6, 2000 Meeting

Thank you for agreeing to meet with us on January 6, 2000, regarding the revised alignment and Section 404 issues for the subject project. The meeting will be held at 9:30 A.M. in your office.

We have received many public comments on the Draft Environmental Impact Statement (DEIS) and have decided to study an alternative alignment not identified in the DEIS (alignment 10). We have conducted a wetland delineation for this project including alignment 10. Enclosed is a brief description of each delineated wetland along with the proposed function, impact, and mitigation.

We are hoping to reach agreement on the following before the end of the meeting:

- 1) The preferred alignment is the least environmentally damaging practicable alternative alignment that meets the purpose and need of this project.
- 2) The function and value of the delineated wetlands.
- 3) The mitigation requirements for the impacts on the delineated wetlands.

We are also interested in discussing the process that will need to be followed in order to obtain an individual permit.

If you require more information, or clarification on the enclosure or the purpose of the meeting, please feel free to call me at (808)541-2700 x 311.

Sincerely,

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure

cc: County of Hawaii. Casey Yamagihara

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
December 30, 1999

IN REPLY REFER TO
HDA-HI

George Young
Chief, Operations Branch
US Army
Corp of Engineers, Building 230
Fort Shafter, HI 96858

Attn: Lolly Silva

Dear Mr. Young:

Subject: Puainako Street Extension and Widening Project
Information for January 6, 2000 Meeting

Thank you for agreeing to meet with us on January 6, 2000, regarding the revised alignment and Section 404 issues for the subject project. The meeting will be held at 9:30 A.M. in the Fish and Wildlife Service conference room at the Federal Building Room 3-122.

We have received many public comments on the Draft Environmental Impact Statement (DEIS) and have decided to study an alternative alignment not identified in the DEIS (alignment 10). We have conducted a wetland delineation for this project including alignment 10. Enclosed is a brief description of each delineated wetland along with the proposed function, impact, and mitigation.

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- 2) The function and value of the delineated wetlands.
- 3) The mitigation requirements for the impacts on the delineated wetlands.

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If you require more information, or clarification on the enclosure or the purpose of the meeting, please feel free to call me at (808)541-2700 x 311.

Sincerely,

A handwritten signature in cursive script that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
December 30, 1999

IN REPLY REFER TO
HDA-HI

Wendy Wiltse
Environmental Protection Agency
300 Ala Moana Blvd. Rm 5-152
Honolulu, HI 96850

Dear Ms. Wiltse:

Subject: Puainako Street Extension and Widening Project
Information for January 6, 2000 Meeting

Thank you for agreeing to meet with us on January 6, 2000, regarding the revised alignment and Section 404 issues for the subject project. The meeting will be held at 9:30 A.M. in the Fish and Wildlife Service conference room at the Federal Building Room 3-122.

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- 2) The function and value of the delineated wetlands.
- 3) The mitigation requirements for the impacts on the delineated wetlands.

We are also interested in discussing the process that will need to be followed in order to obtain an individual permit.

If you require more information, or clarification on the enclosure or the purpose of the meeting, please feel free to call me at (808)541-2700 x 311.

Sincerely,

A handwritten signature in cursive script that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
December 30, 1999

IN REPLY REFER TO
HDA-HI

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

Dear Mr. Hayashida:

Subject: Puainako Street Extension and Widening Project
Information for January 6, 2000 Meeting

Thank you for agreeing to meet with us on January 6, 2000, regarding the revised alignment and Section 404 issues for the subject project. The meeting will be held at 9:30 A.M. in the Fish and Wildlife Service conference room at the Federal Building Room 3-122.

We have received many public comments on the Draft Environmental Impact Statement (DEIS) and have decided to study an alternative alignment not identified in the DEIS (alignment 10). We have conducted a wetland delineation for this project including alignment 10. Enclosed is a brief description of each delineated wetland along with the proposed function, impact, and mitigation.

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- 3) The mitigation requirements for the impacts on the delineated wetlands.

We are also interested in discussing the process that will need to be followed in order to obtain an individual permit.

If you require more information, or clarification on the enclosure or the purpose of the meeting, please feel free to call me at (808)541-2700 x 311.

Sincerely,

Richelle M. Suzuki
Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosure

cc: Kenneth Au, HWY-PA

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File = PuaWet 99 Summary
January 27, 1999

TABLE 3. Summary of wetlands delineated on Alignment One and Alignment Ten of the Proposed Puainako Street Extension, Hilo, Hawaii.

NO.	Survey Station	Delineation Plot ID	Alignment One		Alignment Ten	
			ft ²	m ²	ft ²	m ²
W1	28+00	1-12	5,280	500	5,280	500
W2	49+00	1-4	3,150	298	3,150	298
W3	77+00	1-9	26,136	2,474		
W4	68+00	99-102	1,800	170	1,800	170
W5	80+00	99-103			300	28
W6	86+00	99-104			150	14
W7	92+00	99-111			300	28
W8	96+00	99-110			6,000	568
W9	97+30	99-109			100	9
W10	100+80	99-107			300	28
W11	101+80	99-106			250	24
Total Area of Fill			36,366	3,442	17,630	1,667

WETLAND NO. W1

Wetland No.: W1 Fill: 490 m²/5200 ft²
Survey Station: 28+00 Delineation Sheet No. 1-12
Alignment: 1 and 10

Description of Resource

Field Observations- Wetland is a surface water depression of human origin within an abandoned cane field. The wetland is an impoundment of a broad swale created many years in the past by a farm road blocking surface water drainage. No outlet or high water mark is apparent. Wetland is 25 m in diameter.

In July of 1998 a small amount of open water with maximum depth of 0.6 m/2.0 ft. was visible, but most of the area had standing water beneath a cover of Wainaku grass (*Panicum repens*: FAC+). In December of 1995 no open water was visible, but water was standing above surface beneath Wainaku grass. On both occasions, the soil was saturated, structureless with very strong sulfidic smell. Vegetation of this wetland is entirely Wainaku grass, distinct from surrounding vegetation of mixed grasses and shrubs. No aquatic animals were observed in wetland.

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Map Analysis- Swale indicated on USGS Piihonua Quadrangle map (7.5 minute series) as deflection of 1300 foot contour line. Estimated maximum watershed for this wetland is 40,000 ft.². Site is within the limits of 100 year flood (FEMA). The soil is mapped as Kaiwiki silty clay loam, 0-10% slope, a Typic Hydrandept, and described as well-drained.

Wetland Functions

Hydrological Functions- The wetland appears to store precipitation and overland flow from a small local watershed formed by the impoundment of the swale and allows sedimentation. No outlet is visible, implying that impoundment rarely overflows and that catchment area is small relative to capacity. This wetland prevents impounded water from entering the intermittent stream 100 feet down-slope that drains this area except in periods of high rainfall.

Biological Functions- Vegetation is a common alien grass within a surrounding upland successional community in an abandoned cane field. This wetland is not habitat for native plants. The wetland is isolated from other bodies of water and is not likely to be habitat for native aquatic animals. Wetland may provide habitat for introduced invertebrates, amphibians or fish.

This wetland feature contributes little to beta (landscape) diversity because similar vegetation patches are common in the locality and region.

Impact of Proposed Action

Construction of the proposed roadway may continue to block the swale, thus reproducing the existing conditions and functions. If roadway requires a culvert at this site, the impoundment will be drained resulting in a small increase of water and sediment in the intermittent stream down-slope.

Proposed Mitigation

If site is not drained by a culvert, no change of function would occur. If a culvert is required at this site,

- a) the small amount of water and sediment that would be added to the stream would be negligible and require no mitigation; or
- b) function could be replaced by dredging a comparable size depression on up-slope side of roadway below level of culvert inlet. However, this impoundment would likely breed mosquitos and may be unsightly.

WETLAND NO. W2

Wetland No.:	W2	Fill: 300 m ² /3150 ft ²
Survey Station:	49+00	Delineation Sheet No. 1-4
Alignment:	1 and 10	

Description of Resource

Field Observations- Site is within a man-made drainage channel that originates near, and empties into the intermittent stream. The channel is 10 m wide with steep banks 5 m high. The channel bottom is almost completely vegetated. The wetland is on the relatively level floor of the channel that often has a small amount of water flowing beneath a dense growth of grass. Small areas of open water are sometimes visible. The soil is saturated and structureless, has a sulfidic odor, and measures about 18 cm/7 inches in depth, over pahoehoe lava.

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A portion of this channel is on the north side of the centerline within the proposed ROW; 300m²/3150 ft² of the wetland is within the ROW.

The vegetation is dominated by Wainaku grass (FAC+) with a few scattered kamole (*Ludwigia octovalis*: OBL) and a few FW species. All plants within the wetland are introduced species. Prawns (*Macrobrachium lar*), tadpoles and minnows have been observed in the open water.

Map Analysis- This drainage channel is not shown on USGS Piihonua Quadrangle map (7.5 minute series). The map shows that this locale on the west side of Wilder street has low slope. This site is not within the limits of the 100 year flood (FEMA). The soil is mapped as Kaiwiki silty clay loam, 0-10% slope, a Typic Hydrandept, and described as well-drained.

Wetland Functions

Hydrological Functions- The channel was apparently dug in the past to improve drainage within this locale with very little slope. Channel carries water to intermittent stream system. Wetland vegetation within channel may slow water movement and enhance sedimentation.

Biological Functions- This wetland provides negligible biological function or values. The plants and animals observed are all introduced species that are commonly found elsewhere in this locale and throughout the region.

Impact of Proposed Action

Construction of roadway would block or fill a portion of this channel, impeding drainage of this nearly level area. It is possible that soil moisture in the area may be increased and wetland characteristics develop in places where they do not now occur.

Proposed Mitigation

No mitigation of biological impacts are necessary.

Reconstruction of drainage channel on the north side of the proposed roadway may be necessary to maintain current drainage pattern.

WETLAND NO. W3

Wetland No.: W3
Survey Station: 77+00
Alignment: 1

Fill: 2474 m²/26136 ft²
Delineation Sheet No. 99-112

Description of Resource

Field Observations- Site is a large grassy opening within a mixed landscape of agricultural fields and grazed woodlands. Site is crossed by an electrical transmission line. It appears that the site has been influenced by these and other land uses.

Wetland is a broad, shallow depression within a generally flat locale, apparently fed by precipitation and overland flow. No distinct inlet or outlet has been found, but deep grass mats limit observations of topography. Aerial photograph interpretation

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shows a small part of the wetland abuts the intermittent stream. The presence or type of a connection with the intermittent stream has not been confirmed in the field.

Hydrological conditions have varied between dates and points of observations, i.e. muddy soil recorded in 1992, six inches standing water recorded in 1995, mats of grass floating on 36 inches of water in 1998, and no standing water but soil very moist in 1999. At the date (1998) and point of delineation standing water was 18 inches deep and the soil was found to be saturated, structureless and low chroma. The vegetation at the delineation point and in most of the site is a deep mat of Wainaku grass (FAC+) and California grass (FW). No aquatic animals have been observed at this site.

Map Analysis- The USGS Piihonua Quadrangle map (7.5 minute series) shows the area to have little slope but does not indicate the presence of a wetland. The wetland is within the limits of the 100 year flood (FEMA) which is related to overland drainage towards the intermittent stream. The soil is mapped as Keaukaha Extremely Rocky Muck 6 to 20% slope, a Lithic Tropofolist, described as a thin, well-drained organic soil over Pahoehoe bedrock. An interpretation of an aerial photograph shows the total area of the wetland to be 20,255 m²/217,800 ft², of which 2,474 m²/26,136 ft² would be filled by Alignment One.

Wetland Functions

Hydrological Functions- The major hydrological functions of this wetland are temporary water storage and sedimentation. This depressional wetland receives precipitation and overland water moving through a surface drainageway indicated by the flood zone map. Wetland may also function as streamside floodplain and water storage when discharge of intermittent stream exceeds capacity during high rainfall. The connection of this wetland to the stream is not confirmed or understood and functions related to the stream are conjectural. The water storage capacity of the entire wetland has been estimated as 30,492 m³/1,089,000 ft³.

The stream disappears from the surface a short distance below this wetland. This disappearance is confirmed by the USGS quad map (*Piihonua Quad*). Apparently, the stream flow goes underground through lava tubes or similar voids; it is not known if this water reappears as surface water before reaching the ocean. Given this disappearance, this wetland has negligible function in terms of flooding or surface water quality.

Biological Function- This wetland provides habitat for alien plants and probably aquatic life. All species present are common within the region. No native species are known to make use of this site. This relatively large wetland does provide some beta diversity within the already heterogeneous landscape.

Impact of Proposed Action

The proposed roadway would fill approximately 2474 m²/26,136 ft² of the wetland. The road would bisect the wetland isolating a smaller area on the north side of the road, near the intermittent stream from the larger portion on the south side of the roadway (see attached figure). The proposed action would eliminate storage capacity within the filled area and would deprive the stream of storage capacity south of the roadway. However, based on hydrological calculations that the 100 year storm is equal to 142 m³/second/5 097 ft³/sec., and the fact that only 13 percent of the wetland would be

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filled, the length of storage time lost because of the wetland fill during the 100 year flood would be less than 40 seconds. This represents a negligible loss to flood buffering.

Proposed Mitigation

Full storage capacity and sedimentation can be maintained by culverts under the roadway to connect the north and south portions of the wetland and increasing the area of the depression by appropriate grading of an area equal in size to the roadway fill.

Wetland NOS. W4, W5, W7, W8, W9, W10, W11

Wetland No.	Survey Station	Delineation Sheet No.	Fill Area m ² /ft ²
W4	68+00	99-102	170/1,800
W5	80+00	99-103	28/300
W7	92+00	99-111	28/300
W8	96+00	99-110	568/6,000
W9	97+30	99-109	9/100
W10	100+80	99-107	28/300
W11	101+80	99-106	24/250

Description of Resource

Field Observations- These 7 wetlands are all small surface-water depressions or topographic lows in areas with little slope. None have inlets or outlets. Most contained some standing water on the delineation date. Most have no effect on the species composition of the tree layer but can be recognized by standing water or water marks and an alteration of species of the herb layer. All but one of the wetlands has umbrella sedge (*Cyperus halpan*: FW) as a dominant species. Some have kamole (*Ludwigia octovalis*: OBL) or spikerush (*Eleocharis obtusa*: OBL) as a dominant or subdominant species. The soils have sulfidic odor and usually have low chroma.

Map Analysis- None of these wetlands can be detected on the USGS 7.5 minute series topographic map. None are within the limit of the 100 year flood (FEMA). All have soils mapped as Keaukaha Extremely Rocky Muck 6 to 20% slope, a Lithic Tropofolist.

Wetland Functions

Hydrological Functions- This type and size of surface-water depressional wetland has been found to be common throughout the region on Tropofolist soils with low slope. The underlying pahoehoe bedrock impedes or prevents infiltration. The source of water is precipitation and collection of overland flow from very limited nearby areas.

These wetlands retain a small amount of water within their shallow soil profiles, reducing overland flow to surface waters. However, streams are poorly developed on this soil type and precipitation is normally dissipated by infiltration in areas not underlain by impervious bedrock. Retained water may maintain soil moisture during periods of

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drought or low rainfall, that can be utilized by surrounding plant-life. These functions are restricted to the immediate site of the wetland.

Biological Function- These small depressional wetlands are abundant within the region. They provide habitat for common facultative and a few obligate wetland plants of the region. Most of these plants are introduced, a few are indigenous. Due to their small size and fluctuating water level, they do not provide important habitat for any known aquatic animals. They are not known to be utilized by any native animals.

These wetland features do provide some beta diversity (landscape heterogeneity) on a fine scale.

Impact of Proposed Action

Grading to construct the roadway would fill 855 m²/9050 ft² of these seven wetlands. This filling would not affect drainage patterns or off-site water quality.

Proposed Mitigation

No mitigation proposed because impacts would be negligible.

WETLAND NO. 6

Wetland No.:	W6	Fill: 14 m ² /150 ft ²
Survey Station:	86+00	Delineation Sheet No. 99-104
Alignment:	1	

Description of Resource

Field Observations- This wetland is a very small depression within a nearly level area that appears to be a drainageway or topographic low. Shallow (0.25 m/0.8 ft), vegetated channels meander through the area. The vegetation is dominated by Wainaku grass (FAC+) with other subdominant alien species. The soil has low chroma.

Map Analysis- This wetland cannot be detected on the USGS 7.5 minute series topographic map. It is within the limit of the 100 year flood (FEMA). The soil is mapped as Keaukaha Extremely Rocky Muck 6 to 20% slope, a Lithic Tropofolist.

Wetland Functions

Hydrological Function- This small depressional wetland appears to collect water from precipitation and overland flow and may store a small quantity of water and enhance sedimentation. Retained water may maintain soil moisture during periods of drought or low rainfall, that can be utilized by surrounding plant life. These functions are restricted to the immediate site of the wetland.

Biological Function- This wetland is vegetated with common introduced plant species. No aquatic animal life was observed. Native animals are not likely to utilize this habitat.

Impact of Proposed Action

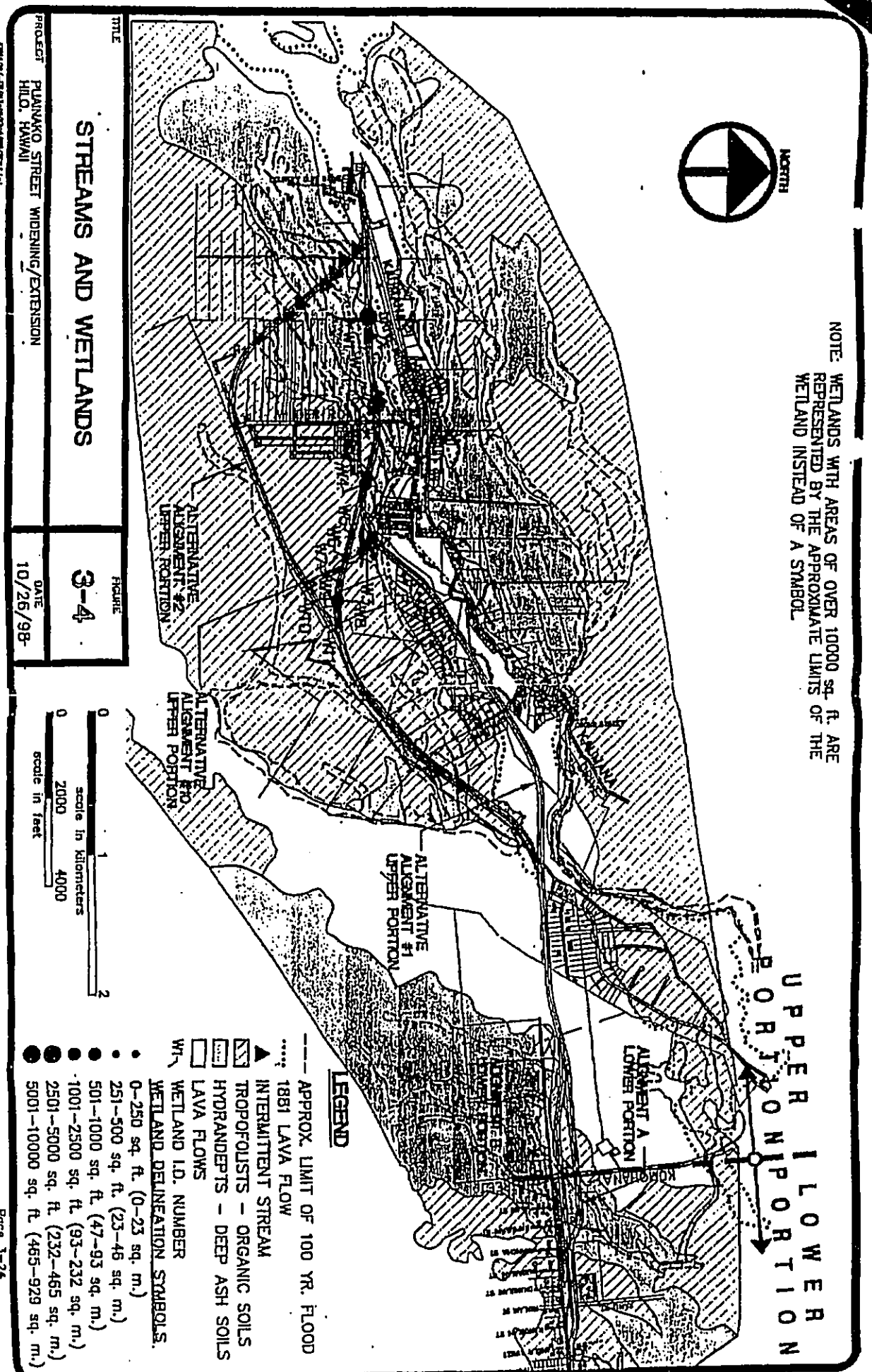
Construction of the roadway would fill this wetland. No adverse biological or hydrological impacts would occur. No off-site impacts would occur because all functions are restricted to the immediate site of the wetland.

RECEIVED AS FOLLOWS

Proposed Mitigation

Proper roadway design will maintain local drainage and surface water quality. No other mitigation is necessary.

RECEIVED AS FOLLOWS



Stephen K. Yamashiro
Mayor



Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

January 20, 2000

Craig Yamamoto
Kinoole Baptist Church
1815 Kinoole Street
Hilo, HI 96720

Dear Mr. Yamamoto:

SUBJECT: Puainako Street Widening and Extension Project

This is to follow up with respect to our meeting last week regarding the potential impact of the Puainako Street Widening and Extension Project (Project) on the Kinoole Baptist Church. We appreciate the time that you and the members of the advisory committee took to better understand the potential impacts and options related to the implementation of this highway improvement project.

As you are aware, the County of Hawaii, through the Department of Public Works is the lead agency in the preparation of the Environmental Impact Statement (EIS) for this project. We are working closely with the Federal Highways Administration (FHWA) and the State of Hawaii Department of Transportation (HDOT) who are assisting in the funding and coordination of this project. Also, HDOT will be responsible for the construction and maintenance of the Puainako Street improvements between Kilauea Street and Komohana Street, including the portion fronting your church.

The Project will require the taking of approximately forty (40) feet of land along the Church's Puainako Street frontage. In addition, the implementation of the Project will result in increased noise impacts to the Church.

One of the key decision points that the agencies involved in the Project must resolve is the type of mitigation related to the Project's impacts on the Kinoole Baptist Church property. The State and Federal regulations related to project impacts provide that appropriate compensation be provided to mitigate impacts such as land taking and increased noise impacts

The Church's decision will be included in the Final Environmental Impacts as well as a discussion of the mitigation measures that will be proposed by the Agencies to address impacts. Please also be aware that the actual land acquisition and noise mitigation provisions will be done at the time just prior to the start of construction of the Project improvements in the vicinity of the Church.

Craig Yamamoto
Kinoole Baptist Church
January 20, 2000
Page 2

As we discussed during our meeting, the mitigation will primarily be related to the acquisition of land for the additional right-of-way required for the project and the increased noise impacts. For your information, all land acquisition will be in accordance with the Federal Uniform Relation and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) as well as with State Regulations. These regulations establish the procedure for valuating lands and/or improvements to be acquired.

The Project will also result in increased noise impacts to the church. According to Federal and State regulations and policies related to noise, reasonable and feasible mitigation measures must be considered. With respect to the church, these potential mitigation measures include the provision of noise mitigation measures to the existing structures to reduce the interior noise levels by a minimum of 5 decibels (dBA) or the acquisition of the structures by HDOT. In either case, the maximum amount of the mitigation is based on a formula related to the use of the church facility.

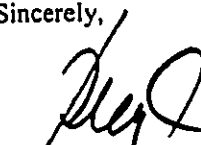
According to discussions with FHWA, while the amount of mitigation for noise will be established by the existing procedures for determination impact and mitigation of those impacts, it is possible that the Church may have flexibility in how those mitigation monies are utilized. According to a FHWA Guidance Paper on Noise Mitigation:

Federal-aid funds may be used in compensation paid during right-of-way negotiations for a partial taking of property. Noise, air quality, access, visual quality, etc. are frequently considered jointly in determining this compensation, which is regarded as part of right-of-way acquisition, not environmental mitigation.

I hope this provides you with enough background and information for your committee to understand the various options and to make a reasoned recommendation to the Church's decision making body.

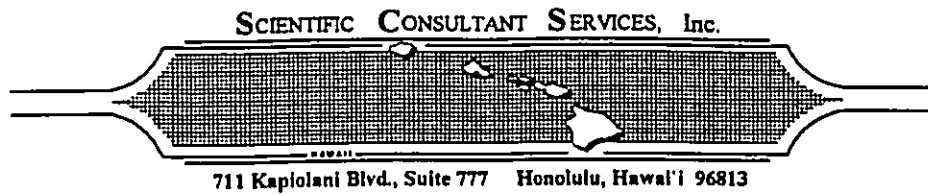
Please feel free to call me or the Project's consultants, Ron Terry (982-5831) or Bill Moore (935-0311) if you have any questions or require additional information on this matter.

Sincerely,



ROBERT K. YANABU
Chief Engineer

cc: Richelle Suzuki, FHWA
Stanley Tamura, District Engineer, DOT Highways Division
Kenneth Au, Advanced Planning Engineer, DOT Highways Division
Donald Okahara, Okahara & Associates, Inc.
Ron Terry, Ph.D.
Bill Moore, William L. Moore Planning



February 2, 2000

Office of Hawaiian Affairs
Mr. Randall Ogata

re: Pu'ainako Street Extension and Widening, Section 106 Consultation

Dear Mr. Ogata:

This missive serves as a formal letter initiating Section 106 consultations regarding archaeological and oral historic interview work within the Pu'ainako Street Corridor, Hilo, Island of Hawai'i. With this document, Scientific Consultant Services, Inc. (SCS) has initiated the consultation process. The process includes three basic steps: a review of site eligibility, adverse effect assessments, and mitigation assessments. Preliminary discussions with Office of Hawaiian Affairs (OHA) representatives (Lynn Lee) have initiated this project and the role that SCS will represent throughout the process. This consultation is a part of a federal Environmental Impact Statement (EIS) being proposed by the Federal Highways Administration, Hawaii Department of Transportation, and the County of Hawaii Department of Public Works.

As such, the attached document provides a brief, but complete, inventory of all the archaeological and oral historic research as related to the Pu'ainako Street Extension and Widening project. In addition, we have compiled a list of all the archaeological work occurring within the proposed roadway areas as well as significance assessments and recommended mitigation for the identified sites. A short paragraph also details the significant sites which may be impacted by construction work, these sites listed to be "preserved." Lynn Lee, of your office, has had preliminary discussions with SCS about this Pu'ainako project and at present, has all archaeological and oral historic interview documents within her possession for review.

If you have any questions about the consultation process or the results offered here, please feel free to contact myself or Dr. Robert L. Spear at 1-808-597-1182 (Fax: 597-1182). We thank you for your help in contributing much to this project and look forward to talking with you in the future about this Section 106 consultation.

With Regards,

Michael Dega
Senior Archaeologist
Scientific Consultant Services, Inc.

INTRODUCTION

This letter is presented in accordance with Section 106 consultation and pertains to archaeological work and historical oral interviews concerning the project area along the Pu`ainako Street corridors. The letter accentuates several tasks in concordance with Section 106 consultation, including: a discussion summary of previous archaeological research in relation to roadway corridors and realignments; a discussion of the potential impact the corridors' routes may have on sites to be preserved; and, a brief outline of historic oral interviews from local residents who provided extensive local knowledge of the area and the area's archaeological sites.

At this time, all materials have been presented to the Office of Hawaiian Affairs (OHA). These materials include research reports of each archaeological project conducted in concert with the Pu`ainako work and the following, a summary of these projects and significance evaluations of each site identified and recorded within various reaches of the corridors. Finally, a brief review of interviews with local residents is presented, as well as the determination that these interviews fulfilled Section 106 consultation dictums.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Due to the variety of proposed corridors over time, numerous archaeological projects have occurred within various sections of the Pu`ainako Street alignment and realignment area. This extensive background section is meant to clarify the nature of archaeological projects occurring at various times within the Pu`ainako corridors. Table 1 enumerates the various projects occurring directly within the corridors and lists the respective road alternate areas subject to investigation.

Prior to the present project, seven archaeological and/or historical inventory projects had been accomplished directly within the proposed project corridors. Several other projects (Borthwick *et al.* 1993, Borthwick and Hammatt 1993, Maly *et al.* 1994, and Spear 1995) occurred near the Pu`ainako realignment but had no immediate impact on the corridors.

Table 1: Research Directly Pertaining to the Pu`ainako Street Realignment

Researchers	Year	Level of Research	Identified Sites	Alternate Designation
Hunt & McDermott	*1994	Inventory Survey	11 new sites comprising 88 features	1, 2, A, B
Kepā Maly	1996	Historic Documentation and Oral History	n/a	general area
Robins and Spear	*1996	Inventory Survey	3 sites of 30 new features; 1 new site comprising 16 features	1, 2, A, B
Eble, Denham, and Pantaleo	*1997	Supplemental Testing	Same as Hunt and McDermott 1994	Alternate A & B
Spear	#1998	Reconnaissance Survey	27 newly identified features; Site 18921	Revised Alternate, South of Alternate 1
McGerty and Spear	#1999	Inventory Survey	17 features; Site 18921	Revised Alternate, South of Alternate 1
Dega and Benson	@1999	Reconnaissance Survey	8 newly identified features; Site 18921	Alternate 10
Dega	@2000	Inventory Survey	8 features; Site 18921	Alternate 10

*=two Inventory Survey's and one Supplemental Testing depicting overlapping sites

#=Reconnaissance Survey and Inventory Survey in same realignment area

@=Reconnaissance Survey and Inventory Survey in same realignment area

Only the archaeological projects directly related to the Pu`ainako realignment are discussed here. These projects represent various levels of archaeological investigation which were accomplished as the corridors were realigned several times during the project's history and the respective, named realignments. Table 2 more succinctly depicts the type of archaeological work accomplished during each individual project.

Table 2: Research Projects and Specific Archaeological Tasks Completed

Researchers	Year	Level of Research	Research Tasks
Hunt & McDermott	1994	Inventory Survey	Historical Research, Pedestrian Survey, Testing
Kepā Maly	1996	Historic Documentation and Oral History	Historical Research and Oral History Interviews
Robins and Spear	1996	Inventory Survey	Pedestrian Survey, Testing
Eble, Denham, and Pantaleo	1997	Supplemental Excavations	Testing
Spear	1998	Reconnaissance Survey	Pedestrian Survey
McGerty and Spear	1999	Inventory Survey	Pedestrian Survey
Dega and Benson	1999	Reconnaissance Survey	Pedestrian Survey
Dega	2000	Inventory Survey	Pedestrian Survey, Testing

SPECIFIC PROJECTS WITHIN PU'AINAKO CORRIDORS

Hunt and McDermott (1994):

The initial project relating to the Pu'ainako roadway was executed by Hunt and McDermott (1994) who conducted an Inventory Survey of the Pu'ainako Street Extension within Waiakea, Kukuau 1 and 2, and Ponohawai in 1992. The project area comprised the largest areal extent of all archaeological work in the area and encompassed Alternate 1, 2, A, and B, the latter two occurring downslope and to the east of the former. The study entailed historical background research, pedestrian survey, and limited subsurface testing.

Briefly, Hunt and McDermott (1994) recorded 13 sites within their project area (State Sites 50-10-35-18911 to -18923), the site complexes comprised of 88 individual features. All the features were interpreted to date from c. A.D. 1880 to 1950 and related to historic period sugar cane production and associated endeavors. The team excavated five units within several features and concluded that the lack of prehistoric artifacts and traditional subsurface features within the units further supports the notion that all the features were historic in origin (Hunt and McDermott 1994:104). Hunt and McDermott (1994:109-113) recommended that Data Recovery operations occur within their documented site complexes as additional excavation work "could potentially yield isolated traces of prehistoric use of the area, presumably for dryland agriculture."

Additionally, the team recommended continued historic research, a task later undertaken by Maly (1996). The Hunt and McDermott report (1994) was accepted by the State Historic Preservation Division (SHPD).

Maly (1996):

The second research program directed toward further understanding the Pu`ainako Street-Waiakea Ahupua`a area was carried out by Kepā Maly (1996). Maly conducted extensive archival research and oral history interviews within the latter portion of 1995. His research primarily focused on Hawaiian settlement and population expansion within this upland area, sugar cane plantation development within the Hilo area, and the Waiakea Mill Company (which cultivated sugar cane through the Pu`ainako corridors). Through informant interviews, he gained very insightful perspectives on land utilization within the Waiakea area in the recent past.

To paraphrase Maly (1996:62), based upon documentary research and informant interviews, it was thought that a variety of traditional Hawaiian sites once existed within the present Pu`ainako Street corridors. However, since a majority of the area was placed under cultivation by operators of the Waiakea Mill Company between the c. 1870s-1940s, features representative of Hawaiian settlement and residency have all but disappeared, primarily as a result of activities associated with the development of the sugar plantations. Informants state that features such as stone mounds, ramped platforms, terraces, wall features, enclosures, and berms (railway berms) were most recently associated with cultivation of sugar cane and later, ranching activities in the area. However, Maly (1996:61-63) cautions that some components of these features may be composed of the remains of earlier period habitations and features associated with traditional land use (agricultural features in particular).

Additionally, another informant (Mr. Kenneth Bell in Maly 1996:62) suggested that Hawaiian artifacts were still being collected from cleared fields in the 1920s. Again, it appears as though in a strict architectural sense, features identified within the project area were predominantly related to sugar cane cultivation. Such were the findings of the following several projects as well.

Robins and Spear (1996):

Following Maly's (1996) work, Robins and Spear (1996) conducted additional Inventory Survey within the same general area as that by Hunt and McDermott (1994), or within the four

proposed road alignments (Alternates 1, 2, A, and B). The project area was very similar to that of Hunt and McDermott but represented an expanded study of the four proposed road alignments. Robins and Spear (1996:1) state that their project reflected a lateral expansion of the original road alignments investigated by Hunt and McDermott (1996), from 120-foot wide course to a width of 300-foot wide course with minor realignments of the original routes. The minor realignments included proposed expansions of 10-feet to 20-feet along the perimeter of several existing streets (Kilauea Avenue, Kinoole Street, and Komohana Street).

In brief, the Robins and Spear report (1996) details the initial identification of 30 architectural features associated with sites previously documented by Hunt and McDermott (Sites -18912, -18914, and -18919) as well as 16 other features that were combined into one new site determination (Site 20681). Robins and Spear (1996:49-52) concluded that all 46 features, representing four sites, were associated with historic sugar cane activities, this assessment based upon the manner in which all the sites were located within or adjacent to designated historic cane fields; site structures (architecture) match cane-related structures anticipated in the historic research and are comparable to other known plantation sites; site structures have architecture atypical to traditional Hawaiian structures; and sites are associated with historic-era artifacts that are specific to sugar plantation or ranching activities.

No traditional components were discovered during the Inventory Survey work. However, this did not preclude the possibility that traditional features and/or artifacts could exist in the area. This thread was investigated by the following Pu'ainako Street archaeological work. To conclude, Robins and Spear (1996:53-56) recommended Data Recovery for eight sites within the corridor and concurred with SHPD in the preservation of several other sites. The Robins and Spear (1996) report was accepted by SHPD.

Eble, Denham, and Pantaleo (1997):

The third archaeologically-focused project pertaining to the Pu'ainako Street realignment was performed by Eble *et al.* (1997) at the request of the Ho'oikaika Hawaiian Club (HHC), a local organization based in Hilo, Hawai'i. Eble *et al.* were contracted to conduct supplemental archaeological excavations at selected sites that had been previously identified by Hunt and McDermott (1994) during an earlier Inventory Survey.

The purpose of the additional work was "to aid in the interpretation of site function and chronology, and to ensure that all cultural remains in the area have been sufficiently identified" (Eble *et al.* 1997:1). As Hunt and McDermott had only excavated five units within 88 features, the sponsoring Ho'ouikaika group deemed additional excavations necessary to support or refute site age and function determinations previously offered by Hunt and McDermott. Importantly, the supplemental archaeological work performed by Eble *et al.* (1997) was not considered an official stage in the State of Hawai'i historic preservation process but rather, was simply a supplemental aid to previous studies.

Work on the project included excavating seven units (typically 1.0 m by 1.0 m) within six sites previously mapped and recorded by Hunt and McDermott in 1994. The sites included Site - 18916, -18911, -18912, -18914, -18915, and -18917. The excavation units yielded artifacts (metal fragments) and midden (charcoal).

Three samples of wood charcoal were submitted for radiocarbon testing and returned dates associated with pre-Contact (traditional) and early historic times. However, the samples were problematical in that they did not precisely date the architectural structures themselves. The charcoal samples either predated feature construction or were derived from the soil matrix and not associated with subsurface features (e.g., *'imu*, hearth, etc.). Eble *et al.* (1997:53) further state that "All intact evidence of pre-Contact occupation and/or activity in the project area has been disturbed or destroyed as a result of Post-Contact period activity." The structural features examined as part of this supplemental project were all thought to have been associated with sugar cane cultivation and related activities, thus reinforcing the interpretations offered by Hunt and McDermott (1994), Maly (1996), as well as Robins and Spear (1996). Eble *et al.* (1997:56) recommended preservation for several sites within the corridor (a boulder and modern, stone-lined path; see below).

Spear (1998):

The following archaeological work conducted in regards to the Pu'ainako Street realignment was a reconnaissance-level survey performed in 1998 within a Revised Alternative Alignment occurring between Alternate 1 and Alternate 2. While reconnaissance surveys are not recognized by the SHPD as a complete research method, the survey provides a rapid way to assess the presence/absence of sites within a parcel. No formalized reporting of reconnaissance

surveys are generally submitted to SHPD as they typically precede Inventory Survey investigations. Such a reconnaissance survey was performed by SCS personnel in October, 1998.

Occurring just to the south and parallel to Site -18921 (see Hunt and McDermott), a total of 27 surface architectural features were documented. The features consisted of rock mounds, short walls, and alignments and were interpreted as early sugar cane features common within other portions of the project corridors. In a letter to a SHPD representative (P. McCoy), Spear (1998) and McCoy agreed that the recordation of each feature, photographic examples of the features, and mapping the relationship of the features to the proposed highway corridors was needed. This edict ushered in the next phase of research, an Inventory Survey of the same area.

All twenty-seven features noted during this reconnaissance survey were associated with Site -18921, a site previously recorded by Hunt and McDermott (1994).

McGerty and Spear (1999):

As a follow-up to the Spear (1998) reconnaissance survey, McGerty and Spear (1999) conducted an Inventory Survey on a short, realigned section of the Pu'ainako road corridor occurring just to the south, and parallel to, the original Alternate 1 route along the western side of the corridor. The project area was c. 800 meters (m) in length (east-west). This produced report was formally listed as an addendum to the Inventory Survey work accomplished by Robins and Spear (1996).

McGerty and Spear (1999) re-identified the features noted by Spear (1998) and mapped and recorded a total of 17 features during the survey. The number of features per project dwindled from 27 to 17 as several of the features documented during the reconnaissance survey (n=27; Spear 1998) were either collapsed into more discrete feature designations or were assessed as not being archaeological features. All 17 features were added to the original Site 18921 inventory. As expected, fifteen of the features were associated with historic sugar cane activities. McGerty and Spear (1999:23; from Condé and Best 1973:120) note that all of Site -18921 was located on lands previously cultivated for commercial sugar cane by the Waiakea Mill Company.

Two features (Feature 1 and Feature 11) were interpreted as possibly relating to use of the area as pasture lands or as a modern piggery, as was identified by an informant. McGerty and Spear (1999:25), following the original significance assessments posed by Hunt and McDermott (1994:112), concurred that the site was significant under Criterion D and warranted additional Data Recovery work.

Dega and Benson (1999):

The next project occurring within the proposed corridors was a reconnaissance survey accomplished by Dega and Benson in August, 1999. The survey was performed within a short, expanded section of the highway (western flank) occurring just to the south, and partially overlapping, with the reconnaissance survey of Spear (1998) and the Inventory Survey work of McGerty and Spear (1999).

The new project area, designated as Alternate 10, was c. 1.0 mile long (east-west) and 300 feet wide (north-south) and occurred c. 0.40 km to the south of Kaumana Drive at its westernmost portion and some 2.5 km to the south of the same road at the project area's eastern/southeastern extent. The western edge of the expanded corridor was just to the east of Wilder Road. This project preceded an Inventory Survey-level investigation (see below) and was an addendum to the work performed by Robins and Spear (1996) and McGerty and Spear (1999).

A total of eight discrete archaeological sites were identified during the survey, all the site having been identified within the initial 0.25 mile from the western border of the project area (between center line stakes marked 71+00-82+00 within Alternate 10). The eight sites were composed of 18 features, including; 12 rock mounds, two platforms, two walls, one alignment, and one stone-lined *'auwai*, or water channel. All the mounds, platforms, walls, and the one alignment were interpreted to be associated with sugar cane cultivation and related activities, a similar interpretation to that presented previously (Hunt and McDermott 1994, Maly 1996, Robins and Spear 1996, etc.). Two mounds and both platforms were identified during a previous survey of the overlapping corridor (Spear 1998, McGerty and Spear 1999).

Of the total 18 features identified during the reconnaissance survey, only one feature was thought to be traditional (pre-Contact) in nature, a rock-lined *'auwai* or water channel. The *'auwai* did, however, run parallel to and between several rock mounds associated with sugar cane

cultivation. The *`auwai* feature was suggestive of a traditional water channel in that the width of the feature was modest (0.80 m) and precluded intensive water coursing through the feature (e.g., for sugar cane cultivation).

Second, the gravity-fed system was lined with small cobbles, not metal that is common within sugar cane water channels. Third, the channel itself was not deep (average 0.10 m below rock surface) and had not been maintained for some time. Finally, the channel ended on a small, flat alluvial plain that would have been conducive for small-scale irrigated taro cultivation.

The presence of the 18 features identified during the survey (some already recorded), including one potentially associated with traditional times, warranted Inventory Survey-level investigations. Based on the survey, it was recommended that additional, yet limited, archaeological work was required. This Inventory Survey work would involve systematic mapping and recording of the sites and limited excavations within and near the *`auwai* feature.

Dega (2000):

The latest project occurring within a portion of the corridor (Alternate 10) was an Inventory Survey-level investigation wherein a total of eight archaeological features composed of 17 components were identified, all of these features having been identified within the initial 1/4 mile from the western border of the project area, between center line marking stakes 71+00 to 82+00. All eight features have been subsumed within Site -18921. Several of these features were previously recorded during a past reconnaissance survey within Alternate 10, this due to the overlap of the original and newly realigned corridors.

The typological breakdown of newly identified features within Site -18921 included: 12 rock mounds, two alignments, one wall, one platform, and one remnant, stone-lined water channel also thought to be associated with sugar cane production in the area. All the mounds, alignments, platform, wall, and water channel documented are interpreted to be associated with sugar cane cultivation in the area, a similar interpretation to that previously presented. No features, including the water channel, were thought to be associated with traditional times.

Excavations occurred at two locations to determine the presence/absence of traditional architecture and/or cultural material associated with one feature (channel) and for the

presence/absence of human burials within an area notified by an informant as containing burials. Both investigations proved negative for traditional materials and burials.

ARCHAEOLOGICAL SIGNIFICANCE ASSESSMENTS AND RECOMMENDED MITIGATION PER SITE

Due to the proliferation (and redundancy) of archaeological work occurring within the proposed Pu`ainako Street corridors, an evaluation of site recommendations per project is warranted to crystallize the significance of sites in the various areas. Only Inventory Survey-level reports are discussed here, reconnaissance survey not being amenable to evaluate site significance and mitigated impacts. Table 3 depicts each archaeological site identified within the various reaches of the Pu`ainako Street Corridors and proposed significance assessments and recommendations by previous researchers (to date). The text describing the assessments and recommendations follows (Note: the present Inventory Survey has not been included within the table). Table 4 summarizes the archaeological sites and their significance.

Table 3: Archaeological Significance Assessments and Recommended Mitigation

Site	Significance Assessment	Recommended Mitigation
18911	Criterion D	Data Recovery
18912	Criterion D	Data Recovery
18913	No Longer Significant	No Further Work
18914	Criterion C, D	Preservation
18915	Criterion C, D	Preservation
18916	Criterion (C), D	Data Recovery (Preservation?)
18917	Criterion D	Preservation
18918	Criterion D	Data Recovery
18919	Criterion D	Data Recovery
18920	No Longer Significant	No Further Work
18921	Criterion D	Data Recovery
18922	Criterion D	No Further Work
18923	Criterion D	No Further Work
20681	Criterion D	Data Recovery
boulder, path	none	Preservation

Table 4: Archaeological Site Summary and Significance

Site No. (50-10-35-)	Alignment	No. of Features	Site Type	Function	Significance Criteria
18911	Shared Lower	11	Complex	Historic Agriculture	D
18912	Shared Lower	5	Complex	Historic Agriculture	D
18913	A	1	Mound	Historic Agriculture	NLS
18914	A	12	Complex	Historic Agriculture	C, D
18915	A	9	Complex	Historic Agriculture	C, D
18916	B	2	Complex	Historic Agriculture	D
18917	A	3	Complex	Historic Agriculture	D
18918	A	4	Complex		D
18919	B	58	Complex	Hist. Ag./ Pasture	D
18920	2	8	Complex	Hist. Ag./ Pasture	NLS
18921	1/10	13	Complex	Historic Agriculture	D
18922	Shared Lower	1	Modified Outcrop	Clearing	D
18923	Shared Lower	1	Modified Outcrop	Clearing	D
20681	B	16	Complex	Historic Agriculture	D

NLS=No Longer Significant

First, Hunt and McDermott (1994) assessed the significance for the thirteen sites they identified within Proposed Corridors 1, 2, A, and B. Of these thirteen, nine sites (Sites -18911, -18912, -18914, -18915, -18916, -18917, -18918, -18919, -18921) were listed as significant under Criterion D and recommended for Data Recovery work. Importantly, SHPD requested that two sites (-18914 and -18915) also be significant under Criterion C (as excellent site types). Sites -18913 and -18920 were assessed as no longer significant and thus, no further work was required at the sites. Sites -18922 and -18923 were assessed as significant under Criterion D but were not recommended for further work.

Second, Robins and Spear (1996) identified an additional 30 features associated with Sites -18912, -18914, and -18915). Two of the sites (Site -18914 and -18915) were previously assessed as significant under Criterion C and D while Site -18912 was assessed as significant under Criterion D only. The 30 features identified by Robins and Spear (1996) are thus incorporated into the respective sites and under the same significance assessments. For example, five additional features were identified by Robins and Spear within Site -18914 and consequently, the area recommended for preservation was expanded. Thus, Robins and Spear (1996:54) retained the previous recommendations of Hunt and McDermott (1994:109-113) as well as recommended site treatment.

One exception to this was that SHPD requested that Site -18917, located in proximity to Sites -18914 and -18915, also be preserved. Thus, three sites (Site -18914, -18915, and -18917) are all recommended for preservation and as a result, no further work will occur at the sites. Finally, the newly identified Site -20681 was recommended for Data Recovery as it was assessed as Significant under Criterion D. Based upon these evaluations, it was recommended that the Alternate B route be chosen over the Alternate A route so as not to impact the three preservation sites.

Third, Eble *et al.* (1997:56), providing supplemental testing at select sites previously identified by Hunt and McDermott (1994), retained the same recommendations as the former for Sites -18916, -18911, -18912, -18914, -18915, and -18917. They also recommended that Feature A at Site 18916 be assessed as significant under Criterion C, due to its similarity in architecture and function as Sites -18914 and -18915. However, as the latter two sites have already been preserved, this may preclude including Site -18916 under the same criteria. Finally, at the

request of HHC, a large boulder and recently constructed stone entryway occurring adjacent to and north of the project area, were to be preserved (Eble *et al.* 1997:56). Although the features were not archaeologically significant, the HHC requested the area to be preserved as a location for the teaching of things Hawaiian. The sites should not be utilized as examples of traditional architecture and are not assessed under the normal mitigation criteria. However, as the local community values the area, their request for preservation of the area was recommended for consideration.

Fourth, McGerty and Spear (1999) identified and recorded 17 features (30 components) along the western flank of the extended corridor as an addendum Inventory Survey to that performed by Robins and Spear (1996). All 17 features were subsumed under Site -18921 and share site significance and recommended mitigation. In this case, the 17 features were assessed as significant under Criterion D and were thought to warrant additional Data Recovery work. McGerty and Spear (1999:25) state that "new data from Site -18921 does not alter either the original significance assessment or recommendations" posed by Hunt and McDermott (1994:109-113).

Finally, Dega (2000) noted that eight features were identified as well as mapped and recorded within the western portion of the corridor (Alternate 10). One feature, thought to be a possible traditional rock-lined *'auwai*, was subject to limited testing. All eight features were subsumed within Site -18921. Based on the fact that adequate data have been collected for the level of investigation conducted herein, the negative findings of excavation work, and the nature of the features (representative sugar cane structures), no further archaeological work was deemed necessary within the western portion of the realigned corridor. None of the features were assigned as significant under any of the four significance assessments (Criterion A-D).

Importantly, although previous study's (see Tables 1, 2, and 3) all stated that Data Recovery operations be conducted through the various proposed corridors, when comparing the evidence from all the project's, including the latest Inventory Survey (Dega 2000), Data Recovery operations do not appear warranted. This evaluation is based upon testing and archival research accomplished by Hunt and McDermott (1994), Robins and Spear (1996), Eble *et al.* (1996), and Dega (2000), as well as historic documentary work and oral history interviews conducted by Maly (1996). More pointedly, further Data Recovery, as has been outlined in each

report, primarily consisted of additional historic documentary work and conducting oral history interviews. Yet, a large database has already been researched and interviews conducted. Additional work would likely not yield much new, significant information for the project area. Finally, in consultation with OHA, no other interviewee's were known to the office that could be interviewed about the history of the Pu`ainako area (Lynn Lee-personal communication).

ARCHAEOLOGICAL SITES IMPACTED BY THE VARIOUS CORRIDOR ROUTES

As stated above, the greatest potential impacts on archaeological sites within the various corridor routes would be near the sites that are recommended for preservation. These include Sites 18914, 18915, 18916, 18917, and a boulder and modern pathway. All five sites occur at the eastern edge of the Pu`ainako Corridor and have been assessed for preservation for multiple reasons. Foremost among the listed criterion included Criterion C and Criterion D. The boulder and modern pathway were recommended for preservation by the HHC, a local interest group. In the latest report (Dega 2000), it was recommended that no further work be required at any of the other identified sites (and their component features). This recommendation appears acceptable if an appropriate amount of oral history interviews were conducted and if no other local residents with extensive knowledge of the area were available for interviews (see below).

ORAL HISTORIC INTERVIEWS

Maly (1996) completed extensive historic documentary research of the Pu`ainako area as well as compiled the most extensive interviewing of area residents. Maly interviewed four local residents to gain a more complete assessment of the Pu`ainako area history during several times in later 1995. No other in-depth oral historic interviews have been conducted in the area. In preliminary discussions, OHA representatives (Lynn Lee) has suggested that the only additional work required for the interviewing phase was to contact the Ho`oikaika Hawaiian Club in Hilo, Hawai`i. Discussions of the latest archaeological work in the area as well as interviewing members of the group about the Pu`ainako Corridor area and project are to be accomplished (with the HHC) by SCS during this consultation phase.

CONCLUSIONS

This brief letter details previous archaeological work conducted within the Pu'ainako project area, significance assessments for identified sites and recommendations for mitigation for each of the sites, potential impacts on the identified archaeological sites, and a shorter history of oral history interviews pertaining to the project area. Based upon the large concentration of archaeological and historical work conducted in, and based upon, the project area, it is suggested that once members of the HHC have reviewed recent archaeological work in the area (Dega 2000) and accept the findings, the requirements of the Section 106 consultation have been fulfilled.

Stephen K. Yamashiro
Mayor



Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

February 9, 2000

David W. Blane, Director
Office of Planning
Hawaii State Department of Business,
Economic Development and Tourism
P. O. Box 2359
Honolulu, HI 96804

Dear Mr. Blane:

SUBJECT: Puainako Street Extension and Widening Project
South Hilo, County of Hawaii

On January 22, 1999, you wrote to our office concurring with our determination that the Puainako project was consistent with Hawaii's CZM program. This determination was based on review of the Draft EIS and subject to conditions stated in your letter.

You noted that additional CZM federal consistency review would be necessary in conjunction with the U.S. Army Corps of Engineers permit for work affecting wetlands. We have been preparing our permit application and are nearly ready for submittal. We have also modified the project by including a new Alternative Alignment for the Upper Portion of the project (see map in attached document). It was developed subsequent to the Draft EIS, in response to environmental concerns. This hybrid of existing alignments and a short section of new alignment *reduces* noise impacts and wetlands conversion and avoids a close approach to Kaumana Cave. We would note that the alternative was developed with discussion among and approval from the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency, each of which agrees that it represents the Least Environmentally Damaging Practicable Alternative in the context of Section 404 of the Clean Water Act. The new alternative is fully discussed in the Final EIS.

One of the environmental consultants for the project, Dr. Ron Terry, has discussed the remaining steps in the CZM process with Jon Nakagawa of your staff. It is our understanding that your office will undertake to coordinate the review period for the Hawaii CZM program determination in the Hawaii State OEQC Environmental Notice


David W. Blane, Director
Office of Planning
February 9, 2000
Page 2

and the review period that is part of the Section 404 Permit process. We would like to do everything possible to assist in this coordination and expedite the review.

Attached is a brief description of the new alternative alignment, including the reason it was developed, its environmental impacts relative to the other project alternative alignments, and an evaluation of its consistency with the Hawaii CZM program. To summarize this evaluation, we conclude that Alternative 10 is consistent with and will be conducted in a manner consistent to the maximum extent practicable with the Hawaii Coastal Zone Management Program.

Please call me at 961-8324 if you have any questions about the project or require further information.

Sincerely,


ROBERT K. YANABU
Chief Engineer

attmt

cc: ✓ Ron Terry
Masa Nishida, Okahara & Associates

SUPPORT DOCUMENT

PURPOSE OF DOCUMENT

This document describes and evaluates modifications to the Puainako Street Extension and Widening Project that have occurred subsequent to the CZM concurrence granted the project in January of 1999 by the Hawaii State Office of Planning (OP). It is intended to assist the OP in re-evaluating and/or affirming its concurrence that the project is consistent with the Hawaii Coastal Zone Management Program.

BACKGROUND

The Hawaii County Department of Public Works (DPW) issued a joint state-federal Draft EIS for the Puainako project in December of 1998. At the same time, a request was made to the OP to concur with DPW's determination that the Puainako project was consistent with Hawaii's CZM program. Included in the letter was a Hawaii CZM Program Assessment Form, which was discussed the impacts to coastal zone resources and planned mitigation. The Hawaii State OP formally concurred in a letter of January 22, 1999, based on its review of the Draft EIS and subject to conditions stated in the letter.

The letter also stated that additional CZM federal consistency review would be necessary in conjunction with the U.S. Army Corps of Engineers permit for work affecting wetlands. DPW is currently preparing its Section 404 permit application and will submit it to the Corps in early 2000.

MODIFICATIONS TO PROJECT SUBSEQUENT TO DRAFT EIS

The project has also been slightly modified by the inclusion of a new Alternative Alignment for the Upper Portion of the project (see attached map). It was developed subsequent to the Draft EIS, in response to environmental concerns expressed in comment letters and follow-up meetings. The new alignment has been named Alternative 10. It is a hybrid of existing alignments 1 and 2 and a short section of new alignment, which reduces noise impacts and wetlands conversion and avoids a close approach to Kaumana Cave. It was developed with discussion and approval among the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency, each of which agrees that it represents the Least Environmentally Damaging Practicable Alternative. The new alternative is fully discussed in the Final EIS, which is currently in final stages of preparation.

ASSESSMENT OF CONSISTENCY WITH HAWAII CZM PROGRAM

The following discussion lists the key CZM Resource areas and evaluates the differences, if any, of Alternative 10 with respect to the other alternatives, which have previously been determined to be consistent with the Hawaii CZM program.

Recreation. Alternative 10 has no impact on recreational resources. It is not near and does not affect any parks, trails, shoreline, streams, fishing areas, swimming areas or any other recreational resources.

Historic Resources. Alternative 10 has impacts to historic site resources that are identical

to the other alternatives under consideration, in that sites related to sugar cane plantations (clearing mounds, drainage features, etc.) will be impacted. The identity, significance, and mitigation for these impacts has been reviewed and approved by the State Historic Preservation Division.

Scenic and Open Space Resources. Alternative 10 has impacts with respect to scenic and open space resources that are identical to the other alternatives under consideration. These impacts are very minor, in that no multi-story structures, interference in coastal viewplanes, or other key impacts or resources are involved.

Coastal Ecosystems. The project is not located near the coast. Alternative 10 has impacts with regard to coastal ecosystems that are identical to the other alternatives under consideration, except that a lesser amount of wetland fill would be necessary. Alternative 1 would fill an estimated 36,366 square feet of wetlands, Alternative 2 would fill about 300,000 square feet, and Alternative 10 would fill 17,630 square feet.

Economic Uses. No economic uses are present or affected.

Coastal Hazards. The site is not located near the coast and no impact to coastal hazards would occur. With respect to potential inland flood inundation area according to flood hazard maps, Alternative 10 has impacts that are identical to the other alternatives under consideration.

Managing Development. With respect to issues related to managing development, such as required permits, environmental documentation and public involvement, Alternative 10 has impacts that are identical to the other alternatives under consideration.

HAWAII COUNTY DPW DETERMINATION

After evaluating the potential impact to coastal zone resources, the Hawaii County Department of Public Works concludes that if the project were built using Alternative 10, it would be consistent to the maximum extent practicable with the Hawaii Coastal Zone Management Program.

attachment: Puainako Alternatives Map



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
February 15, 2000

IN REPLY REFER TO
HDA-HI

George Young
Chief, Operations Branch
US Army
Corp of Engineers, Building 230
Fort Shafter, HI 96858

Attn: Lolly Silva

Dear Mr. Young:

Subject: Puainako Street Extension and Widening Project
Least Environmentally Damaging Practicable Alternative

In accordance with the Memorandum of Understanding on NEPA-Section 404 Integration (MOU), we request a written preliminary agreement that:

- 1) The final EIS NEPA preferred alignment is the least environmentally damaging practicable alternative,
- 2) The project will not significantly degrade the aquatic environment, and
- 3) The project mitigation plan and implementation schedule is adequate.

At the meetings on 1/6/2000 and 1/24/2000, which were attended by the Army Corp of Engineers, Fish and Wildlife Service, Environmental Protection Agency, Hawaii Department of Transportation, and the County of Hawaii, Department of Public Works it was explained that in response to the public comments on the Draft Environmental Impact Statement (DEIS), we decided to study an alternative alignment not identified in the DEIS (alignment 10). A wetland delineation for this project, including alignment 10, was conducted and a brief description of each delineated wetland along with the proposed function, impact, and mitigation was distributed (enclosure 1). Also distributed were sketches of each delineated wetland in relation to the road (enclosure 2).

Based on the information provided at the meeting, all parties verbally agreed to the following:

- 1) Alignment 10, our preferred alignment, is the least environmentally damaging practicable alternative alignment that meets the purpose and need of this project,
- 2) Alignment 10 will impact 0.41 acres of wetlands that have little biological or hydrological value,
- 3) Culverts and dry wells will be constructed within the County right-of-way to

provide adequate drainage throughout the wetland areas,

- 4) Although it is possible to provide on-site mitigation for the wetland impacts, the best method of mitigation is with an in-lieu fee to be used to enhance other wetlands in the area.
- 5) The in-lieu fee will be \$100,250 which is based on the cost to design, purchase the right-of-way, construct, and maintain 0.41 acres of wetland consisting of Rye grass in the Upper Puainako area. (enclosure 3).

We are still working on selecting a mitigation site, however we received a draft proposal from the Ola'a-Kilauea Partnership to protect and restore wetlands in the Mauna Loa Boy's School area of Kulani Correctional Facility to enhance the survival of native plants and animal communities and recover rare and endangered species (enclosure 4). If you have any comments, please let us know. We are working with our Western Resource Center (San Francisco Office) to see if the proposal meets our requirements.

We are trying to publish our Final EIS by March 2000, therefore, in the interest of time, we hope that you can preliminarily agree to the three items required in the MOU while we work out the details of the mitigation site.

If you require more information, or clarification on the enclosures, please feel free to call me at (808)541-2700 x 311.

Sincerely,

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
February 15, 2000

IN REPLY REFER TO
HDA-HI

Robert Smith
US Fish and Wildlife
300 Ala Moana Blvd. Rm 3122
BOX 50088
Honolulu, HI 96850

Attn: Michael Molina

Dear Mr. Smith:

Subject: Puainako Street Extension and Widening Project
Least Environmentally Damaging Practicable Alternative

In accordance with the Memorandum of Understanding on NEPA-Section 404 Integration (MOU), we request a written preliminary agreement in the project mitigation plan as a result of earlier Fish and Wildlife Coordination Act consultation.

At the meetings on 1/6/2000 and 1/24/2000, which were attended by the Army Corp of Engineers, Fish and Wildlife Service, Environmental Protection Agency, Hawaii Department of Transportation, and the County of Hawaii, Department of Public Works it was explained that in response to the public comments on the Draft Environmental Impact Statement (DEIS), we decided to study an alternative alignment not identified in the DEIS (alignment 10). A wetland delineation for this project, including alignment 10, was conducted and a brief description of each delineated wetland along with the proposed function, impact, and mitigation was distributed (enclosure 1). Also distributed were sketches of each delineated wetland in relation to the road (enclosure 2).

Based on the information provided at the meeting, all parties verbally agreed to the following:

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- 2) Alignment 10 will impact 0.41 acres of wetlands that have little biological or hydrological value,
- 3) Culverts and dry wells will be constructed within the County right-of-way to provide adequate drainage throughout the wetland areas,
- 4) Although it is possible to provide on-site mitigate for the wetland impacts, the best method of mitigation is with an in-lieu fee to be used to enhance other wetlands in the area.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
February 15, 2000

IN REPLY REFER TO
HDA-HI

Wendy Wiltse
Environmental Protection Agency
300 Ala Moana Blvd. Rm 5-152
Honolulu, HI 96850

Dear Ms. Wiltse:

Subject: Puainako Street Extension and Widening Project
Least Environmentally Damaging Practicable Alternative

In accordance with the Memorandum of Understanding on NEPA-Section 404 Integration (MOU), we request a written preliminary agreement that:

- 1) The final EIS NEPA preferred alignment is the least environmentally damaging practicable alternative,
- 2) The project will not significantly degrade the aquatic environment, and
- 3) The project mitigation plan and implementation schedule is adequate.

At the meetings on 1/6/2000 and 1/24/2000, which were attended by the Army Corp of Engineers, Fish and Wildlife Service, Environmental Protection Agency, Hawaii Department of Transportation, and the County of Hawaii, Department of Public Works it was explained that in response to the public comments on the Draft Environmental Impact Statement (DEIS), we decided to study an alternative alignment not identified in the DEIS (alignment 10). A wetland delineation for this project, including alignment 10, was conducted and a brief description of each delineated wetland along with the proposed function, impact, and mitigation was distributed (enclosure 1). Also distributed were sketches of each delineated wetland in relation to the road (enclosure 2).

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- 1) Alignment 10, our preferred alignment, is the least environmentally damaging practicable alternative alignment that meets the purpose and need of this project,
- 2) Alignment 10 will impact 0.41 acres of wetlands that have little biological or hydrological value,
- 3) Culverts and dry wells will be constructed within the County right-of-way to provide adequate drainage throughout the wetland areas,
- 4) Although it is possible to provide on-site mitigate for the wetland impacts, the best method of mitigation is with an in-lieu fee to be used to enhance other



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

BENJAMIN J. CAYETANO
GOVERNOR
SEJI F. NAYA, Ph.D.
DIRECTOR
BRADLEY J. MOSSMAN
DEPUTY DIRECTOR
DAVID W. BLANE
DIRECTOR, OFFICE OF PLANNING

OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2848
Fax: (808) 587-2824

Ref. No. P-8478

February 16, 2000

Mr. Robert K. Yanabu
Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252

Dear Mr. Yanabu:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency
Review for the New Alignment Alternative 10 for the Puainako Street
Extension and Widening Project, South Hilo, County of Hawaii

The Hawaii CZM Program has reviewed the new alignment Alternative 10 for the Puainako Street Extension and Widening Project in Hilo. This modification can be covered by our previous CZM consistency concurrence dated January 22, 1999, because the new alignment is a hybrid of existing alignments which were previously reviewed, and a section of new alignment reduces noise impacts and wetlands conversion and avoids a close approach to Kaumana Cave.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other State or County of Hawaii regulations. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

David W. Blane
Director
Office of Planning

Mr. Robert K. Yanabu
Page 2
February 16, 2000

c: U.S. Army Corps of Engineers, Regulatory Branch
U.S. Fish and Wildlife Service, Pacific Islands Ecoregion
Department of Health, Clean Water Branch
Department of Land & Natural Resources,
Planning & Technical Services Branch
Planning Department, County of Hawaii
✓ Ron Terry, Ph.D.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
February 23, 2000

IN REPLY REFER TO
HDA-HI

George Young
Chief, Operations Branch
US Army
Corp of Engineers, Building 230
Fort Shafter, HI 96858

Attn: Lolly Silva

Dear Mr. Young:

Subject: Puainako Street Extension and Widening Project
Draft Final Environmental Impact Statement (Draft FEIS) - *Due March 20, 2000*

In accordance with the Memorandum of Understanding on NEPA-Section 404 Integration (MOU), we request your review of the Draft FEIS for the subject project.

Due to HDOT deadlines, the county needs the ROD by May 31. If we can have the review comments back to us by *March 20* that would help our schedule. We are hoping that the comments are minor so that we can have responses and corrections done in a couple of weeks and submit the responses for review.

The request for an Individual 404 Permit should be submitted by our consultant next week. We are hoping that prior to publication of the FEIS on April 28, 2000, we will have our mitigation site selected and written agreement by all parties. NEPA requires a 30 day period for review prior to issuing the ROD (May 31).

It is a very tight schedule. Anything you can do to help would be greatly appreciated.

If you require more information, or clarification on the enclosures, please feel free to call me at (808)541-2700 x 311.

Sincerely,

A handwritten signature in cursive script that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures

cc: Ken Au, HWY-PA
Robert Yanabu, Hawaii County



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
February 23, 2000

IN REPLY REFER TO
HDA-HI

Robert Smith
US Fish and Wildlife
300 Ala Moana Blvd. Rm 3122
BOX 50088
Honolulu, HI 96850

Attn: Michael Molina

Dear Mr. Smith:

Subject: Puainako Street Extension and Widening Project
Draft Final Environmental Impact Statement (Draft FEIS) - *Due March 20, 2000*

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If you require more information, or clarification on the enclosures, please feel free to call me at (808)541-2700 x 311.

Sincerely,

A handwritten signature in cursive script that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures

cc: Ken Au, HWY-PA
Robert Yanabu, Hawaii County



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
February 23, 2000

IN REPLY REFER TO
HDA-HI

Wendy Wiltse
Environmental Protection Agency
300 Ala Moana Blvd. Rm 5-152
Honolulu, HI 96850

Dear Ms. Wiltse:

Subject: Puainako Street Extension and Widening Project
Draft Final Environmental Impact Statement (Draft FEIS) - *Due March 20, 2000*

In accordance with the Memorandum of Understanding on NEPA-Section 404 Integration (MOU), we request your review of the Draft FEIS for the subject project.

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It is a very tight schedule. Anything you can do to help would be greatly appreciated.

If you require more information, or clarification on the enclosures, please feel free to call me at (808)541-2700 x 311.

Sincerely,

A handwritten signature in black ink that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures

cc: Ken Au, HWY-PA
Robert Yanabu, Hawaii County



S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
March 6, 2000

IN REPLY REFER TO
HDA-HI

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

MaryAnn Naber
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, N.W.
Old Post Office Pavillion Rm 809
Washington, D.C. 20004

RE: Notification of Adverse Effect
Puainako Extension and Widening, South Hilo, Hawaii

Dear Ms. Naber:

In accordance with Section 106 of the National Historic Preservation Act, we are notifying the Council that the Federal Highway Administration (FHWA) in cooperation with the Hawaii Department of Transportation (HDOT), and the County of Hawaii Department of Public Works (DPW), will have an adverse effect, during the construction of the subject project, on 8 archaeological sites significant and of value chiefly for the information on prehistory or history they are likely to yield through archaeological, historical, and scientific methods of information recovery, including archaeological excavation.

The undertaking is a project to widen, partially realign, and extend Puainako Street in Hilo, Hawaii. Along the 2.4 km long section between Kilauea Avenue and Komohana Street, Puainako Street (Lower Portion) would be widened from two to four lanes. The 37 meter right-of-way would also accommodate dual sidewalks and bicycle lanes. Improvements to vertical grades yielding satisfactory sight distances and upgrades to intersections, including two new traffic signals, would also occur. Along the western most 1.0 km section of this portion, Puainako Street would be routed north of its current alignment. Puainako Street would be extended approximately 7.3 km between Komohana Street and the Saddle Road (State Highway 200, also designated Kaumana Drive) (Upper Portion) as a two-lane road. The eastern project terminus is at the intersection of Puainako Street and Kilauea Avenue, and the western terminus is at approximately the 10 km marker on the Saddle Road.

We have been coordinating with the SHPO on this project since 1993. On July 15, 1996 this project was approved by the SHPO with a "no adverse effect" determination with the requirement to protect the archaeological sites in Alignment A (Enclosure 1). Since that time, the alignment was adjusted and the regulations changed. It was agreed to, by all parties, that this project follow the new procedures.

In accordance with the new procedures, enclosed (Enclosure 2) is a summary of the archaeological and oral historic interview work conducted within the Puainako Street Corridor. The document describes the steps taken to identify the historic properties, a description of the historic properties, and a description of the undertaking's effects on the historic properties. Also enclosed (Enclosure 3 and 4) are the archaeological sections from the Draft Final EIS, which is currently being review for publication.

Also enclosed (Enclosure 5) is a draft Memorandum of Agreement (MOA), that is currently being reviewed by all parties. We welcome any comments you may have on the format or content of the MOA.

If you require additional information or have any questions, please feel free to contact me at (808)541-2700 x 311.

Sincerely,



Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures (5)



REPLY TO
ATTENTION OF

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

March 9, 2000

RECEIVED

MAR 2 2000

HAWAII DIVISION

Regulatory Branch

Ms. Richelle Suzuki
U.S. Department of Transportation
Federal Highway Administration
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850

Dear Ms. Suzuki:

This is in response to your letter dated February 15, 2000 regarding the Puainako Street Extension and Widening Project. The Honolulu Engineer District concurs with the findings that the final EIS recommended alternative, Alignment B and Alignment 10 is the least environmentally damaging practicable alternative and the proposed mitigation plan is appropriate to mitigate for the impacts to the wetland.

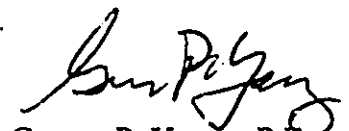
Per joint agency meetings referred to in your letter, discussions of the mitigation included the following:

1. Purchasing a right of way and creation of an in-kind .41 acres wetland.
2. Establishment of a partnership with Ola'a-Kilauea Partnership Wetland Restoration Project to protect and restore wetlands within the general vicinity.

The Corps agrees in concept to either of the mitigation plans proposed and my staff will be meeting with your agency to discuss proposal #2.

In addition, a review of the draft FEIS has been completed by my staff and there are no further comments. Should you have additional questions or need further information, you may contact Ms. Lolly Silva at 438-7023 or Mr. Farley Watanabe at 438-7701.

Sincerely,


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



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Blvd, Rm 3-122
Box 50088
Honolulu, HI 96850

RECEIVED

HAWAII DIVISION

MAR 10 2000

In reply refer to: MSR

Richelle Suzuki
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Rm 3-306
Honolulu, HI 96850

Re: Puainako Street Extension and Widening Project Draft Final Environmental Impact Statement,
South Hilo, Hawaii

Dear Ms. Suzuki:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Final Environmental Impact Statement (Draft FEIS) for the Puainako Street Extension and Widening Project, South Hilo, Hawaii. The project sponsors are the Federal Highway Administration, the State of Hawaii Department of Transportation, and the County of Hawaii Department of Public Works. These comments have been prepared in accordance with provisions of the National Environmental Policy Act of 1969, [42 U.S.C. 4321 *et seq.*; 83 Stat. 852] as amended, the Watershed Protection and Flood Prevention Act of 1954 [16 U.S.C. 1001 *et seq.*; 33 U.S.C 701b; 68 Stat. 666], as amended, the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], as amended (ESA), and other authorities mandating Department of Interior concern for environmental values. Based on these authorities, the Service offers the following comments for your consideration.

The proposed project involves the widening, partial realignment, and extension of Puainako Street in Hilo. The lower portion of Puainako Street would be widened from two to four lanes along the 2.4 kilometer (1.5 mile) section between Kilauea Avenue and Komohana Street. Along the western-most section of this portion, Puainako Street would be routed north of its current alignment and be extended approximately 7.3 km (4.5 mi.) between Komohana Street and the Saddle Road. The project's purposes are: (1) to improve arterial traffic flow of the State Highway system by providing a direct link between the existing Puainako Street (Highway 2000) and Saddle Road (Highway 200) and (2) to alleviate congested and unsafe traffic conditions on the existing Kaumana Drive and Puainako Street.

The Service believes the Draft FEIS adequately describes the proposed action and identifies reasonable project alternatives. We believe the preferred action for the proposed project is the Least Environmentally Damaging Practicable Alternative under consideration in the Draft FEIS. Furthermore, the Service supports the implementation of several key mitigation measures described in the Draft FEIS including:

- 1) A contingency plan to protect lava tube habitat during all phases of the project.
- 2) Funding in the amount of \$110,250 to the National Park Service for a wetlands enhancement project to mitigate for the loss of wetland habitat, which will occur as a result of placement of fill during the project. The funding will be applied to the efforts of the Olaa-Kilauea Partnership Wetland Restoration Project for three specific components including: fencing and feral animal


control; propagation and out-planting; and alien plant control. We believe this mitigation plan, which includes follow-up monitoring, embodies the spirit of the law for wetlands protection and enhancement. The Service is available to review the specific plans for monitoring and management of these mitigation activities when they become available.

3) Best Management Practices to be followed during all stages of the project to help prevent and minimize environmental degradation due to erosion, soil and water contamination, and other project-related impacts.

Based upon information provided in your letter and in the Draft FEIS, information contained in our files, including maps prepared by the Hawaii Heritage Program, and the Service's National Wetlands Inventory Program and our own knowledge of Hawaiian cave ecosystems and wetlands, we concur with your determination that the proposed project is not likely to adversely affect endangered or threatened species in the Hawaiian Islands. Based on this determination, we believe the requirements of section 7 of the ESA have been satisfied. However, obligations under section 7 of the ESA must be reconsidered if (1) new information reveals impacts of this identified action that may affect a listed species or critical habitat in a manner that was not previously considered, (2) this action is subsequently modified in a manner not previously considered in this assessment, or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

The Service appreciates your concern for environmental values and the opportunity to comment on the proposed project. If you have any questions regarding these comments, please contact Fish and Wildlife Biologist Mike Richardson at (808) 541-3441 or by facsimile transmission at (808) 541-3470.

Sincerely,


Paul Henson,
Field Supervisor
Ecological Services

cc: USEPA-Region IX, Honolulu
DAR, Hilo
DAR, Honolulu
CZMP, Hawaii
CWB, Hawaii
CWRM, Hawaii

Stephen K. Yamashiro
Mayor



Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

March 14, 2000

DAVID W BLANE DIRECTOR
OFFICE OF PLANNING
HAWAII STATE DEPARTMENT OF BUSINESS
ECONOMIC DEVELOPMENT AND TOURISM
P O BOX 2359
HONOLULU HAWAII 96804

Attn: Jon Nakagawa

SUBJECT: PUAINAKO STREET EXTENSION AND WIDENING PROJECT
South Hilo, County of Hawaii

Thank you for your letter of February 16, 2000, stating that the modification to the project can be covered by the previous CZM consistency dated January 22, 1999.

You noted that additional CZM federal consistency review would be necessary in conjunction with the U.S. Army Corps of Engineers permit for work affecting wetlands. We have been preparing our permit application and have submitted to the Corps. Attached is a copy of the submittal. Instead of submitting the entire PFEIS, we have excerpted those sections pertaining to wetlands, including Section 3.2.2 (Existing Wetlands Environment), Section 4.2.2 (Impacts to Wetlands and Proposed Mitigation Measures), and Appendix N, which contains a detailed description of the major wetlands mitigation measure. Although the application and support document may reference other sections of the EIS, we would note that discussion of such areas is essentially the same as the Draft EIS. When the EIS is approved for release by the Federal Highway Administration, we will send you a full copy, including all appendices.

As we stated in our previous letter, it is our understanding that your office will undertake to coordinate the review period for the Hawaii CZM program determination in the Hawaii State OEQC Environmental Notice and the review period that is part of the Section 404 Permit process

Ltr. to Blane
March 14, 2000
Page 2 of 2

(if one is determined necessary under the particular permit that is deemed appropriate by the Corps). We would like to do everything possible to assist in this coordination and expedite the review.

Please call me at 961-8321 if you have any questions about the project or require further information. You may also wish to contact Bruce Meyers of Okahara & Associates at 961-5527, the design engineers for the project, or Dr. Ron Terry, at 982-5831, the chief scientist for the EIS.



ROBERT K. YANABU, P.E.
Chief Engineer

RT/cky

attachment

copy: ✓ Ron Terry
Masa Nishida, Okahara & Associates, Inc.



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
March 14, 2000

Don Hibbard, Administrator
State Historic Preservation Division
Kakuhihewa Building Rm 555
601 Kamokila Blvd.
Kapolei, HI 96707

Attn: Pat McCoy:

Subject: Puainako Street Extension and Widening, Section 106 Requirements

Dear Dr. Hibbard

This letter outlines work performed to satisfy Section 106 regulations pertaining to the Puainako Street Extension and Widening Project, Hilo, Island of Hawai'i and requests State Historic Preservation Office (SHPO) concurrence on the major findings of the Section 106 process.

Background:

The Puainako project began in 1992, when a State of Hawai'i Environmental Impact Statement was initiated by the Hawai'i County Department of Public Works (DPW). Subsequent to the acceptance of this EIS by the Governor of the State of Hawai'i in December 1993, the County of Hawai'i, in consultation with the Hawaii Department of Transportation (HDOT) and the Federal Highway Administration (FHWA), determined that federal funding might be appropriate for this project. At the same time, the project alignments were redesigned in various sections. Accordingly, in 1995, an EIS consistent with both the federal and state environmental laws and regulations began. The lead agencies since that time have been the Federal Highways Administration (FHWA), Hawai'i Department of Transportation (HDOT), and DPW.

During the course of this subsequent EIS process, two additional redesigns occurred. One was a slight adjustment in two places to reduce the number and severity of floodplain crossings. The second was the addition of Alignment 10, which was a hybrid of Alignments 1 and 2 with a short, new connecting section. Alignment 10 was developed after the Draft EIS in response to concerns about noise, wetlands fill, and a near approach to Kaumana Cave.

The following is a brief summary of the major studies undertaken for the project:

Hunt and McDermott (1994) was the first archaeological inventory study and was done as part of the State EIS. It recorded 13 sites in Alignments 1, 2, A, and B, and entailed historical background research, interviews with informants, pedestrian survey, and limited subsurface

testing. The report concluded that the sites were related to sugar cane cultivation in the late 19th and early 20th centuries and recommended preservation of two sites (18914 and 18915) as well as limited data recovery. The report was accepted by your office with requests for revisions on July 20, 1994.

Robins and Spear (1996) App. E2 of Draft EIS: This archaeological inventory survey was commissioned for the federal EIS, with an expanded and slightly realigned corridor. The scope was expanded to conform with Section 106 of NHPA. It added features to the 13 sites of Hunt and McDermott and classified other features into one additional site, yielding 14 total sites. It confirmed findings of the sugar cane plantation origin of all features. The report was accepted by your office on July 15, 1996. Subsequent to acceptance of this report, Site 18917 was added to the list of sites recommended for preservation, bringing the total for preservation to three sites.

Maly (1996). Commissioned by the Office of Hawaiian Affairs, this study involved extensive archival research and oral history interviews focused on Hawaiian settlement and sugar cane plantation development. Maly interviewed a number of native Hawaiians concerning the project area. A key interview with Kenneth Bell provided a separate line of evidence securely identifying archaeological features as related to sugar cane. This study was not sponsored by FHWA and was never submitted by SHPD, but its information was incorporated in various reports that have been subject to SHPD review.

McGerty and Spear (1999). This archaeological inventory study covered 800 meters of a realigned section of Alignment 1. This report was accepted with revisions by SHPD and is currently (March 2000) in second Draft.

Dega (2000). This was an archaeological inventory survey of Alignment 10, which contained 8 features with 17 components, all considered part of Site 18921, which is shared with Alignment 1. Excavations were undertaken at two places to determine presence or absence of traditional architecture and/or cultural material or human burials were present (none were present). This report also includes a summary of consultation with Native Hawaiians, as well as determination on Traditional Cultural Places. The first draft of this report is under review by SHPD.

The attached map illustrates the sites and the attached table provides a summary of their function and significance, based on the conclusion of these reports and consultation with your office.

We would emphasize that all the sites have temporally and culturally been identified with historic sugar cane cultivation in the area. Sites 18914, 18915 and 18917 (all located exclusively in Alignment A) are the only sites determined to be important for preservation in place. The presence of these sites was the deciding factor that has led FHWA to recommend Alignment B as a component of the Recommended Alternative for the project. The recommendation of both the consultants and your office for data recovery for some of the other sites has since been modified, since subsequent archaeological and documentary research has obviated this (see attached report).

Traditional Cultural Properties and Consultation with Native Hawaiian Groups

Consultation with Native Hawaiian groups and individuals has been an integral part of the project since the first archaeological reports. Furthermore, the Office of Hawaiian Affairs (OHA) funded a detailed oral history study of the Puainako project area by Kepa Maly. Although the FHWA did not participate in this report, our consultants have used its data and conclusions in interpreting archaeological sites. We also would maintain that it represents a valid component of the overall effort to consult with Native Hawaiian Groups, along with the considerable previous and subsequent consultation. We believe that our archaeological reports demonstrate that during this process, Native Hawaiian organizations (e.g., Ho'ouikaika) have been allowed a reasonable opportunity to identify their concerns about historic properties, advise on the identification and evaluation of historic properties, articulate their views on the undertaking's effects on such properties, and participate in the resolution of adverse effects. In an effort to formalize consultation efforts that have taken place over eight years, we recently requested our Section 106 consultants (Scientific Consultant Services, Inc.) to make a formal request of OHA to validate these efforts as satisfactory to their concerns. We expect to receive a formal concurrence from OHA shortly.

Midway through the Section 106 process we became aware that Section 106 rules had been expanded to identify and assess impacts to Traditional Cultural Properties (TCP). We asked our archaeological consultants to assess this issue, and their conclusions, with which we concur, are that there are no TCPs in the project area, nor would any be adversely affected by the project. This is based on the fact that a) during all consultations, archaeological field work, and interviews, no groups or individuals have made specific claims or offered specific knowledge regarding the presence of such resources; b) none of the archaeological sites identified within the project area have been identified or suggested as traditional cultural places; and c) historic research and oral historic interviews and consultations have failed to reveal the presence of any traditional sites occurring within the project area.

Findings and Request for Concurrence:

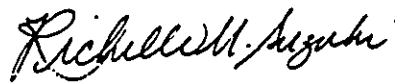
We hereby request concurrence from the State Historic Preservation Division with the following findings:

- All historic sites have been identified and their significance properly assessed;
- These sites consist of 14 archaeological sites identified in the table below. Three are determined to be significant for preservation in place;
- No Traditional Cultural Properties are present in the area of potential effect for the project;
- For those archaeological sites that were determined at some point by the consulting archaeologists and/or your office to require data recovery only, the data recovery has been sufficient, and no further work is needed (please see attached letter from consulting archaeologist);
- No historic sites significant for preservation in place will be adversely affected by the project, given the specified mitigation;
- Mitigation will consist of development and implementation of a preservation plan that will prevent any impacts to offsite archaeological sites (i.e., sites in Alignment A of the project) during construction; and

- Consultation with Native Hawaiian organizations has been undertaken and is deemed by your office to be adequate. We have consulted since the commencement of the project with the Office of Hawaiian Affairs (OHA) and the individuals and organizations that OHA and others determined to be important to consult, including the Ho'oi kai' ka Hawaiian Awareness Club, Ms. Paula De Morales, Mr. Kenneth Bell, and numerous other individuals discussed in the reports named above.

In making this request, FHWA would like to acknowledge the cooperation of your office during the long duration of this project. We realize that there have been many changes of personnel, design, and regulations during this time, and we appreciate your patience.

