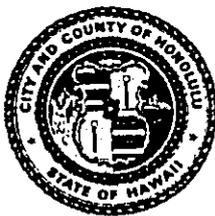


DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

FRANK F. FASI
MAYOR



DONALD A. CLEGG
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

RECEIVED 92/SMA-76(JT)

October 12, 1992

'92 OCT 13 P2:20

Mr. Brian J.J. Choy, Director
Office of Environmental Quality Control
220 S. King Street, 4th Floor
Honolulu, Hawaii 96813

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Dear Mr. Choy:

CHAPTER 343, HRS
Environmental Assessment/Determination
Negative Declaration

Recorded Owner : Attractions Hawaii dba Waimea Falls Park
Applicant : Attractions Hawaii dba Waimea Falls Park
Agent : Steve Kaiser
Location : 59-864 Kamehameha Highway, Haleiwa, Oahu
Tax Map Key : 6-1-02: por. 2
Request : To permit (retain) four concrete bridges
at Waimea Falls Park
Determination : Environmental Impact Statement (EIS) not
required

We have reviewed the comments received during the 30-day public comment period which began on September 23, 1992. The applicant has incorporated the comments in the Final Environmental Assessment (EA). On the basis of the EA, we have determined that this project will not have a significant environmental effect and have issued a negative declaration.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the Final EA.

Approved

A handwritten signature in cursive script, appearing to read "Donald A. Clegg", written over a horizontal line.
DONALD A. CLEGG
Director of Land Utilization

DAC:ct

→ 1992-10-23-0A- FEA - Waimea Falls Park ^{OCT 23 1992}

FINAL
ENVIRONMENTAL ASSESSMENT
FOR
WAIMEA FALLS PARK
REPLACEMENT BRIDGES

WAIMEA FALLS PARK

59-864 KAMEHAMEHA HIGHWAY

WAIMEA BAY, OAHU, HAWAII

PREPARED BY

ENVIRONMENTAL COMMUNICATIONS, INC.

1992-03-04 - 11:00 AM - 11:00 AM - 11:00 AM

'92 OCT 5 AM 8 26
DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF LAND UTILIZATION

650 South King Street, 7th Floor
Honolulu, Hawaii 96813

DLU MASTER APPLICATION FORM

Additional data, drawing/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing."
PLEASE ASK FOR THESE INSTRUCTIONS.

All specified materials and fees must accompany this form; incomplete applications could delay processing. You are encouraged to consult with department staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing" sheet.
Please print legibly or type the required information.

PERMIT REQUESTED (Check one or more as appropriate):

Clusters:

- Agricultural Cluster
 Cluster Housing
 Country Cluster

- Park Dedication
 Plan Review Use
 Planned Development-Housing
 Shoreline Setback Variance
 Site Plan Review

- Special Management Area Permit/Assessment
 State Special Use Permit
 Subdivision
 Sunlight Reflection
 Variance from LUO Sec.(s):

Conditional Use Permits:

- Type 1 Type 2

- Existing Use
 Flood Hazard Variance

- Site Development Plan
 Special District:

(Indicate District)

- Waiver (public uses/utilities)
 Zero Lot Line
 Zone Change, From _____ to _____
 Zoning Adjustment, LUO Sec.(s):

TAX MAP KEY(S): 6-1-02: 2

LOT AREA: _____

ZONING DISTRICT: P-1

STATE LAND USE DISTRICT: Conservation

STREET ADDRESS/LOCATION OF PROPERTY: 59-864 Kamehameha Highway Haleiwa, HI 96712

RECORDED FEE OWNER:

Name Attractions Hawaii dba Waimea Falls
Mailing Address Davies Pacific Center Park
841 Kishop Street, Suite 1050
Phone Number 538-1911
Signature [Signature]

APPLICANT:

Name Same as Fee Owner
Mailing Address _____
Phone Number _____
Signature [Signature]

PRESENT USE OF PROPERTY/BUILDING: Bridges (4)

AUTHORIZED AGENT/CONTACT PERSON:

Name Mr. Steve Kaiser
Mailing Address c/o Sea Life Park
Makapuu Point, Waimanalo, HI 96714
Phone Number 259-7933
Signature [Signature]

PROJECT NAME (if any): Waimea Falls Park
Replacement Bridges

PROJECT PROPOSAL (Briefly describe the proposed activity or project): This is an "after the fact" SMA permit application for replacement bridges (4).

FOR DEPARTMENT USE ONLY

FILE NO. _____

Submitted Fee Amount: \$ _____

Date Application Accepted: _____ Accepted By: _____

Date of Public Hearing: _____

- Approved
 Approved with conditions indicated below.
 Denied for reason(s) given below.
 Exempt project.

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Signature

Title

Date

The above approval does not constitute approval of any other required permits, such as building permits.

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE NUMBER</u>
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V.	ALTERNATIVES CONSIDERED	7
VI.	DETERMINATION	8
VII.	LIST OF PREPARERS	9
VIII.	AGENCIES TO BE CONSULTED IN PREPARATION OF E.A.	10

LIST OF FIGURES

- Figure 1. Project Location Map (USGS Quad Map)
- Figure 2. Project Site Plan Location Map (Replacement Bridges)
- Figure 3. State Land Use District Boundaries
- Figure 4. Special Management Area Map
- Figure 5. Flood Insurance Rate map (FIRM), panel 9 of 135
revised September 4, 1987.

EXHIBIT A. Alvin Zane & Associates site inspection report

EXHIBIT B. T. Iida Contracting, Ltd. letter

I. SUMMARY

CHAPTER 343, HRS
ENVIRONMENTAL ASSESSMENT (EA)

Action: Applicant

Project Name: Waimea Falls Park - Replacement Bridges

Project Description: This document is for an *after the fact* Special Management Area (SMA) permit. for "reconstructed bridges."

Project Location: Waimea Falls Park

Tax Map Key: 6-1-02: 2

Area: The four replacement bridge sites total approximately 5423 square feet.

State Land Use Designation: Conservation

County Zoning Designation: P-1 Preservation

Landowner: Attractions Hawaii

Agent: Steve Kaiser c/o Sea Life Park

Contact: c/o Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96809
Phone: (808) 524-0594

II. PROJECT DESCRIPTION

A. Technical Characteristics

1. This SMA application is to comply with the Department of Land Utilization, City & County of Honolulu (DLU) SMA permit requirements for "after the fact" permits*. *DLU letter dated 3-2-92 to Mr. Steve Kaiser. The focus of the E.A. will dwell principally on the four (4) bridges which were lost and subsequently replaced due to the storm event of November 20, 1990. Discussions on Waimea Falls Park as an operating commercial entity will not be covered beyond a general description of location. This is due to the fact that there have been no structural or operational changes at the Park beyond the four bridges which have been built and are in use at the present time. During the severe storm event of November 20, 1990, four (4) bridges at Waimea Falls Park were severely damaged and required emergency repair and/or replacement. Permit approvals for this work were granted by the State Department of Land and Natural Resources and the U.S. Army Corps of Engineers on an emergency basis. Omitted in the process was the preparation and processing of the SMA permit from DLU. This application will rectify that unintentional oversight.

2. Historically, Waimea Falls Park began as an 1800 acre recreational park in 1969 when the fee was acquired by the Bishop Corporation. The Park is located in Waimea Valley on the North Shore of Oahu about 35 miles from Honolulu, and 2.8 miles north-east of Haleiwa. (See Figure 1) Today, the Park presents a vast array of recreational and cultural experiences, and consists of the Waimea Arboretum and Botanical Gardens; a wildlife preserve for endangered birds and animals; numerous documented Hawaiian historical sites and hiking trails. The main visitor center and other support facilities were first completed in September, 1974. The total parcel is included in the State Land Use District Boundary map as Conservation, (See Figure 2) the City & County zoning maps as Preservation (P-1) open space recreation, and the Special Management Area (SMA) boundary map includes the entire parcel, following the Park's property line up to and including the upper reaches of the valley, nearly 3.5 miles from the actual shoreline. (See Figure 3). The Park's development was initiated in 1972 with a State Department of Land and Natural Resources (DLNR) review and approval of the Park's EIS in January 8, 1975 and the Conservation District Use Application permit (CDUA) on January 24, 1975. In 1979, the Park sought and obtained approvals

from the DLU for an SMA permit for expansions to the visitor center, a food service facility at the Waimea Falls turnaround, and a group dining facility. Today, the Park is a premier visitor attraction on Oahu, and particularly the North Shore and, has played an active role in the Community at large by providing a venue for many weddings, luaus, educational tours for school, church and community groups. Today, the Park employs 200 full time workers in categories ranging from management to maintenance. Employees are from the North Shore and adjacent areas, and many have been with the Park since inception. Park management and staff are also vital community citizens who participate in the North Shore Community organizations, i.e. North Shore Neighborhood Board No. 27, Sunset Beach Community Association, etc.

3. Replaced Bridges - Alvin Zane & Associates, Inc. conducted an onsite investigation on November 25, 1990 to inspect the extent of damage suffered after the flood. His findings are provided as Exhibit A. In summary, Mr. Zane found that the original bridge structures had experienced severe structural damage due to clogging of debris/boulders that accumulated on the in-stream bridge foundations. He also noted that the basic construction methodology of the original bridges was such that the combined impact of severe flooding, accumulated debris, and age, all contributed to the destruction of the original bridge systems. He recommended in his summary that longer and wider spans be used, and that the replacement bridges be set at higher elevations above the stream to avoid a future recurrence of damage due yet another 100+ year flood.

4. Bridge Construction - T. Iida Contracting, Ltd. provided their construction expertise in the replacement program. Their analysis and recommendations (Exhibit B) on the construction methodology was governed by replacing the bridges in an efficient and time effective manner, and also, to minimize construction impacts to Waimea Stream during the construction phase. Mr. Henry T. Iida advised against working in the stream since this could prove detrimental to the stream biota, and also would be potentially costly in terms of time delays due to rained out days, preparation of in-stream coffer dams, and foundation work. Mr. Iida recommended that the wider and longer bridge spans be built to avoid the need for cofferdams, and to expedite the installation of pre-cast pre-stressed concrete bridge spans.

B. Social and Economic Characteristics

Waimea Falls Park experienced down time for repairs that totaled approximately 4 1/2 months for bridge replacement. During this time, the Park management repaired damage to the landscaping, the aviarys, the utilities/infrastructure, and the visitor center. Employees were retained during the period of loss and utilized in repair and recovery projects that were not their normal every day activity. No employees were laid off and total staff contributed to the repairs of the Park as a unified restoration effort. The Park re-opened on May 1, 1991.

C. Environmental Characteristics

The installation of the four bridges was accomplished under the permit approvals of the U.S. Army Corps of Engineers and the State Department of Land and Natural Resources. Work was done with a minimum of impact to the stream biota, and this was due to the design of the wider and long spans that did not require in-stream foundations or footings. The net result was the replacement of bridge structures that would not experience flood damage in the event that another major flood event, i.e. 50, 100 year rain would repeat itself. Further, as the old bridge was insured, it was necessary to replace them with bridges meeting the required insurance standards. An exact replacement at the old bridge elevations would have been uninsurable.

III. AFFECTED ENVIRONMENT

A. Geographical Characteristics

1. Topography - The topography at the four bridge sites range from 30.5' mean sea level (MSL) to 114' with each bridge site as follows:
Bridge # 1: - 30.5' to 50' MSL.
Bridge # 2: - 82' to 98' MSL
Bridge # 3: - 88.8' to 104.8' MSL
Bridge # 4: - 94.8' to 114.81' MSL
2. Soils - The soils at the bridge sites are characterized by "Jaucas Sand (JaC) and in a representative profile, the soil is single grain, pale brown to very pale brown, sandy and more than sixty inches deep. In many places, the surface layer is dark brown as a result of accumulation of organic matter and alluvium." U.S. Department of Agriculture, Soil Conservation Service, August, 1972.
3. Vegetation - The four bridge sites have been altered and ungrouted boulder walls have been placed as support/foundations for the bridge spans. Scrub vegetation has been removed in those locations.

B. Hydrological Characteristics

1. Drainage
Replacement designs have incorporated accepted drainage criteria at each bridge site.
2. Coastal Zone Management Program
The construction of the four bridges has not resulted in any detrimental impact on the Coastal Zone. Stream flow in the Waimea Stream continues at a normal rate of flow.

C. Biological Characteristics

In-stream biota have not been visibly affected by the completed construction. After the bridges were completed and stream flow rate returned to normal, traditional life patterns resumed.

IV. SUMMARY OF MAJOR IMPACTS AND MITIGATIVE MEASURES

The major impacts have been mitigated with the design and construction of the four replacement bridges. The wider and longer spans achieved the following goals and objectives:

1. No repair work was done in the stream proper for foundation footings or piers which removed the need for coffer dams to abate or hold back existing stream flow during concrete pouring for the foundations.

2. The ability to span the stream with wider pre-cast plank flooring also removed the potential for debris and boulder accumulation in the stream bed, which in turn would have resulted in transfer of water volume weight to the superstructure, resulting in another bridge loss.

3. The time savings in the construction methodology selected minimized the Park not being open as an economic benefit to the Park employees. Traditional construction methods of in-stream foundations could have resulted in unpredictable delays due to rained out days, lack of sheet piling materials, etc.

4. Replaced the old insured bridges with new bridges meeting the new standards of safety and insurability criteria.

V. ALTERNATIVES CONSIDERED

No alternatives were considered beyond the decision to expand and improve the bridge design concept to prevent future damage due to inadequate sizing and design capacity.

VI. DETERMINATION, FINDINGS, AND REASONS SUPPORTING DETERMINATION

After completing this after the fact assessment of the actual environmental effects of the completed action, and consulting with other governmental agencies, it has been determined that an Environmental Impact Statement (EIS) is not required. Therefore, this document constitutes a Notice of Negative Declaration. Reasons supporting the Negative Declaration determination are as follows, using as the criteria, the policy, guideline and provisions of Chapters 342, 343, and 344, Hawaii Revised Statutes (HRS).