Sincerely Yours,



Richelle M. Suzuki, P.E.
Transportation Engineer

Enclosures

**Puainako Street Extension and Widening Project
Archaeological Site Summary and Significance**

Site No. (50-10-35)	Alignment	No. of Features	Site Type	Interpreted Function	Significance Eligibility Criteria	Mitigation
18911	Shared Lower	11	Complex	Historic agriculture	D	NLS
18912	Shared Lower	5	Complex	Historic agriculture	D	NLS
18913	A	1	Mound	Historic agriculture	D	NLS
18914	A	12	Complex	Historic agriculture	C, D	Preservation
18915	A	9	Complex	Historic agriculture	C, D	Preservation
18916	B	2	Complex	Historic agriculture	D	NLS
18917	A	3	Complex	Historic agriculture	C, D	Preservation
18918	A	4	Complex	Historic agriculture/pasture	D	NLS
18919	B	58	Complex	Historic agriculture/pasture	D	NLS
18920	2	8	Complex	Historic agriculture	D	NLS
18921	1/10	5	Complex	Historic agriculture	D	NLS
18922	Shared Lower	1	Modified outcrop	Clearing	D	NLS
18923	Shared Lower	1	Modified outcrop	Clearing	D	NLS
20681	B	16	complex	Historic agriculture	D	NLS

Notes: National Register of Historic Places/Hawaii Register of Historic Places eligibility criteria. From 36 CFR 60

A Site reflects major trends or events in the history of the state or nation

B Site is associated with the lives of persons significant in the past

C Site is an excellent example of a site type

D Site is likely to yield information important to prehistory and history

E Site has cultural or religious significance

NLS: No longer significant: For all impacted sites, sufficient data recovery has been accomplished.

March 10, 2000

Richelle Suzuki, Transportation Engineer
Hawaii Division
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850
Fax: 541-2704

The purpose of this letter is to present the rationale for our recommendation that no further Data Recovery is required for the archaeological sites that have been inventoried and assessed for the Puainako Street Widening project area.

Background: A great deal of archaeological and archival work (including oral history interviews) has been performed in the Puainako project area. In brief, archaeological and archival work has been accomplished by Hunt and McDermott (1994); oral historic interviews were conducted by Maly (1996); archival and archaeological work was further accomplished by Robins and Spear (1996); Eblé *et al.* (1997) conducted archaeological investigations and consulted with the native Ho'okaika Hawaiian Club; Spear (1998), McGerty and Spear (1999), and Dega and Benson (1999) all performed additional archaeological work within the project area; finally, Dega (2000) conducted further archaeological and interview work. As of July 15, 1996, both the Hunt and McDermott (1994) report and the Robins and Spear (1996) study had been accepted by SHPD. The Maly (1996) and Eblé *et al.* (1997) reports were funded by OHA and were not subject to evaluation. McGerty and Spear (1999) received comments from SHPD (dated April 27, 1999) and a final draft is awaiting approval. Finally, Dega (2000) submitted an Inventory Survey draft report to SHPD (dated January 25, 2000) that is awaiting review at present.

Data Recovery Recommendations. Prior to the work of Dega (2000), all previously submitted reports recommended that Data Recovery work, in the form of excavation and oral interviews, be conducted for the project area. This assessment was altered by Dega (2000) and within the Section 106 process for several reasons.

- 1) Three archaeological sites (Site 50-10-35-18914, -18915, and -18917) occurring outside the project area have been recommended for preservation. The three archaeological sites occur within Alternate Alignment A. Alternate A will not be subject to construction (see Dega and Spear 2000 Preservation Plan). As all the sites identified within the project area have been accurately dated to historic sugar cane use of the area, these preserved sites will remain as intact representatives of the project area sites. Site type, function, and temporal affiliation has been proven the same for each site and component feature assessed during the numerous archaeological projects within the Puainako project area. There is little variation in the type or distribution of historic archaeological sites within the project area. If Data Recovery is required in the future, these three sites, composed of a total 24 features, will remain available for further investigation. Incidentally, the two sites located in Alignment A that were not recommended for preservation - Sites 18913

and 18918 - would also be available for future Data Recovery, as will Site 18920 in Alignment 2 and a large portion of Site 18921 in Alignment 1.

- 2) The sum of the archaeological work involving identification, recording, testing, documentary research and interviews concerning these sugar-cane related mounds, platforms, ramps, wall segments, modified outcrops, and terraces has produced a substantial body of information. The project area has been thoroughly investigated and the results have been accepted by SHPD and OHA on numerous occasions. The most recent testing of the project area again failed to reveal anything other than historic land use of the area (sugar cane cultivation), an interpretation accepted by OHA. It is our assessment that further archaeological work and/or interview work would not yield any important information concerning pre-historic land use, and would produce redundant results in terms of historic era land use.
- 3) A number of other archaeological investigations for projects on or near UH-Hilo have also identified, recorded and tested very similar sugar-cane related features.

If you have any further questions, please do not hesitate to call myself or Dr. Robert L. Spear at (808) 597-1182. Thank you.

Sincerely,

Michael F. Dega
Senior Archaeologist
Scientific Consultant Services, Inc.

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Received Mar-23-00 08:04am
03/23/00 08:00

from 808 961 5529 + GEO
808 961 5529 OKAHARA & ASSOC. --- RON TERRY

page 2
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DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96828-3440

COPY

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REPLY TO
ATTENTION OF

March 15, 2000

Regulatory Branch

Mr. Bruce Meyers
Okahara & Associates, Inc.
200 Kohola Street
Hilo, Hawaii 96720

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MAR 21 2000

OKAHARA & ASSOC., INC.
HILO OFFICE

Dear Mr. Meyers:

This is to acknowledge receipt of your Department of the Army (DA) permit application, submitted on behalf of the County of Hawaii, Department of Public Works for the Puainako Street Extension and Widening Project located in Hilo, Hawaii.

It has been determined that the activity complies with the terms and conditions of the Nationwide Permit (NWP) and the net adverse environmental effects of the proposed work are minimal. Therefore, your application has been deemed complete and will be processed under NWP #14, Road Crossing. We will be coordinating with other resources agencies for comments. In addition, the following authorizations will be required:

1. Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch;
2. Coastal Zone Federal Consistency Management Determination from the State of Hawaii Department of Business, Economic Development and Tourism, Office of Planning.

Furthermore, since the project impacts 0.41 acres of wetlands, a mitigation proposal to reduce the adverse effects is required. My staff has informed me that they are currently working with Ms. Richelle Suzuki of Federal Highways Administration to complete the proposal. Please note that prior to commencement of work, the mitigation proposal must be approved by the District Engineer.

File Number 980000226 has been assigned to this project. Please refer to this file number in future correspondence or

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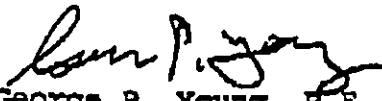
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03/23/00 08:00 808 961 5529 OKAHARA & ASSOC. →→→ RON TERRY

page 3
003

-2-

inquiries. Should you need further information, please call
Ms. Lolly Silva at (808)438-7023 or Mr. Farley Watanabe at
(808)438-7701.

Sincerely,


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

Copies Furnished:
State Department of Health, Clean Water Branch, Honolulu
Hawaii 96801
Office of Planning, Department of Business, Economic
Development and Tourism, Honolulu, Hawaii 96813
State Historic Preservation Office, Honolulu, Hawaii
U.S. Fish and Wildlife Service, Honolulu, Hawaii 96850
National Marine Fisheries Service, Honolulu, Hawaii
Department of Public Works, Engineering Division, County of
Hawaii, 25 Aupuni Street, Hilo, Hawaii 96720
Environmental Protection Agency, Honolulu Hawaii

**Advisory
Council On
Historic
Preservation**

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HAWAII DIVISION

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

MAR 23 2000

Mr. Richelle M. Suzuki, PE
Transportation Engineer
Federal Highway Administration
300 Ala Moana Blvd., Room 3-306
Box 50206
Honolulu, HI 96850

REF: Proposed Extension and Widening of Puainko Street
South Hilo, Hawaii

Dear Mr. Suzuki:

On March 15, 2000, we received your notification and supporting documentation regarding the adverse effects of the referenced project on properties listed on and eligible for listing on the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800) does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, should circumstances change and you determine that our participation is required, please notify us.

Pursuant to 36 CFR 800.6(b)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Hawaii State Historic Preservation Officer (SHPO), and related documentation at the conclusion of the consultation process. The filing of this MOA with the Council is required in order for the Federal Highway Administration to complete its compliance responsibilities under Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require the further assistance of the Council, please contact MaryAnn Naber at 202-606-8505 or via eMail at mnaber@achp.gov.

Sincerely,


J. Klima

Director
Office of Planning and Review

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

Pacific Islands Contact Office
300 Ala Moana Blvd. Box 50003
Honolulu, HI 96850

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HAWAII DIVISION

March 24, 2000

Richelle Suzuki, PE
US Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850

Re: Puainako Street Extension and Widening Project, South Hilo, Hawaii.
Least Environmentally Damaging Alternative

Dear Ms. Suzuki:

Thank you for the opportunity to review the Draft Final Environmental Impact Statement for Puainako Street Extension and Widening Project. The proposed project involves widening, partial realignment, and extension of Puainako Street in Hilo, a connector to Saddle Road. The comments presented here are provided in accordance with the Memorandum of Understanding regarding the National Environmental Policy Act and Clean Water Act Section 404 Integration Process for Surface Transportation Projects in the State of Hawaii.

The FEIS adequately describes the proposed action and identifies reasonable project alternatives. EPA agrees that the combination of Alignments B and 10 is the preferred alignment and the least environmentally damaging alternative for this project. Federal Highways is to be commended for developing this alternative which meets the spirit of the MOU in "placing high priority on the avoidance of adverse impacts to waters of the U.S." This preferred alternative will impact 0.4 acres of wetland, which is less area of impact than the build alternatives discussed in the DEIS. The biological and hydrological values of these wetlands are largely unknown.

EPA agrees that the best method of mitigation for 0.4 acres of wetlands loss along Alignment 10 is an in-lieu fee, although we do not endorse fees as a precedent for mitigation of wetlands impacts due to future highway projects. The in-lieu fee of \$110,250 for impacts of Puainako Street extension will be used to enhance other wetlands. We support the proposal from the Ola'a-Kilauea Partnership Wetlands Restoration Project which involves fencing and feral animal control, propagation and out-planting of native plants, and alien plant control. However, we strongly recommend that this project be modified to insure long term maintenance of the fencing and control efforts for feral animals and alien plants. This could perhaps be accomplished

through a voluntary agreement, at no additional cost.

Again, thank you for your excellent interagency coordination efforts, consistent with the NEPA-404 MOU. If you have any further questions, please contact me at (808) 541-2752.

Sincerely,

A handwritten signature in cursive script that reads "Wendy Wiltse".

Wendy Wiltse, Ph.D.
Environmental Scientist

cc: COE, Honolulu District
FWS, Honolulu



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
April 6, 2000

Don Hibbard, Administrator
State Historic Preservation Division
Kakuhikewa Building Rm 555
601 Kamokila Blvd.
Kapolei, HI 96707

Attn: Pat McCoy

Subject: Puainako Street Extension and Widening, Section 106 Requirements

Dear Dr. Hibbard:

We request your concurrence that the subject project will affect historic properties; however we will not adversely affect on historic properties. We believe that the proposed conditions will protect the historic properties from being adversely affected.

The procedures in 36 CFR §800.5(b) states the following:

The Agency Official, in consultation with the SHPO/THPO, may propose a finding of no adverse effect when the undertaking's effect do not meet the criteria of §800.5(a) or the undertaking is modified or conditions are imposed, such as the subsequent review of plans for rehabilitation by the SHPO/THPO to ensure consistency with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines, to avoid adverse effects.

We are proposing that no further data recovery is necessary and that temporary fencing be erected along the north edge of Alignment B between Komohana and Kawili Streets to ensure that the preserve area, on property not owned by the County of Hawaii or Hawaii Department of Transportation, and sites within Alignment A and beyond are not adversely affected.

We would like to acknowledge the cooperation and timely response from you and your staff. If you have any questions, please call me at (808)541-2700 ext 311.

Sincerely Yours,

A handwritten signature in cursive script that reads 'Richelle M. Suzuki'.

Richelle M. Suzuki, P.E.
Transportation Engineer

cc: Robert Yanabu, Hawaii County
Ron Terry, Consultant

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Received Apr-06-00 11:00am

from 6928020 + GEO

page 2

BENJAMIN J. CAYetano
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhikawa Bldg., Room 588
601 Kamehameha Boulevard
Honolulu, Hawaii 96807

April 6, 2000

Ms. Richelle Suzuki, Transportation Engineer
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, Hawaii 96850

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

DEPUTY
JANET E. KAWELA

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

LOG NO: 25169
DOC NO: 0004PM01

Dear Ms. Suzuki:

**SUBJECT: Section 106 Compliance Requirements
Proposed Puainako Street Extension and Widening Project
Waialakea and Kukuau 1 and 2, South Hilo, Hawaii Island**

Thank you for your letter of March 14, 2000, requesting our concurrence with the major findings of the Section 106 process, and letter of April 6, 2000, requesting our concurrence that the proposed Puainako Street Extension and Widening Project will have "no adverse effect" on historic properties. Included with your earlier letter was a letter from Scientific Consultant Services, Inc. concerning the matter of whether or not data recovery was warranted at any of the sites identified in the proposed project area (Degas to Suzuki March 10, 2000).

Your letter consists of two parts: (1) a background section that briefly summarizes the history of archaeological surveys, ethnographic studies (oral and archival research), and consultation with Native Hawaiian groups on traditional cultural properties and other cultural concerns, and (2) a list of the major findings of all these studies. We agree with the findings as stated below:

(1) We have not yet completed our review of the latest archaeological survey report (Degas 2000) on Alignment 10, but we believe that this survey and all of the previous surveys were adequate, finding a total of 14 sites. No new sites were found in the survey of Alignment 10, which did add 8 new features to Site 18921, however. All 14 sites are related to historic sugar cane cultivation. None of the 14 sites are traditional cultural properties.

(2) We agree with the significance evaluations and recommended mitigation treatments for all 14 sites. All 14 sites have been evaluated as significant under Criterion D. Three of the sites (18914, 18915, and 18917) have also been evaluated as significant under Criterion C. These sites are located outside of the final road corridor, in Alignment A. No further work is required at the other 11 sites, which in our view have been adequately documented and are thus "no longer

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Ms. Richelle Suzuld, Transportation Engineer
Page Two

significant." We thus agree with the conclusions in the March 10, 2000, letter from your consultant, Scientific Consultant Services, Inc. None of the 14 sites will undergo mitigation, but the three sites located outside of the project area, in Alignment A, will be protected by temporary fencing during road construction.

(3) We believe that a good faith effort was made to consult with Native Hawaiian groups and individuals throughout the project. It is our understanding, however, that you have not yet received a letter from the Office of Hawaiian Affairs (OHA) confirming that the consultation process was adequate and that there are no cultural concerns with the proposed road extension.

In conclusion, we concur with all of the findings of the Section 106 process, including the finding that the proposed road extension and widening project will have "no adverse effect" on significant historic properties.

If you should have any questions about our review comments please contact our Hawaii Island archaeologist, Patrick McCoy (692-8029).

Aloha,



TIMOTHY E. JOHNS
State Historic Preservation Officer

PM:jk

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX B1

Revised Vegetation Report

VEGETATION REPORT
For
PUAINAKO STREET EXTENSION
And WIDENING PROJECT

Hilo, Hawaii

February 11, 2000

Prepared for:

**Department of Public Works
County of Hawaii
Department of Transportation
State of Hawaii
Federal Highways Administration**

Prepared by:

Grant Gerrish, Ph.D.

And

**Okahara & Associates, Inc.
200 Kohola St.
Hilo, Hawaii 96720**

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EXECUTIVE SUMMARY

A botanical study was conducted of proposed alternative alignments for the extension and widening of Puainako St. Special attention was given to the search for rare or endangered species, and for ecosystems that might be unique to the project area. A total of 156 vascular plant species were identified within the proposed alignments. Of these, 21 are endemic, 21 are indigenous, 109 are alien, and 5 were introduced to Hawaii by Polynesian settlers. No plants listed or proposed for listing as threatened or endangered were found within or near the alignments. A review of the known distributions of listed or proposed endangered or threatened plant species revealed that none have ever been previously found within the project area. Based on the field study and this review, it is concluded that it is very improbable that any plant now listed or proposed for listing as endangered or threatened occurs within the project area.

Originally, the natural vegetation of most of the project area was 'Ohi'a/Uluhe (*Metrosideros/Dicranopteris*) Fern Forest. This 'Ohi'a/Uluhe Fern Forest community is associated with young lava flows and shallow soils on the lower windward slope of Mauna Loa. While the vegetation of the project area still strongly reflects the original vegetation, past human land-use has significantly modified the vegetation in many areas. Intensive farming, including sugar cane production, has been carried out in the parts of the project area that have deep soil derived from volcanic ash. These soils are classified as Hydrandepts and are well-drained to moderately well-drained. The remaining areas have shallow soil over lava and have been less disturbed by human activity. The shallow soil habitats include the Lava Lands of the 1881 lava flow, and somewhat older sites with shallow muck soils, classified as Tropoflists. Both of these shallow soil habitats often support native vegetation similar to the original vegetation.

None of the native plant communities found are outstanding in terms of their diversity of plant species nor are they unique to the project area. Proposed construction would not threaten the existence of these community types. However, these native plant communities, especially the 'Ohi'a/Uluhe Open Forest found on the 1881 lava flow are characteristic natural features of the Hilo area. From the perspective of landscape planning it is suggested that it is desirable to maintain these native vegetation elements in the area. The possibility that Alignment Two might hasten development and 'sprawl' within areas now open space is also discussed.

Recommendation: No communities were found within the project area that deserve high priority for protection on the basis of their uniqueness. On the other hand, all three alignments in the Upper Portion have areas with viable native plant communities. Of the three proposed alignments, Alignment One would displace the greatest extent of native vegetation (3,380 m/1100 ft), all of it on the 1881 lava flow. Alignments Two and Ten would disturb somewhat lesser extents, 2,580 m/8,400 ft and 2,490 m/8,100 ft, respectively, with 770 m/2,500 ft and 250 m/800 ft, respectively, on the 1881 lava flow. Therefore, selecting Alignment Ten would have the least adverse direct impact on native vegetation.

Animal Habitat No known vegetation resources important to native vertebrate animal species are localized in or near the proposed alignments. The invertebrate fauna of the project area and entire Hilo region is poorly known. For the most part, the value of the vegetation of the project area as habitat for native invertebrates is unknown, with the exception of Kaumana Cave, which passes underground near Alignment One in a couple places. Sixteen native invertebrate species are reported from the cave in the vicinity of the project area. The invertebrate community within the cave is dependent on roots from overhead vegetation.

Recommendation: Maintain native vegetation over Kaumana Cave. Prudence would dictate leaving as much distance as possible between the cave and the right-of-way. Alignments Two and Ten avoid the vicinity of Kaumana Cave entirely.

INTRODUCTION

This document is the final report of botanical studies in support of a Final Environmental Impact Statement for proposed right-of-way alignments for the extension and widening of Puainako St. from Kaumana Drive to Kawili St. The purpose of this study is to describe and evaluate the vegetation, identify ecologically sensitive or valuable plants and communities, identify potential adverse impacts of the proposed action, and recommend measures to mitigate potential adverse impacts. Wetland studies and delineations were conducted in conjunction with the botanical studies and are described in a technical report entitled, "Final Wetland Study and Delineations for the Puainako Street Extension and Widening Project," dated February 2000.

METHODS AND PROJECT AREA

Description and Locations of Proposed Alternative Alignments

Three alternative alignments are under consideration in the Upper Portion (from Kaumana Drive to a point 1000 meters (3250 ft.) west of Komohana St.). These three alternatives are designated Alignment One, Alignment Two and Alignment Ten. Together, these three alternatives are made up of six sections. Each of the three alternatives utilizes a unique combination of the six sections, sharing some sections with one or both of the other alternatives. Sections are identified by the two letters indicating their endpoints (Figure 1).

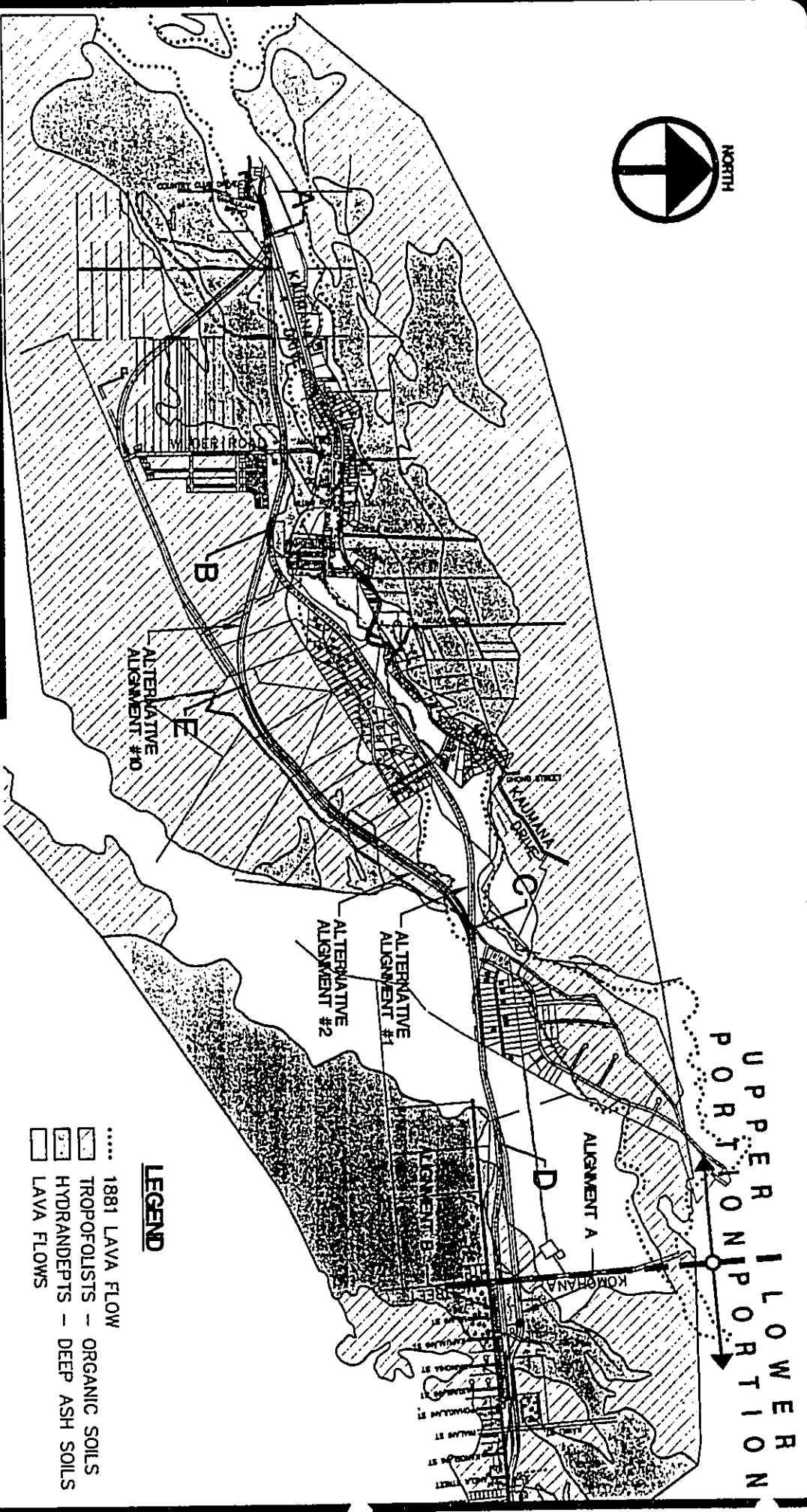
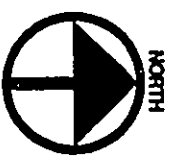
Two alternative alignments are under consideration in the Lower Portion (from the junction with the Upper Portion to Kawili St.), designated Alignment A and Alignment B. Each of these is a unique alignment with no overlapping sections (Figure 1).

The alternative alignments presented in this report were developed during an extended period of environmental review and project planning. This current set of alignments reflects modifications made to avoid or minimize adverse social, biological and wetland impacts. The following is a summary of botanical field studies made during the course of this environmental review.

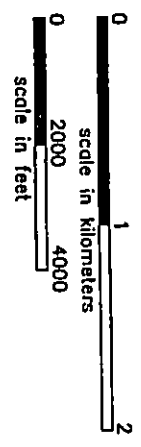
The first field study was conducted in May 1992 in support of a 1993 Environmental Impact Statement, in accordance with Chapter 343 Hawaii Revised Statutes for the widening and extension of Puainako St. This report studied the alternatives then under consideration, Alignments One and Two. That document, prepared by the County of Hawaii Department of Public Works, was accepted by the Governor of the State of Hawaii and published in August 1993.

A second field study of Alignments One and Two was carried out in 1995 to support a second EIS, in accordance with the National Environmental Policy Act (NEPA), for the same project being prepared for approval by the U.S. Highway Administration (FHWA) and other Federal, State and County agencies.

In 1998, during preparation of this Draft EIS, minor relocations of Alignment One were made to reduce adverse impacts to water quality in flood zones and drainageways.



- LEGEND**
- 1881 LAVA FLOW
 - ▨ TROPOFOLISTS - ORGANIC SOILS
 - ▤ HYDRANDEPTS - DEEP ASH SOILS
 - ▭ LAVA FLOWS



TITLE
SITE PLAN FOR PROPOSED ALIGNMENTS

FIGURE 1

PROJECT PUAINAKO STREET WIDENING/EXTENSION
 HILO, HAWAII

DATE 2/03/2000

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The proposed right-of-way of Alignment One was again partially modified in 1998. Most of the right-of-way between the western terminus at Kaumana Drive and Wilder Road was shifted 46 meters (150 feet) south to reduce construction impacts in flood zones and drainageways. South of Wilder Road, near the residential subdivision at Pamoho Road, the right-of-way was modified making an arc extending a maximum of 92 meters (300 feet) south of the original proposed right-of-way. A botanical study of these revised locations was conducted in June and July, 1998.

Finally, after review of the Draft EIS, Alignment Ten was proposed to reduce adverse social, biological and wetland impacts. This new alignment was studied and evaluated in 1999.

This current document describes and compares the alignments as they are presented in the Final EIS. The two alternatives proposed for the Lower Portion, Alignments A and B, have not been modified during this process.

Botanical Study

The study began with a literature search to determine which, if any, plant species listed or proposed for listing as endangered or threatened by the U. S. Fish and Wildlife Service might occur within the region of the proposed Puainako St. extension. Such listed plants are legally protected by federal and State law. The lists of threatened and endangered plants provided by USFWS, Pacific Islands Office, Honolulu were reviewed. The ranges of listed and proposed plants were determined from the Manual of Flowering Plants of Hawai'i (Wagner et al. 1990).

Botanical field studies were carried out after the alignments had been surveyed and staked. The surveyors had place stakes at one-hundred foot intervals, thus simplifying establishing precise locations along the alignment; because the survey was done in English measurements (feet) and the survey stakes bear labels in feet, in this report the survey markers are referenced by feet, not metric units.

The botanical studies covered a study area 92 meter (300 ft.) wide centered about the center-line. The botanist walked the entire length of all proposed Alignments following the staked center-line. Excursions to the side were made as needed in the proposed right-of-ways. Vegetation descriptions were recorded in all plant communities encountered along the alignments and a list of all plant species encountered was prepared. Nomenclature used for flowering plants generally follows Wagner et al. (1990); plants not listed in that source are named according to St. John (1973). Fern nomenclature follows Neal (1965), for the most part, or secondarily, Mueller-Dombois et al. (1980).

Factors controlling the vegetation pattern were analyzed. The Soil Survey (Sato et al. 1973) and the U.S. Geological Survey topographic maps (Pihonua and Hilo Quadrangles) were consulted for information relating to substrate age and type, and to land-use history.

RESULTS

Plant Species of the Project Area

A total of 156 vascular plant species were identified within the proposed alignments (Table A, at end of this report). Of these, 21 are endemic, 21 are indigenous, 109 are alien, and 5 were introduced to Hawaii by Polynesian settlers.

Description of Vegetation of the Project Area

Original Vegetation

Originally, the natural vegetation of most of the project area was 'Ohi'a/Uluhe (*Metrosideros/Dicranopteris*) Fern Forest, which is a subtype of the Lowland Wet Forest (Gagne and Cuddihy 1990). This 'Ohi'a/Uluhe Fern Forest community is associated with young lava flows and shallow soils on the lower windward slope of Mauna Loa. This community is dominated by a deep mat of uluhe, more or less scattered 'ohi'a trees, and relatively few other plant species. At a few sites within the project area with somewhat deeper soil, the vegetation has further developed into the 'Ohi'a (*Metrosideros*) Lowland Wet Forest or the Koa/'Ohi'a (*Acacia/Metrosideros*) Lowland Forest communities (Gagne and Cuddihy 1990). These communities have a closed tree canopy, less uluhe ground cover, and a somewhat richer assortment of associated species.

Present Vegetation

OVERVIEW The vegetation of the project area still strongly reflects the original vegetation. However, past human land-use has significantly modified the vegetation in many areas. Intensity of human agricultural use is strongly correlated with soil type (Figure 1). The correlation can be detected in the field as well as from aerial photographs and soil survey maps. Intensive farming, including sugar cane production, has been carried out in most parts of the project area that have deep soil. The remaining areas have shallow soil over lava and have been less or not at all disturbed by human activity.

The shallow soil habitats include an extensive area covered by the 1881 lava flow. Most of this flow, within the project area, has not been disturbed by human activity and is covered with primary native vegetation similar to that described above as Original Vegetation. Shallow soil habitats also include somewhat older sites with shallow muck soils, classified as Tropofolists. The tropofolist soils of these areas apparently are too shallow to have supported intensive agriculture but have been variably disturbed, perhaps by grazing or selective logging; small areas were cleared for sugarcane production. The Tropofolists support native 'ohi'a forest, but where disturbed, the vegetation is usually a variable mix of native and alien species.

It is not clear whether all native vegetation is primary or if some areas are secondary regrowth following human disturbance.

Areas with deep soil derived from volcanic ash have supported agriculture in the past. These soils are classified as Hydrandepts and are well-drained to moderately well-

drained (Sato et. a. 1973). Most of these soils were used for sugar cane production, but have been abandoned for a number of years. Current agricultural use appears to be limited to sporadic grazing, or no use at all. The vegetation of these abandoned fields is secondary growth undergoing rapid change noted between the 1992 and later botanical studies. Following abandonment, these fields were apparently taken over by alien grasses and shrubs with scattered trees, best described as a savanna. Now, however, large areas are being recolonized by native plant species, especially uluhe (Dicranopteris linearis) and 'ohi'a (Metrosideros polymorpha), and to a much lesser extent, koa (Acacia koa).

The four major community types found within the study area are described below.

'OHI'A/ULUHE FERN FOREST The more extensive of the two native communities within the project area is 'Ohi'a/Uluhe Fern Forest generally as described above under "Original Vegetation." This is an open forest with columnar-shaped 'ohi'a (Metrosideros polymorpha) trees up to 12 meters (40 ft.) tall. The ground between the trees is completely covered by mats of the indigenous fern, uluhe (Dicranopteris linearis).

Within the project area, the 'Ohi'a/Uluhe Fern Forest occurs on several different substrates (Sato et al. 1973), including the 1881 lava flow which is mapped as "pahoe-hoe lava" and has a very thin, discontinuous layer of accumulated organic matter. This community is also supported on slightly older pahoe-hoe lava flows with a shallow, organic soil (Tropofolist) classified as Keei or Keaukaha series "extremely rocky muck". The canopy cover is generally open, but may be nearly closed in some areas. In the latter case, the groundcover is still predominantly uluhe, distinguishing this community from the Closed 'Ohi'a Forest community described below.

Where the 'Ohi'a/Uluhe Fern Forest occurs as primary vegetation on the 1881 lava flow, few other species of plants may be found. Native plants that do occur infrequently are 'ahaniu (Machaerina mariscoides), pukiawe (Styphelia tameiameia), neneleau (Rhus sandwicensis), and wawai-'iole (Lycopodium cernuum). On the older lava flows with Tropofolist soils, hapu'u or tree ferns (Cibotium spp.), papala-kepau (Pisonia umbellifera), and kawa'u (Ilex anomala) were infrequently found within the 'Ohi'a/Uluhe Fern Forest community. The most common alien plants invading this community are bamboo orchid (Arundinia bambusifolia), melastoma (Melastoma candidum), strawberry guava or waiawi (Psidium cattleianum), broomsedge (Andropogon virginicus), and swordfern (Nephrolepis hirsutula). Infrequently, native koa (Acacia koa) occurs on these older substrates forming a subtype, here designated 'Ohi'a-Koa/Uluhe Forest.

'Ohi'a/Uluhe Fern Forest is also becoming re-established within the abandoned fields on deep Hydrandep soil. Field observations between 1992 and 1998 clearly show that uluhe and 'ohi'a are replacing much of the alien grass and shrub vegetation of the Savanna community type. However, because the development of forest vegetation is still incipient, these areas are treated as a Fernland subtype of the Savanna community.

CLOSED 'OHI'A FOREST The other predominantly native community is a Closed 'Ohi'a Forest. The canopy is about 15 meters (50 ft.) high and made up of three

varieties of Metrosideros polymorpha ('ohi'a): varieties incana, glaberrima and macrophylla. The largest trees are of variety macrophylla. This community has several more native species than the fern forest community described above. The most abundant of these additional trees is kopiko (Psychotria hawaiiense), with occasional pilo (Coprosma sp.) Hapu'u is fairly common. Some uluhe does grow in sunnier spots, but the ground-cover is generally dominated by the alien swordferns (Nephrolepis hirsutula and N. cordifolia), and kahili ginger (Hedychium gardnerianum). The epiphytic flora is well-developed, including ie'ie (Freycinetia arborea), 'ekaha (Elaphoglossum spp.), wawai-'iole (Lycopodium phyllanthum), palai-lau-li'i (Sphaerocionium lanceolatum), and Adenophorus sp., and mosses and liverworts. Alien trees are also common in this community. Strawberry guava or waiawi forms dense understory thickets in many places. Common guava (Psidium guajava), African tulip tree (Spathodea campanulata), and Alexander palm (Archontophoenix alexandrae) occasionally occur.

SAVANNA Savanna of widely scattered trees has developed on deep Hydrandep soil where the original vegetation has been removed for agricultural or other purposes and then abandoned. The Savanna vegetation is highly variable from place to place and includes many species of alien plants and a smaller number of native plants as well.

In 1992 the predominant vegetation was a ground-cover of tall, dense grass with widely scattered trees of many species. Thickets occurred in some places. The most common grasses were Wainaku grass (Panicum repens), California grass (Brachiaria mutica), both of which form extensive, impenetrable mats, and two bunch grasses, little bluestem (Schizachyrium condensatum) and broomsedge (Andropogon virginicus). Volunteer sugar cane (Saccharum officinarum) was often much in evidence. Trees occurring singly or in groves or thickets, included albizia (Paraserianthes falcataria), common guava, waiawi, melochia (Melochia umbellata), gunpowder tree (Trema orientalis), and the native koa.

In many areas, the native 'ohi'a/uluhe community was seen to persist or be re-invading. 'Ohi'a, hapu'u and uluhe were commonly seen in gullies where they may have survived land clearing. In other places, it was clear that 'ohi'a saplings were becoming reestablished and uluhe mats spreading into the grasslands of the Savanna. Comparisons of unquantified observations made in 1992, 1995 and 1998 clearly indicate that 'ohi'a and uluhe are now more widespread and are displacing the alien species in much of this habitat type. A Fernland of these two native species now strongly dominates an estimated 50% of the area, sometimes beneath widely scattered alien tall trees, and it is expected to continue to spread.

MIXED 'OHI'A AND WAIAWI SHRUBLAND Many areas with shallow soil are a mix of dense waiawi thickets intermingled with 'ohi'a and uluhe. Presence of other native and alien plants is also variable. Some of these areas appear to be native vegetation on Tropofolist soil that was not completely cleared but has been disturbed, then invaded by waiawi and other alien species. Other areas appear to have been cleared but partially re-invaded by 'ohi'a, waiawi and uluhe. In either case, these communities

may contain all the species of the Savanna and of the 'Ohi'a/Uluhe Fern Forest communities described above.

Detailed Vegetation Description Along Alignments

The vegetation of the three alignments is described from west to east; that is, from Kaumana Drive near Country Club Drive, to Kawili Street. Locations are referenced to the survey stakes of the alignment centerlines, and other landmarks. For completeness and coherence, the descriptions of shared sections are repeated for each alignment (Table 1).

ALIGNMENT ONE

Section A-B Alignment One diverges from Kaumana Drive at survey mark 00 ft., near Country Club Drive. From this point to marker 2500 ft., the vegetation is Closed 'Ohi'a Forest with trees up to 15 meters (50 ft.) tall. The understory is variably dominated by uluhe, hapu'u and kopiko saplings with alien swordferns, or waiawi thickets. Kahili ginger and melastoma are other common alien plants.

Near marker 2500 ft. the alignment runs near the interface of the Closed O'hia Forest and Savanna vegetation in abandoned sugar cane fields. Closed forest is on the north side of the easement, the center-line and south side are in Savanna. The Savanna is an area of deeper soil of the Kaiwiki silty clay loam series (Sato et al. 1973). Volunteer sugar cane is still conspicuous. The Savanna is a patchwork of areas dominated by either Wainaku and California grass, broomsedge and little bluestem, or uluhe and 'ohi'a. Comparisons of unquantified observations made in 1992, 1995 and 1998 indicate that in this area 'ohi'a and uluhe are becoming dominant and that Wainaku grass is becoming more abundant in areas where California grass once prevailed. Many species of alien trees are scattered individually or in groves and thickets across the Savanna. The more common trees are albizia, guava, waiawi, avocado (*Persea americana*), rose apple (*Syzigium jambos*), and Alexander palm. There are also several small groves of koa trees up to 18 meters (60 ft.) tall. Several steep gullies occur in the section between the 2900 and the 4400 ft. markers. The vegetation often includes lush stands of Wainaku grass or California grass, but generally resembles the surrounding community.

Section B-C Near marker 5500 On the east side of Wilder St., the alignment crosses an extent of shallower Tropofolist soil that appears to have been cleared then abandoned. Waiawi clumps are mixed with 'ohi'a/uluhe patches within a matrix of Wainaku and California grass. Some of this area was re-cleared in 1994 for unknown purposes. This Mixed 'Ohi'a/Waiawi shrubland continues to about marker 8500 ft where the alignment crosses onto the 1881 lava flow.

Near marker 7100 feet, the alignment skirts the residential and farming area on Pamoho St. A wetland dominated by Wainaku grass and California grass occurs near the 138 kv electrical power transmission line near marker 7800 ft.

At the 8500 ft. marker, where Alignment One crosses onto the 1881 lava flow, the vegetation up to about the 17000 ft. marker is the best example of an undisturbed 'Ohi'a/Uluhe Fern Forest encountered on this alignment. Pole-sized 'ohi'a trees form an

open canopy in a sea of uluhe. There is some natural variation in the vegetation. In a few places the native sedge, 'ahaniu, forms up to 20% of the groundcover and wawae-'iole (*Lycopodium cernuum*) may makeup 1%; in most places, however, the cover of uluhe is near 100%. The height of the 'ohi'a canopy varies according to soil conditions from about 7 to 12 meters (25 to 40 ft.), with a mean of about 9 meters (30 ft). In the taller stands, the canopy is more nearly closed and the ground is more moist and shady.

Some alien plants are found within this community, but always as a minor component. The unobtrusive bamboo orchid is the most widely distributed alien plant in this vegetation type. Among the larger, more disruptive aliens, melastoma is the most common. Even melastoma, however, is widely scattered and never dominates, even locally. Waiawi is even less common, but does become somewhat more abundant in the taller, more closed 'ohi'a stands. The moist, shady conditions may favor this species.

As Alignment One nears the Sunrise Estates subdivision, it leaves the 1881 lava flow and enters an 'ohi'a/uluhe community where the 'ohi'a trees are larger and the vegetation is more heavily degraded by alien plants. Waiawi and melastoma thickets reappear and swordfern often replaces uluhe as the groundcover. The indigenous sedge, *Scleria testacea*, occurs here sparingly.

Section C-D From marker 17100 ft. to 19300 ft. the alignment skirts the Sunrise Estates subdivision. The north side of the right-of-way impinges on the recently bulldozed areas of the subdivision while the south side is within a disturbed 'ohi'a/uluhe community as just described.

East of Sunrise Estates to Komohana St., the alignment passes through a Mixed 'Ohi'a and Waiawi Shrubland vegetation which has a matrix of 'Ohi'a/Uluhe Fern Forest but also many areas dominated by waiawi and other aliens. The 'ohi'a are commonly up to 12 meters (40 ft.) tall, but widely scattered. Presence of a few hala trees (*Pandanus tectorius*) indicate that this is a later successional stage of the lowland forest. Thickets of large, mature waiawi and melastoma show that this land has long been disturbed, perhaps by cattle grazing.

A large number of other alien tree species emerge above the open 'ohi'a canopy, these include Alexander palm, African tulip tree, and gunpowder tree.

ALIGNMENT TWO

Section A-E Alignment Two begins at Kaumana Drive near Country Club Drive. The vegetation is a Closed 'Ohi'a Forest with trees up to 55 ft. tall and hapu'u. Much of the understory is dominated by waiawi but kopiko saplings and other native shrubs and fern are common in some spots. The more open areas usually have a groundcover of uluhe; the alien swordferns predominate under the closed canopy. A number of epiphytic species are present, including ie'ie and 'ekaha. The soil is a very shallow layer of litter and humus over pahoehoe lava.

At marker 1500 ft., the alignment enters long-abandoned sugar cane fields on Kaiwiki silty clay loam soil. This secondary vegetation is highly variable Savanna, as described for Section A-B of Alignment One. Volunteer sugar cane is common in this Savanna vegetation. In 1995, the most extensive subtype was that dominated by little blue stem and broomsedge. By 1998, the area dominated by uluhe and young 'ohi'a had greatly increased and the area

Table 1. Plant community types of the three proposed Alignments.

Section	Alignment			Survey Stations		Community	Extent	
	1	2	10	Begin	End		(m)	(ft)
A-B	X		X	00	2500	Closed 'Ohi'a Forest	770	2500
				2500	5500	Savanna	920	3000
				5500	5800	Mixed 'Ohi'a/Waiawi	90	300
B-C	X			5800	8500	Mixed 'Ohi'a/Waiawi	830	2700
				8500	17000	'Ohi'a/Uluhe Fern Forest	2620	8500
C-D	X	X	X	17000	19300	Sunrise Estates Subdivision	710	2300
				19300	24400	Mixed 'Ohi'a/Waiawi	1570	5100
A-E			X	700	1500	Closed 'Ohi'a Forest	250	800
				1500	3000	Savanna	460	1500
				3000	3700	'Ohi'a-Koa/Uluhe Fern Forest	220	700
				3700	4200	Savanna	150	500
				4200	5000	Mixed 'Ohi'a/Waiawi	250	800
				5000	6200	'Ohi'a/Uluhe Fern Forest	370	1200
				6200	10900	Mixed 'Ohi'a/Waiawi	1450	4700
				10900	12800	'Ohi'a/Uluhe Fern Forest	580	1900
E-C		X	X	12800	13100	'Ohi'a/Uluhe Fern Forest	90	300
				13100	16000	Mixed 'Ohi'a/Waiawi	890	2900
				16000	19500	'Ohi'a/Uluhe Fern Forest	1080	3500
B-E			X	5800	9200	Mixed 'Ohi'a/Waiawi	1050	3400
				9200	11000	'Ohi'a/Uluhe Fern Forest	550	1800

under California grass had decreased, and in many places is now co-dominant with Wainaku grass.

A large number of trees are scattered through the Savanna. Perhaps the most conspicuous are young koa, up to 18 meters (60 ft.) tall; the only other native trees of the Savanna are 'ohi'a and neneleau. Alien trees include avocado, eucalyptus (Eucalyptus robusta) rose apple, waiawi, and African tulip tree. Many other alien shrubs and herbs are found in the Savanna community. A number of small drainageways in deep gullies cross this area. Wainaku grass (Panicum repens) is common on the banks.

'Ohi'a/Koa/Uluhe Fern Forest occur between the 3000 ft. and 3700 ft. markers. The canopy is open, made up of 'ohi'a and a few large koa trees. The uluhe and uluhe-nui (Hicriopteris pinnata) form a deep mat, but there are also many thickets of waiawi and melastoma. A deep drainage channel with little flow is within this section, too.

From the 3700 ft. marker to the 4200 ft. marker, Alignment Ten crosses another abandoned field with Savanna-type groundcover, but no trees. From the 4200 ft. marker to about the 5000 ft. marker the vegetation is Mixed 'Ohi'a and Waiawi Shrubland with many other alien plants, including maile pilau (Paederia scandens), thimbleberry, and swordfern.

From the 5000 ft. marker to the 6200 ft. marker near Wilder Street the vegetation is a relatively undisturbed 'Ohi'a/Uluhe Fern Forest with only occasional waiawi or melastoma. Between 5000 and 6000 ft. markers, the native vegetation is well-developed into a nearly closed canopy of 'ohi'a with a hapu'u understory and uluhe groundcover. Very few alien plants are found here. The vegetation near Wilder Street is disturbed and open with California grass, melastoma, waiawi, as well as some 'ohi'a and uluhe. From Wilder Street to the 138 kv electrical power transmission line at marker 10900 ft. the vegetation is Mixed 'Ohi'a and Waiawi Shrubland. Much of this area appears to have been cleared in the past. The vegetation on the south edge of the right-of-way is a low stature, open 'ohi'a/uluhe forest. The north side is more open with California grass and broomsedge-dominated savanna vegetation. In many parts of the right-of-way itself, the uluhe and 'ohi'a appear to be reestablished, but many other areas have dense waiawi thickets.

From the 10900 ft. marker to the bulldozed road at 13100 ft. marker the vegetation is strongly native in character. The uluhe mat is dense, with scattered 'ohi'a up to 8 meters (25 ft.) tall and frequent hapu'u. Melastoma and waiawi do occasionally occur.

Section E-C From the junction with Alignment Ten at 12800 ft., Alignment Two traverses a regularly grazed area that is a mixture of pasture grasses and groves of mostly alien trees. The vegetation includes gunpowder tree, melochia, and common guava. Ginger and California grass are common groundcover, as is uluhe. From the 16000 ft. marker to the junction with Alignment One near Sunrise Estates, the vegetation is more nearly 'Ohi'a/Uluhe Fern Forest, but still with many of the same alien species.

Section C-D As Alignment Two, joining the other two Alignments, nears the Sunrise Estates subdivision, it leaves the 1881 lava flow and enters an 'ohi'a/uluhe community where the 'ohi'a trees are larger and the vegetation is more heavily degraded by alien plants. Waiawi and melastoma thickets reappear and swordfern often replaces uluhe as the groundcover. The indigenous sedge, Scleria testacea, occurs here sparingly. From

marker 17100 ft. to 19300 ft. the alignment skirts the Sunrise Estates subdivision. The north side of the right-of-way impinges on the recently bulldozed areas of the subdivision while the south side is within a disturbed 'ohi'a/uluhe community as just described.

East of Sunrise Estates to Komohana St., the alignment passes through a Mixed 'Ohi'a and Waiawi Shrubland vegetation which has a matrix of 'Ohi'a/Uluhe Fern Forest but also many areas dominated by waiawi and other aliens. The 'ohi'a are commonly up to 12 meters (40 ft.) tall, but widely scattered. Presence of a few hala trees (*Pandanus tectorius*) indicates that this is a later successional stage of the lowland forest. Thickets of large, mature waiawi and melastoma show that this land has long been disturbed, perhaps by cattle grazing.

A large number of other alien tree species emerge above the Mature koa are found within the open 'ohi'a canopy, these include Alexander palm, African tulip tree, and gunpowder tree.

ALIGNMENT TEN Alignment Ten is made up of three sections shared with Alignments One and Two, and one new section.

Section A-B Alignment Ten diverges from Kaumana Drive at survey mark 00 ft., at Country Club Drive. From this point to marker 2500 ft., the vegetation is Closed 'Ohi'a Forest with trees up to 15 meters (50 ft.) tall. The understory is variably dominated by uluhe, hapu'u and kopiko saplings with alien swordferns, or waiawi thickets. Kahili ginger and melastoma are other common alien plants.

Near marker 2500 ft. the alignment runs near the interface of the Closed 'Ohi'a Forest and Savanna vegetation in abandoned sugar cane fields. Closed forest is on the north side of the easement, the centerline and south side are in Savanna. The Savanna is an area of deeper soil of the Kaiwiki silty clay loam series (Sato et al. 1973). Volunteer sugar cane is still conspicuous. The Savanna is a patchwork of areas dominated by either Wainaku and California grass, broomsedge and little bluestem, or uluhe and 'ohi'a. Comparisons of unquantified observations made in 1992, 1995 and 1998 indicate that in this area 'ohi'a and uluhe are becoming dominant and that Wainaku grass is becoming more abundant in areas where California grass once prevailed. Many species of alien trees are scattered individually or in groves and thickets across the Savanna. The more common trees are albizia, guava, waiawi, avocado (*Persea americana*), rose apple (*Syzigium jambos*), and Alexander palm. There are also several small groves of koa trees up to 18 meters (60 ft.) tall. Several steep gullies with streambeds occur in the section between the 2900 and the 4400 ft. markers. The streamside vegetation often includes lush stands of Wainaku grass or California grass, but generally resembles the surrounding community.

Section B-E Alignment Ten diverges from Alignment One on the east side of Wilder St., in an area of shallow Tropofolist soil that appears to have been cleared then abandoned. Waiawi clumps are mixed with 'ohi'a/uluhe patches within a matrix of Wainaku and California grass. Some of this area was re-cleared in 1994 for unknown purposes. This heterogeneous mixed community of waiawi and 'ohi'a extends to the fenceline at 8850 ft. From this point to about 9200 ft. the vegetation on the north side of the centerline is open 'Ohi'a/Uluhe Fern Forest while the south side is infested with

waiawi. From about 9200 ft. to the junction with Alignment Two at 11000 ft. the vegetation is 'Ohi'a/Uluhe Fern Forest with an understory of uluhe and a moderate number of alien species.

Section E-C Alignment Ten follows Alignment Two from this point; references are now made to the survey markers of Alignment Two. Alignment Ten survey mark 11000 ft. corresponds to Alignment Two 12800. From the Alignment Two junction at 12800 ft. the alignment traverses a regularly grazed area that is a mixture of pasture grasses and groves of mostly alien trees. The vegetation includes gunpowder tree, melochia, and common guava. Ginger and California grass are common groundcover, as is uluhe. From the 16000 ft. marker to the junction with Alignment One near Sunrise Estates, the vegetation is more nearly 'Ohi'a/Uluhe Fern Forest, but still with many of the same alien species.

Section C-D As Alignment Ten, following Alignment One, nears the Sunrise Estates subdivision, it leaves the 1881 lava flow and enters an 'ohi'a/uluhe community where the 'ohi'a trees are larger and the vegetation is more heavily degraded by alien plants. Waiawi and melastoma thickets reappear and swordfern often replaces uluhe as the groundcover. The indigenous sedge, *Scleria testacea*, occurs here sparingly. From marker 17100 ft. to 19300 ft. the alignment skirts the Sunrise Estates subdivision. The north side of the right-of-way impinges on the recently bulldozed areas of the subdivision while the south side is within a disturbed 'ohi'a/uluhe community as just described.

East of Sunrise Estates to Komohana St., the alignment passes through a Mixed 'Ohi'a and Waiawi Shrubland vegetation which has a matrix of 'Ohi'a/Uluhe Fern Forest but also many areas dominated by waiawi and other aliens. The 'ohi'a are commonly up to 12 meters (40 ft.) tall, but widely scattered. Presence of a few hala trees (*Pandanus tectorius*) indicates that this is a later successional stage of the lowland forest. Thickets of large, mature waiawi and melastoma show that this land has long been disturbed, perhaps by cattle grazing. A large number of other alien tree species emerge above the open 'ohi'a canopy, these include Alexander palm, African tulip tree, and gunpowder tree.

ALIGNMENTS A AND B The vegetation of the Lower Portion, Alignments A and B, along Puainako Street from Komohana Street to Kawili Street, is secondary forest. Most of this area appears to have been abandoned sugar cane fields. Large gunpowder trees up to 18 meters (60 ft.) tall dominate. Other trees, all alien, include melochia, octopus tree (*Shefflera actinophylla*), Chinese banyan (*Ficus microcarpa*), and bingabing (*Macaranga mappia*). The groundcover is made up of alien plants including oak fern (*Cyclosorus dentatus*), palm grass (*Setaria palmifolia*), thimbleberry (*Rubus rosifolius*), sensitive plant (*Mimosa pudica*), and wedelia (*Wedelia trilobata*). The vegetation in openings is chiefly sugar cane, California grass, and wedelia.

Rare or Endangered Plants

No plants listed as threatened or endangered by the U.S. Fish and Wildlife Service

were found within or near the studied alignments. A review of the known distributions of listed or proposed endangered or threatened plant species revealed that none have ever been previously found within the project area. Based on the field study and this review, it is concluded that it is very improbable that any plant now listed or proposed for listing as endangered or threatened occurs within the project area.

DISCUSSION AND RECOMMENDATIONS

Criteria for Determining Resource Value of the Vegetation

All vegetation has general resource value regardless of the species present, whether dominated by native or alien plants, or the rarity or abundance of the species present. These general values include control of soil erosion, retention of water in the soil, atmospheric cooling, noise reduction and aesthetic value associated with greenery and open space, and, sometimes, recreational opportunities. The vegetation of the project area provides these resource values to the Hilo community.

Biological resource value refers to values that individual species have because of their rarity, uniqueness or important role in supporting the ecosystem. A community with a unique combination of plant species or that is habitat for valuable animal species also has biological value. For the purposes of the present assessment, alien plants, and communities dominated by alien plants, are considered to have general value but no biological resource value. Vegetation attributes that have biological value are 1) rare or endangered native plants; 2) plant communities dominated by native plants, especially if the community is a combination of plant species found only in that area; and 3) plant communities that support native animal species.

Landscape ecology assigns positive value to diversity within the landscape, recognizing that the variety of land uses, plant communities and ecosystems significantly affect the well-being of the human population as well as the flora and fauna of the region. Any undeveloped land provides open space with the general values described above. Native plant communities additionally can provide educational and cultural uses, especially when close to a city population center.

Recommendations for Rare or Endangered Plants

No plants listed as threatened or endangered, or proposed for listing, by the U.S. Fish and Wildlife Service were found, nor is it considered likely that any such plants occur in or near the alignments. No other plants known to be considered rare by other parties or agencies were found.

Since no rare plants occur in the project area, no recommendations for rare plants are needed.

Recommendations for Native Plant Communities

Much of the primary natural vegetation along the alignments has been destroyed by land-clearing for agricultural use and is now dominated by secondary communities of mostly

alien plants. In some other areas, alien plants, especially waiawi and melastoma, have heavily invaded the natural vegetation and compromised its native character. On the other hand, large areas of abandoned sugar cane fields at the western end of all three alignments is being recolonized by native vegetation.

There are stretches on each alignment where the vegetation is near its natural state. The following four areas were identified:

1) The western ends of all three alignments, near Kaumana Drive, begin in Closed 'Ohi'a Forest, on or near the 1881 lava flow. Although waiawi, swordfern, and other alien species are present, this community appears to be a functioning, mid-succession 'ohi'a forest where a few other native tree species are becoming established. The community is floristically simple with no more than a dozen vascular species, including ferns and epiphytes.

2) In Section B-C, between the 8500 ft. marker and the 17000 ft. marker, where Alignment One passes between Kaumana Drive and the Pacific Plantation subdivision on the 1881 lava flow, the vegetation is an intact representative community of the 'Ohi'a/Uluhe Fern Forest. Very few alien plants are present. This is a very simple community with perhaps five other native species very sparsely distributed among the 'ohi'a and uluhe. Kaumana Cave passes under this portion of the 1881 lava flow near the proposed right-of-way. Endemic, cave-adapted invertebrates are dependent upon the roots of native vegetation above the cave. It is not known if clearing and construction in the vicinity of the cave will affect these animals.

3) Two stretches of Alignment Two within Section A-E pass through communities that are nearly free of alien plants: from the 5000 ft. marker to about the 6000 ft. marker near Wilder Street, and from the 10900 ft. marker south-southeast of Pamoho Street to the 12800 ft. marker south of Pacific Plantation subdivision. These two sites have 'Ohi'a/Uluhe Fern Forest slightly more developed than the community just described on the 1881 lava flow. These communities have a very deep mat of uluhe, 'ohi'a up to about 8 meters (25 ft.) tall, and occasional hapu'u.

4) On Alignment Ten, Section B-E, between 9200 and 11000 ft markers is an advanced 'Ohi'a/Uluhe Fern Forest with large trees and few alien plants.

Similar communities occur elsewhere in the vicinity of Hilo, South Hilo District, and Puna district on relatively young lava flows. Proposed construction would not threaten the existence of these community types and, as previously stated, these communities do not contain rare species nor do they appear to be important habitat for any native animal.

Table 2. Summary of the extent of each community type that would be affected by each of the three proposed alignments. Predominantly native communities are Closed 'Ohi'a Forest, 'Ohi'a/Uluhe Fern Forest, and 'Ohia-Koa/Uluhe Fern Forest.

COMMUNITY	EXTENT WITHIN COMMUNITY					
	ALIGN 1		ALIGN 2		ALIGN 10	
	(m)	(ft.)	(m)	(ft.)	(m)	(ft.)
Closed 'Ohi'a Forest	770	2,500	250	800	770	2,500
'Ohi'a/Uluhe Fern Forest	2,620	8,500	2,340	7,600	1,720	5,600
'Ohia-Koa/Uluhe Fern Forest	0	0	220	770	0	0
Mixed 'Ohi'a/Waiawi	2,490	8,100	4,150	13,500	3,600	11,700
Savanna	920	3,000	620	2,000	920	3,000
Subdivision	710	2,300	710	2,300	710	2,300
Total Length	7,510	24,400	8,290	26,200	7,720	25,100
Total Native Communities	3,380	11,000	2,580	8,400	2,490	8,100

Nevertheless, the proposed alignments raise two planning issues that should be evaluated: first, utilization of the 1881 lava flow and, second, change in access that may lead to development within native communities and other open areas.

Until recently, much of the 1881 lava flow escaped disturbance due to the shallow, rocky soil, unsuitable for agriculture or grazing. At the present time, the 1881 lava flow and its natural vegetation of Closed 'Ohi'a Forest and 'Ohi'a/Uluhe Fern Forest is a distinctive feature of the landscape of northwest Hilo. Several additional projects currently in planning would clear portions of this flow, including the proposed realignment of Saddle Road, the proposed extension of Mohouli Street and proposed and approved projects at the University Park. All alignments begin on the 1881 flow at their western junctions with Kaumana Drive, but Alignment One and Ten (Section A-B) would impact nearly twice the extent as Alignment Two (Section A-E). Additionally, selection of Alignment One would build 2620 meters (8500 ft.) on the 1881 flow in 'Ohi'a/Uluhe Fern Forest near the Pacific Plantation subdivision (Section B-C), effectively disrupting a long stretch of native ecosystem.

Selection of Alignment Two would improve the access to unoccupied areas of the land of Kukuau 1 and Kukuau 2. Some of these areas have been affected by low intensity grazing and other uses, others still possess the native vegetation. Construction of this alignment may hasten development and loss of open space and native vegetation.

Recommendation

1) A planning analysis should be made for the 1881 lava flow. It should be determined the extent, if any, of areas that have conservation protection. Selection of an alignment for the extension of Puainako Street should evaluate the impact on the 1881 lava flow as a unique landscape feature.

2) No communities were found within the project area that deserve high priority for protection on the basis of their uniqueness. On the other hand, all three alignments in the Upper Portion have areas with viable native plant communities. Of the three proposed alignments, Alignment One would displace the greatest extent of native vegetation (3,380 m/1100 ft), all of it on the 1881 lava flow. Alignments Two and Ten would disturb somewhat lesser extents of native vegetation, 2,490 m/8,100 ft and 2,580 m/8,400 ft, respectively, with 250 m/800 ft and 770 m/2,500 ft, respectively, on the 1881 lava flow. Therefore, selecting Alignment Ten would have the least adverse direct impact on native vegetation.

These communities are remnants of native ecosystems near the outskirts of the Hilo urban area or may be former agricultural lands reclaimed by native species. Although it might be desirable from a landscape conservation perspective to maintain some areas of native ecosystem near Hilo, these lands do not appear to be strong candidates for conservation protection, because most of these areas are privately owned and currently zoned for agriculture or development, rather than conservation.

3) Roadsides should be managed to permit revegetation by native species by a) control of disruptive alien plant species, especially waiawi, b) encourage the spread of uluhe by refraining from herbicide use where it is established, and c) planting koa and 'ohi'a in areas with deep soils.

No decisive choice between the three proposed alternative alignments is warranted on the basis of adverse impact to, or relative value of, their native plant communities, all alignments would involve roughly equal adverse impacts described above.

Recommendations for Native Animal Habitat

Few native, vertebrate animals are likely to occur within the project area. However, two animals that may be utilizing the area vegetation are listed as endangered: the Io or Hawaiian Hawk (Buteo solitarius) and the Hawaiian Hoary Bat (Lasiurus cinereus semotus). Both of these species are relatively non-selective in the type of habitat required for nesting and foraging. Both utilize alien as well as native vegetation, and are well-adapted to human altered landscapes. All the plant species and community types within the right-of-ways of the two alternative alignments are widely available within the region. No known vegetation resources important to these or any other native vertebrate species are localized in or near the proposed alignments.

The invertebrate fauna of the project area and entire Hilo region is poorly known. For the most part, the value of the vegetation of the project area as habitat for native invertebrates is unknown. The one site where good data exist is Kaumana Cave, which comes near, underground, the right-of-way of Alignment One. Sixteen native invertebrate species are reported from the cave in the vicinity of the project area (Stone 1992). The invertebrate community within the cave is dependent on roots from overhead vegetation.

The native invertebrate species do not occur within segments of the cave that do not have 'ohi'a-dominated vegetation overhead (Stone 1992).

Recommendation

Maintain native vegetation over Kaumana Cave. No experimental or other objective data are available to determine the width of vegetation buffer needed above the Cave. Prudence would dictate leaving as much distance as possible between the cave and the right-of-way.

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TABLE A. PLANT SPECIES OF THE PUAINAKO ST. EXTENSION PROJECT AREA

Vascular plants found within the two alternative Puainako St. Extension right-of-way. ORIGIN = Place of Origin (E = endemic, I = indigenous, P= Polynesian introduction, A = other alien); LIFE FORM = Life Form (T = tree, TF = tree fern, S = shrub, H = herb, G = grass or grass-like, F = fern, L = liana or vine); WETLAND = Wetland Indicator Status from National List (FWS 1988) (OBL = Obligate, FW = Facultative Wetland, F = Facultative, FU = Facultative Upland, UP = Upland, NI = Not Indicator).

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Acacia koa</u> Gray koa	E	T	UP
<u>Adenophorus tamariscinus</u> (Kaulf.) Hook. & Grev. wahine-noho-mauna	E	F	FU
<u>Adiantum cuneatum</u> Langsd. and Fisch. maidenhair fern	A	F	UP
<u>Ageratina riparia</u> (Regel) R. King & H. Robinson Hamakua pamakani	A	S	FU
<u>Ageratum conyzoides</u> L. maile-honohono	A	H	FU
<u>Aleurites moluccana</u> (L.) Wild. kukui	P	T	UP
<u>Alpinia purpurata</u> (Viell.) K. Schum. red ginger	A	H	UP
<u>Alstonia</u> sp.	A	T	UP
<u>Andropogon virginicus</u> L. broomsedge	A	G	FU
<u>ArchontophoeUPx alexandrae</u> (F. v. Muell.) H. A. Wendl. & Drude Alexander palm	A	T	UP
<u>Ardisia crenata</u> Sims Hilo holly	A	S	UP

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Ardisia elliptica</u> Thunb. shoebutton ardisia	A	S	FU
<u>Arundinia bambusifolia</u> (Roxb.) Lindl. bamboo orchid	A	H	FU
<u>Asplenium contiguum</u> Kaulf. spleenwort	E	F	UP
<u>Athyrium esculentum</u> (Retz.) Copel. warabi, paco	A	F	UP
<u>Bambusa</u> sp. bamboo	A	T	UP
<u>Begonia hirtella</u> Link pikonia	A	H	UP
<u>Bidens pilosa</u> ki nehe	A	H	UP
<u>Blechnum occidentale</u> L. blechnum	A	F	UP
<u>Bothriochloa pertusa</u> (L.) A. Camus pitted beardgrass	A	G	UP
<u>Brachiaria mutica</u> (Forsk.) Stapf California grass	A	G	FW
<u>Buddleia asiatica</u> Lour. butterfly bush	A	S	UP
<u>Caladium bicolor</u> common names not listed	A	H	UP
<u>Castilleja arvensis</u> Schlecht. & Cham. paintbrush	A	H	UP
<u>Centella asiatica</u> (L.) Urb. Asiatic pennywort	A	H	FAC
<u>Cecropia obtusifolia</u> Bertol. guarumo	A	T	UP

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Chamaecrista nictans</u> (L.) Moench partridge pea	A	H	UP
<u>Cibotium chamissoi</u> Kaulf. hapu'u-'i'i	E	TF	FAC*
<u>Cibotium glaucum</u> (Sm.) H. & A. hapu'u	E	TF	FAC*
<u>Clerodendrum philipinum</u> Schauer pikake hohono	A	S	FAC
<u>Clidemia hirta</u> (L.) D. Don Koster's curse	A	S	FU
<u>Clusia rosea</u> Jacq. autograph tree	A	T	UP
<u>Coculus trilobus</u> huehue	I	V	UP
<u>Coffea arabica</u> L. Arabian coffee	A	T	UP
<u>Coix lachryma-jobi</u> L. Job's tears	A	G	FW
<u>Commelina diffusa</u> N. L. Burm. honohono	A	H	FW
<u>Conyza bonariensis</u> (L.) Cronq. hairy horseweed	A	H	UP
<u>Coprosma rhynchocarpa</u> Gray pilo	E	T	UP
<u>Cordyline fruticosa</u> (L.) A. Chev. ti, ki	P	S	UP
<u>Crotolaria assamica</u> Benth rattlepod	A	S	UP
<u>Crotolaria juncea</u> L. sunn hemp	A	H	UP

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Crotolaria pallida</u> Aiton smooth rattlepod	A	H	UP
<u>Cuphea carthagenensis</u> (Jacq.) Macbride tarweed	A	H	FAC
<u>Cuphea hyssopifolia</u> Kunth false heather	A	S	UP
<u>Cyclosorus dentatus</u> (Forsk.) Ching oak fern	A	F	UP
<u>Cyperus halpan</u> L. umbrella sedge	A	G	FW
<u>Desmodium sandwicense</u> E. Mey. Spanish clover	A	H	FU
<u>Desmodium tortuosum</u> (Sw.) DC Florida beggarweed	A	S	UP
<u>Dicranopteris linearis</u> (Burm.) Underw. uluhe. false staghorn	I	F	FU
<u>Digitaria pentzii</u> Stent. Pangola grass	A	G	FAC
<u>Elaphoglossum alatum</u> Gaud. 'ekaha	E	F	FAC
<u>Elaphoglossum reticulatum</u> (Kaulf.) Gaud. 'ekaha	E	F	UP
<u>Eleocharis obtusa</u> (Willd.) Schult. spikerush	I	G	OBL
<u>Elephantopus spicatus</u> Juss. ex Aubl. elephant's foot	A	H	UP
<u>Emilia sonchifolia</u> (L.) DC Flora's paintbrush	A	H	UP
<u>Erechtites velerianifolia</u> (Wolf) DC fireweed	A	H	FAC

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Eucalyptus robusta</u> Sm. swamp mahogany	A	T	FU
<u>Eucalyptus saligna</u> Sm. Sydney blue gum	A	T	UP
<u>Ficus microcarpa</u> L. fil. Chinese banyan	A	T	UP
<u>Filicium decipiens</u> (W. and A.) Thw. fern tree	A	T	UP
<u>Freycinetia arborea</u> Gaud. ie'ie	E	L	FU
<u>Grammitis tenella</u> Kaulf. kolokolo, mahina-lua	E	F	UP
<u>Hedychium gardnerianum</u> Roscoe kahili ginger	A	H	UP
<u>Heliocarpus popayanensis</u> Kunth moho	A	T	UP
<u>Hibiscus furcellatus</u> Desr. 'akiohala	I	S	FAC*
<u>Hicriopteris pinnata</u> (G. Kunze) Ching uluhe-nui	E	F	UP
<u>Hippobroma longiflora</u> (L.) G. Don star-of Bethlehem	A	H	FU
<u>Hyptis pectinata</u> (L.) Poit. comb hyptis	A	S	NI
<u>Ilex anomala</u> H. & A. kawa'u	E	T	FU
<u>Impatiens sultani</u> Hook f. impatiens	A	H	UP
<u>Ipomoea indica</u> (J. Burm.) Merr. morning glory	I	L	FU

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Justica betonica</u> L. white shrimp plant	A	H	UP
<u>Lantana camara</u> L. lantana	A	S	UP
<u>Livistonia chinensis</u> (Jacq.) R. Br. ex Mart. Chinese fan palm	A	T	UP
<u>Ludwigia octovalvis</u> (Jacq.) Raven kamole	P	H	OBL
<u>Lycopodium cernuum</u> L. wawae-'iole	I	F	FAC*
<u>Lycopodium phyllanthum</u> H. & A. wawae-'iole	I	F	UP
<u>Lygodium japonicum</u> Sw. climbing fern	A	F	NI
<u>Macaranga mappa</u> (L.) Mull. Arg. bingabing	A	T	FAC+
<u>Machaerina angustifolia</u> (Gaud.) T. Koyama uki	I	G	FAC
<u>Machaerina mariscoides</u> (Gaud.) J. Kern 'ahaniu	I	G	FU
<u>Manihot esculenta</u> Crantz. cassava	A	S	UP
<u>Mecodium recurvum</u> 'ohi'a-ku	E	F	UP
<u>Melastoma candidum</u> D. Don melastoma	A	S	FU
<u>Melinis minutiflora</u> Beauv. molassesgrass	A	G	UP
<u>Melochia umbellata</u> (Houtt.) Staph. melochia	A	T	UP

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Metrosideros polymorpha</u> Gaud.var. <u>glaberrima</u> 'ohi'a-lehua	E	T	FAC+
<u>Metrosideros polymorpha</u> Gaud. var. <u>incana</u> 'ohi'a-lehua	E	T	FAC-
<u>Metrosideros polymorpha</u> Gaud. var. <u>macrophylla</u> 'ohi'a-lehua	E	T	FAC
<u>Microsorium scolopendria</u> (Burm.) Copel. laua'e	I	F	UP
<u>Miconia calvescens</u> no common name	A	S	UP
<u>Mimosa pudica</u> L. sensitive plant	A	S	FU
<u>Musa x paradisiaca</u> L. banana	A	T	FU
<u>Nephrolepis cordifolia</u> (L.) Presl no common name	A	F	FU
<u>Nephrolepis hirsutiua</u> (Forst.) Presl swordfern	A	F	FAC
<u>Ophioglossum pendulum</u> L. adder's tongue	I	F	UP
<u>Oplismenus hirtellus</u> (L.) Beauv. basketgrass	A	G	FU
<u>Oxalis corniculata</u> L. yellow wood sorrel	P	H	FU
<u>Oxalis corymbosa</u> DC pink wood sorrel	A	H	UP
<u>Paederia scandens</u> (Lour.) Merr. maile pilau	A	L	UP
<u>Pandanus tectorius</u> S. Parkinson ex Z hala	I	T	FAC*

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Panicum maximum</u> Jacq. guineagrass	A	G	FU
<u>Panicum repens</u> L. Wainaku grass	A	G	FAC+
<u>Paraserianthes falcataria</u> (L.) Nielson albizia	A	T	UP
<u>Paspalum conjugatum</u> Berg. Hilo grass	A	G	FAC+
<u>Paspalum scrobiculatum</u> L. ricegrass	I	G	FAC*
<u>Paspalum urvillei</u> Steud. vaseygrass	A	G	FAC
<u>Passiflora edulis</u> Sims lilikoi	A	L	UP
<u>Pennisetum purpureum</u> Schumach. elephant grass	A	G	FU
<u>Peperomia leptostachya</u> Hook & Arnott alaala wai nui	I	H	UP
<u>Persea americana</u> Mill. avocado	A	T	UP
<u>Phaius tankarvilleae</u> (Banks ex L'Her.) Blume Chinese ground orchid	A	H	FU
<u>Phlebodium aureum</u> (L.) J. Sm. laua'e-haole	A	F	UP
<u>Philodendron</u> Schott sp. philodendron	A	L	UP
<u>Phyllanthus debilis</u> Klein ex Wild. niruri	A	H	UP
<u>Pipturus albidus</u> (H. & A.) Gray mamaki	E	T	UP

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Pisonia umbellifera</u> (J. R. & G. Forst.) Seem papala-kepau	I	T	UP
<u>Pityrogramma chrysophylla</u> gold fern	A	F	UP
<u>Plantago lanceolata</u> L. narrow-leaved plantain	A	H	FU
<u>Pleopeltis thunbergiana</u> Kaulf. pakahakaha	I	F	UP
<u>Pluchea symphytifolia</u> (Mill.) Gillis sourbush	A	S	FAC*
<u>Polygala paniculata</u> L. Milkwort	A	H	FU
<u>Polygonum capitatum</u> knotweed	A	H	UP
<u>Psidium cattleianum</u> Sabine waiawi, yellow strawberry guava	A	T	FAC
<u>Psidium guajava</u> L. common guava	A	T	FU
<u>Psilotum nudum</u> (L.) Griseb. moa	I	F	FU-
<u>Psychotria hawaiiense</u> (Gray) Fosb. kopiko	E	T	UP
<u>Pycnus polystachyos</u> (Rottb.) P. Beauv. no common name	I	G	FAC
<u>Rhus sandwicensis</u> Gray neneleau	E	T	UP
<u>Rubus rosifolius</u> Sm. thimbleberry	A	S	FAC-
<u>Saccharum officinarum</u> L. sugar cane	A	G	FU

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Sacilepis indica</u> (L.) Chase Glenwoodgrass	A	G	FAC+
<u>Sadleria cyatheoides</u> Kaulf. 'ama'u	E	F	FU
<u>Schinus terebinthifolius</u> Raddi christmasberry	A	T	FU
<u>Schizachyrium condensatum</u> (Kunth) Nees little bluestem	A	G	NI
<u>Scleria testacea</u> Nees nutgrass	I	G	FU
<u>Setaria gracilis</u> (Poir.) Beauv. perennial foxtail	A	G	UP
<u>Setaria palmifolia</u> (Koen.) Stapf palmgrass	A	G	FU
<u>Shefflera actinophylla</u> (Endl.) Harms octopus tree	A	T	UP
<u>Spathodea campanulata</u> Beauv. African tulip tree	A	T	UP
<u>Spathoglottis plicata</u> Blume Philippine ground orchid	A	H	FAC+
<u>Spermacoce assurgens</u> Ruiz & Pav. buttonweed	A	H	FAC
<u>Sphaerocionium lanceolatum</u> (H. & A.) Copel. Palai-lau-li'i	E	F	UP
<u>Sphenomeris chusana</u> (L.) Copel. pala. lace fern	A	F	FAC
<u>Stachytarpheta urticifolia</u> (Salisb.) Sims no common name	A	S	FAC*
<u>Styphelia tameiameia</u> (Cham.) F. Muell. pukiawe	E	T	NI

BOTANICAL NAME COMMON NAME	ORIGIN	LIFE FORM	WET- LAND
<u>Syngonium auritum</u> (L.) Schott no common name	A	L	UP
<u>Syzigium jambos</u> (L.) Alston rose apple	A	T	FAC
<u>Tibouchina herbacea</u> (DC) Cogn. glorybush	A	S	FAC
<u>Thelypteris interrupta</u> (Willd.) K. Iwats neke	I	F	OBL
<u>Themeda villosa</u> (Poir.) A. Camus Lyon's grass	A	G	UP
<u>Toreina asiatica</u> L. Ola'a beauty	A	H	FAC
<u>Trema orientalis</u> (L.) Bl. gunpowder tree	A	T	UP
<u>Tritonia crocosmiflora</u> Nichols. montbretia	A	H	UP
<u>Vaccinium reticulatum</u> Sm. ohelo	E	S	UP
<u>Waltheria indica</u> L. uhaloa	I	S	UP
<u>Wedelia trilobata</u> (L.) Hitchc. wedelia	A	H	FU
<u>Zingiber zerumbet</u> (L.) Sm awapuhi	P	H	FU

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX B2

Revised Wetlands Report

**Final Wetland Study and Delineations
for**

**Puainako Street Extension
and Widening Project**

Hilo, Hawaii

February 11, 2000

Prepared for:

**Department of Public Works
County of Hawaii**

**Department of Transportation
State of Hawaii**

Federal Highways Administration

Prepared by:

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EXECUTIVE SUMMARY

This is the final report of wetland studies and delineations for proposed right-of-way alignments for the extension of Puainako St. from Kaumana Drive to Kawili St. The purpose of these studies is 1) to describe and analyze habitats that contain wetlands, 2) delineate jurisdictional wetlands within the proposed right-of-way, 3) calculate the area of potential wetland fill for each alignment and 4) evaluate the functions and values of wetlands and to suggest mitigation measures.

The alternative alignments presented in this report were developed during an extended period of project planning, including extensive informal consultation with the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA) and U.S. Fish and Wildlife Service (USFWS). Three alternative alignments, designated Alignment One, Alignment Two and Alignment Ten, are under consideration in the Upper Portion (from Kaumana Drive to a point 1000 meters (3250 ft.) west of Komohana St.). Each of the three alternatives utilizes a unique combination of six sections, sharing some sections with one or both of the other alternatives. Two alternative alignments are under consideration in the Lower Portion (from the junction with the Upper Portion to Kawili St.), designated Alignment A and Alignment B. (Figure 1). A complete wetlands delineation was made for all sections of Alignments One and Ten, and for the sections of Alignment Two that are shared with Alignments One and Ten and for Alignments A and B. An estimate of the area of wetlands within the remaining portion of Alignment Two is based on a model of wetlands and soil type.

Three different soil types and landforms were found in the project area. The Lava Flows are the 1881 lava flow which has a very thin, discontinuous layer of organic soil and no developed gullies or drainageways. No wetlands occur on this soil type. Tropofolists are shallow organic soils formed over prehistoric pahoehoe lava flows from Mauna Loa. These areas also have poorly developed drainage and infiltration is limited by the underlying lava. Small depressional wetlands are frequently found in areas of low slope. The Hydrandepts are relatively deep ash soils that have been cultivated. These soils are generally well-drained and the surface is dissected by well-defined gullies. Wetlands were found only where human actions have blocked or altered the natural patterns.

On Alignment One, a total of four wetlands were delineated with a combined area within the 60 m wide corridor of 3,442 m²/36,366 ft². The largest of the wetlands is 2,474 m²/26,136 ft². On Alignment Ten, a total of ten wetlands were delineated with a combined area of 1,669 m²/17,630 ft². The largest wetland here was 568 m²/6000 ft². On Alignment Two, no wetlands were found in the sections that were delineated. However, the field studies found numerous small wetlands in the portion that was not delineated. An estimate based on a field sample and soil type model was made that Alignment Two may contain up to 32,568 m²/344,000 ft² of jurisdictional wetlands. All of these wetlands would be small, depressional impoundments of rainfall.

Alignment Ten was found to have the smallest area of wetlands. However, all the wetlands of the project area have low hydrological and biological value. These small, depressional wetlands, isolated from other surface water bodies, retain a small amount of rainfall, may slow overland runoff and may allow some sedimentation. Even these small effects are likely to have little influence on surface water quality because drainageways in

this watershed are poorly developed and no surface water bodies flow out of the project area. Similar small wetlands are abundant outside the proposed alignments.

All the wetlands of Alignment One are dominated by alien plant species. These wetlands have no identified biological value for conservation of native biota nor any other notable value. On Alignment Two, some small wetland habitat pockets are dominated by one or two indigenous OBL plants, and much of the wetland area occurs within native or partially native communities. On Alignment Ten, a minority of the wetlands are within predominantly native vegetation, the remainder are within alien-dominated communities.

It is difficult to assign a biological value to any of the wetlands within the project area based on botanical characteristics. Most of the plants that grow in the wetlands are the same native and alien species that occur in the surrounding communities on drained soils. Most of the wetland pockets are very small. No significant biological function as special habitat for other organisms is known for any of these poorly drained sites.

The low biological and hydrological value of the wetlands does not justify choosing an alignment based on wetland function. In this project area, the plant communities surrounding the wetlands are often of higher biological function and value than the wetlands. Choice of alignments should weigh biological values of the surrounding communities as described in the vegetation report for this project.

Army Corps of Engineers Pacific Ocean Division (USACE). The determinations were confirmed during a site visit on August 3, 1995, by Kathleen Dadey, USACE. Dr. Dadey requested that an estimate of the area of wetlands that would be filled by each of the proposed alignments be prepared based on a "worst case scenario." Under this scenario, all areas with at least one of the three required criteria were determined to be jurisdictional wetlands

Based on this "worst case" determination, USACE indicated that construction using Alignment One (57,064 ft²/5,400 m² fill) and either Alignment A (400 ft²/38 m² fill) or B (no fill) could probably be authorized, whereas Alignment Two (307,200 ft²/29,084 m² fill) would result in a greater area of wetland fill.

A wetlands delineation was then conducted for Alignment One and Alignment A, identifying the location and size of jurisdictional wetlands within the proposed right-of-way using Alignment One. The delineation was conducted in accordance with the Corps of Engineers Wetlands Delineation Manual (Corps of Engineers 1987) and the National List of Plant Species That Occur in Wetlands: Hawaii (Region H) (U.S. Fish and Wildlife Service 1988). Application for a Department of the Army Permit was made in 1996. USACE authorized the construction of Alignment One under Nationwide Permit 26 in September 1996, conditioned upon future CZM and Section 401 compliance.

However, completion of the EIS and construction did not take place at that time. In 1998, in continuing consultations with USACE and U.S. Environmental Protection Agency (USEPA), minor relocations of Alignment One were made to reduce adverse impacts to water quality in flood zones and drainageways. Between the western terminus at Kaumana Drive and Wilder Road, most of the right-of-way was shifted 46 meters (150 feet) south. South of Wilder Road, near the residential subdivision at Pamoho Road, the right-of-way was modified, making an arc extending a maximum of 92 meters (300 feet) south of the original proposed right-of-way. Wetland studies and delineations were made for the modified alignment.

Finally, after review of the Draft EIS, Alignment Ten was proposed to further reduce adverse social, biological and wetland impacts. Alignment Ten shares a section with Alignment One and an adjusted section with Alignment Two. Section E-C was relocated 18 m (60 ft.) northwest of this original section in Alignment Two, moving the proposed alignment away from the 100-year flood floodzone (Figure 1). This new alignment was studied and delineated in 1999.

This current document describes and compares the alignments as they are presented in the Final EIS. The two alternatives proposed for the Lower Portion, Alignments A and B, have not been modified during this process.

METHODS AND PROJECT AREA

Description and Location of Proposed Alternative Alignments

Three alternative alignments are under consideration in the Upper Portion (from Kaumana Drive to a point 1000 meters (3250 ft.) west of Komohana St.). These three alternatives are designated Alignment One, Alignment Two and Alignment Ten. Together, these three alternatives are made up of six sections (Figure 1). Each of the three alternatives utilizes a unique combination of the six sections, sharing some sections with one or both of the other alternatives.

Two alternative alignments are under consideration in the Lower Portion (from the junction with the Upper Portion to Kawili St.), designated Alignment A and Alignment B. Each of these is a unique alignment with no overlapping sections.

Wetland Habitat Determination and Delineations

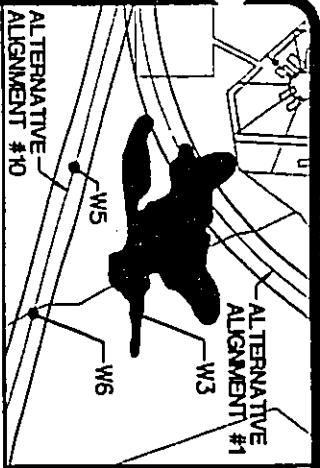
In 1995, a preliminary determination of the presence of jurisdictional wetlands was made using vegetation data from the field studies and information from the soil survey (Sato et al. 1973) for Alignments One and Ten. Vegetation, soil and hydrological criteria were used to determine the parts of the project area that have one or more strong indicators of wetland habitat. This information was used to form a model based on soil type to estimate the area of potential fill for each alignment.

In 1998 and 1999 a complete delineation was made for all sections of Alignments One and Ten, and for the sections of Alignment Two that are shared with Alignments One and Ten. The delineations were conducted by a team of two botanists and a soil scientist within a 60 m (200 ft.) wide study area, 30 m (100 ft.) on either side of the staked center line. This analysis of wetland habitats was guided by the Corps of Engineers Wetlands Delineation Manual (Corps of Engineers 1987) and the National List of Plant Species That Occur in Wetlands: Hawaii (Region H) (U.S. Fish and Wildlife Service 1988).