1. The completed action will not adversely affect the physical and social environment. The temporary and short term impact to the ambient Noise and Air quality standards during the construction phase did not result in a negative impact at the four bridge sites.
2. There are no known endangered plant or animal species at the four bridge sites.
3. There are no known archaeological sites at the four bridge sites. None were uncovered during the construction phase.
4. The completed bridges are in compliance with applicable State and County Land Use maps at the four bridge sites.
5. There are no adverse secondary effects on future development, the population or public facilities.
6. This Notice of Negative Declaration shall serve to meet the requirements of Chapter 343, HRS.

VII. LIST OF PREPARERS

Environmental Communications, Inc.
Environmental Assessment

Alvin Zane & Associates
Civil & Structural Engineers

Mr. Steve Kaiser
Sea Life Park

VIII. LIST OF AGENCIES TO BE CONSULTED IN THE AFTER THE FACT PREPARATION OF THE ENVIRONMENTAL ASSESSMENT.

ORGANIZATIONS AND AGENCIES

<u>Agency</u>	<u>Date of Consultation</u>	<u>Date Comment Received.</u>
Department of Land and Natural Resources	7-10-92	8-19-92
Dept. of Health Environ.Mgt.Div.	7-10-92	8-14-92
Office of State Planning Coastal Zone Mgt. Prog.	7-10-92	
Office of State Planning Mr. Harold Masumoto	7-10-92	
University of Hawaii Environmental Center	7-10-92	
Department of Gen. Planning.	7-10-92	July 28, 1992 ✓
Dept. of Land Utilization	7-10-92	
Dept. of Public Works	7-10-92	July 16, 1992 ✓
North Shore N.B. No.27 Attn: Jimmy Awai	7-10-92	August 1, 1992 ✓
Sunset Beach Comm.Assn. Mr. Lucky Cole, Pres.	7-10-92	
Dept. of Parks & Recreation	7-10-92	9-15-92 ✓

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR



C. MICHAEL STREET
ACTING DIRECTOR AND CHIEF ENGINEER

ENV 92-165

July 13, 1992

Mr. Fred Rodriguez
Environmental Communications, Inc.
P. O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodriguez:

Subject: Environmental Assessment (EA)
Waimea Falls Park Replacement Bridges
TMK:6-1-02:2

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

Very truly yours,

C. Michael Street

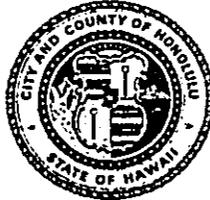
C. MICHAEL STREET
Director and Chief Engineer

JUL 16 1992

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR



BENJAMIN B. LEE
CHIEF PLANNING OFFICER

ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER

ET 7/92-2139

July 22, 1992

Mr. F. J. Rodriguez
Environmental Communications Inc.
P.O. Box 536
Honolulu, Hawaii 96809

Dear Mr. Rodriguez:

Environmental Assessment for
Waimea Falls Park Replacement Bridges

This is in response to your memorandum dated July 10, 1992. We have reviewed the subject Environmental Assessment (EA) and have no objections to the proposed permit application.

Thank you for the opportunity to comment on the Draft EA. Should you have any questions, please contact Eugene Takahashi at 527-6022.

Sincerely,

A handwritten signature in black ink, appearing to read "Benjamin B. Lee", is written over the typed name and title.

BENJAMIN B. LEE
Chief Planning Officer

BBL:ft

cc: Arthur Challacombe (DLU)



NORTH SHORE NEIGHBORHOOD BOARD NO. 27

P.O. BOX 607 • HALEIWA, HAWAII 96712

August 1, 1992

Mr. Donald Clegg
Department of Land Utilization
Municipal Building
560 South King Street
Honolulu, HI 96813

Dear Sir,

North Shore Neighborhood Board #27 voted on July 28 to support a negative declaration in the matter of Waimea Falls Park's application for after-the-fact SMA permits for replacing two bridges destroyed in the disastrous November 20, 1990, flood.

Sincerely yours,

James L. Awai, Jr.
James L. Awai, Jr. TM
Chair

cc: Mr. Fred Rodriguez
Environmental Communications, Inc.
Post Office Box 536
Honolulu, HI 96809

AUG 1 2 1992

JLA/yk



Oahu's Neighborhood Board System-Established 1973

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK F. FASI
MAYOR

RECEIVED
SEP 16 1992

WALTER M. OZAWA
DIRECTOR

PARAMETRIX, INC.
HONOLULU

ALVIN K.C. AU
DEPUTY DIRECTOR

September 15, 1992

TO: DONALD A. CLEGG, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: WALTER M. OZAWA, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR FOUR CONCRETE
BRIDGES AT WAIMEA FALLS PARK
TAX MAP KEY 6-1-2: POR. 2
PROJ. REF. NO. 92/SMA-76(JT)

We have reviewed the draft environmental assessment for an after-the-fact Special Management Area Permit for four concrete bridges at Waimea Falls Park.

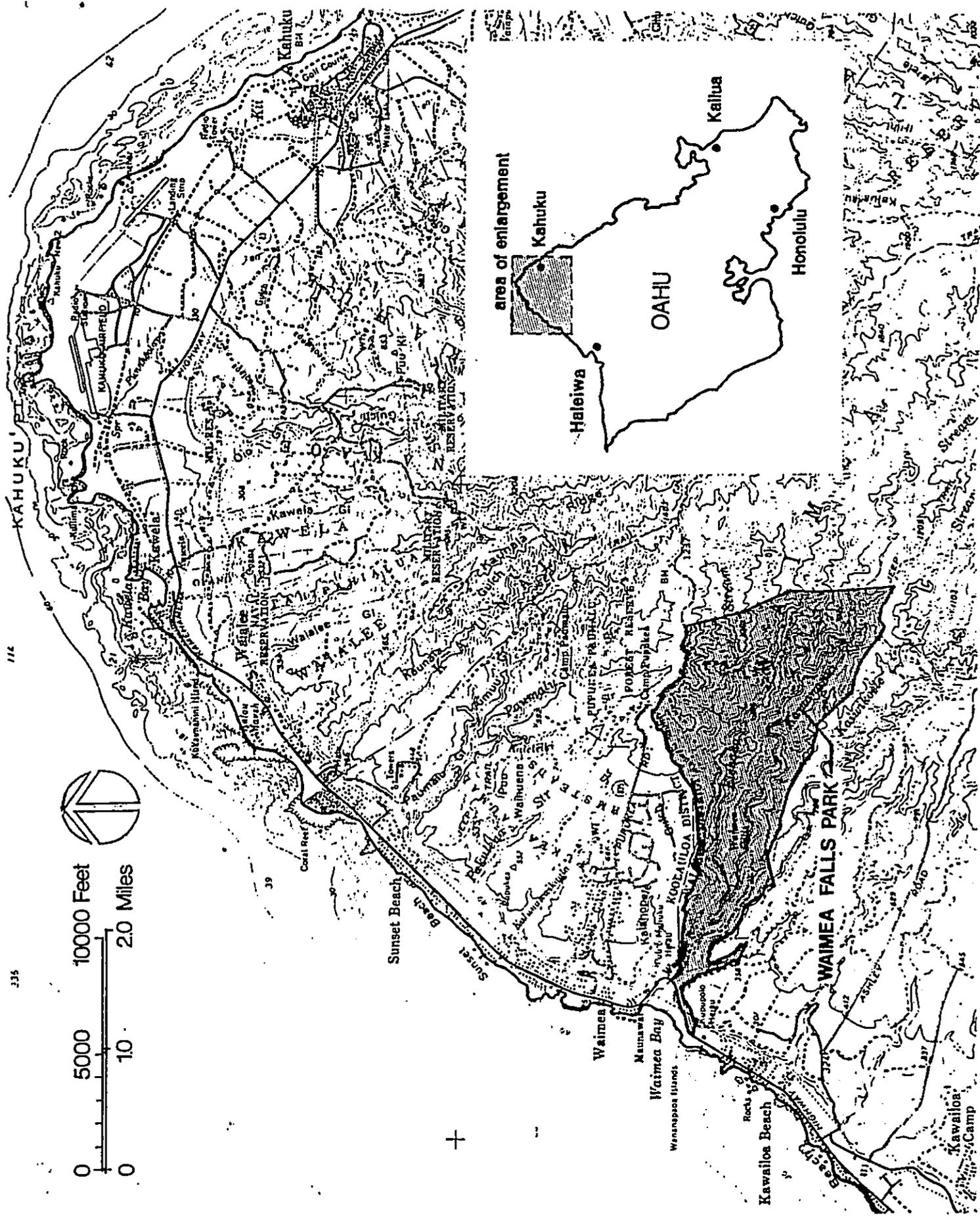
We have no comments to offer regarding this environmental assessment.

If you have any questions, please call John Morihara of our Advance Planning Branch at extension 4246.


For WALTER M. OZAWA, Director

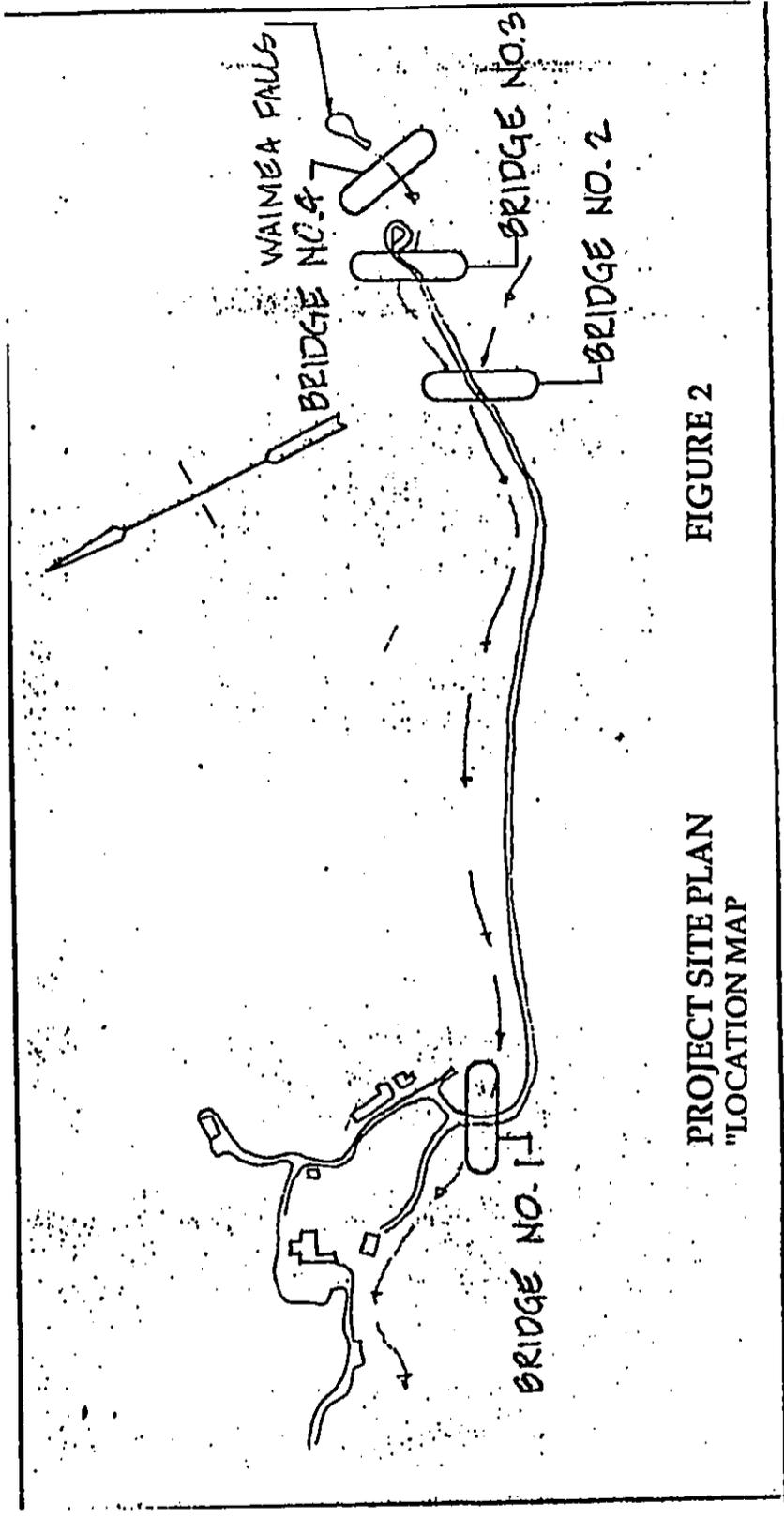
WMO:ei

cc: Charles Pietsch, Attractions Hawaii
✓ Fred Rodriguez, Parametrix, Inc.
Office of Environmental Quality Control