The vegetation, soil and hydrological criteria defined in the Delineation Manual were used to identify jurisdictional wetlands. In this report, the symbols OBL (obligate wetland species), FW (Facultative Wetland species), FAC (Facultative Species), FU (Facultative Upland species), and NI (Not Indicator species) are used to indicate each plant species' "wetland status" in the context and as defined in the National List, cited above.

Hydric soil conditions were checked by digging soil pits. Wetland indicators described in the Delineation Manual, such as low chroma and bright mottles, were noted. Additionally, lack of soil structure was included as a strong indicator of hydric soil.

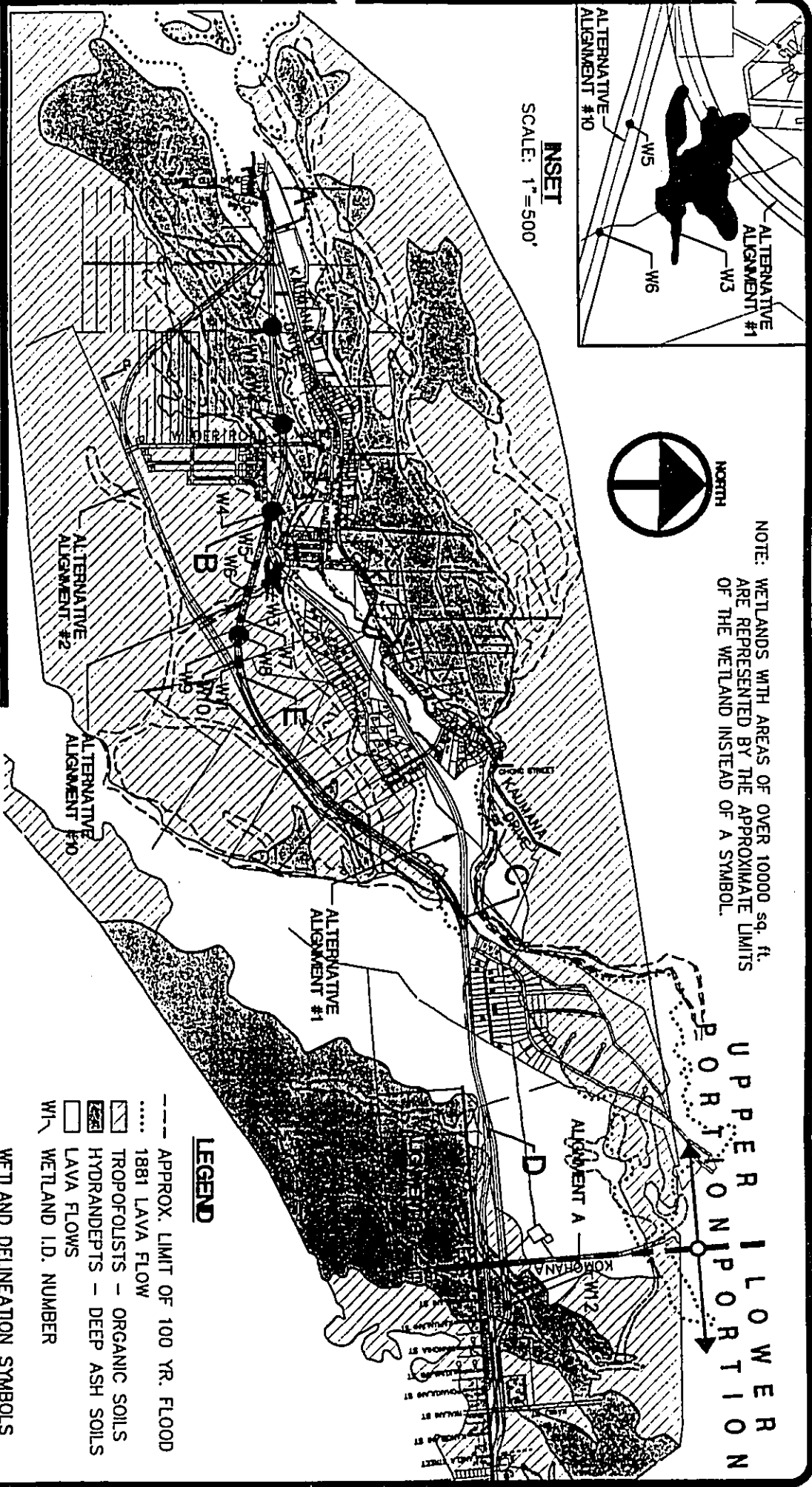
Presence of soil saturation or free water in the pit was taken as a hydrological indicator of wetland conditions. Soil that was muddy due to poor drainage at the time of the study is also considered a strong indicator.



INSET
SCALE: 1"=500'



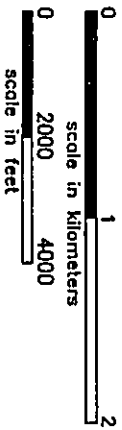
NOTE: WETLANDS WITH AREAS OF OVER 10000 sq. ft. ARE REPRESENTED BY THE APPROXIMATE LIMITS OF THE WETLAND INSTEAD OF A SYMBOL.



DELINEATED WETLANDS

PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

DATE 2/03/2000



- LEGEND**
- APPROX. LIMIT OF 100 YR. FLOOD
 - 1881 LAVA FLOW
 - [diagonal hatching] TROPICOLISTS - ORGANIC SOILS
 - [cross-hatching] HYDRANDEPTS - DEEP ASH SOILS
 - [stippled] LAVA FLOWS
 - W1- WETLAND I.D. NUMBER
- WETLAND DELINEATION SYMBOLS**
- 0-1000 sq. ft. (0-93 sq. m.)
 - 1001-10000 sq. ft. (93-929 sq. m.)

DATE: 2/03/2000

Page

RESULTS

Wetland Habitat Analysis

Correlation of Soil Types and Land Use with Wetland Indicators

Three general soil types occur within the project area: Lava Lands, Tropofolists, and Hydrandepts (Figure 1). The distributions of the three major soil types are easily recognized in the field from land use and the present vegetation (Gerrish 2000).

1) LAVA FLOWS. The Lava Flows are the 1881 lava flow, vegetated with 'Ohi'a/Uluhe Fern Forest or Closed 'Ohi'a Forest. The soil is a very thin, discontinuous layer of organic matter. The surface may be 50% or more pahoehoe lava outcrop.

2) TROPOFOLISTS. The Tropofolists are shallow organic soils formed over prehistoric pahoehoe lava flows from Mauna Loa. For the most part, these soils are covered by native vegetation. Some areas have been degraded by grazing or other human activity and support the Mixed 'Ohi'a and Waiawi Shrubland. Many other areas are undisturbed, with open to closed canopy, native forest classified as 'Ohi'a/Uluhe Fern Forest.

3) HYDRANDEPTS. The Hydrandepts are relatively deep soils of Mauna Kea ash that have been cleared and cultivated, mostly for sugarcane. Although no cane is currently cultivated in the project area, the abandoned fields are easily recognized. (Gerrish 2000).

No areas with wetland characteristics have been found on the Lava Lands (rLW), which comprise the 1881 and other young lava flows within the project area. This simple, early succession community never contains more than 50% FAC or wetter species among the dominants. No species wetter than FAC have been found here.

The Hydrandepts belong to soil series identified as Kaiwiki silty clay loam, Olaa extremely stony silty clay loam, Olaa silty clay loam, and Panaewa very rocky silty clay loam. These soils are generally well-drained and the surface is dissected by well-defined gullies. Some of these gullies are shown on the USGS topographic maps as intermittent streams; all are shown on FEMA flood maps as well. They have all had water flowing on at least one occasion that I have visited them. In some locations, the gullies contain OBL or uncommon FW plants.

Jurisdictional wetlands are found only on shallow Tropofolists on prehistoric pahoehoe lava flows or other situations where human activity has impeded or altered the natural drainage pattern. These are identified in the Soil Survey as belonging to the Keaukaha extremely rocky muck and the Keei extremely rocky muck series. These soils are not in their entirety hydric, but have a tendency to become waterlogged when microtopography or compaction impedes drainage.

Detailed observations of soil and hydrology were made on an 800 meter (2600 ft.) long segment of Alignment Two between survey stations 4200 ft. and 6800 ft. Approximately 20% of this sample distance had hydrophytic vegetation and strong indicators of either hydric soil or wetland hydrology. This 20% factor was used in the 1995 determinations to estimate the potential extent of wetland habitats within Alignments One and Two. No variance for the 20% factor had been determined and no estimate of the reliability of this

model was available. The estimates generated were considered preliminary estimates of the extent of problematic wetland sites within a densely vegetated and rugged terrain. Furthermore, the 20% factor was considered to be a "conservatively high" estimate of wetland area, reflecting a "worst case" scenario.

Watershed Characteristics

The project area is a region of extremely high rainfall. The median annual rainfall is approximately 4000 – 5000 mm (160 – 200 inches) (DLNR 1986). However, streams are poorly developed on the younger substrates, lava flows and Tropofolist soils. Overland flow may occur during periods of high rainfall, but rainfall usually infiltrates rapidly through fractures in the lava substrate. Therefore, these two substrate types do not have distinct watershed characteristics and do not usually contribute to surface water body flow.

The older surfaces with Hydrandept soils are dissected with gullies and more or less distinct drainageways. Flowing or standing water has been observed in some of these during field surveys. All of these areas with Hydrandept soils in the project area are within the same small watershed with a system of gullies sloping to the northeast and leading to the principal drainageway which roughly follows the southern edge of the 1881 lava flow. The larger gullies and drainageways are indicated on the FEMA flood maps as areas within the limit of the 100 year flood (Figure 1). Portions of the principle drainageway are shown on the USGS 7.5 Minute Series Quadrangle Map as an unnamed intermittent stream. This drainageway disappears from view and from the USGS map a short distance east of Pamoho St. at the point that it enters an area of Tropofolist soil. Presumably, water enters subterranean lava tubes or other channels at this point. Thus, overland flow and surface water body flow in the Upper Portion of the project area is not known to contribute to surface water bodies outside the project area other than the ocean.

Area of Potential Wetland Fill and Wetland Functions

Summary of Wetland Area Within the Proposed Alignments

The area of wetlands within the 60 m (200 ft.) wide corridor is summarized in Table 1. Each individual wetland, with the exception of Alignment Two Section A-E, is listed in Table 2. Section A-E of Alignment Two was not delineated for two reasons:

- 1) The 1995 wetland studies and determination found this section to contain numerous small and variable patches of wetlands. Due to the difficulty of delineating wetlands on Tropofolist soils in Hawaii, and the difficulty of delineating wetlands under dense vegetation, it was concluded that a delineation of these areas would require inordinate effort and produce dubious, unrepeatabe results. Instead, the area of wetlands was modeled, as described above.
- 2) Because the field studies and model determined that extensive wetlands were present in this area, it was agreed that this alignment would probably not be advanced as the preferred alignment. In the event that this alignment might be chosen, a delineation would be necessary.

TABLE 1. Total area of wetlands within 60 m (200 ft.) wide corridor for Alignments One, Two and Ten. Area within sections also given (see Figure 1.) for section locations. All areas based on field delineations, except for section A-E of Alignment Two, which is based on model described in text.

Alignment One			Alignment Two			Alignment Ten		
Section	ft ²	m ²	Section	ft ²	m ²	Section	ft ²	m ²
Total	36,366	3,442	Total	344,000	32,568	Total	17,630	1,669
A-B	10,230	968	A-E	344,000	32,568	A-B	8,430	798
B-C	26,136	2,474	E-C	0	0	B-E	9,200	871
C-D	0	0	C-D	0	0	E-C	0	0
						C-D	0	0

TABLE 2. Summary of wetlands delineated on Alignment One and Alignment Ten in the Upper Portion of the Proposed Puainako Street Extension, Hilo, Hawaii. Area of wetlands within 60 m (200 ft.) wide corridor is given.

NO.	Survey Station	Delineation Plot ID	Alignment One		Alignment Ten	
			ft ²	m ²	ft ²	m ²
W1	28+00	1-12	5,280	500	5,280	500
W2	49+00	1-4	3,150	298	3,150	298
W3	77+00	1-9	26,136	2,474		
W4	68+00	99-102	1,800	170	1,800	170
W5	80+00	99-103			300	28
W6	86+00	99-104			150	14
W7	92+00	99-111			300	28
W8	96+00	99-110			6,000	568
W9	97+30	99-109			100	9
W10	100+80	99-107			300	28
W11	101+80	99-106			250	24
Total Area			36,366	3,442	17,630	1,669

The wetland habitat of Alignment Two section A-E is described in the section following the delineated wetlands.

Description and Function of Individual Wetlands

The following sections use a standardized format to describe and present data for each wetland listed in Table 2. Wetland function and predicted impact of the proposed action is also discussed.

WETLAND NO. W1

Wetland No.:	W1	Fill: 500 m ² /5280 ft ²
Survey Station:	28+00	Delineation Sheet No. 1-12
Alignment:	1 and 10	

Description of Resource

Field Observations-Wetland is a surface water depression of human origin within an abandoned cane field. The wetland is an impoundment of a broad swale created many years in the past by a farm road blocking surface water drainage. No outlet is apparent. Wetland is 25 m in diameter.

On 7/98 a small amount of open water with maximum depth of 0.6 meters was visible, but most of the area had standing water beneath a cover of Wainaku grass (*Panicum repens*: FAC+). On 12/95 no open water was visible, but water was standing above surface beneath Wainaku grass. On both occasions, the soil was saturated, structureless with very strong sulfidic smell. Vegetation of this wetland is entirely Wainaku grass, distinct from surrounding vegetation of mixed grasses and shrubs. No aquatic animals were observed in wetland.

Map Analysis- Swale indicated on USGS Piihonua Quadrangle map (7.5 minute series) as deflection of 1300 foot contour line. Estimated maximum watershed for this wetland is 40,000 ft.² Site is within the limits of 100 year flood (FEMA). The soil is mapped as Kaiwika silty clay loam, 0-10% slope, a Typic Hydrandept, and described as well-drained.

Wetland Functions

Hydrological Functions- The wetland appears to store precipitation and overland flow from a small local watershed formed by the impoundment of the swale and allows sedimentation. No outlet is visible, implying that impoundment rarely overflows and that catchment area is small relative to capacity. This wetland prevents impounded water from entering the principle drainageway 100 feet down-slope that drains this area, except in periods of high rainfall.

Biological Functions- Vegetation is a common alien grass within a surrounding upland successional community in an abandoned cane field. This wetland is not habitat for native plants. The wetland is isolated from other bodies of water and is not likely to be habitat for native aquatic animals. Wetland may provide habitat for introduced invertebrates, amphibians or fish.

This wetland feature contributes little to beta (landscape) diversity because similar vegetation patches are common in the locality and region.

Impact of Proposed Action and Proposed Mitigation

Construction of the proposed roadway may continue to block the swale, thus reproducing the existing conditions and functions. If roadway requires a culvert at this site, the impoundment will be drained resulting in a small increase of water and sediment in the principle drainageway down-slope.

If site is not drained by a culvert, no change of function would occur. If a culvert is required at this site,

a) the small amount of water and sediment that would be added to the principle drainageway would be negligible and require no mitigation; or

b) function could be replaced by dredging a comparable size depression on up-slope side of roadway below level of culvert inlet. However, this impoundment would likely breed mosquitoes and be unsightly.

WETLAND NO. W2

Wetland No.: W2

Fill: 298 m²/3150 ft²

Survey Station: 49+00

Delineation Sheet No. 1-4

Alignment: 1 and 10

Description of Resource

Field Observations- Site is within a man-made drainage channel that originates nearby and empties into the principle drainageway. The channel is 10 m wide with steep banks 5 m high. The channel bottom is almost completely vegetated. The wetland is on the relatively level floor of the channel, which often has a small amount of water flowing beneath a dense growth of grass. Small areas of open water are sometimes visible. The soil is saturated and structureless, measuring 7 inches deep over pahoehoe lava.

A portion of this channel is on the north side of the centerline within the proposed ROW; 298m²/3150 ft² of the wetland is within the ROW.

The vegetation is dominated by Wainaku grass (FAC+) with a few scattered kamole (*Ludwigia octovalis*: OBL) and a few FW species. All plants within the wetland are introduced species. Introduced prawns (*Macrobrachium lar*), tadpoles and minnows have been observed in the open water.

Map Analysis- This drainage channel is not shown on USGS Piihonua Quadrangle map (7.5 minute series). The map shows that this locale on the west side of Wilder street has low slope. This site is not within the limits of the 100 year flood (FEMA). The soil is mapped as Kaiwiki silty clay loam, 0-10% slope, a Typic Hydrandept, and described as well-drained.

Wetland Functions

Hydrological Functions- The channel was apparently dug in the past to improve drainage within this locale with very little slope. Channel carries water to principle drainageway. Wetland vegetation within channel may slow water movement and enhance sedimentation.

Biological Functions- This wetland provides negligible biological function or values. The plants and animals observed are all introduced species that are commonly found elsewhere in this locale and throughout the region.

Impact of Proposed Action and Proposed Mitigation

Construction of roadway would block or fill a portion of this channel, impeding drainage of this nearly level area. It is possible that soil moisture in the area may be increased and wetland characteristics develop in places where they do not now occur.

No mitigation of biological impacts is necessary. Reconstruction of drainage channel on the north side of the proposed roadway may be necessary to maintain current drainage pattern.

WETLAND NO. W3

Wetland No.: W3

Fill: 2474 m²/26136 ft²

Survey Station: 77+00

Delineation Sheet No. 1-9

Alignment: 1

Description of Resource

Field Observations- Site is a large grassy opening within a mixed landscape of agricultural fields and grazed woodlands. An electrical transmission line crosses site. It appears that the site has been influenced by these and other land uses.

Wetland is a broad, shallow depression within a generally flat locale, apparently fed by precipitation and overland flow. No distinct inlet or outlet has been found, but deep grass mats limit observations of topography. Aerial photograph interpretation shows a small part of the wetland abuts the principle drainageway. The presence or type of a connection with the drainageway has not been confirmed in the field.

Hydrological conditions have varied between dates and points of observations, i.e. muddy soil recorded in 1992, 15 cm (6 in.) standing water recorded in 1995, mats of grass floating on 1 m (36 in.) of water in 1998, and no standing water but soil very moist in 1999. At the date (1998) and point of delineation standing water was 0.5 m (19 in.) deep and the soil was found to be saturated, structureless and low chroma. The vegetation at the delineation point and in most of the site is a deep mat of Wainaku grass (FAC+) and California grass (FW). No aquatic animals have been observed at this site.

Map Analysis- The USGS Piihonua Quadrangle map (7.5 minute series) shows the area to have little slope but does not indicate the presence of a wetland. The wetland is within the limits of the 100 year flood (FEMA) which is related to overland drainage towards the principle drainageway. The soil is mapped as Keaukaha Extremely Rocky Muck 6 to 20% slope, a Lithic Tropofolist, described as a thin, well-drained organic soil over Pahoehoe bedrock. An interpretation of an aerial photograph shows the total area of the wetland to be 2.3 ha (5.0 acres)

Wetland Functions

Hydrological Functions- The major hydrological functions of this wetland are temporary water storage and sedimentation. This depressional wetland receives precipitation and overland water moving through a surface drainageway indicated by the flood zone map. Wetland may also function as a floodplain and water storage when flow through drainageway exceeds capacity during high rain fall. The connection of this wetland to the drainageway is not confirmed or understood and functions related to the drainageway are conjectural. The water storage capacity of the entire wetland has been estimated as 1,089,000 cf. This capacity would delay peak flooding of the 100 year flood by 213 seconds, and would contain the full discharge of the 10 year flood for 307 seconds.

The drainageway disappears from the surface a short distance below this wetland. The USGS quad map (Piuhonua Quad) confirms this disappearance. Apparently, the flow goes underground through lava tubes or similar voids; it is not known if this water reappears as surface water before reaching the ocean. Given this disappearance, influence of this wetland on flooding or surface water quality is short-lived.

Biological Function- This wetland provides habitat for alien plants and probably aquatic life. All species present are common within the region. No native species are known to make use of this site. This relatively large wetland does provide some beta diversity within the already heterogeneous landscape.

Impact of Proposed Action and Proposed Mitigation

The proposed roadway would fill approximately 2474 m²/26136 ft² of the wetland. The road would bisect the wetland isolating a smaller area on the north side of the road near the drainageway from the larger portion on the south side of the roadway (Figure 1). The proposed action would eliminate storage capacity within the filled area and would deprive the drainageway of storage capacity south of the roadway.

Full storage capacity and sedimentation can be maintained by culverts under the roadway to connect the north and south portions of the wetland and increasing the area of the depression by appropriate grading of an area equal in size to the roadway fill.

Wetland NOS. W4, W5, W7, W8, W9, W10, W11

Wetland No.	Survey Station	Delineation Sheet No.	Fill Area m ² /ft ²
W4	68+00	99-102	170/1,800
W5	80+00	99-103	28/300
W7	92+00	99-111	28/300
W8	96+00	99-110	568/6,000
W9	97+30	99-109	9/100
W10	100+80	99-107	28/300
W11	101+80	99-106	24/250

Description of Resource

Field Observations- These 7 wetlands are all small surface-water depressions or topographic lows in areas with little slope. None have inlets or outlets. Most contained some standing water on the delineation date. Most have no effect on the species composition of the tree layer but can be recognized by standing water or water marks and an alteration of species of the herb layer. All but one of the wetlands has umbrella sedge (*Cyperus halpan*: FW) as a dominant species. Some have kamole (*Ludwigia octovalis*: OBL) or spikerush (*Eleocharis obtusa*: OBL) as a dominant or subdominant species. The soils have sulfidic odor and usually have low chroma.

Map Analysis- None of these wetlands can be detected on the USGS 7.5 minute series topographic map. None, with the exception of W4, is within the limit of the 100 year flood (FEMA). All have soils mapped as Keaukaha Extremely Rocky Muck 6 to 20% slope, a Lithic Tropofolist.

Wetland Functions

Hydrological Functions- This type and size of surface-water depression wetland has been found to be common throughout the region on Tropofolist soils with low slope. The underlying pahoehoe bedrock impedes or prevents infiltration. The source of water is precipitation and collection of overland flow from very limited nearby areas.

These wetlands retain a small amount of water within their shallow soil profiles, reducing overland flow to surface waters. However, streams are poorly developed on this soil type and precipitation is normally dissipated by infiltration in areas not underlain by impervious bedrock. During periods of drought or low rainfall retained water may maintain soil moisture that can be utilized by surrounding plant-life. These functions are restricted to the immediate site of the wetland.

Biological Function- These small depression wetlands are abundant within the region. They provide habitat for common facultative and a few obligate wetland plants of the region. Most of these plants are introduced, a few are indigenous. Due to their small size and fluctuating water level, they do not provide important habitat for any known aquatic animals. They are not known to be utilized by any native animals.

These wetland features do provide some beta diversity (landscape heterogeneity) on a fine scale.

Impact of Proposed Action and Proposed Mitigation

Grading to construct the roadway would fill 855 m²/9050 ft² of these seven wetlands. This filling would not affect drainage patterns or off-site water quality.

No mitigation proposed because impacts would be negligible.

WETLAND NO. 6

Wetland No.:	W6	Fill: 14 m ² /150 ft ²
Survey Station:	86+00	Delineation Sheet No. 99-104
Alignment:	10	

Description of Resource

Field Observations- This wetland is a very small depression within a nearly level area that appears to be a drainageway or topographic low. Shallow (0.25 m), vegetated channels meander through the area. The vegetation is dominated by Wainaku grass (FAC+) with other subdominant alien species.

Map Analysis- This wetland cannot be detected on the USGS 7.5 minute series topographic map. It is within the limit of the 100 year flood (FEMA). The soil is mapped as Keaukaha Extremely Rocky Muck 6 to 20% slope, a Lithic Tropofolist.

Wetland Functions

Hydrological Function- This small depression wetland appears to collect water from precipitation and overland flow and may store a small quantity of water and enhance sedimentation. During periods of drought or low rainfall retained water may maintain soil moisture that can be utilized by surrounding plant-life. These functions are restricted to the immediate site of the wetland.

Biological Function- This wetland is vegetated with common introduced plant species. No aquatic animal life was observed. Native animals are not likely to utilize this habitat.

Impact of Proposed Action and Proposed Mitigation

Construction of the roadway would fill this wetland. Impacts off-site would be negligible due to the extremely small size of the wetland.

Proper roadway design will maintain local drainage and surface water quality. No other mitigation is necessary.

Description of Wetlands of Alignment Two, Section A-E

Detailed observations from 4200 to 6800 of Alignment Two determined that as much as 20% of the linear extent of the center-line of the proposed right-of-way has strong wetland indicators. The wet areas were of several types. Some of these wet areas are small, undrained pockets, dominated by OBL plants, i.e. spikerush (*Eleocharis obtusa*) and kamole (*Ludwigia octovalis*), or by FW (California grass) or FAC (Wainaku grass) grasses. These were found at survey marks 6000 (6 meters:20 ft. diameter), 5900 (6 meters:20 ft. diameter) and 5600 (5 meters:15 ft. diameter). The soils are saturated, structureless, and low chroma. The soil in intervening stretches has strong structure and higher chroma. Although the groundcover within the wet pockets is clearly hydrophytic, the over-story does not reflect the local conditions, but is made up almost entirely of 'ohi'a, the same as the surrounding community.

A larger wet area (30 meters:100 ft. extent along the center-line) was found near the 5200 ft. marker. Saturated, low chroma soils was found. However, the groundcover is not made up of the OBL plants found in the smaller undrained pockets. This, and other large wet areas, is characterized by much reduced canopy cover of 'ohi'a. The trees are scattered and somewhat stunted in appearance. The groundcover is dominated by uluhe and Wainaku grass. These areas are similar in vegetation appearance to "bog formation" dieback areas known mostly from the slopes of Mauna Kea (Mueller-Dombois et al 1980).

Another extensive segment, between 4200 to 4900 ft. markers, is a mosaic of drained areas and the two types of wet areas described above. This stretch also includes a number of areas with water flowing over the surface or in poorly developed drainageways, on dates of observation, often with sparse hydrophytic vegetation. An estimate was made that 50% of the right-of-way here may be wetland.

These detailed observations of an extent of 800 meters (2600 ft.) between 4200 and 6800 determined that 155 meters (505 ft.), or nearly 20%, have wetland characteristics. In a "worst case" analysis, this factor of 20% wetlands is multiplied times the extent of the alignment traversing soils mapped as Tropofolist 3,904 meters (12,800 ft.) and the study corridor width to generate an estimate that there may be up to 32,568 square-meters (344,000 square-feet) of jurisdictional wetland within Alignment Two section A-E.

Description of Wetlands in Lower Portion: Alignments A and B

Alignment A traverses a small wetland seep of 2 m² (20 ft.²). This pocket of undrained soil is dominated by alien plants, and is contained in a surrounding upland community of a secondary forest of alien trees and plants with little conservation value. No biological, hydrological or other function of this wetland has been identified.

No wetlands occur in Alignment B.

DISCUSSION AND RECOMMENDATIONS

Area of Potential Wetland Fill

Alignment Ten (1,669 m²/17,630 ft²) would affect significantly less wetland area than Alignment One (3,442 m²/36,366 ft²) and far less than Alignment Two (32,568 m²/344,000 ft²).

Biological Function and Value

All the wetlands of Alignment One are dominated by alien plant species and occur within vegetation dominated by alien plants. No areas on Alignment One are dominated by OBL plants or even have a high abundance of OBL plants. These wetlands have no identified biological value for conservation of native biota nor any other notable value.

On Alignment Two, some small wetland habitat pockets are dominated by one or two indigenous OBL plants, and much of the potentially wetland area occurs within native or partially native communities. Although the flora of the poorly drained sites is made up of widespread, non-endemic, wetland species, some of the communities surrounding them are of limited distribution worldwide or statewide. The 'Ohi'a/Uluhe Fern Forest that includes these wetland pockets may be found only at relatively low elevations on the windward side of Mauna Loa or Kilauea, due to its dependence on young lava substrates in an area of high rainfall. The wetland pockets appear to be a natural inclusion within the vegetation.

On Alignment Ten, the wetlands numbered 7 to 11 (657 m²/6950 ft²) are within predominantly native vegetation, the remainder are within alien-dominated communities.

It is difficult to assign a biological value to any of the wetlands within the project area based on botanical characteristics. The plants that grow in the wetlands are either the same native and alien species that occur in the surrounding communities on drained soils (e.g. 'ohi'a, waiawi, California grass, Wainaku grass) or are ubiquitous, pan-tropical species (spikerush and kamole). Most of the wetland pockets are very small. No significant biological function as special habitat for other organisms is known for any of these poorly drained sites.

RECOMMENDATION

1) The low biological value of the wetlands does not justify choosing an alignment based on wetland biological function.

2) In this project area, the plant communities surrounding the wetlands are often of higher biological function and value than the wetland inclusions. Choice of alignments should weigh biological values of the surrounding communities as described in the vegetation report for this project (Gerrish 2000).

Hydrological Function and Value

The wetlands of the project area have similar function. These small, depressionai wetlands, isolated from other surface water bodies, retain a small amount of rainfall, may slow overland runoff and may allow some sedimentation. Even these small effects are likely to have little influence on surface water quality because drainageways in this watershed are poorly developed and no surface water bodies flow out of the project area.

Similar small wetlands are abundant outside the proposed alignments.

RECOMMENDATION

Proper roadway design and best management practices will maintain proper drainage and adequately protect surface water quality. No further mitigations are recommended.

REFERENCES

Corps of Engineers. 1987, Corps of Engineers Wetlands Delineation Manual. Environmental Laboratory, Vicksburg, MI; Department of the Army.

Gerrish, G. 2000. Vegetation Report For Proposed Puainako Street Extension Hilo, Hawaii. EIS Technical Report.

Mueller-Dombois, D, Jacobi JD, Cooray RG, Balakrishnan B. 1980. Ohia Rain Forest Study: Ecological Investigations of the Ohia Dieback Problem in Hawai'i. Revised Edition. College of Tropical Agriculture and Human Resources, Hawai'i Agricultural Experiment Station. Miscellaneous Publication 183.

U.S. Fish and Wildlife Service. 1988. National List of Plant Species that Occur in Wetlands: Hawaii (Region H). Biological Report 88(26.13) U.S. Department of the Interior.

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Puainako Street Extension, Hilo</u> Applicant/Owner: <u>HDOH / FHWA</u> Investigator: <u>Gebrish</u>	Date: <u>7/18/98</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Savanna</u> Transect ID: <u>Align 1/10</u> Plot ID: <u>98-12</u> <u>(W1)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Panicum repens</u>	<u>H</u>	<u>FAC+</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).			<u>100%</u>		
Remarks:					

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs <input checked="" type="checkbox"/> Other <u>FEMA Flood Zone</u> ___ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>24</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks: <u>Site is a small impoundment of swale created by old farm road.</u>	

W1

SOILS

Map Unit Name (Series and Phase): Kaiwiti Silty Clay Loom 0-10% sp Drainage Class: well-drained

Taxonomy (Subgroup): Typic Hydrandent Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-20	A				<u>Saturated/structureless</u>
20+	C				<u>Pahoehoe bedrock</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	

Remarks: Designated Wetland No. W1. Near station 28+00 of joint alignment 1 and 10. Wetland is 25m in diameter, 490 m²/5200 ft².

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Puainoa St. Extension, Hilo</u> Applicant/Owner: <u>HDOT / FHWA</u> Investigator: <u>Gerrish</u>	Date: <u>7/18/98</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Savanna</u> Transect ID: <u>Align 1/10</u> Plot ID: <u>98-4</u> <u>(W2)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Panicum repens</u>	<u>H</u>	<u>FAC+</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Vegetation includes OBL and FACW species as non-dominant species.

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other _____</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>6-12</u> (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: _____ (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Remarks: <u>Site is the vegetated bottom of a dredged channel with flowing water and some open pools.</u></p>	

W2

SOILS

Map Unit Name (Series and Phase): <u>Kaimiki Silty Clay Loam 0-10% slope</u>		Drainage Class: <u>well-drained</u>			
Taxonomy (Subgroup): <u>Typic Hydroudept</u>		Field Observations Confirm Mapped Type? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottles Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
+1-0	O				<u>Sparse litter</u>
0-2	A1	<u>7.5YR 4/4</u>	<u>10R 4/4</u>	<u>1%</u>	<u>Firm, structureless</u>
2-9	A2	<u>7.5YR 4/3</u>	<u>10R 3/6</u>	<u>1%</u>	<u>Weak crumb struc.</u>
9+	C				<u>Pahoehoe Lava</u>
Hydro Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input checked="" type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks: <u>Pit dug at point not inundated. Soil saturated and structureless in A1 horizon.</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle) Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks: <u>Site in broad steep-sided dredged channel 10m wide. A 30m section of wetland channel is on north side of CL near station 49+00 of joint alignment 1 and 10, equals 300m²/3150 ft.²</u>	

Designated wetland no. W2.

Approved by HQUSACE 2/92

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>Puainako St. Extension, Hilo</u> Applicant/Owner: <u>HDOT / FHWA</u> Investigator: <u>GERRISH</u>	Date: <u>5/29/98</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? Yes <input type="radio"/> No <input checked="" type="radio"/> Is the area a potential Problem Area? Yes <input type="radio"/> No <input checked="" type="radio"/> (If needed, explain on reverse.)	Community ID: <u>A9</u> Transect ID: <u>Align 1</u> Plot ID: <u>98-9</u> <u>(W3)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Panicum repens</u>	<u>H</u>	<u>FAC+</u>	9. _____	_____	_____
2. <u>Brachiaria mutica</u>	<u>H</u>	<u>FACW</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Includes grass mats floating on water.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): _____ Stream, Lake, or Tide Gauge _____ Aerial Photographs <input checked="" type="checkbox"/> Other <u>FEMA Flood Zone</u> _____ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated _____ Saturated in Upper 12 Inches _____ Water Marks _____ Drift Lines _____ Sediment Deposits _____ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): _____ Oxidized Root Channels in Upper 12 Inches _____ Water-Stained Leaves _____ Local Soil Survey Data _____ FAC-Neutral Test _____ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>18</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Remarks: <u>Depth of water on delineation date noted above. Water present or absent on other observation dates.</u>

W3

SOILS

Map Unit Name (Series and Phase): <u>Keaukaha extremely rocky much</u>		Drainage Class: <u>well-drained</u>			
Taxonomy (Subgroup): <u>Lithic Tropepelist</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-24+	A	10YR 2/1			Structureless, some peat
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chrome Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks: <u>Soil sampled below 18" of standing water.</u> <u>Spade inserts 36" into soil.</u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks: <u>Designated wetland no. W3</u> <u>According to aerial photo analysis, total wetland area is 217,800 ft.². Proposed fill would be 26,136 ft.²</u>	

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Puainako St. Extension, Hilo</u> Applicant/Owner: <u>HDOT / FHWA</u> Investigator: <u>GERRISH</u>	Date: <u>7/2/99</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Mixed</u> Transect ID: <u>ALISH 1/W</u> Plot ID: <u>99-102 (W4)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Panicum repens</u>	<u>H</u>	<u>FAC+</u>	9.		
2. <u>Bracharia mutica</u>	<u>H</u>	<u>FACW</u>	10.		
3. <u>Bracharia mutica</u>	<u>S</u>	<u>FACW</u>	11.		
4. <u>Metrosideros polymorpha</u>			12.		
5. <u>var. globerrima</u>	<u>T</u>	<u>FAC+</u>	13.		
6. <u>Psidium cattleianum</u>	<u>T</u>	<u>FAC</u>	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC+): 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>All</u> (in.)	Remarks:

W4

SOILS

Map Unit Name (Series and Phase): <u>Keaukaha extremely rocky muck</u>		Drainage Class: <u>well-drained</u>	
Taxonomy (Subgroup): <u>Lithic Tropofolist</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Profile Description:			
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)
<u>0-15</u>	<u>A</u>	<u>10YR 2/2</u>	
Texture, Concretions, Structure, etc. <u>Weak structure</u>			
Hydro Soil Indicators:			
<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions		
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils		
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils		
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List		
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List		
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input checked="" type="checkbox"/> Other (Explain in Remarks)		
Remarks: <u>Soil indicators marginal. Determined to be hydric based on low chroma and weak structure.</u>			

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks: <u>Designated wetland no. W4. North of center line near station 68+00 (Alignments 1 and 10). 30 ft. by 60 ft., 1800 ft.².</u>	

SOILS

Map Unit Name (Series and Phase): <u>Leakaha extremely rocky muck</u>		Drainage Class: <u>well-drained</u>			
Taxonomy (Subgroup): <u>Lithic Tropofolist</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottles Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-5</u>	<u>A</u>	<u>10YR 2/1.5</u>			<u>Structureless Clay</u>
Hydro Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input checked="" type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle) Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	(Circle) Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks: <u>Designated wetland no. W5. Sharp boundary, 15ft. x 20ft. = 300 ft. sq. North side of centerline near station 80+00 of Alignment 10.</u>	

W5

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Puainako St. Extension, Hilo</u>	Date: <u>7/2/99</u>
Applicant/Owner: <u>HDOT / FHWA</u>	County: <u>Hawaii</u>
Investigator: <u>GERRISH</u>	State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? Yes No	Community ID: <u>Mixed</u>
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: <u>Align 10</u>
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: <u>99-103</u> <u>(W5)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cyperus halpanis</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Eleocharis obtusa</u>	<u>H</u>	<u>OBL</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>3</u> (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>All</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
Remarks:	

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>Puainako St. Extension, Hilo</u> Applicant/Owner: <u>HDOT / FHWA</u> Investigator: <u>GERRISH</u>	Date: <u>7/2/99</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Mixed</u> Transect ID: <u>Align 10</u> Plot ID: <u>99-104 (W6)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Panicum repens</u>	<u>H</u>	<u>FAC+</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input checked="" type="checkbox"/> Other <u>FEMA Flood zone</u> <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>16</u> (in.)	Remarks: <u>Topography and vegetation indicate drainageway. Within FEMA flood zone.</u>

WG

SOILS

Map Unit Name (Series and Phase): <u>Keaukaha extremely rocky muck</u>		Drainage Class: <u>well-drained</u>			
Taxonomy (Subgroup): <u>Lithic Tropofolist</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-20</u>	<u>A</u>	<u>5YR 2.5/1</u>			<u>Soft clay, weak structure</u>
<u>20+</u>	<u>C</u>				<u>Pahoehoe bedrock</u>
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input checked="" type="checkbox"/> Gleyed or Low-Chrome Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Is this Sampling Point Within a Wetland?		<input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks: <u>Designated Wetland no. WG. Wetland is irregular shape among upland hummocks. Crossed by centerline near station 86+00. Proposed fill of 150 ft. 2</u>		

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Rainako St. Extension, Hilo</u>	Date: <u>7/15/99</u>
Applicant/Owner: <u>HDOT / FHWA</u>	County: <u>Hawaii</u>
Investigator: <u>GERRISH</u>	State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? Yes No	Community ID: <u>Ohi'a</u> Transect ID: <u>Align 10</u> Plot ID: <u>99-111</u> <u>(W7)</u>
Is the site significantly disturbed (Atypical Situation)? Yes No	
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cyperus halpan</u>	<u>H</u>	<u>FACW</u>	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Ludwigia octovalis (OBL) also present.

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="margin-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>1</u> (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>0-21</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
Remarks:	

W7

SOILS

Map Unit Name: Keaukaha extremely rocky muck G-20% slope Drainage Class: well-drained
 (Series and Phase): Lithic Tropofolist Field Observations: Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-21	A	7.5YR 2.5/1			silty clay loam weak structure saturated
21+	C				Partly bedrock

Hydro Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chrome Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	

Remarks: Designated wetland no. W7. Near station 92+00 of Alignment 10, 25 ft. south of centerline. 20 ft. x 15 ft., 300 ft.²

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Puainaloa St. Extension, Hilo</u> Applicant/Owner: <u>HDOT / FHWA</u> Investigator: <u>GERRISH</u>	Date: <u>7/15/99</u> County: <u>Hawaii</u> State: <u>Hawaii</u>						
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse.)	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><input checked="" type="radio"/> Yes</td> <td style="text-align: center;"><input type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/> Yes</td> <td style="text-align: center;"><input checked="" type="radio"/> No</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/> Yes</td> <td style="text-align: center;"><input checked="" type="radio"/> No</td> </tr> </table>	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Yes	<input checked="" type="radio"/> No
<input checked="" type="radio"/> Yes	<input type="radio"/> No						
<input type="radio"/> Yes	<input checked="" type="radio"/> No						
<input type="radio"/> Yes	<input checked="" type="radio"/> No						
Community ID: <u>Ohia</u> Transect ID: <u>Align 10</u> Plot ID: <u>99-110 (W8)</u>							

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cyperus helpan</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Paspalum conjugatum</u>	<u>H</u>	<u>FAC</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Ludwigia octovalis (OBL) also present

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="margin-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="margin-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="margin-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>1</u> (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>0-6.5</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Flooded</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
Remarks: _____	

W8

SOILS

Map Unit Name: Keokuk extremely rocky muck ^{6-20% slope} Drainage Class: well-drain
 (Series and Phase): _____ Field Observations: _____
 Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:		Matrix Color	Mottle Colors	Mottle	Texture, Concretions,
Depth	Horizon	(Munsell Moist)	(Munsell Moist)	Abundance/Contrast	Structure, etc.
(inches)					
0-6.5	A	7.5YR 2.5/2	5YR 4/6	41%	silty clay loam weak structure, sandy saturated
6.5+	C				palmerhoe bedrocks

Hydro Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	

Remarks: Designated wetland no. W8. Clearly demarcated depression at center line and north side at station 96+00 of alignment 10. 100 ft. x 60 ft., 6000 ft.²

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Puainako St. Extension, Hilo</u> Applicant/Owner: <u>HDOH / FHWA</u> Investigator: <u>GERRISH</u>	Date: <u>7/15/99</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the area a potential Problem Area? <input checked="" type="radio"/> Yes <input type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Ohia</u> Transect ID: <u>Align 10</u> Plot ID: <u>99-109 (W9)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cyperus halpan</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Scleria testacea</u>	<u>H</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Sacilepis indica</u>	<u>H</u>	<u>FAC+</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 67%

Remarks: _____

HYDROLOGY

<p>___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other ___ No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>1.5</u> (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: <u>10</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p>___ Water Marks</p> <p>___ Drift Lines</p> <p>___ Sediment Deposits</p> <p>___ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>___ Oxidized Root Channels in Upper 12 Inches</p> <p>___ Water-Stained Leaves</p> <p>___ Local Soil Survey Data</p> <p>___ FAC-Neutral Test</p> <p>___ Other (Explain in Remarks)</p>
Remarks: _____	

W 9

SOILS

Map Unit Name (Series and Phase): <u>Keautaha extremely rocky muck</u>		Drainage Class: <u>well-drained</u>			
Taxonomy (Subgroup): <u>Lithic Tropoh list 6-20% slope</u>		Field Observations Confirm Mapped Type? <input checked="" type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
<u>0-10</u>	<u>A1</u>	<u>7.5YR 2.5/1</u>			<u>silty clay loam,</u> <u>weak structure</u>
<u>10+</u>	<u>C</u>				<u>Poroshae bedrock</u>
Hydro Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input checked="" type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soil List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soil List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> No	(Circle)
Hydric Soils Present? <input checked="" type="radio"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes No
Remarks: <u>Designated wetland no. W109. Clearly demarcated 10'x10' 100 square ft. North side of centerline near station 197+30 on Alignment 10.</u>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Prainyke St. Extension, Hilo</u> Applicant/Owner: <u>HDoT / FHWA</u> Investigator: _____	Date: <u>7/15/99</u> County: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Ohia</u> Transect ID: <u>Align 10</u> Plot ID: <u>99-107</u> <u>(W10)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cyperus halpan</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: _____

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>4</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Remarks: _____

W10

SOILS

Map Unit Name: Keanokha extremely rocky muck Drainage Class: well-drained
 (Series and Phase): Lithic Tropholite 6-20% slope Field Observations
 Taxonomy (Subgroup): Lithic Tropholite 6-20% slope Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-13	A	7.5YR 2.5/1			Silty clay loam, weak structure, strong
13	C				Peatstone bedrock

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Soil saturated at bottom of profile

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)
Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	
Hydric Soils Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	

Remarks: Designated wetland no W10, North of center line near station 100+80. Clearly demarcated, 20' x 15' equals 300 ft. ²

**DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)**

Project/Site: <u>Puainako St. Extension, Hilo</u> Applicant/Owner: <u>HDOT / FHWA</u> Investigator: <u>GERRISH</u>	Date: <u>7/15/99</u> Country: <u>Hawaii</u> State: <u>Hawaii</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Ohi'a</u> Transect ID: <u>A136-10</u> Plot ID: <u>99-106</u> <u>(W11)</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Cyperus halimifolius</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Sacciolepis indica</u>	<u>H</u>	<u>FAC+</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Ludwisia octovalis (OBL) present as subdominant.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>6</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>8</u> (in.)	Remarks:

W11

SOILS

Map Unit Name (Series and Phase): <u>Keaukaha extremely rocky muck</u>		Drainage Class: <u>well-drained</u>			
Taxonomy (Subgroup): <u>Lithic Troxofolist</u>		Confirm Mapped Type? <input checked="" type="radio"/> Yes <input type="radio"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A ₁	7.5YR 2.5/1			silty clay loam
4-8	A ₂	7.5YR 2.5/1	5YR 3/3	1%	moist, subang. blocky silty clay loam, moist, weak structure
8-12	A ₃	7.5YR 2.5/1	7.5YR 4/6	1%	silty clay loam,
12+	C	Pahohoe b-lack			saturated weak structure
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Wetland Hydrology Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Hydric Soils Present?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Remarks: <u>Designated wetland no. W11. Near station 101+80 on Alignment 10. Area 250 ft.²</u>		

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

ATTACHED TO APPENDIX B2 – SUPERSEDED WETLANDS SECTIONS FROM DRAFT EIS:

CHAPTER 3 – EXISTING ENVIRONMENT (PORTION)

3.2.2 Wetlands

3.2.2.1 Wetland Determination and Delineation Methodology

Overview

Analysis of wetland habitats was guided by the *Corps of Engineers Wetlands Delineation Manual* (US-COE 1987) and the *National List of Plant Species That Occur in Wetlands: Hawaii (Region H)* (U.S. Fish and Wildlife Service 1988). The vegetation, soil and hydrological criteria defined in the Delineation Manual were used to determine the parts of the project area that have one or more strong indicators of wetland habitat.

Precise delineation of the extent of wetland habitat in Hawaii on moderate to high slopes in areas of rainforest climate is highly problematic. Quite often, areas with basically upland characteristics contain scattered pockets of tiny "wetlands," often with borderline wetlands indicator characteristics. This is the case for much of the project area.

Therefore, in consultation with the US-COE, Honolulu District, the analysis of wetland habitat was done in two steps. First, in order to generate an estimate of the maximum area that might be wetlands under the jurisdiction of the US-COE (the "worst-case" area of disturbance), all areas that field surveys and map data determined to possess one strong indicator of the presence of at least one of the three required criteria were determined to be jurisdictional wetlands. This determination was made for all alternative alignment segments and provides a consistent basis of comparison between alternatives. Second, where feasible, a site-specific formal delineation measured the actual wetland areas. This was done for Alignment A and Alignment 1 (Alignment B contained no wetlands). Alignment 2 contains hundreds of small, poorly drained pockets, mostly less than 5.0 sq. meters (55 sq. feet) in a dominantly upland matrix. This situation precluded actual delineation of individual wetlands. Therefore, the "worst-case" figure was used as the estimate of wetlands for Alignment 2.

In accordance with 40 CFR 230 Subpart E, the project area was inventoried for special aquatic sites, such as sanctuaries and refuges, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. No such sites are present or would be affected by the Project.

Wetlands Determinations

The estimates generated during the determination were derived from a percentage estimator model based on the soil types of the project area. Three general soil types occur within the project area (Fig. 3-4). The distributions of the three major soil types are easily recognized in the field:

1. **LAVA LANDS.** The Lava Lands are the 1881 lava flow and other young flows, vegetated with 'Ohi'a/Uluhe Fern Forest or Closed 'Ohi'a Forest. The soil is a very thin, discontinuous layer of organic matter. The surface may be 50 percent or more pahoehoe lava outcrop. No wetlands were found on these lava lands.
2. **TROPOFOLISTS.** The Tropofolist soils are shallow, organic soils formed over prehistoric pahoehoe lava flows from Mauna Loa. These soils are not in their entirety hydric, but have a tendency to become waterlogged when microtopography or compaction impede drainage. Many parts of these soils are covered by native vegetation; other areas have been degraded by grazing or other human activity, and support the Mixed 'Ohi'a and Wai'awi Shrubland.
3. **HYDRANDEPTS.** The Hydrandepts are relatively deep soils of Mauna Kea ash that have been cleared and cultivated, mostly for sugarcane. They are present in the western portions of Alignments 1 and 2. Now abandoned, these areas primarily support alien-dominated vegetation.

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

These soils are moderately well-drained to well-drained, and contain well-developed gullies and intermittent streams that drain through a main channel, also intermittent. Wetlands were not found within this soil type, except within stream channels.

Within the project area, only the shallow Tropofolists on prehistoric pahoehoe lava flows contain the dispersed wetland patches. Other soil types may contain wetlands, but they are more typical discrete, low-slope bodies with reasonably clear boundaries.

Field, airphoto and map analysis determined that no Tropofolist soils are present on Alignments A or B, and that little occurs along Alignment 1. Alignment 2, by contrast, is largely situated on Tropofolist soils. Detailed observations of vegetation, soil and hydrology were made on a 854-meter (2,800-ft) long segment of Alignment 2. These observations revealed that approximately 20 percent of this sample distance had indicators of hydric soil or wetland hydrology. This 20 percentage factor was used to estimate the maximum probable area wetland habitats within portions of the alignments that cross Tropofolist soils.

Wetlands Delineations

Following the determination, a formal delineation was conducted for Alignments A and 1, which contained discrete wetlands. As discussed above, delineation is not feasible for Alignment 2. The delineation process involved field sampling of delineation points as well as map and airphoto analysis. Correspondence related to the U.S. Army COE review of and concurrence with the wetland delineation is contained in Appendix A1.

3.2.2.2 Distribution of Streams and Wetlands

Figure 3-4 illustrates the wetlands and Tropofolist soils of the project area. Table 3.6 summarizes the locations and areal extent of all wetlands on an alignment by alignment basis.

Lower Portion East of Alignment A and B Divergence

This entirely urbanized area contains moderate to high slopes and no streams or wetlands.

Alignment A

Alignment A crosses some Tropofolist soils but does not contain scattered wetland patches. It crosses the channelized Waiakea Stream and traverses a small wetland seep of 2 sq. meters (20 square feet).

Alignment B

Alignment B contains no wetlands area.

Alignment 1

Using the 20 percent estimator described above, an estimate of 5,400 square-meters (57,064 square feet) was derived for the maximum wetland area within this segment. This maximum estimate can be used for comparison with Alignment Two, where the maximum wetland area was estimated by the same methods.

Following the determination, the wetlands of Alignment 1 were fully delineated by field surveys. Two jurisdictional wetlands were found.

The first is on the west side of Wilder Road, at the 1,495-meter (4,900-foot) marker, within a man-made drainage ditch that originates within the right-of-way and drains to the north. The ditch has a broad bottom vegetated with alien grasses and herbs. Flowing water can usually be detected under the grass. Since no high-water mark is visible, this 298 square-meter (3,150 square-foot) area is delineated as a wetland.

The second, south of Uhaloa Street, is a large grass-covered depression that appears to receive water from

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

the intermittent stream drainage system previously described. The stream channel appears to end in this vicinity, perhaps blocked by the 1881 lava flow (see Section 4.1.3 for hydrology discussion). Measurement from an aerial photograph shows that this wetland covers 2.1 hectare (5.04 acre); the proposed right-of-way crosses the wetland and would occupy 2,474 square-meters (26,136 square-feet). The wetland vegetation is predominantly two alien grasses, Wainaku grass (*Panicum repens*) and California grass (*Brachiaria mutica*).

Alignment 2

The western portion crosses a number of gullies, swales and intermittent streams that are part of the same drainage system described on Alignment 1. Alignment 2 crosses most of these water courses perpendicularly and no associated wetlands were found.

Alignment 2 crosses 3,904 meters (12,800 feet) of tropofolist soil. Much of this area is O'hi'a/Uluhe fern forest, or the degraded native forest type, Mixed O'hi'a/Wai'awi. These areas contain several types of wetlands. Some are small, undrained pockets 1 to 2 meters (3 to 6 feet) in diameter. The ground cover of these is dominated by obligate wetland plants: i.e., spikerush (*Eleocharis obtusa*) and kamole (*Ludwigia octovalis*). The canopy species are usually the same as the surrounding community. Other, larger, wet areas (roughly 30 m [100 ft] in diameter) are characterized by much reduced canopy cover of 'ohi'a. The trees are scattered and appear somewhat stunted. The ground cover is dominated by uluhe and Wainaku grass, rather than distinct obligate or facultative wetland species. Much of Alignment 2 is a mosaic of these two types of wetlands interspersed within much larger upland (non-wetland) sections. In some areas, water flows over the surface or in poorly developed drainageways.

When the 20 percent wetland estimator is applied to the total area of Tropofolist soil, it is estimated that a maximum of 29,084 square-meters (307,200 square-feet) of wetlands within Alignment 2.

3.2.2.3 Wetland Functions

Biological Functions

The very small wetland of Alignment A consists of a seep or a small pocket of undrained soil and is dominated by alien plants. The surrounding upland community is a secondary forest of alien trees and plants with little conservation value. No biological function of this wetland has been identified.

Table 3-6 Distribution of Wetlands

Alignment	Total Wetland Area
1	0.28 ha (0.68 acres)
2	2.91 ha (7.19 acres)
A	2.0 square meters (20 sq. ft).
Alternative Combinations	
1-A	0.28 ha (0.68 acres)
1-B	0.28 ha (0.68 acres)
2-A	2.91 ha (7.19 acres)
2-B	2.91 ha (7.19 acres)

Note: Estimate for Alignment 2 is based on determination (worst-case) method. Corresponding figure for Alignment 1 (for comparison only) is 0.54 ha (1.3 acres).

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

The two wetlands intersected by Alignment 1 are of two different types. The first, west of Wilder Road, is within a drainage ditch and consists of a thick stand of the alien grasses, Wainaku grass and California grass, growing within the flowing water. Small areas of open water can sometimes be seen. No native plants or other important plant resources occur in this area. Alien aquatic animals, such as tadpoles and prawns, can sometimes be found. There is no known use of the area by native animals.

The second wetland intersected by Alignment 1, near Uhaloa Street, is much larger, totaling 2.1 hectare (5.04 acre), with 2,474 square-meters (26,136 square-feet) within the proposed right-of-way. The water level apparently fluctuates between being subsurface to up to a meter (3 feet) deep in some places. This is a broad area also dominated by the two alien grasses, Wainaku grass and California grass. A few other alien plant species occur here, but no native plants or other important plant resources are present. The vegetation on the north side is highly modified by homes and small farms and includes bamboo thickets and stands of tall alien trees. The south side is generally vegetated by Mixed O'hi'a/Wai'awi thickets, and is partly native in character. This wetland provides an open-space area within the region, but a large extent of open space also occurs on the east, west and south sides.

Along Alignment 2, on Tropofolist soils (Fig. 3-4), wetlands are dispersed in an irregular mosaic within mostly upland vegetation. Much of the surrounding vegetation is predominantly native in character. Some areas are intact O'hi'a/Uluhe fern forest with few alien plants present. Most, however, is degraded Mixed O'hi'a/Wai'awi thickets. Generally the wetland areas are dominated by alien ground cover species. Some small pockets, 1-2 meters, (3-6 feet) diameter, of submerged soil occur where the ground cover is dominated by spikerush, an indigenous sedge and obligate wetland plant. No endemic wetland plants characterize these pockets. The tree layer above does not appear to be affected by these small wetland pockets. Larger undrained areas, 30 meters (100 feet) in diameter also occur. These resemble "bog-formation dieback" areas that naturally occur in some 'ohi'a forests at higher elevations (Stone and Scott 1985:405-406). The 'ohi'a trees are scattered and stunted in appearance. The ground cover tends to be dominated by alien grasses rather than native plants, leading to a generalization that within the project area, the wetlands are often more alien than native in plant composition. It is difficult to determine if these various types of wetlands are natural inclusions in these forests, or if they are the result of soil compaction and drainage impedance by pig activity or other human-induced disturbance.

The wetlands of Alignment 2, being mostly dominated by the same plant species that are common in the surrounding vegetation, do not include any important native plant resources. No special biological function of these areas are known. These small wetland inclusions appear to be widely distributed within the region. The wetlands within the proposed right-of-way are not essential for the well-being of the surrounding ecosystem.

There are no permanent streams, and the intermittent streams do not contain native aquatic fauna, and little native flora, none of which is valuable from a conservation perspective.

Hydrological Functions

On Alignment 1, the wetland west of Wilder Road is within a drainage ditch that lacks a high-water mark.

The wetland near Uhaloa Street appears to receive and store water from the drainage system of intermittent streams. The United States Geological Survey (USGS) map shows that the major collector of the intermittent stream ends in this vicinity, with no visible channel leaving the area. This phenomenon is probably associated with the presence of the 1881 lava flow blocking the normal downhill path of the stream. Water within the wetland probably slowly infiltrates to the groundwater. Sedimentation during storm runoff probably also occurs.

The wetlands of Alignment 2 appear to have less distinct function and are associated with a young lava surface with only incipient stream formation. Water infiltration through the shallow organic (Tropofolist) soil is slowed by underlying pahoehoe lava bedrock. The wetlands are generally too shallow to store

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

appreciable volumes of water, but probably do permit some sedimentation from surface flowing water. The wetlands being small and scattered within better-drained uplands, it is probable that water leaving the wetlands infiltrates to the groundwater at more permeable locations rather than continuing as surface flow.

CHAPTER 4 – IMPACTS AND PROPOSED MITIGATION MEASURES (PORTION)

4.2.2 Wetlands

4.2.2.1 Impacts

A detailed discussion of wetlands delineation, extent and function is contained in Section 3.2.2. To reiterate, Alignment A contains a tiny wetland of approximately 2 sq. meters (20 sq. ft.); Alignment B contains no wetlands; Alignment 1 contains two discrete wetlands totaling 0.28 ha (0.68 acres); and Alignment 2 contains scattered pockets of wetlands typically less than 1 meter (3 ft.) in diameter estimated to total to 2.91 ha (7.19 acres). Any Build Alternative would involve disturbance to wetlands, including filling wetlands with road-building materials, directing intermittent streams through culverts and other minor alterations of drainage patterns. It was determined that the amount of wetlands that would potentially be disturbed by project activities would be sufficient to require a Section 404 Individual Permit. Therefore the FHWA implemented the Memorandum of Understanding (MOU) to implement jointly the NEPA and Section 404 of the Clean Water Act. In accordance with the MOU, signatory agencies including FHWA, HDOT, U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers reviewed the alternatives. Based on this review, one No-build Alternative and one Build Alternative with four alternative alignments were advanced for detailed engineering and environmental studies. Appendix A1 contains correspondence related to this analysis.

Impacts to Biological Function

No known unique biological resources or faunal relationships are associated with the wetland areas or intermittent stream channels and banks. The wetlands and banks are mostly vegetated with alien plants and do not appear to offer important habitat for native organisms. However, in some areas they appear to be naturally occurring elements within the native forest community.

Impacts to Hydrologic Function

Alignment A The 2 square meters (20 square feet) of wetland have negligible function and no adverse impacts will occur.

Alignment 1 The two wetlands are of different types. The wetland west of Wilder Road is within a broad (9 meters: 30 feet) drainage ditch. This area is delineated as a wetland because it is vegetated and no usual high-water mark is discernible (Figure 3-4, above). Culverts proposed as part of the drainage plan will mitigate impacts to hydrologic function of this wetland. The wetland near Uhaloa Street may function as a water storage area for an adjacent intermittent drainage. Presumably, water from the wetland infiltrates into the groundwater or moves into subsurface channels, such as lava tubes.

Alignment 2 As the wetlands in this area consist of scattered pockets and are not a component of organized drainage systems, no impact to such systems would be expected to occur as a result of filling the pockets. Some groundwater recharge function will be lost, although the underlying pahoehoe generally retards recharge in these Tropofolist soils and such areas are not major recharge areas. In any case, the disturbed area represents only a negligible proportion of the total area that functions for groundwater recharge in the Hilo area.

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

4.2.2.2 Comparison Among Alternatives

No-Build Alternative

The No-Build Alternative would avoid disturbance to any wetland within the proposed road corridors.

Build Alternative

Lower Portion: Alignment A vs. B

Alignment A would disturb 2 square meters (20 square feet) of wetland near the Waiakea channel. No jurisdictional wetlands occur within Alignment B.

Upper Portion: Alignment 1 vs. 2

For comparison between the alternatives, an estimate of the maximum area of wetlands was made using a soil-type model. Based on this model, Alignment 2 would disturb a much larger area of scattered wetlands (29,084 square-meters:307,200 square-feet) than the same model estimates to occur on Alignment 1 (5400 square-meters:57,064 square feet). A detailed delineation of Alignment 1 found that actual wetland area within the right-of-way totaled 2,772 square meters (29,286 square feet). Most of this area (2,474 square meters:26,136 square feet) was in a single wetland, not of the mosaic type found within Alignment 2. Based on this observation, it is anticipated that if it were feasible, a more detailed study of Alignment 2 would find that the actual wetland area would be considerably lower than the figure given above, but still several times greater than the wetland area of Alignment 1.

4.2.2.3 Mitigation

Construction of any Build Alternative would require a Department of the Army Permit for dredge and fill in the waters of the United States. The project was granted a provisional Nationwide Permit No. 26 for the construction of Alignments A and 1 on September 10, 1996. This Nationwide Permit lapsed on January 21, 1997 due to a periodic review of this permit type (see Appendix A1 for documentation). A renewed application is underway concurrent with the EIS.

It is expected that a Nationwide Permit would be granted if Alignment 1 is selected. The following conditions, which were specified in the lapsed permit, are also anticipated to be imposed if the current permit application is granted:

- o Obtain a Section 401 Water Quality Certification or waiver thereof from the Hawaii State Department of Health;
- o Provide adequate drainage through the wetland areas;
- o Significant earth-moving activities will occur only during periods of no or low rainfall; the County of Hawaii will make every effort to conduct construction activities during the "dry season" (May through September);
- o Construction activities will be conducted in a manner as to minimize and control erosion and sedimentation;
- o All fill and other construction material will be clean, uncontaminated and free of deleterious substances, including toxic chemical, debris and fine grained material;
- o Particular care will be taken to ensure that no petroleum products, trash or other debris enter the water;
- o No construction or excavated materials will be stockpiled in the aquatic environment.

NOTE: SUPERSEDED SECTION FROM DRAFT EIS

If Alignment 2 is selected, it is expected that an Individual Permit will be required. Additional mitigation measures are expected to be imposed because it would involve a much greater area of fill. The precise nature of the mitigation would be determined by the U.S. Army Corps of Engineers and will be specified only in the event that Alignment 2 is advanced as the Recommended Alternative in the Final EIS. It is currently proposed that enhancement of wetland-containing areas outside the currently proposed ROW at a proposed ratio of 4:1 (enhanced to filled area) be considered. These enhancements are proposed to consist of "beautification strips", water storage areas, swales or sediment retention areas that will be allowed to revegetate to natural conditions.

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX E3

Chronology of Archaeological and Cultural Resource Studies

CHRONOLOGY OF ARCHAEOLOGICAL AND CULTURAL RESOURCE STUDIES

PUAINAKO STREET EXTENSION AND WIDENING PROJECT

PROJECT HISTORY

The Puainako project began in 1992, when a State of Hawaii Environmental Impact Statement was initiated by the Hawaii County Department of Public Works (DPW). Subsequent to the acceptance of this EIS by the Governor of the State of Hawaii in December 1993, the County of Hawaii, in consultation with the State Department of Transportation and the Federal Highway Administration determined that federal funding might be appropriate for this project. At the same time, the project alignments were redesigned in various sections. Accordingly, in 1995, an EIS consistent with the both federal and state environmental laws and regulations was begun. The lead agencies since that time have been the Federal Highways Administration (FHWA), Hawaii Department of Transportation (HDOT), and DPW (Refer to Figs. 1-1 and 3-6 for maps of project area and archaeological sites, respectively).

During the course of this subsequent EIS process, two additional redesigns occurred. One was a slight adjustment in two places to reduce the number and severity of floodplain crossings. The second was the addition of Alignment 10, which was a hybrid of Alignments 1 and 2 with a short, new connecting section. Alignment 10 was developed after the Draft EIS in response to concerns about noise, wetlands fill, and a near approach to Kaumana Cave.

CHRONOLOGY OF ARCHAEOLOGICAL AND CULTURAL RESOURCE STUDIES

The principal studies are summarized below. Refer to pages 8-19 of Appendix E4 for detailed discussion of project history.

Hunt and McDermott (1994). App. E1 of Draft EIS. Archaeological inventory study for State EIS. Recorded 13 sites in Alignments 1, 2, A, and B. Entailed historical background research, interviews with informants, pedestrian survey, and limited subsurface testing. Concluded that features were related to sugar cane cultivation in the late 19th and early 20th centuries. *Status of review by State Historic Preservation Division:* Accepted by SHPD. See letter of July 20, 1994, Hibbard to Kiyosaki, and letter of July 15, 1996, Hibbard to Kiyosaki, App. A1 - Section 106.

Robins and Spear (1996) App. E2 of Draft EIS: Archaeological inventory survey for federal EIS, with expanded and slightly realigned corridor. Scope expanded to conform with Section 106 of NHPA as well as Chapter 6E, HRS. Added features to 13 sites of Hunt and McDermott, classified other features into one additional site (14 total). Confirmed findings of sugar cane plantation origin for features. *Status of review by State Historic Preservation Division:* Accepted by SHPD. See letter of February 28, 1996, Hibbard to Spear, and letter of July 15, 1996, Hibbard to Kiyosaki App. A1 - Section 106.

Maly (1996). Excerpted in Part II of App. E4 of Final EIS: Commissioned by the Office of Hawaiian Affairs. Extensive archival research and oral history interviews focused on Hawaiian settlement and population expansion and sugar cane plantation development. Key interview with Kenneth Bell provided separate line of evidence securely identifying archaeological features as related to sugar cane. *Status of review by State Historic Preservation Division:* Not sponsored by FHWA. Not submitted to SHPD.

Eble, Denham, and Pantaleo (1997). Excerpted in Part II of App. E4 of Final EIS : Sponsored at request of the Ho'ouikaika Hawaiian Club (HHC), which sought to verify or contradict findings of previous studies through additional excavation. Basically confirmed earlier work. *Status of review by State Historic Preservation Division:* Not sponsored by FHWA. Not submitted to SHPD.

McGerty and Spear (1999). Part I of App. E4: Archaeological inventory study on 800 meters of, realigned section of Alignment 1. McGerty and Spear (1999) re-identified the features noted by Spear (1996) and reclassified features. *Status of review by State Historic Preservation Division:* Accepted with revisions and currently (February 2000) in 2nd Draft.

Dega (2000). Part II of App. E4: Archaeological inventory survey of Alignment 10, which contained a 8 features with 17 components, all considered part of Site -18921, which is shared with Alignment 1. Excavations at two places to determine whether traditional architecture and/or cultural material or human burials were present, none of which was present. Report includes summary of consultation with Native Hawaiians, as well as determination on Traditional Cultural Places (none present). *Status of review by State Historic Preservation Division:* 1st draft under review by SHPD.

Dega (2000). (Not included in Final EIS): Preservation plan for Sites 18914, 18915, and 18917 during construction. Currently in preparation.

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX E4

Supplemental Archaeological Inventory Studies

Part I: Expanded Corridor, Alignment 1

Part II: Alignment 10 and Summary of Section 106 Work

ADDENDUM TO:

**AN INVENTORY SURVEY OF THE PU'AINAKO STREET
REALIGNMENT/EXTENSION PROJECT
EXPANDED CORRIDOR, WAIĀKEA, KŪKŪAU 1 AND 2
AND PONAHAWAI, SOUTH HILO DISTRICT,
ISLAND OF HAWAII**

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Revised July 1999

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ABSTRACT

At the request of Okahara and Associates, Inc., additional archaeological Inventory Survey was conducted by Scientific Consultant Services, Inc. (SCS) on a short, realigned section of a road corridor within the proposed Pu'ainako Street Realignment/Extension Project.

A total of 17 features (30 components), including stacked basalt platforms of various shapes, stacked and core-filled walls, and an alignment, were identified during the Inventory Survey. The stacked mounds, alignments, and one wall segment (Feature 2D) were interpreted as features associated with plantation activities. Two of the recorded walls (Feature 1 and 11) were interpreted as possibly related to use of the area as pasture or to the modern piggery identified by an informant.

All of these features were assigned to Site 18921.

The original significance assessment of this site was that it was significant under Criterion D and that it warranted additional Data Recovery work (Hunt and McDermott 1994:112). Data for Site 18921 does not alter either the original significance assessment or recommendations.

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INTRODUCTION

At the request of Okahara and Associates, Inc., additional Archaeological Inventory Survey was conducted by Scientific Consultant Services, Inc. (SCS) on a short, realigned section of a road corridor within the proposed Pu`ainako Street Realignment/Extension Project (Figure 1). The following report is an Addendum to *An Inventory Survey of the Pu`ainako Street Realignment/Extension Project Expanded Corridor, Waiākea, Kūkūau 1 and 2 and Ponahawai, South Hilo District, Island of Hawai`i* (Robins and Spear 1996). For information on the project history, scope, and overall findings, the reader is directed to the Hunt and McDermott (1994) and Robins and Spear (1996) reports.

The realigned section of the road corridor in relation to the original alternative alignment is shown in Figure 2. Figure 3 illustrates the locations of the 17 newly identified features (consisting of 30 components). These newly identified features were interpreted as being part of Site 18921 and were tied into the center line stakes for locational accuracy and then placed onto a project map supplied by Okahara and Associates. The present project area was approximately 800 meters in length.

FIELD WORK RESULTS

Situated between two stream, Site 50-10-35-18921 was originally recorded during a survey in 1994 (Hunt and McDermott). Five features were identified (Fe. A-E), and were located approximately 1,060 ft amsl (above mean sea level) in Kūkūau 2 Ahupua`a. The site was situated within Alternate 1 of the Pu`ainako Street realignment. Additional observations concerning the site were made during a project survey in 1996 (Robins and Spear).

In 1994, two mounds (Fe. A and C), two terraces (Fe. B and E) and a wall segment (Fe. D) were recorded. During the 1996 survey, it was noted that Features B and C were contiguous structures, and Feature C was damaged by root intrusion. Feature B was re-mapped and found to be located 10 m east of Feature A.

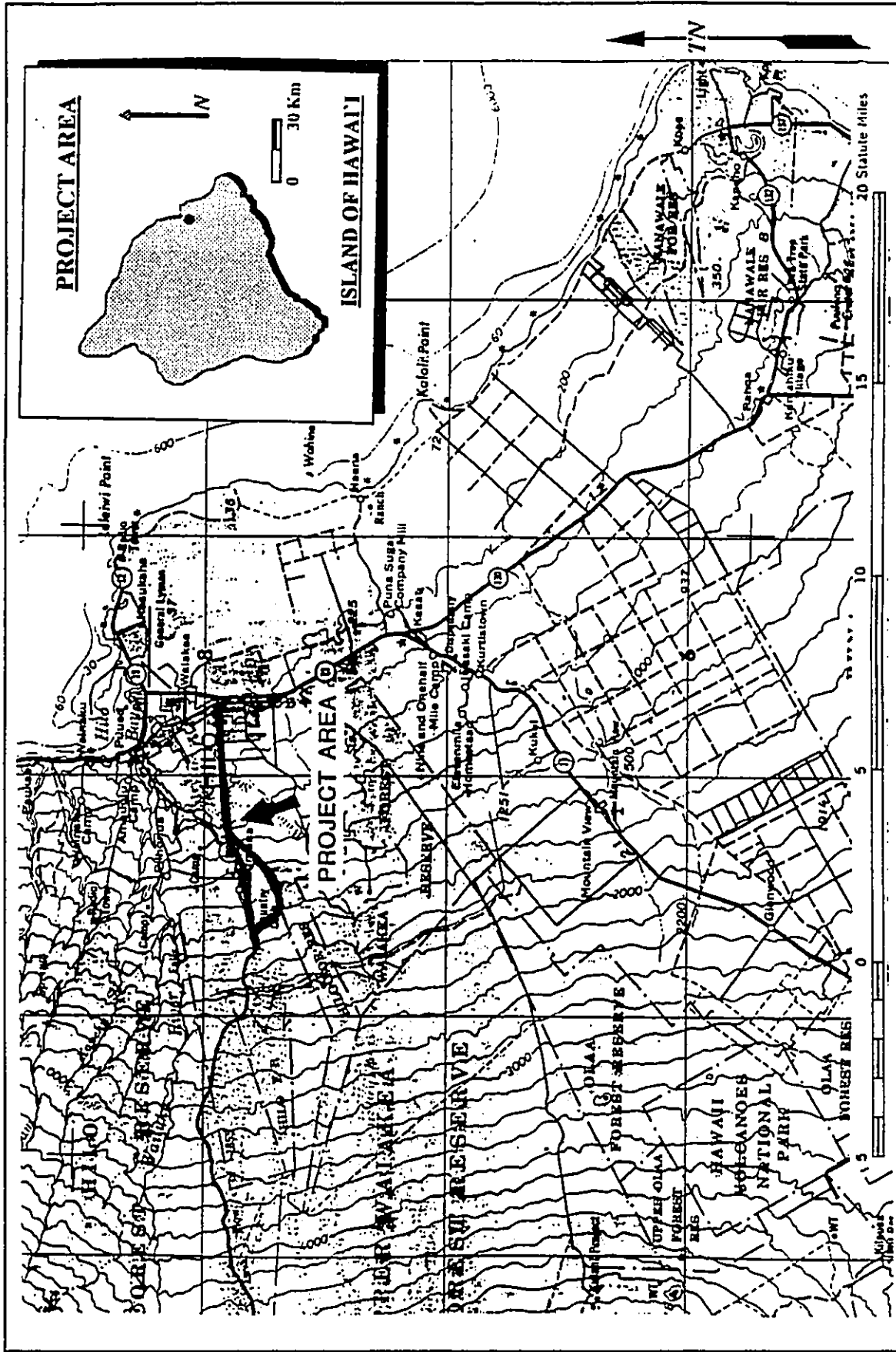


Figure 1: USGS Hilo Quadrangle Showing General Project Area Road Corridors.

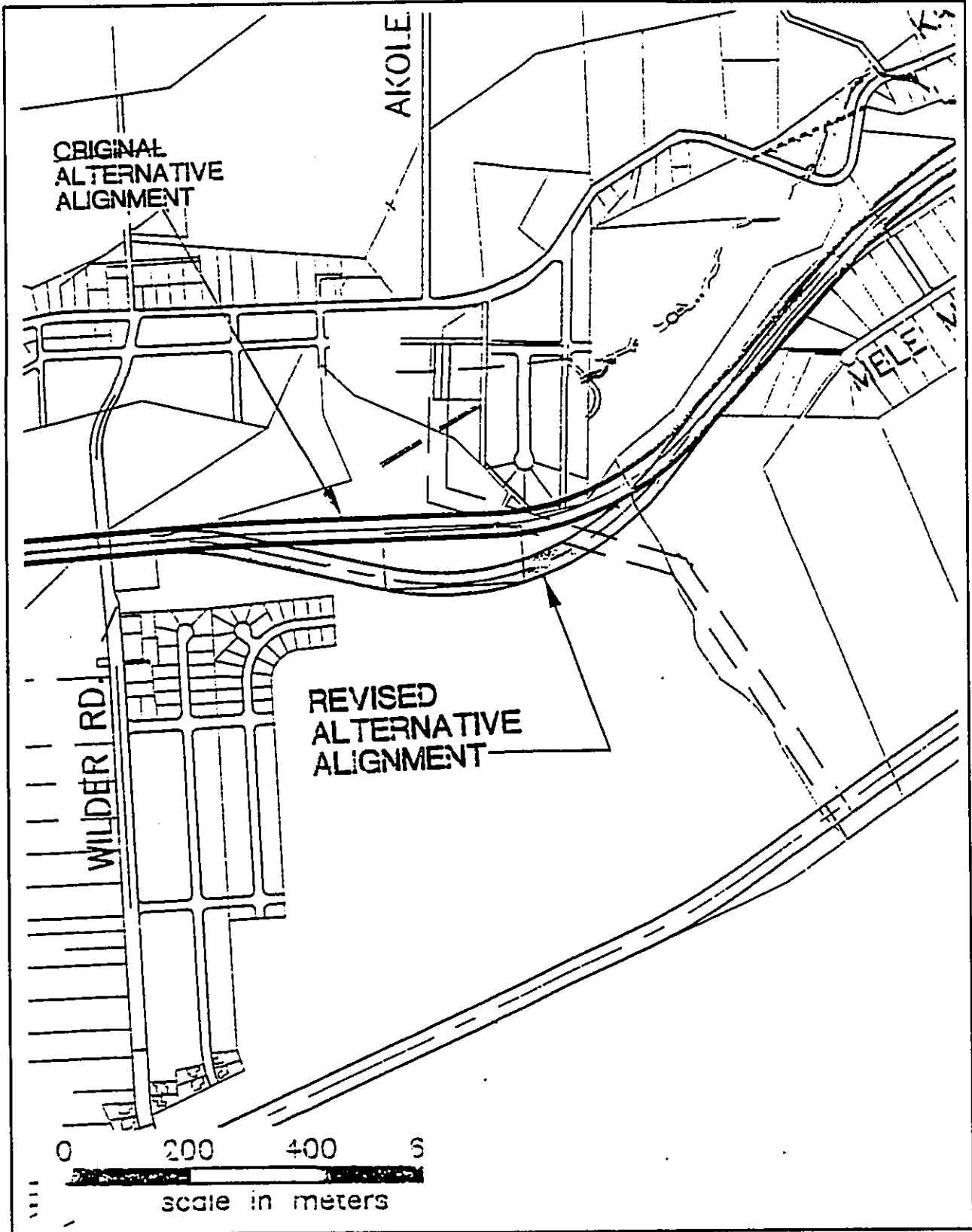


Figure 2: Map Showing Original Alternative Alignment and Revised Alternative Alignment.

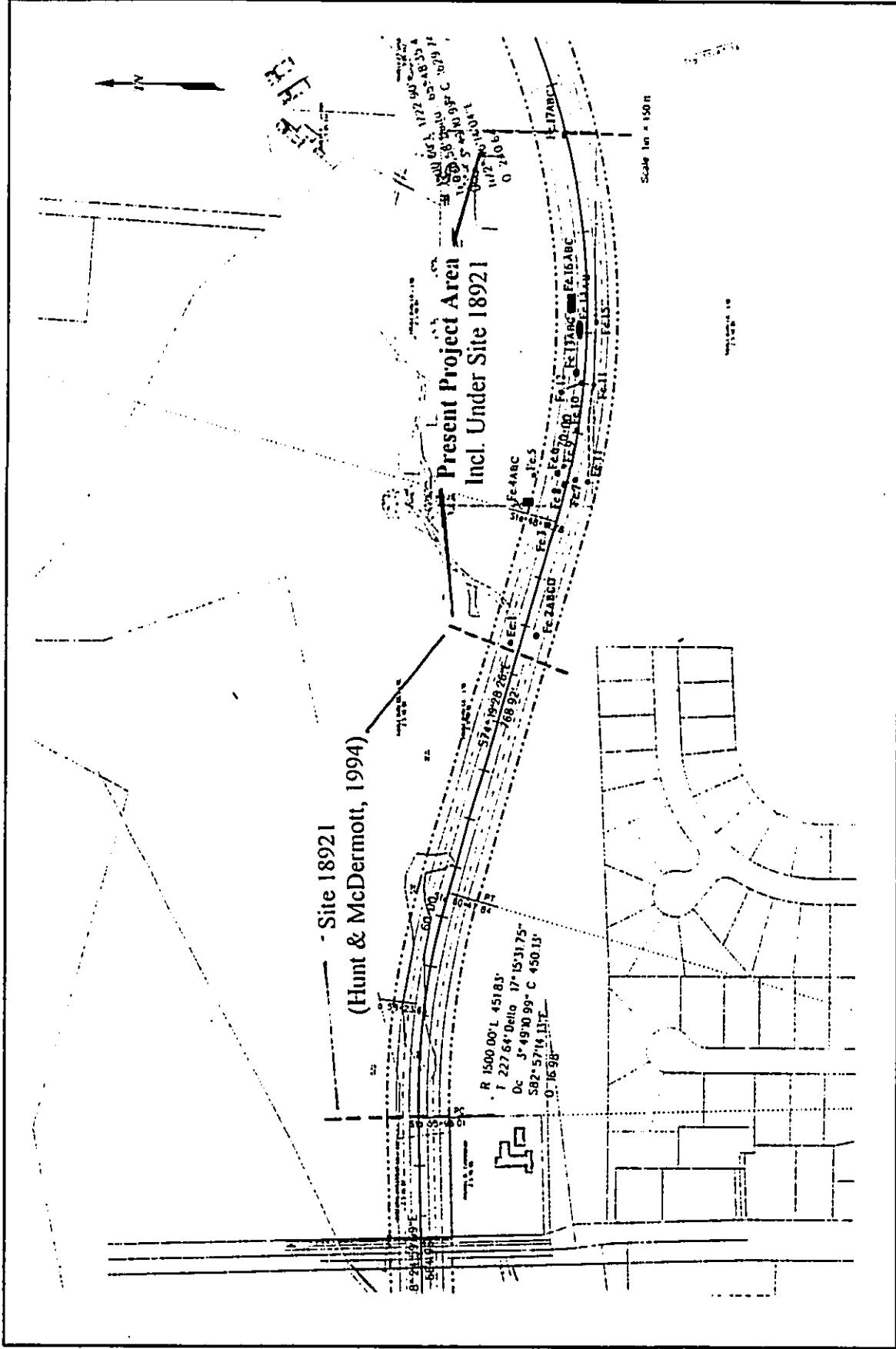


Figure 3: Additional Feature Locations in the Proposed Realignment of Pu'ainako Street.

Site 18921 was interpreted in 1994 as being associated with historic cane agriculture, such as clearing mounds, foundations and/or ramps. In 1996, a land owner in the vicinity stated portions of Site 18921 had been used as a pig farm up until 1989. The features within the present project area were located in designated cane land during the historic period, and the features could have been reused and possibly modified for a piggery during more recent times.

The proposed road corridor in the present project area had become very overgrown and some sections to the north and south of the center line were extremely difficult to penetrate due to the thick, high grass, and guava forest. However, a total of 17 features, consisting of 30 components, were identified and mapped during this phase of the project. Several of the features were found to include more than one component.

FEATURE 1

Feature 1 was a short wall segment constructed of stacked basalt boulders and large cobbles extending, at a right angle, to and directly off a deep-cut stream bed and extending to the north (Figures 4 and 5). It measured 3.60 by 1.00 by 1.02 m and stood between four to seven courses high. To the south it dropped off into the stream bed. There has been much alteration to the sides of the stream due to large quantities of fast moving water over the years. Erosion has impacted the wall, removing its southern end.

The wall had been well built and appeared to have been faced at one time. The top of the wall had collapsed to the east. This feature is interpreted as a possible boundary wall, perhaps demarcating plantation and pasture land. A second interpretation is that the wall was related to a piggery that existed in the area until 1989 (Robins and Spear 1996:42).

FEATURE 2A, B, C, D

Feature 2 was a complex of four features consisting of a short wall segment and a cluster of three rock mounds located on the southern side of the deep stream cut (Figure 6). Feature 2A was a rock mound comprised of various sized boulders. It measured 3.00 by 0.78 by 0.38 m high and was constructed in a somewhat linear manner.

RECEIVED AS FOLLOWS



Figure 4: Feature 1, A Free-Standing Wall. View to South.

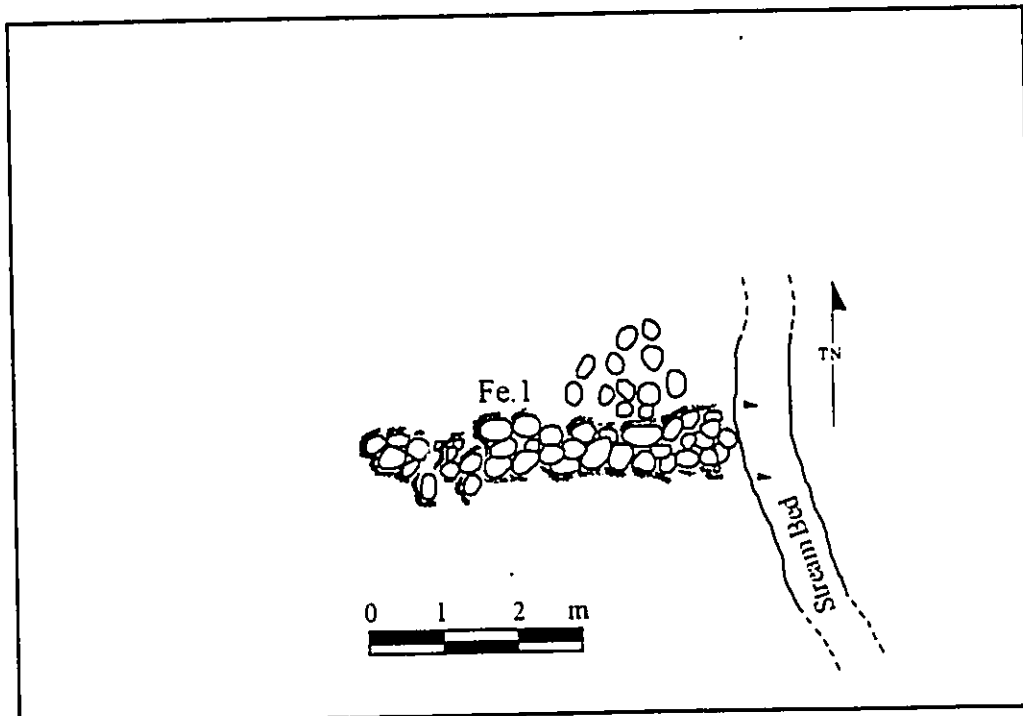


Figure 5: Planview of Feature 1 Wall.