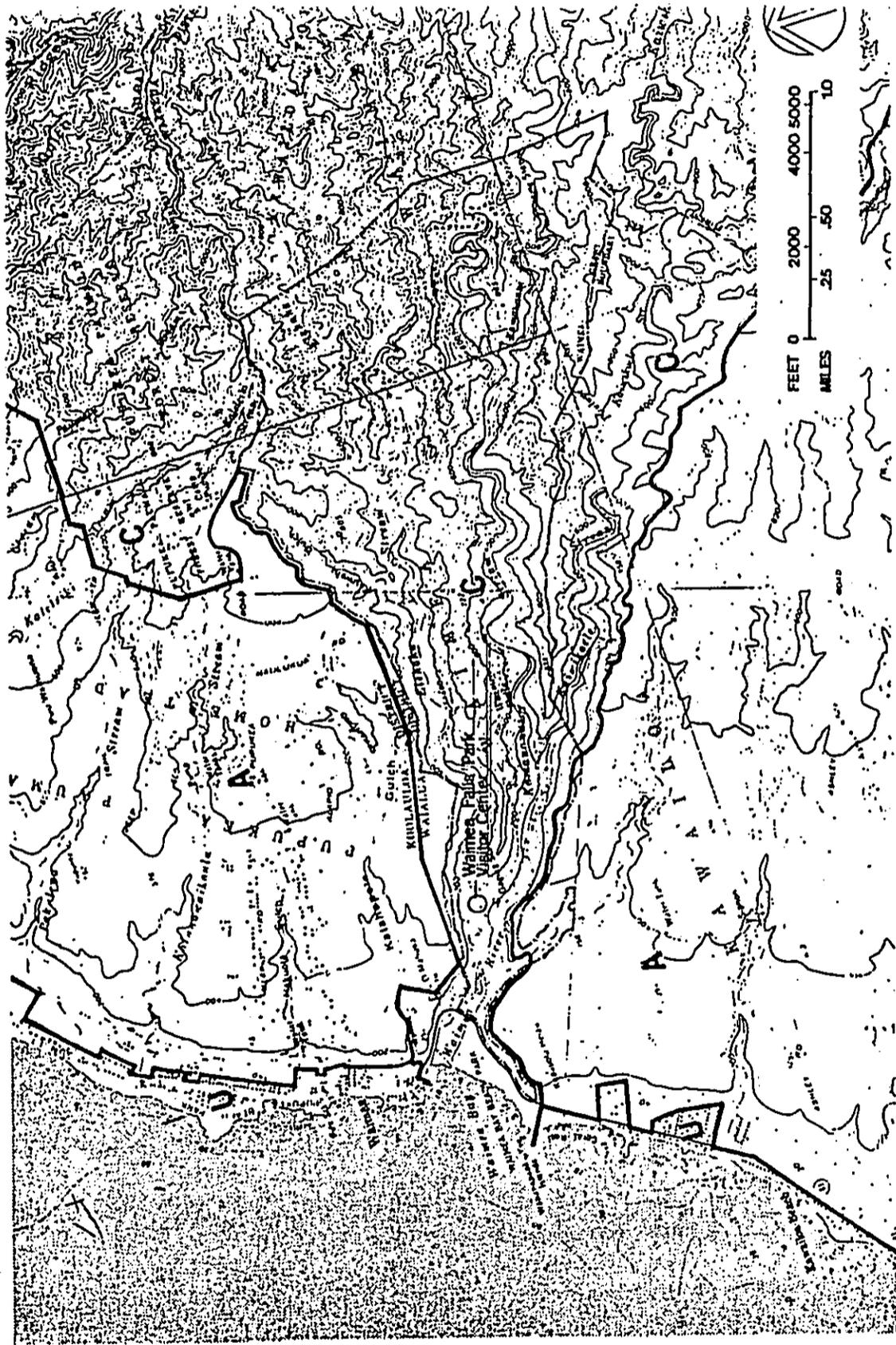
PROJECT LOCATION MAP
USGS QUAD MAP

FIGURE 1



PROJECT SITE PLAN
"LOCATION MAP

FIGURE 2

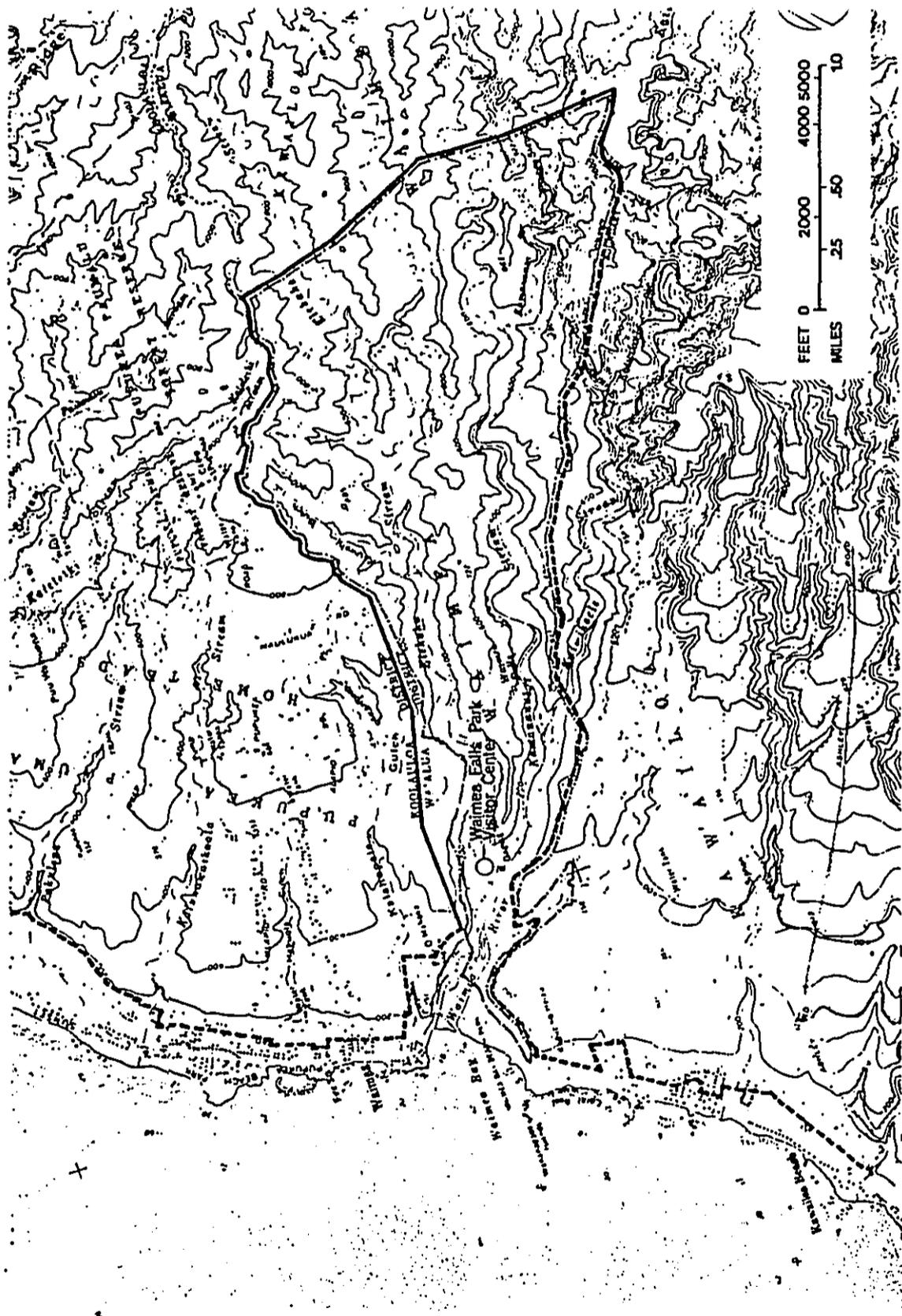


A Agriculture
C Conservation
U Urban

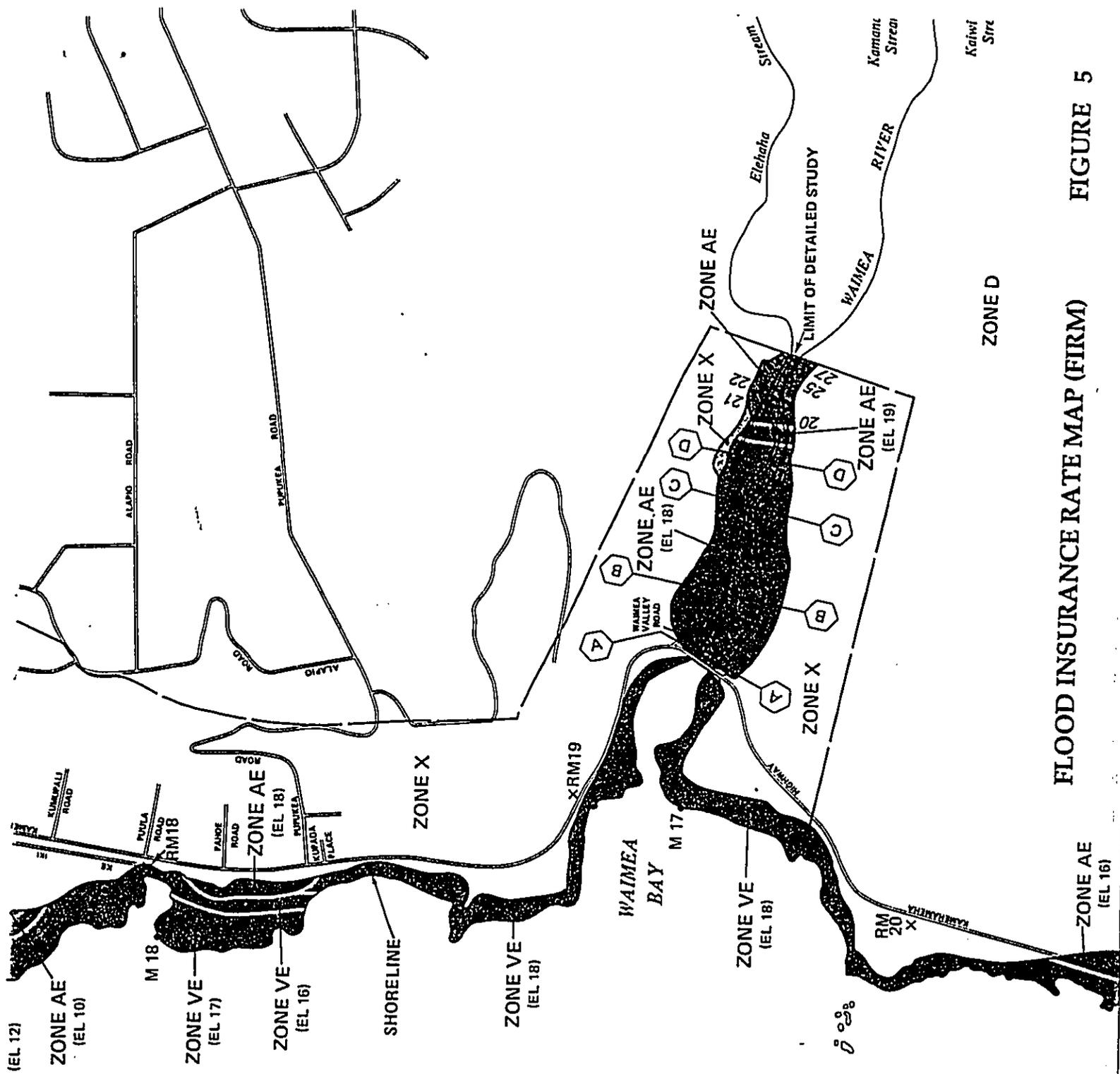
----- Waimea Falls Park Property Line

FEET 0 2000 4000 5000
 MILES 0 .25 .50 1.0

STATE LAND USE DISTRICT BOUNDARIES **FIGURE 3**



SPECIAL MANAGEMENT AREA MAP FIGURE 4



NOTE:
 COASTAL BASE FLOOD ELEVATIONS
 APPLY ONLY LANDWARD OF THE
 SHORELINE SHOWN ON THIS MAP.

FLOOD INSURANCE RATE MAP (FIRM) FIGURE 5

Alvin Zane & Associates, Inc.

STRUCTURAL ENGINEERS

1314 S. KING ST., SUITE 963 • HONOLULU, HAWAII 96814

TELEPHONE (808) 524-3478

Mr. Steve Kaiser
Sea Life Park
Makapuu Pt.
Waimanalo, Hawaii 96795

Subject: Waimea Falls Park Bridges

Dear Mr. Kaiser:

On Sunday November 25, 1990, the undersigned and you made a site visit of the various bridge structures that were damaged during the recent rain storm. Observation centered on three vehicular bridges, a sewer line bridge site, and a pedestrian bridge site. These bridges are identified on the enclosed site plan as bridges V-1, V-2, V-3, P-1, and S-1.

During the site visit, I noted the following:

1. Bridges P-1 and S-1 were completely washed away. The steel superstructure for S-1 was situated on the stream banks. The abutment for S-1 on the Haliwa site was completely washed away and only a section of the sewer line is remaining. Considerable erosion noted on the stream banks. The gaging station was also washed away.
2. Bridge V-1 appears to be a reinforced concrete structure with a coral filled topping. No bridge railing, probably washed away. Portions of the coral filled topping were also washed away. Appeared that flood waters flowed over the bridge and the adjacent approach roads.
3. Bridge V-2 also appears to be a reinforced concrete structure with a coral filled topping. Again like V-1, no bridge railing, portions of topping washed away, and flood waters flowed over the bridge. Utilities on the upstream edge damaged.
4. Bridge V-3 appears to be a reinforced concrete structure presently submerged under water and not passable by car. No bridge railing. Appears the underside of the bridge is clogged with boulders and debris.
5. Bridge P-1 has washed away. Previously this was a timber bridge used as a pedestrian crossing. Appears that this bridge was supported on grouted boulders on opposite sides of the stream. These boulders are presently undermined.

EXHIBIT A

ALVIN ZANE & ASSOCIATES LETTER

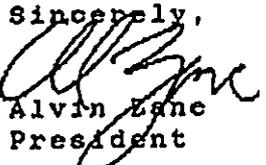
Based on the above observation I am certain that considerable damage has occurred to Bridges V-1, V-2, and V-3. These bridges were subjected to extremely high lateral forces caused by the flowing water and debris or boulder impact. These lateral forces are transmitted to the superstructure then to the abutment or substructure of the respective bridges. The bridge abutments cannot be seen because they are buried. Bridge plans are not available, thus abutment design or connection from the superstructure to abutment is not known. Damage to the abutment and superstructure are highly probable.