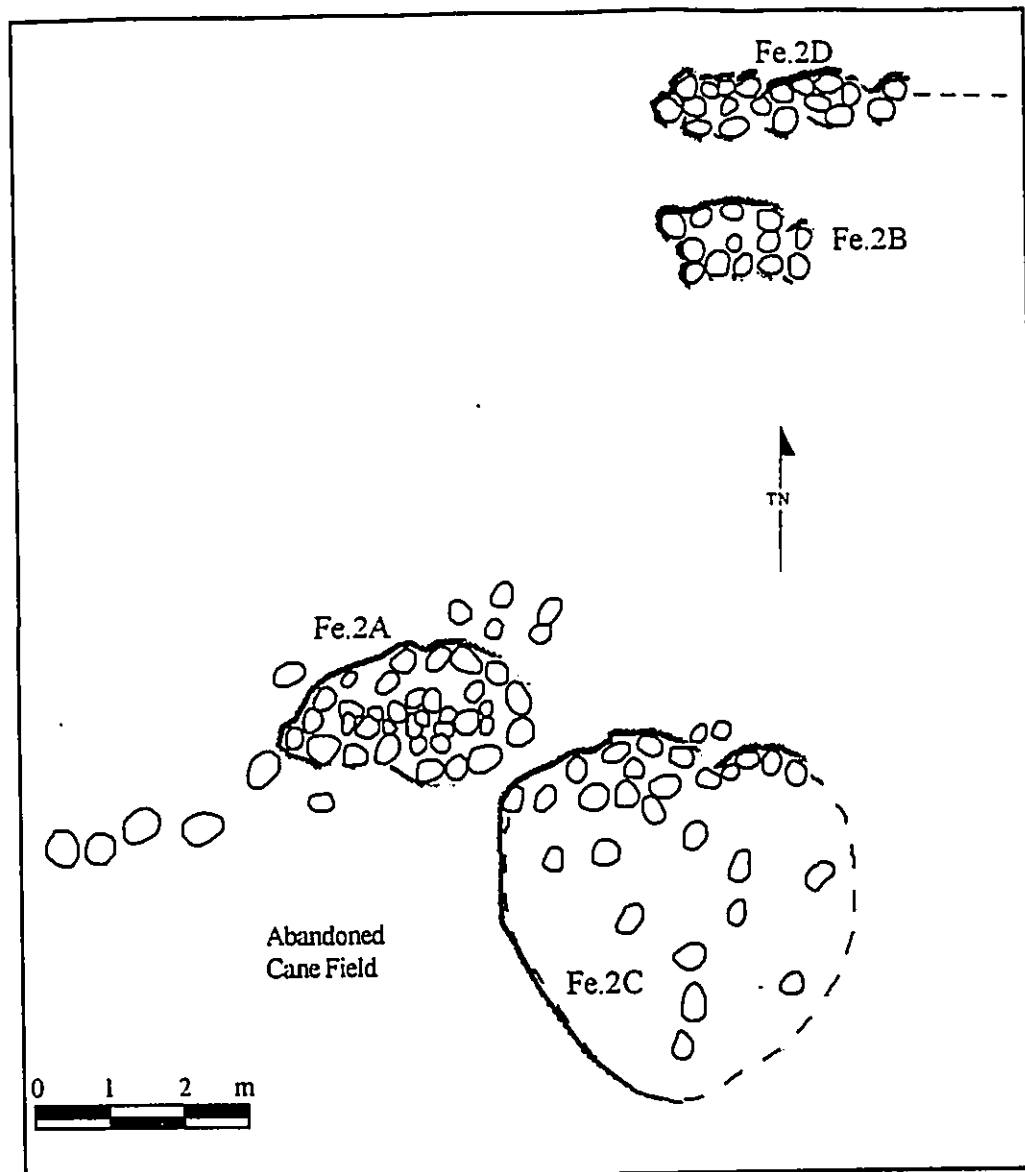


Figure 6: Planview of Features 2A, 2B, 2C, and 2D.

Feature 2B was a small, roundish rock mound of various sized basalt cobbles and boulders located to the north of 2A. It measured 1.60 by 1.60 by 0.20/0.60 m high.

Feature 2C was a larger rock mound composed of various-sized cobbles and boulders. It measured 5.00 by 2.80 by 0.33 m high.

Directly to the south of these three rock mounds was what had previously been sugarcane fields. The edge of Features 2A and C appeared to have been pushed and flattened along with dirt deposits during historic agricultural activities.

Feature 2D consisted of a small wall segment constructed of small to medium basalt boulders stacked three courses high. The wall extended from east to west, measured 3.00 by 0.87 by 0.58 m and was in poor condition due to surrounding vegetation encroachment.

The wall and three mounds were all interpreted as clearing features originating during the plantation era.

FEATURE 3A, B

Feature 3 was located close to the center line stake, near a small sunken grotto. It consisted of two components, including a small linear and an oval basalt rock mound (Figure 7). Feature 3A measured 2.60 by 1.50 by 0.21/0.40 m high. Feature 3B, located to the east of 3A, measured 3.25 by 1.00 by 0.38 m high.

Both features were interpreted as clearing mounds associated with plantation activities.

FEATURE 4 A, B, C

To the north of Feature 3, on the highway boundary, was Feature 4. This feature consisted of a cluster of three basalt rock mounds (Figure 8). Feature 4A was a low linear mound of basalt cobbles and boulders that measured 3.20 by 1.70 by 0.20 m high.

Feature 4B was a rectangularly-shaped mound of basalt cobbles and boulders that measured 3.40 by 2.10 by 0.83 m high.

Feature 4C was heavily covered with thick vegetation. The feature appeared to be rounded in shape and level on top. Feature 4C measured 2.00 by 1.00 by 0.75 m high.

All three mounds were interpreted as clearing mounds associated with plantation activities.

FEATURE 5

Feature 5 was a wide, crescent-shaped rock terrace abutting a level soil area (Figure 9). The feature was constructed of small to medium basalt boulders, stood one to five courses high, and was flat on top. Feature 5 measured 2.25 by 1.90 by 0.91 m high. On the south side of the feature was a lower rock terrace standing one course high and occurs 0.61 m below the main portion of the feature.

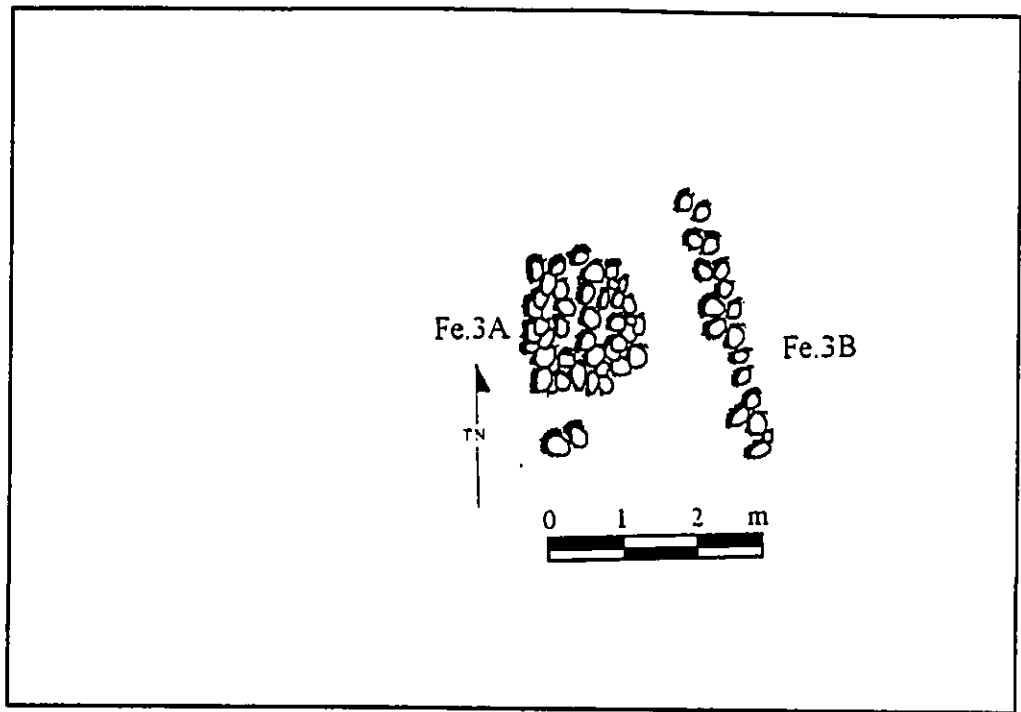


Figure 7: Planview of Features 3A and 3B.

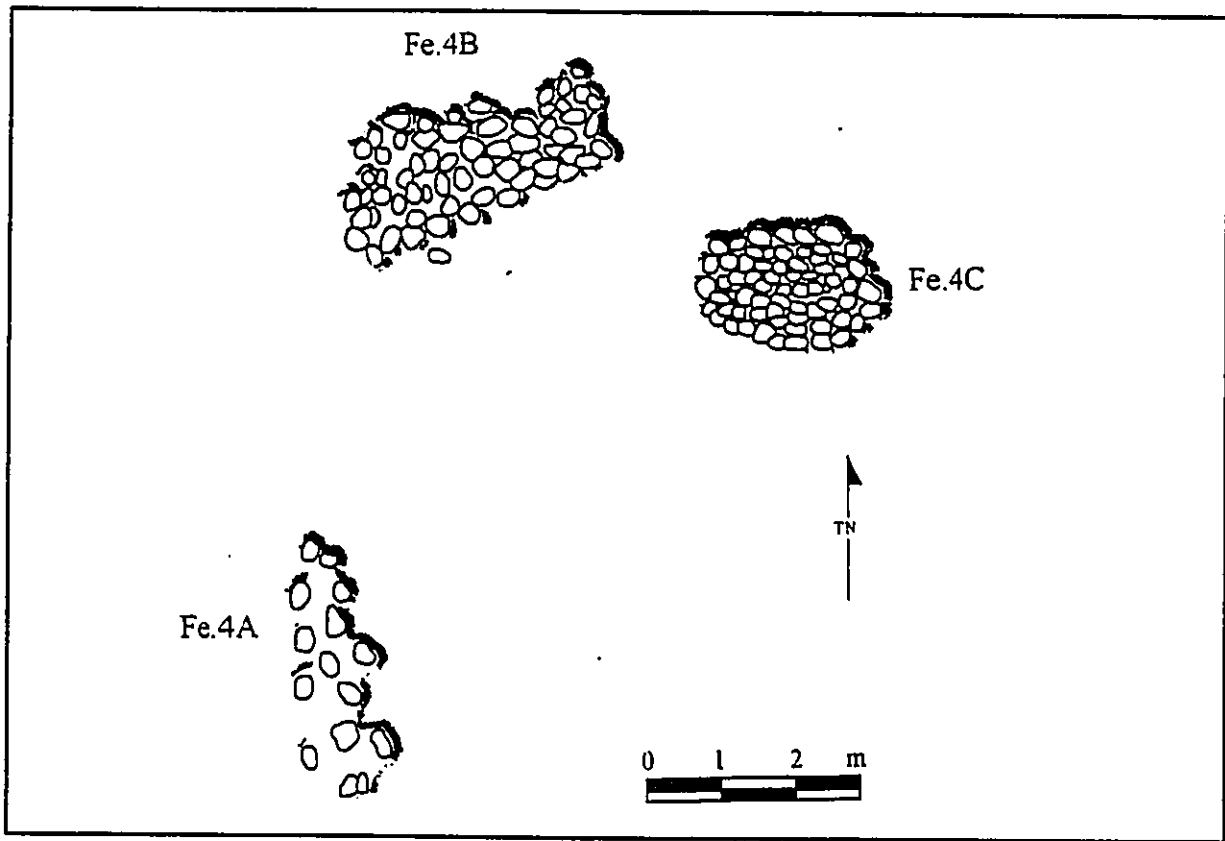


Figure 8: Planview of Features 4A, 4B, and 4C.

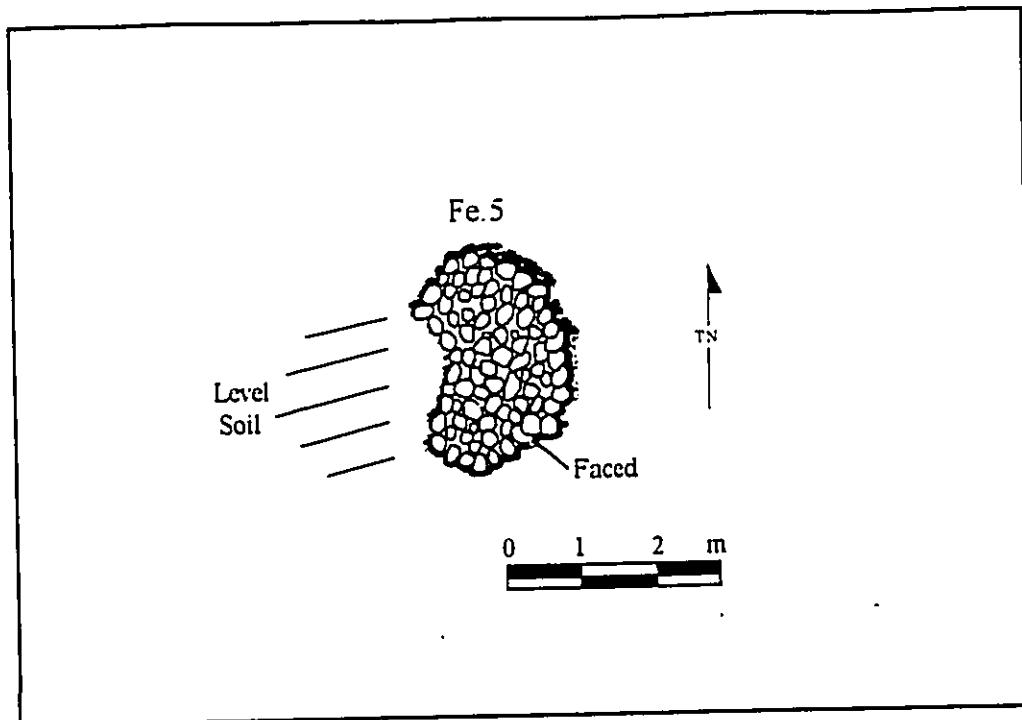


Figure 9: Planview of Feature 5.

This feature was interpreted as a clearing mound-in-progress and associated with plantation activities. Its shape fit the contour of the soil terrace that it lay against and which would have made a convenient platform on which boulders could be stacked.

FEATURE 6

Feature 6 was a nicely faced, stacked platform constructed of small to medium basalt boulders. It measured 4.45 by 1.00 by 0.24/0.93 m high (Figure 10). The feature's somewhat amorphic shape varied from one (at the south end) to six courses (at the north end) and was flat on top. This feature was interpreted as a clearing mound associated with plantation activities.

FEATURE 7

Feature 7 was a deteriorated round platform constructed of stacked basalt cobbles and boulders. It measured 3.84 by 2.45 by 0.65/0.90 m high and was flat on top (see Figure 10). This feature was interpreted as a clearing mound associated with plantation activities.

FEATURE 8

Feature 8 was a rectangularly-shaped stacked platform constructed of small to medium basalt boulders. It was flat on top and nicely faced on all sides. Feature 8 measured 3.40 by 2.25 by 1.50 m high and was constructed four to seven courses high (see Figure 10). This feature was interpreted as a clearing mound associated with plantation activities.

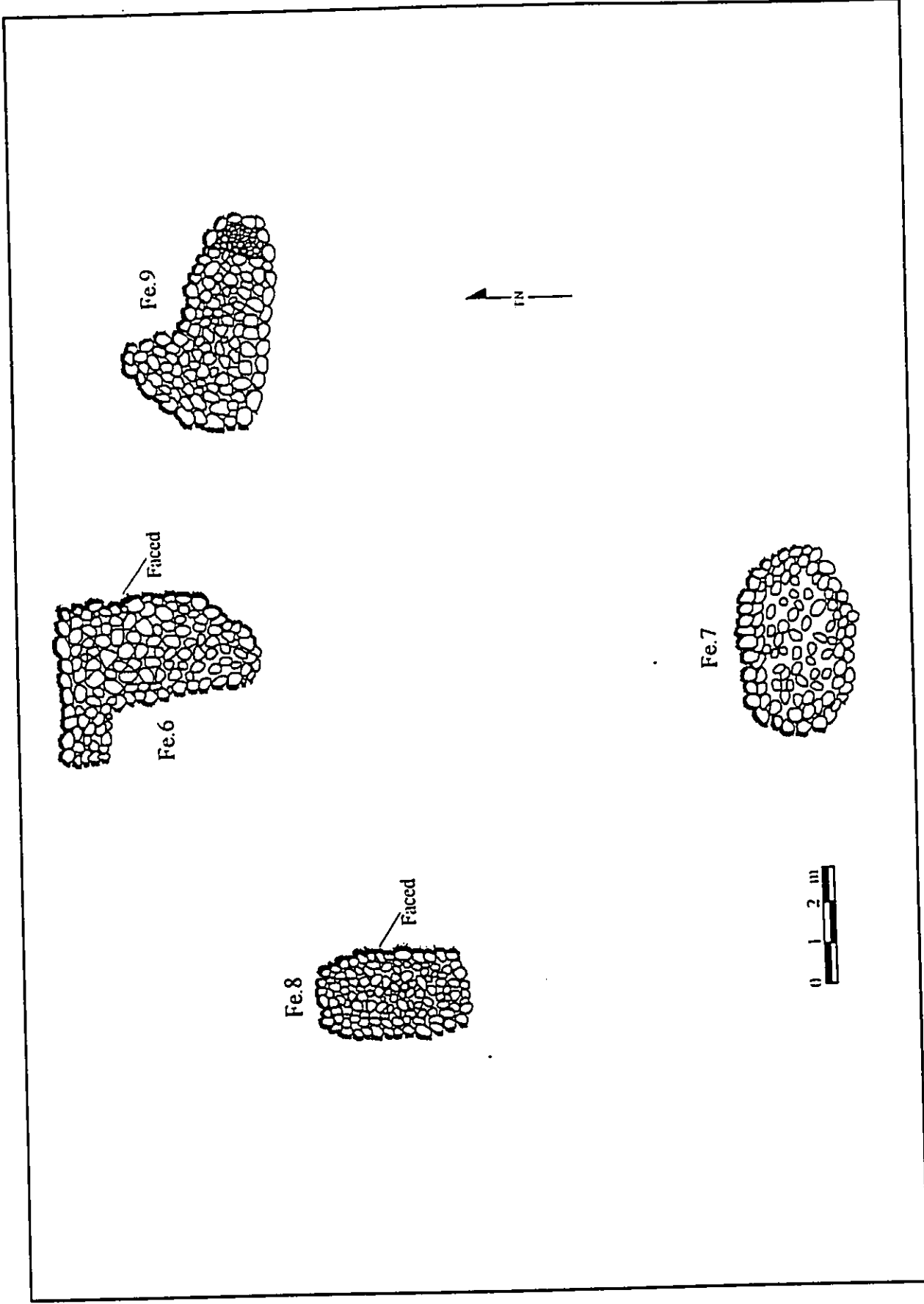


Figure 10: Planview of Features 6, 7, 8, and 9.

FEATURE 9

Feature 9 was an crescent-shaped stacked platform constructed of small to medium basalt boulders. It was flat on top and a small rock terrace extended on the north side. Feature 9 measured 5.00 by 3.50 by 1.48 m high (see Figure 10). This feature was interpreted as a clearing mound associated with plantation activities.

FEATURE 10

Feature 10 was a rectangularly-shaped stacked platform constructed of small to medium basalt boulders (Figure 11). It was flat on top and, although nicely fitted on the west and north side, the feature was tumbled to the south and east. It measured 10.00 by 3.59 by 1.83 m and stood from four to five courses high. This feature was interpreted as a clearing mound associated with plantation activities.

Fourteen meters to the south of the center line stake was the western end of Feature 11. This entire section was heavily overgrown and features were difficult to identify in the dense vegetation.

FEATURE 11

Feature 11 was a bi-faced, core-filled basalt wall (see Figure 11; Figure 12). It was constructed of small to medium cobbles and boulders, and the linear portion of which stood three to four courses high. The length of Feature 11 extended more than 60.00 m (200 feet) to the west, at which point it was covered with impenetrable vegetation and appeared to angle off to the southwest, out of the project area. The wall was irregular in shape as it incorporated several rock bulges on its north side which stood three to six courses high (0.60 / 0.85). The average width was 1.00 m but this extended to several meters at the bulges. Barbed wire was strung along the top of the eastern end for several meters to the west.

This feature was interpreted as a possible boundary wall related to pasture land. A second, less likely, possibility is that this wall was related to a piggery used during modern times (Robins and Spear 1996:42).

FEATURE 12

Feature 12 was a long, narrow, rectangularly-stacked platform of small to medium basalt boulders (Figures 13 and 14). It was flat on top and nicely faced on each side, although slightly tumbled at the north end. It measured 6.75 by 1.50 by 1.50 m and stood five to six courses high. This feature was interpreted as a clearing mound associated with plantation activities.

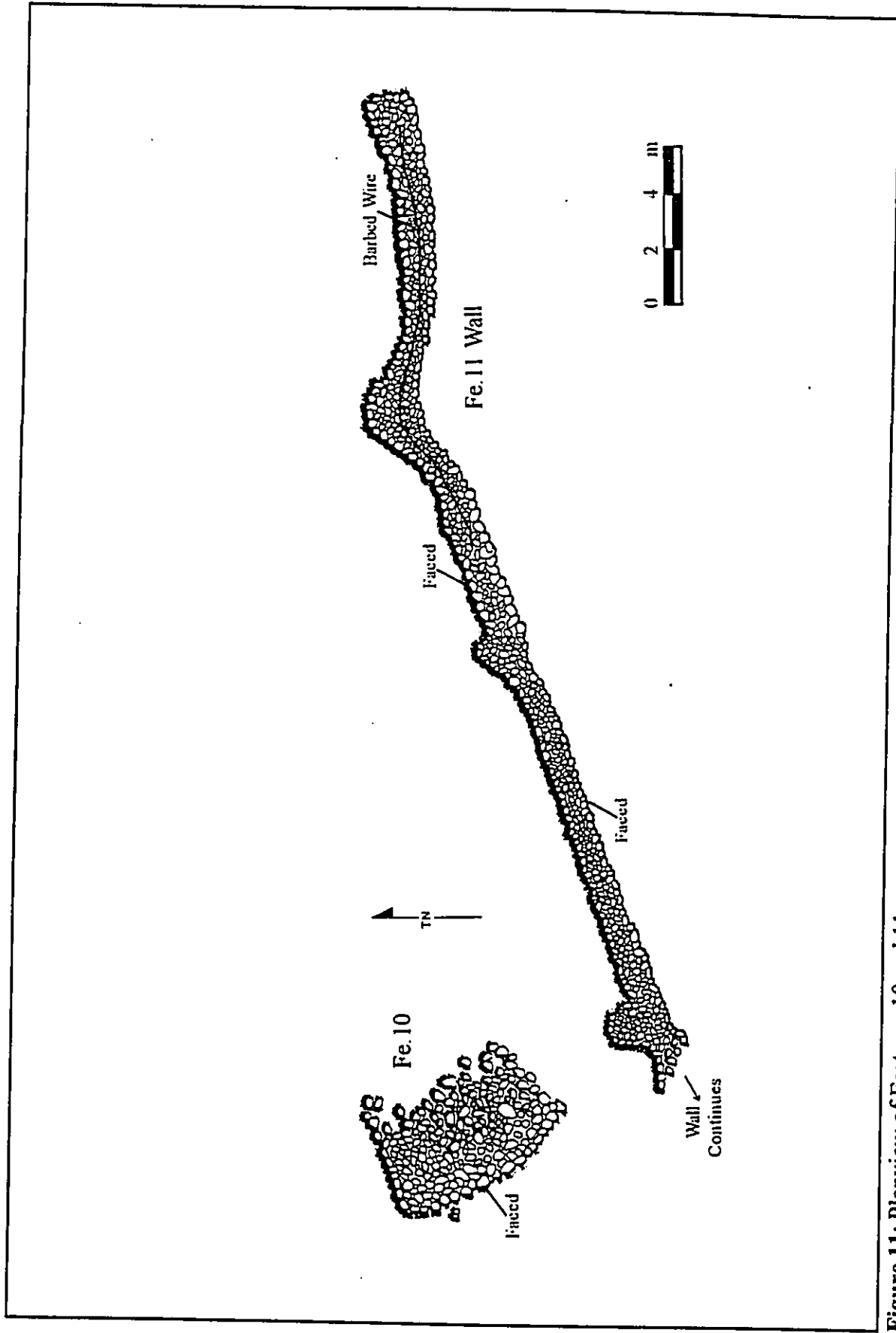


Figure 11: Planview of Features 10 and 11.

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Figure 12: Photograph of Feature 11 Wall with Vegetation. View to East.



Figure 13: Planview of Feature 12. View to East.

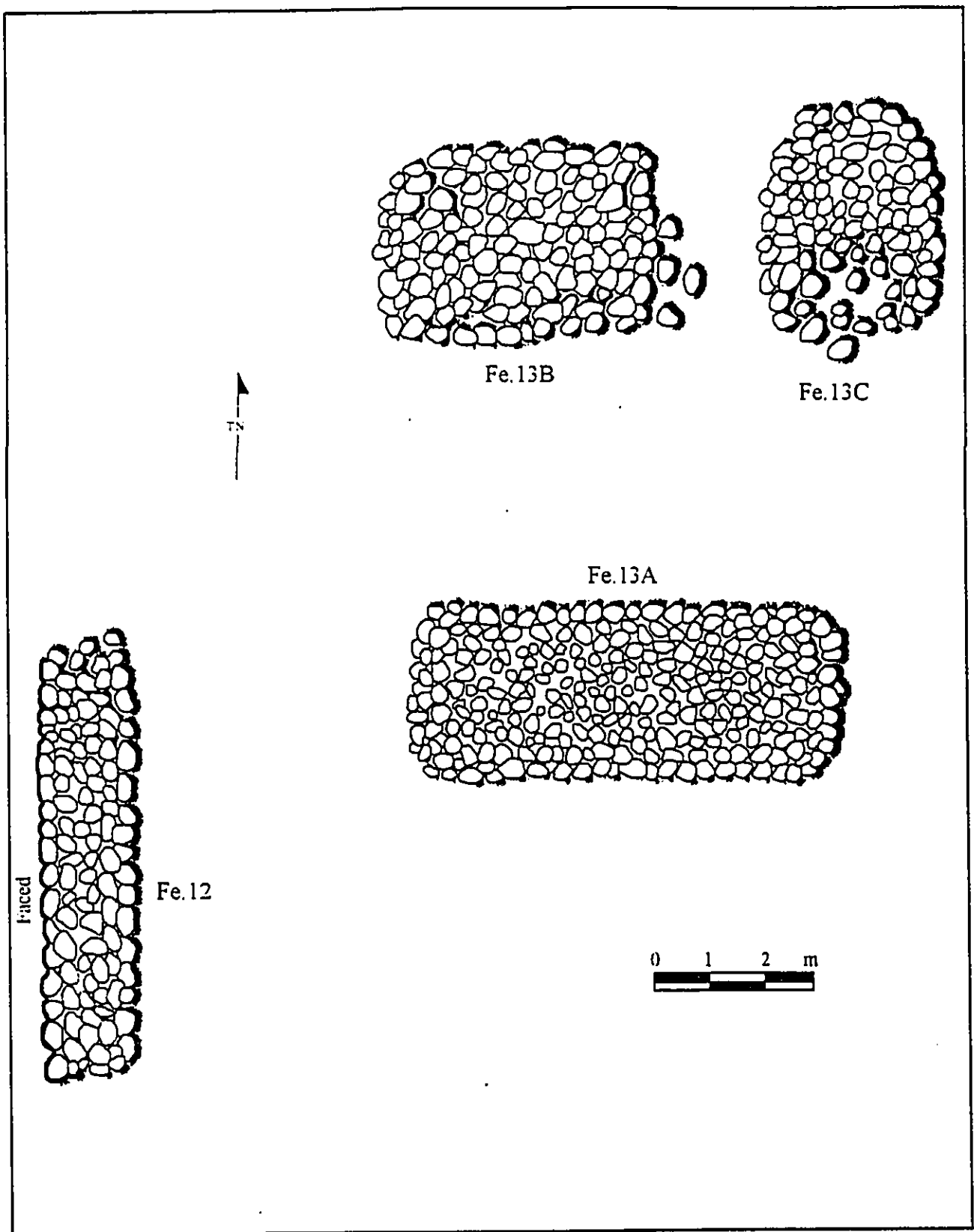


Figure 14: Planview of Features 12, 13A, 13B, and 13C.

FEATURE 13A, B, AND C

Feature 13 was a cluster of three large, stacked basalt rock platforms constructed from small to medium basalt boulders and located to the east of Feature 12 (see Figure 14; Figure 15). Feature 13A measured 7.30 by 3.00 by 1.20 m. It was faced on all sides, flat on top, and stood five to six courses high.

Feature 13B measured 4.30 by 3.40 by 1.95 m. It was loosely faced on all sides, mounded on top, and stood five to six courses high.

Feature 13C measured 4.00 by 2.55 by 1.60 m. The sides of the feature were somewhat collapsed and it was slightly mounded on top. Feature 13 C stood five to six courses high.

All three platforms were interpreted as clearing mounds associated with plantation activities.

FEATURE 14A, B

Feature 14 consisted of two stacked, basalt rock platforms located approximately 7.00 m to the east of Feature 13 (Figures 16 and 17). Feature 14A was a very overgrown eroded rock mound that measured 5.60 by 2.90 by 1.30 m. It was constructed from small to medium basalt boulders. The northern portion and part of the east face were still nicely faced. The mound stood from five to six courses high and was rectangular-shaped.

Feature 14B measured 5.80 by 3.30 by 1.75 m. It stood from three to six courses high, was constructed from small to medium basalt boulders, and still retained several sections of facing. It was curved, vaguely crescent-shaped, and flat on top. Both rock platforms were interpreted as clearing mounds associated with plantation activities.

FEATURE 15

Feature 15 was an earthen ditch, a short segment of which was rock lined (see Figure 17). The faced portion extended 1.10 m in length. The ditch itself was 1.00 m deep and 1.00 m wide, on an east-west axis. Its full length was unknown because of the dense vegetation which covered most of the feature. Feature 15 was interpreted as an irrigation ditch associated with plantation activities.

RECEIVED AS FOLLOWS



Figure 15: Photograph of Feature 13A. View to North.

RECEIVED AS FOLLOWS



Figure 16: Photograph of Feature 14B. View to North.

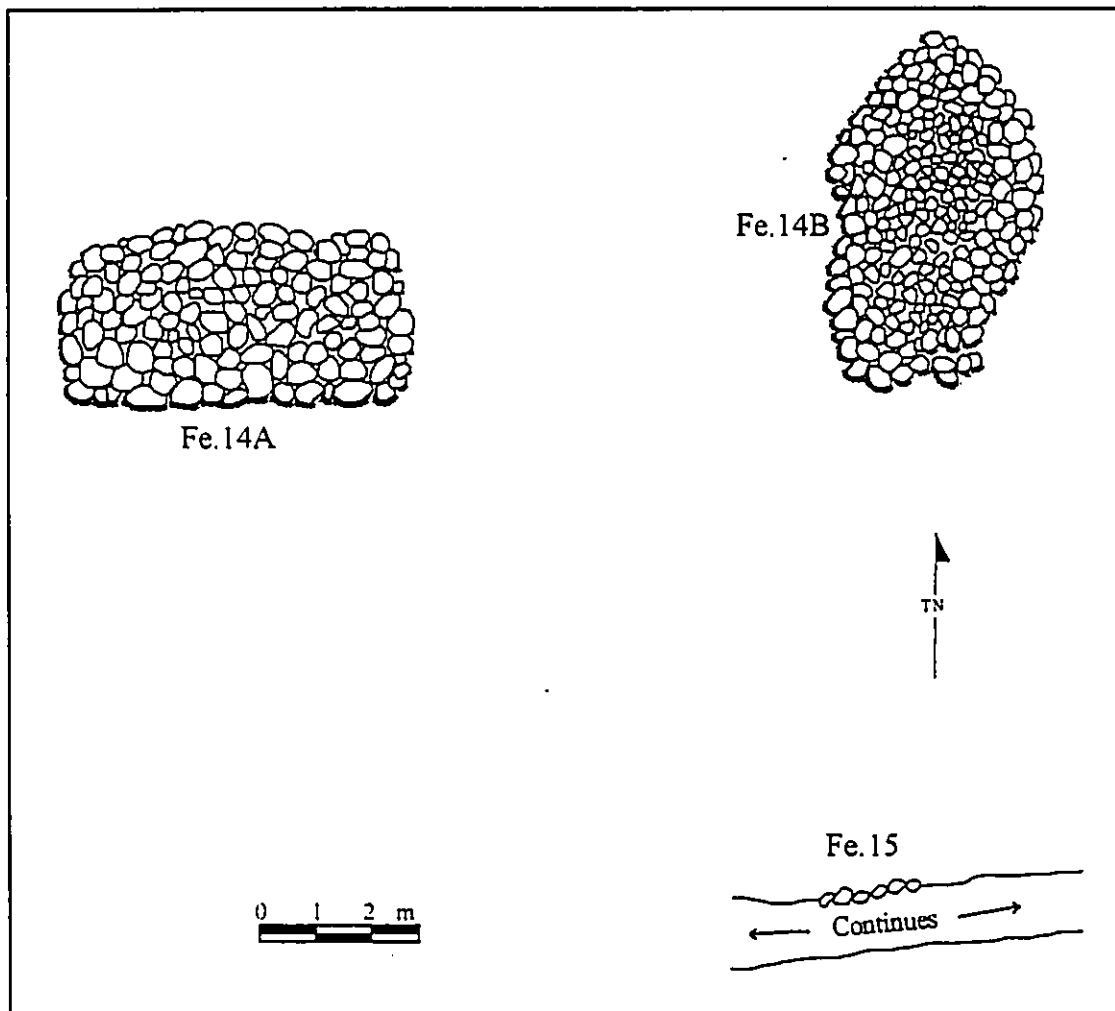


Figure 17: Planview of Features 14A, 14B, and 15.

FEATURE 16A, B, C

Feature 16 consisted of a small rock platform, a large rock platform, and an alignment (Figure 18). Both platforms were constructed on a low bedrock outcrop. Feature 16A measured 3.9 by 1.90 by 1.39 m. It was constructed of small to medium basalt boulders and is circular in shape, flat on top, and faced.

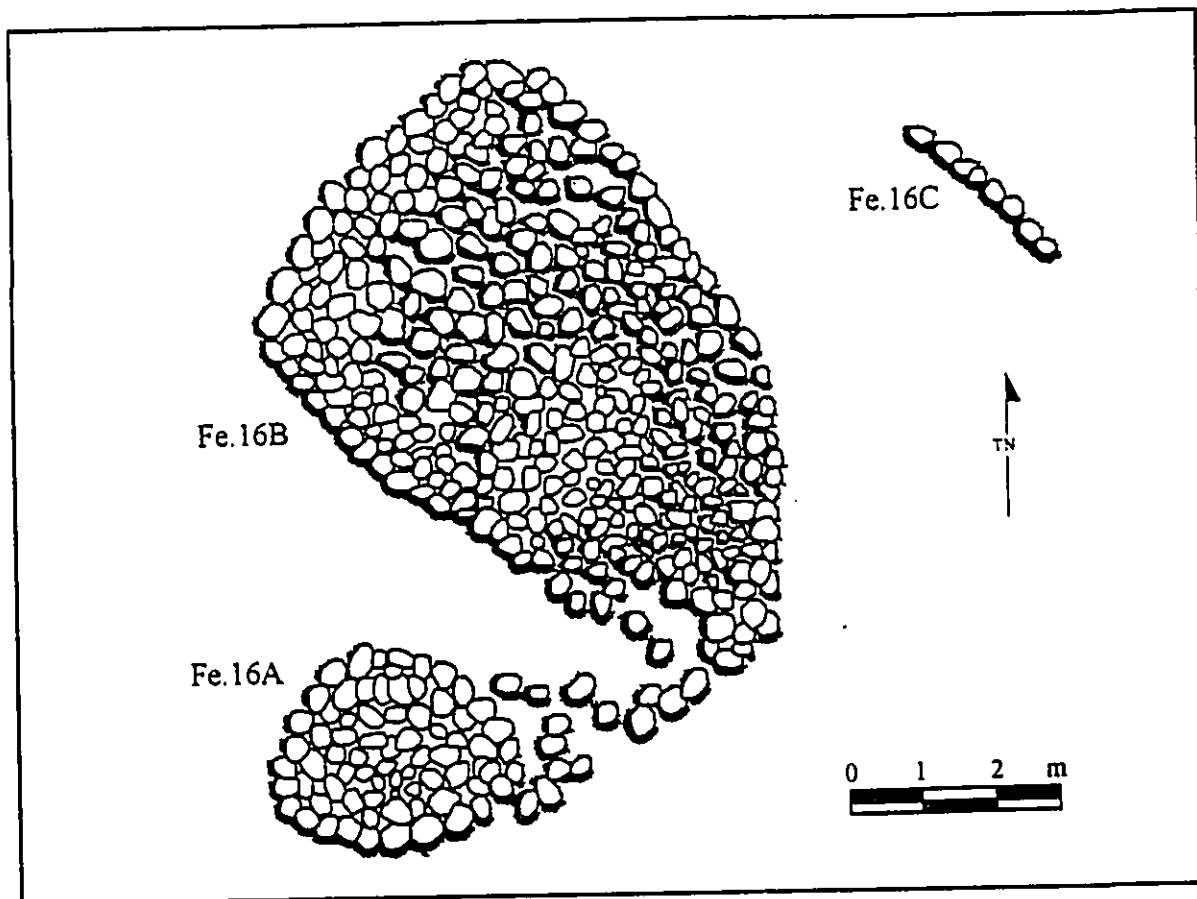


Figure 18: Planview of Features 16A, 16B, and 16C.

Feature 16B was constructed from small to medium basalt boulders and measured 7.00 by 5.00 by 1.15/2.14 m. It stood three to six courses high and was flat on top. Most of the platform was still faced, although the southern end had collapsed. The entire feature was overgrown with vegetation.

To the northeast was a short alignment, Feature 16C. It measured 2.44 m long by 0.36 m high and was one rock wide.

Features 16A, B, and C were interpreted as plantation-related clearing mounds.

FEATURE 17A, B, C

Feature 17 consisted of a cluster of small rock mounds located on a low, overgrown lava outcrop above a swampy section in the eastern portion of the project area (Figure 19). Feature 17A was constructed from small to medium basalt boulders and measured 4.50 by 2.70 by 0.46/0.88 m. It was vaguely crescent-shaped and stood from three to five courses high. Feature 17A was tumbled but flat on top.

Feature 17B was constructed of small to medium basalt boulders and measured 1.70 in diameter (Figure 20). The round platform stood from three to five courses high, was faced, and was flat on top.

Feature 17C was constructed of small to medium basalt boulders and measured 2.90 by 2.10 by 0.50/1.04 m. The oval-shaped platform stood from three to five courses high, was nicely faced all around, and was flat on top.

Located south of the southern boundary of the highway and in line with the center line stake no. 68+00, was a large, modified outcrop. As it was out of the project area, it will only be briefly described. The outcrop consisted of large slabs of lava. The end nearest to the project area was elevated approximately two meters above the ground. The top of the outcrop had several gutter-like features that may have been natural, a result of the heavy rains that occur in the area. Surrounding the outcrop to the south were at least six small rock mounds. The vegetation was thick and there are probably more in the vicinity. Two artifacts were observed including an old rusty metal pail sitting on one of the mounds and a machine-made, whole glass liquor bottle of pale green glass from the 1920s.

DISCUSSION AND CONCLUSION

A total of 17 features (30 components), including stacked basalt platforms of various shapes, stacked and core-filled walls, and an alignment were identified during the inventory survey. The stacked mounds, alignments, and one wall segment (Feature 2D) were interpreted as features associated with plantation activities. Two of the recorded walls (Feature 1 and 11) were interpreted as possibly being related to use of the area as pasture or, less likely, to a modern piggery identified by an informant (Robins and Spear 1996:42).

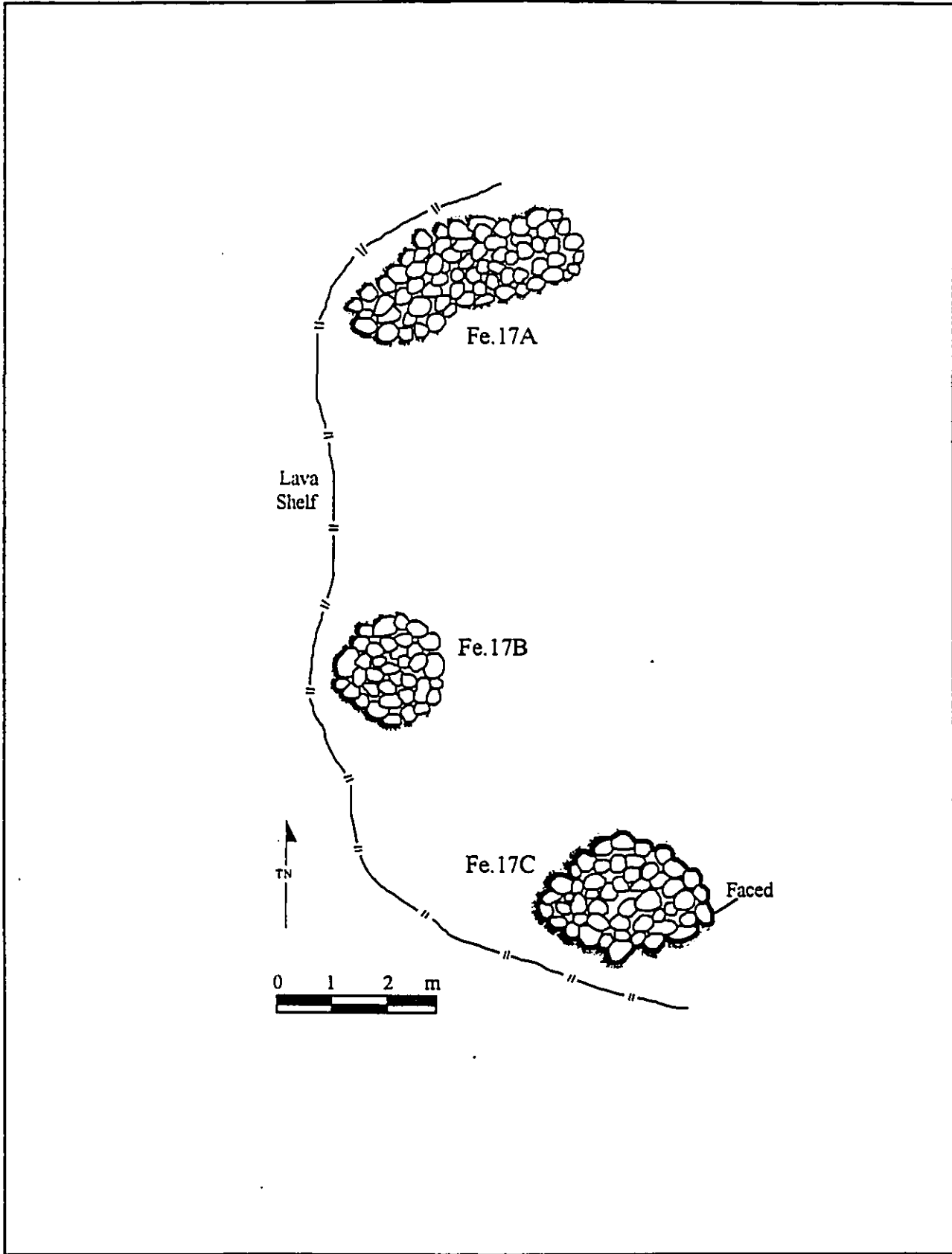


Figure 19: Planview of Features 17A, 17B, and 17C.

RECEIVED AS FOLLOWS



Figure 20: Photograph of Feature 17B. View to Northwest.

All of these features were assigned to Site 18921 originally, recorded in 1994. The results and interpretations of this recent survey are consistent with the previous conclusions for Site 18921 by Hunt and McDermott (1994:112).

All of Site 18921, including the present project area, was located on lands previously cultivated for commercial sugar cane by the Waiākea Mill Co. (Condé and Best 1973:120). The sugar company intensively impacted the landscape for cane cultivation with mechanized plowing and tilling to at least a 6-inch depth of ground surface and by clearing the soil areas of rocks. Such activities would have destroyed any pre-existing surface evidence of Hawaiian sites.

Past archaeological reports and interviews have made it clear that commercial sugarcane activities left constructed remains throughout abandoned cane fields. Spear (1992) noted linear mounds along Waianuenue Avenue which were determined to be historic in age, resulting from activities associated with sugarcane or cattle ranching. Other abandoned sugar cane lands have contained a variety of high stacked and faced mounds, modified outcrops, mounds and stone walls or alignments (Goodfellow 1991; Goodfellow and Fager 1992).

Many of the features identified in past surveys, as well as the present survey, were built on natural formations such as lava terraces, outcrops, ridge tops, and sloped terrain. These areas are not considered ideal for agriculture but supply space for related activities. Features with vertically faced sides and level surfaces (often ovoid or round in shape), were interpreted as having been used for water tank foundations or as rock clearing mounds (Erkelens and Athens 1993).

In Kohala and Hilo, historic sources and local residents described cane related clearing mounds as having a dual purpose (Hunt and McDermott 1994; Erkelens and Athens 1993:46). Besides that of a clearing mound, the rocks were piled inside a loosely stacked wall which allowed a cart to be pulled up close to the edge providing easy access the rock pile, thus, creating a potential loading platform. Often these mounds contained a depression in the middle where the rocks were thrown which distinguishes the cane features from a traditional Hawaiian platform where basalt rocks were "piled, heaped, and closely fitted together with remarkable skill ... to create house platforms, walls... animal enclosures... temple platforms... and a variety of other sites" (Kirch 1985:34).

In their 1994 testing, Hunt and McDermott noted the cane features were typically unstable and lacked "weight bearing vertical faces"(1994:104). Excavations revealed :

"the construction fill was jumbled with no internal structure—indicating that the method of construction was to build sturdy facing, then fill in nothing more than a haphazard way. This unstable construction contrasts with indigenous Hawaiian architecture, where stable weight bearing vertical faces and stable mounds, often with paving stones, etc., are the norm."

Due to the fact that recently much archaeological work has focused on land previously used for sugar cane cultivation, a number of criteria have appeared distinguishing historic-cane era sites from traditional Hawaiian sites: (1) Sites are located within or adjacent to designated historic cane fields; (2) Site structures match cane-related structures anticipated in the historic research and are comparable to other known sugar plantation sites; (3) Site structures have architecture atypical to traditional Hawaiian structures; and (4) Sites are associated with historic-era artifacts that are specific to sugar plantation or ranching activities (Robins and Spear 1996:50; Borthwick *et al.* 1993; Hunt and McDermott 1994; Maly *et al.* 1994; and Spear 1995).

Sites recorded by the 1994 and 1996 survey have identified features associated with plantation activities including, field walls, ramp structures for cane hauling, foundations for water tanks, a railroad track, and railroad beds containing railroad ties on the surface. These features have been documented in a similar state of preservation and architectural construction as those in the present project area (Borthwick *et al.* 1992; Erkelens and Athens 1993; Hammatt *et al.* 1995).

Typical at Site 18921 were features reflecting unstable construction, loose rock fill piled inside of high, well faced round or rounded rectangular features. In construction, height, and configuration, the features were atypical to traditional Hawaiian structures. Feature 11, a long, well built wall with barbed wire strung along the surface, three to four course high, and bi-faced, was constructed in the traditional manner. It may have been built as a field or ranching boundary.

Specific areas for preservation between the road corridor and the University of Hilo's facilities for a cultural-botanic preserve were previously approved by the State Historic Preservation Division. The section of realignment containing the present project area does not affect the agreed upon section of preservation.

The original significance assessment of this site was that it was significant under Criterion D and that it warranted additional Data Recovery work (Hunt and McDermott 1994:112). New data for Site 18921 does not alter either the original significance assessment or recommendations.

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SCS Project Number 183-1

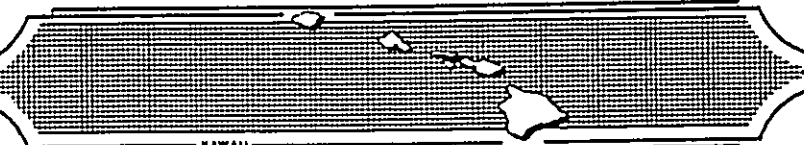
ADDENDUM TO:

**ARCHAEOLOGICAL INVENTORY SURVEY OF
THE PU'AINAKO STREET REALIGNMENT/EXTENSION PROJECT,
EXPANDED CORRIDOR,
WAIAKEA, KUKUAU 1 AND 2, SOUTH HILO DISTRICT,
HILO, ISLAND OF HAWAII**

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SCS183-1

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ABSTRACT

At the request of Okahara and Associates, Inc., Scientific Consultant Services, Inc. (SCS) conducted a supplemental Archaeological Inventory Survey on a short, re-aligned section of the road corridor within the proposed Pu`ainako Street Realignment/Extension Project. This latest work follows those archaeological projects conducted from 1994 through 1996 and 1998 within a similar portion of the proposed corridor.

During the present Inventory Survey, a total of eight archaeological features composed of 17 components were identified, all of these features having been identified within the initial 1/4 mile from the western border of the project area, between center line marking stakes 71+00 to 82+00. All eight features have been subsumed within Site -18921. Several of these features were previously recorded during a past reconnaissance survey, this due to the overlap of the original and newly realigned corridors.

The typological breakdown of newly identified features included within Site -18921: 12 rock mounds, two alignments, one walls, one platform, and one remnant, stone-lined water channel also thought to be associated with sugar cane production in the area. At present, all the mounds, alignments, platform, wall, and water channel documented here are interpreted to be associated with sugar cane cultivation in the area, a similar interpretation to that previously presented. No features, including the water channel, were thought to be associated with traditional times.

Excavations occurred at two locations to determine the presence/absence of traditional architecture and/or cultural material associated with one feature (channel) and for the presence/absence of human burials within an area notified by an informant as containing burials. Both investigations proved negative for traditional materials and burials.

The original significance assessment of Site 18921 was that it was significant under Criterion D and that the site warranted additional Data Recovery work (Hunt and McDermott 1994:112). However, after the present work, additional fieldwork is not recommended as little information may be gleaned through excavating these sugar cane-related features. Thus, no further archaeological work is recommended for the eight features identified, recorded, and subject to limited excavation during the present project.

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INTRODUCTION

At the request of Okahara and Associates, Inc., Scientific Consultant Services, Inc. (SCS) conducted a supplemental Archaeological Inventory Survey on a short, re-aligned section of the road corridor within the proposed Pu'ainako Street Realignment/Extension Project. This latest work follows those archaeological projects conducted from 1994 through 1996 and 1998 within a similar portion of the proposed corridor and is devised as addendum to those reports. The present Inventory Survey was designed to cover a new area of the corridor.

The corridor surveyed during this project was approximately 1.0 mile long (east-west) and 300 feet wide (north-south) and ran both parallel and perpendicular to Kaumana Drive, just to the south of the former proposed corridor alignment (Figures 1 and 2). The center line of the corridor is approximately 0.40 km to the south of Kaumana Drive at its most western portion and some 2.5 km to the south of the same road at the project's eastern/southeastern extent. The western edge of the corridor lies just to the east of Wilder Road.

Fieldwork was carried out at various times within November and December, 1999 and was conducted by Michael Dega (Field Supervisor), LeAnn McGerty, Amy Buffum-Cordero, Leina'ala Blomfield Benson, and Guerin Tome. Field work and report production were done under the overall direction of Robert L. Spear, Ph.D. who served as the project's Principal Investigator.

The present project is the latest in a series of archaeological work occurring within the road realignment corridor. Past investigations within a fairly redundant section of the Pu'ainako area included Inventory Survey and Reconnaissance-level investigations. Herein, all the projects thus far completed in the area will be briefly analyzed and synthesized into a coherent pattern. This is, in effect, being done to alleviate confusion that has occurred due to overlapping project areas and site/feature designations.

As this report is an addendum to previous work, only a brief mention of the project area setting and history will be undertaken here. The reader is referred to Hunt and McDermott (1994), Maly (1996), and Robins and Spear (1996) for a more thorough overview of the project area, its environs, and history.

PHYSICAL SETTING

As stipulated above, the project area subject to the present Inventory Survey was approximately 1.0 miles long (east-west) and c. 300 feet wide (north-south) (see Figure 2). The subject area reaches its highest elevation at the westernmost edge of the project area (c. 1,060 ft amsl) as it extends toward the mountains and island interior. The lowest elevation occurring within the present corridor is along the eastern border, elevations being c. 900 ft. amsl. The eight sites identified and tested during the present research occur between the center line marking stakes 82+00 and 71+00. Although modest in length and breadth, the project area contained a fairly complex matrix of landforms and vegetation.

LAND FORMS

The project area extension crosses lands varying in elevation within modest distances, these created by the dissection of numerous, very small drainages throughout the parcel and the collapsing of lava tubes, the latter creating natural catchments of water and sediment from upslope reaches. The parcel itself may be best characterized as an upland, rain forest component of Mauna Loa and containing, among other features, intermittent and perennial stream flows, flood catchment zones, and residential housing.

The western flank of the project area contains the greatest gradient in elevation as the slope proceeds to the east (*makai*). More intermittent streams and therefore, erosion, are most prevalent within this third. The central portion of the project area is slightly undulating and contains flattened plateaus amenable for water catchment. Thus, much of the middle third is covered by secondary growth trees overlaying marshy, saturated soil. Free-standing pools of water are common within the central portion of the project area. The eastern flank contains slightly undulating topography as well. Perhaps most visible in the lower third is the presence of lava flows. Mauna Loa lava flows of varying radiocarbon ages cross the lower third of the parcel. The most prevalent and visible lava flow in the lower third is the 1881 flow. However, the Punahoa flow (c. 3,000-4,000 B.P.) and Kulaloha flow (c. 1,100-1,400 B.P.) are also present within portions of the corridor. The ubiquity of visible flow across the parcel has a direct impact on project area vegetative, soil, and hydrological regimes.

HYDROLOGY

The corridor is prone to receiving much upland water, as is indicated by the numerous small, intermittent drainages coursing through the project area. A majority of these drainages are small and narrow, these likely created by fast-moving, flood borne waters that create small, very incised drainages. Standing water is common in the central and eastern portion of the project area. Combined with the fern-dominated vegetation and non-intensively sloping topography, marshy conditions prevail. That the area receives much direct rainfall (c. 130-200 inches annually; Hunt and McDermott 1994:6) was quite evident during fieldwork.

Water normally proceeds through the parcel from west-east (*mauka-makai*), although numerous, small drainages cross the variable landscape. Water channels or *'auwai* thought to be associated with sugar cane cultivation on the parcel in the early 1900s also move in a west-east and side slope fashion across the parcel.

SOILS

According to Sato *et al.* (1973: 27, 23), soils within this corridor primarily consist of two types: thin organic soils (muck) of the Keaukaha soil series and silty clay loam of the Kaiwiki series. The former soil series was not considered as sufficient soil for mechanized agriculture while the latter series (Kaiwiki) was considered as being optimal soil for agricultural endeavors. The lava flows most evident in the eastern portion of the project corridor contain only pockets of soil. Briefly, deviations from these two general project area soil types were modest.

VEGETATION

A fair amount of different floral species occur within the corridor, a majority of these species being secondary growth varieties being close to the ground surface and cloaking surface visibility. Predominantly, *uluhe* or false staghorn fern (*Dicranopteris linearis*) occurs throughout the corridor, covering a 3/4 mile swath (or 75%) along the eastern side of the project area. A majority of the identified sites (see below) occur within *'ohi`a* or common guava (*Psidium guajava* L.) groves where surface visibility is fair to good. Other floral species occurring within the corridor include: *'ohe* or bamboo (*Schizostachyum glaucifolium*), wild orchid (*Orchidaceae*), java plum (*Syzygium cumini* L.), *wiawi* fern, fern tree (*Filicium decipiens* ?), *mai`a* or banana (*Musa* sp.), and *'akala* or thimbleberry (*Rubus rosifolius* Sm.). During fieldwork, it was noted that taro or *kalo* (*Colocasia esculenta*) was being successfully grown in neighboring residential areas.

TRADITIONAL AND HISTORIC SETTING

In-depth discussions of project area history and testimony have previously been provided in Hunt and McDermott (1994), Maly (1996), and Robins and Spear (1996), and are not duplicated here. These authors have appropriately synthesized the traditional and historic setting of the project area and following their results of fieldwork, have classified the documented sites into the known culture history paradigm of the area (e.g., platforms and mounds associated with sugar cane cultivation, etc.).

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Due to the variety of proposed corridors over time, numerous archaeological projects have occurred within various sections of the Pu`ainako Street alignment and realignment area. The following is meant to clarify the nature of archaeological projects occurring at various times within the Pu`ainako corridor and by extension, to review the requirements needed to fulfill present research program objectives. Table 1 below enumerates the various projects occurring directly within the corridor and lists the road alternate area subject to investigation.

Prior to the present project, seven archaeological and/or historical inventory projects had been accomplished directly within the proposed project corridor. Several other projects (Borthwick *et al.* 1993, Borthwick and Hammatt 1993, Maly *et al.* 1994, and Spear 1995) occurred near the Pu`ainako realignment but had no immediate impact on the corridor. Only the archaeological projects directly related to the Pu`ainako realignment are discussed here. These projects represent various levels of archaeological investigation which were accomplished as the corridor was realigned several times during the project's history and the respective, named realignments. Table 2 more succinctly depicts the type of archaeological work accomplished during each individual project.

Table 1: Archaeological Research Directly Pertaining to the Pu'ainako Street Realignment

Researchers	Year	Level of Research	Identified Sites	Alternate Designation
Hunt & McDermott	*1994	Inventory Survey	11 new sites comprising 88 features	1, 2, A, B
Kepā Maly	1996	Historic Documentation and Oral History	n/a	general area
Robins and Spear	*1996	Inventory Survey	3 sites of 30 new features; 1 new site comprising 16 features	1, 2, A, B
Eble, Denham, and Pantaleo	*1997	Supplemental Testing	Same as Hunt and McDermott 1994	Alternate A & B
Spear	#1998	Reconnaissance Survey	27 newly identified features; Site 18921	Revised Alternate, South of Alternate 1
McGerty and Spear	#1999	Inventory Survey	17 features; Site 18921	Revised Alternate, South of Alternate 1
Dega and Benson	@1999	Reconnaissance Survey	8 newly identified features; Site 18921	Brilhaute Alternate
S Dega and McGerty	@1999	Inventory Survey	8 features; Site 18921	Brilhaute Alternate

*=two Inventory Survey's and one Supplemental Testing depicting overlapping sites

#=Reconnaissance Survey and Inventory Survey in same realignment area

@=Reconnaissance Survey and Inventory Survey in same realignment area

S=Present project

Table 2: Research Projects and Specific Archaeological Tasks Completed

Researchers	Year	Level of Research	Research Tasks
Hunt & McDermott	1994	Inventory Survey	Historical Research, Pedestrian Survey, Testing
Kepā Maly	1996	Historic Documentation and Oral History	Historical Research and Oral History Interviews
Robins and Spear	1996	Inventory Survey	Pedestrian Survey, Testing
Eble, Denham, and Pantaleo	1997	Supplemental Excavations	Testing
Spear	1998	Reconnaissance Survey	Pedestrian Survey
McGerty and Spear	1999	Inventory Survey	Pedestrian Survey
Dega and Benson	1999	Reconnaissance Survey	Pedestrian Survey
Dega and McGerty	1999	Inventory Survey	Pedestrian Survey, Testing

SPECIFIC PROJECTS WITHIN PU'AINAKO CORRIDOR

Hunt and McDermott (1994):

The initial project relating to the Pu'ainako roadway was executed by Hunt and McDermott (1994) who conducted an Inventory Survey of the Pu'ainako Street Extension within Waiakea, Kukuau 1 and 2, and Ponoahawai in 1992. The project area comprised the largest areal extent of all archaeological work in the area and encompassed Alternate 1, 2, A, and B, the latter two occurring downslope and to the east of the former (Figure 3). The study entailed historical background research, pedestrian survey, and limited subsurface testing.

Briefly, Hunt and McDermott (1994) recorded 13 sites within their project area (State Sites 50-10-35-18911 to -18923), the site complexes comprised of 88 individual features (see Figure 3). All the features were interpreted to date from c. A.D. 1880 to 1950 and related to historic period sugar cane production and associated endeavors. The team excavated five units within several features and concluded that the lack of prehistoric artifacts and traditional subsurface features within the units further supports the notion that all the features were historic in origin (Hunt and McDermott 1994:104). Hunt and McDermott (1994:109-113) recommended that Data Recovery operations occur within their documented site complexes as additional excavation work "could potentially yield isolated traces of prehistoric use of the area, presumably for dryland agriculture." Additionally, the team recommended continued historic research, a task later undertaken by Maly (1996). The Hunt and McDermott report (1994) was accepted by the State Historic Preservation Division (SHPD).

Maly (1996):

The second research program directed toward further understanding the Pu'ainako Street-Waiakea Ahupua'a area was carried out by Kepā Maly (1996). Maly conducted extensive archival research and oral history interviews within the latter portion of 1995, his research primarily focusing on Hawaiian settlement and population expansion within this upland area, sugar cane plantation development within the Hilo area, the Waiakea Mill Company (which cultivated sugar cane through the Pu'ainoko corridor), and through informant interviews, gained a very insightful perspectives on land utilization within the Waiakea area in the recent past.

To paraphrase Maly (1996:62), based upon documentary research and informant interviews, it was thought that a variety of traditional Hawaiian sites once existed within the present Pu'ainako Street corridor. However, since a majority of the area was placed under

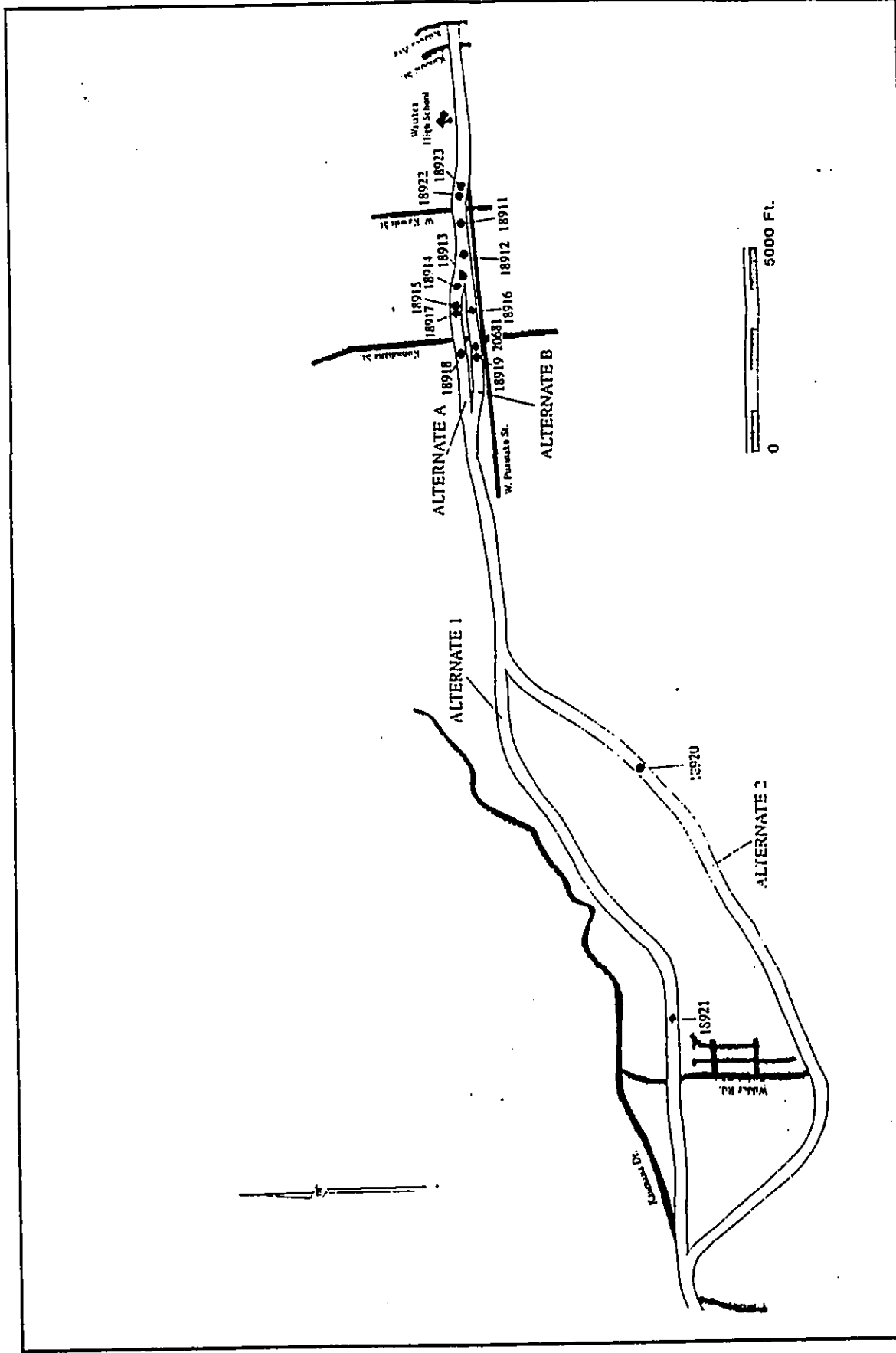


Figure 3: Planview Map of Project Areas and Site Locations within the Pu'ainako Street Extension Corridors as Designated by Hunt and McDermott (1994) and Robins and Spear (1996).

cultivation by operators of the Waiakea Mill Company between the c. 1870s-1940s, features representative of Hawaiian settlement and residency have all but disappeared, primarily as a result of activities associated the development of the sugar plantations. Informants state that features such as stone mounds, ramped platforms, terraces, wall features, enclosures, and berms (railway berms) were most recently associated with cultivation of sugar cane and later, ranching activities in the area. However, Maly (1996:61-63) cautions that some components of these features may be composed of the remains of earlier period habitations and features associated with traditional land use (agricultural features in particular).

Additionally, another informant (Mr. Kenneth Bell in Maly 1996:62) suggested that Hawaiian artifacts were still being collected from cleared fields in the 1920s. Again, it appears as though in a strict architectural sense, features identified within the project area were predominantly related to sugar cane cultivation. Such were the findings of the following several projects as well.

Robins and Spear (1996):

Following Maly's (1996) work, Robins and Spear (1996) conducted additional Inventory Survey within the same general area as that by Hunt and McDermott (1994), or within the four proposed road alignments (Alternates 1, 2, A, and B) (see Figure 3). The project area was very similar to that of Hunt and McDermott but represented an expanded study of the four proposed road alignments. Robins and Spear (1996:1) state that their project reflected a lateral expansion of the original road alignments investigated by Hunt and McDermott (1996), from 120-foot wide course to a width of 300-foot wide course with minor realignments of the original routes. The minor realignments included proposed expansions of 10-feet to 20-feet along the perimeter of several existing streets (Kilauea Avenue, Kinoole Street, and Komohana Street).

In brief, the Robins and Spear report (1996) details the initial identification of 30 architectural features associated with sites previously documented by Hunt and McDermott (Sites -18912, -18914, and -18919) as well as 16 other features that were combined into one new site determination (Site 20681). Robins and Spear (1996:49-52) concluded that all 46 features, representing four sites, were associated with historic sugar cane activities, this assessment based upon the manner in which all the sites were located within or adjacent to designated historic cane fields; site structures (architecture) match cane-related structures anticipated in the historic research and are comparable to other known plantation sites; site structures have architecture

atypical to traditional Hawaiian structures; and that sites are associated with historic-era artifacts that area specific to sugar plantation or ranching activities. In brief, no traditional components were discovered during the Inventory Survey work. However, this did not preclude the possibility that traditional features and/or artifacts could exist in the area. This thread was investigated by the following Pu'ainako Street archaeological work. To conclude, Robins and Spear (1996:53-56) recommended Data Recovery for eight sites within the corridor and concurred with SHPD in the preservation of several other sites. The Robins and Spear (1996) report was accepted by SHPD.

Eble, Denham, and Pantaleo (1997):

The third archaeologically-focused project pertaining to the Pu'ainako Street realignment was performed by Eble *et al.* (1997) at the request of the Ho'oikaika Hawaiian Club (HHC), a local organization based in Hilo, Hawai'i. Eble *et al.* were contracted to conduct supplemental archaeological excavations at selected sites that had been previously identified by Hunt and McDermott (1994) during an earlier Inventory Survey (Figure 4).

The purpose of the additional work was "to aid in the interpretation of site function and chronology, and to ensure that all cultural remains in the area have been sufficiently identified" (Eble *et al.* 1997:1). As Hunt and McDermott had only excavated five units within 88 features, the sponsoring Ho'oikaika group deemed additional excavations necessary to support or refute site age and function determinations previously offered by Hunt and McDermott. Importantly, the supplemental archaeological work performed by Eble *et al.* (1997) was not considered an official stage in the State of Hawai'i historic preservation process but rather, was simply a supplemental aid to previous studies.

Briefly, the crew excavated seven units (typically 1.0 m by 1.0 m) within six sites previously mapped and recorded by Hunt and McDermott in 1994 (see Figure 4). The sites included Site -18916, -18911, -18912, -18914, -18915, and -18917. The excavation units yielded artifacts (metal fragments) and midden (charcoal).

Three samples of wood charcoal were submitted for radiocarbon testing and returned dates associated with pre-Contact (traditional) and early historic times. However, the samples were problematical in that they did not precisely date the architectural structures themselves. The charcoal samples either predated feature construction or were derived from the soil matrix

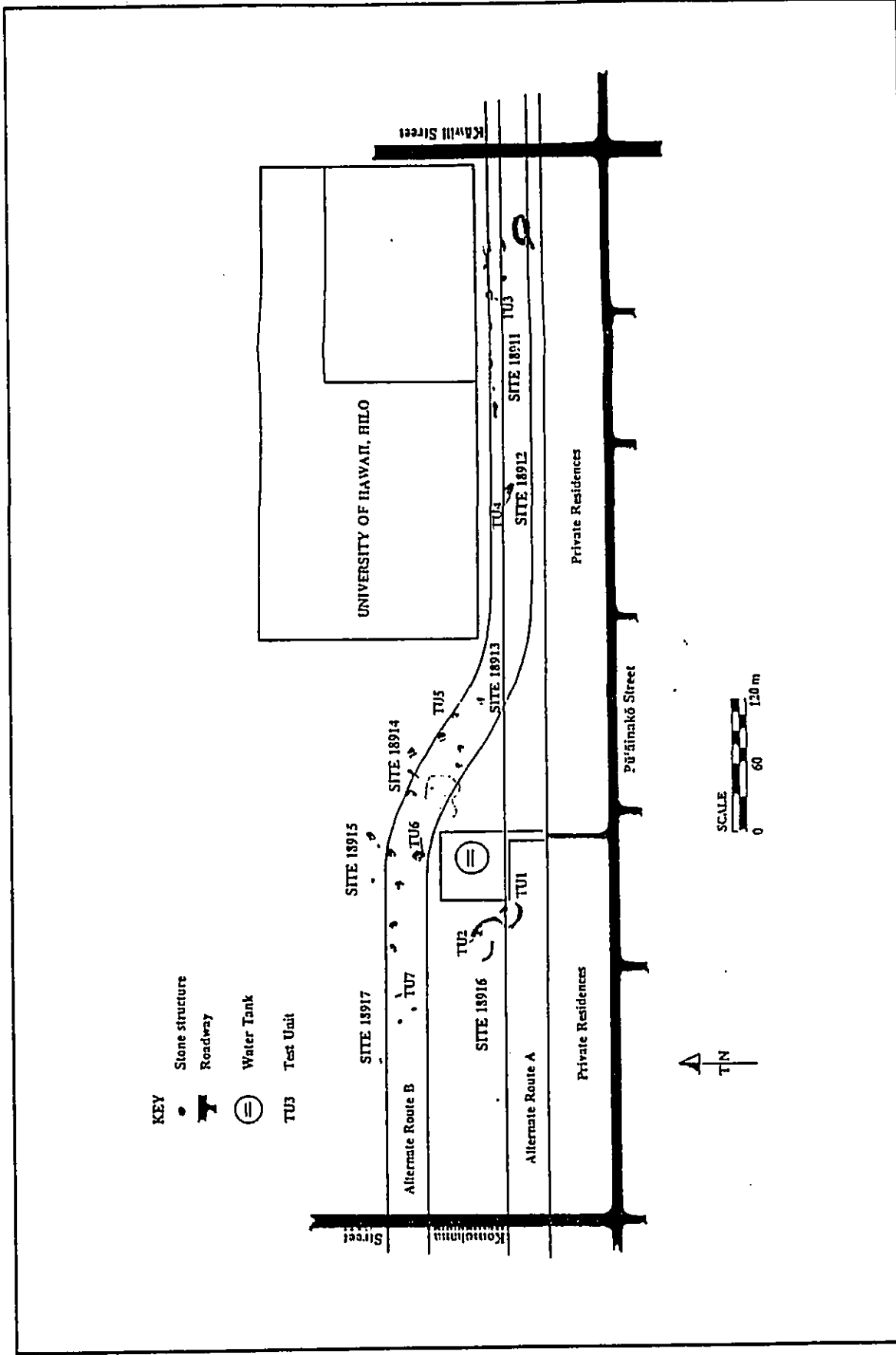


Figure 4: Planview Map of Project Area and Excavation Locations within the Pu'ainako Street Extension Corridors as Designated by Eble *et al.* (1997), Adapted from Hunt and McDermott (1994).

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and not associated with subsurface features (e.g., *imu*, hearth, etc.). Eble *et al.* (1997:53) further state that "All intact evidence of pre-Contact occupation and/or activity in the project area has been disturbed or destroyed as a result of Post-Contact period activity." The structural features examined as part of this supplemental project were all thought to have been associated with sugar cane cultivation and related activities, thus reinforcing the interpretations offered by Hunt and McDermott (1994), Maly (1996), as well as Robins and Spear (1996). Eble *et al.* (1997:56) recommended preservation for several sites within the corridor (a boulder and modern, stone-lined path; see below).

Spear (1998):

The following archaeological work conducted in regards to the Pu'ainako Street realignment was a reconnaissance-level survey performed in 1998 within a Revised Alternative Alignment occurring between Alternate 1 and Alternate 2 (Figure 5). While reconnaissance surveys are not recognized by the SHPD as a complete research method, the survey provides a rapid way to assess the presence/absence of sites within a parcel. No formalized reporting of reconnaissance surveys are generally submitted to SHPD as they typically precede Inventory Survey investigations. Such a reconnaissance survey was performed by SCS personnel in October, 1998.

Occurring just to the south and parallel to Site -18921 (see Hunt and McDermott), a total of 27 surface architectural features were documented (see Figure 5). The features consisted of rock mounds, short walls, and alignments and were interpreted as early sugar cane features common within other portions of the project corridor. In a letter to a SHPD representative (P. McCoy), Spear (1998) and McCoy agreed that the recordation of each feature, photographic examples of the features, and mapping the relationship of the features to the proposed highway corridor was needed. This edict ushered in the next phase of research, an Inventory Survey of the same area.

All twenty-seven features noted during this reconnaissance survey were associated with Site -18921, a site previously recorded by Hunt and McDermott (1994).

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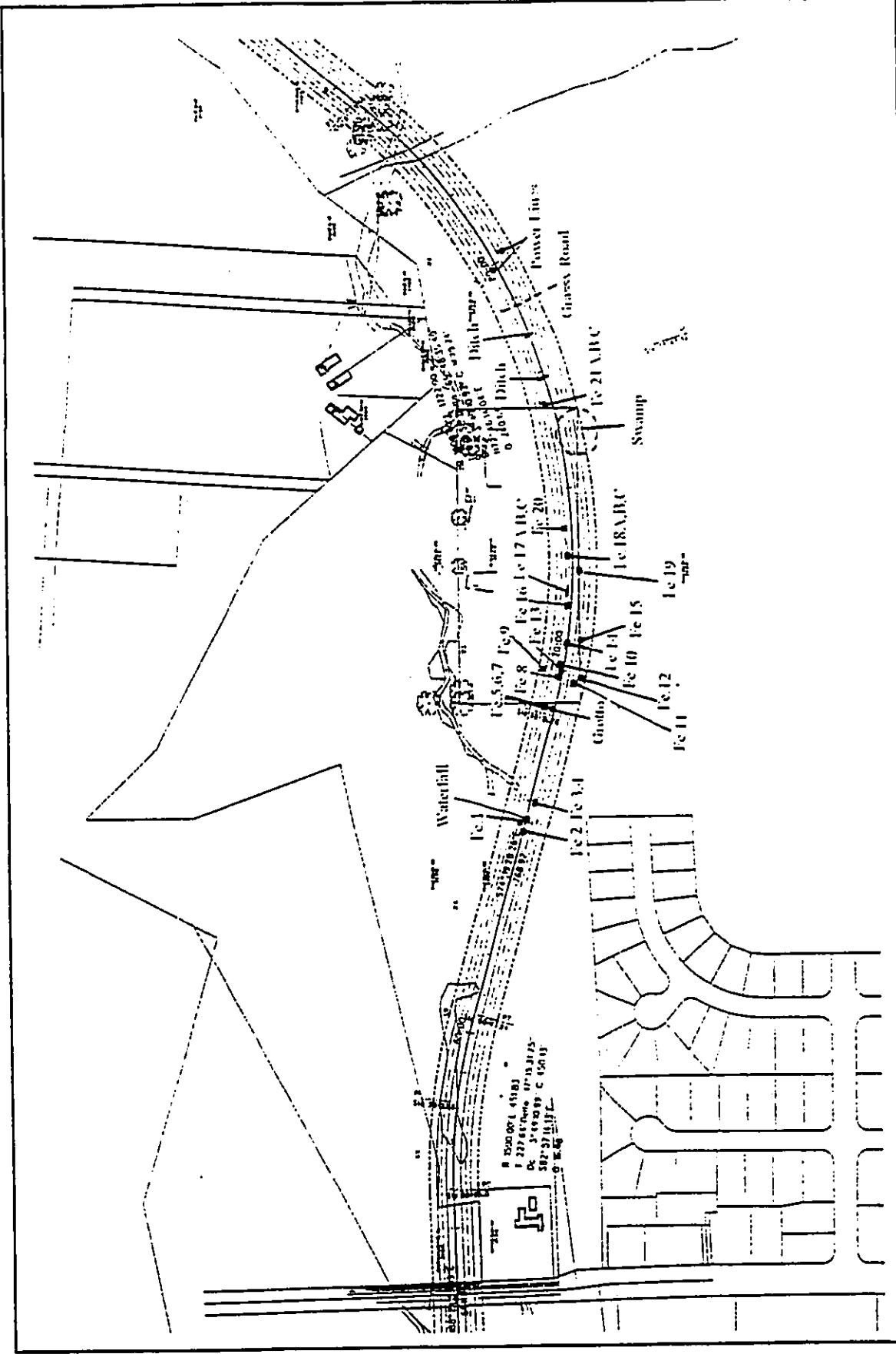


Figure 5: Planview Map of Reconnaissance Survey Project Area and Identified Sites within the Pu'ainako Street Extension Corridors as Designated by Spear (1998).



McGerty and Spear (1999):

As a follow-up to the Spear (1998) reconnaissance survey, McGerty and Spear (1999) conducted an Inventory Survey on a short, realigned section of the Pu'ainako road corridor occurring just to the south, and parallel to, the original Alternate 1 route along the western side of the corridor (Figure 6). The project area was c. 800 meters (m) in length (east-west). This produced report was formally listed as an addendum to the Inventory Survey work accomplished by Robins and Spear (1996).

McGerty and Spear (1999) re-identified the features noted by Spear (1998) and mapped and recorded a total of 17 features during the survey (see Figure 6). The number of features per project dwindled from 27 to 17 as several of the features documented during the reconnaissance survey (n=27; Spear 1998) were either collapsed into more discrete feature designations or were assessed as not being archaeological features. All 17 features were added to the original Site 18921 inventory. As expected, fifteen of the features were associated with historic sugar cane activities. McGerty and Spear (1999:23; from Condé and Best 1973:120) note that all of Site - 18921 was located on lands previously cultivated for commercial sugar cane by the Waiakea Mill Company.

Two features (Feature 1 and Feature 11) were interpreted as possibly relating to use of the area as pasture lands or as a modern piggery, as was identified by an informant. McGerty and Spear (1999:25), following the original significance assessments posed by Hunt and McDermott (1994:112), concurred that the site was significant under Criterion D and warranted additional Data Recovery work.

Dega and Benson (1999):

The next project occurring within the proposed corridor was a reconnaissance survey accomplished by Dega and Benson in August, 1999. The survey was performed within a short, expanded section of the highway (western flank) occurring just to the south, and partially overlapping, with the reconnaissance survey of Spear (1998) and the Inventory Survey work of McGerty and Spear (1999).

The new project area was c. 1.0 mile long (east-west) and 300 feet wide (north-south) and occurred c. 0.40 km to the south of Kaumana Drive at its westernmost portion and some 2.5 km to the south of the same road at the project area's eastern/southeastern extent (see Figure 2). The

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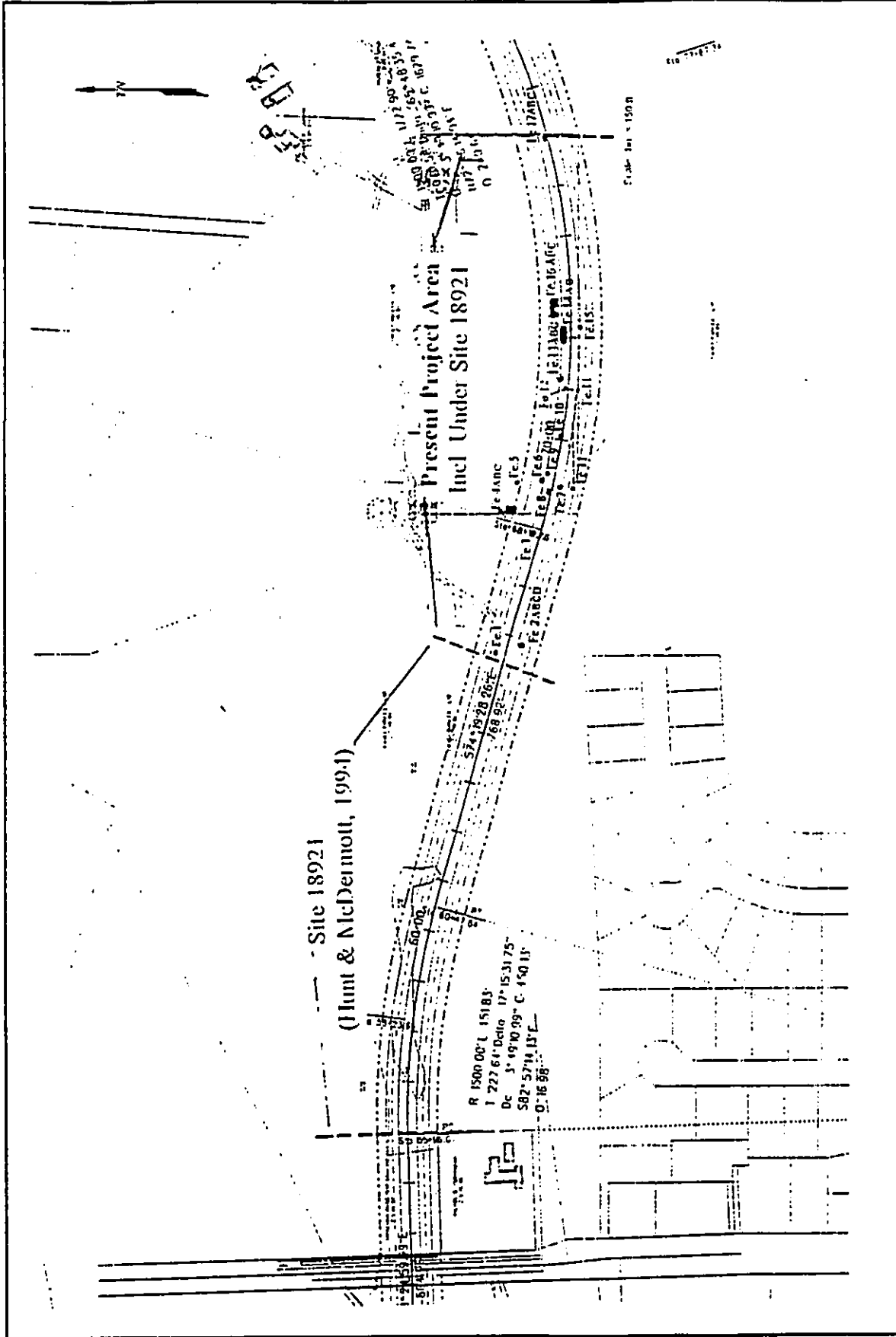


Figure 6: Planview Map of Inventory Survey Project Area and Identified Sites within the Pu'ainako Street Extension Corridors as Designated by McGerty and Spear (1999).

western edge of the expanded corridor was just to the east of Wilder Road. This project preceded an Inventory Survey-level investigation (see below) and was an addendum to the work performed by Robins and Spear (1996) and McGerty and Spear (1999).