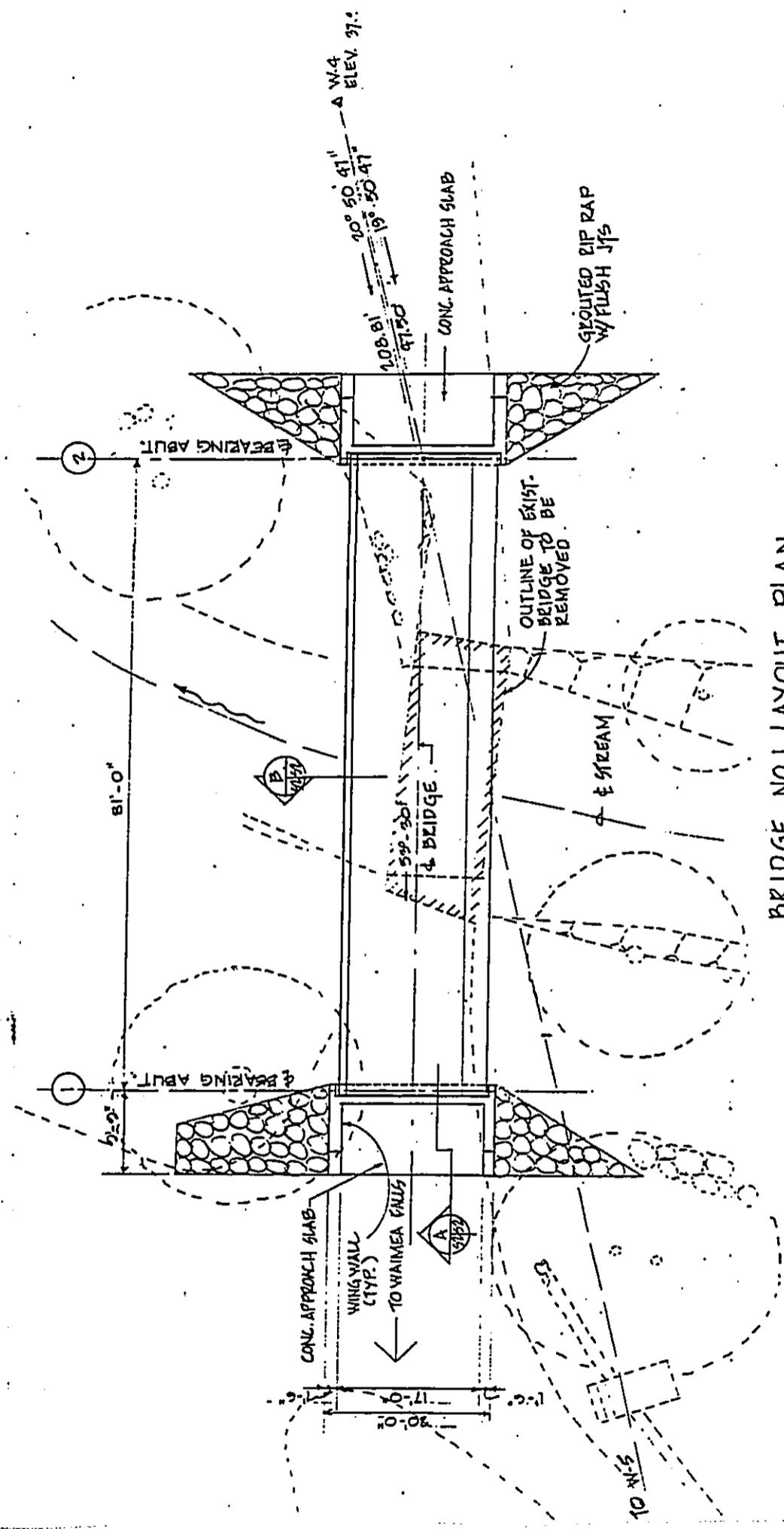
I understand that buses about 50 tons, cars, and trucks use these bridges daily. The structural safety of these bridges are questionable. I recommend that these bridges be replaced with new bridges because the risk is too great for any person to assume.

Possible bridge concepts are enclosed for your review. After receipt of the topographic survey for these bridges, I shall finalize the conceptual plans. Presently, for V-1, V-2, V-3, I am proposing the use of prestressed concrete tees for the superstructure and for the abutment considering the use of a drilled-in reinforced concrete caisson system. I am also proposing longer and wider spans and setting all bridges at a higher deck elevation. For pedestrian bridge P-1, I am proposing a precast prestressed concrete slab structure.

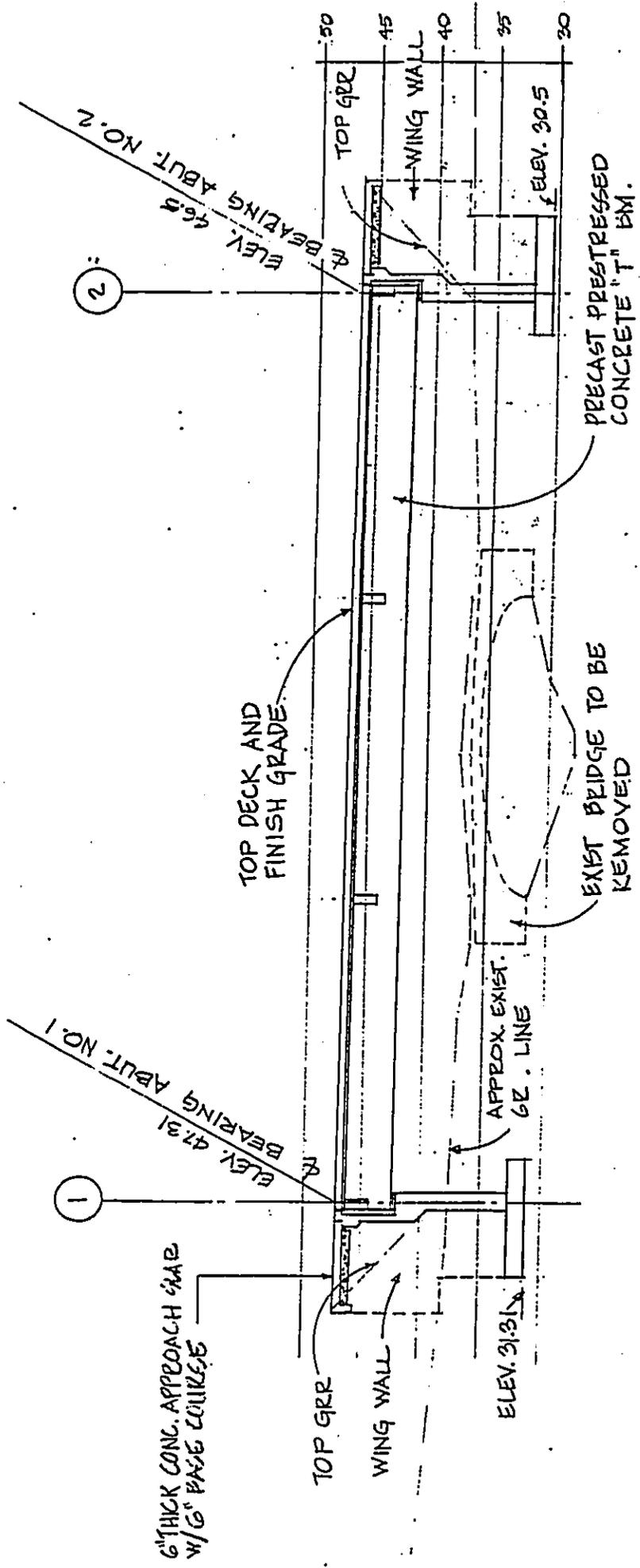
Please call if you have any questions.