Briefly, a total of eight discrete archaeological sites were identified during the survey, all the site having been identified within the initial 0.25 mile from the western border of the project area (between center line stakes marked 71+00-82+00) (Figure 7). The eight sites were composed of 18 features, including; 12 rock mounds, two platforms, two walls, one alignment, and one stone-lined *'auwai*, or water channel. All the mounds, platforms, walls, and the one alignment were interpreted to be associated with sugar cane cultivation and related activities, a similar interpretation to that presented previously (Hunt and McDermott 1994, Maly 1996, Robins and Spear 1996, etc.). Two mounds and both platforms were identified during a previous survey of the overlapping corridor (Spear 1998, McGerty and Spear 1999).

Of the total 18 features identified during the reconnaissance survey, only one feature was possibly thought to be traditional (pre-Contact) in nature, a rock-lined *'auwai* or water channel. The *'auwai* did, however, run parallel to and between several rock mounds associated with sugar cane cultivation. The *'auwai* feature was suggestive of a traditional water channel in that the width of the feature was modest (0.80 m) and precluded intensive water coursing through the feature (e.g., for sugar cane cultivation).

Second, the gravity-fed system was lined with small cobbles, not metal that is common within sugar cane water channels. Third, the channel itself was not deep (average 0.10 m below rock surface) and had not been maintained for some time. Finally, the channel ended on a small, flat alluvial plain that would have been conducive for small-scale irrigated taro cultivation.

The presence of the 18 features identified during the survey (some already recorded), including one potentially associated with traditional times, warranted Inventory Survey-level investigations. Based on the survey, it was recommended that additional, yet limited, archaeological work was required. This work, under the guise of an Inventory Survey, would involve systematic mapping and recording of the sites and limited excavations within and near the *'auwai* feature. This work is described in the present addendum report.

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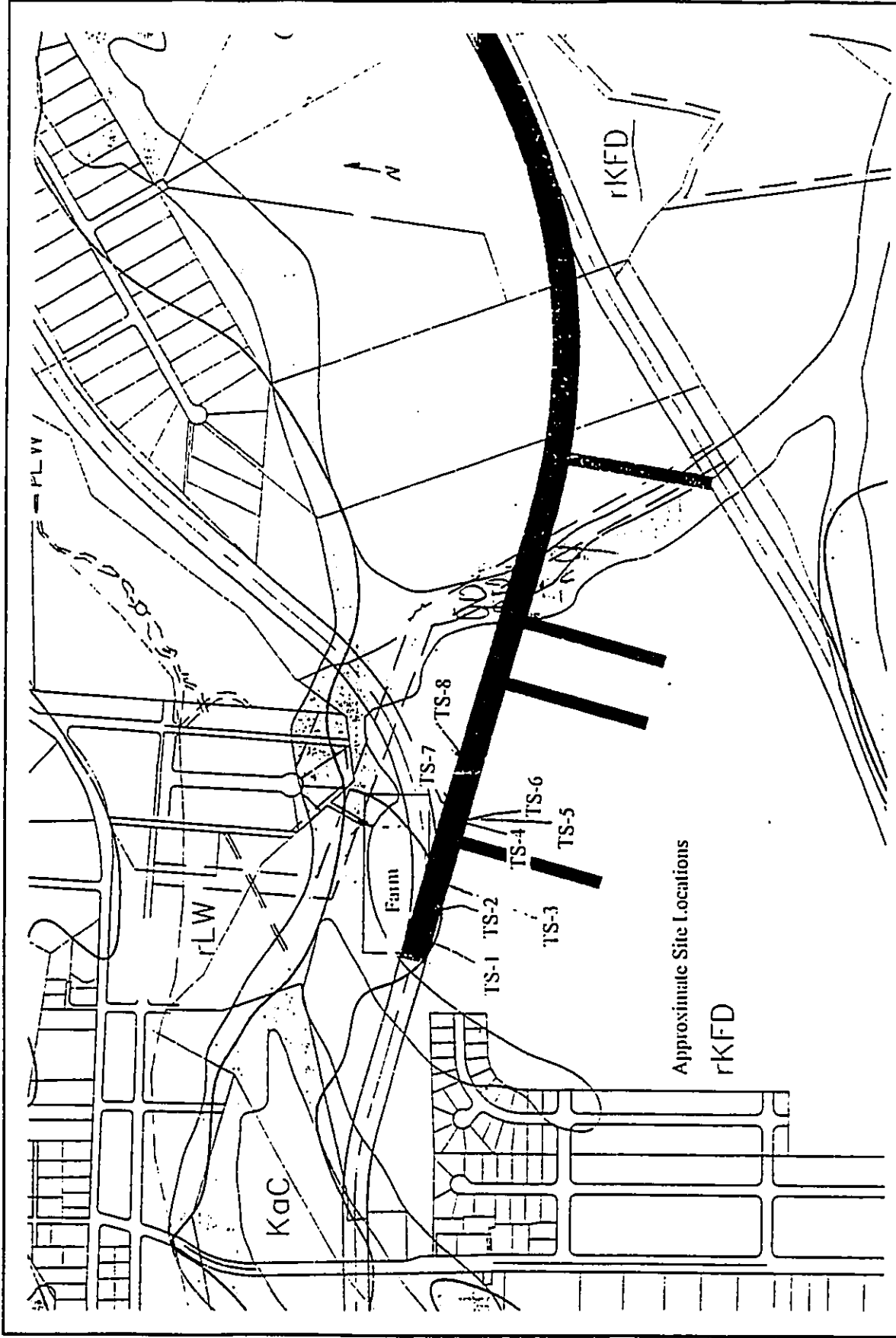


Figure 7: Planview Map of Inventory Survey Project Area and Identified Sites within the Pu'ainako Street Extension Corridors for the Present Project as Designated by Dega and McGerty (1999).

Dega and McGerty (1999):

This Inventory Survey-level work is the topic of the present addendum report. The results of this survey and limited testing are presented below (see also Figure 7).

ARCHAEOLOGICAL SIGNIFICANCE ASSESSMENTS AND RECOMMENDED MITIGATION PER SITE

Due to the proliferation (and redundancy) of archaeological work occurring within the proposed Pu'ainoko Street corridors, an evaluation of site recommendations per project is warranted to crystallize the significance of sites in the various areas. Only Inventory Survey-level reports are discussed here, reconnaissance survey not being amenable to evaluate site significance and mitigated impacts. Table 3 depicts each archaeological site identified within the various reaches of the Pu'ainoko Street Corridors and associated significance assessments and recommendations (to date). The text describing the assessments and recommendations follows (Note: the present Inventory Survey has not been included within the table).

Table 3: Archaeological Significance Assessments and Recommended Mitigation

Site	Significance Assessment	Recommended Mitigation
18911	Criterion D	Data Recovery
18912	Criterion D	Data Recovery
18913	No Longer Significant	No Further Work
18914	Criterion C, D	Preservation
18915	Criterion C, D	Preservation
18916	Criterion (C), D	Data Recovery (Preservation?)
18917	Criterion D	Preservation
18918	Criterion D	Data Recovery
18919	Criterion D	Data Recovery
18920	No Longer Significant	No Further Work
18921	Criterion D	Data Recovery
18922	Criterion D	No Further Work
18923	Criterion D	No Further Work
20681	Criterion D	Data Recovery
boulder, path	none	Preservation

First, Hunt and McDermott (1994) assessed the significance for the thirteen sites they identified within Proposed Corridors 1, 2, A, and B. Of these thirteen, nine sites (Sites -18911, -18912, -18914, -18915, -18916, -18917, -18918, -18919, -18921) were listed as significant under Criterion D and recommended for Data Recovery work. Importantly, SHPD requested that two sites (-18914 and -18915) also be significant under Criterion C (as excellent site types). Sites -18913 and -18920 were assessed as no longer significant and thus, no further work was required at the sites. Sites -18922 and -18923 were assessed as significant under Criterion D but were not recommended for further work.

Second, Robins and Spear (1996) identified an additional 30 features associated with Sites -18912, -18914, and -18915). Two of the sites (Site -18914 and -18915) were previously assessed as significant under Criterion C and D while Site -18912 was assessed as significant under Criterion D only. The 30 features identified by Robins and Spear (1996) are thus incorporated into the respective sites and under the same significance assessments. For example, five additional features were identified by Robins and Spear within Site -18914 and consequently, the area recommended for preservation was expanded. Thus, Robins and Spear (1996:54) retained the previous recommendations of Hunt and McDermott (1994:109-113) as well as recommended site treatment. One exception to this was that SHPD requested that Site -18917, located in proximity to Sites -18914 and -18915, also be preserved. Thus, three sites (Site -18914, -18915, and -18917) are all recommended for preservation and as a result, no further work will occur at the sites. Finally, the newly identified Site -20681 was recommended for Data Recovery as it was assessed as Significant under Criterion D. Based upon these evaluations, it was recommended that the Alternate B route be chosen over the Alternate A route so as not to impact the three preservation sites.

Third, Eble *et al.* (1997:56), providing supplemental testing at select sites previously identified by Hunt and McDermott (1994), retained the same recommendations as the former for Sites -18916, -18911, -18912, -18914, -18915, and -18917. They also recommended that Feature A at Site 18916 be assessed as significant under Criterion C, due to its similarity in architecture and function as Sites -18914 and -18915. However, as the latter two sites have already been preserved, this may preclude including Site -18916 under the same criteria. Finally, at the request of HHC, a large boulder and recently constructed stone entryway occurring adjacent to and north of the project area, were to be preserved (Eble *et al.* 1997:56). Although the features were not archaeologically significant, the HHC requested the area to be preserved as a location

for the teaching of things Hawaiian. The sites should not be utilized as examples of traditional architecture and are not assessed under the normal mitigation criteria. However, as the local community values the area, their request for preservation of the area was recommended for consideration.

Fourth, McGerty and Spear (1999) identified and recorded 17 features (30 components) along the western flank of the extended corridor as an addendum Inventory Survey to that performed by Robins and Spear (1996). All 17 features were subsumed under Site -18921 and share site significance and recommended mitigation. In this case, the 17 features were assessed as significant under Criterion D and were thought to warrant additional Data Recovery work. McGerty and Spear (1999:25) state that "new data from Site -18921 does not alter either the original significance assessment or recommendations" posed by Hunt and McDermott (1994:109-113).

Finally, the most recent work in the corridor was performed as part of the present Inventory Survey addendum (present document). Site significance evaluations and recommendations are presented below.

EXPECTED ARCHAEOLOGICAL PATTERNS AND FINDINGS

Based upon the profusion of archaeological reports detailing findings in the Pu'ainako area, during the present Inventory Survey work it was suspected that a majority of the sites identified within the new extension would be associated with sugar cane cultivation and activities occurring across the area from the 1880s-1940s. In brief, sites/features representative of this historic period could include rock mounds, platforms (loading ramps), walls (ranching activities), and water channels, among other architectural features. Based upon the fact that the area was intensively cultivated for sugar cane in the past, it was unlikely that surface architecture relating to traditional times would be discovered.

RESEARCH METHODOLOGY

During the present Inventory Survey addendum, several archaeological methods were utilized during the investigation, including those related to fieldwork and those associated with laboratory work. Fieldwork essentially consisted of conducting additional survey to that accomplished within the same parcel by Dega and Benson (1999), performing mapping and recording of identified sites, and conducting subsurface testing within a feature (*aiwai*) thought to possibly represent a traditional component. Sample collection (soil) and photographic documentation of site features were also accomplished during this phase of research. As the results of the excavations were minimal, laboratory work essentially involved drafting site plan view maps and stratigraphic profiles.

ARCHAEOLOGICAL INVENTORY SURVEY: RESULTS

During the present Inventory Survey (this being an addendum to work performed by Robins and Spear 1996 and McGerty and Spear 1999), 8 features were identified within an extended portion of the Pu'ainako Street realignment (see Figure 7). All eight of the features have been subsumed under the Site -18921 designation.

IDENTIFIED SITES

As stated above, the western flank of the present Inventory Survey area overlapped with previously surveyed locations. Several features composing Site 18921 occur within the present project area and were re-identified during the present survey. In addition, several other features, not documented previously, were identified during the current phase of research. All the sites and component features recorded during fieldwork were located within the western 1/4 of the corridor, no sites having been identified within the eastern 3/4 of the project corridor between the center line marking stakes 71+00 to 82+00.

To remain consistent with previous work in approximately the same area (McGerty and Spear 1999), all feature numbers presented here consecutively follow the feature designations from the former addendum report. The former report discusses 17 features, all associated with Site -18921. Thus, the present report begins the feature summary from Feature 18-on. Again, in a similar style to McGerty and Spear (1999), the present report also collapses similar feature

types into a single feature designation (e.g., three rock mounds=Feature 22A, B, and C). Table 4 below summarizes all archaeological features identified during the present Inventory Survey. These features are further described below.

Table 4: Archaeological Features Identified During the Reconnaissance/Inventory Survey

Feature Number (All Site -18921)	Total Features	Feature Type-Function	Centerline Stake Assoc #
*Feature 18	1	wall	71+00
Feature 19	4	rock mounds, alignment	72+00
Feature 20	1	rock mound	74+00-75+00
Feature 21	2	rock mounds	77+00
Feature 22	3	rock mounds	77+00
Feature 23	2	stone-lined <i>auwai</i> , mound	77+00
*Feature 24	2	platform, mound	77+00
Feature 25	2	mound, alignment	82+00

*=Previously Noted (Spear 1998) or Recorded (McGerty and Spear 1999)

FEATURE 18

Feature 18 consisted of a free-standing wall occurring near the western flank of the project area adjacent to centerline stake marker 71+00 (see Figure 7). The feature was located some 15 m to the southwest of the previously identified Feature 13A (McGerty and Spear 1999:16). Feature 18 was previously noted by Spear (1998) as "Feature 15" but was not mapped or recorded during the reconnaissance survey. The feature occurred on the exterior (to the south) of the road alignment surveyed by McGerty and Spear (1999).

Feature 18 was oriented east-west and measured 12 m long and averaged 2 m wide. The feature was a bi-faced, core-filled wall set 3-5 courses high (0.96 m) and consisted of a faced mound at its western terminus and a faced C-shaped wall along its eastern end (Figures 8, 9, and 10). Composed of small to medium basalt cobbles and boulders, the historic wall presumably functioned as a possible boundary wall related to pasture usage. Barbed wire ran along the top of the wall, this feature seemingly supporting use of the feature as boundary wall during historic times. No testing was accomplished at the site.

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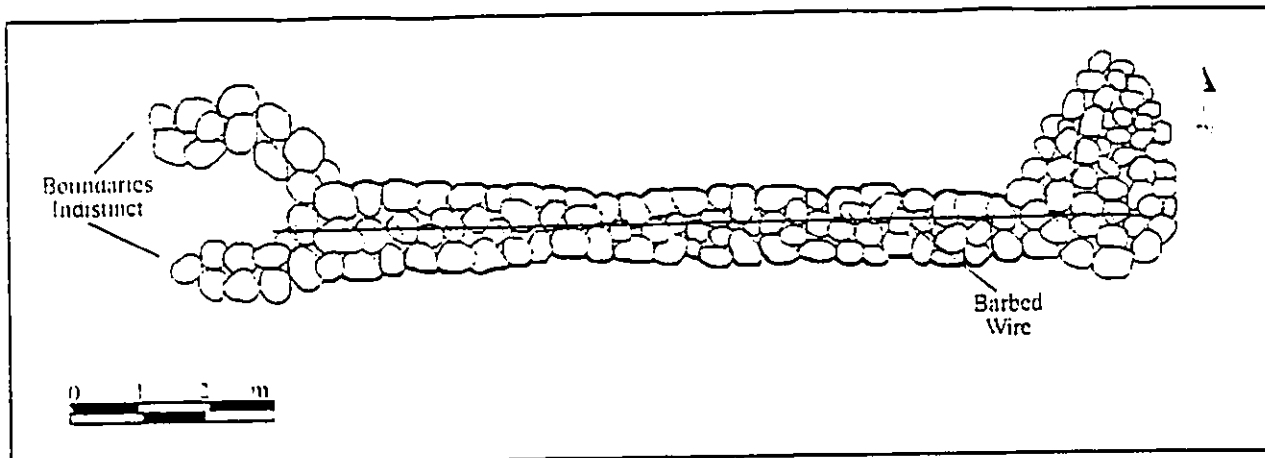


Figure 8: Planview Map of Feature 18 Wall.



Figure 9: Photograph of Feature 18 Wall. View to West.

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Figure 10: Photograph of Feature 18 Wall Profile. View to South.

FEATURE 19A, B, C, D

This feature was comprised of three rock mounds and one wall alignment, all presumably historic-period structures (Figure 11). The features occurred c. 30 m to the south-southwest of centerline stake marker 72+00, c. 80 m southeast of Feature 18 (see Figure 7). All three mounds and the alignment were located on a low, overgrown lava outcrop above slightly undulating terrain, the latter which incorporated a small, incised drainage.

Feature 19A, a loosely built mound, was constructed of small cobbles and boulders that measured some 7 m in diameter. The mound was built a variable 1-2 courses high, the highest point being in the center of the stacked mound and extending to 0.45 m above the surface. The feature was construed to be a rock clearing mound associated with land clearing during sugar cane cultivation in the area.

Feature 19B, also a rock mound, occurred 1 m to the west of Feature 19A and was composed of small cobbles and boulders. The feature measured 3.8 m long (north-south) by 3.5 m wide (east-west) and reached a maximum height of 0.35 m above the ground surface. This

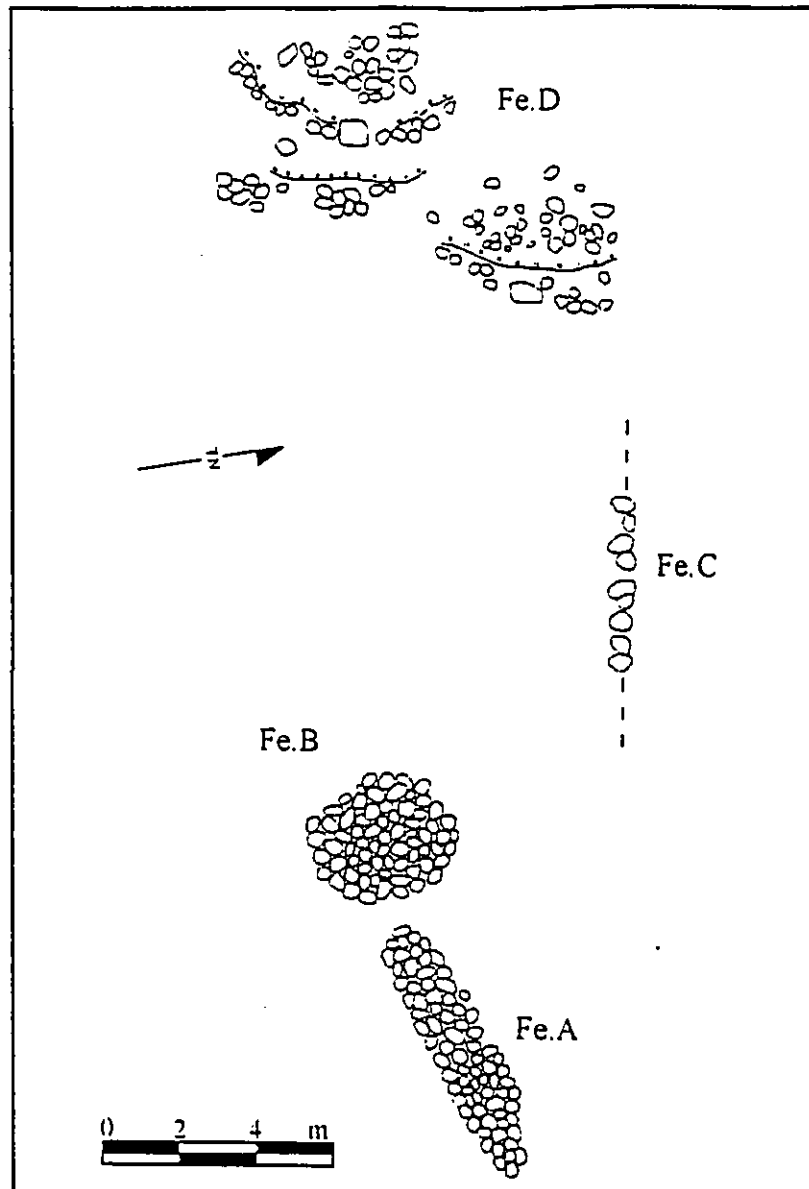


Figure 11: Planview Map of Features 19A, B, C, and D.

fairly well-stacked feature is also presumed to be a clearing mound associated with sugar cane cultivation.

Feature 19C was a small rock alignment located 6 m to the northeast of Feature 19B. The feature was 5.10 m long (east-west) and a variable 0.40-0.60 m wide. The alignment consisted of only one course of small, unmodified cobbles laid in an intermittent fashion along the edge of a low bank. The construction and location of the feature was suggestive of a small, erosion control wall. This feature was also an historic structure, due to its association with other sugar cane-related features in the area.

Feature 19D was a rock mound located c. 3 m from the western edge of Feature 19C. The mound locus, composed of piled and stacked basalt cobbles, measured 10.5 m north-south by 7.7 m east-west. The feature was informally constructed on pahoehoe bedrock and extended to 0.55 m high. Similar to the other mounds in the area, Feature 19D presumably functioned as a clearing mound associated with sugar cane cultivation in the area.

No subsurface testing was performed within Feature 19. All four architectural features are thought to be associated with sugar cane production in the area during the late 19th through early-mid 20th century. The features functioned as clearing mounds and a water control feature.

FEATURE 20

This feature was comprised of one feature, a rock mound located adjacent to and between the centerline marking stakes 74+00 to 75+00 (see Figure 7). The feature was previously noted during reconnaissance survey (Spear 1998) and consisted of an irregularly-stacked mound composed of cobbles and small boulders. The feature measuring 5 m in diameter and reaching to 0.55 m above the surface, was roughly oval-shaped in morphology (see Figure 11 for representative example). The most likely function of the feature was as a clearing mound and is thought to be associated with sugar cane cultivation in the area. No testing was performed within the feature.

FEATURE 21A, B

This feature is comprised of two rock mounds that are morphologically and architecturally similar to other rock mounds in the project area (see Figure 11 for representative example). The Feature 21 mounds were identified 10 m to the north of centerline stake marker 77+00 bordering an area characterized by a small alluvial flat (see Figure 7). Both Feature 21A and 21B measured c. 5.5 m in diameter and were composed of small, unmodified cobbles and boulders. Both features reached a maximum height of 0.75 m above the ground surface and were oval-shaped in planview. Feature 21A and Feature 21B were separated by a very modest drainage (0.70 m wide) that had been infilled with sediment. Both structures are interpreted to be clearing mounds associated with sugar cane cultivation in the area. No testing was accomplished within Feature 21.

FEATURE 22A, B, C

This feature is comprised of three rock mounds that are also morphologically and architecturally similar to other rock mounds in the project, particularly Features 21A and B (see Figure 11 for representative example). Two of the three mounds were identified c. 25 m to the south of centerline stake marker 77+00 while one mound directly abutted the same centerline stake marker. All three mounds were composed of small, unmodified cobbles and boulders that reached a maximum 0.70 m above the slightly undulating ground surface. The two southern mounds (Features 22A and B) averaged 5 m in diameter while Feature 22C measured 7 m long (north-south) by 4 m wide (east-west). All three structures are interpreted to be clearing mounds associated with sugar cane cultivation and activities. No testing was done to further investigate these historic features.

FEATURE 23A, B

Of the 16 total features identified during the present Inventory Survey, only one feature (Feature 23A) was potentially thought to be a traditional (pre-Contact) structure. Feature 23B, a rock mound, occurred along the western flank of Feature 23A. Feature 23A, a remnant, rock-lined *'auwai*, was identified near the southern side of centerline Stake 77+00. The *'auwai* ran south for c. 50 m from near the centerline stake. The feature itself was composed of 1-2 courses of unmodified-slightly modified basalt cobbles and contained an interior water channel averaging 0.80 m wide and only 0.20 m in depth (infilling over time) (Figures 12 and 13).

The *'auwai* runs parallel to and between several sugar cane-era mounds (Features 22A and B), its northern terminal point being across a small, flat expanse of alluvial floodplain. At its southern termination point, the small water course adjoins with a small natural erosional ditch. Water through the gravity-fed feature would thus have coursed in a south-north direction through the channel, eventually running through a fairly flat area suitable for wetland taro cultivation.

There were several reasons to interpret the remnant *'auwai* feature as being traditional in nature. First, the size of the feature (0.80 m wide, 0.20 m deep) precluded the movement of large quantities of water through its channel, a feature not normally practical for sugar cane cultivation which typically utilizes deep, wide ditches. Second, the small channel is lined with small basalt cobbles, not historic materials (metal siding, etc.). Third, the *'auwai* is a gravity-fed system that proceeds onto a small plain ideal for small-scale, cultivation of taro. Fourth, the system channel

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Figure 13: Photograph of Feature 23 Water Channel (Note: Absence of Guava Trees within the Water Channel but Bordering Channel). View to South.

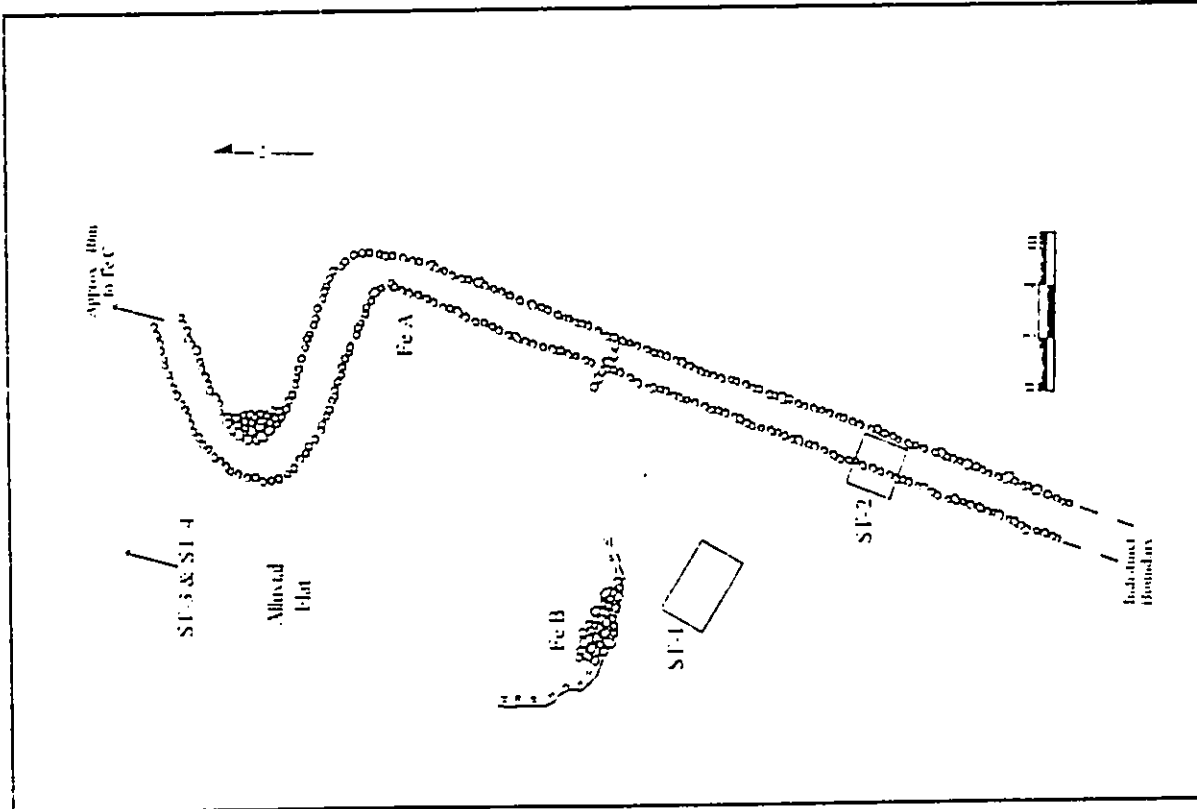


Figure 12: Planview Map of Feature 23 Water Channel.

is not deep, being only some 0.10 m below the rock alignments defining the feature, the *'auwai* obviously not having been maintained for some time. Finally, the identified rock-lined *'auwai* is very similar to other prehistoric *'auwai* previously identified within the Hawaiian Islands (see Kirch 1985, Dega and McGerty 1999 for examples). Based upon the above factors, both the *'auwai* feature and the possible *lo'i* field area were subject to limited excavations during the present Inventory Survey.

Feature 23 Subsurface Testing

Four stratigraphic trenches were placed across various reaches of the Feature 23 *'auwai* and within possible *lo'i* fields (see Figure 12). All four trenches were mechanically excavated by a small Bobcat backhoe. One trench (ST-1) bisected a section of the *'auwai* to aid in determining the temporal nature of the feature as well as the construction involved in creating the irrigation system. In addition, three other trenches were excavated within various areas of the possible *lo'i* area to reveal the presence/absence of an associated *lo'i* system located on a flat expanse to the north of the *'auwai* feature. No surface architecture was identified on the expanse. Logically, the presence of a traditional *'auwai* necessitated the presence of *lo'i* fields. Testing these fields by limited trenching could have also revealed the presence of soils associated with a former *lo'i* system. The four trenches, variable in length and depth below surface, are discussed below.

Stratigraphic Trench 1 (ST-1):

ST-1 was a 3.0 m long (east-west) by 1.80 m long (north-south) trench excavated to a maximum depth of 0.80 meters below surface (mbs). The trench was placed directly through one segment of the Feature 23 *'auwai*, from its exterior surface through the construction and center channel, to the exterior wall on the other flank of the *'auwai*.

Briefly, two stratigraphic layers were identified within the trench, the layers not exhibiting any change from the exterior through interior channel of the feature. Layer I (0-0.20 mbs) was composed of dark brown (7.5YR 3/3) silty clay and represented the area's humic O-horizon. This upper layer contained common, micro and macro roots as well as decomposing surface organics. Layer II (0.20-0.80+ mbs) consisted of a dark reddish brown (5YR 3/3), fairly compacted clay-silty clay matrix void of most roots or visible organics. Neither of the two strata contained cultural material. The rock segments forming the sidewalls of the small channel intrude to a maximum depth of 0.20 mbs.

As seen through excavation within the shallow channel, the surface of the *'auwai* was characterized only by sediment, no stones lining the base of the channel as is common within traditional *'auwai* (see Dega and McGerty 1998).

Based upon excavation evidence, the Feature 23 *'auwai* was re-interpreted as a small, stone-lined water channel associated with historic times. As no charcoal was recovered from the excavation unit, we cannot provide an absolute date for construction of the feature. However, the channels eminent association with several clearing mounds (Features 22A, B, and C, etc.) suggests that the channel was also associated with sugar cane cultivation. To test this hypothesis, three other ST's were excavated within the possible *lo'i* area. It was suspected that if soils and or midden (e.g., charcoal) were recovered from the alluvial area, the argument for the *'auwai* being traditional would be further supported.

Stratigraphic Trench-2 (ST-2):

ST-2 was placed 5 m to the northwest of a section of the *'auwai*, within a small alluvial flat area, to investigate whether the plain was indeed a former locus for traditional cultivation. The trench was 2 m long (northwest-southeast), 1.80 m wide, and excavated to maximum depth of 0.82 mbs.

Two stratigraphic layers were identified within the trench: Layer I (0-0.16 mbs) consisted of dark brown (7.5YR 3/3) silty clay and represented the area's humic O-horizon. This upper layer contained common, micro and macro roots as well as decomposing surface organics. Layer II (0.16-0.82+ mbs) was composed of brown (7.5YR 4/3) silty clay with common, black (5YR 2.5/1) mottling. The trench proved negative for the presence of carbonized material (e.g., charcoal representing swidden clearing) as well as an oxidation/reduction pattern that may signify cultivation layers. The black mottling occurring within Layer II was interpreted as the infiltration or turbation of organics from Layer I. Similar results were produced from ST-1 and ST-4.

Stratigraphic Trench-3 (ST-3):

ST-3 was placed c. 35 m to the northwest of the northern terminus of the *'auwai* feature within a small, alluvial flat. The trench measured 5 m long (northwest-southeast), 1.80 m wide, and was excavated to a maximum depth of 0.85 mbs. Two stratigraphic layers were identified within the trench: Layer I (0-0.14 mbs) consisted of dark brown (7.5YR 3/3) silty clay and was again representative of the area's humic O-horizon. This upper layer contained common, micro

and macro roots as well as decomposing surface organics. Layer II (0.14-0.85+ mbs) was composed of brown (7.5YR 4/3) silty clay and only contained very modest concentrations of micro roots. Charcoal flecks were present at 0.20 mbs, although in a dispersed and limited amount. The flecks were large and appeared to have been modern infiltrations into the sediment layer (through root extensions). No other cultural materials were recovered from the unit. In addition, the stratigraphy showed no signs of oxidation/reduction layering which may be typical of *lo'i* areas that have some antiquity of use.

Stratigraphic Trench-4 (ST-4):

ST-4 was placed 10 m to the south of ST-3 within the small, alluvial flat. The trench measured 4 m long (northwest-southeast), 1.80 m wide, and was excavated to a maximum depth of 0.75 mbs. Two stratigraphic layers were identified within the trench: Layer I (0-0.15 mbs) consisted of dark brown (7.5YR 3/3) silty clay, the humic O-horizon. Layer II (0.14-0.75+ mbs) was composed of brown (7.5YR 4/3) silty clay and contained very modest concentrations of micro roots. Mottling occurred within Layer II at 0.60 mbs and consisted of light grey (5YR 7/1) clay sediment. The mottling was disparate and modest in concentration. Several charcoal flecks were present at 0.60 mbs and again occurred in a dispersed and limited amount. The flecks were large and also appeared to have been modern infiltrations into the sediment layer (through root extensions). No other cultural indices were recovered from the unit.

As was the case with ST-2 and ST-3, also placed within the alluvial flats, these depositional units likely represent a flat area ideal for sediment catchment from upland (west) areas. Thus, the sediment analyzed during trenching was likely a result of natural deposition over time. Interestingly, besides the architectural structures occurring within this area (Feature 22 A, B, and C. etc.), there was no other evidence for sugar cane cultivation of the area, particularly within the subsurface sediments.

Feature 23B, a rock mound, was somewhat atypical of other clearing mounds in the area. The feature occurred c. 6 m to the west of Feature 23A, along the latter's mid-section, and was composed of unmodified basalt cobbles. The feature measured 4 m long, 1.75 m wide, and reached a height of 0.60 m above the outcropped ground surface on which it was constructed. The feature was very small (see Figure 12), as if the mound was did not represent a total clearing operation or had been subject to disturbance over time. The feature did not represent an *'ahu* or trail marker as the size was great and not near a known trail. The feature's composition and location was suggestive of other mounds in the area related to sugar cane cultivation. No excavations were conducted as the rocks were placed on an outcrop.

FEATURE 24A, B

This feature consisted of two separate features: a small platform and a mound (Figure 14). The feature components, separated by a 2 m area, were located 15 m to the northeast of Feature 22 and had previously been noted during reconnaissance survey (Spear 1998). Feature 24A was a small platform composed of small cobbles and boulders (Figure 15). The feature measured 5 m long (east-west), 3 m wide (north-south), and extended to 1.3 m (three courses) above the ground surface on its western flank. The platform was fairly square in morphology and was thought to represent a sugar cane loading structure (see Hunt and McDermott 1994 for similar feature type).

Feature 24B was comprised of a rock mound that was morphologically and architecturally similar to other rock mounds in the project area. The feature measured c. 6.5 m in diameter and was composed of small, unmodified cobbles and boulders. Feature 24B reached a maximum height of 0.80 m above the ground surface and was oval-shaped in planview. The structure was interpreted to be a clearing mound associated with sugar cane cultivation in the area. No testing was accomplished within the Feature 24A or 24B historic structures.

FEATURE 25A, B

This feature was composed of two components, a clearing mound and a small alignment, and was identified adjacent to centerline marker stake 82+00 (see Figure 7). Feature 25A was a rock mound abutting the centerline and measured 6.40 m in diameter. The feature was composed of small boulders with unmodified cobbles stacked over the boulder base. The mound extended to 0.80 m above the surface and was rectangular to oval-shaped (see Figure 11 for representative example). The structure was interpreted to represent a clearing mound associated with sugar cane cultivation.

Feature 25B was a small, remnant alignment occurring 10 m northwest of the 82+00 centerline. The feature measured 2 m long and was composed of a double-course of small boulders and a few cobbles. The alignment extended to 0.95 m above the surface of a very modest drainage and presumably functioned as a small, water control device. Due to the

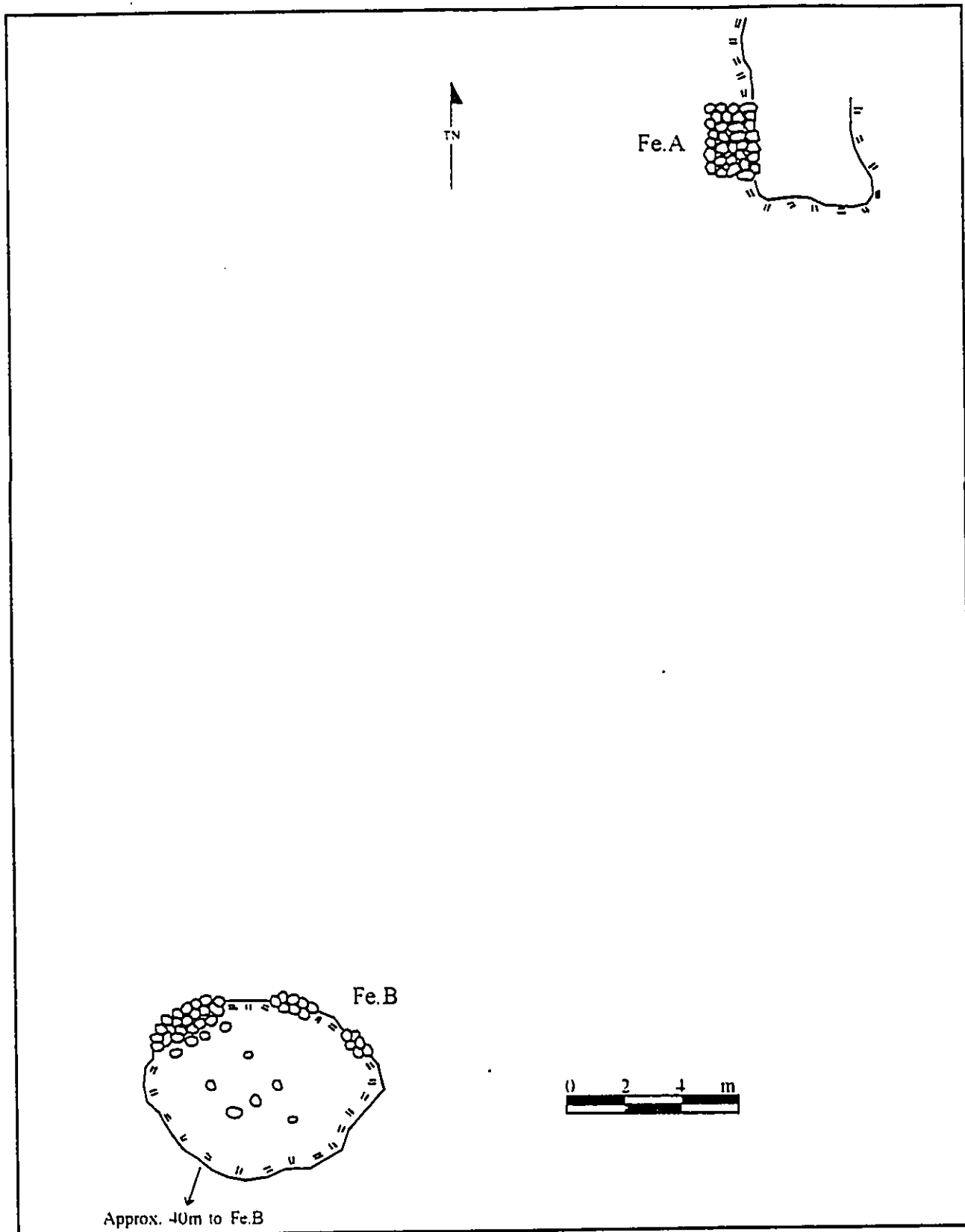


Figure 14: Planview Map of Features 24A and B.



Figure 15: Photograph of Feature 24A Platform. West Wall. View to West.

placement of the feature across the small drainage in an area predominantly characterized by clearing mounds, there was no reason to suspect that the feature was traditional in nature. No excavations were conducted at Feature 25. Both Feature 25A and 25B were interpreted to be associated with sugar cane cultivation in the area, a similar interpretation to all other features within the project area.

Additional Testing-possible burial

In late December, 1999, after the completion of the fieldwork portion of this Inventory Survey addendum work, two employees of SCS met with a land lessee along the Pu'ainako corridor (near Kaumana Street) who had previously stated that an area within the alignment was

thought to contain one or more human burials. His informant was a now deceased Japanese gentlemen who had lived on the parcel for some time. Thus, SCS was required to conduct a reconnaissance of the area and if needed, to test the supposed burial area to determine the presence/absence of such remains. This work was coordinated and approved through the State Historic Preservation Division, Burials Division.

The informant took SCS workers to the possible burial area, which was situated in the southwestern corner of the lessee's parcel, and then departed. SCS workers performed a reconnaissance of the area and determined that the area's surface features had previously been mapped and recorded (McGerty and Spear 1999) as Features 13a through 17a, 17b, and 17c (Figure 16). The sum of these features were interpreted as related to sugar cane agriculture occurring within the area during the late 1800s-1940s. The present investigation found nothing to disprove this interpretation.

To test for possible burials and more accurately determine feature function, Feature 13a, a platform, was chosen for "excavation" work. In brief, an interior architectural section of Feature 13a was dismantled (2 m long by 1 m wide) (see Figure 16). Investigators noted that the platform was core-filled and that only one architectural layer occurred from the top of the feature to the ground surface. No artifacts, subsurface features, or ecofacts were identified during the work. Testing proved negative for human remains. The feature was correctly assessed as a platform related to sugar cane production (loader, etc.). As all the features in the area were previously mapped, recorded, and described, and feature function was not in doubt, further work in the area was suppressed. There was no indication that ground surfaces between the features contained burials (no uprights, mounds, headstones, etc.).

Based upon these results, SCS contacted SHPD on 12/29/99 and informed them of the negative results of this testing. SHPD burial representatives acknowledged the fieldwork and dismissed the presence of burials within the particular location mentioned by the informant.

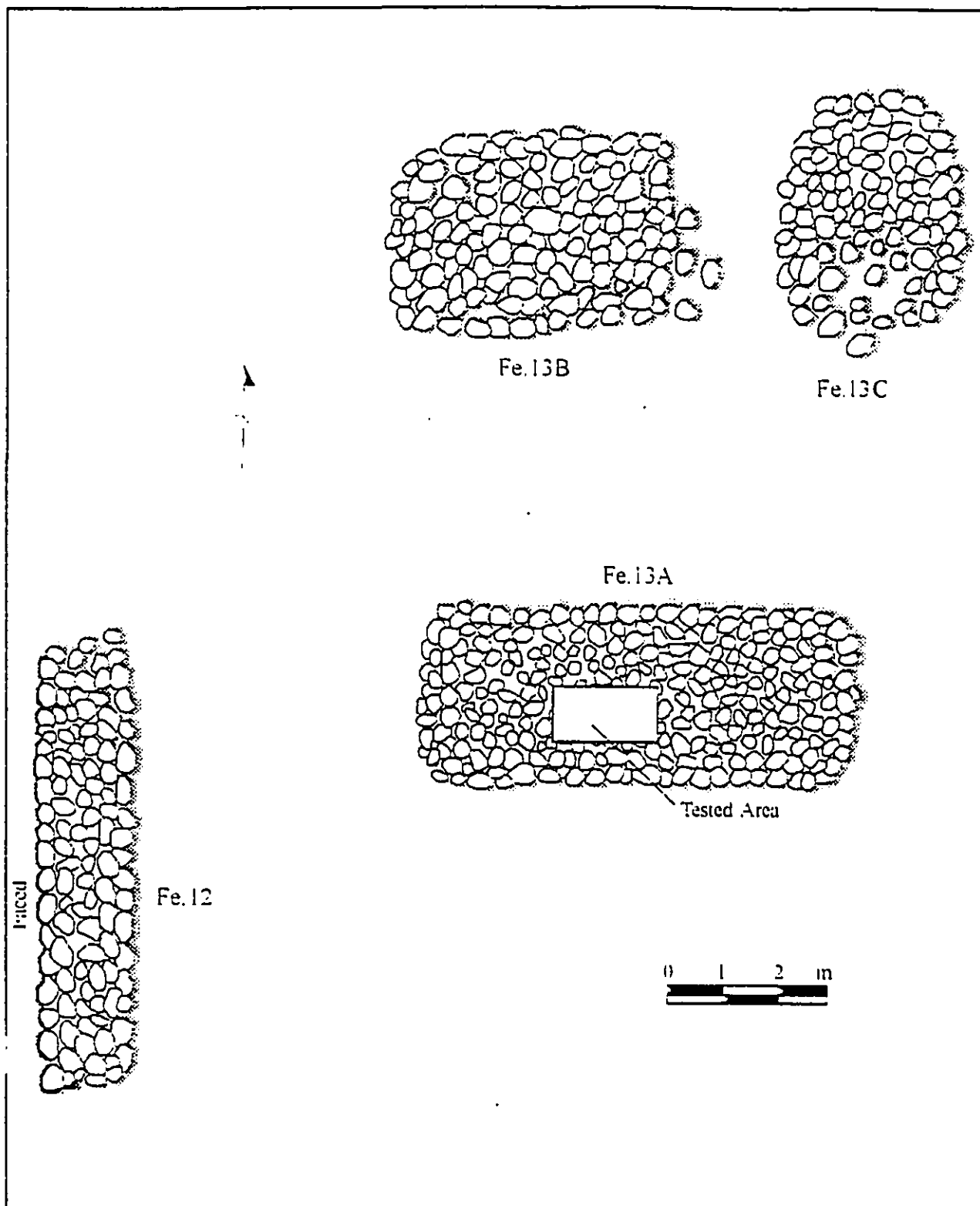


Figure 16: Planview Map of Site -18921, Feature 13A Platform Tested for Burial During Present Inventory Survey Work.

DISCUSSION

At the request of Okahara and Associates, Inc., Scientific Consultant Services, Inc. (SCS) conducted a supplemental Archaeological Inventory Survey on a short, re-aligned section of the road corridor within the proposed Pu'ainako Street Realignment/Extension Project. This latest work follows those archaeological projects conducted from 1994 through 1996 and 1998 within a similar portion of the proposed corridor and is devised as an addendum to those reports. The present Inventory Survey was designed to cover a new area of the corridor. This work included survey, mapping and recording of identified sites, and limited excavation.

Based upon this addendum Inventory Survey, a total of eight new features were identified and recorded. One feature (Feature 23) was also subjected to subsurface testing. All eight features have been assigned to Site -18921, a site previously identified within the western portion of the Pu'ainako Street realignment (Hunt and McDermott 1994; McGerty and Spear 1999). All eight features and their component parts, are interpreted as related to sugar cane cultivation (rock clearing mounds, platform loader, and water funneling/control channels).

The typological breakdown of identified features composing the sites includes: 12 rock mounds, two alignments, one platform, one wall, and one remnant; stone-lined water channel. All of the mounds are interpreted to be associated with sugar cane cultivation in the area, a similar interpretation to that previously presented (Hunt and McDermott 1994, Robins and Spear 1996, McGerty and Spear 1999). Two alignments (Feature 19 and 25) were identified during the current project, these likely functioning as water control features and also, associated with the sugar cane era. One platform (Feature 24), representing a loading platform, was noted during the present survey, the structure associated with a mound (and thus, both were sugar cane related features). One wall was identified (Feature 18) and presumably was a boundary wall associated with ranching times (historic times). Finally, one rock-lined water channel was identified (Feature 23), this feature thought to have conducted/drained water between associated rock mounds. There was no evidence to support the suggestion that the feature was a traditional *'auwai* and no evidence to suggest that the area was a former *lo'i* field.

The above eight features, composed of 17 components, represent an approximately 100% survey of the realignment corridor. "Approximately 100%" refers to a full survey of the centerline area and where possible, survey of other open areas. Portions of the *uluhe* fern-

dominated tract (eastern flank) were not readily amenable to survey, the ferns intensively cloaking the ground surface over a marshy surface. Survey of these areas would be more amenable after clearing operations.

The integrity of the identified sites was varied. A majority of the sites exist in fair-good preservational condition, several mounds having been badly eroded or disturbed through time. The platform, wall, and two alignments were fairly well preserved, impeding vegetation being the major disturbance to the features. The water channel (Feature 23) was very well-preserved, its original facings being completely intact. Only infilling within the center of the channel was noted as a possible alteration of the feature.

As stated previously, all the sites identified during this phase of research are presumed to be affiliated with historic times and contain cultural value in relation to the sugar cane industry. However, additional research in the area, including subsurface testing, would likely not provide much additional information than has already been gleaned through the many Inventory Survey-level projects overlapping this western portion of the project area.

SIGNIFICANCE ASSESSMENTS

In concert with previous archaeological research in the area, all the features discussed here are assessed as being significant under State Criterion D (Have yielded, or be likely to yield, information important for research on prehistory or history). Several other previously documented sites (-18914, -18915, -18917), typifying clearing mounds, railroad beds and ramps, and a possible water tank foundation, have been previously assessed as significant under Criterion C (Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value). Thus, as a representative sample of similar-type sites have been assessed as significant under Criterion C, none of the features listed herein are assessed under the same Criterion C designation.

RECOMMENDATIONS

All eight features identified, mapped and recorded, and subject to limited testing here have been subsumed within Site -18921. Based on the fact that adequate data have been collected for the level of investigation conducted herein, the negative findings of excavation work, and the nature of the features (representative sugar cane structures), no further archaeological work is deemed necessary within this portion of the realigned corridor.

Importantly, although previous study's (see Tables 1, 2, and 3) have all stated that Data Recovery operations be conducted through the various proposed corridors, when comparing the evidence from all the project's, including the present Inventory Survey, Data Recovery operations do not appear warranted. Based upon testing and archival research accomplished by Hunt and McDermott (1994), Robins and Spear (1996), Eble *et al.* (1996), and the present report, as well as historic documentary work and oral history interviews conducted by Maly (1996), further Data Recovery work does not appear warranted. Further Data Recovery, as has been outlined in each report, primarily consisted of additional historic documentary work and conducting oral history interviews. Yet, a large database has already been researched and interviews conducted. Additional work would likely not yield much new, significant information.

Further reconnaissance survey of the project corridor and /or monitoring may be necessary once the eastern portion of this particular corridor has been cleared and the ground surface is more visible. This additional, limited survey may be required due to the fact that *'uluhe* fern covered mainly all of the eastern 1/3 of the present project area, the ferns making ground visibility extremely poor. Thus, we are presently unsure as to whether additional archaeological sites occur under the low fern canopy. Once cleared, additional survey could proceed quite quickly. Based upon previous and present work within the area, features mainly associated with sugar cane cultivation would be expected to be prevalent within this portion of the corridor.

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APPENDIX A:
Excerpts from Oral Historic Interviews
May 1996

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Interview 4. Kenneth Bell, at Waiākea
Informal Interviews with Kepā Maly
December 4, 1995, January 4, and March 1, 1996

Mr. Kenneth K. Bell was born on August 6, 1915, in Waiākea, Hilo, and is of Hawaiian and Caucasian ancestry, his mother was Ellen K. Hennesy-Bell. Mr. Bell's father, William John Bell was the superintendent of the Railroad, and Carpentry and Blacksmith Shops of the Waiākea Mill Company. When Mr. Bell was born, his family lived in a house situated on the lot where the Kilauea Avenue Seven-Eleven Store is presently located. In c. 1926, plantation manager, William Williams, built a new manager's house, now the location of the Kilauea Ward of the Mormon Church, and the Bells moved into the old manager's house. This home, previously the residence of David McHattie Forbes, was situated in the area of the present-day Hawai'i Motors showroom, what is now the corner of Kilauea Avenue-Kekūanaō'a Street.



Mr. Kenneth Bell in front of a section of the Railroad Berm in his yard on Makani Circle (March 1, 1996)

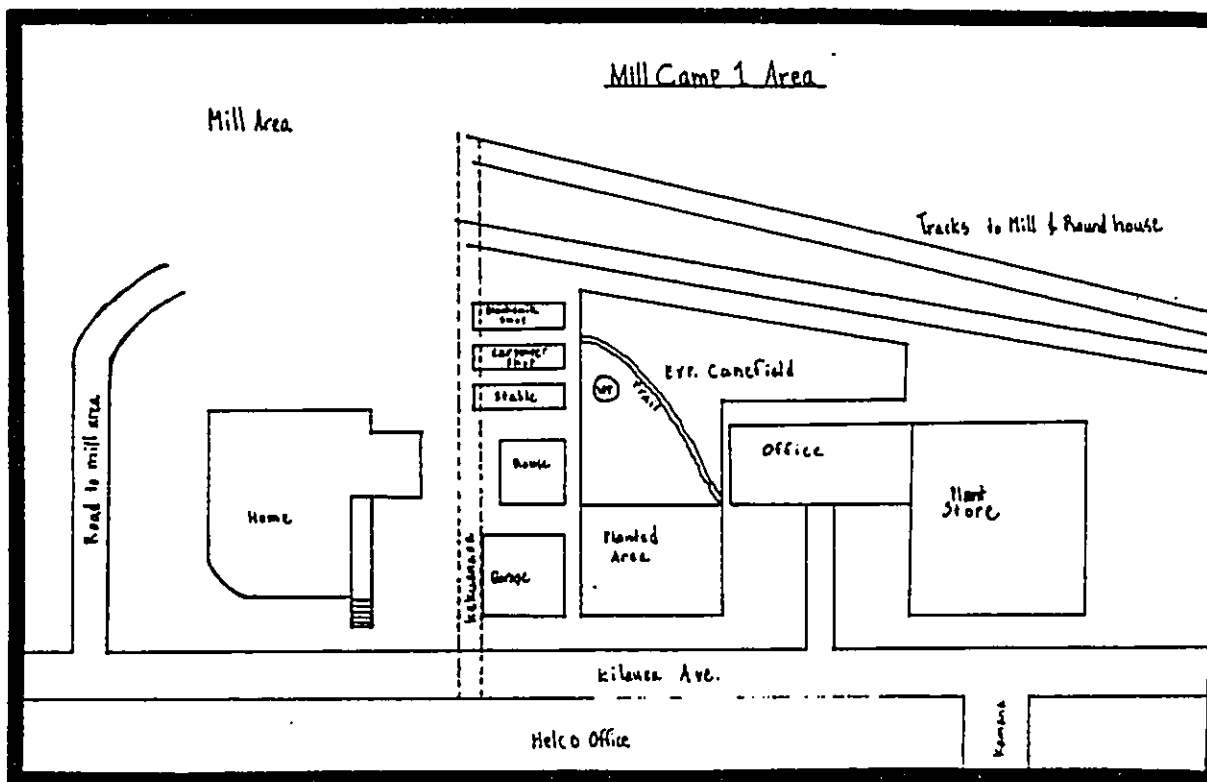


Figure 5. Rough Sketch Map Plantation Store, Office, Old Manager's House and Vicinity
 (Drawn from a Map prepared by Kenneth Bell)

On a site visit (March 1, 1996), Mr. Bell pointed out the location of the old plantation store, situated basically in the middle of the present-day Hilo Shopping Center parking lot (in line with Kamanā Street). Standing on Kilauea (back to Kamanā Street), facing makai towards the Plantation Store, the Waiākea Plantation Office was situated on the left side, and extended towards the present-day First Hawaiian Bank. On the *mauka* and town-side corner of Kilauea Avenue-Kamanā Street was the old Yanaguchi Shell gas station, on the Puna-side corner, was the Morgado's property. The present-day Helco Office on Kilauea Avenue was formerly the Napier's lot, their house, was relocated to the Puna-side of the lot, and is still standing at the time of this writing. The elder Mr. Napier was the Waiākea Mill blacksmith.

While describing the area between the plantation office and the Bell's home, Mr. Bell noted that on the side of the plantation office, there was an open area planted in flowers. Next to the garden—now part of the First Hawaiian Bank and towards Kekūanaō'a Street—was an experimental cane field of the Waiākea Plantation. An old trail running down from the vicinity of the Plantation Office and cut through the experimental cane field. The trail then continued down to the old mill stables, situated in the vicinity of the Mill (generally the property *makai* of the Waiākea Villas Annex). Mr. Bell remembers that the *luna* (supervisors), rode horse back to and from the fields and stable on this trail; and he would often wait to ride the horses back to the stables. The old manager's house in which Mr. Bell grew up was a large house, situated on natural rise (now gone). The detached garage for the house would now be within First Hawaiian Bank. On the town side of the Bell's home (from about the middle of the existing car lot) were some other supervisor's homes, and then in the area fronting Chiefess Kapi'olani Elementary School, *makai* of Kilauea Avenue (Cafe 100 area), the Serrao family had some pasture land. Remnants of the old pasture boundary wall may still be seen running towards the shore, and in front of the present State Judiciary Annex, may still be seen portions of the plantation wall that fronted Kilauea Avenue.

The Waiākea Mill was located behind the present-day Hawai'i Motors shops. Driving on the gravel road, passing the present-day Pu'ueo Poi Factory, one may still see one of the two old bag-sugar warehouses; the sugar was transported from the mill to the warehouses on a conveyor belt system. On the water's edge, just behind the bag sugar warehouse, was the old tug fueling shed, the cement boat slip is still visible on the shore. Just behind the bag-sugar warehouses, the scows were loaded with the bags to transport them to the harbor for shipping. Also, running from the mill, was a bagasse refuse chute that transported the bagasse to the canec factory, which was situated at the *makai* side of the property of the present-day Waiākea Villas. As a child, Mr. Bell also used to ride the scows from the bag-sugar warehouses—situated on the Waiākea-Wailoa shore side, below the Mill (just *makai* of the Hawai'i Motors shops, towards Pu'ueo Poi Factory) to the Bulk Sugar Warehouse at the Hilo Harbor. The bagged sugar was transported on scows led by a tug, through a series of lochs, across the Waiākea-Wailoa ponds to the harbor where the sugar was loaded into the ships. Mr. Bell also remembers that during his childhood, Chinese were working portions of the Waiākea fishponds, raising mullet and growing watercress.

During the December 4, 1995 interview, Mr. Bell also discussed operations of the Waiākea Railroad System, he used to ride throughout the Waiākea fields on the trains with his father and friends. The tracks ran down to the mill in the vicinity of the present-day Lanihuli Street, through the Hawai'i Motors auto lot. During the interview, the "Railroad and Flume Right of Ways Through Waiakea Homestead Lots & Government Land" (1930) map, prepared by P.E. Arioli and John N. Smith was used to locate specific cane lots and sites that were being discussed. Mr. Bell also noted that he knew Peter Arioli and Johnny Smith (Mr. Smith had died not too long ago), cartographers of the 1930 map. Mr. Bell has clear recollections about various land use activities throughout the Waiākea Homestead and Cane Lots. Mr. Bell observed that the *tsunami* of April 1, 1946 destroyed the coastal portions of the Waiākea sugar tug, scow, and loch operations. (Railway and Plantation records also report that the *makai* rail system was destroyed as well.) Already experiencing land and labor problems, the ailing Waiākea Mill and Plantation operations were closed (the elder Mr. Bell had already retired in c. 1940). Mr. Kenneth Bell himself, worked for HT&T (a branch of C. Brewer), and when he retired in 1980, he was Superintendent of the Bulk Sugar Plant.

The following interview narratives are based on the hand-written notes collected during the interviews, and are paraphrased from discussions on December 4, 1995, January 4, 1996, and a site visit on March 1,

1996. Mr. Bell reviewed the paraphrased narratives and made necessary corrections. On June 14, 1996, Mr. Bell gave his personal release of the interview records (including the introductory texts above and the transcript narratives below), and that information is contained within the following transcript.

[Looking at the Arioli and Smith Map of 1930]

KB: The darker railroad track lines on the map shows you the "Main Line" which ran out of the mill, it was the line with the heaviest use. The Main Line intersection is just above Kino'ole Street by Lanikāula Street, and is still visible in sections. It comes out below the ILWU Hall [and Hale Hōaloa] on Lanikāula. From the main track line, there were other "Branch" and "Spur" lines. These were the feeders to the Main Line. Additionally, portable tracks were used to extend the lines out from the Branch and Spur lines into the fields to help get cut sugar cane to the Main Line for transportation to the Waiākea Mill. The large open space here on the map [pointing to the location] above rail branches 1 and 2, and track spurs C and D, was pasture and further up, it was forest. There was no sugar in that area.

Where ever you see the railroad tracks on the map, there was sugar cane planted. The tracks crossed through cultivated lands and were temporarily lengthened in some spots by the portable tracks. The rail extended into fields from out by St. Joseph's, the area of the University (Branches 2 and 3) and past Camp 2, and through all of these *mauka* areas as indicated on the map. Camp 2 is right on Pū'āinakō, just above Kino'ole, where the big mango trees are, and there's a dip on the road. Pū'āinakō was still a dirt road when I was a kid. The old rail road bed was right in the area of the dip that runs along Lōkahi Road. The railroad track that continued towards the mill came out by the present-day ILWU Hall. There are still old plantation camp houses standing in the Camp 2 area (Lōkahi and Pāmala Roads). Across from Camp 2 towards Puna, the Akamine's had a piggery which remained in use until not too long ago. Camp 3 is situated where the Kino'ole Sure Save is located, and just behind that area was one of the big stables where mules, horses, and things were kept for the plantation.

Where the main railroad line cuts up to Camp 4, is basically 'Āinaola today. On 'Āinaola, just past Haihai Street, almost across from 'Āinalako Street, you can still see the remains of the old water station, that was used to supply the locomotive boilers. Following the main line on up, you get to Camp 6, basically between Alaloa Street and the old Camp 6 Gyms, situated near the corner of Kupulau and 'Āinaola. There was another big stable operation here as well. Across from Camp 6 on the Puna-side fields, accessed now by Ala'oli Road, they used to have pineapple planted too. Above here, the railroad track and fields continued all the way up to the flumes and above the area marked as Camp 10. On the Puna-side, the main line stopped at the end of Flume No. 1.

My house here [on Makani Circle], is situated on the railroad Branch 7, it runs right through the front house, and I have kept a part of the stone railroad berm in-tact in the back of my yard. When we moved up here, there was also a nice rock mound that had been built when they were clearing the fields for planting. The mound was taller than me, and nicely finished. Mounds, walls, and built up areas were all throughout these fields, in fact, the golf course area [Hilo Municipal Golf Course] was covered with them at one time. And if you go up above the Camp 6 area, you can still see all these rock mounds and stuff along side the road in the brush. These rock clearing piles were all throughout these fields, and a lot of them were beautiful pieces of work.

KM: What do you know about these rock mounds, walls, and other stone work? Are they from ancient Hawaiian land use, or from plantation work.

KB: I don't think that much survived from old Hawaiian times, when they cleared areas for planting almost nothing was left behind. You know, my father had a collection of Hawaiian adze stones from more than a foot long, to the size of your small finger. He had *'ulu maika*, *kukui* lamps, *olonā* scrapers, and other things that came from the fields that were being cleared even when I

was a kid. When the Japanese and Filipino workers cleared the fields, they worked hard, and all the usable land was planted in sugar.

KM: Do you know where some of the artifacts came from?

KB: I don't know the specific fields, but they were the Waiākea fields.

Now even when I was a child and I would go with my father out into the fields, I would see the workers clearing the fields. You know, they worked hard. The workers had wooden sleds pulled by mules. They would go through the area being cleared and load stones on the sleds. The mules would then haul the sleds to selected mounding areas, usually some place where sugar couldn't be planted, like a natural rock outcrop or waste area. Then they would make these mounds and platforms. Like I said, these mounds and things were built up everywhere in the fields, and you can still see them in old fields and pasture areas. I also remember that in some areas where the train track was placed, there were walls that were built. Up in the cane lots, these walls helped to keep people and cows off of the tracks.

KM: Do you have an idea of about when these mounds were being built? They were doing it when you were a child?

KB: Well, a lot of work was probably started right when they began the plantation operations, but they were still doing the work manually when I was a kid. They didn't have all the bull-dozers and things like they used later. They did have some old steam cranes that we called the "donkey engines," but a lot of the harvesting was even done with the mules and sleds that were used to clear the rocks. The mules would pull the loaded sleds to the railroad spurs and main tracks for transporting to the mill.

KM: You know, up in this area near UH-H—fields No. 11, 12, 13, 17, 18, 19...— there are also some very interesting rock platforms, they have ramps going up to the flat surface area. How would these have been used for the sugar field operations?

KB: I remember that the *luna* (field managers) used to ride horses all through the fields, and in some places, they would ride up the ramps on these platforms to survey the fields. From on top of the platforms sitting on their horses, they could see all over fields. There were no trees in the way, and everything was clear.

KM: You actually saw them do this?

KB: Oh yes, a group of us kids would some times go into the fields, and the *luna* would see us and chase us out.

KM: So, you remember this area between UH-H and Pū'āinakō?

KB: Yes.

KM: The fields had sugar?

KB: Yes. Like I said, where ever the tracks were laid, they were set in places that the plantation could use.

KM: Do remember William Kama'u? He had leased the old Fairview Dairy, after Doc Hill gave up the lease.

KB: Yeah, he had the lower area around the schools. After the sugar went out, he may have had cattle in some areas up where you're talking about here [pointing to the study area]. You know, some other people have called me about this place here. They asked me about burials, graves, and old Hawaiian sites, but I told them "no more." I never heard about it in my time. Some people draw conclusions about the place before they get all the information.

Now down where we had our beach house, there used to be a *heiau*. It was the old type, an enclosure, and inside the walls, you could see bones.

KM: Where was this?

KB: Down towards Keaukaha. You know where the Gaspro is?

KM: Yes.

KB: Well down there, and along Oceanview Road, fronting Baker's Beach. We had a house there, the second one from the end of the road. My mother was very respectful of that place. She always had use take care of the *hciau*, and she planted flowers around the area. No one would mess around with the place. We even covered up place where the bones were exposed. We took care of this place until my mother died. When we sold the house, the new owners knocked it down. A friend of ours, an old Japanese man used to live in the first lot. I saw him one time after we moved out, and asked him how things were going, he told me the haoles had knocked the *hciau* down and that during the night time you could hear voices and wailing like. Later when I saw him again, he told me he'd moved. There was too much spooky stuff going on down there. The new house is still there, you can see the place.

[going outside]

Where the taro is planted [a circular patch], this is where the mound of stones was that had been in the yard, when we bought the place. It was a nice mound with the rocks from the field all neatly set in place. Down there [pointing to the back section of the yard in a swale], that's the remnant of the old railroad berm. It was built up to cross the swale, and ran right up through a portion of my house.

KM: This railroad berm is really neatly built.

KB: That's how they made all these things, really nice work.

KM: Now I see that you've purposefully save this section of the railroad berm. Do you feel that preserving some of these things is important to our history? This shows us some of our past, and now, sugar is *pau*.

KB: Yes, these things have historic value also [end discussion].

Conversation of January 4, 1996

During a telephone conversation on January 4, 1996, Mr. Bell shared some of his recollections about the disposition of operations of the Waiākea Mill following the tidal wave (*tsunami*) of April 1, 1946:

KB: The mill was already on the way out at the time of the tidal wave, and my father had already retired too. Following the tidal wave, all the tugs and scows that were used to haul the processed sugar from the bag-sugar warehouse to the wharf, were all destroyed. I remember that as a child, I would go down to the warehouse and ride the tugs along Wailoa, across Waiākea pond and out to the wharf. There would be up to ten scows tied together in a line and pulled by the tug to the wharf. In this part of the operation, they didn't use the trains. The trains hauled the cane from the fields to the mill, and the tugs hauled the processed sugar and molasses to the wharf for shipping. Some people today say that trains ran sugar between the mill and the wharf, I never saw that.

Now, after the tidal wave, that killed the mill operations. There was so much damage, and the trains along the coast never ran again. After they began harvesting again, sugar from the Waiākea fields was processed by 'Ōla'a Sugar Company, and I think maybe at Pāpa'ikou. Shortly afterwards, the Waiākea Mill closed down for good in about 1948, the mill works were stripped. All the salvageable equipment was shipped away, I think some of the mill equipment was sent to the Philippines.

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX F

Revised Drainage Report

**SUMMARY OF
PRELIMINARY DRAINAGE
CALCULATIONS**

**PUAINAKO STREET WIDENING &
EXTENSION**

KAUMANA DRIVE TO KILAUEA AVENUE

in

Hilo, County of Hawaii, Hawaii

Prepared For:

**The County of Hawaii
Department of Public Works
Hilo, Hawaii**

Prepared By:

**Okahara & Associates, Inc.
200 Kohola Street
Hilo, Hawaii, 96720**

February 2000

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INTRODUCTION

The Puainako Street widening and extension plan, prepared for the County of Hawaii Department of Public Works, is a preliminary plan for the widening and extension of the existing Puainako Street in Hilo, Hawaii. (See Figure 1). At present, Puainako Street is a two lane urban arterial from Kanoelehua Avenue to Komohana Street. It is approximately 1.5 miles long. The proposed extension would lengthen the roadway by 4.6 miles, extending it to Kaumana Drive in the vicinity of the Country Club Drive / Kaumana Drive intersection. The portion of the project from Kilauea Street to Komohana Street was identified and designated as the "Lower Portion." The portion of the project from Kaumana Drive to Komohana Street was identified and designated as the "Upper Portion". This preliminary drainage report is a summary and discussion of the initial investigations, findings, proposals and recommendations for the drainage issues associated with both the "Upper" and "Lower" portions of the project. The information contained in this report is for preliminary discussion only and the information contained within will need to be revised as more accurate data becomes available.

In the preliminary stages of the design of the "Upper" portion of the project, three alternative roadway alignments were considered; namely Alternative Alignment 1, Alternative Alignment 2, and Alternative Alignment 10. Each alignment was studied in detail. For the "Lower" portion of the project, two roadway alignments were also considered namely Alignment A and Alignment B. Only Alignment B was studied in detail. However, Alignments A & B generally follow the same route. This report is concerned with the drainage issues associated with the alternative roadway alignments of both the upper and lower portions. (See Figure 2).

The construction activities for the extension of the roadway would include tree removal, clearing and grubbing, excavation, embankment construction, paving of the roadway and shoulders, lawn / vegetation replication and the construction of drainage facilities.

The proposed roadway typical section will be crowned to shed water and prevent standing water on the roadway. This runoff will be collected in roadside ditches and drainage structures (i.e.: drywells, catch basins, retention ponds and / or detention ponds) and disposed of by both infiltrating it into the ground and discharging it into the natural drainage paths. The paving of the roadway will increase the amount of impervious surface area within the project limits. Attempts will be made to dispose of any increase in runoff associated with the increase in impervious area through the utilization of drywells and percolation ponds.

Route design for all alignments had among its goals routing the road around floodplains where practical and avoidance of longitudinal crossings of floodplains. Nevertheless, all "Build Alternative" alignments involve several crossings of areas identified as within the 100-year floodplain. (See Figure 2). Alignments A and B each encroach once on a floodplain, for a total of 0.30 HA (0.74 ACRE) and 0.05 HA (0.13 ACRE) respectively. Alignment 1 makes a total of six floodplain crossings, with a total of 2.24 HA (5.55 ACRES), Alignment 2 would make 10 floodplain crossings, with a total area of 2.56 HA (6.33 ACRES), while alignment 10 would make seven floodplain crossings, with a total area of 2.47 HA (6.11 acres).

The Upper Portion alternative alignments traverse a number of intermittent streams. These streams are believed to be tributaries to an isolated flood plain located in the tracts of land "Kukuau 1" and "Kukuau 2". This flood plain was mapped as shown on the "Flood Insurance Rate Map", as part of the National Flood Insurance Program, prepared by the Federal Emergency Management Agency and as duplicated and shown within. (See Figure 2).

At locations where the proposed roadway crosses a stream or obvious drainage path, culverts will be installed to permit the runoff to pass beneath the roadway. The culverts will be sized to allow the passage of the normal or base flow of the stream along with the runoff associated with the design rain storm. The design storm will have a frequency of return of 50 years or less. In the final design stage, the

proposed culverts will be checked against a design storm having a frequency of return of 100 years and recommendations made based upon their performance.

In locations where the proposed roadway crosses flood hazard zones, measures will be taken to prevent changes in the flood water patterns. Flood water elevation and flow characteristics would be integrated into the design of flood zone crossings to determine the best design, and at the same time, evaluating upstream areas for potential flood damages. Flood plain management strategies would include sizing culverts at the flood plain crossings, to allow the passage of 100 year frequency of return flood waters and to prevent any increase in the flood water elevations or limits of inundation. This could also include replicating flood storage volumes in areas where flood plain is proposed to be filled to maintain the existing volume of storage for flood waters within the project limits. In any such case, acceptable flood plain management measures shall be implemented to prevent any alterations in the flood patterns within the project limits in accordance with the applicable sections of Chapter 27 of the County of Hawaii Ordinances.

During the construction grading and earthwork, provisions will be made to minimize the potential for soil erosion and measures will be taken to minimize the amount of sediment that leaves the construction limits. Soil erosion and sediment control standard management practices, as described in the "Erosion and Sediment Control Guide for Hawaii", prepared by the Soil Conservation Society of America, Hawaii Chapter, dated March 1981, shall be implemented. These management measures could include:

1. Timing construction activities, such as grading or the installation of culverts, during periods of minimum rainfall.
2. Limiting the amount of surface area graded at any given time to reduce the area subject to potential erosion.
3. Constructing temporary drainage ditches to divert runoff away from areas susceptible to soil erosion.

4. Implementing the use of soil erosion protective materials such as mulch or geotextiles on areas where soils have a high potential for erosion, until permanent provisions, such as lawns and grasses can be developed. Lawns and grassing shall be installed as soon as grading operations permit, to minimize the amount of time soils are exposed to possible erosion.
5. Sediment management could include the use of sedimentation basins to collect sediment which enters runoff waters. Geotextiles such as siltation fencing could be utilized to minimize the amount of sediments which would leave the site to collect in drainage structures and streams.

The final design and recommendations shall conform to the following design standards where they are determined applicable:

1. "Storm Drainage Standards", Department of Public Works, County of Hawaii, State of Hawaii, dated October 1970.
2. "Erosion and Sediment Control, Guide for Hawaii", U.S.D.A. Soil Conservation Service, in cooperation with the Hawaii Association of Soil and Water Conservation Districts, and the Soil Conservation Society of America, Hawaii Chapter, dated March 1981.
3. "Hawaii Administrative Rules", Department of Health, Chapters 11-55, Sec. 34, as revised as of October 1992.
4. "County of Hawaii Ordinances Chapter 27", County of Hawaii, State of Hawaii.

HYDROLOGIC METHODOLOGY

The methodology used to estimate rainfall runoff and address the other drainage concerns within the project vicinity are as follows:

1. A base map was prepared showing the approximate location of all roadways, property lines and easements.
2. Existing topographic features were added to the base map, taken from a number of sources. 5' and 20' contours, existing houses, buildings, pavement and vegetation / ground cover were taken from aerial photographs and contour maps prepared by R.M. Towill Corporation, dated Oct., 1977. Existing features not covered in these sources were supplemented from maps prepared by U.S.G.S. and actual field surveys. Existing flood hazard zones were taken from the Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency.
3. The major drainage paths, streams and rivers within the project limits were delineated and identified.
4. Where the proposed roadway traverses natural drainage paths or flood hazard zones, it was proposed to construct culverts to pass the rainfall runoff flows beneath the roadway.
5. It was noted the construction of the roadway pavement would add additional impervious surface area within the project limits. This additional impervious ground cover was expected to increase the amount of rainfall runoff within the project limits. It was proposed to construct a series of drainage structures such as drywells, retention / detention ponds or percolation ponds to inject any increase in runoff from the site into the ground. That is, attempts would be made to balance or make equal the preconstruction and post construction rates of runoff and volume of runoff leaving the project limits. To develop these preconstruction and post construction runoff rates and volumes, ambiguous design point were chosen down gradient of the project limits

along all the natural drainage paths which traversed the project limits. These points were strategically located as to include the entire limits of the roadway construction within the rainfall runoff tributary areas to the design points. The expected rainfall runoff to each of the points was then calculated using either the Rational Method, the F.E.M.A. Regression Equation Method, or the Soil Conservation Service Method (S.C.S. TR-55). The Rational Method was used for all drainage areas 100 acres in area or less. For areas greater than 100 acres, the F.E.M.A. Regression Equation Method was used for the upper alignments, and the S.C.S. Method was used for the lower alignments. These runoff rates and volumes represented the expected "preconstruction runoff". A second base map was prepared showing the location and limits of the proposed roadway and the rainfall runoff to the design points was recalculated. These runoff rates and volumes represented the "post-construction runoff". In areas where the runoff showed an increase, structures were designed to detain or inject the increase in runoff into the ground within the associated tributary areas within the project limits.

6. In areas where the proposed roadway crosses natural drainage paths, culverts were proposed to pass the expected runoff flow beneath the roadway. The tributary area to each of the required structures was delineated and the "post-construction" runoff to each of the culverts calculated using either the Rational, F.E.M.A. Regression Equation, or S.C.S. Method as described above. The design storm for these culverts was a storm having a frequency of return of 50 years or less.
7. In areas where the proposed roadway crosses flood hazard zones it was proposed to construct culverts to pass the flows below the proposed roadway. These culverts were sized similar to those at drainage path crossings but the design storms these culverts were sized for was a storm having a frequency of return of 100 years. In these areas where the proposed roadway crosses flood hazard zones it

was also proposed to replicate flood storage volume in areas where flood plain is proposed to be filled. This would insure that the existing flood storage volume, within the project limits, would be maintained. These volumes would be calculated in the final design using the average end area method commonly used in earthwork quantity calculations.

RATIONAL METHOD

$$Q = CIA$$

Where:

- Q = Peak runoff in c.f.s.
- C = Coefficient of runoff -- depends on drainage characteristics of watershed area. Coefficient is dimensionless.
- I = Average rainfall intensity for a storm duration causing the entire drainage area to contribute to Q; this duration equals T_c

Where:

- T_c = Time of concentration in minutes; minimum $t_c = 5$ min.
- L = Length of T_c travel route in ft.
- S = Slope of watershed area in ft. / ft.

1. Rainfall Intensities taken from "Technical Paper 43, Rainfall Atlas of the Hawaiian Islands"; U.S. Department of Commerce, Weather Bureau.
2. Runoff coefficients taken from Table 1, County of Hawaii D.P.W. "Storm Drainage Standards", dated October 1970.
3. Design storm frequency = 50 year recurrence interval.
4. Reference, Rational Method; ASCE Manual of Practice #37.
5. T_c ; Taken from Plate 5, County of Hawaii D.P.W. "Storm Drainage Standards", dated October, 1970.

SOIL CONSERVATION SERVICE (S.C.S. TR-55) METHOD

$$Q = \frac{(P - I_a)}{(P - I_a) + S}$$

Where:

- Q = Runoff (in.)
- P = Rainfall (in.)
- S = Potential Maximum Retention After Runoff Begins (in.)
- I_a = Initial Abstraction (in.)

$$I_a = 0.2S$$

$$S = 1000/CN - 10$$

Where: CN = Curve Number; dependent on soil characteristics and ground cover type.

T_c = T_c sheet flow + T_c shallow concentrated flow + T_c channel flow. (See "Erosion and Sediment Control Guide for Urbanizing Area in Hawaii", Soil Conservation Service, for a more detailed discussion of methodology.)

Design storms calculated for 50 year recurrence interval.

F.E.M.A. REGRESSION EQUATION METHOD

$$Q_{50} = 641(DA)^{0.64}(PA)^{0.70}$$

$$Q_{100} = 822(DA)^{0.64}(PA)^{0.50}$$

Where:

- Q_{50} = 50-Year Runoff (cfs)
- Q_{100} = 100-Year Runoff (cfs)
- DA = Drainage Area (mi²)
- PA = Average Annual Precipitation (in/100)

1. "Flood Insurance Study", Federal Emergency Management Agency, Hawaii County, Hawaii, May 16, 1994.

CULVERT HYDRAULIC DESIGN METHODOLOGY

DESIGN CRITERIA

1. $T_m = 50$ Years Design Storm Frequency of Return
2. $1.5D \leq H_i < H_{max}$.
 - A. $H_i =$ Inlet Headwater
 - B. $D =$ Diameter of Culvert
 - C. $H_{max} =$ Vertical Distance between Invert of Culvert and Bottom of Pavement Subgrade.
3. Minimum Culvert Diameter (inside)
 $D_{min.} = 24"$
4. Minimum Culvert Slope
 $S_{min.} = 0.5\%$
5. Pipe Class
Class III
6. Entrance Loss Coefficient
 $K_e = 0.50$
7. Mannings Coefficient of Roughness
Concrete Pipe: $N = 0.013$
8. Assumed Tailwater
See Tailwater Calculations
9. Culvert Lengths
Taken from Preliminary Sketch Plans
10. Minimum Velocity of Flow
 $V_{min} = 2\text{-}1/2$ Ft./Sec.

11. Maximum Velocity of Flow at Culvert Outlet
 $V_{max} = 5 \text{ Ft./Sec.}$

IF: $5 < V \leq 18 \text{ Ft./Sec.}$
Channel at outlet of culvert will be lined.

IF: $V > 18$
Energy dissipators will be provided

12. Maximum Velocity of Flow in all Channels
Unlined Channels $V_{max} = 5.0 \text{ Ft./Sec.}$
Lined or Rock channels $V_{max} = 15 \text{ Ft./Sec.}$

13. Design Equations and Parameters

INLET CONTROL DESIGN EQUATIONS

Inlet control design equations.

UNSUBMERGED ¹

$$\text{Form (1)} \quad \frac{HW_i}{D} = \frac{H_c}{D} + K \left[\frac{Q}{AD^{0.5}} \right]^M - 0.5S \quad \text{2} \quad \text{(A)}$$

$$\text{Form (2)} \quad \frac{HW_i}{D} = K \left[\frac{Q}{AD^{0.5}} \right]^M \quad \text{(B)}$$

SUBMERGED ²

$$\frac{HW_i}{D} = c \left[\frac{Q}{AD^{0.5}} \right]^2 + Y - 0.5S \quad \text{2} \quad \text{(C)}$$

Definitions

HW _i	Headwater depth above inlet control section invert, ft
D	Interior height of culvert barrel, ft
H _c	Specific head at critical depth (d _c + V _c ² /2g), ft
Q	Discharge, ft ³ /s
A	Full cross sectional area of culvert barrel, ft ²
S	Culvert barrel slope, ft/ft
K, M, c, Y	Constants from table 9

- NOTES: ¹ Equations (26) and (27) (unsubmerged) apply up to about Q/AD^{0.5} = 3.5.
² For mitered inlets use +0.7S instead of -0.5S as the slope correction factor.
³ Equation (28) (submerged) applies above about Q/AD^{0.5} = 4.0.

Taken from: "Hydraulic Design of Highway Culverts", FHWA Report No.: FHWA-IP-85-15, Hydraulic Design Series No. 5, September 1985.

RECEIVED AS FOLLOWS

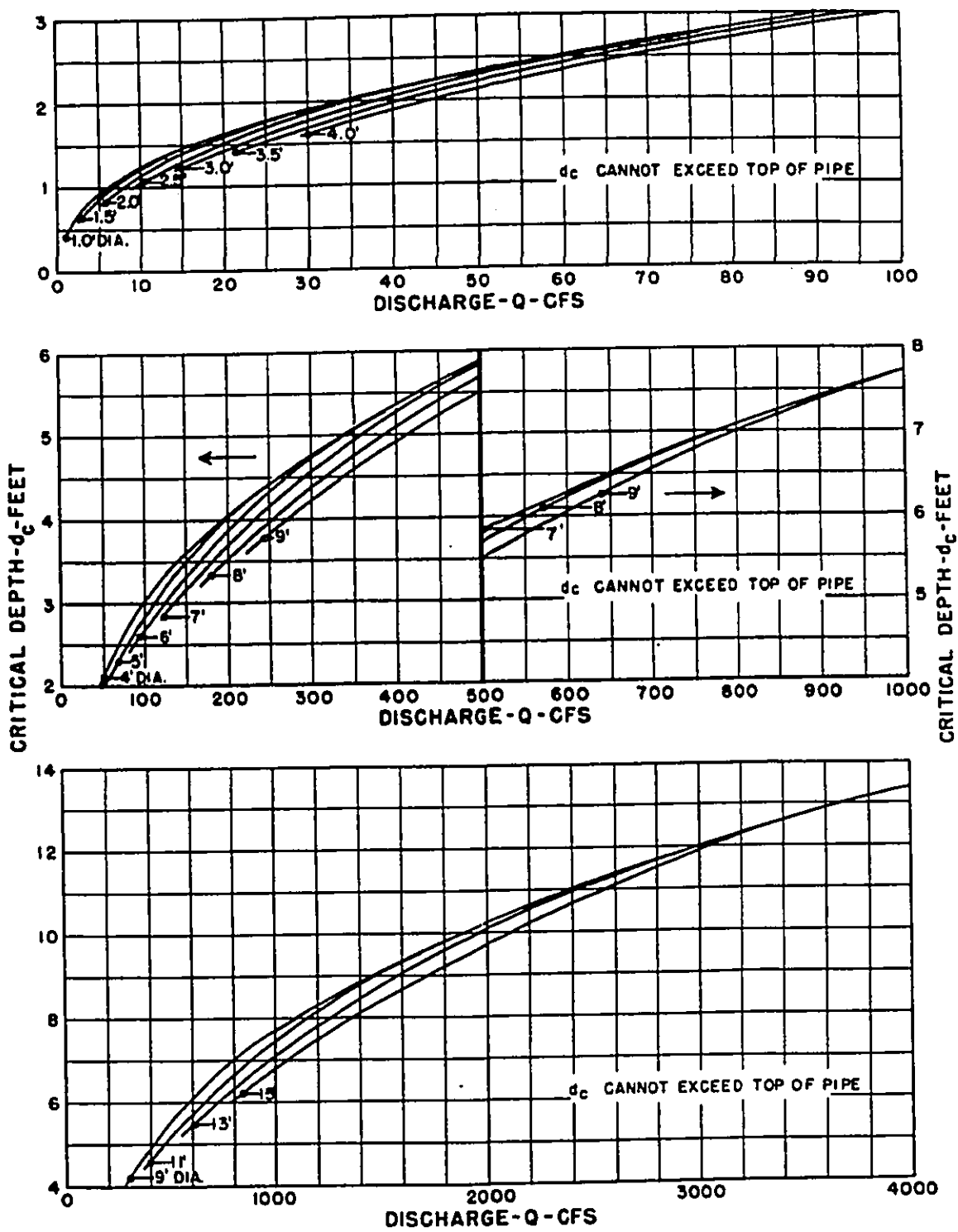
Constants for inlet control design equations.

CHART NO.	SHAPE AND MATERIAL	MOHOGRAPH SCALE	INLET EDGE DESIGN	UNSUBMERGED			SUBMERGED		
				EQUATION FORM	K	M	c	Y	References
1	Circular Concrete	1	Square edge w/headwall	1	0.0098	2.0	0.0398	0.67	(56) (57)
		2	Groove end w/headwall		.0078	2.0	.0292	.76	(56) (57)
		3	Groove end projecting		.0045	2.0	.0317	.69	(56) (57)
2	Circular CMP	1	Headwall	1	.0078	2.0	.0379	.69	(56) (57)
		2	Mitered to slope		.0210	1.33	.0463	.75	(57)
		3	Projecting		.0340	1.50	.0553	.54	(57)
3	Circular	A	Beveled ring, 45° bevels	1	.0018	2.50	.0300	.76	(57)
		B	Beveled ring, 33.7° bevels*		.0018	2.50	.0243	.83	(57)
8	Rectangular Box	1	30° to 75° wingwall flares	-	.026	1.0	.0385	.81	(56)
		2	90° and 15° wingwall flares	1	.061	0.75	.0400	.80	(56)
		3	0° wingwall flares		.061	0.75	.0423	.82	(8)
9	Rectangular Box	1	45° wingwall flare d=.0430	2	.510	.667	.0309	.80	(8)
		2	18° to 33.7° wingwall flare d=.0830		.486	.667	.0249	.83	(8)
10	Rectangular Box	1	90° headwall w/3/4" chamfers	2	.515	.667	.0375	.79	(8)
		2	90° headwall w/45° bevels		.495	.667	.0314	.82	(8)
		3	90° headwall w/33.7° bevels		.486	.667	.0252	.865	(8)
11	Rectangular Box	1	3/4" chamfers; 45° skewed headwall	2	.522	.667	.0402	.73	(8)
		2	3/4" chamfers; 30° skewed headwall		.533	.667	.0425	.705	(8)
		3	3/4" chamfers; 15° skewed headwall		.545	.667	.04505	.68	(8)
		4	45° bevels; 10°-45° skewed headwall		.498	.667	.0327	.75	(8)
12	Rectangular Box 3/4" chamfers	1	45° non-offset wingwall flares	2	.497	.667	.0339	.803	(8)
		2	18.4° non-offset wingwall flares		.495	.667	.0361	.806	(8)
		3	18.4° non-offset wingwall flares 30° skewed barrel		.495	.667	.0386	.71	(8)
13	Rectangular Box Top Bevels	1	45° wingwall flares - offset	2	.497	.667	.0302	.833	(8)
		2	33.7° wingwall flares - offset		.495	.667	.0252	.881	(8)
		3	18.4° wingwall flares - offset		.495	.667	.0227	.887	(8)
16-19	C M Boxes	1	90° headwall	1	.0083	2.0	.0379	.69	(57)
		2	Thick wall projecting		.0145	1.75	.0419	.64	(57)
		3	Thin wall projecting		.0340	1.5	.0496	.57	(57)

RECEIVED AS FOLLOWS



CHART 4



BUREAU OF PUBLIC ROADS
JAN. 1964

CRITICAL DEPTH
CIRCULAR PIPE

OUTLET CONTROL DESIGN EQUATIONS

D	=	Diameter of Culvert
Q	=	Q Total / Number of Culvert Barrels (CFS)
TW	=	Tailwater (Ft.)
dc	=	Critical Depth (see attached)
ho	=	Tw or $\frac{(dc + D)}{2}$ (Whichever is greater)
H	=	Headwater
H	=	$[1 + Ke + (29n^2L) / R^{1.33}] V^2 / 2g$
EL _{ho}	=	Elevation of Headwater Outlet Invert + H + ho.

LOWER PUAINAKO ALIGNMENT OVERALL ALIGNMENT HYDROLOGY

The present drainage patterns of the area the proposed alignment traverses is as follows; In the area between Komohana Street and Kilauea Street, rainfall which falls to the south & southwest of Puainako Street flows north / northeast overland through primarily residential areas. Along the south side of Puainako Street from Komohana Street to Kawili Street there exists an earth / rock drainage channel which intercepts the flow and directs it down gradient to a large drainage channel which runs along the west side of Kawili Street which eventually ends in Waiakea Pond. There are a number of existing drywells along the south side of Puainako Street that currently inject some of the runoff into the ground. The existing channel is relatively shallow and very irregular in cross section. Where driveways or side streets cross over the existing channels culverts have been installed to pass the flows. These culverts vary widely in cross section, size and configuration. Although the channel and drainage structures may be adequate for smaller flows it is expected these structures will be inadequate to pass the flows associated with the project design storm. It is expected the runoff to the south / southwest of Puainako Street will cross over the Puainako Street roadway and enter the project limits during the design year storm. Throughout the length of the proposed roadway alignment there are a number of natural drainage paths where the flows are expected to converge and transform into channel flow. In the area between Komohana Street and Kawili Street these drainage paths flow toward the Waiakea Flood Control Channel. In the area between Kawili Street and Waiakea Intermediate School the flows are expected to flow through a wooded area toward Waiakea High School and into the drainage channel which runs along the north / northwest side of Kawili Street. In the area between Waiakea Intermediate School and Lokahi Street the flows are directed by means of an open and closed drainage system located on the school parcel toward an intermittent stream which runs toward the north and passes to the north / northwest of the residential area on Lokahi Street and eventually ends in Waiakea Pond. In the area between Lokahi Street and Kinoole Street the natural

drainage paths intercept the flows and direct it toward an intermittent stream which flows toward Kinoole Street. Upon inspection where this stream intersects Kinoole Street it appears the culverts required to pass this flow beneath Kinoole Street is either completely blocked by sediment or nonexistent. This concern requires further investigation. In the area between Kinoole Street and Kilauea Street the runoff is directed to a single drywell to the northwest of the Kilauea / Puainako Street intersection.

The Hawaii Department of Transportation (DOT) was contacted to determine where existing drainage problems or where drainage runoff crosses the existing Puainako Street. Mr. George Nakayama of Hawaii DOT maintenance department cited that water crosses the existing alignment during heavy rains on the vicinity of Santos Road.

Testimony from the owner of the dwelling north of Puainako Street and Kuhilani Street intersection, he indicated that flooding occurs behind and on his property. The extent of the flooding is unknown.

The proposed roadway alignment was delineated and the tributary drainage areas, to each of the required drainage structures or culverts, were determined, identified and labeled "A" through "T" (See Figures 3 and 4). The corresponding quantity of runoff for each of the subareas was calculated using the Rational Method or Soil Conservation Service Method and the structures sized accordingly. Due to length, the calculations are not included in this preliminary drainage summary report. However, a copy of the calculations are available for review at the office of:

OKAHARA & ASSOCIATES, INC.
200 KOHOLA STREET
HILO HAWAII 96720
PHONE: (808) 961-5527

In addition, due to the fact that only preliminary design calculations were required, no effort was made to design minor roadside ditches, and preliminary drainage construction costs do not reflect these potential construction costs.

LOWER PUAINAKO PRE-CONSTRUCTION / POST-CONSTRUCTION RAINFALL RUNOFF SUMMARY

DESIGN POINT	PRE-CONSTRUCTION						POST-CONSTRUCTION						Net Change
	AREA (ACRES)	Q ₁₀ RATIONAL METHOD (CFS)	Q ₁₀ SCS METHOD (CFS)	Q ₁₀ USED (CFS)	APPROX. NO. OF DRYWELLS IN THE AREA	Q ₁₀ USED (%) DRYWELL CAPACITY (6 CFS/DRYWELL)	AREA (ACRES)	Q ₁₀ RATIONAL METHOD (CFS)	Q ₁₀ SCS METHOD (CFS)	Q ₁₀ USED (CFS)	APPROX. NO. OF DRYWELLS IN THE AREA	Q ₁₀ USED (%) DRYWELL CAPACITY (6 CFS/DRYWELL)	
A	7.60	54.76		54.76	3	36.76	59.61		59.61	3	41.81		+4.85
B	47.04	236.85		236.85	0	236.85	243.63		243.63	0	243.63		+6.78
C	6.76	37.03		37.03	0	37.03	44.50		44.50	0	44.50		+7.47
D	3.90	8.50		8.50	0	8.50	47.42		47.42	0	47.42		+38.92
E	139.10	712.19		757.00	2	745.00	645.00		645.00	2	633.00		-112.00
F(E+F)	4.10(143.20)	717.05		779.00	2	767.00	720.75		816.00	2	804.00		+37.00
G	75.20	385.30		385.30	11	319.30	420.93		420.93	11	354.93		+35.63
H(G+H)	27.91(103.10)	533.73		756.00	14	672.00	577.21		785.00	14	701.00		+29.00
I(G+H+I)	5.40(108.50)	553.61		800.00	14	716.00	587.20		800.00	14	716.00		0.00
J	2.40	6.01		6.01	0	6.01	3.35		3.35	0	3.35		-2.66
K	9.80	46.00		46.00	1	40.00	92.65		92.65	1	86.65		+46.65
L	5.70	60.37		60.37	2	48.37	45.37		45.37	2	33.37		-15.00
M	2.80	37.50		37.50	0	37.50	38.62		38.62	0	38.62		+1.12
N	4.10	54.50		54.50	0	54.50	48.17		48.17	0	48.17		-6.33
O(N+O)	1.90(6.00)	71.36		71.36	0	71.36	67.59		67.59	0	67.59		-3.77
P1,P3	-	-		-	-	-	1017.21		1230.00	20	1110.00		+110.00
P4	-	-		-	-	-	8.58		8.58	0	8.58		0
P(P1-P4)	208.00	-		1214	20	1094.00	76.11		1236.00	20	1116.00		-1067.89
Q(O+P)	214.00	-		1264	20	1144.00	78.11		76.11	0	76.11		-24.94
R	35.70	214.38		33.36	0	33.36	8.42		8.42	0	8.42		+36.06
S	0.60	9.81		9.81	0	9.81	4.81		4.81	0	4.81		-5.00
T	82.60	402.68		402.68	1	396.68	439.58		439.58	1	433.58		+36.90
TOTAL	673.80												+152.79

NOTES

1. MCBA - MODIFIED CATCH BASIN "A" (CATCH BASIN / DRYWELL)
2. INDICATES AN INCREASE IN RUNOFF TO THIS POINT DUE TO A REDIRECTION OF FLOW THROUGH THIS POINT.
3. () - INDICATES A COMBINED RUNOFF AREA OR FLOW RATE.

TOTAL INCREASE IN RUNOFF TO DESIGN POINTS A,B,D,E,I,J,K,L,M,P,Q,R,S & T

CHECK:
 $Q = (0.40)(16.7)(21.14) = 140.9 \text{ cfs}$
 $A = 7675' \times 120' / 43550 \text{ sf} = 21.14 \text{ AC.}$
 $T_c = 5 \text{ min.} > 1 = 16.7 \text{ in/hr.}$
 $I_C = 0.95 - 0.55 = 0.40$

**LOWER PUAINAKO - ALIGNMENT B
PRELIMINARY DRAINAGE STRUCTURES**

Culvert I.D.	Approx. Sta.	Min. Recommended Culv.	Remark
1	242 + 30	36" Dia RCP Culv, L = 130'	
2	243 + 50	54" Dia RCP Culv, L = 160'	
3	248 + 15	30" Dia RCP Culv, L = 140'	
4	254 + 25 O/S 80' RT	30" Dia RCP Culv, L = 70'	
5	254 + 80	30" Dia RCP Culv, L = 130'	
6	258 + 30	48" Dia RCP Culv, L = 130'	
7	259 + 50	72" Dia RCP Culv, L = 130'	
8	265 + 10	60" Dia RCP Culv, L = 180'	
9	274 + 20	48" Dia RCP Culv, L = 370'	
		(2) 24" Dia RCP Culv, L = 80'	
10	275 + 20	24" Dia RCP Culv, L = 130'	
11	279 + 20	30" Dia RCP Culv, L = 150'	
12	284 + 00	24" Dia RCP Culv, L = 260'	
13	287 + 00	24" Dia RCP Culv, L = 130'	
14	289 + 00 O/S 70' RT	24" Dia RCP Culv, L = 130'	
15	289 + 85	24" Dia RCP Culv, L = 130'	
16	294 + 50 O/S 75' LT	24" Dia RCP Culv, L = 70'	
17	294 + 50 O/S 70' RT	48" Dia RCP Culv, L = 100'	
18	295 + 15 TO 297 + 50	48" Dia RCP Culv, L = 235'	
19	297 + 50 TO 305 + 50	90" Dia RCP Culv, L = 800'	
20	306 + 10	96" Dia RCP Culv, L = 220'	
21	309 + 20 O/S 70' RT	36" Dia RCP Culv, L = 70'	
22	309 + 80	36" Dia RCP Culv, L = 130'	
23	@ KINOOLE ST INTER.	24" Dia RCP Culv, L = 400'	
24	318 + 95	24" Dia RCP Culv, L = 130'	

* See Figure 7 for approximate locations.

**LOWER PUAINAKO - ALIGNMENT B
PRELIMINARY DRAINAGE STRUCTURES (CONTINUED)**

MAJOR ROADSIDE CHANNELS AND DETENTION BASINS			
Location		Size	Remarks
To be determined		To be determined	
CATCH BASINS			
Location	No.	Remarks	
(See Plan)	9		
MODIFIED CATCH BASIN / DRY WELL			
Location	No.	Remarks	
(See Plan)	30		
STANDARD DRYWELLS			
Location	No.	Remarks	
(See Plan)	1		

**UPPER PUAINAKO - ALTERNATIVE #1
OVERALL ALIGNMENT HYDROLOGY**

The present drainage pattern of the area the roadway Alternative Alignment #1 traverses is as follows: In the areas between Country Club Drive and Wilder Road, rainfall which falls to the south & southwest of the alignment flows north northeast overland through primarily old cane fields overgrown with dense grass and brush. This runoff eventually makes it's way into one of the two existing streams that converge at Wilder Road and pass beneath Wilder Road through two existing 8' diameter C.M.P. culverts. In the area between Wilder Road and Pacific Plantation Subdivision, rainfall which falls to the south & southwest of the alignment flows north / northeast overland through residential areas and into undeveloped areas and eventually into the existing stream which flows to the east / southeast. Rainfall which falls to the north of the alignment flows overland through some residential areas, but mainly through undeveloped land to the stream which flows east / southeast.

In the area between Kilua Road and Edita Street, runoff which falls to the north & northwest of the alignment flows overland through undeveloped land (mainly scrub and brush) into the Pacific Plantation Subdivision.

In the area between Edita Street and Sunrise Ridge Subdivision, rainfall which falls to the north of the alignment flows overland through scrub and dense woods eastward where it eventually enters the Waipahoehoe Stream which flows to the northeast. Rainfall which falls to the south of the alignment flows northeast / east overland through dense woods where it eventually enters the existing flood control channel / Waiakea Stream which flows to the northeast and passes beneath the Komohana Street bridge.

It is proposed to construct a series of drainage structures along the alignment to allow the existing drainage patterns to remain with as little disturbance as possible due to the roadway construction. The proposed rainfall runoff quantities will be estimated using the Rational

Method and the F.E.M.A. Regression Equation Method, as described herein. The proposed drainage structure will be sized so as to allow the passage of runoff from a design storm with a 50-year or less return interval.

The proposed roadway alignment was delineated and the tributary drainage areas, to each required drainage structure or culvert, were determined, identified (17 total) and labeled "A" through "P". The corresponding quantity of runoff for each of the 17 subareas was calculated using the Rational Method, or F.E.M.A. Regression Equation Method, and the structures sized accordingly. The sub basins A through K drain via intermittent stream into an isolated flood plain located on the tracts of Land Kukuau 1 and Kukuau 2. The runoff waters are believed to flow down to the low point within this flood plain, located about 2,500 ft. east northeast of the existing Edita St. cul-de-sac / intersection. (See Figure 5). Sub basins L through P are believed to flow overland into the Waiakea Stream Tributary No. 3 and Waiakea Stream, and eventually into Waiakea Pond. Due to the fact that only preliminary designs were required, no effort was made to design minor roadside ditches, and preliminary drainage construction cost estimates do not include these potential construction costs.

In addition to the preliminary design of the proposed roadway culverts, the existing 8' diameter C.M.P. and the 5' diameter R.C.P. culverts along Wilder Road were checked for adequate capacity to ensure proper drainage of the proposed roadway.

The calculations are not included in this preliminary drainage summary report. However, a copy of the calculations are available for review at the office of:

OKAHARA & ASSOCIATES, INC.
200 KOHOLA STREET
HILO, HAWAII 96720
PHONE: (808) 961-5527

**UPPER PUAINAKO - ALTERNATIVE #1
RAINFALL RUNOFF SUMMARY**

<i>Area Designation</i>	<i>Area (Ac.)</i>	<i>Rational Q50 (c.f.s.)</i>	<i>F.E.M.A. Regression Q50 (c.f.s.)</i>	<i>Q50 Used (c.f.s.)</i>	<i>Q50 (c.f.s.)/ Area (Ac.)</i>
A	5675	--	4209	4209	0.74
B	2001	--	2160	2160	1.08
C	329	--	680	680	2.07
D	320	--	668	668	2.09
E1	11.57	33	80	33	2.85
E2	64.27	184	239	184	2.88
F	42.60	210	184	210	4.93
G	54.68	192	216	192	3.51
H	15.66	51	97	51	3.26
I	6.73	27	56	27	4.01
J	28.26	86	141	86	3.04
K	3.17	10	35	10	3.15
L	4.09	16	41	16	3.19
M	4.75	19	45	19	4.00
N	7.21	27	59	27	3.74
O	9.86	35	72	35	3.55
P	19.09	53	110	53	2.78
D - EXISTING 5' CULVERT	--	--	297	297	--
F+ EXISTING 5' CULVERT	--	581	555	581	--
A+C+D+E1+E2+F+G	5497	--	4589	4589	0.71
H+I	22.39	78	122	78	3.48
J+K	31.43	96	151	96	3.05
A+B+C+D+E1+E2+F+G+H+I+J+K	8552	--	5472	5472	0.64

**UPPER PUAINAKO - ALTERNATIVE #1
PRELIMINARY DRAINAGE STRUCTURES**

ROADWAY CULVERTS*			
<i>Culvert I.D.</i>	<i>Approx. Sta.</i>	<i>Size</i>	<i>Remarks</i>
1	32+70	(2) 84" Dia RCP Culv. L=150'	
2	45+60	(4) 12' x 9'-0" Box Culv. L=65'	
3	20+30 O/S 300' LT	36" Dia RCP Culv. L=75'	
4	53+25	(3) 48" Dia RCP Culv. L=105'	
5	53+25 O/S 350' LT	24" Dia RCP Culv. L=75'	
6	53+25 O/S 400' RT	60" RCP Culv	Existing - Overtops
7	53+25 O/S 740' LT	(2) 96" Dia CMP Culv	Existing - Overtops
8	53+25 O/S 60' LT	36" Dia CMP Culv	Existing
9	66 + 00	(2) 72" Dia RCP Culv L=75'	
10	84+20	(5) 12' x 8' Box Culv. L=115'	
11	131+70	42" Dia RCP Culv. L=75'	
12	131+90 O/S 70' RT	60" CMP Dia Culv	Existing
13	182+00	48" Dia RCP Culv. L=250'	
14	195+50	(6) 12' x 8' Box Culv. L=115'	
15	205+70	24" Dia RCP Culv. L=75'	
16	210+40	24" Dia RCP Culv. L=80'	
17	218+30	30" Dia RCP Culv. L=80'	
18	224+60	30" Dia RCP Culv. L=70'	
MAJOR ROADSIDE CHANNELS*			
<i>Location</i>	<i>Size</i>	<i>Remarks</i>	
STA. 129 + 75	8' x 3' (Varies)	Existing	
STA 90+00 --> 100+00	To be determined		
STA. 145+00 --> 180+00	To be determined		
STA. 180+00 -->193+00	6' Deep (Varies) _/ Channel	Existing	
DRYWELLS			
<i>Description</i>	<i>Q'ty</i>	<i>Remarks</i>	
Drywells	115		
Subtotal			

*See Figure 8 for approximate locations.

**UPPER PUAINAKO - ALTERNATIVE #2
OVERALL ALIGNMENT HYDROLOGY**

The present drainage pattern of the area the roadway alternative alignment #2 traverses is as follows: In the areas between Country Club Drive and Wilder Road, rainfall which falls to the south & southwest of the alignment flows north / northeast overland through primarily old cane fields overgrown with dense grass and brush. This runoff eventually makes it's way into one of the two existing streams that converge at Wilder Road and pass beneath Wilder Road through two existing 8' diameter C.M.P. culverts. In the area between Wilder Road and Pacific Plantation Subdivision, rainfall which falls to the south & southwest of the alignment flows north / northeast overland through dense woodland areas and into undeveloped areas and eventually into the existing stream which flows to the east / southeast. Rainfall which falls to the north of the alignment flows overland through some residential areas but mainly through undeveloped land to the stream which flows east / southeast.

In the area between Edita Street and Sunrise Ridge Subdivision, rainfall which falls to the north of the alignment flows overland through scrub and dense woods eastward where it eventually enters the Waipahoehoe Stream which flows to the northeast. Rainfall which falls to the south of the alignment flows northeast / east overland through dense woods where it eventually enters the existing flood control channel / Waiakea Stream which flows to the northeast and passes beneath the Komohana Street bridge.

It is proposed to construct a series of drainage structures along the alignment to allow the existing drainage patterns to remain with as little disturbance as possible due to the roadway construction. The proposed rainfall runoff quantities will be estimated using the Rational Method and F.E.M.A. Regression Equation Method, as described herein. The proposed drainage structure will be sized so as to allow the passage of runoff from a design storm with a 50-year or less return interval.

The proposed roadway alignment was delineated and the tributary drainage areas, to each required drainage structure or culvert, were determined, identified (23 total) and labeled "A" through "W". The corresponding quantity of runoff for each of the 23 subareas was calculated using the Rational Method, or F.E.M.A. Regression Equation Method, and the structures sized accordingly. The sub basins A through Q drain via intermittent stream into an isolated flood plain located on the tracts of Land Kukuau 1 and Kukuau 2. The runoff waters are believed to flow down to the low point within this flood plain, located about 2,500 ft. east northeast of the existing Edita St. cul-de-sac / intersection. (See Figure 6). Sub basins S through W are believed to flow overland into the Waiakea Stream Tributary No. 3 and Waiakea Stream, and eventually into Waiakea Pond. Due to the fact that only preliminary designs were required, no effort was made to design minor roadside ditches, and preliminary drainage construction cost estimates do not include these potential construction costs.

In addition to the preliminary design of the proposed roadway culverts, the existing 8' diameter C.M.P. and the 5' diameter R.C.P. culverts along Wilder Road were checked for adequate capacity to ensure proper drainage of the proposed roadway.

The County of Hawaii Department of Public Works was contacted to determine where existing drainage problems occur along and in the vicinity of the propose Puainako Street extension. According to Mr. Thomas Nakasone of the County of Hawaii DPW maintenance department, flooding problems occur at the following locations during heavy rains.

1. On Wilder Road, from Uhaloa Road to approximately end of Wilder Road.
2. On Uhaloa Road between Eiei Road and Uluhe Road.
3. On lots TMK: 2-5-46:06, 2-5-46:07, 2-5-41:01, 2-5-46:09 and various lots on the east side of Wilder Road. There may be other locations where flooding occurs as drainage runoff flows down gradient to the FEMA flood zone areas.

In addition, Mr Nakasone cited that the existing 5-foot diameter RCP culvert and 2-8-foot diameter CMP culverts on Wilder Road had been overtopped and therefore insufficient for the existing drainage runoff.

The calculations are not included in this preliminary drainage summary report. However, a copy of the calculations are available for review at the office of:

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**UPPER PUAINAKO - ALTERNATIVE #2
RAINFALL RUNOFF SUMMARY**

<i>Area Designation</i>	<i>Area (Ac.)</i>	<i>Rational Q50 (c.f.s.)</i>	<i>F.E.M.A. Regression Q50 (c.f.s.)</i>	<i>Q50 Used (c.f.s.)</i>	<i>Q50 (c.f.s.) Area (Ac.)</i>
A	5828	--	4186	4186	0.74
B	671	--	1073	1073	1.60
C	213	--	515	515	2.42
D	41.25	191	180	191	4.63
E	33.88	150	159	150	4.43
F	124	--	364	364	2.94
G	7.26	30	59	30	4.13
H	54.92	188	216	188	3.42
I	12.34	46	83	46	3.73
J	47.41	144	197	144	3.04
K	176	--	456	456	2.59
L	108	--	334	334	3.09
M	493	--	881	881	1.79
N	30.87	110	150	110	3.56
O	98.44	288	314	268	2.72
P	43.08	122	185	122	2.83
Q	4.02	13	41	13	3.23
R	757	--	1159	1159	1.53
S	4.09	16	41	16	3.91
T	4.68	19	45	19	4.06
U	5.96	23	52	23	3.86
V	7.31	26	60	26	3.56
W	6.64	19	56	19	2.86
A+C+D+E+F+G+H+K +L+M	6877	--	4759	4759	0.69
O+P+Q	146	--	404	404	2.77
A+B+C+D+E+F+G+H +I+J+K+L+M+N+O+P +Q+R	8541	--	5468	5468	0.64

* From FEMA Flood Insurance Study, May 16, 1994.

**UPPER PUAINAKO - ALTERNATIVE #2
PRELIMINARY DRAINAGE STRUCTURES**

ROADWAY CULVERTS			
<i>Culvert I.D.</i>	<i>Approx. Sta.</i>	<i>Min. Recommended Culvert</i>	<i>Remarks</i>
1	13+40	60" Dia RCP Culv. L=75'	
2	18+20	(2) 72" Dia RCP Culv. L=75'	
3	23+50	60" RCP Culv. L=75'	
4	32+20	(4) 12' x 9' Box Culv. L=85'	
5	34+80	30" Dia RCP Culv. L=75'	
6	41+20	84" Dia RCP Culv. L=75'	
7	49+50	60" Dia RCP Culv. L=75'	
8	107+75	48" Dia RCP Culv. L=75'	
9	168+00	(5) 12' x 8' Box Culv. L=85'	
10	205+50	(2) 60" Dia RCP Culv. L=250'	
11	219+00	(6) 12' x 8' Box Culv. L=115'	
12	229+20	24" Dia RCP Culv. L=75'	
13	235+00	24" Dia RCP Culv. L=75'	
14	241+40	30" Dia RCP Culv. L=75'	
15	250+30	30" Dia RCP Culv. L=75'	
16	268+40	24" Dia RCP Culv. L=75'	
MAJOR ROADSIDE CHANNELS*			
<i>Location</i>	<i>Size</i>	<i>Remarks</i>	
STA. 50+00 --> 68+00	10'x6.5' \ /		
STA. 68+00 --> 100+50	20'x8' 		
STA. 175+00 --> 205+00	TO BE DETERMINED		
DRYWELLS			
<i>Description</i>	<i>Qty</i>	<i>Remarks</i>	
Drywells	115		

*See Figure 8 for approximate locations.

UPPER PUAINAKO - ALTERNATIVE #10 OVERALL ALIGNMENT HYDROLOGY

The present drainage pattern of the area the roadway Alternative Alignment #10 traverses is as follows: In the areas between Country Club Drive and Wilder Road, rainfall which falls to the south & southwest of the alignment flows north northeast overland through primarily old cane fields overgrown with dense grass and brush. This runoff eventually makes it's way into one of the two existing streams that converge at Wilder Road and pass beneath Wilder Road through two existing 8' diameter C.M.P. culverts. In the area between Wilder Road and Pacific Plantation Subdivision, rainfall which falls to the south & southwest of the alignment flows north / northeast overland through residential areas and into undeveloped areas and eventually into the existing stream which flows to the east / southeast. Rainfall which falls to the north of the alignment flows overland through some residential areas, but mainly through undeveloped land to the stream which flows east / southeast.

In the area between Kilua Road and Edita Street, runoff which falls to the north & northwest of the alignment flows overland through undeveloped land (mainly scrub and brush) into the Pacific Plantation Subdivision.

In the area between Edita Street and Sunrise Ridge Subdivision, rainfall which falls to the north of the alignment flows overland through scrub and dense woods eastward where it eventually enters the Waipahoehoe Stream which flows to the northeast. Rainfall which falls to the south of the alignment flows northeast / east overland through dense woods where it eventually enters the existing flood control channel / Waiakea Stream which flows to the northeast and passes beneath the Komohana Street bridge.

It is proposed to construct a series of drainage structures along the alignment to allow the existing drainage patterns to remain with as little disturbance as possible due to the roadway construction. The proposed rainfall runoff quantities will be estimated using the Rational

Method and the F.E.M.A. Regression Equation Method, as described herein. The proposed drainage structure will be sized so as to allow the passage of runoff from a design storm with a 50-year or less return interval.

The proposed roadway alignment was delineated and the tributary drainage areas, to each required drainage structure or culvert, were determined, identified (17 total) and labeled "A" through "P". The corresponding quantity of runoff for each of the 17 subareas was calculated using the Rational Method, or F.E.M.A. Regression Equation Method, and the structures sized accordingly. The sub basins A through K drain via intermittent stream into an isolated flood plain located on the tracts of Land Kukuau 1 and Kukuau 2. The runoff waters are believed to flow down to the low point within this flood plain, located about 2,500 ft. east northeast of the existing Edita St. cul-de-sac / intersection. (See Figure 5). Sub basins L through P are believed to flow overland into the Waiakea Stream Tributary No. 3 and Waiakea Stream, and eventually into Waiakea Pond. Due to the fact that only preliminary designs were required, no effort was made to design minor roadside ditches, and preliminary drainage construction cost estimates do not include these potential construction costs.

In addition to the preliminary design of the proposed roadway culverts, the existing 8' diameter C.M.P. and the 5' diameter R.C.P. culverts along Wilder Road were checked for adequate capacity to ensure proper drainage of the proposed roadway.

The calculations are not included in this preliminary drainage summary report. However, a copy of the calculations are available for review at the office of:

OKAHARA & ASSOCIATES, INC.
200 KOHOLA STREET
HILO, HAWAII 96720
PHONE: (808) 961-5527

**UPPER PUAINAKO - ALTERNATIVE #10
RAINFALL RUNOFF SUMMARY**

<i>Area Designation</i>	<i>Area (Ac.)</i>	<i>Rational Q50 (c.f.s.)</i>	<i>F.E.M.A. Regression Q50 (c.f.s.)</i>	<i>Q50 Used (c.f.s.)</i>	<i>Q50 (c.f.s.)/ Area (Ac.)</i>
A	5675	--	4209	4209	0.74
B	1534	--	2160	2160	1.08
C	329	--	680	680	2.07
D	320	--	668	668	2.09
E1	11.57	33	80	33	2.85
E2	64.27	184	239	184	2.86
F	42.60	210	184	210	4.93
G	110	--	337	337	3.06
H	314	--	660	660	2.10
I	98.52	263	310	263	2.72
J	42.97	122	185	122	2.84
K	5.45	18	49	18	3.30
L	4.09	16	41	16	3.19
M	4.75	19	45	19	4.00
N	7.21	27	59	27	3.74
O	9.86	35	72	35	3.55
P	19.09	53	110	53	2.78
D - EXISTING 5' CULVERT	--	--	297	297	--
F+ EXISTING 5' CULVERT	--	581	555	581	--
A+C+D+E1+E2+F+G+H	6666	--	4755	4755	0.69
I+J+K	145	--	403	403	2.78
A+B+C+D+E1+E2+F+G+H+I+J+K	8545	--	5469	5469	0.64

**UPPER PUAINAKO - ALTERNATIVE #10
PRELIMINARY DRAINAGE STRUCTURES**

ROADWAY CULVERTS*			
<i>Culvert I.D.</i>	<i>Approx. Sta.</i>	<i>Size</i>	<i>Remarks</i>
1	20+30 O/S 300' LT	36" Dia RCP Culv. L=75'	
2	45+60	(4) 12' X 9'-0" Box Culv. L=65'	
3	32+70	(2) 84" Dia RCP Culv. L=150'	
4	53+25	(3) 48" Dia RCP Culv. L=105'	
5	53+25 O/S 350' LT	24" Dia RCP Culv. L=75'	
6	53+25 O/S 400' RT	60" RCP Culv	Existing - Overtops
7	53+25 O/S 740' LT	(2) 96" Dia CMP Culv	Existing - Overtops
8	53+25 O/S 60' LT	36" Dia CMP Culv	Existing
9	66+00	(2) 72" Dia RCP Culv L=75'	
10	87+20	(2) 60" Dia RCP Culv L=100'	
11	150+00	(5) 12' x 8' Box Culv L=85'	
12	188+40	(2) 60" Dia RCP Culv. L=250'	
13	201+70	(6) 12' x 8' Box Culv. L=115'	
14	212+00	24" Dia RCP Culv. L=75'	
15	216+60	24" Dia RCP Culv. L=80'	
16	224+50	30" Dia RCP Culv. L=80'	
17	230+80	30" Dia RCP Culv. L=70'	
MAJOR ROADSIDE CHANNELS*			
<i>Location</i>	<i>Size</i>	<i>Remarks</i>	
STA. 158+00 --> 188+00	To be determined		
STA. 188+00 --> 201+00	6' Deep (Varies) _/ Channel		Existing
DRYWELLS			
<i>Description</i>	<i>Qty</i>	<i>Remarks</i>	
Drywells	115		
Subtotal			

*See Figure 8 for approximate locations.

CONCLUSIONS / RECOMMENDATIONS

In order to insure proper drainage of the area within the vicinity of the proposed roadway alignment, it is recommended the proposed drainage structures as designed within and as shown on the enclosed hydrologic plans, be provided as a minimum effort. In the final design stage it is recommended that the drainage study include a preconstruction hydrologic study and a post construction study. If the study indicates any increase in runoff, it is recommended a series of drainage structures be designed to temporarily store or percolate into the ground any increase in rainfall runoff. The detailed design of these structures is not included as part of this study due to the fact that the design of these structures requires detailed topographic information which is not yet available. The structures might include drywells, detention ponds, retention ponds and percolation ponds.

As the design progresses and more data becomes available it will be necessary to revise these calculations and recommendations to incorporate more precise data.

Flood plain management strategies would include sizing culverts at the crossings to allow the passage of the 100 year design storm and to prevent any increase in flood water elevation or limits of inundation. This would also include replicating flood storage volumes in areas where the flood plain is proposed to be filled. This would insure that the existing flood storage volume, within the project limits, would be maintained.

During the construction grading and earthwork, provisions should be made to minimize the potential for soil erosion, and measures taken to minimize the amount of sediment that leaves the construction limits. Soil erosion and sediment control standard management practices, as described in the "Erosion and Sediment Control Guide for Hawaii", prepared by the Soil Conservation Society of America, Hawaii Chapter, dated March 1981, could be implemented. These management measures would include:

1. Timing of construction activities, such as grading or the installation of culverts, during periods of minimum rainfall.

2. Limiting the amount of surface area graded at any given time to reduce the area subject to potential erosion.
3. Constructing temporary drainage ditches to divert runoff away from areas susceptible to soil erosion.
4. Implementing the use of soil erosion protective materials, such as mulch or geotextiles, on areas where soils have a high potential for erosion, until permanent provisions, such as lawns and grasses can be developed. Lawns and grassing should be installed as soon as grading operations permit, to minimize the amount of time soils are exposed to possible erosion.
5. Sediment management could include the use of sedimentation basins to collect sediment which enters runoff waters. Geotextiles such as siltation fencing could be utilized to minimize the amount of sediments which would leave the site to collect in drainage structures and natural drainage paths.

The final design and recommendations should conform to the following design standards where they are determined applicable:

1. "Storm Drainage Standards", Department of Public Works, County of Hawaii, State of Hawaii, dated October 1970.
2. "Erosion and Sediment Control, Guide for Hawaii", U.S.D.A. Soil Conservation Service, in cooperation with the Hawaii Association of Soil and Water Conservation Districts, and the Soil Conservation Society of America, Hawaii Chapter, dated March 1981.
3. "Hawaii Administrative Rules", Department of Health, Chapters 11-55, sec. 34, as revised as of October 1992.
4. "County of Hawaii Ordinances Chapter 27", County of Hawaii, State of Hawaii.

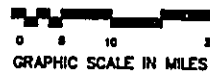
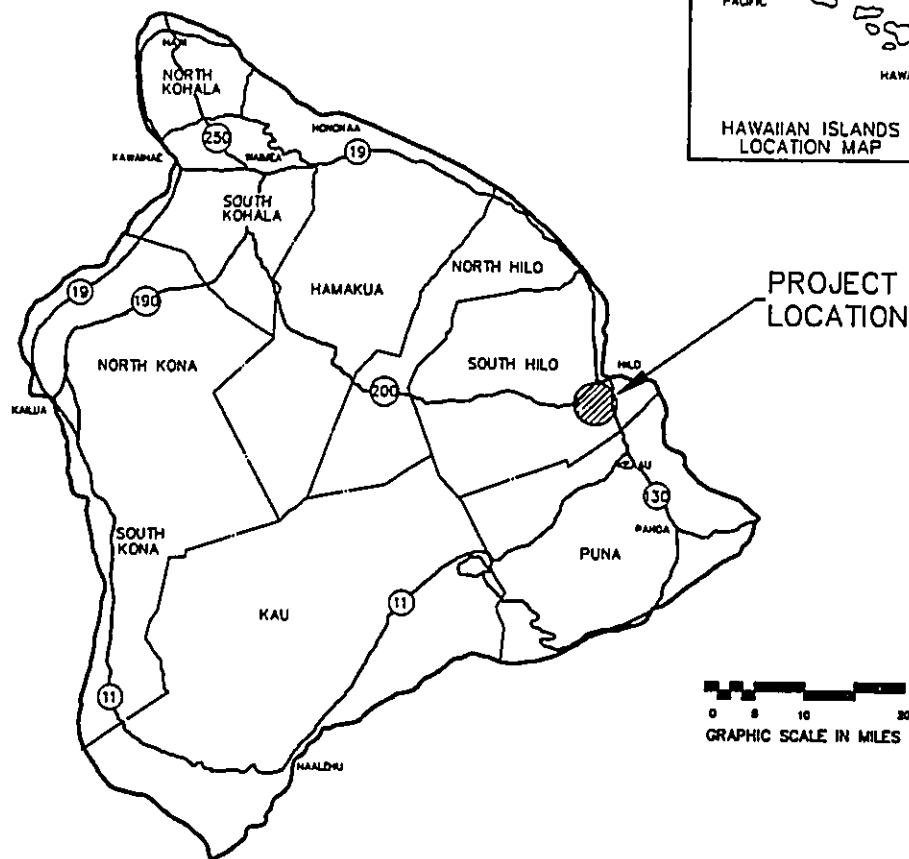
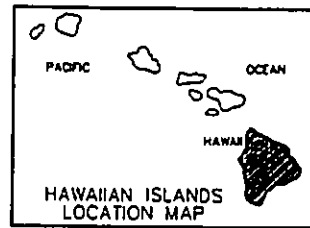
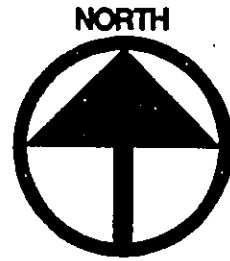
In the upper portion, alternative roadway Alignments 1, 2, and 10 all cross a number of streams and F.I.R.M. Flood Hazard Zones.

Alternative 1 makes a total of six floodway encroachments, with the largest occurring southeast of Kilua Road. This crossing is the point at which many of the streams and floodway converge, therefore, a large culvert system or bridge is expected. The other five encroachments are relatively small by comparison and will be accommodated with the use of culverts and/or drainage ditches. Alternative 2 makes a total of 10 floodway encroachments with the largest occurring east of Edita Street. This crossing is directly downstream of the crossing occurring at Alternative 1 as described above. Flow amounts are expected to be slightly higher at this point, therefore, a large culvert system or bridge will be needed. Of the nine remaining encroachments, five are simple, relatively small scale crossings that will be accommodated with the use of culverts. The four other encroachments are all long longitudinal encroachments that will require an extensive ditch and conveyance replacement design. Alternative 10 makes a total of seven floodway encroachments with the largest occurring east of Edita Street, and is very similar to the crossing described for Alternative 2. The other six encroachments are relatively small and will be accommodated with the use of culverts and/or drainage ditches.

One area of concern for both alignments is the F.E.M.A. floodzone located east of the Pacific Plantation Subdivision. This is the area where the F.E.M.A. floodzones converge and appears to pond. However, during large storm events, this area does overflow and fills up the existing ditch located just south of the Sunrise Estates Subdivision as witnessed by the developers of the subdivision. From this account, a large culvert structure has been designed to pass this flow for both alignments at a point just southeast of the Sunrise Estates Subdivision.

In conclusion, Alignment 2 will make more floodzone crossings and will encroach into a larger floodzone area than either Alignment 1 or Alignment 10. Because of this fact, Alignment 2 will require extra culverts and drainage ditches, and will, therefore, cost more. Also, the conveyance lost by the longitudinal encroachments of Alternate 2 will be difficult to replace and may have a harmful effect to the surrounding areas. Alternative 10 does make one more crossing than Alternative 1, however, this crossing is a relatively minor one. With the scale of the project in mind, this additional culvert will be relatively insignificant in terms of cost and effort. It is, therefore, recommended that either Alignments 1 or 10 be chosen as the preferred alignment.

APPENDIX



TITLE

PROJECT LOCATION MAP

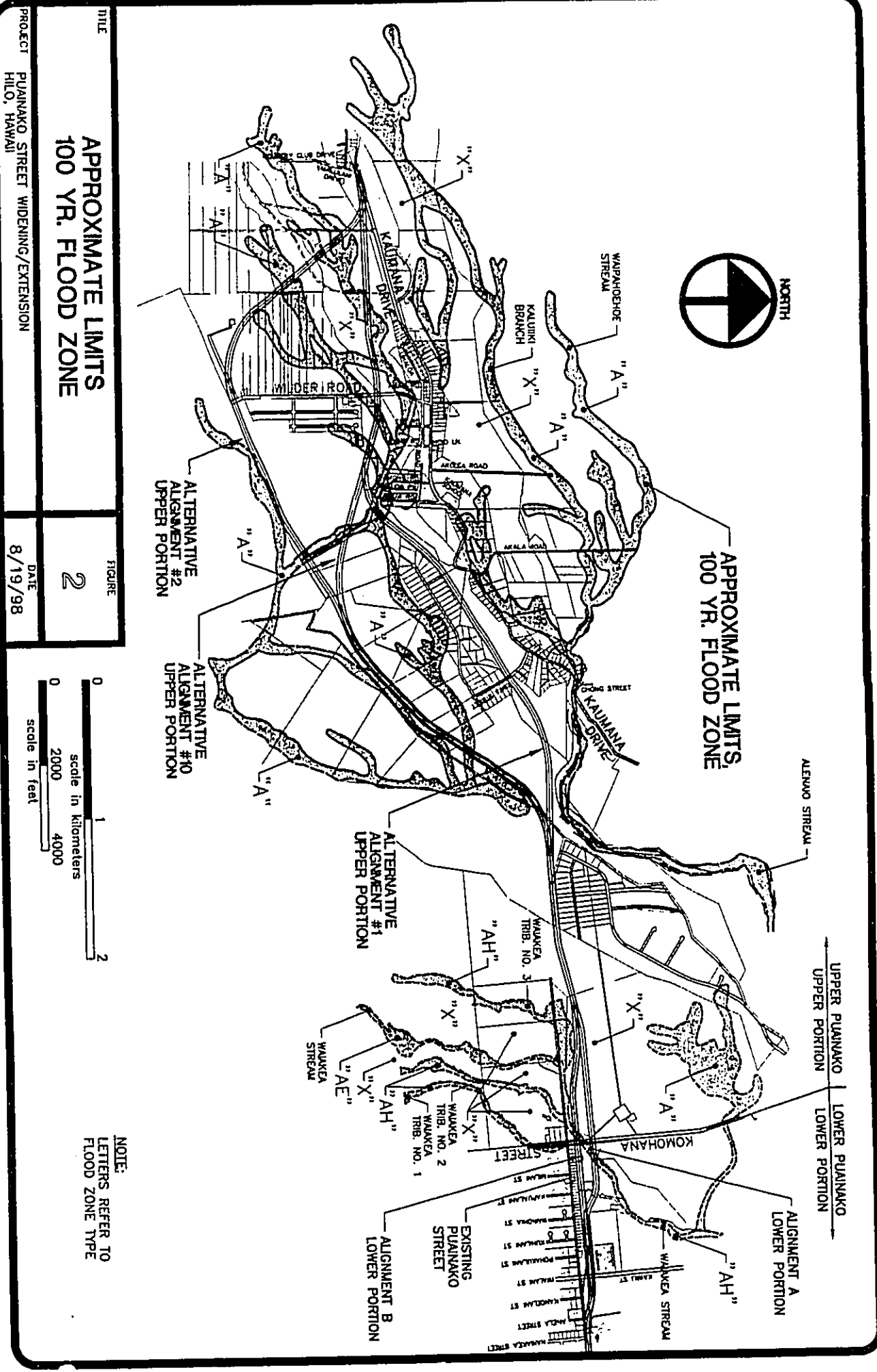
COUNTY OF HAWAII, STATE OF HAWAII

FIGURE

1

PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

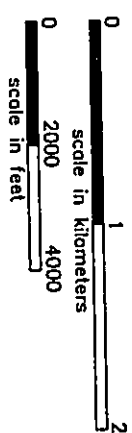
DATE
8/19/98



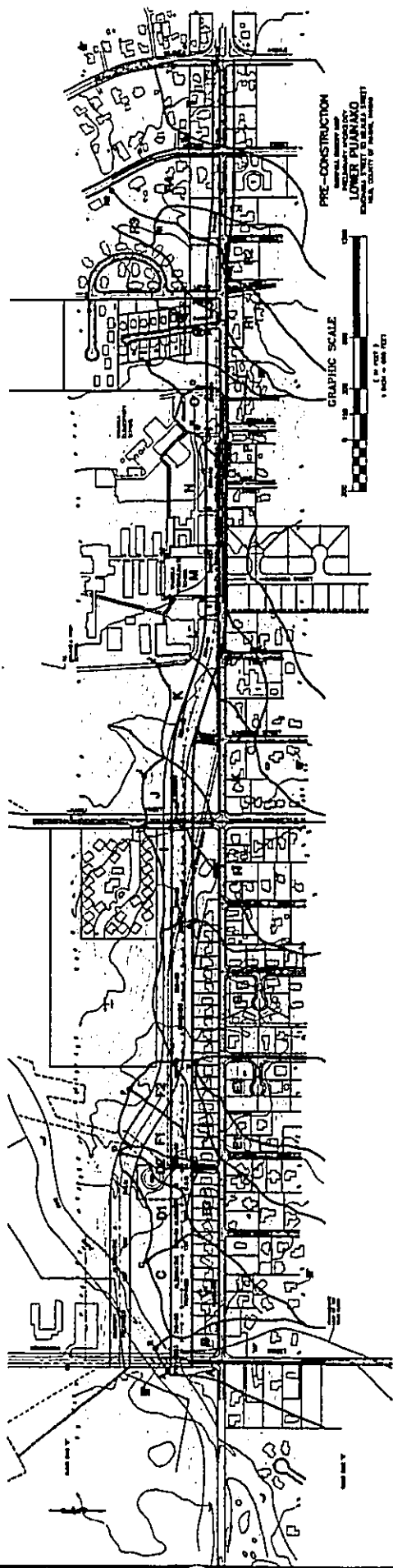
TITLE
APPROXIMATE LIMITS
100 YR. FLOOD ZONE

PROJECT
 PUAINAKO STREET WIDENING/EXTENSION
 HILO, HAWAII

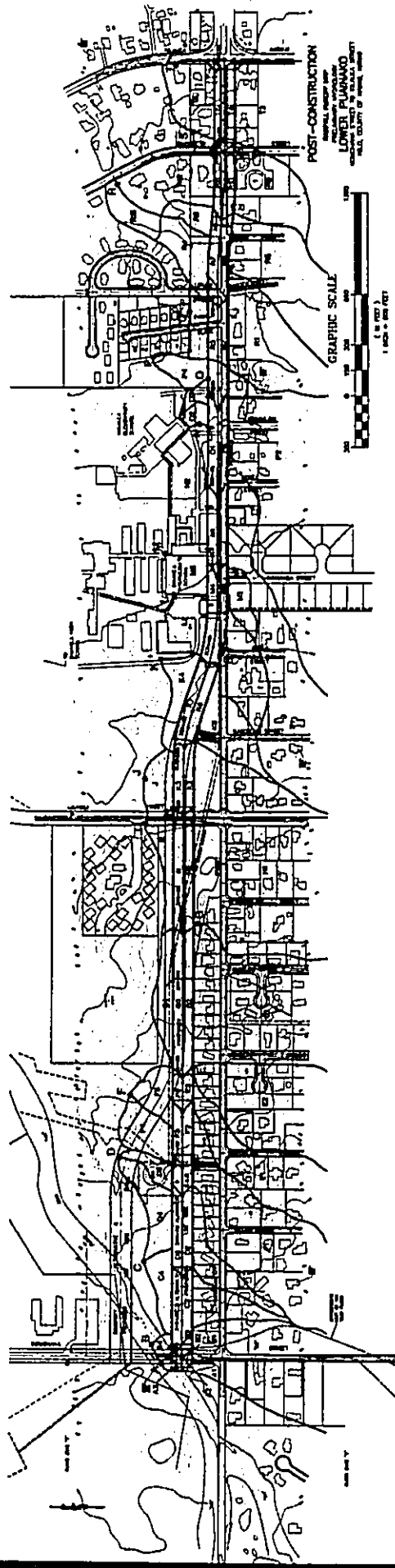
FIGURE
 2
DATE
 8/19/98



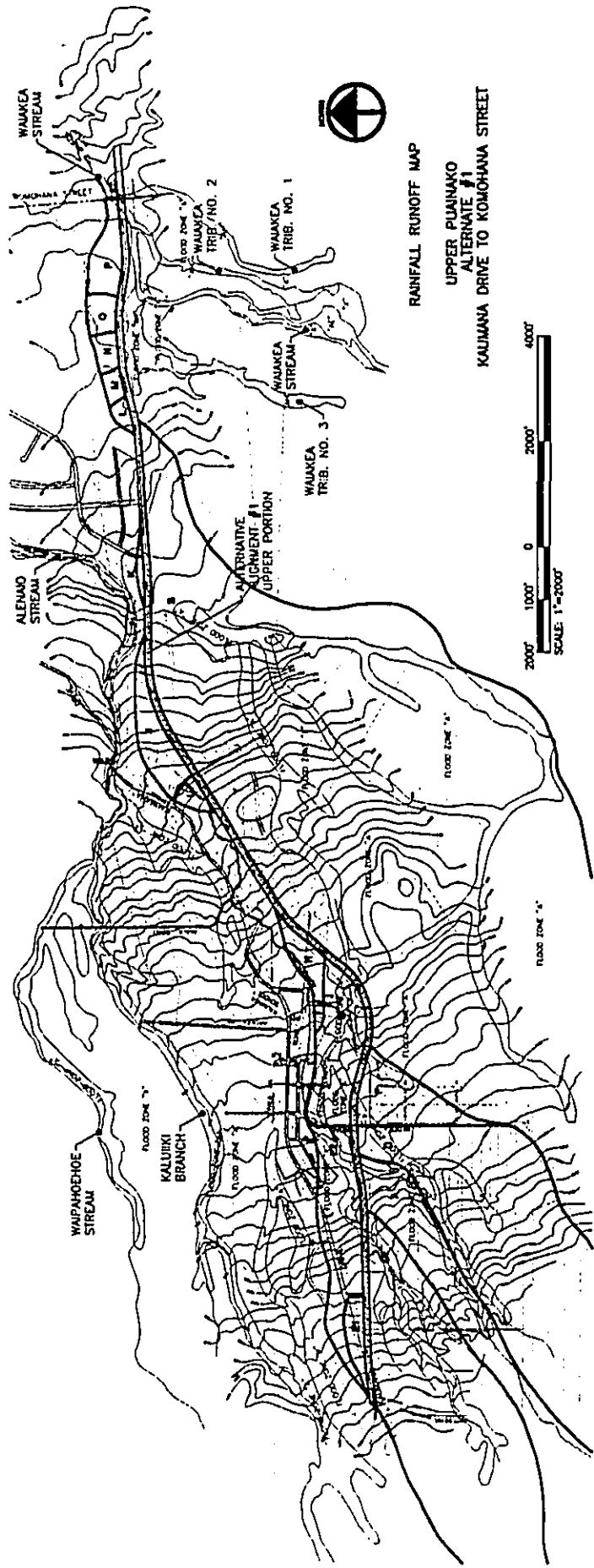
NOTE:
 LETTERS REFER TO
 FLOOD ZONE TYPE



TITLE	<p>LOWER PUAINAKO PRE-CONSTRUCTION RAINFALL-RUNOFF MAP</p>
FIGURE	<p>3</p>
DATE	<p>8/19/98</p>
PROJECT	<p>PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII</p>

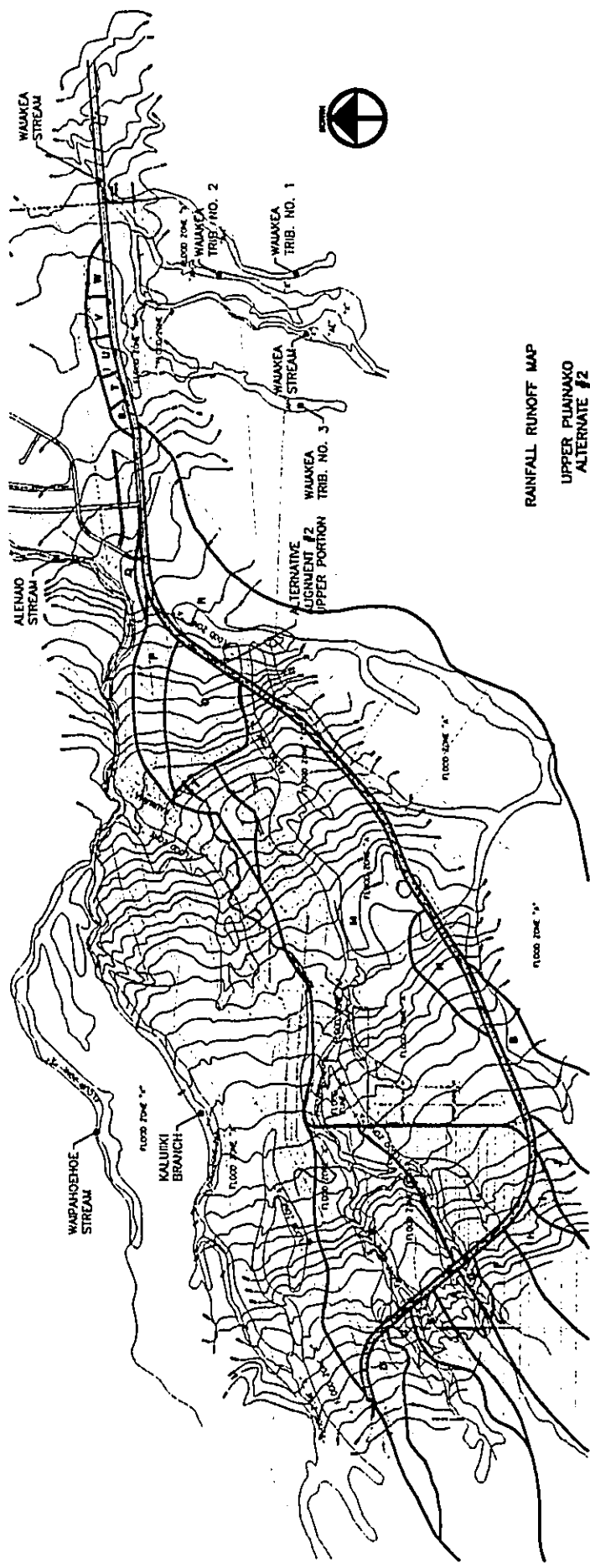


TITLE	LOWER PUAINAKO POST-CONSTRUCTION RAINFALL-RUNOFF MAP
FIGURE	4
PROJECT	PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII
DATE	8/19/98



TITLE	UPPER PUAINAKO ALTERNATE #1 RAINFALL RUNOFF MAP	
FIGURE	5	
PROJECT	PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII	
DATE	8/19/98	

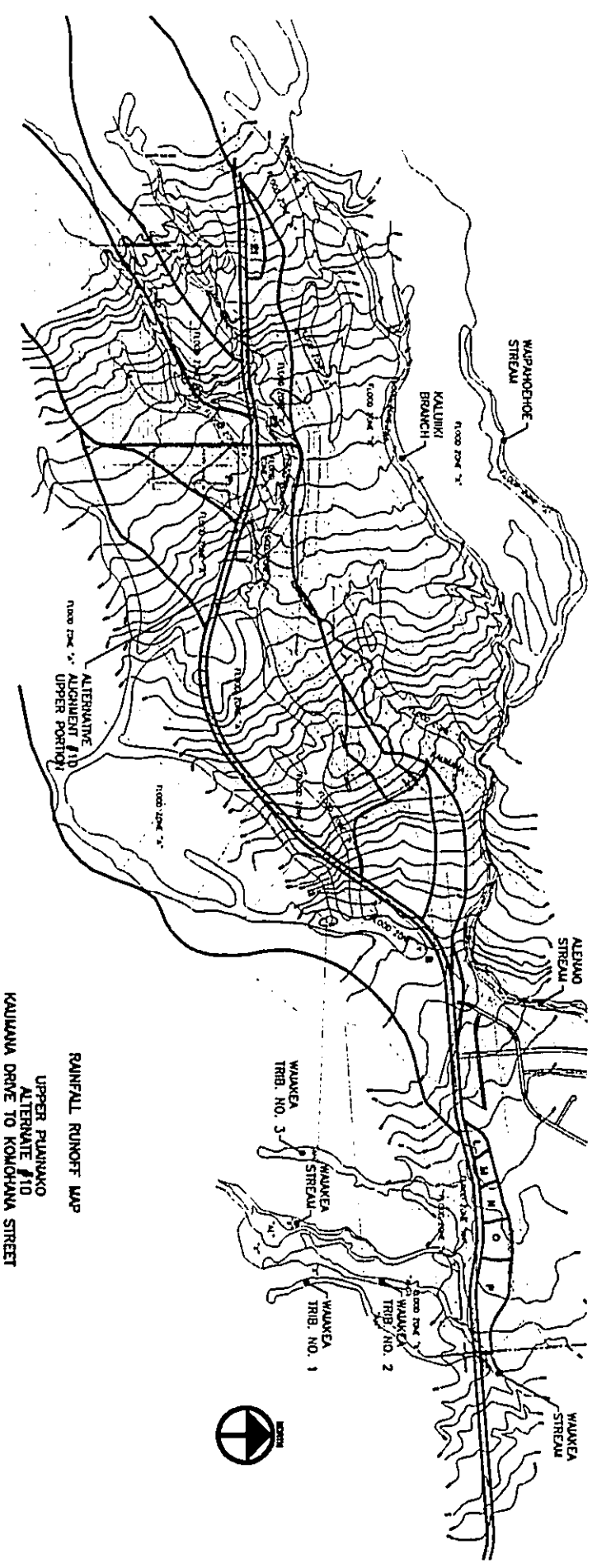
8211/10 / PRELIM-10000-PC-00-10000/00001-1-1



RAINFALL RUNOFF MAP
 UPPER PUAINAKO
 ALTERNATE #2
 KAUMANA DRIVE TO KOMOHANA STREET



TITLE UPPER PUAINAKO ALTERNATE #2 RAINFALL RUNOFF MAP	FIGURE 6
PROJECT PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII	DATE 8/19/98

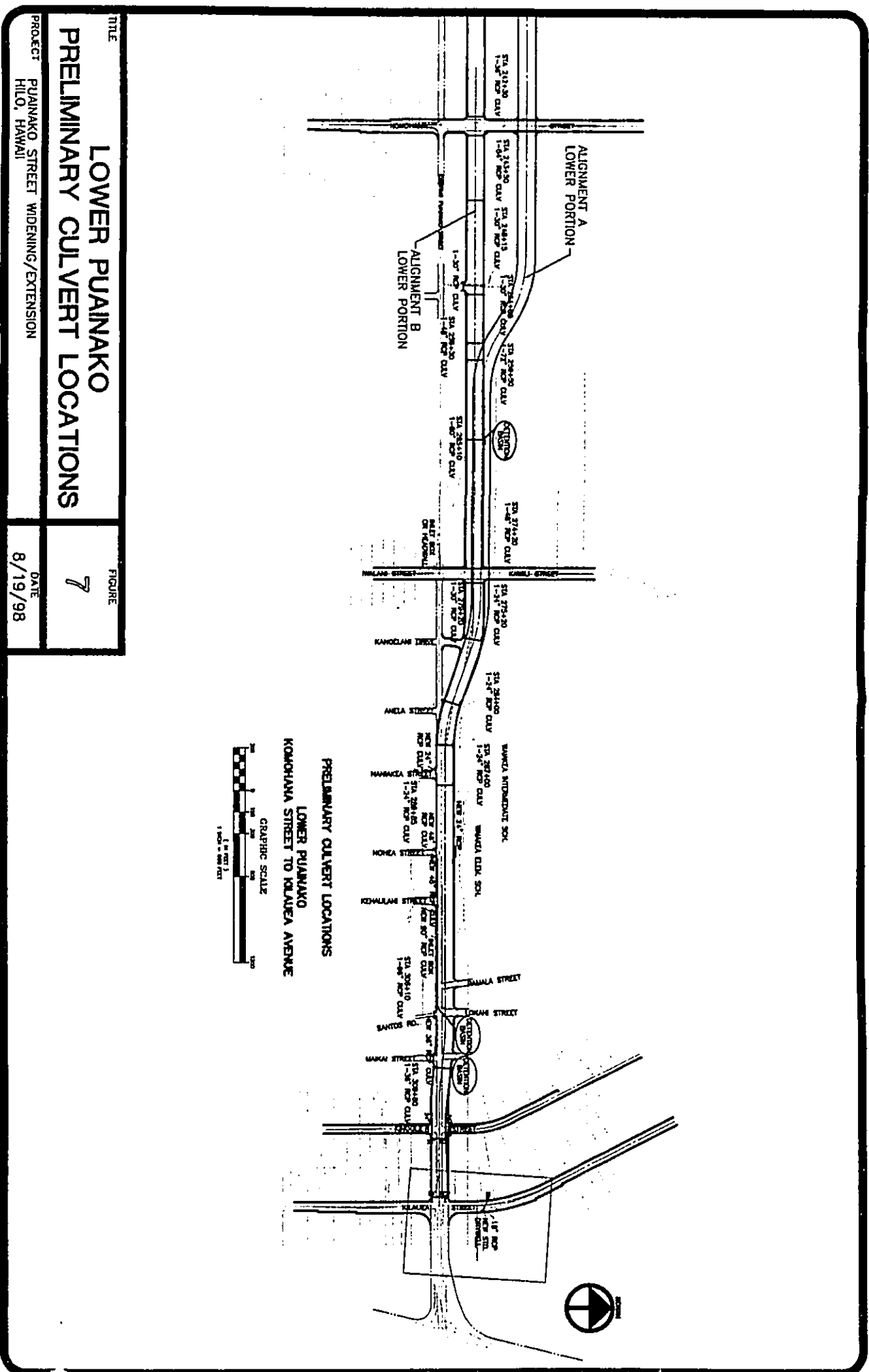


RAINFALL RUNOFF MAP
 UPPER PUANAKO
 ALTERNATE #10
 KAUAIWA DRIVE TO KOKOPIWA STREET

TITLE
 UPPER PUANAKO ALTERNATE #10
 RAINFALL RUNOFF MAP

PROJECT PUANAKO STREET WIDENING/EXTENSION HILO, HAWAII	FIGURE 0a
DATE 8/19/98	





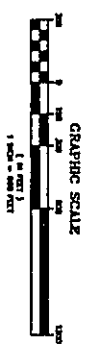
TITLE
**LOWER PUAINAKO
 PRELIMINARY CULVERT LOCATIONS**

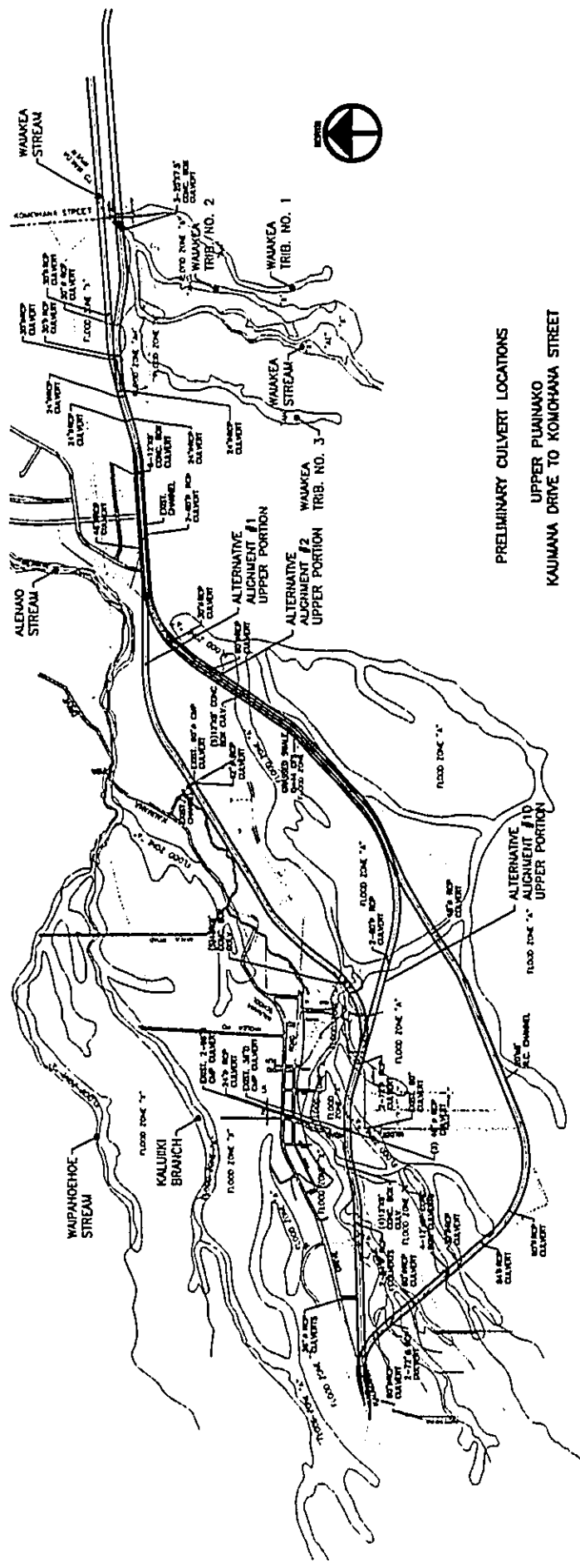
PROJECT
 PUAINAKO STREET WIDENING/EXTENSION
 HILO, HAWAII

FIGURE
7

DATE
 8/19/98

PRELIMINARY CULVERT LOCATIONS
 LOWER PUAINAKO
 KOMOHANA STREET TO KAUUEA AVENUE





PRELIMINARY CULVERT LOCATIONS
 UPPER PUAINAKO
 KAUIMANA DRIVE TO KONDHAWA STREET

TITLE	<p>UPPER PUAINAKO PRELIMINARY CULVERT LOCATIONS</p>	FIGURE	8
PROJECT	<p>PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII</p>	DATE	8/19/98

NO. 1278 / J. NELSON-DREYER/TC-DB/SCALE 1:2

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX I

Revised Preliminary Cost Summary

PROBABLE CONSTRUCTION COST ESTIMATE

PUAINAKO EXTENSION FROM KOMOHANA TO KILAUEA AVENUE Alignment "A"

O/A Job No. 92014

Sheet 1 of 2

Date: 2/10/00

ITEM DESCRIPTION	QUAN- TITY	UNIT	UNIT COST	TOTAL COST
1a. 4" A.C.	99,500	sy	24.00	2,388,000.00
1b. 2" A.C.	14,300	sy	12.00	171,600.00
1c. 6" Base Course	19,000	cy	45.00	855,000.00
1d. 4" Untreated Permeable Base Course	11,100	cy	40.00	444,000.00
2. Concrete curb & gutter	16,200	lf	45.00	729,000.00
3. Concrete Curb (island median)	14,650	lf	30.00	439,500.00
4. 6" Topsoil & grassing	35,000	sy	10.00	350,000.00
5. 10' Wide Concrete Sidewalk, 4" Concrete with 4" Base Course	17,700	sy	45.00	796,500.00
6. Excavation	122,000.00	cy	10.50	1,281,000.00
7. Embankment	25,000.00	cy	5.00	125,000.00
8. Reconstruct a portion of the Existing Waterline and Lateral including Fire Hydrants	1	Budget	350,000.00	350,000.00
9. Waiakea Schools drive/parking	1	ls	400,000.00	400,000.00
10. Relocate Poles where necessary	1	Budget	400,000.00	400,000.00
11a. Retaining Walls (Decorative Walls)	1	Budget	500,000.00	500,000.00
11b. Sound Barrier Walls*	1	Budget	353,000.00	353,000.00
12a. Drainage Structures, Intake Structures & Drywells with Culverts	1	Budget	2,300,000.00	2,300,000.00
12b. Erosion Control (NPDES)	1	Budget	500,000.00	500,000.00
13. Misc. Items: fencing, barricades, etc.	1	Budget	125,000.00	125,000.00

14. Traffic Control	1	Budget	200,000.00	200,000.00
15. Intersection Signal Subtotal	1	Budget	2,550,000.00	2,550,000.00
a. Kilauea Ave. 350,000.00				
b. Kinoole St. 350,000.00				
c. Iwalani / Kawili Intersections 500,000.00				
d. Waiakea Elem. Ingress & Egress .. 1,000,000.00 (Nohea, Naniakea)				
e. Komohana St. 350,000.00				
16. Minor Street Improvements Subtotal	1	Budget	460,000.00	460,000.00
a. Maikai St. 20,000.00				
b. Lokahi St. 70,000.00				
c. Pamala St. 70,000.00				
d. Kehaulani St. 50,000.00				
e. Anela St. 50,000.00				
f. Kanoelani St. 100,000.00				
g. Kapualani St. 100,000.00				
17. Construct Multiple Culverts over Waiakea Flood Channel	1	19,140 sf	2,296,800.00	2,296,800.00
18. Guard Rail	2500	lf	55.00	137,500.00
SUBTOTAL				18,151,900.00
15% CONTINGENCY				2,722,785.00
GRAND TOTAL				20,874,685.00
SAY				\$20,875,000.00

*Actual cost of sound barrier walls is \$583,000, however, some of the walls are not expected to be constructed because it exceeds the \$35,000 per parcel limit.

PROBABLE CONSTRUCTION COST ESTIMATE

PUAINAKO EXTENSION FROM KOMOHANA TO KILAUEA AVENUE Alignment "B"

O/A Job No. 92014

Sheet 1 of 2

Date: 2/10/00

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1a. 4" A.C.	98,500	sy	24.00	2,364,000.00
1b. 2" A.C.	14,300	sy	12.00	171,600.00
1c. 6" Base Course	18,800	cy	45.00	846,000.00
1d. 4" Untreated Permeable Base Course	11,000	cy	40.00	440,000.00
2. Concrete Curb & Gutter	16,000	lf	45.00	720,000.00
3. Concrete Curb (island median)	14,500	lf	30.00	435,000.00
4. 6" Topsoil & Grassing	35,000	sy	10.00	350,000.00
5. 10' Wide Concrete Sidewalk, 4" Concrete w/4" Base Course	17,500	sy	45.00	787,500.00
6. Excavation	122,000	cy	10.50	1,281,000.00
7. Embankment	25,000	cy	5.00	125,000.00
8. Reconstruct a portion of the Existing Waterline and Lateral including Fire Hydrants	1	Budget	350,000.00	350,000.00
9. Waiakea Schools drive/parking	1	ls	400,000.00	400,000.00
10. Relocate Poles where necessary	1	Budget	400,000.00	400,000.00
11a. Retaining Walls (Decorative Walls)	1	Budget	500,000.00	500,000.00
11b. Sound Barrier Walls	1	Budget	710,100.00	710,100.00
12a. Drainage Structures, Intake Structures & Drywells with Culverts	1	Budget	2,300,000.00	2,300,000.00
12b. Erosion Control (NPDES)	1	Budget	500,000.00	500,000.00
13. Misc. Items: Fencing, Barricades, etc.	1	Budget	125,000.00	125,000.00
14. Traffic Control	1	Budget	200,000.00	200,000.00

15. Intersection Signal Subtotal	1	Budget	2,550,000.00	2,550,000.00
a. Kilauea Ave.			350,000.00	
b. Kinoole St.			350,000.00	
c. Iwalani / Kawili Intersections			500,000.00	
d. Waiakea Elem. Ingress & Egress .. (Nohea, Naniakea)			1,000,000.00	
e. Komohana Street ..			350,000.00	
16. Minor Street Improvements Subtotal	1	Budget	460,000.00	460,000.00
a. Maikai St.			20,000.00	
b. Lokahi St.			70,000.00	
c. Pamala St.			70,800.00	
d. Kehaulani St.			50,000.00	
e. Anela St.			50,000.00	
f. Kanoelani St.			100,000.00	
g. Kapualani St.			100,000.00	
17. Construct multiple culverts over Waiakea Flood Channel	0	0	0.00	0.00
18. Guard Rail	2500	lf	55.00	137,500.00
SUBTOTAL				16,152,700.00
15% CONTINGENCY				2,422,905.00
GRAND TOTAL				18,575,605.00
SAY				\$18,576,000.00

*Actual cost of sound barrier walls is \$940,000, however, some of the walls are not expected to be constructed because it exceeds the \$35,000 per parcel limit.

COST COMPARISON SUMMARY

LOWER PUAINAKO:

1. Alignment "A" : \$18,151,900
2. Alignment "B" : \$16,152,700*

UPPER PUAINAKO:

- A. Connect to Lower Puainako Alignment "A"
 1. Alternative 1 : \$17,680,650*
 2. Alternative 2 : \$21,766,500*
 3. Alternative 10: \$18,009,350*
- B. Connect to Lower Puainako Alignment "B"
 1. Alternative 1 : \$19,977,450
 2. Alternative 2 : \$24,063,300
 3. Alternative 10: \$20,306,150

LOWER PUAINAKO + UPPER PUAINAKO:

1. Alignment "A" + Alternative 1: $\$18,151,900 + \$17,680,650 = \$35,832,550$
2. Alignment "A" + Alternative 2: $\$18,151,900 + \$21,766,500 = \$39,918,400$
3. Alignment "A" + Alternative 10: $\$18,151,900 + \$18,009,350 = \$36,161,250$
4. Alignment "B" + Alternative 1: $\$16,152,700 + \$19,977,450 = \$36,130,150$
5. Alignment "B" + Alternative 2: $\$16,152,700 + \$24,063,300 = \$40,216,000$
6. Alignment "B" + Alternative 10: $\$16,152,700 + \$20,306,150 = \$36,458,850$

*Cost of culverts over Waiakea Stream is deleted.
(Note: All costs on this page does not include 15% contingency)

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX K2

Acoustic Study Supplement

PUAINAKO STREET EXTENSION AND WIDENING ACOUSTIC STUDY SUPPLEMENT

After publication of the Draft EIS, the board and various members of the Kinoole Baptist Church raised objections in comment letters to the finding that because noise mitigation walls capable of reducing sound levels by at least 5.0 L_{eq} were judged infeasible, no noise mitigation measures would be offered to the Church (see Appendix A3 for comment letters). Additionally, they expressed concern that the combination of loss of parking, decrease in circulation efficiency and noise impacts would combine to render the church unusable. In response to these concerns, the project sponsor agencies attempted to reduce impacts to the greatest extent practicable and explore alternative mitigation. The first effort led to a reduction in the right-of-way between Kinoole Street and Kilauea Avenue of about 2 m (6 ft.), which combined with a redesign of the sidewalk shifted the traffic lane nearest the church about 3 m (10 ft.) away from the church. An acoustic engineer recalculated the noise levels at these structures under the revised design (see letter of January 28, 2000 from Y. Ebisu to R. Terry, attached). The study determined that the redesign would reduce the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building (Receptors A-39 and A-38, respectively, on Fig. 4-1b of the EIS). However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored.

The Federal Highway Administration (FHWA) and the Hawaii Department of Transportation, Highways Division (HDOT) have instituted policies that require that reasonable and feasible mitigation measures must be considered when a highway project is expected to produce noise impacts. A noise mitigation measure is considered feasible and reasonable if it accomplishes a substantial noise reduction (at least 5 L_{eq}) while meeting constraints of cost, safety, drainage, access, maintenance, viewplane preservation, etc. According to the most recent jointly approved policy (October 1997), the cost of mitigation should not exceed \$35,000 per affected residence.

In response to concerns that this cost ceiling does not properly consider the benefits of mitigation at noise impacted non-profit institutional structures, the FHWA and HDOT are in the process of revising the policy. In the interim, these agencies have adopted a model developed by the Florida Department of Transportation that redefines "reasonable" costs in terms of the amount, nature and timing of use a structure receives, in recognition that public use structures may involve far greater number people/hours than residences.¹

This model has been applied to Kinoole Baptist Church. Data on church use were collected through a series of discussions with church personnel (see attached spreadsheet). The mechanics of the calculation are presented in the attached paper. To explain the findings in words, the model approaches the cost of noise mitigation from the standpoint of the *abatement cost factor*. The process to derive this figure begins by applying the anticipated HDOT accepted cost of abatement per benefited residence of

¹ Wayson, R.L., and MacDonald J.M. 1997. *A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations*. Prep. For Florida State Department of Transportation Environmental Management Office. FL-ER-65-97.

\$35,000 per residence. Then, the derivation quantifies a typical residential usage and considers a hypothetical barrier section that would occupy the frontage of a typical residence. These are then combined with the HDOT barrier cost per residence to provide a basis for the abatement cost factor, based on person hours of usage and barrier area. The resulting abatement cost factor gives a comparative measure of cost associated with the proposed abatement. When this is applied to typical barriers in the project area, the figure is \$436,046/person-hour/square foot. This figure can then be compared to other special use sites, such as Kinoole Baptist Church. Working backwards from the barrier that would be required to achieve sound abatement of 5 dBA or more at the Church, the equivalent figure is \$290,500/person-hour/square foot. This can be interpreted as meaning that the cost to provide noise mitigation per person/hour at the Church is lower than the typical cost for residences. Therefore, although the cost of providing noise mitigation barriers may appear high, they may be considered reasonable.

In the case of Kinoole Baptist Church, the noise mitigation barriers necessary to achieve sound reduction are actually infeasible because of access restrictions. Therefore, other sound reduction measures such as soundproofing and air conditioning may be considered. The figure of \$290,500, which is based on wall barriers, may still be considered an appropriate benchmark for examining the reasonableness of alternative sound reduction measures.

The FHWA and HDOT have determined, based on this analysis, that noise reduction measures costing more than \$35,000 (up to a ceiling of \$290,500), such as soundproofing and air-conditioning, may be considered reasonable. Although the actual cost of soundproofing and air-conditioning has not been calculated, these measures are estimated to cost far less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and feasible, and the State intends to construct them, or consider damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected. A final decision on the installation of these mitigation measures will be made upon completion of project design and the public involvement process. If during final design conditions substantially change, these mitigation measures may not be provided.

Summary of Issues Raised at Public Hearing and in Written Comments

A public hearing, attended by more than 100 persons, was held at the University of Hawaii at Hilo on January 19, 1999 (transcript of hearings at end of this appendix). The following summarizes the principal issues raised in comments received at the hearing and also in the written comments that were received during the comment period. The issues are presented in order of the frequency with which the issue was raised, with the most commonly cited issues first.

Noise (and Related Traffic Problems) at Pacific Plantations Subdivision. Although the issue was not raised in the public hearing, a number of written comments were received on this topic. Most stated support for the Project but opposition to the selection of Alignment 1, and preference for Alignment 2. The primary objection was noise, as the Draft EIS stated that although many homes would be impacted by a noise increase of 15 dBA or more, feasible and reasonable mitigation was not possible. The lead agencies attempted to resolve this (and other problems) by designing a hybrid alignment of 1 and 2 (named Alignment 10) that would retain the best features of both and minimize adverse impacts. This route, which eliminated noise impacts to Pacific Plantations Subdivision and caused no additional noise impacts, has been advanced as the Recommended Alternative in the Final EIS.

Noise, Loss of Right-of-Way and Access Restrictions at Kinoole Baptist Church. Testifiers at the public hearing and a number of comment letters objected to the project's impacts on the church. One of the major objections was the finding that because noise mitigation walls that could reduce sound levels by at least 5.0 L_{eq} were judged to cost greater than \$35,000 (and were in any case infeasible because of access considerations), no noise mitigation measures would be offered to the church. Additionally, they expressed concern that the combination of loss of parking, decrease in access and internal circulation efficiency, and noise impacts would combine to render the church unusable. In response to these concerns, the project sponsor agencies attempted to reduce impacts to the greatest extent practicable and explore alternative mitigation. The first effort led to a reduction in the right-of-way between Kinoole Street and Kilauea Avenue of about 2 m (6 ft.), which combined with a redesign of the sidewalk shifted the traffic lane nearest the church about 3 m (10 ft.) away from the church. This redesign reduced the level of noise to 66.4 L_{eq} at the main chapel and to 66.5 L_{eq} at the side building. However, because this level approaches or exceeds the 67 L_{eq} criterion, a noise impact still occurs. Therefore, alternative mitigation was explored, using a model that has been adopted by FHWA and HDOT for determining whether the cost level at which mitigation for noise impacts is considered reasonable for non-profit institutional structures. This model has been applied to Kinoole Baptist Church, with results that noise reduction measures costing more than \$35,000 (up to a ceiling of \$290,500), such as sound-proofing and air-conditioning, may be considered reasonable. Although the actual cost of sound-proofing and air-conditioning has not been calculated, these measures are estimated to cost far less than the specified ceiling. Therefore, based on cost, sound reduction and other factors, noise mitigation measures for the Kinoole Baptist Church would appear to be reasonable and

feasible, and the State intends to construct them, or consider damages to the church as part of the right-of-way acquisition procedure, if a Build Alternative is selected.

Impact to Caves. In written comments, two members of speleological organizations raised concerns about impacts to caves in general and, in particular, to Kaumana Cave (the main opening of which is a County Park) and a newly discovered cave in the Sunrise Estates subdivision. The commenters stated that insufficient consideration was given to the value of lava tube caves in the EIS, that the mapping of Kaumana Cave was inaccurate, and that other caves would be adversely impacted by the Project and were not receiving adequate consideration. The lead agencies and consultants met with the Hawaii Speleological Survey to gain more information on these concerns. They then consulted with the U.S. Geological Survey and the U.S. Fish and Wildlife Service to gain their recommendations about assessing the value of caves, impacts to them, and mitigation, if necessary. The result of the coordination has been to determine that lava tube caves have been adequately considered (with the addition of the discussion of the cave in Sunrise Estates to the Final EIS), that Kaumana Cave was accurately mapped, and that, in most cases, impacts to caves would be very minor, because they are widespread in the pahoehoe flows of the island of Hawaii are rarely uniquely valuable. Mitigation measures related to caves presented in the Draft EIS have been refined. These state that if a lava tube cave is encountered, all construction with the potential to impact the lava tube will immediately cease, and appropriate personnel in the Hawaii County Department of Public Works will be contacted. These personnel will contact State Historic Preservation Division, the USGS and the USFWS to determine whether historic sites or burials are present, and whether the lava tube has special geological or biological value that merits investigation and data collection. Organizations with an interest in lava tube caves will also be consulted.

Coordination with Public Schools and the University of Hawaii. Several agencies requested additional coordination with these schools in order to ensure that the final roadway design satisfies the schools' requirements for access and parking and causes minimum inconvenience during construction. The project representatives met with the affected schools and agencies and have scheduled further coordination during final design in order to meet these goals.

Access to Nearby Properties. Several commenters had questions concerning whether the Project could provide better access to their properties, which were near, but did not border any alignment of the project. They were informed via letter that, in general, only properties that actually border the alignment or would have their access to the property interfered with by the Project in some way would be potentially provided access directly on the highway. Such properties may be allowed by the Hawaii State Department of Transportation to access the road directly, subject to review and possible conditions

Insufficient Information Concerning Wetlands. The U.S. Environmental Protection Agency expressed concerns in written comments that the wetlands in the project area were discounted in the Draft EIS because they are not unique, harbor invasive alien species, and are often the result of human interference with topography and/or drainage systems. Furthermore, they requested additional information on the hydrologic functions

and values of the wetlands, and a discussion of cumulative impacts of wetlands loss. These concerns have been fully addressed through expansion of consideration of wetlands in the Final EIS, including a program of compensatory mitigation

Impacts to State of Hawaii Land Parcels. The Hawaii State Department of Land and Natural Resources (DLNR) expressed concerns regarding impacts to State properties that might be deprived of useful function or experience restricted access. Project representatives met with DLNR to discuss the properties on a case-by-case basis.

Address Cultural Impacts of Project The Office of Hawaiian Affairs requested that cultural impacts be addressed. This agency, and other Native Hawaiian Organizations that it has identified in subsequent meetings, have been reconsulted as part of expanded Section 106 consultation.

**Noise Abatement Cost Factor Calculation
Puainako Street Widening and Extension EIS**

Kinoole Baptist Church:

Data:

HDOT-accepted barrier cost per residence	\$35,000
Assume residences are used 24 hrs. per day	No - 16 hrs./day/resident
Determine average frontage of residence*	100 ft.
Determine average height of barrier*	6.0 ft.
Hypothetical area of barrier per resident frontage	600 sq. ft.
State average number of people per dwelling unit	3.01**

Calculation:

Abatement cost factor =

$$\frac{\$35,000}{\text{residence}} * \frac{\text{residence}}{3.01 \text{ persons}} * \frac{\text{usage}}{16 \text{ hours}} * (6.0 \text{ ft} * 100 \text{ ft.}) = \$436,046/\text{person-hr/ft}^2$$

- * Based on proposed barriers for Puainako Street; approximate
 ** 1990 Census

- | | |
|---|-----------------------------------|
| 1. Length of proposed barrier at KBC | 350 ft. |
| 2. Height of proposed barrier | 6.0 ft. |
| 3. Product of Item 1 times Item 2 | 2,100 sq. ft. |
| 4. Average amount of time a person stays at site per visit | *** |
| 5. Average number of people that use site per day who will receive at least 5 dB(A) benefit from abatement at the site. | *** |
| 6. Product of Item 4 times Item 5 | 253*** |
| 7. Quotient of item 3 divided by Item 6 | 8.30 ft ² /person hour |
| 8. Product of \$35,000 by Item 7 | \$290,500 |
| 9. Does Item 8 exceed the abatement cost factor of \$436,046/person-hr/ft ² ? | No |
| 10. If Item 9 is no, abatement is reasonable | |
| 12. If Item 9 is yes, abatement is not reasonable | |

*** this product in Item 6 that requires these data was calculated through more detailed means on the attached spreadsheet

Kinoole Baptist Church Use Patterns
May 14, 1999 Version

Hours	Number of persons on site							Sunday Weekly Person
	Mond	Tuesd	Wedn	Thurs	Frid	Satur	Sunday	
Staff	8	3	3	3	3	3	120	
Volunteer	4	2	2	2	2	2	40	
Students	2	2	2	2	2	2	20	
Aftersc. Staff	4.5	2	2	2	2	2	45	
Aftersc. Students	2.5	20	20	20	20	20	250	
Monday Spec. Group	3	6					18	
Tuesday Spec. Group	2.5		6				15	
Wed. Prayer Serv.	3			30			90	
Thursday Practice	3				8		24	
Friday Women	3					10	54	
Friday Once Month	3					2.5	7.5	
Worship 8:00	3						45	
Worship 9:00	3						70	
Worship PM	2						30	
Sunday workers	8						8	
Youth (monthly)	2.5						64	
Saturday once month	4						6.5	
Summer Childcare	8	7	7	7	7	7.5	30	
Summer Child Staff	8	5	5	5	5	5	280	
Summer Child Vol	8	0.6	0.6	0.6	0.6	0.6	200	
Summer Youth	4	3.5	3.5	3.5	3.5	3.5	24	
							70	

1772.75 Total Weekly Person Hours
253.25 Average Daily Person Hours

*For purposes of spreadsheet calculation, the hours in the day column have been reduced from their actual value by a factor to account for less than weekly occurrence of event:
 Afterschool Staff and Students to 2/3 of actual value
 Friday Special 1/4 of actual value
 Youth to 1/4 of actual value
 Summer Childcare Kids, Staff, Volunteers and Youth to 1/5 their actual value
 Tuesday Group to 1/4 of actual value

This information was collected by Ron Terry in March 1999 for Okahara and Associates and verified by Craig Yamamoto of Kinoole Baptist Church in May 1999.

Y. Ebisu & Associates

Acoustical and Electronic Engineers

1126 12th Avenue
Room 305
Honolulu, Hawaii 96816
(808) 735-1634

YEA Job #33.009
January 28, 2000

Geo Metrician
HCR 1 Box 9575
Keaau, HI 96749

Attention: Mr. Ron Terry:

Subject: Reevaluation of Puainako Street Segment Between Kilauea and Kinoole;
Puainako Widening and Extension Project FEIS; Hilo, Hawaii

Dear Ron:

I reevaluated the effect of the westbound lane striping changes that are shown in the intersection plans provided to me via 1/27/00 transmittal from Colin Hashiro of Okahara & Associates, Inc. The primary change involved a narrowing of the median by 6 feet which shifted the westbound lanes 6 feet toward the south and further from the two impacted church buildings and the residential building (see Figure 9N of my Acoustical Study Report (Supplement #1) dated March 1997. Noise mitigation measures were originally recommended for all three buildings since projected 2020 traffic noise levels had exceeded the HDOT 66 Leq noise abatement criteria under the old striping plan.

Following my reevaluation and calculations of 2020 traffic noise levels with the new striping plans, I concluded that traffic noise levels at all three buildings will still exceed the HDOT 66 Leq noise abatement criteria. At the main chapel building (Sta 313 in Table 10A of my March 1997 report), traffic noise level contributions from Puainako Street were predicted to decline to 66.0 Leq as a result of the new striping plan, but total noise level will remain above 66 Leq (at 66.4 Leq) due to the traffic noise contributions from Kinoole Street. Traffic noise levels at the other two buildings are also predicted to remain above 66 Leq (at 66.6 Leq) with the new striping plan.

Based on the above results, traffic noise mitigation measures are still recommended for all three buildings identified in my March 1997 report. Let me know if you have any questions regarding these results.

Sincerely,



Yoichi Ebisu, P.E.

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX M

Tax Map Keys for Properties Affected by Right-of-way Take

PUAINAKO STREET EXTENSION (LOWER PORTION)
FROM KILAUEA STREET TO KOMOHANA STREET
PROPERTY OWNERS PARTIAL LISTING
DATE: DEC. 1999

2-2-39-031	JON GOMES
2-2-39-057	JON GOMES
2-2-40-012	TSURUKO KAMIYAMA
2-2-40-026	H.A.K. ASSOCIATES
2-2-40-025	HATSUE OKUDA
2-2-40-056	ALLAN K. OKUDA
2-2-40-042	R.C.J.C.L.D.S. (CHURCH)
2-4-09-095	WALTER U. C. LOW
2-4-09-018	JAMES N. NAKAHARA
2-2-39-058	CLARENCE M. INOUE
2-2-39-011	KINOOLE BAPTIST CHURCH
2-2-39-001	HATADA BAKERY INC.
2-4-52-021	STATE OF HAWAII
2-4-52-016	STATE OF HAWAII
2-4-52-001	STATE OF HAWAII
2-4-09-017	HERMAN P. MANALILI
2-4-09-016	DOUGLAS W. AGASA
2-4-09-040	ELLEN KUMUJI
2-4-09-033	STATE OF HAWAII
2-4-09-041	CONCHITA SANTOS
2-4-09-091	TSURUE AKAMINE
2-4-09-053	HERBERT ARAKAKI
2-4-09-051	RICHARD H. ONISHI
2-4-09-050	LAURA Y. CHOCK
2-4-09-083	JOHN C. & NANCY H. TAIRA
2-4-01-015	STATE OF HAWAII
2-4-01-005	STATE OF HAWAII
2-4-01-163	STATE OF HAWAII
2-4-01-162	ADULT STUDENT HOUSING, INC.
2-4-01-167	STATE OF HAWAII
2-4-01-007	STATE OF HAWAII
2-4-09-113	DOROTHY P. KEY
2-4-09-070	FUKUCHI FAMILY TRUST
2-4-09-069	JAMES M. & KATHLEEN L. OKIMOTO
2-4-09-068	KIYOSHI YONEMORI
2-4-09-067	GEORGE T. YAMADA TRUST
2-4-09-079	WENDELL P. & MARY GACUSANA
2-4-14-001	MYRON K. & KIM M. ROSEHILL
2-4-14-134	THOMAS T. & FUMIE Y. KURITANI
2-4-14-061	TETSUO & MILDRED S. IGAWA
2-4-14-112	HILO DAIJINGU
2-4-14-042	DAVID M. BLACKMER

2-4-14-041	JANE R. LEE
2-4-14-086	AGATON B. BARROGA
2-4-14-087	JACK I. MIYASHIRO
2-4-14-088	TOKIKO N. IDE
2-4-14-089	SHIZUO & ALPHA W. KANEKO
2-4-14-016	ELIZABETH K. MEDEIROS
2-4-14-015	DEAN ...
2-4-14-063	HENRY K. APAO
2-4-14-058	DARRYL H. ARRUDA
2-4-14-013	STEPHEN R. & LUCILLE J. MEEK
2-4-01-010	STATE OF HAWAII
2-4-22-016	SEIGO NAGAO
2-4-13-203	HARRY H. NISHIMURA TRUST
2-4-13-204	HARRY H. NISHIMURA TRUST
2-4-01-122 (12)	STATE OF HAWAII
2-4-13-097	TED W. HASHIMOTO
2-4-13-087	JANET H. FUJIOKA TRUST
2-4-13-029	JANET H. FUJIOKA TRUST
2-4-13-030	TAKIKO KIMURA
2-4-01-156	ARNOLD T. KOYA
2-4-01-043	COUNTY OF HAWAII
2-4-01-155	JOSE P. & GIRLIE A. PARAS
2-4-01-154	STANLEY KALEILEHUA-OPANA KAINA
2-4-01-153	ERLINDA V. DALERE
2-4-01-152	STEVEN J. & LYDIA SANTIAGO
2-4-01-151	CARL P. & MILAGROSA Q. CONOL
2-4-01-150	LORETO S. BALANGATAN
2-4-01-149	WADE I. & GWEN E. KITAMURA
2-4-01-148	MASAMI & TSURUKO DAIMARU
2-4-01-147	QUIRINO JR. & AUDRIE ANTONIO
2-4-01-146	MICHAEL M.H. TENGAN
2-4-01-145	JITSUO & HAMAKO NISHIDA
2-4-01-144	ADAM & CHARLENE CARVALHO
2-4-01-143	STATE OF HAWAII
2-4-01-157	STATE OF HAWAII
2-4-01-142	MARVIN L. SR. & DONNA MAE ENOS
2-4-01-141	MELVIN F. & FELYN M. URBANOZO
2-4-01-140	GARFIELD H. ARAKAKI
2-4-01-139	BLAYNE S. HANAGAMI
2-4-01-138	REED MITSUO YOSHIWA
2-4-01-137	EDWIN S. & SUSAN C. TAIRA
2-4-01-136	CLYDE & SHARON D. SARAGOSA
2-4-01-135	WAYNE K.WAGATSUMA
2-4-01-134	ROBERT J. & JARNELL K.L. OSBORN
2-4-01-133	THELMA S. CLARK
2-4-01-132	BENJAMIN & ANTONINA HIMALAYA
2-4-01-131	ALLAN T. OKAMURA
2-4-01-130	WESLEY I. & SHARON H. OGATA

2-4-01-129	NELSON S. FURUHARA
2-4-01-128	MILTON K. & JANIS F.M. KALUA
2-4-01-127	AURORA B. CARLOS
2-4-01-126	WILLIAM R. SR. & LUPE HALM
2-4-01-125	SHIGEYOSHI & ASAKO SHINDO
2-4-01-124	IVAN T. & JOYCE NAKAGAWA
2-4-01-123	EVELYN Y. TOGASHI
2-4-01-041	STATE OF HAWAII
2-4-13-031	HAROLD T. HATANAKA
2-4-13-032	ALICE H. KIM
2-4-13-085	SAITO TRUST
2-4-13-084	ROBERT C. & JOANN MARTIN
2-4-13-048	KENICHI & RUTH MOMOKO YOTSUJI
2-4-13-045	DAN K. MATSUMOTO
2-4-13-096	ALLEN & JOYCE AHN
2-4-13-151	K.L. CHOCK TRUST
2-4-13-152	ABRAHAM A. & BESSIE M. KUBO
2-4-13-153	ALFREDO & LUZ C. ALIPIO
2-4-13-108	JAMES KAWAKAHI KALAUOKA
2-4-13-198	JOSE M. AUGUSTIN
2-4-13-199	TOMONO FAMILY
2-4-13-200	PAUL C. CANTOR
2-4-13-155	DONNA NATSUE KIM

KOMOHANA INTERSECTION

2-4-22-016	SEIGO NAGAO
2-4-22-185	TETSUO HAMADA
2-4-22-015	TETSUO HAMADA
2-4-22-014	STEVEN & TRACY S. ANICAS
2-4-22-178	SEELYN P.K. KAWEWEHI
2-4-22-013	EARL M. & CAROL O. NAKASHIMA
2-4-22-011	JAMES T. MATSUMURA
2-4-22-012	MISSIONARY CHURCH - HI DIST.
2-4-22-010	KENNETH TOGUCHI
2-4-22-036	GEORGE E. & EVA H. SHORT
2-4-01-156	ARNOLD T. KOYA
2-4-13-203	HARRY H. NISHIMURA TRUST
2-4-13-202	HARRY H. NISHIMURA TRUST
2-4-13-016	TAKASHI AND DOROTHY C. MATSUI
2-4-13-015	CHARLES I. AND AMY TAHARA
2-4-13-051	RAY M. YONEMITSU
2-4-13-103	JAMES A. NAGATA
2-4-13-201	ALVIN L. DEMELLO TRUST
2-4-13-098	MICHAEL E. CHUN
2-4-13-012	VARIOUS OWNER

KILAUEA INTERSECTION/MAKAI TOWARDS HILO

2-2-39-033	RICHARD M. YAMAUCHI
2-2-39-055	TAKAYOSHI & TSUGINO KOUCHI
2-2-39-058	CLARENCE M. INOUE
2-2-39-032	RICHARD H. & ELIZABETH M. SAKAI
2-2-39-056	TOSHIO EBESUGAWA TRUST
2-2-39-083	EMIKO FUJIE
2-2-39-087	FRANK P. ROHNER
2-2-39-036	CARL E. & HELIE ROHNER
2-2-39-111	RANDOLPH A. ROHNER TRUST
	DONALD & MAKI DECLEENE

KILAUEA TOWARDS PUNA

2-2-40-108	BERNADETTE L. CORTEZ-CAMERO
2-2-40-109	CLESSON Y. CHIKASUYE
2-2-40-011	CLESSON Y. CHIKASUYE
2-2-40-010	HERBERT & SHELLEY YASUHARA
2-2-40-080	RUSSELL K. YOSHIDA
2-2-40-009	K. TANIGUCHI LTD.
2-2-40-007	K. TANIGUCHI LTD.

KINOOLE/MAUKA TOWARDS PUNA

2-2-40-042	R.C.J.C.L.D.S. (CHURCH)
2-2-40-074	HARUE KOHARA
2-2-40-041	HARUE KOHARA
2-2-40-040	SHIZUE N. LUCERO
2-2-40-039	RAYMOND KOW TRUST

KINOOLE/MAUKA TOWARDS HILO

2-2-39-002	JAMES D. & MARY D.R. SUTHERLAND
2-2-39-100	WADE I. & GWEN E. KITAMURA
2-2-39-099	EUNICE M. KUNS TRUST
2-2-39-003	SALVATION ARMY
2-2-39-004	SALVATION ARMY
2-2-39-005	COUNTY OF HAWAII
2-2-39-006	PUNANA LEO O HILO
2-2-39-045	MARTHA E. ARRUDA

PUAINAKO STREET EXTENSION (UPPER PORTION - ALTERNATIVE #1)
DATE: DEC. 1999

2-5-03-020	STATE OF HAWAII
2-5-03-021	STATE OF HAWAII
2-5-44-001	RICHARD M. TOWILL TRUST
2-5-45-001	RICHARD M. TOWILL TRUST
2-5-45-014	ERNEST M. MATTOS
2-5-46-007	M-10 INC.
2-5-46-001	M-10 INC.
2-5-46-009	DAVID H. MURAKAMI
2-5-61-079	BRILHANTE-HAWAII, INC.
2-5-61-055	SAMUEL M. & MIDORI SUZUKI
2-5-61-080	BRILHANTE-HAWAII, INC.
2-5-61-020	ELAINE L.H. LUDLOFF
2-5-61-019	ALLEN L. NOVAK
2-5-61-001	WENDY WAGNER
2-5-61-033	RANDELL RILEY
2-5-06-141	STATE OF HAWAII
2-5-06-002	BRILHANTE-HAWAII, INC.
2-5-06-149	BRILHANTE-HAWAII, INC.
2-4-08-014	MALAMA PACIFIC CORPS.
2-4-75-044	JERRY T. & SANDRA S. WATANABE
2-4-75-043	GILBERT & OKYO CHANG
2-4-75-042	CALEN R. & RHONDA M. MATSUNO
2-4-75-041	MASAO & JEAN M. NEKOBA
2-4-75-040	GLENN H. & PAULINE N. HORIUCHI
2-4-75-039	IVAN S. MOCHIDA
2-4-75-038	WARREN H.W. LEE
2-4-75-037	ALPHONSIS H. LOH
2-4-75-036	WILLIAM DE ROOY
2-4-75-035	WAYNE & WENDY Y. GOYA
2-4-75-034	SUZANNE S. HARA
2-4-75-033	RICHARD HENDERSON
2-4-01-012	STATE OF HAWAII
2-4-01-122	STATE OF HAWAII
2-4-01-010	STATE OF HAWAII

RECEIVED AS FOLLOWS

PUAINAKO STREET EXTENSION (UPPER PORTION - ALTERNATIVE #2)
DATE: DEC. 1999

2-5-03-021	STATE OF HAWAII
2-5-03-020	STATE OF HAWAII
2-5-44-001	RICHARD M. TOWILL TRUST
2-5-44-002	MAUNA KEA SUGAR CO., INC.
2-5-45-010	MAUKAI HAWAII INC.
2-5-45-008	CECILIA ARAUJO
2-5-45-007	CECILIA ARAUJO
2-5-45-006	MAUKAI HAWAII INC.
2-5-46-012	M-10 INC.
2-5-46-001	M-10 INC.
2-5-61-079	BRILHANTE-HAWAII, INC.
2-5-61-078	BRILHANTE-HAWAII, INC.
2-5-61-076	BRILHANTE-HAWAII, INC.
2-5-61-075	BRILHANTE-HAWAII, INC.
2-5-61-074	BRILHANTE-HAWAII, INC.
2-5-61-034	BRILHANTE-HAWAII, INC.
2-5-61-035	BRILHANTE-HAWAII, INC.
2-5-61-036	BRILHANTE-HAWAII, INC.
2-5-61-037	BRILHANTE-HAWAII, INC.
2-5-06-002	BRILHANTE-HAWAII, INC.
2-5-06-149	BRILHANTE-HAWAII, INC.
2-4-08-014	MALAMA PACIFIC CORPS.
2-4-75-044	JERRY T. & SANDRA S. WATANABE
2-4-75-043	GILBERT & OKYO CHANG
2-4-75-042	CALEN R. & RHONDA M. MATSUNO
2-4-75-041	MASAO & JEAN M. NEKOBA
2-4-75-040	GLENN H. & PAULINE N. HORIUCHI
2-4-75-039	IVAN S. MOCHIDA
2-4-75-038	WARREN H.W. LEE
2-4-75-037	ALPHONSUS H. LOH
2-4-75-036	WILLIAM DE ROOY
2-4-75-035	WAYNE & WENDY Y. GOYA
2-4-75-034	SUZANNE S. HARA
2-4-75-033	RICHARD HENDERSON
2-4-01-012	STATE OF HAWAII
2-4-01-122	STATE OF HAWAII
2-4-01-010	STATE OF HAWAII

PUAINAKO STREET EXTENSION (UPPER PORTION - ALTERNATIVE #10)
DATE: DEC. 1999

2-5-03-020	STATE OF HAWAII
2-5-03-021	STATE OF HAWAII
2-5-44-001	RICHARD M. TOWILL TRUST
2-5-45-001	RICHARD M. TOWILL TRUST
2-5-45-014	ERNEST M. MATTOS
2-5-46-007	M-10 INC.
2-5-46-001	M-10 INC.
2-5-46-009	DAVID H. MURAKAMI
2-5-61-079	BRILHANTE-HAWAII, INC.
2-5-61-078	BRILHANTE-HAWAII, INC.
2-5-61-076	BRILHANTE-HAWAII, INC.
2-5-61-075	BRILHANTE-HAWAII, INC.
2-5-61-074	BRILHANTE-HAWAII, INC.
2-5-61-034	BRILHANTE-HAWAII, INC.
2-5-61-035	BRILHANTE-HAWAII, INC.
2-5-61-036	BRILHANTE-HAWAII, INC.
2-5-61-037	BRILHANTE-HAWAII, INC.
2-5-06-002	BRILHANTE-HAWAII, INC.
2-5-06-149	BRILHANTE-HAWAII, INC.
2-4-08-014	MALAMA PACIFIC CORPS.
2-4-75-044	JERRY T. & SANDRA S. WATANABE
2-4-75-043	GILBERT & OKYO CHANG
2-4-75-042	CALEN R. & RHONDA M. MATSUNO
2-4-75-041	MASAO & JEAN M. NEKOBA
2-4-75-040	GLENN H. & PAULINE N. HORIUCHI
2-4-75-039	IVAN S. MOCHIDA
2-4-75-038	WARREN H.W. LEE
2-4-75-037	ALPHONSUS H. LOH
2-4-75-036	WILLIAM DE ROOY
2-4-75-035	WAYNE & WENDY Y. GOYA
2-4-75-034	SUZANNE S. HARA
2-4-75-033	RICHARD HENDERSON
2-4-01-012	STATE OF HAWAII
2-4-01-122	STATE OF HAWAII
2-4-01-010	STATE OF HAWAII

**PUAINAKO STREET EXTENSION AND WIDENING
SOUTH HILO, HAWAII**

FINAL

**ENVIRONMENTAL IMPACT STATEMENT
AND SECTION 4(f) EVALUATION**

APPENDIX N

**Interim Project Description,
Memorandum of Understanding, Offsite Wetlands Mitigation**

Ola'a-Kilauea Partnership Wetland Restoration Project

Proposed By:

National Park Service – Hawai'i Volcanoes National Park
Hawai'i Department of Public Safety - Kulani Correctional Facility
Hawai'i Division of Forestry and Wildlife -Natural Area Reserve Program
U.S. Geological Survey's Biological Resources Division
U.S. Fish and Wildlife Service
U.S.D.A Forest Service

in partnership with the

Federal Highway Administration, Hawaii Division
Hawaii State Department of Transportation, Highways Division
Hawaii County Public Works Department

Project Summary:

As part of mitigation for impacts to wetlands associated with the Puainako Extension and Widening project, which is being undertaken by the highway agencies listed above, the Olaa-Kilauea Partnership will protect and restore wetlands in the Mauna Loa Boy's School area of Kulani Correctional Facility (see attached map figure). The purpose is to enhance the long-term survival of native plant and animal communities and recover rare and endangered species. \$110,000 in funds is needed for a three-year project.

The goals of the proposed project include:

- *Fencing and Feral Animal Control:* Construct a fenced management unit to protect wetlands from ungulates (pigs, mouflon sheep and goats), inspect and maintain fences and remove ungulates from the fenced unit.
- *Propagation and Outplanting:* Propagate native plants for outplanting in protected wetlands to restore wetland species composition and function. Monitor the survival and reproduction of outplanted plants to provide guidance for future management.
- *Alien Plant Control:* Determine effective alien plant control methods and control invasive non-native plants in the wetlands.
- *Monitoring and Mitigation Success Evaluation:* The success of the mitigation will be judged by the OKP partners jointly with the U.S. Army Corps of Engineers through monitoring of the wetlands species composition and ecosystem health before mitigation is applied and at specified intervals afterwards.

Background: The Olaa-Kilauea Partnership is a cooperative land management effort for 32,000 acres on the Big Island. The overall goals of the partnership include enhancing the long-term survival of native plant and animal communities, maintaining a healthy

forest ecosystem, and protecting and managing a large contiguous area across ownership boundaries.

The Olaa-Kilauea Partnership area includes Kulani Correctional Facility. The upper elevation parts of Kulani, particularly the area around the Mauna Loa Boy's School, contains low stature 'ohi'a forest interspersed with a matrix of native trees, shrubs and grassland areas containing "pocket bogs". Depressions in the lava flow surface collect water and have formed perennial pocket bogs dominated by native grasses and sedges. The upper Kulani area proposed for wetland protection and management contains approximately 22 ha of pocket bog, and is contained in TMKs 2-4-008: 001 & 009.

The greatest threat to these bog systems is from ungulates. These animals spread alien plants and trample and dig in the bogs facilitating the invasion of the alien plants. Portions of the upper Kulani bogs have already been protected from feral ungulates by fencing and animal control. The Partnership fenced and removed all animals from the 360 ha Mauna Loa Boy's School Unit in 1995, and fences are checked and maintained on a monthly basis. The Partnership is currently planning to build additional fences in this area to protect a greater proportion of this unique matrix of forest and bog ecosystems. One fence, the North Boundary Unit, will be along the eastern boundary of Kulani Correctional Facility below the Mauna Loa Boy's School Unit.

Although pigs have been removed from the Mauna Loa Boy's School Unit and recovery is underway, extended periods of pig digging have damaged the pocket bogs by fostering alien plant invasion and damaging the structure and physical conditions of the bogs. A few bog-associated native plants have been eliminated or totally eliminated from most of the pocket bogs. The bogs that are currently unprotected by fencing have an even greater degree of damage. Management efforts following fencing and animal removal can accelerate recovery by replacing some of the depleted species and removing certain alien plants. Restoration activities can also assist in the recovery of two endangered bog species and several other rare bog plants.

Proposed Project:

Fencing and Feral Animal Control (\$30,000). Introduced ungulates (pigs, mouflon sheep, and goats) are the main threat to wetlands in the Boy's School area. Although pigs damaged the bogs the most in the past, an expanding population of mouflon sheep has reached the Kulani boundary on two sides. The Mauna Loa Boy's School enclosure already protects a large number of pocket bogs from ungulates. The planned North Boundary Unit fence will protect additional wetlands, and provide good sites for wetland restoration. All environmental compliance documents have been completed for the North Boundary Unit fencing project and a Finding of No Significant Impact has been issued.

This project would fund a portion of the materials and supplies for the North Boundary Unit Fence as well as a portion of fence inspection and maintenance costs for both fenced units (Mauna Loa Boy's School Unit and the new unit). It is important to inspect fences on a monthly basis and perform necessary repairs to prevent ungulate ingress. All labor

to construct the fence and road will be provided by volunteers. This funding will also help support a portion of National Park Service staff pig control efforts within the new fenced unit following fence completion.

Propagation and Outplanting (\$60,000). This project will fund a propagation and outplanting program for the fenced, protected pocket bogs at Kulani Correctional Facility as well as follow-up monitoring of plant survival and reproduction. Outplanting can occur right away in portions of the Mauna Loa Boy's School Unit, and the North Boundary Unit will be ready for outplanting following fencing and animal removal. The Volcano Rare Plant Facility (University of Hawaii Center for Conservation Research and Training) will be in charge of all propagation work, and funding requested in this proposal will support a 1/2 time Propagation Assistant and all necessary materials and supplies. The horticulture program at Kulani Correctional Facility may also assist in propagation of certain species, particularly the non-endangered, matrix species.

One of the most visible species to restore into the Kulani pocket bogs is the endangered Mauna Loa silversword (*Argyroxiphium kauense*).² This species formerly extended intermittently around windward Mauna Loa in patches of upper elevation (about 5000-7500 feet) habitat. The Mauna Loa silversword is now on the verge of extinction, and is known from only three sites with fewer than 1,000 individuals in the wild. Overall recovery efforts for the species are being designed and implemented by the non-profit Hawaiian Silversword Foundation in partnership with state and federal agencies.

The goal of silversword reintroduction is to develop self-sustaining populations of silverswords, one of the largest of which is located within the pocket bogs and open forest of Kulani Correctional Facility. Five hundred silversword seedlings were planted in the Mauna Loa Boy' School Unit in 1999, and the Partnership is hopeful this effort can be continued. The Propagation Assistant will grow approximately 500 plants/year from selected seed at the Volcano Rare Plant Facility. The Propagation Assistant will raise seedlings from multiple maternal lines to ensure adequate genetic representation and keep accurate records of silversword germination and seedling survival.

In addition to outplanting and monitoring the Mauna Loa silversword, the project will also include the restoration of other rare and endangered species as well as non-endangered species that form the matrix of this community. Partnership staff will collect seeds or cuttings of various native bog species in the field, and the Propagation Assistant

² According to the U.S. Fish and Wildlife Service, there are only three remaining wild populations of Mauna Loa Silversword, and one of those populations (Upper Waiakea) is clearly limited to wetlands (upland bogs). This population is not yet recognized as taxonomically distinct from the other populations, but plants from this population exhibit key morphological traits that are adaptations to specialized wetland habitats. There are also data showing this population is genetically different from the two other populations of Mauna Loa Silverswords that persist in drier habitats. Seedling establishment for this population also appears to be locally adapted to wetland conditions. All reintroduction work for the Upper Waiakea population is restricted to wetland habitats. The upland bogs at Kulani are the only protected outplanting site for the expansion of this population and are essential for its recovery. The island of Hawaii is a young island, and the Mauna Loa Silversword is likely in the process of speciating into wetland and dry habitat types. Similar speciation of closely related silverswords into dry and wet habitats has already occurred on Maui, a slightly older island. This variety of the Mauna Loa silversword is a wetland plant.

will grow the propagation material to supply stock for planting. The restoration effort will include transplanting of seedlings as well as direct seeding back into selected bogs, particularly those with barren exposed soil from pig damage or weed clearing.

All outplanting work will be accomplished using existing personnel from the Olaa-Kilauea Partnership. All necessary permits for handling endangered species will be maintained. The Partnership will take special precautions to ensure no pests are transported to the outplanting site. All seedlings for outplanting will be sprayed ahead of time for insect and fungal pests, and plants will also be checked visually for weeds.

USGS-BRD is currently monitoring the survival and growth of the outplanted population of 500 silverswords in the Mauna Loa Boy's School, and this effort will be expanded to additional plantings of silverswords and other species. The goal of this monitoring is directly tied to management efforts and the monitoring will recommend any necessary modifications of planting methods for future outplanting. The Partnership will also establish photopoints to document recovery and changes in the bogs over time.

The following species are designated for outplanting and restoration:

Endangered Species

Argyroxiphium kauense

Plantago hawaiiensis

Rare Species

Viola maviensis

Common Species (locally depleted)

Carex echinata

Carex montis-eeka

Carex thunbergii

Deschampsia nubigena

Dicanthelium hillebrandianum

Oreobolus furcatus

Rhynchospora chinensis

Alien Plant Control (\$20,000). The proposed weed control project is part of an integrated management program that also includes fencing management units, eradicating ungulates from within fenced units and plant propagation and outplanting. Ungulate control is a critical first step in successful weed control because the removal of ungulates slows the establishment and spread of most weeds and allows the recovery of native vegetation. Although most of the project area is dominated by native plants, alien species can continue to spread and seriously alter the composition and structure of the native ecosystems, even after ungulates are removed. A well-coordinated weed control program at the same time pigs are being removed will reduce the establishment and spread of weeds. Short-term monitoring should show that this project significantly decreases the presence of weeds within the bogs.

The program will include distribution mapping, development of a control strategy, control using selective herbicide, weed burning and/or manual methods. Follow-up monitoring will be used to evaluate and refine the effectiveness of control efforts.

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Control methods will include hand-pulling, digging, cutting, spot burning and direct application of low concentration herbicide. Staff and researchers will experiment with control techniques to determine the most efficient treatment that will cause the least disturbance to desirable native plants in the bogs.

Staff will use structured treatment cycles and produce and maintain a computerized database for control efforts. Field staff will record population size, reproductive phenology, date and type of control treatment for each infestation and will monitor all control sites annually. Accurate mapping will enable staff to revisit sites to evaluate the effectiveness of control treatment and the need for follow-up control efforts. Staff will use Global Positioning System (GPS) to increase the accuracy of mapping and input mapping information into an existing Geographical Information System (GIS) database developed for the partnership area. Ongoing research and monitoring will assess the success of management and provide direction for future actions.

Priority Alien Plants (Bog Ecosystems)

Andropogon virginicus

Anthoxanthum odoratum

Axonopus fissifolius

Juncus effusus

Juncus planifolius

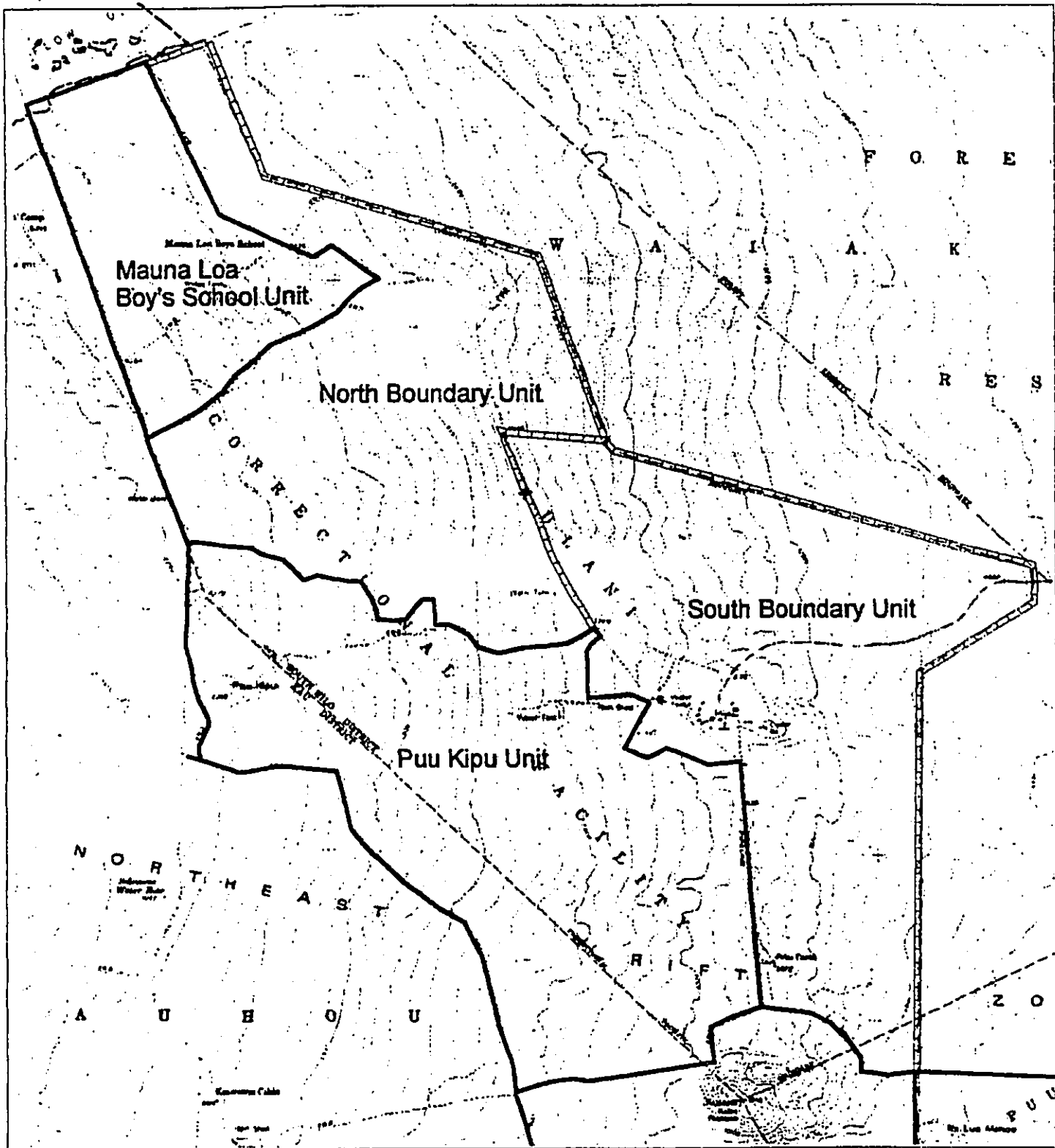
Schizachyrium condensatum

Monitoring and Mitigation Success Evaluation. (Budget is integrated with above efforts). Monitoring and research are critical to the success of all aspects of the project. It is important to monitor the pace of recovery following fencing and outplanting efforts, determine the efficacy of alien plant control and watch for unforeseen complications to recovery. The success of the mitigation will be judged by the OKP partners jointly with the U.S. Army Corps of Engineers through monitoring of the wetlands species composition and ecosystem health before mitigation is applied and at specified intervals afterwards.

Budget (3 year Project):

Fencing and Ungulate Control (\$30,000)	
Fence Materials (1.35 mile)	20,000
Fence Maintenance (Personnel and equipment)	5,000
Pig Control	5,000
Propagation and Outplanting (\$60,000)	
Plant Propagation Assistant	45,000
Materials and Supplies (greenhouse)	7,500
Monitoring Personnel	5,000
Outplanting Supplies	2,500
Alien Plant Control (\$20,000)	
Alien Plant Control Personnel (\$5,000/year)	15,000
Equipment and Supplies	5,000
TOTAL	\$110,000

Kulani Correctional Facility - Existing and Proposed Fenced Units



Proposed Fence and Road
Existing Fences
Property Boundaries

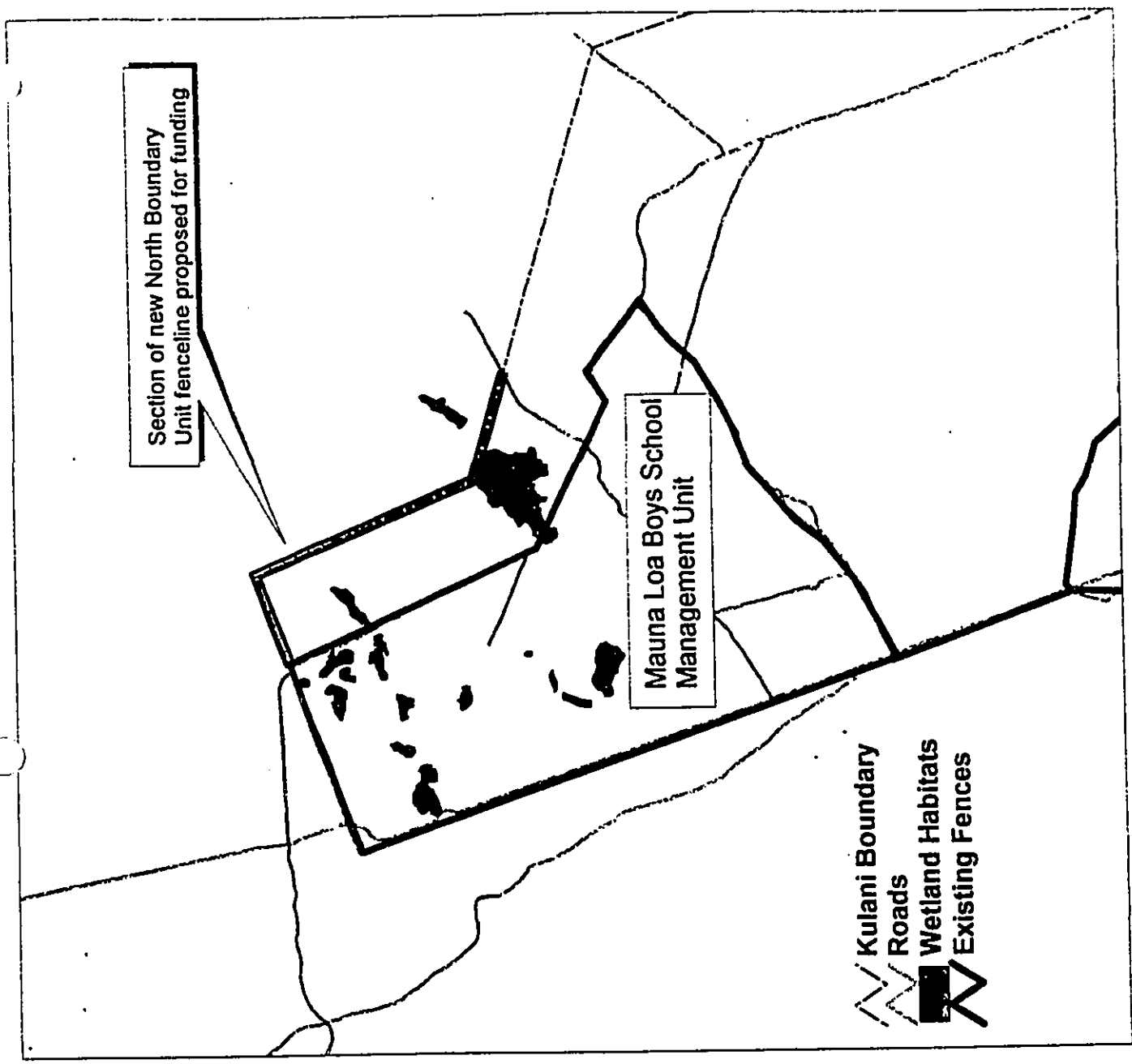


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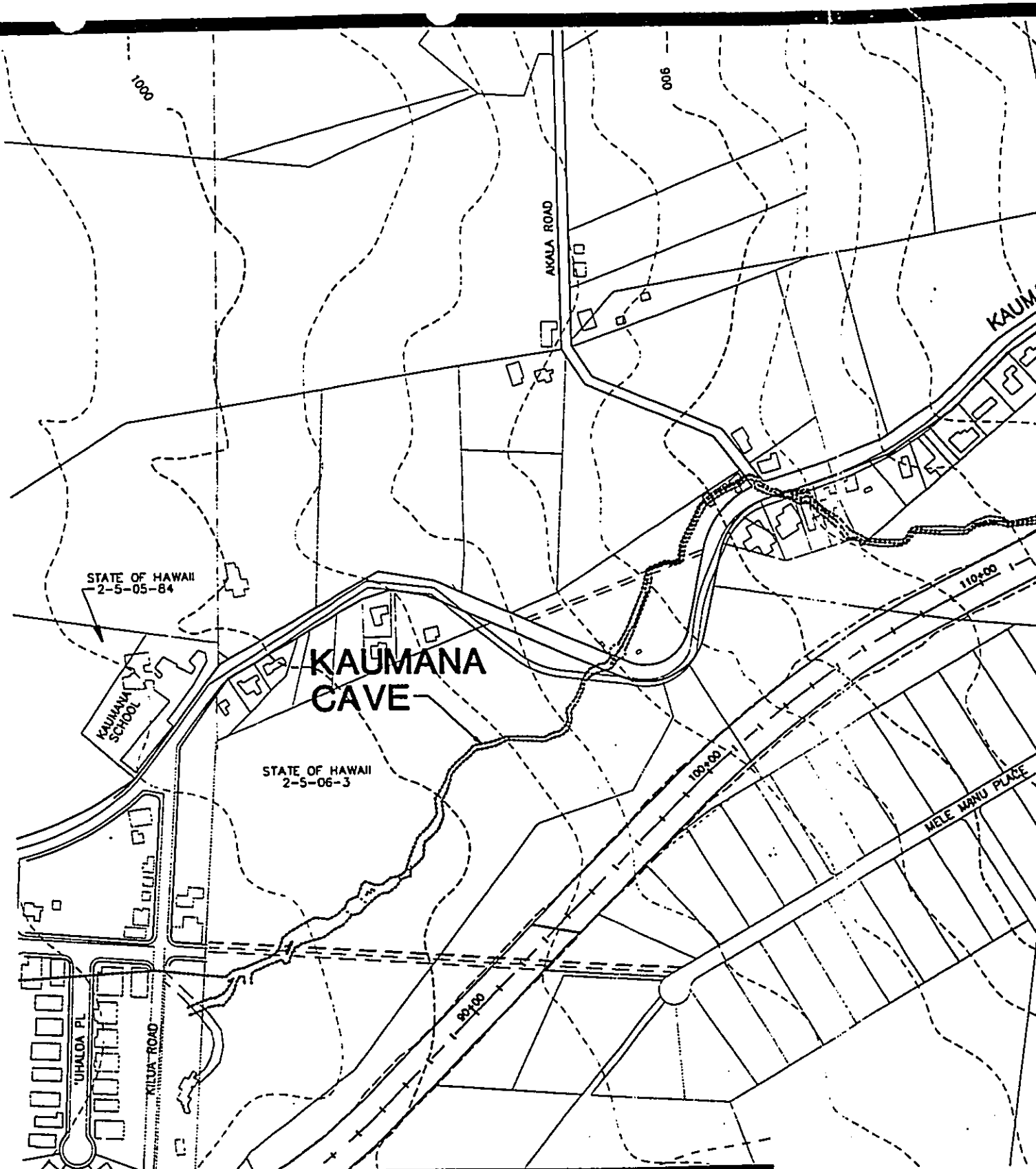
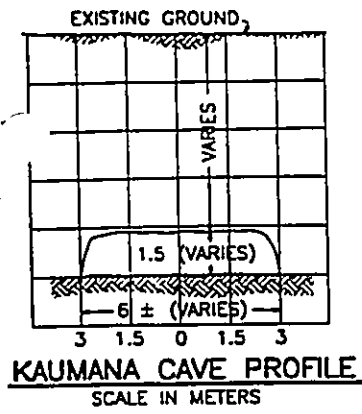


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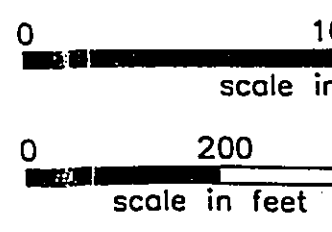


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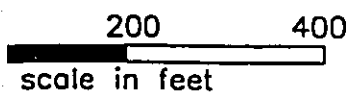
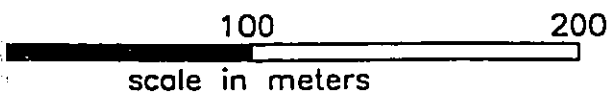
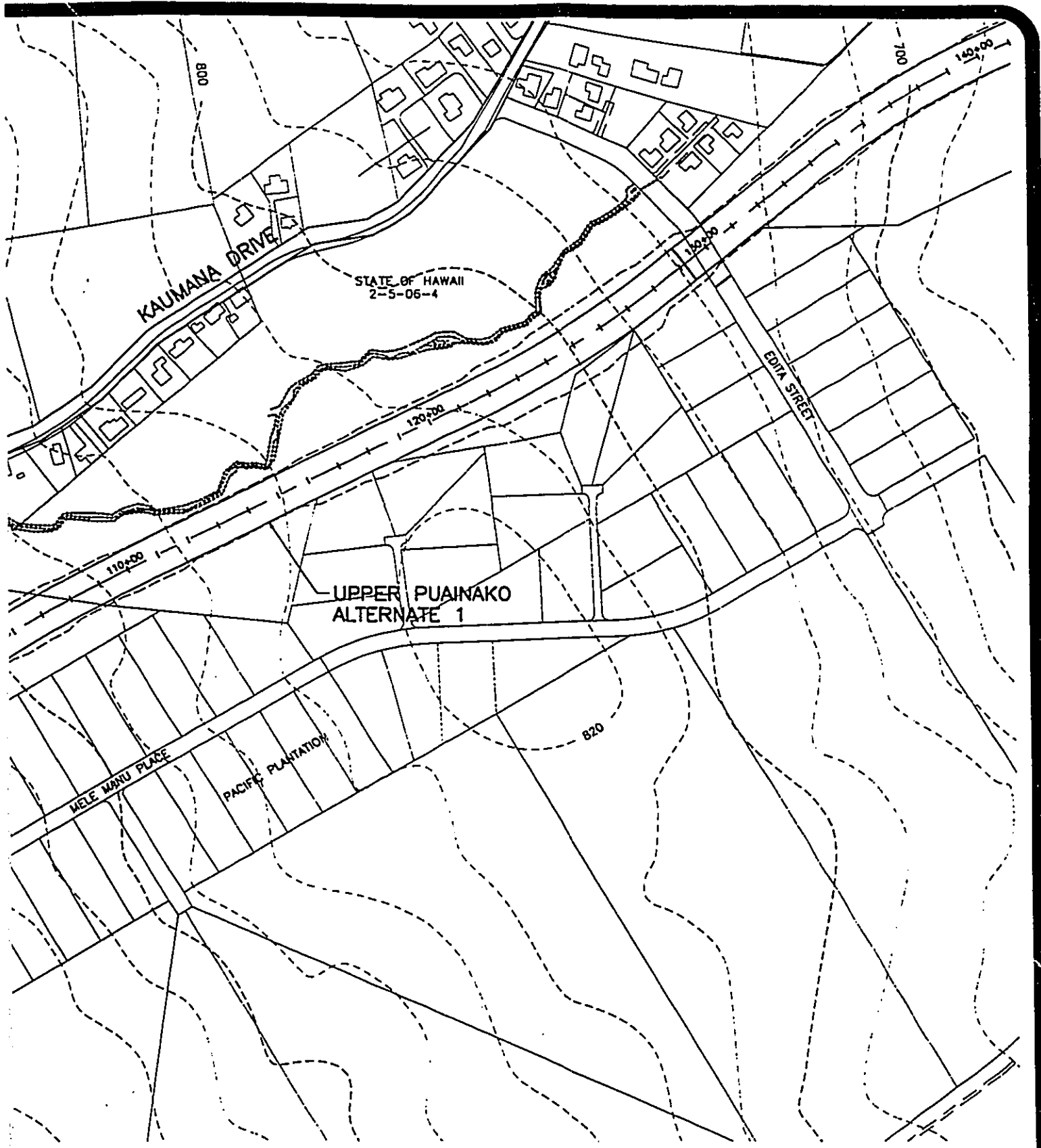


TITLE	KAUMANA CAVE
PROJECT	PUAINAKO STREET EXTENSION HILO, HAWAII

FIGURE	3-1
DATE	7/5/96



9100311A





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United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

DEC 15 1997

OKAHAMA

In Reply Refer To: CMC

Donna Fay Kiyosaki
County of Hawaii
Department of Public Works
25 Aupuni Street, room 202
Hilo, Hawaii 96720-4252

DEC 15 1997

Re: Puainako Widening and Extension Environmental Impact Statement, Determination of Potential Threatened and Endangered Species

Dear Ms. Kiyosaki:

The U.S. Fish and Wildlife Service (Service) has received your November 3, 1997, letter requesting information about threatened or endangered species that might be affected by the Puainako Rd. widening and extension project. The purpose of this project is to alleviate congested and unsafe traffic conditions on Kaumana Drive by providing a direct link between Saddle Road and State Highway 11. The project sponsors are the Federal Highway Administration, The State of Hawaii Department of Transportation, and the County of Hawaii Department of Public Works.

The Service has reviewed the provided information as well as other information contained in our files, including maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program. To the best of our knowledge, there are no species currently listed as endangered, threatened, or candidates directly within the project site. The federally endangered Hawaiian hawk (*Buteo solitarius*) and the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) are known from the general vicinity and may occur at the project site. However, the Service believes that the proposed project is not likely to adversely affect either of these species because of the project's location and previous disturbance.

However, it is our responsibility to bring an important matter to your attention. According to our understanding of the project, the proposed route will pass over a subterranean lava tube (Kaumana Cave) known to support a unique native invertebrate community. In particular, this cave system is home to a native arthropod in the genus *Oliarus*, family Cixiidae. This plant hopper is endemic to the Kaumana cave system and is, thus, found nowhere else in the world. It has been brought to our


COUNTY OF HAWAII
DEPARTMENT OF PARKS & RECREATION

25 Aupuni Street, Rm 210
Hilo, Hawaii 96720
Phone (808) 961-8311 *** Fax (808) 961-8411

MEMORANDUM

Date: June 26, 1998

To: Donna Kiyosaki, Chief Engineer

From: George Yoshida, P&R Director 

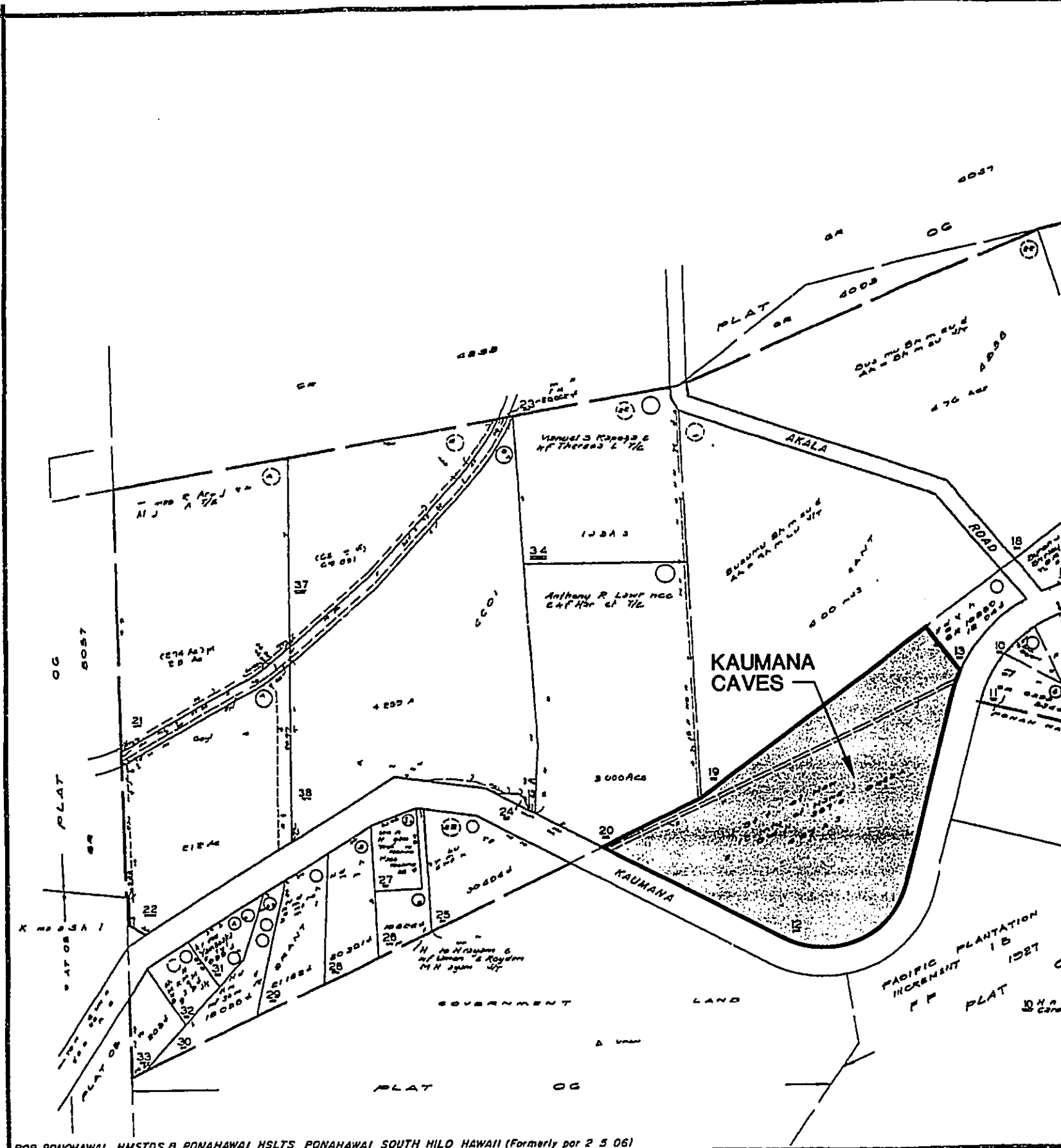
Re: Puainako Street Extension-EIS
Determination of Presence of Section 4(F) Resources

The proposed extension is not anticipated to adversely impact the Kaumana Cave park site.

Although the County has maintained the Kaumana Cave park site for decades, an executive order was never issued by the State. An inquiry to the Hawaii District Land Management office has confirmed this.

Other than a tax map key designation, we have no boundary description of the site. Perhaps your survey section can provide this information.

With regard to jurisdiction over the site, I will meet with Mayor Yamashiro to determine whether the site should be retained or returned to the State.



POR PONAHAWAI HMSTDS B PONAHAWAI HSLTS PONAHAWAI SOUTH HILO HAWAII (Formerly por 2 5 06)

PUAINAKO STREET EXTENSION AND WIDENING PROJECT

PROJECT DESCRIPTION, PURPOSE AND NEED

The Project would widen to four lanes and partially realign Puainako Street (State Hwy. 2000) between Kilauea Avenue and Komohana Street. Sidewalks and bicycle lanes would be built on both sides of the street. Puainako Street would be extended as a two-lane road with paved shoulders for 4.5 miles between Komohana Street and Saddle Road (State Hwy. 200) near Country Club Drive. The Project's purposes are to improve arterial traffic flow of the State Highway system by providing a direct link between the existing Puainako Street and the Saddle Road, and to alleviate congested and unsafe traffic conditions on Puainako Street and Kaumana Drive. The Project has been a part of the Hawaii County General Plan since 1967.

Currently, insufficient lanes and unsatisfactory alignments produce severe traffic congestion at peak hours and higher than normal accident rates on Puainako Street and Kaumana Drive. Traffic engineers calculate a substantial worsening of these conditions if improvements such as the proposed Project are not made.

The Federal Highways Administration (FHWA) and the Hawaii State Department of Transportation are serving as joint lead agencies to prepare an Environmental Impact Statement (EIS) in compliance with federal and State requirements, with the assistance of the Hawaii County Department of Public Works. The accepting authorities for the EIS are the Hawaii Division Administrator of FHWA and the Governor of Hawaii.

ALTERNATIVES UNDER CONSIDERATION

Alternative 1: The No-Build Alternative. The No-Build Alternative assumes very limited improvements to Puainako Street, including widening shoulders and consideration of traffic signals at Komohana Street and the Waiakea School Complex.

Alternative 2: The Build Alternatives. (See map) The project corridor consists of a Lower Portion, along Puainako Street between Kilauea Avenue and Komohana Street; and an Upper Portion, between Komohana Street and Kaumana Drive near the Country Club Drive Intersection. Each portion contains a set of two alternative alignments for part of the route. The Lower Portion has Alignments A and B, and the Upper Portion has Alignments 1 and 2. Four distinct combinations of these alignments are possible.

COST AND SCHEDULE

The Project would cost an estimated \$62.650 to \$67.234 million, depending on the combination of alignments chosen. This total includes right-of-way acquisition, engineering and construction. If approvals are obtained in a timely manner, Project design is proposed to begin in 1999. Construction would begin in 1999 and would be finished in the year 2001.

AFFECTED ENVIRONMENT AND IMPACTS

In its lower end the project area has residential uses intermixed with schools, churches and businesses. The mauka areas contain vacant land with some natural vegetation (especially on the 1881 lava flow) and also low-density residential and agricultural uses. A number of intermittent streams drain the gentle slopes. No threatened or endangered plant species are present, but the endangered hawk and bat can be found, as they are throughout the island.

The environmental effects would be mostly beneficial (better air quality, decreased traffic congestion, less energy consumption, and safer roadways for motorists, pedestrians, and bicycles) but partially adverse (relocation of at least five households; construction impacts; and loss of native vegetation, a small area of wetlands, and some archaeological features related to the sugar plantations). Some impacts, such as changes in noise levels, are mixed. Adverse impacts will be avoided or reduced through mitigation measures.

235 SOUTH BERETANIA STREET, SUITE 702
Honolulu, Hawaii 96813

All written comments should be legible and include your name (individual and/or organization) and return address.

Maps, drawings and other pertinent information including written comments received as a result of coordination with other governmental agencies are available for inspection at the following location:

Hawaii County Department of Public Works,
25 Aupuni Street
Hilo, Hawaii 96720

In addition, copies of the draft EIS are available for public review and copying at the following locations:

University of Hawaii
Hilo Campus Library
200 W. Kawili Street
Hilo, Hawaii

Hilo Public Library
300 Waiuanuenue Avenue
Hilo, Hawaii

University of Hawaii at Manoa
Hamilton Library
2550 The Mall

State of Hawaii
Department of Transportation
Highways Division
Planning Branch
600 Kapiolani Blvd, Room 304

State of Hawaii
Department of Transportation
Hawaii District Office
50 Makaala Street
Hilo, Hawaii

Hawaii State Library (Main Branch)
Reference Desk
47 South King Street
Honolulu, Hawaii

State Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii

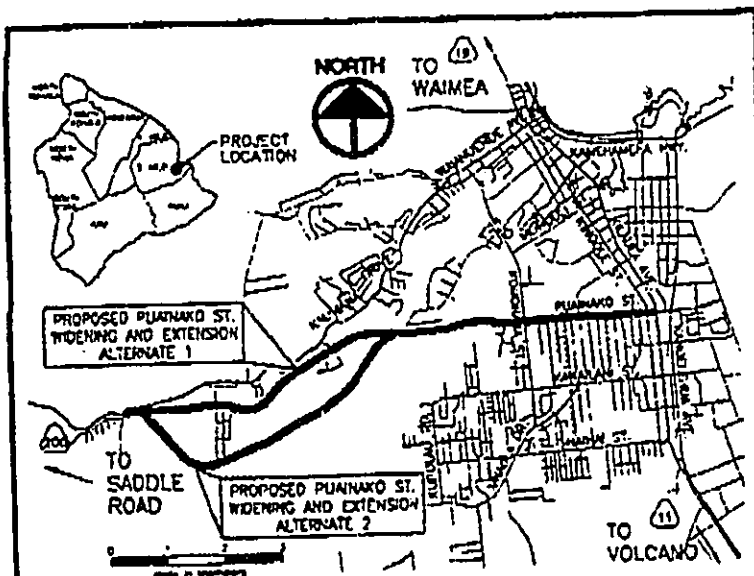
Kailua-Kona Public Library
75-140 Hualalai Road
Kailua-Kona, Hawaii

U.S. Department of Transportation
Federal Highway Administration
Highway Division
300 Ala Moana Boulevard Room 3202
Honolulu, Hawaii

Notice is also hereby given that the Hawaii County Department of Public Works, the Hawaii State Department of Transportation, and the Federal Highway Administration will hold a public hearing on the proposed Puainako Extension and Widening Project on January 19, 1999, at 7:00 PM at the University of Hawaii at Hilo, Campus Center Room 306-307. The purpose of this meeting is to present the Puainako project, answer questions and solicit oral and written comments from those who have an interest in the project. The public hearing will discuss the alignment alternatives, environmental effects, relocation assistance programs, and tentative schedules for right-of-way acquisition and construction. Interested persons will be heard particularly with reference to the social, economic impact of the proposed alternatives. The public is invited to attend. Persons unable or not desiring to appear at the hearing may file signed statements presenting their views on the project. Such statements should be submitted on or before February 22, 1999. Comments received by mail will receive the same evaluation as oral comments made at the public hearing.

Jiro Sumada, Deputy Chief Engineer
Hawaii County Department of Public Works
(112221—Hawaii Tribune-Herald: December 20, 1998; January 10, 1999)

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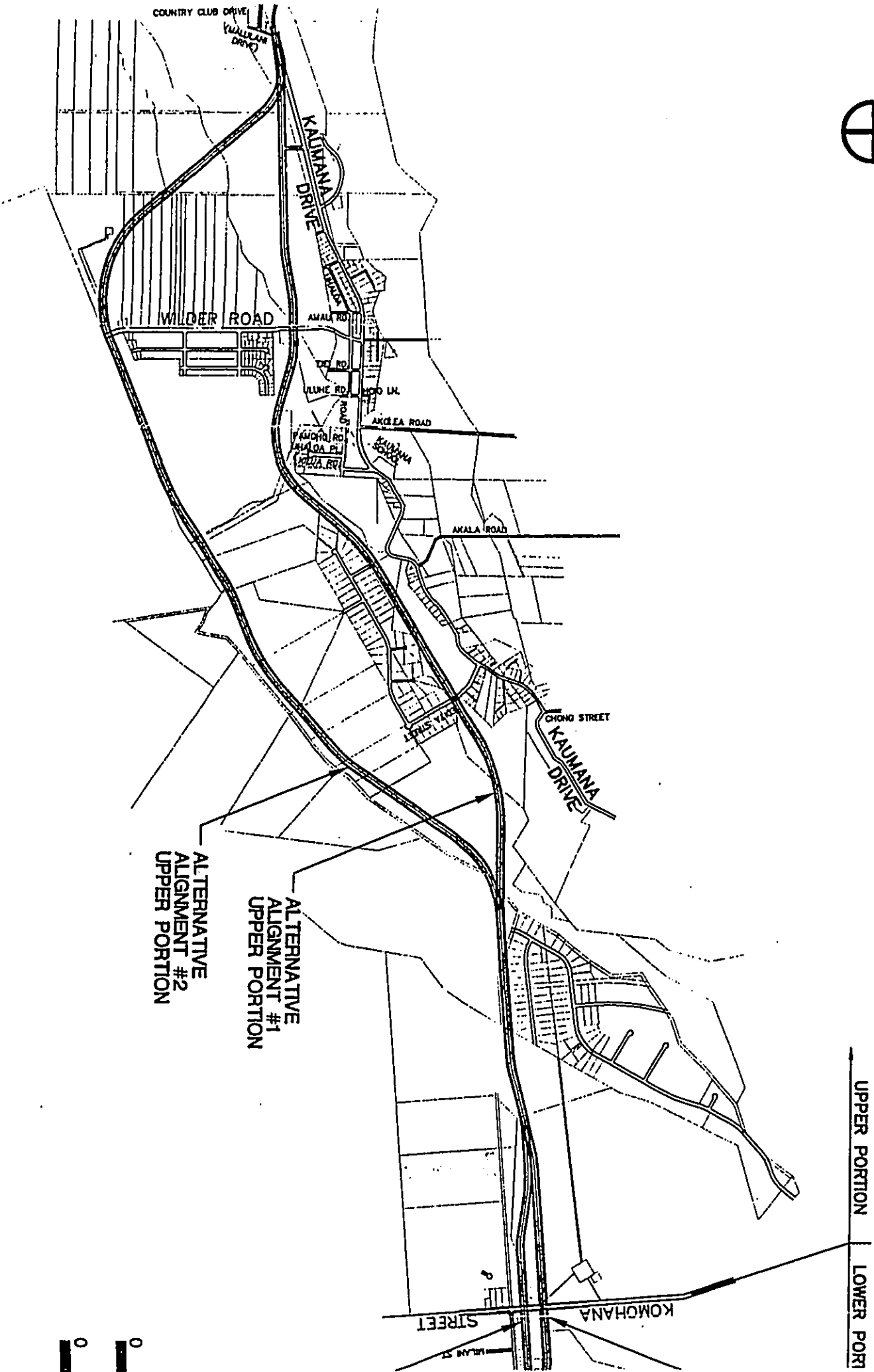
NOTICE AVAILABILITY OF DRAFT ENVIRONMENTAL IMPACT STATEMENT AND PUBLIC HEARING

The Hawaii County Department of Public Works (DPW), in cooperation with the State Department of Transportation, Highways Division (DOT) and the Federal Highway Administration (FHWA) announce the availability of a draft Environmental Impact Statement (EIS) for the proposed Puainako Extension and Widening Project in South Hilo, Hawaii County. Notice is hereby given that the draft EIS has been distributed as required by the National Environmental Policy Act of 1969 and Chapter 343 Hawaii Revised Statutes. The draft EIS identifies and assesses the environmental and social impacts that could result from the project. The project would widen Puainako Street to four lanes east of Komohana Street and extend it 7.3 km (4.5 miles) as a two-lane highway between Komohana Street and the Saddle Road (State Highway 200). The formal public and agency review period for this draft EIS has begun.

To ensure that all significant issues are identified and the full range of issues related to this project are addressed, comments and suggestions are invited from all interested parties. Two sets of project alignment alternatives are being considered. Public and agency input will be used in evaluating the alternative alignments addressed in the draft EIS and in selecting the preferred alignment alternative, which will be stated in the final EIS. The period for receipt of comments closes on February 8, 1999. Written comments on the project and draft EIS will be accepted up to and including February 8, 1999. If you wish to comment, please mail or deliver any comments you may have to the following addresses:

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850

and
Governor, State of Hawaii
C/o Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813



CORRECTION

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

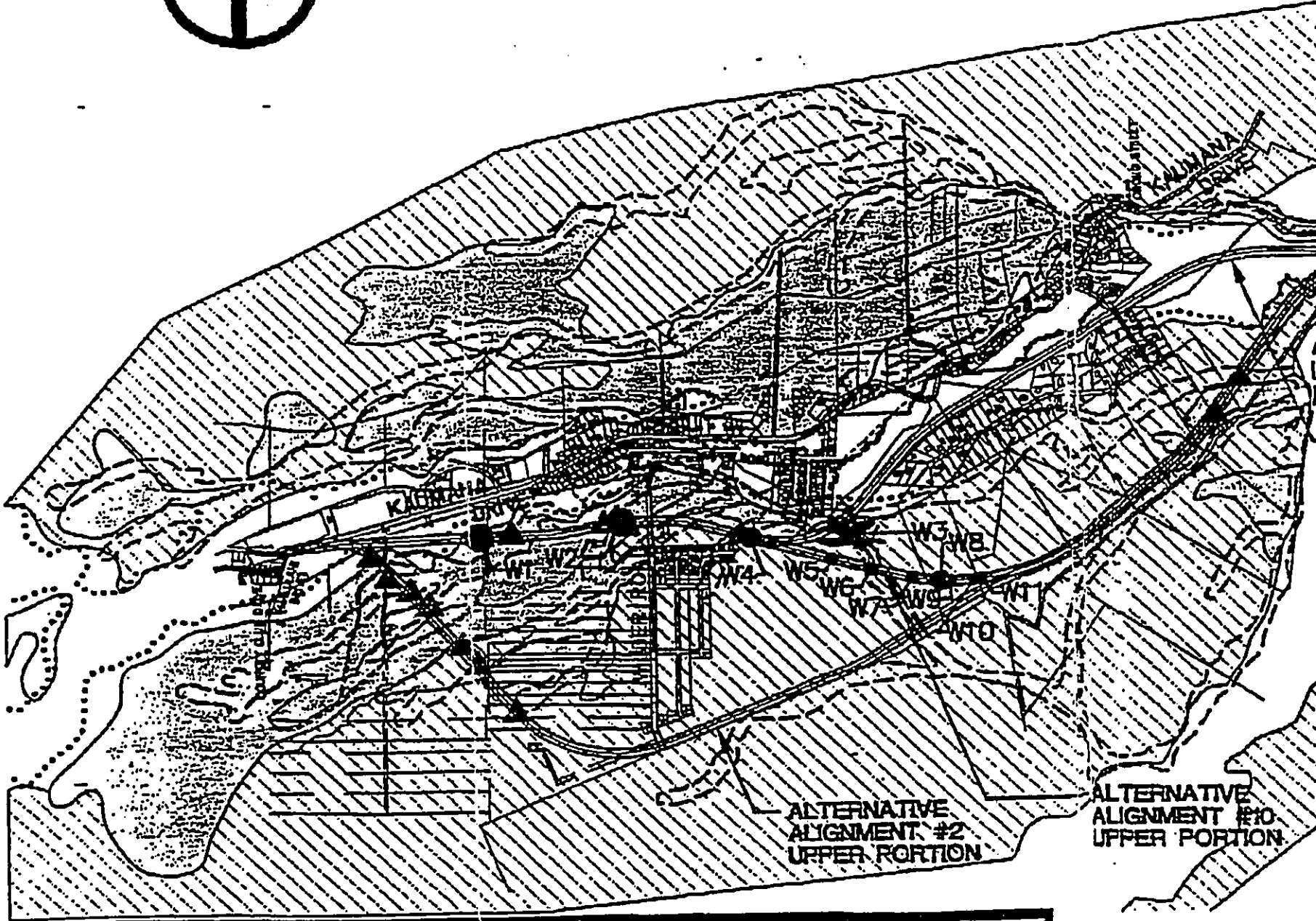
Proposed Mitigation

Proper roadway design will maintain local drainage and surface water quality. No other mitigation is necessary.

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NOTE: WETLANDS WITH AREAS OF OVER 10000 sq. ft. ARE REPRESENTED BY THE APPROXIMATE LIMITS OF THE WETLAND INSTEAD OF A SYMBOL.

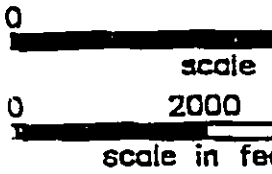


TITLE
STREAMS AND WETLANDS

FIGURE
3-4

DATE
10/26/98

PROJECT **PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII**



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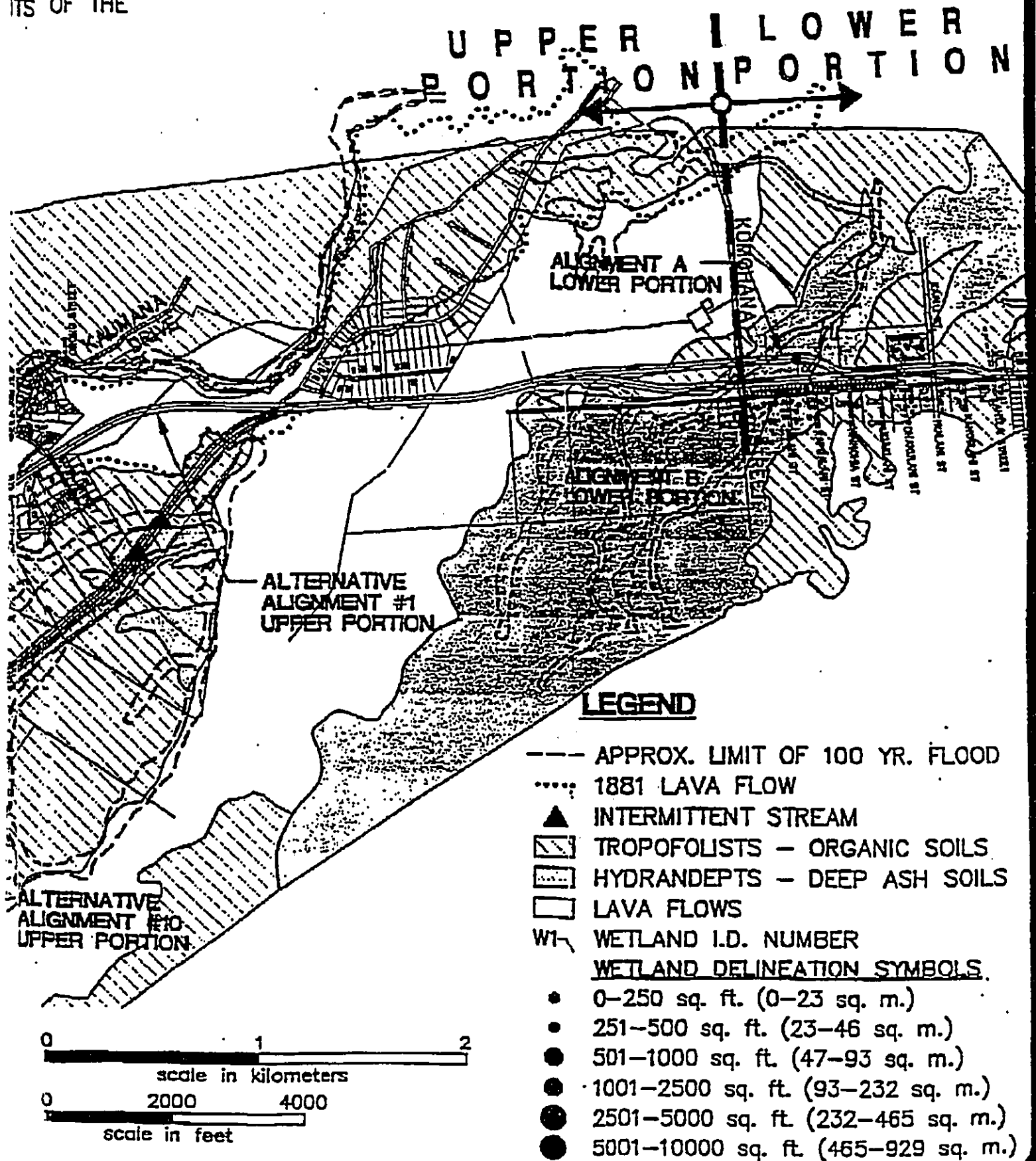
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OKAHARA & ASSOC.

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INTRODUCTION

This document is the final report of botanical studies in support of a Final Environmental Impact Statement for proposed right-of-way alignments for the extension and widening of Puainako St. from Kaumana Drive to Kawili St. The purpose of this study is to describe and evaluate the vegetation, identify ecologically sensitive or valuable plants and communities, identify potential adverse impacts of the proposed action, and recommend measures to mitigate potential adverse impacts. Wetland studies and delineations were conducted in conjunction with the botanical studies and are described in a technical report entitled, "Final Wetland Study and Delineations for the Puainako Street Extension and Widening Project," dated February 2000.

METHODS AND PROJECT AREA

Description and Locations of Proposed Alternative Alignments

Three alternative alignments are under consideration in the Upper Portion (from Kaumana Drive to a point 1000 meters (3250 ft.) west of Komohana St.). These three alternatives are designated Alignment One, Alignment Two and Alignment Ten. Together, these three alternatives are made up of six sections. Each of the three alternatives utilizes a unique combination of the six sections, sharing some sections with one or both of the other alternatives. Sections are identified by the two letters indicating their endpoints (Figure 1).

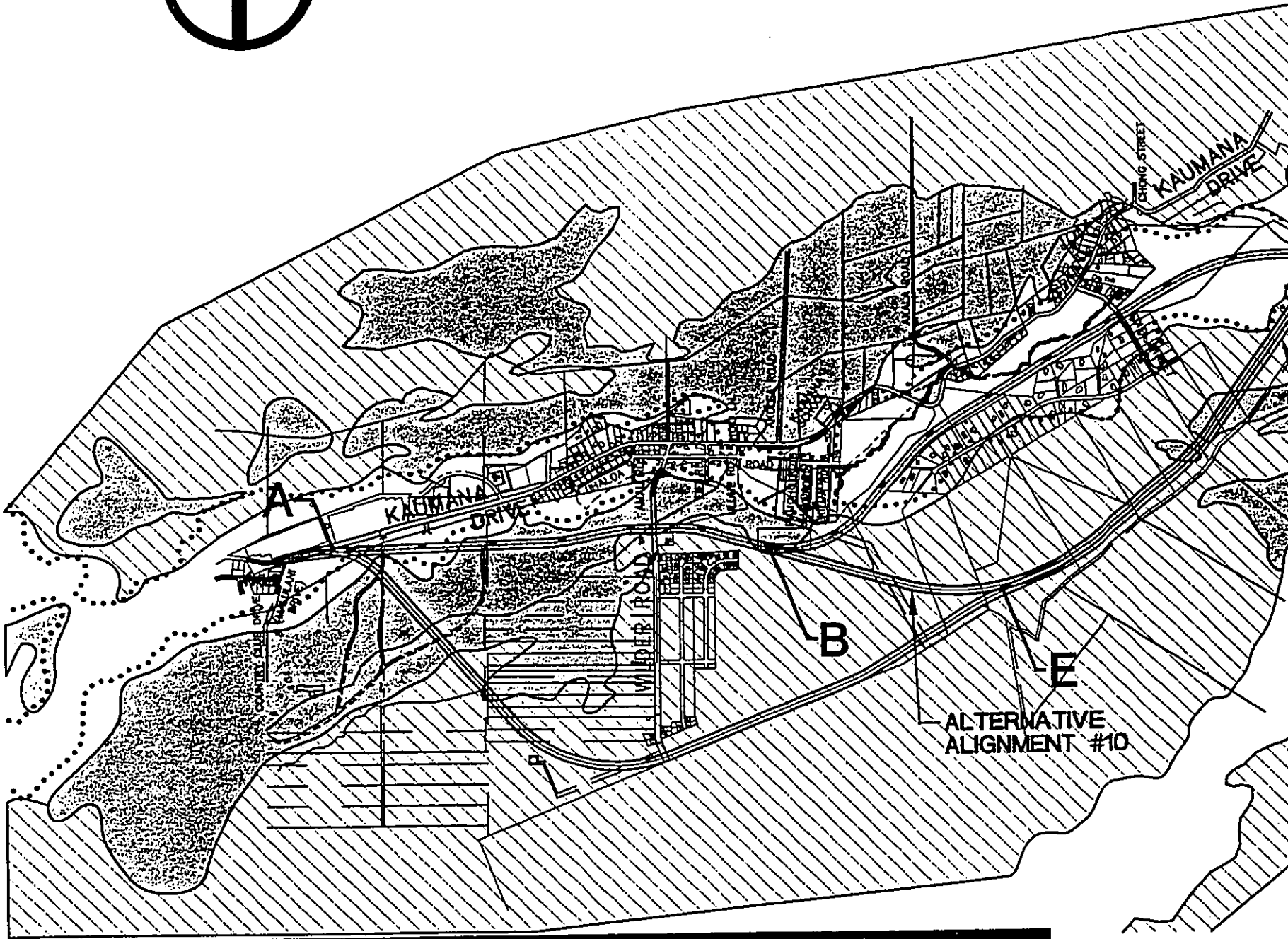
Two alternative alignments are under consideration in the Lower Portion (from the junction with the Upper Portion to Kawili St.), designated Alignment A and Alignment B. Each of these is a unique alignment with no overlapping sections (Figure 1).

The alternative alignments presented in this report were developed during an extended period of environmental review and project planning. This current set of alignments reflects modifications made to avoid or minimize adverse social, biological and wetland impacts. The following is a summary of botanical field studies made during the course of this environmental review.

The first field study was conducted in May 1992 in support of a 1993 Environmental Impact Statement, in accordance with Chapter 343 Hawaii Revised Statutes for the widening and extension of Puainako St. This report studied the alternatives then under consideration, Alignments One and Two. That document, prepared by the County of Hawaii Department of Public Works, was accepted by the Governor of the State of Hawaii and published in August 1993.

A second field study of Alignments One and Two was carried out in 1995 to support a second EIS, in accordance with the National Environmental Policy Act (NEPA), for the same project being prepared for approval by the U.S. Highway Administration (FHWA) and other Federal, State and County agencies.

In 1998, during preparation of this Draft EIS, minor relocations of Alignment One were made to reduce adverse impacts to water quality in flood zones and drainageways.



TITLE

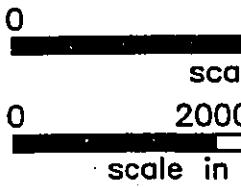
SITE PLAN FOR PROPOSED ALIGNMENTS

FIGURE

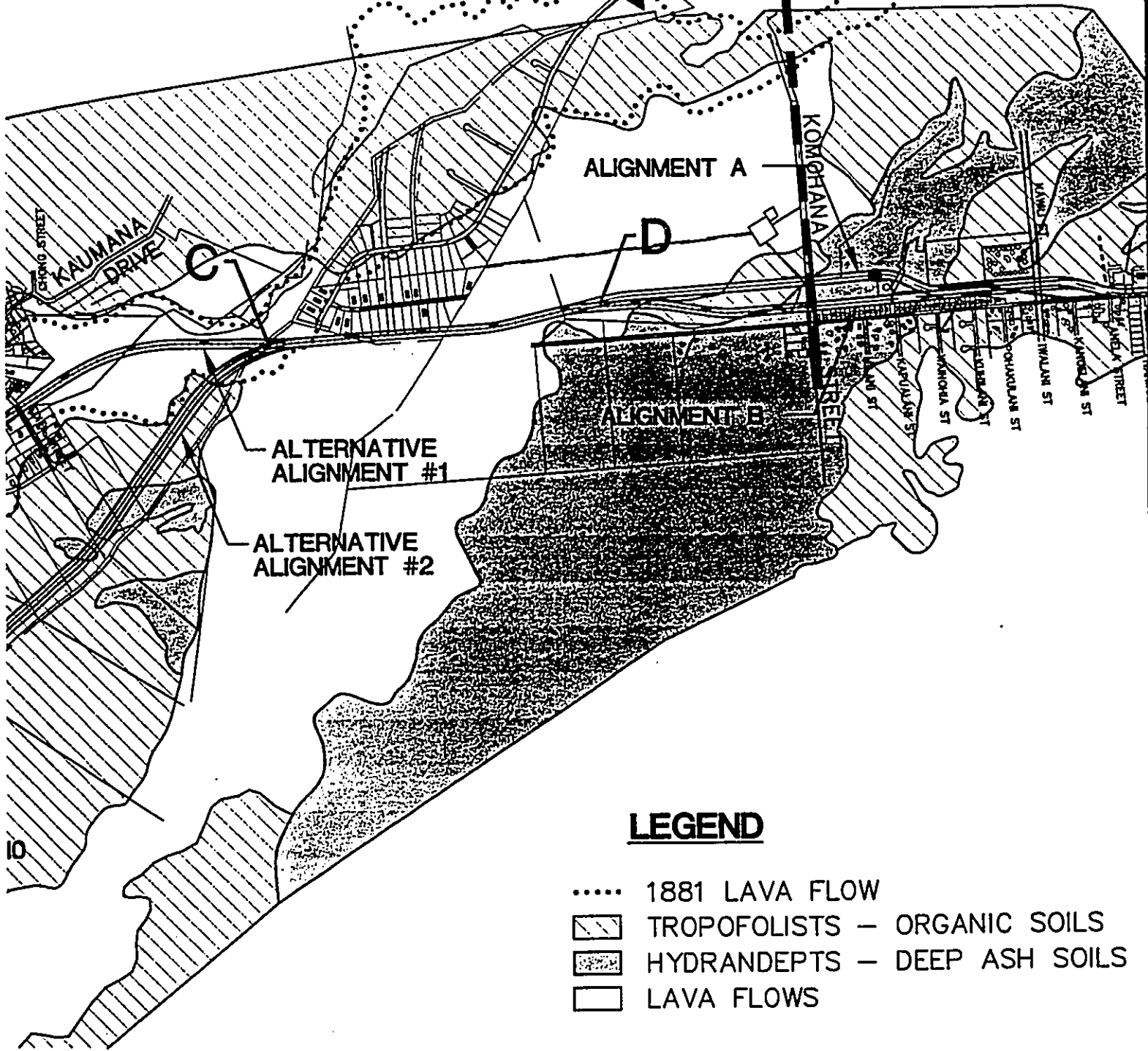
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PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII




DATE
2/03/2000

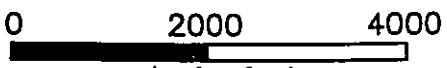
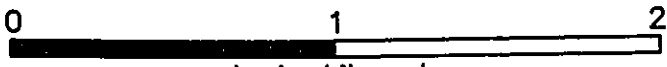


UPPER PORTION | LOWER PORTION



LEGEND

- 1881 LAVA FLOW
-  TROPFOLISTS - ORGANIC SOILS
-  HYDRANDEPTS - DEEP ASH SOILS
-  LAVA FLOWS



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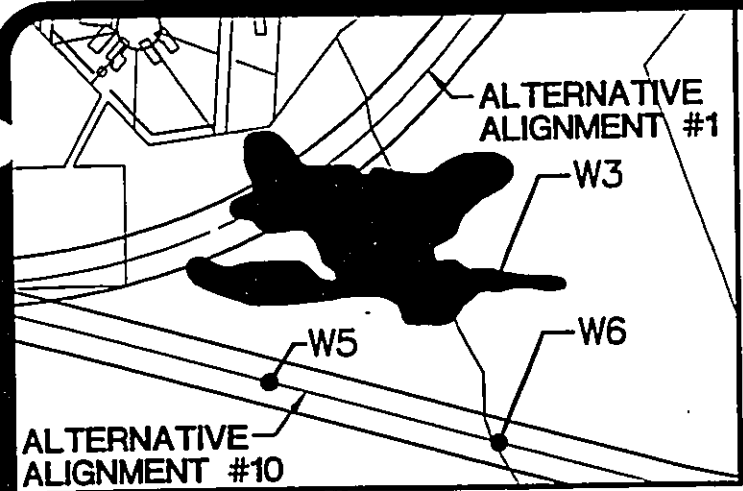
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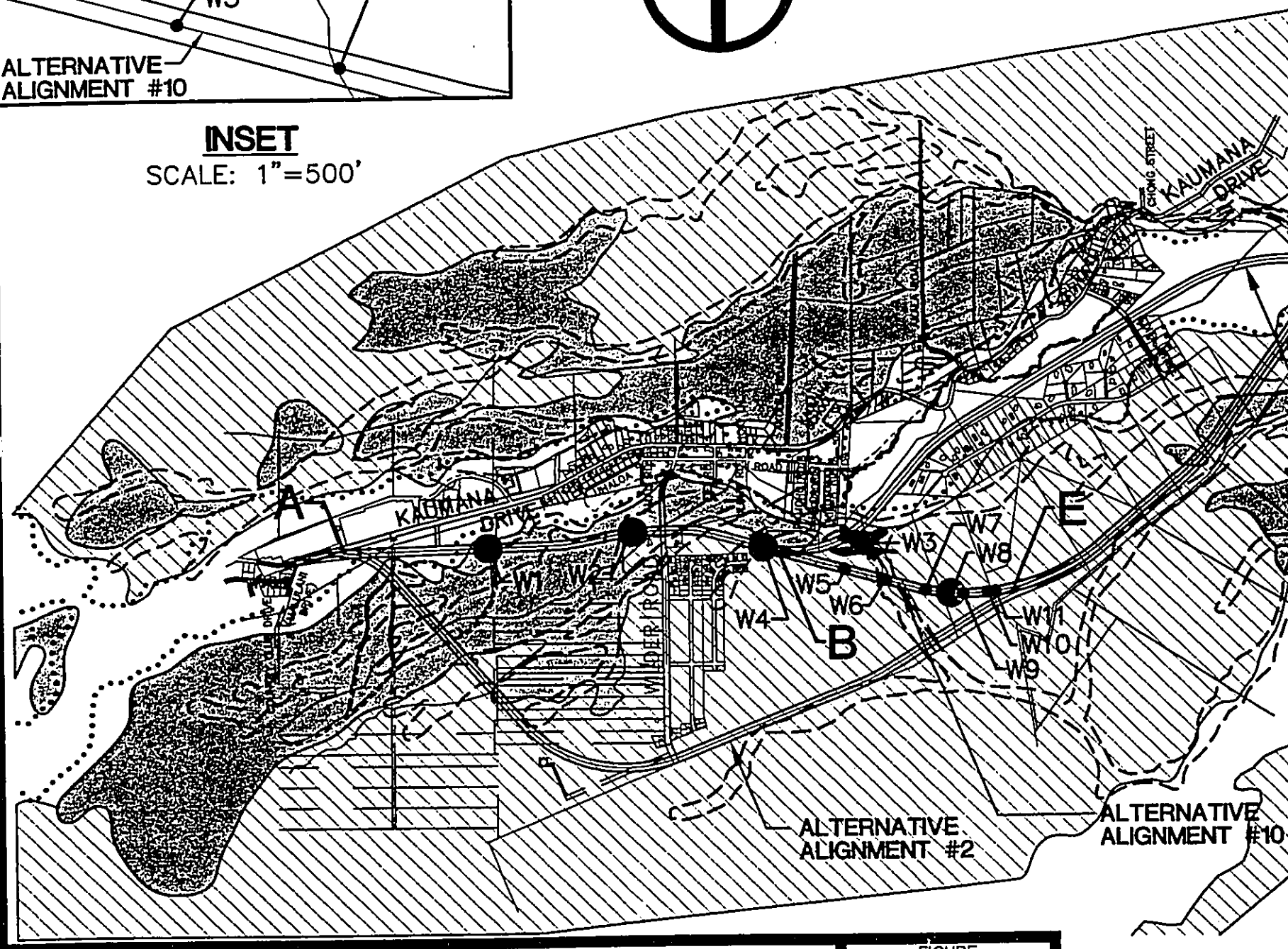
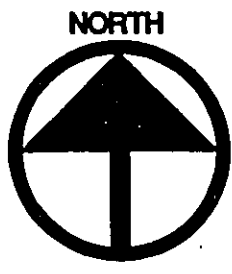
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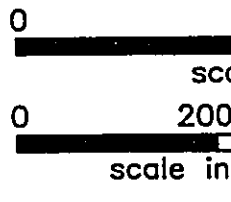
INSET
SCALE: 1"=500'

NOTE: WETLANDS WITH AREAS OF OVER 1
ARE REPRESENTED BY THE APPROX
OF THE WETLAND INSTEAD OF A S

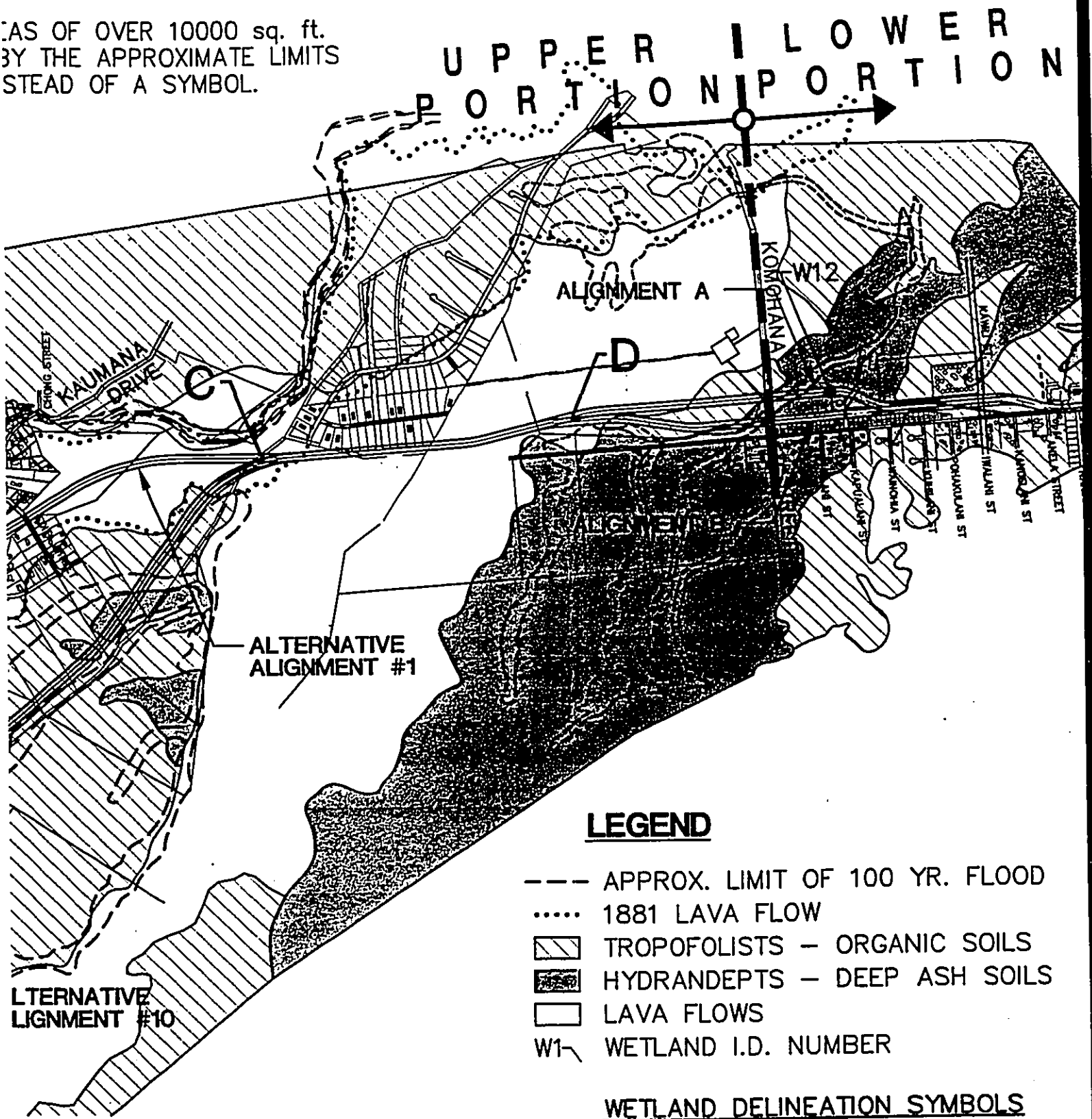


TITLE	DELINEATED WETLANDS
PROJECT	Puainako Street Widening/Extension HILO, HAWAII

FIGURE	1
DATE	2/03/2000



AREAS OF OVER 10000 sq. ft.
 SHOWN BY THE APPROXIMATE LIMITS
 INSTEAD OF A SYMBOL.



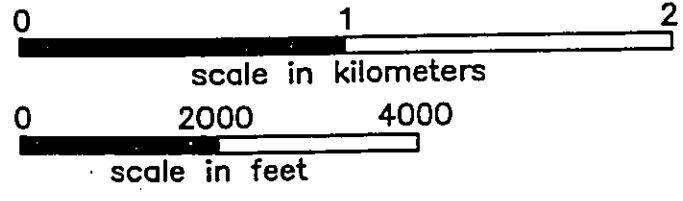
ALTERNATIVE ALIGNMENT #10

LEGEND

- APPROX. LIMIT OF 100 YR. FLOOD
- 1881 LAVA FLOW
- [diagonal lines] TROPOFOLISTS - ORGANIC SOILS
- [stippled] HYDRANDEPTS - DEEP ASH SOILS
- [white box] LAVA FLOWS
- W1- WETLAND I.D. NUMBER

WETLAND DELINEATION SYMBOLS

- 0-1000 sq. ft. (0-93 sq. m.)
- 1001-10000 sq. ft. (93-929 sq. m.)



RESULTS

Wetland Habitat Analysis

Correlation of Soil Types and Land Use with Wetland Indicators

Three general soil types occur within the project area: Lava Lands, Tropofolists, and Hydrandepts (Figure 1). The distributions of the three major soil types are easily recognized in the field from land use and the present vegetation (Gerrish 2000).

- 1) LAVA FLOWS. The Lava Flows are the 1881 lava flow, vegetated with 'Ohi'a/Uluhe Fern Forest or Closed 'Ohi'a Forest. The soil is a very thin, discontinuous layer of organic matter. The surface may be 50% or more pahoehoe lava outcrop.
- 2) TROPOFOLISTS. The Tropofolists are shallow organic soils formed over prehistoric pahoehoe lava flows from Mauna Loa. For the most part, these soils are covered by native vegetation. Some areas have been degraded by grazing or other human activity and support the Mixed 'Ohi'a and Waiawi Shrubland. Many other areas are undisturbed, with open to closed canopy, native forest classified as 'Ohi'a/Uluhe Fern Forest.
- 3) HYDRANDEPTS. The Hydrandepts are relatively deep soils of Mauna Kea ash that have been cleared and cultivated, mostly for sugarcane. Although no cane is currently cultivated in the project area, the abandoned fields are easily recognized. (Gerrish 2000).

No areas with wetland characteristics have been found on the Lava Lands (rLW), which comprise the 1881 and other young lava flows within the project area. This simple, early succession community never contains more than 50% FAC or wetter species among the dominants. No species wetter than FAC have been found here.

The Hydrandepts belong to soil series identified as Kaiwiki silty clay loam, Olaa extremely stony silty clay loam, Olaa silty clay loam, and Panaewa very rocky silty clay loam. These soils are generally well-drained and the surface is dissected by well-defined gullies. Some of these gullies are shown on the USGS topographic maps as intermittent streams; all are shown on FEMA flood maps as well. They have all had water flowing on at least one occasion that I have visited them. In some locations, the gullies contain OBL or uncommon FW plants.

Jurisdictional wetlands are found only on shallow Tropofolists on prehistoric pahoehoe lava flows or other situations where human activity has impeded or altered the natural drainage pattern. These are identified in the Soil Survey as belonging to the Keaukaha extremely rocky muck and the Keei extremely rocky muck series. These soils are not in their entirety hydric, but have a tendency to become waterlogged when microtopography or compaction impedes drainage.

Detailed observations of soil and hydrology were made on an 800 meter (2600 ft.) long segment of Alignment Two between survey stations 4200 ft. and 6800 ft. Approximately 20% of this sample distance had hydrophytic vegetation and strong indicators of either hydric soil or wetland hydrology. This 20% factor was used in the 1995 determinations to estimate the potential extent of wetland habitats within Alignments One and Two. No variance for the 20% factor had been determined and no estimate of the reliability of this

In addition, due to the fact that only preliminary design calculations were required, no effort was made to design minor roadside ditches, and preliminary drainage construction costs do not reflect these potential construction costs.

LOWER PUAINAKO PRE-CONSTRUCTION / POST-CONSTR

DESIGN POINT	PRE-CONSTRUCTION						AREA (ACRES)
	AREA (ACRES)	Q ₅₀ RATIONAL METHOD (CFS)	Q ₅₀ SCS METHOD (CFS)	Q ₅₀ USED (CFS)	APPROX. NO. OF DRYWELLS IN THE AREA	Q ₅₀ USED (-) DRYWELL CAPACITY (6 CFS/DRYWELL)	
				54.76	3	36.76	7.60
A	7.60	54.76		236.85	0	236.85	47.75
B	47.04	236.85		37.03	0	37.03	5.14
C	6.76	37.03		8.50	0	8.50	6.51
D	3.90	8.50		757.00	2	745.00	113.33
E	139.10	712.19	757.00	779.00	2	767.00	29.14(142.47)
F(E+F)	4.10(143.20)	717.05	779.00	385.30	11	319.30	75.34
G	75.20	385.30		756.00	14	672.00	31.34(106.68)
H(G+H)	27.9(103.10)	533.73	756.00	800.00	14	716.00	2.06(108.74)
I(G+H+I)	5.40(108.50)	553.61	800.00	6.01	0	6.01	1.34
J	2.40	6.01		46.00	1	40.00	11.27
K	9.80	46.00		60.37	2	48.37	4.51
L	5.70	60.37		37.50	0	37.50	4.63
M	2.80	37.50		54.50	0	54.50	3.49
N	4.10	54.50		71.36	0	71.36	1.54(5.03)
O(N+O)	1.90(6.00)	71.36		-	-	-	204.27
P1-P3	-	-		-	-	-	1.03
P4	-	-		1214	20	1094.00	205.31
P/(P1-P4)	208.00	-	1214	1264	20	1144.00	1.03(6.06)
P(O+P)	214.00	-	1264	33.36	0	33.36	1.01
Q	3.20	33.36		214.38	2	202.38	38.05
R	35.70	214.38		9.81	0	9.81	0.29
S	0.60	9.81		402.68	1	396.68	83.12
T	82.60	402.68					673.80
TOTAL	673.80						

NOTES

1. MCBA - MODIFIED CATCH BASIN "A" (CATCH BASIN / DRYWELL)
2. INDICATES AN INCREASE IN RUNOFF TO THIS POINT DUE TO A REDIRECTION OF FLOW THROUGH THIS POINT.
3. () - INDICATES A COMBINED RUNOFF AREA OR FLOW RATE.

POST-CONSTRUCTION RAINFALL RUNOFF SUMMARY

POST-CONSTRUCTION								NO. OF STS
AREA (ACRES)	Q ₅₀ RATIONAL METHOD (CFS)	Q ₅₀ SCS METHOD (CFS)	Q ₅₀ USED (CFS)	APPROX. NO. OF DRYWELLS IN THE AREA	Q ₅₀ USED (-) DRYWELL CAPACITY (6 CFS/DRYWELL)	ΔQ ₅₀ (CFS)		
7.60	59.61		59.61	3	41.61	+4.85		
47.75	243.63		243.63	0	243.63	+6.78		
5.14	44.50		44.50	0	44.50	+7.47		
6.51	47.42		47.42	0	47.42	+38.92	2	
113.33	576.56	645.00	645.00	2	633.00	-112.00		
29.14(142.47)	720.75	816.00	816.00	2	804.00	+37.00	2	
75.34	420.93		420.93	11	354.93	+35.63		
31.34(106.68)	577.21	785.00	785.00	14	701.00	+29.00	2	
2.06(108.74)	587.20	800.00	800.00	14	716.00	0.00		
1.34	3.35		3.35	0	3.35	-2.66		
11.27	92.65		92.65	1	86.65	+46.65		
4.51	45.37		45.37	2	33.37	-15.00		
4.63	38.62		38.62	0	38.62	+1.12		
3.49	48.17		48.17	0	48.17	-6.33		
1.54(5.03)	67.59		67.59	0	67.59	-3.77		
204.27	1017.21	1230.00	1230.00	20	1110.00	+1110.00	2	
1.03	8.58		8.58	0	8.58			
205.31	-	1236.00	1236.00	20	1116.00			
1.03(6.06)	76.11		76.11	0	76.11	-1067.89		
1.01	8.42		8.42	0	8.42	-24.94		
38.05	250.44		250.44	2	238.44	+36.06		
0.29	4.81		4.81	0	4.81	-5.00		
83.12	439.58		439.58	1	433.58	+36.90		
673.80						+152.79		

TOTAL INCREASE IN RUNOFF TO DESIGN POINTS A,B,D,E,I,J,K,L,M,P,Q,R,S & T

CHECK:

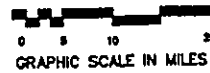
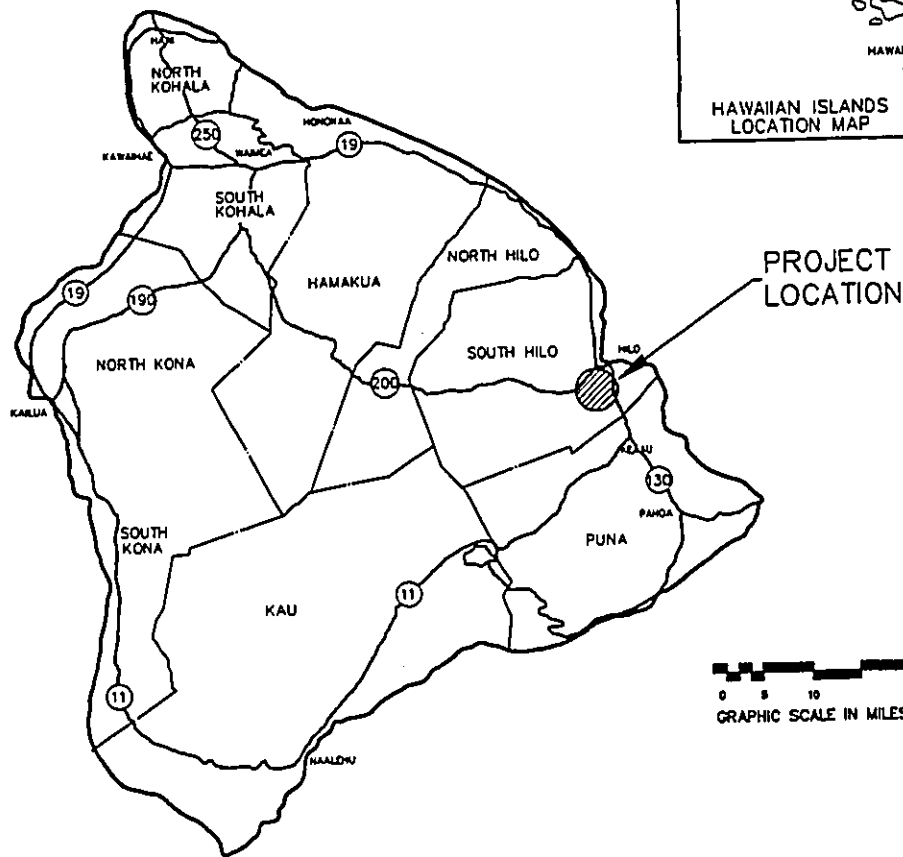
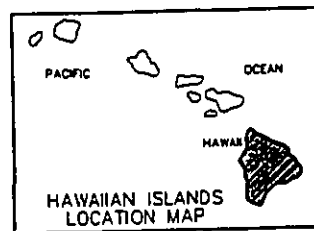
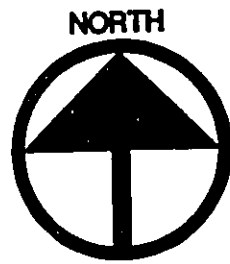
$$\Delta Q = (\Delta C)(I)(A)$$

$$\Delta C = 0.95 - 0.55 = 0.40$$

$$T_c = 5 \text{ min. } > I = 16.7 \text{ in/hr}$$

$$A = 7675' \times 120' / 43560 \text{ sf} = 21.14 \text{ AC.}$$

$$Q = (0.40)(16.7)(21.14) = 140.9 \text{ cfs}$$



TITLE

PROJECT LOCATION MAP

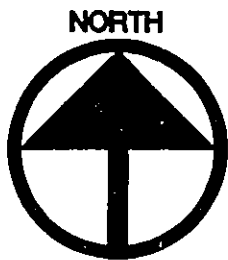
COUNTY OF HAWAII, STATE OF HAWAII

FIGURE

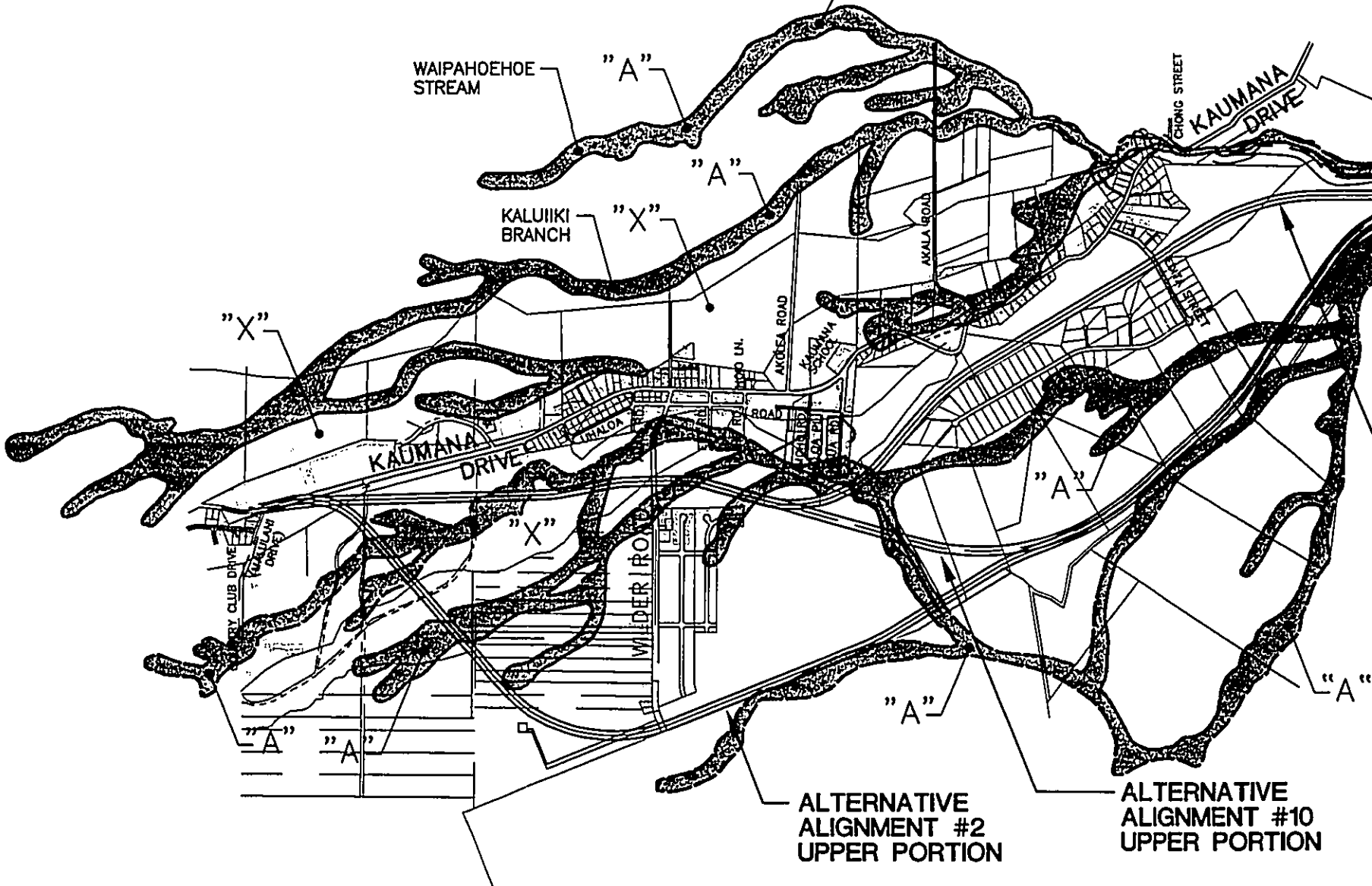
1

PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

DATE
8/19/98



APPROXIMATE LIMITS,
100 YR. FLOOD ZONE



TITLE

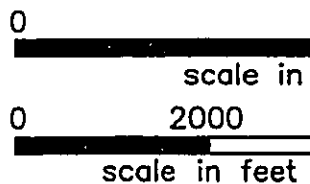
APPROXIMATE LIMITS 100 YR. FLOOD ZONE

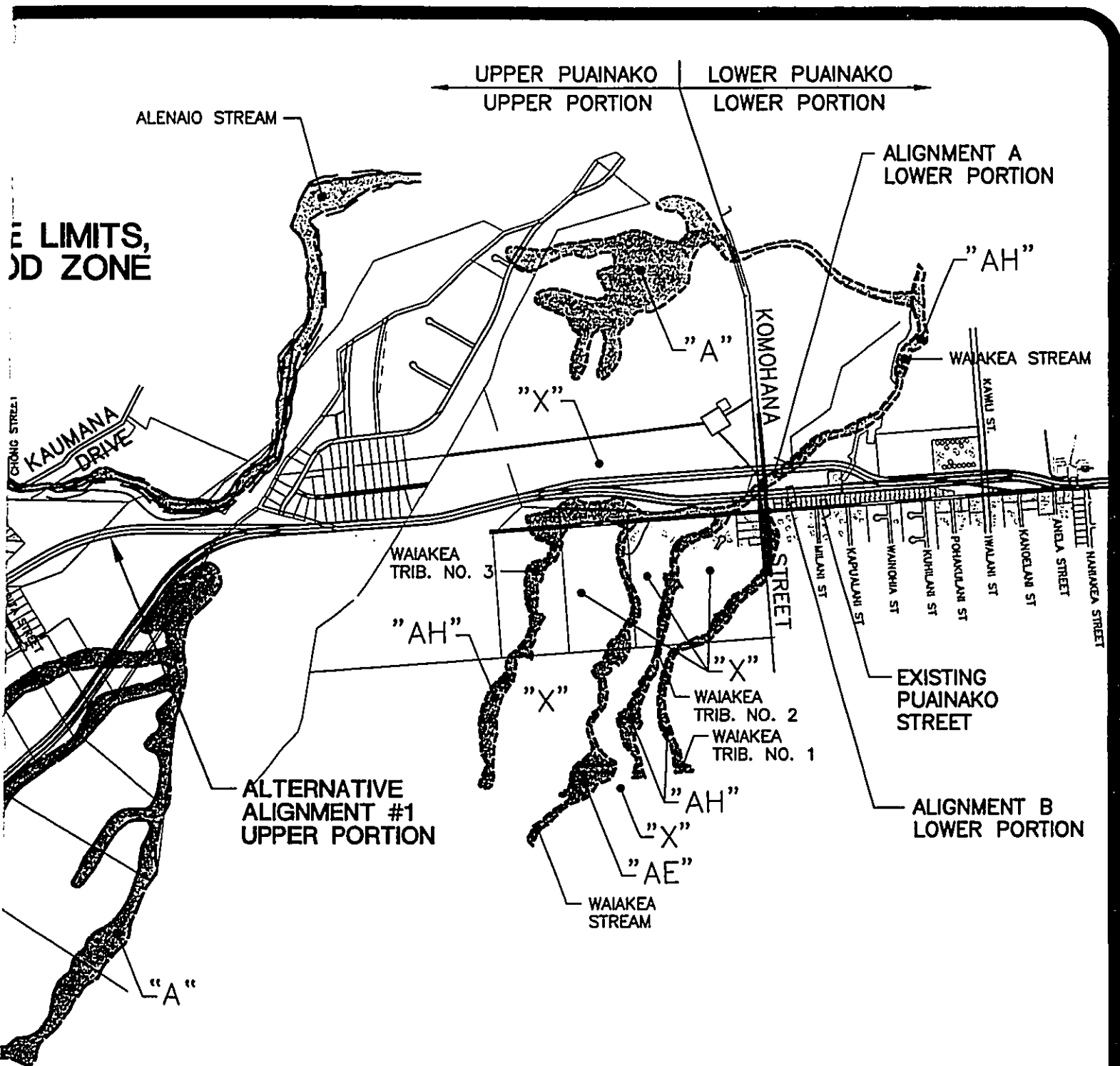
FIGURE

2

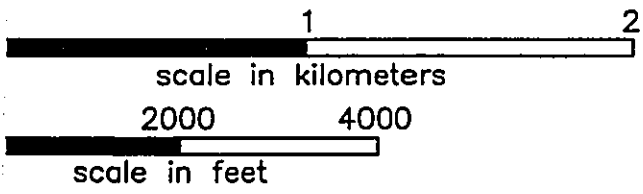
PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

DATE
8/19/98

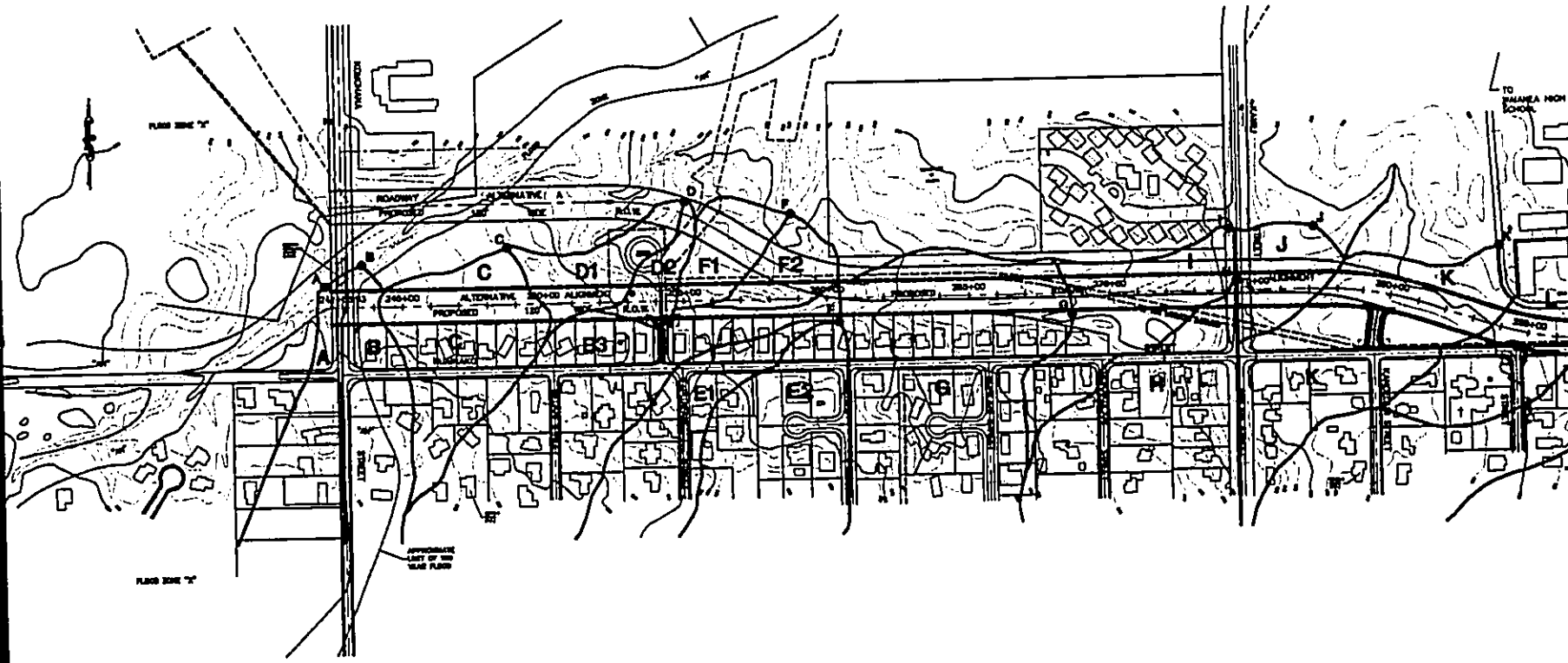




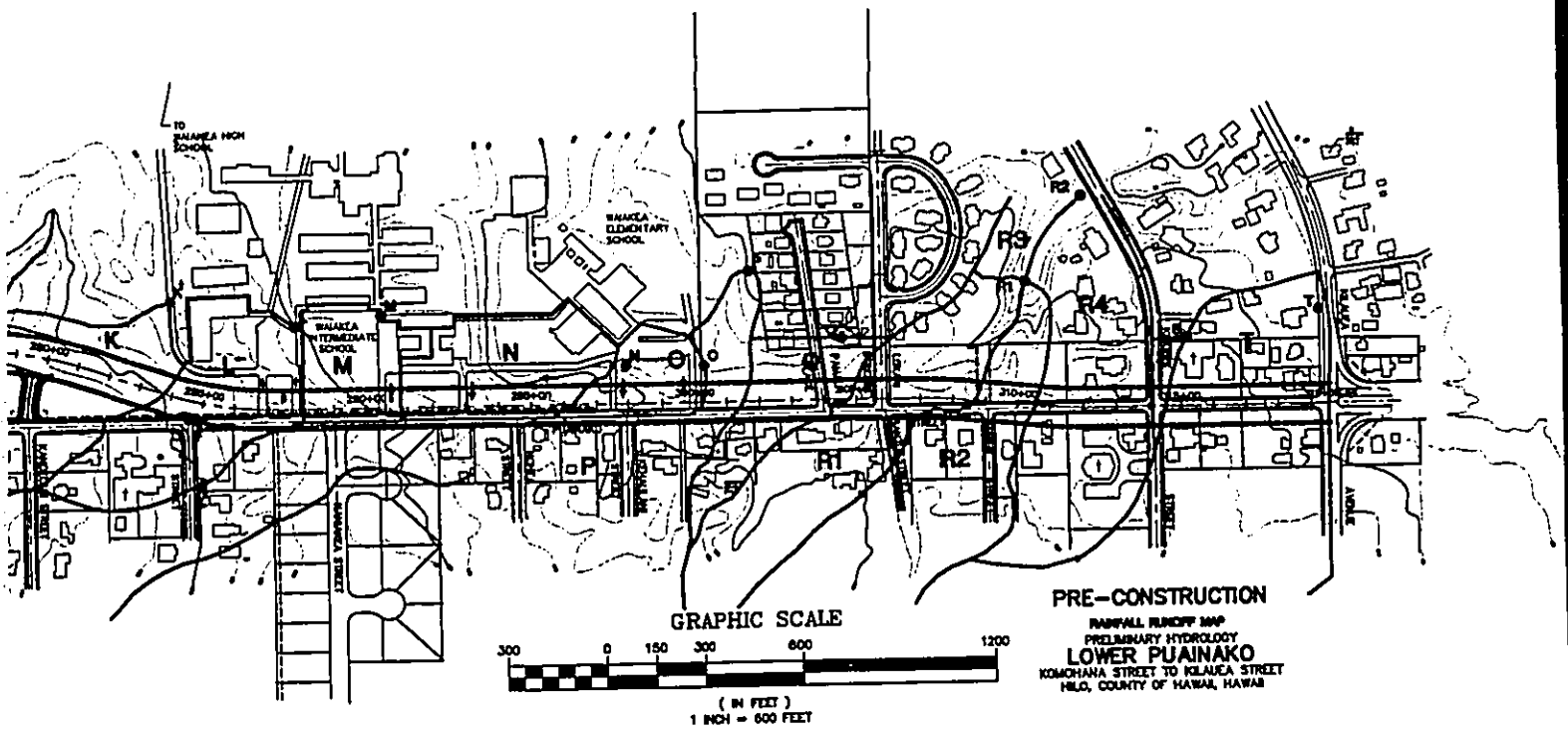
ALTERNATIVE ALIGNMENT #1 UPPER PORTION

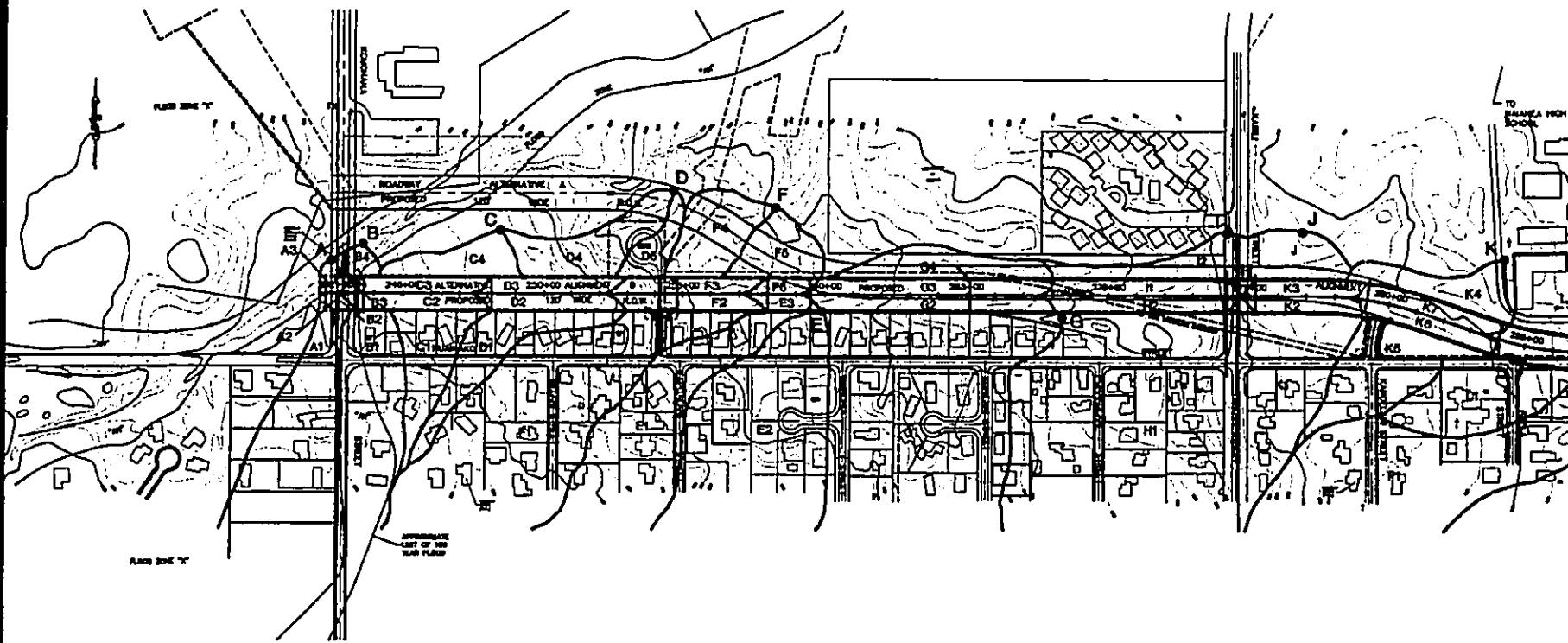


NOTE:
LETTERS REFER TO FLOOD ZONE TYPE



TITLE LOWER PUAINAKO PRE-CONSTRUCTION RAINFALL-RUNOFF MAP	FIGURE 3
PROJECT PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII	DATE 8/19/98





TITLE

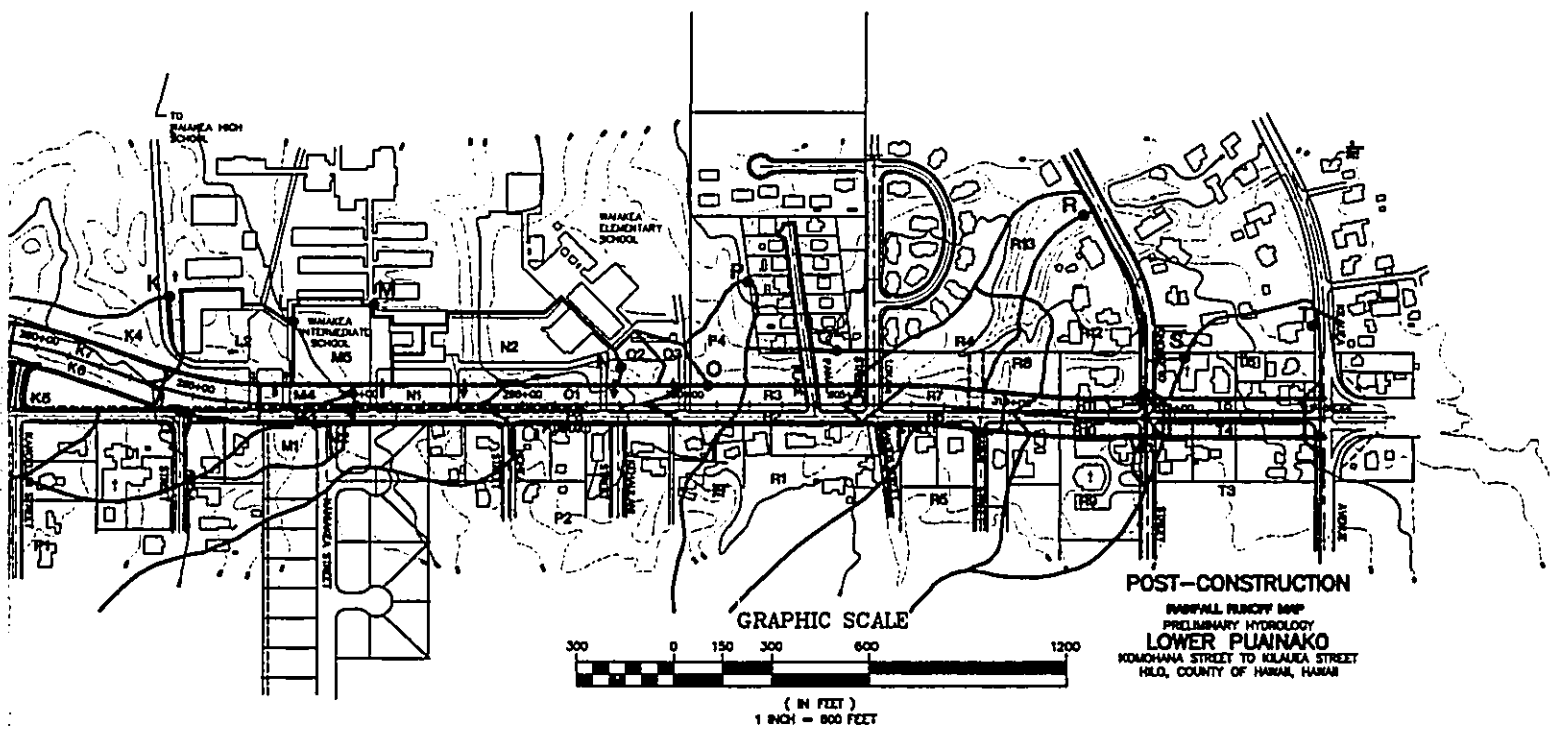
**LOWER PUAINAKO
POST-CONSTRUCTION RAINFALL-RUNOFF MAP**

FIGURE

4

PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

DATE
8/19/98



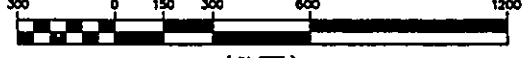
POST-CONSTRUCTION

PRELIMINARY HYDROLOGY

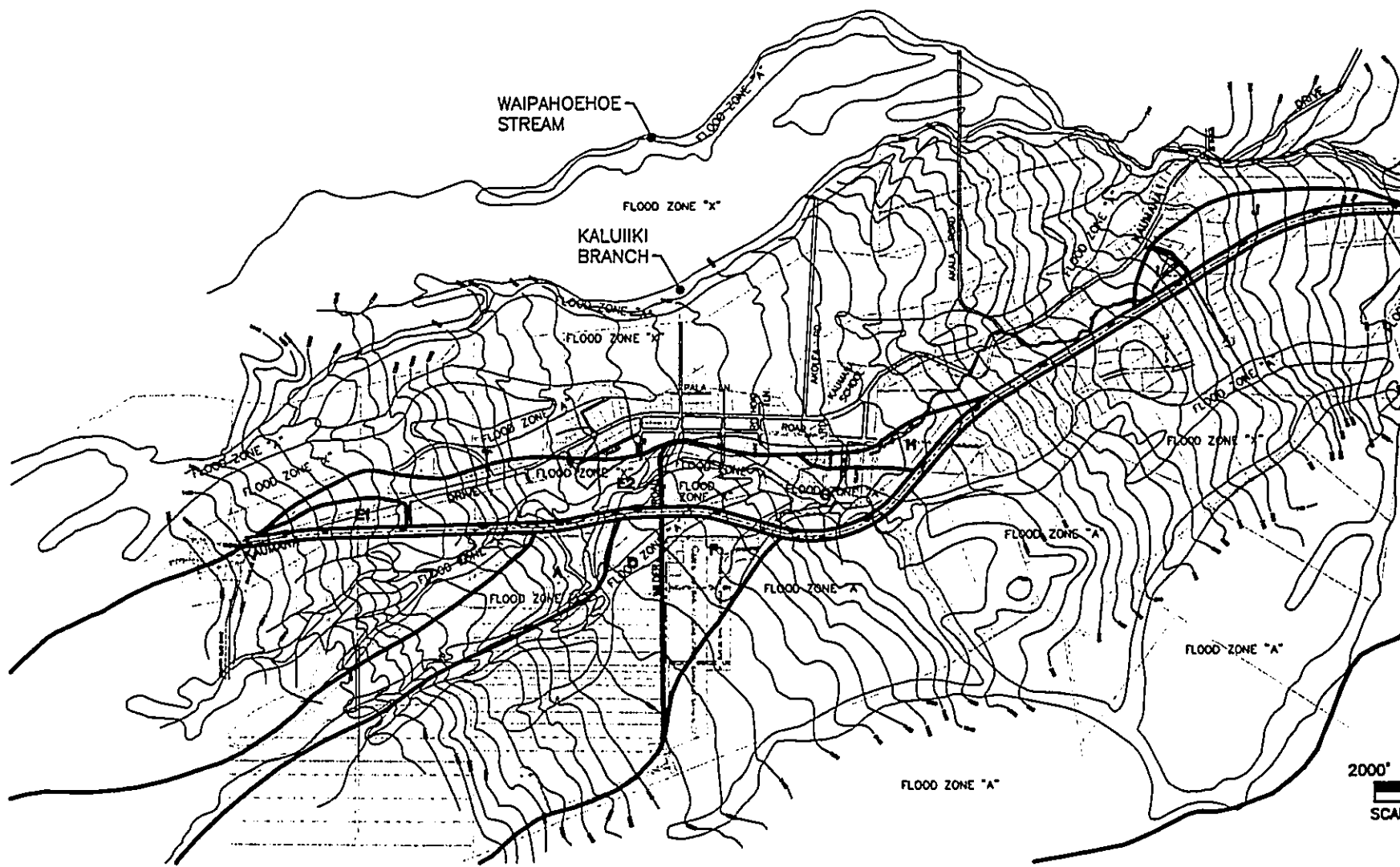
LOWER PUAINAKO

KOMOHANA STREET TO KLAUKA STREET
H.D., COUNTY OF HAWAII, HAWAII

GRAPHIC SCALE



(IN FEET)
1 INCH = 600 FEET



TITLE

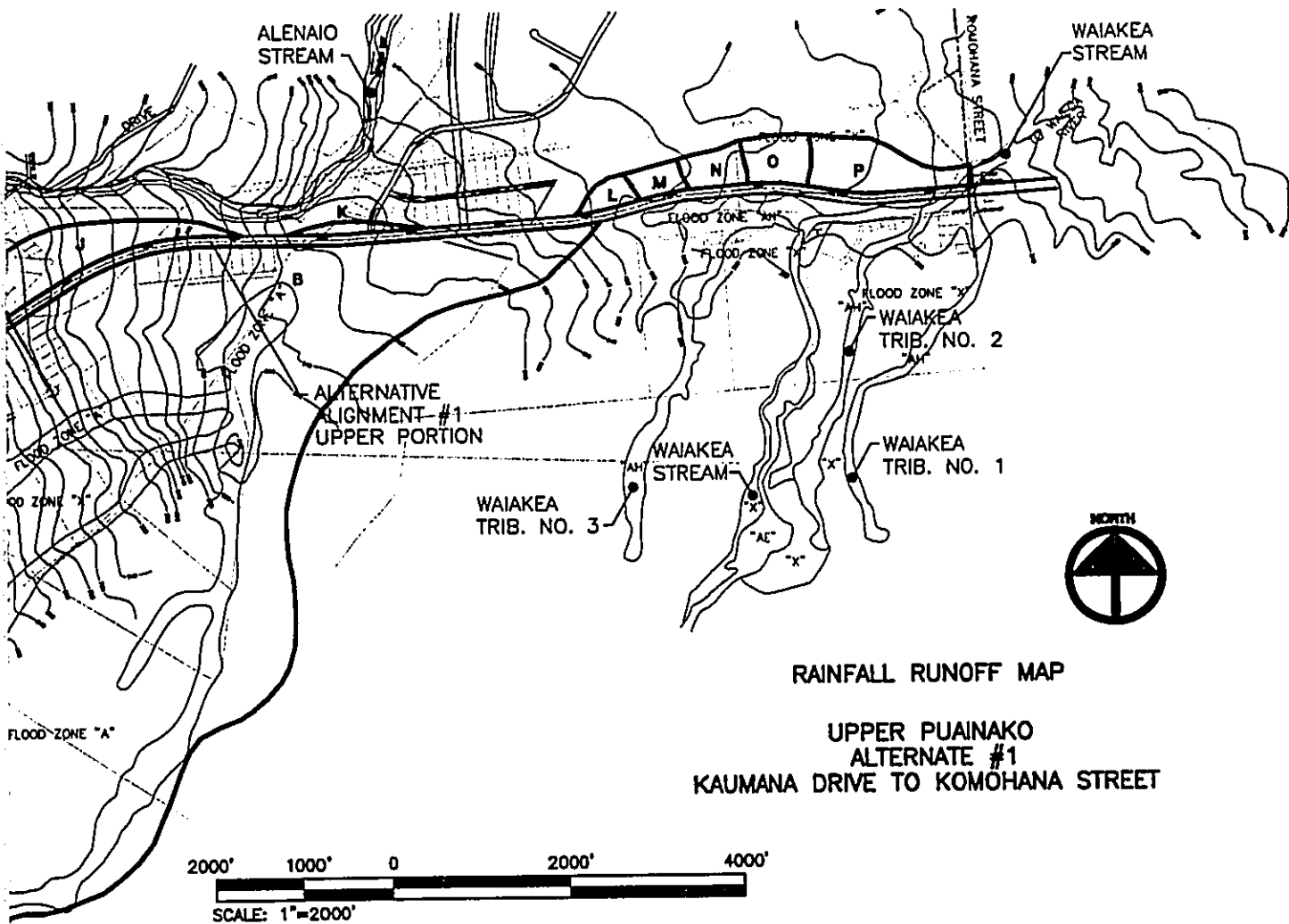
**UPPER PUAINAKO ALTERNATE #1
RAINFALL RUNOFF MAP**

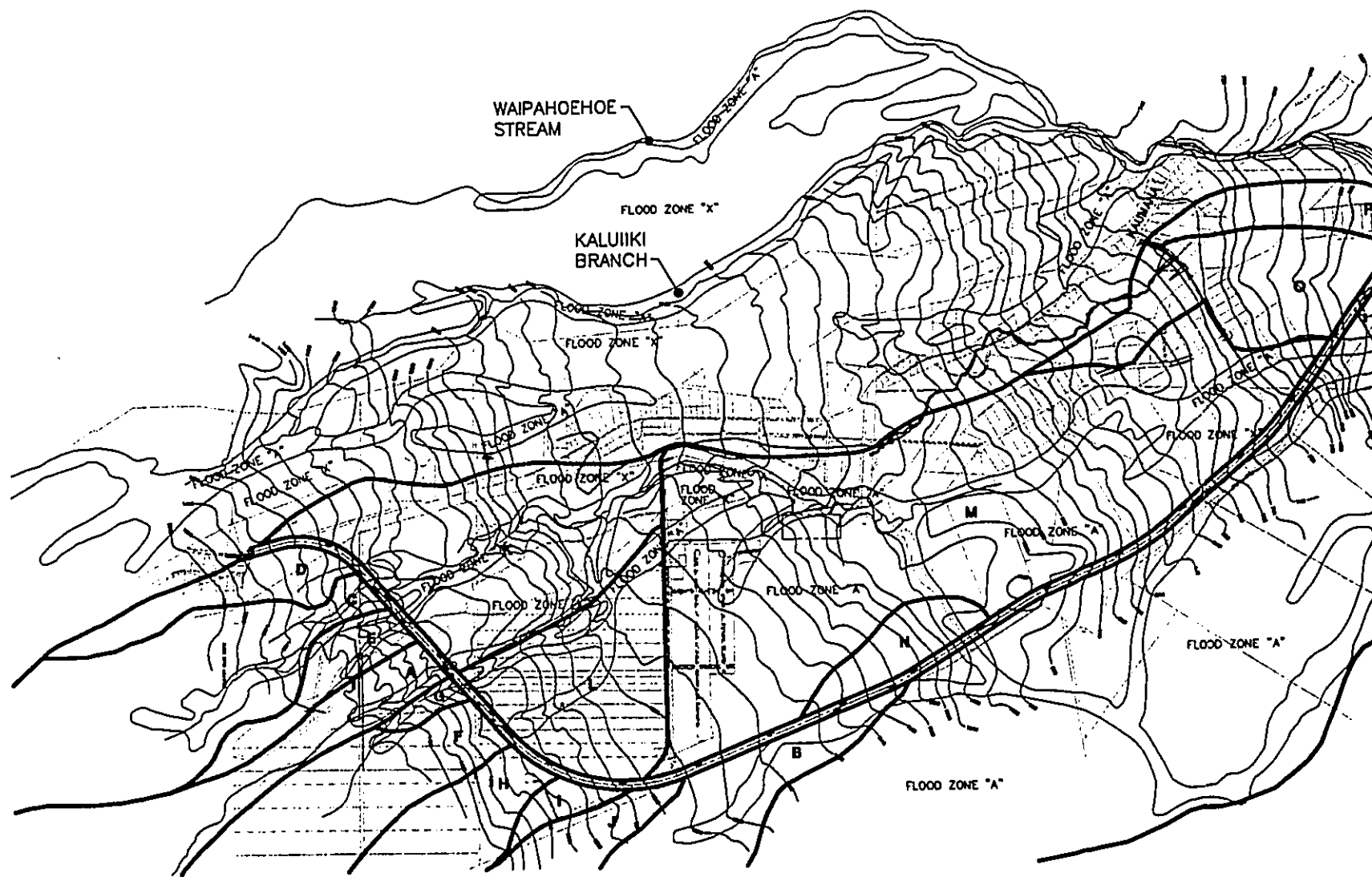
FIGURE

5

PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

DATE
8/19/98





TITLE

**UPPER PUAINAKO ALTERNATE #2
RAINFALL RUNOFF MAP**

FIGURE

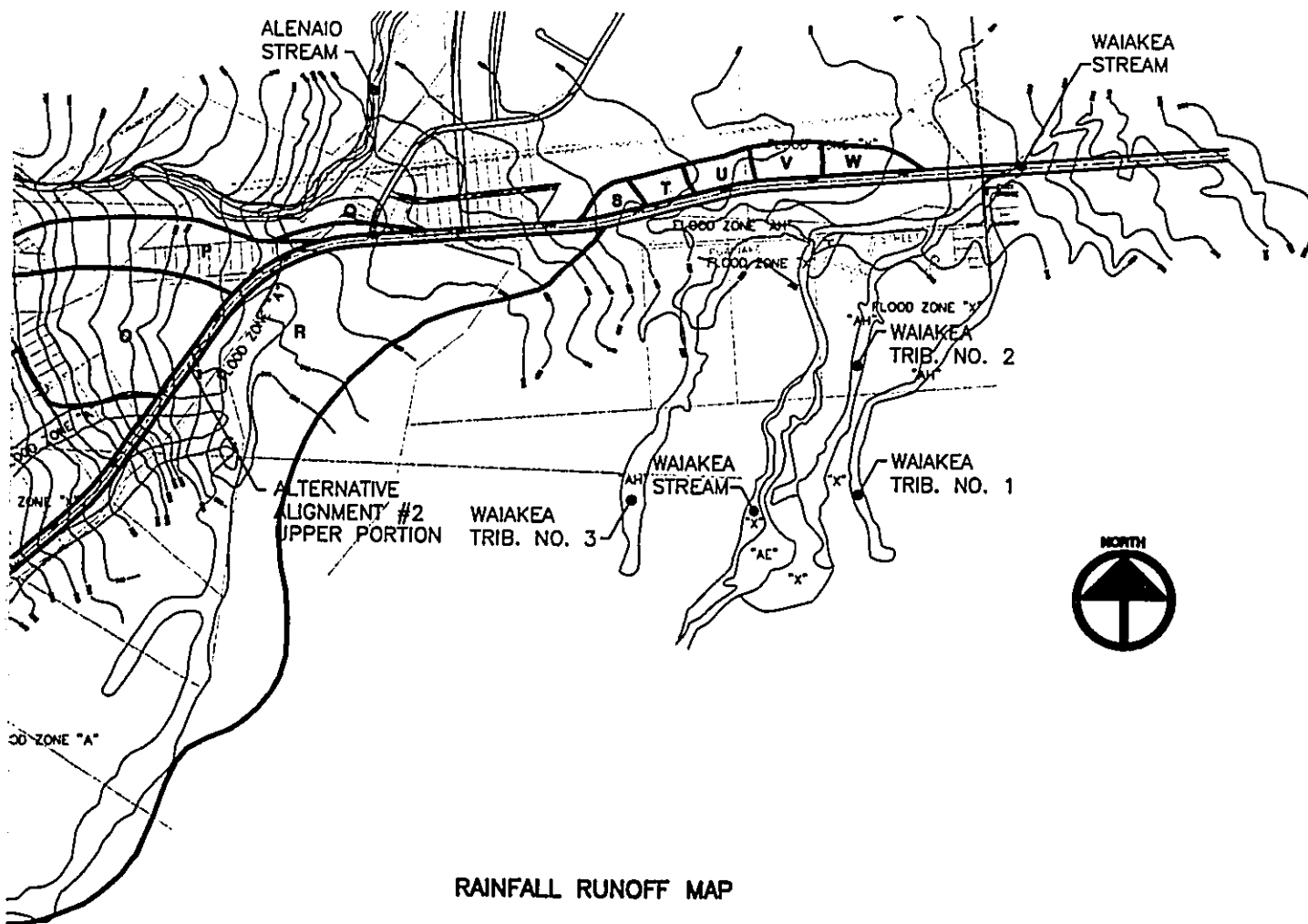
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PROJECT

PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

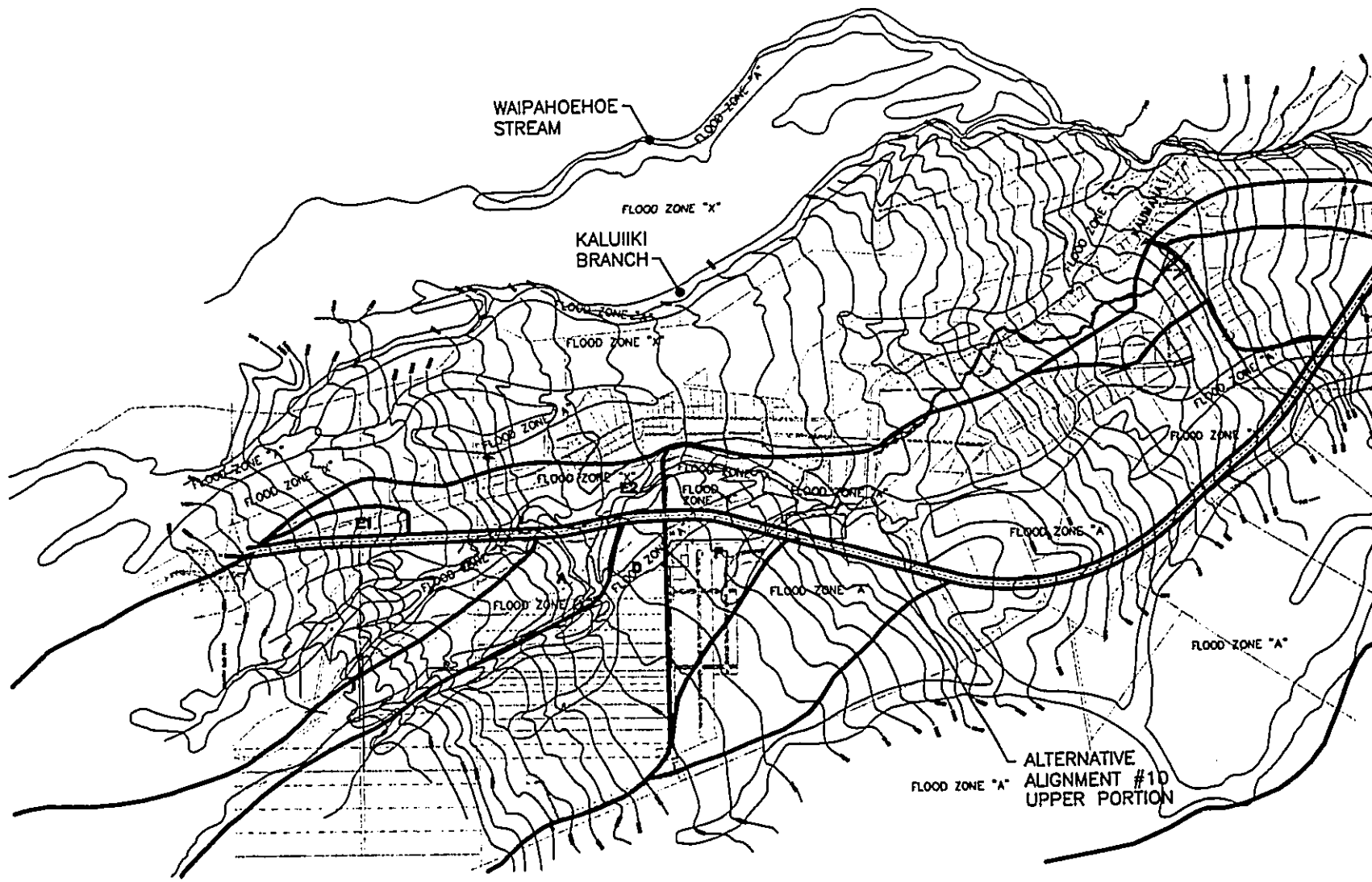
DATE

8/19/98



RAINFALL RUNOFF MAP
 UPPER PUAINAKO
 ALTERNATE #2
 KAUMANA DRIVE TO KOMOHANA STREET





TITLE

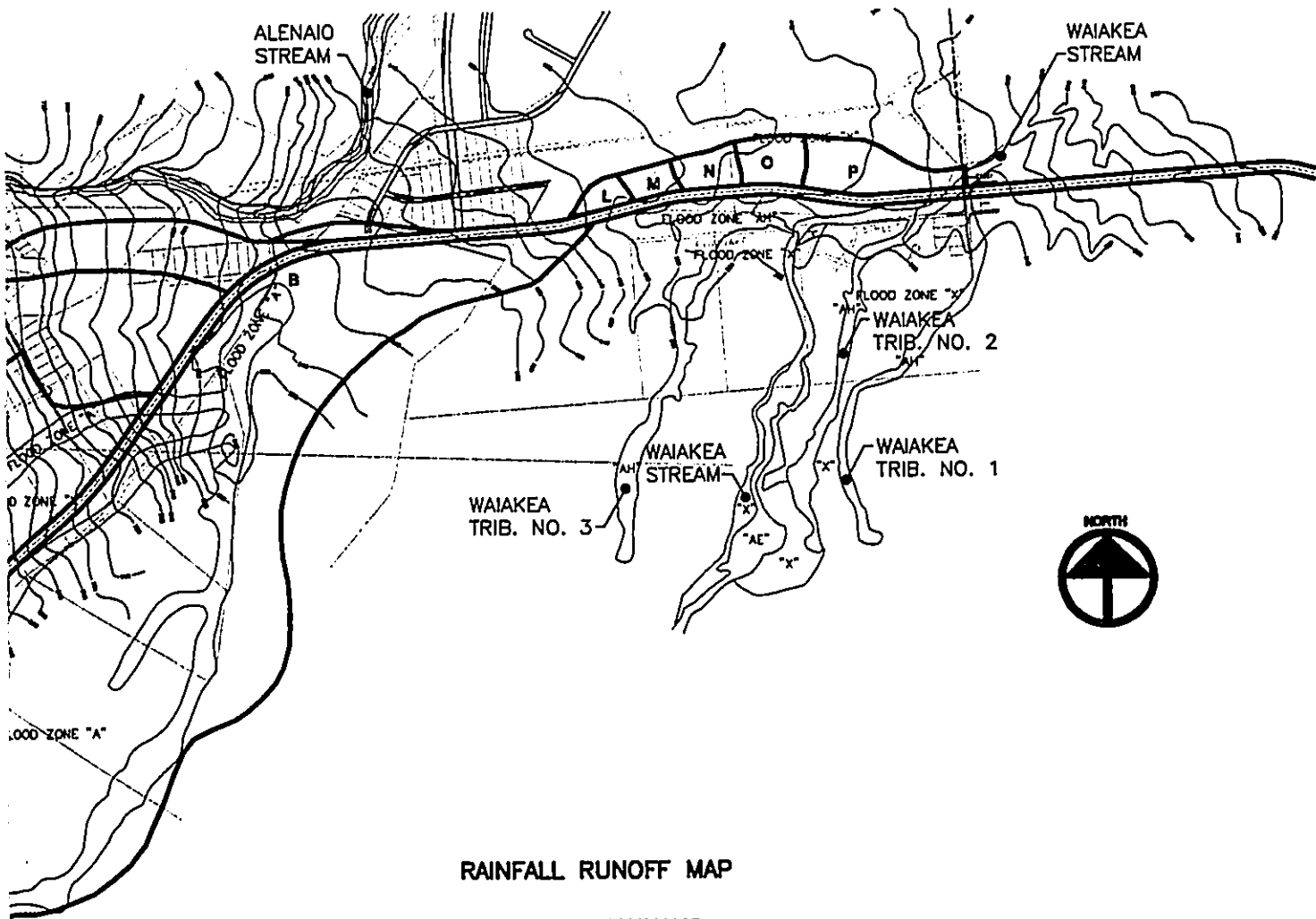
**UPPER PUAINAKO ALTERNATE #10
RAINFALL RUNOFF MAP**

FIGURE

6a

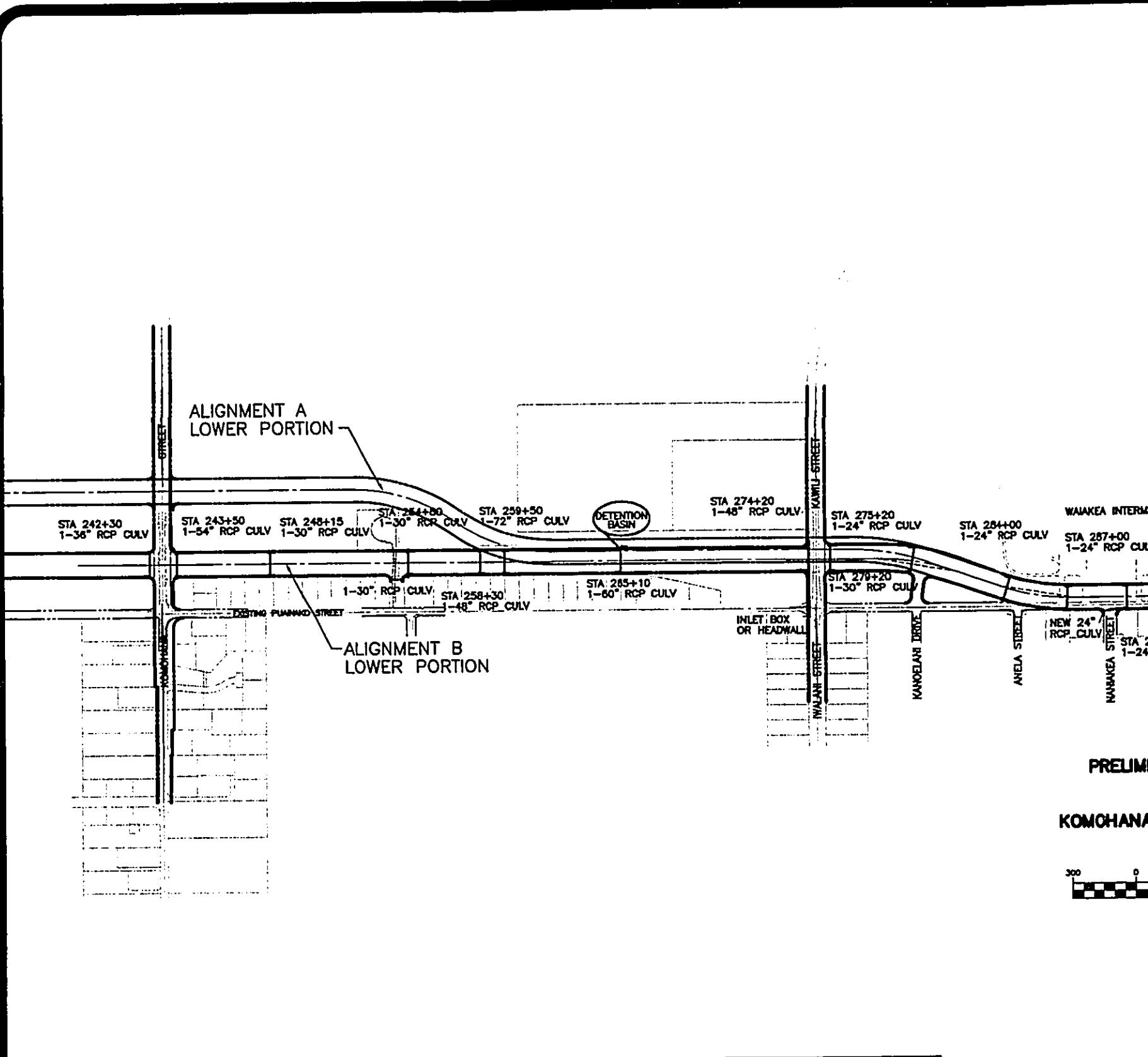
PROJECT PUAINAKO STREET WIDENING/EXTENSION
HILO, HAWAII

DATE
8/19/98

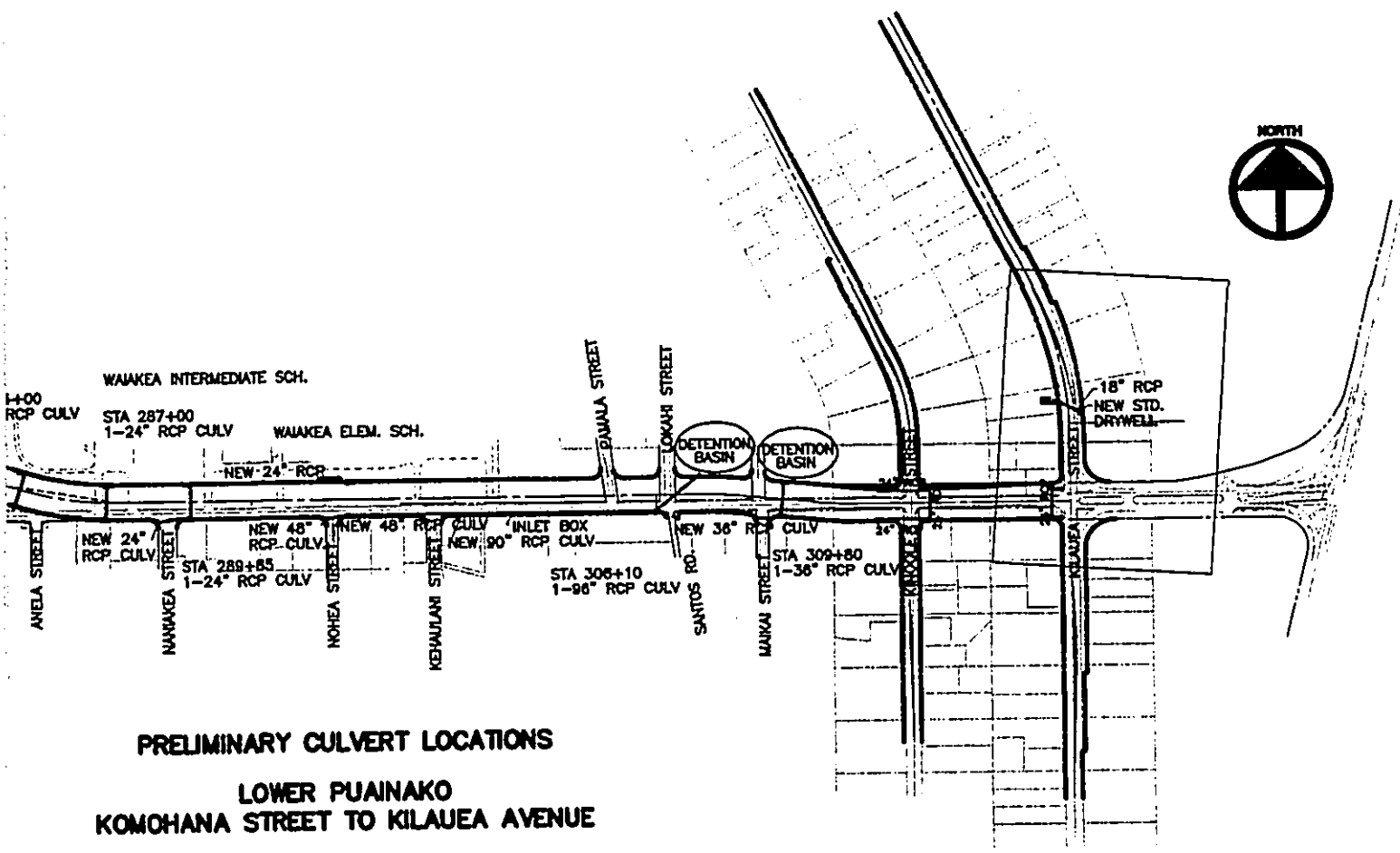


RAINFALL RUNOFF MAP
 UPPER PUAINAKO
 ALTERNATE #10
 KAUMANA DRIVE TO KOMOHANA STREET

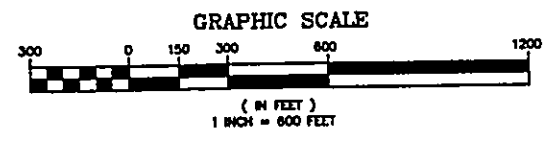


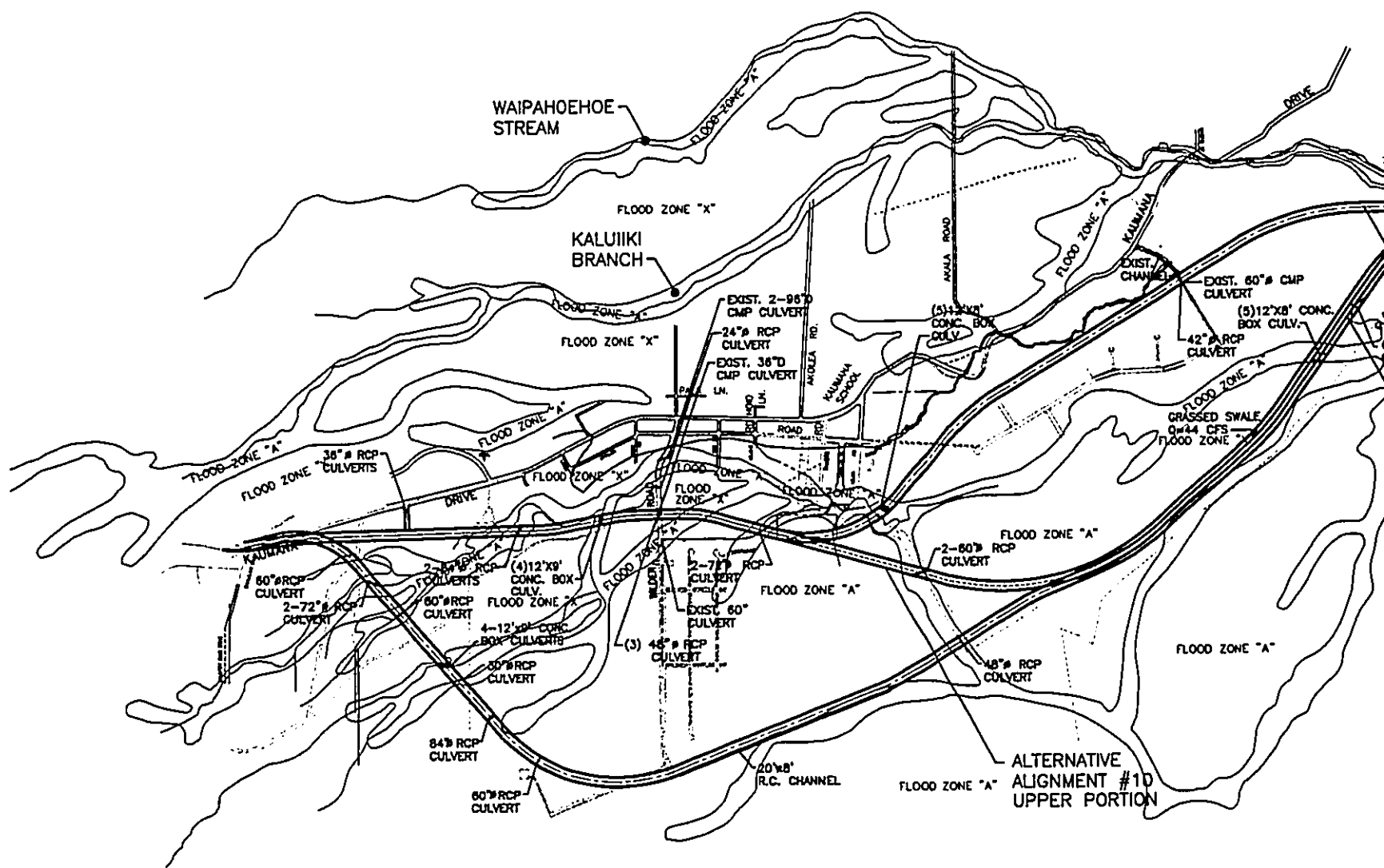


TITLE LOWER PUAINAKO PRELIMINARY CULVERT LOCATIONS	FIGURE 7
PROJECT PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII	DATE 8/19/98



PRELIMINARY CULVERT LOCATIONS
LOWER PUAINAKO
KOMOHANA STREET TO KILAUEA AVENUE





<p>TITLE</p> <h1 style="text-align: center;">UPPER PUAINAKO PRELIMINARY CULVERT LOCATIONS</h1>	<p>FIGURE</p> <h1 style="text-align: center;">8</h1>
<p>PROJECT</p> <p>PUAINAKO STREET WIDENING/EXTENSION HILO, HAWAII</p>	<p>DATE</p> <p>8/19/98</p>