Sincerely,

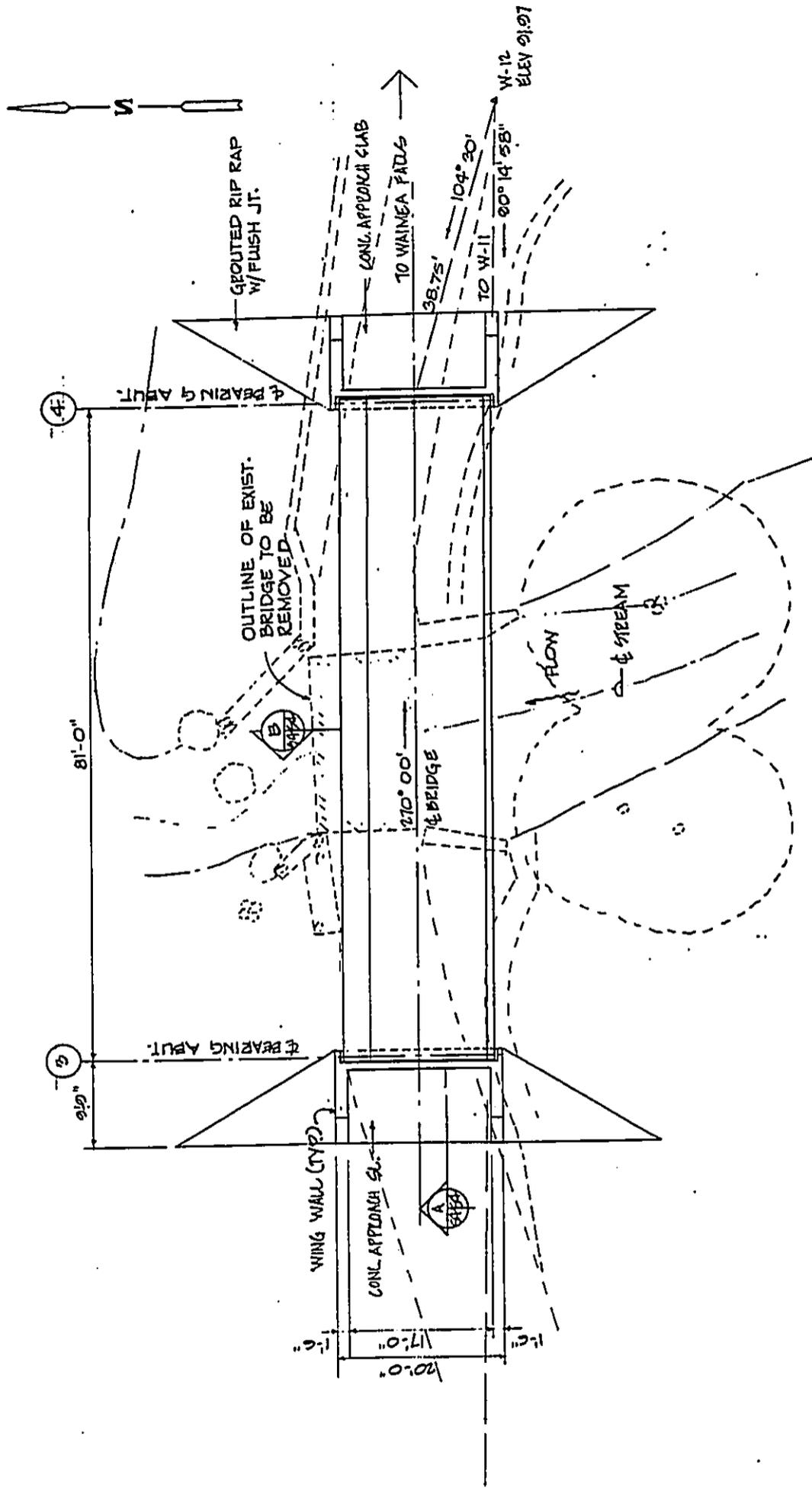

Alvin Lane
President



BRIDGE NO. 1 LAYOUT PLAN
 SCALE: 1/8" = 1'-0"

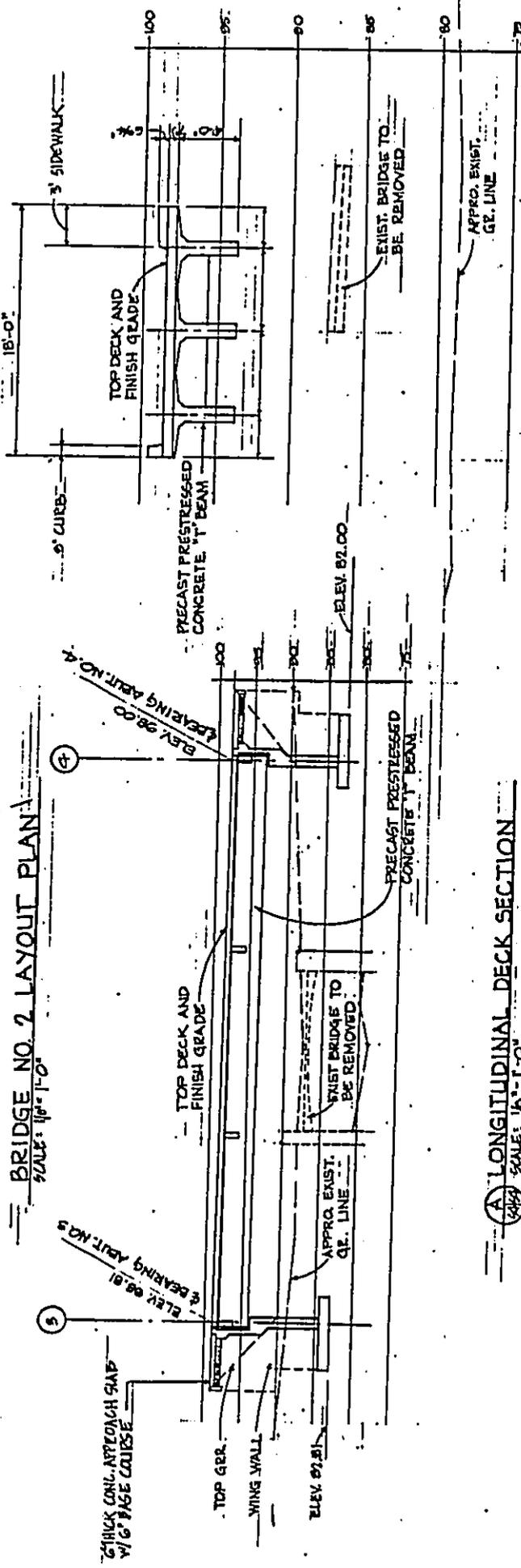


A LONGITUDINAL DECK SECTION
 SCALE: 1/8" = 1'-0"



BRIDGE NO. 2 LAYOUT PLAN

SCALE: 1/4" = 1'-0"

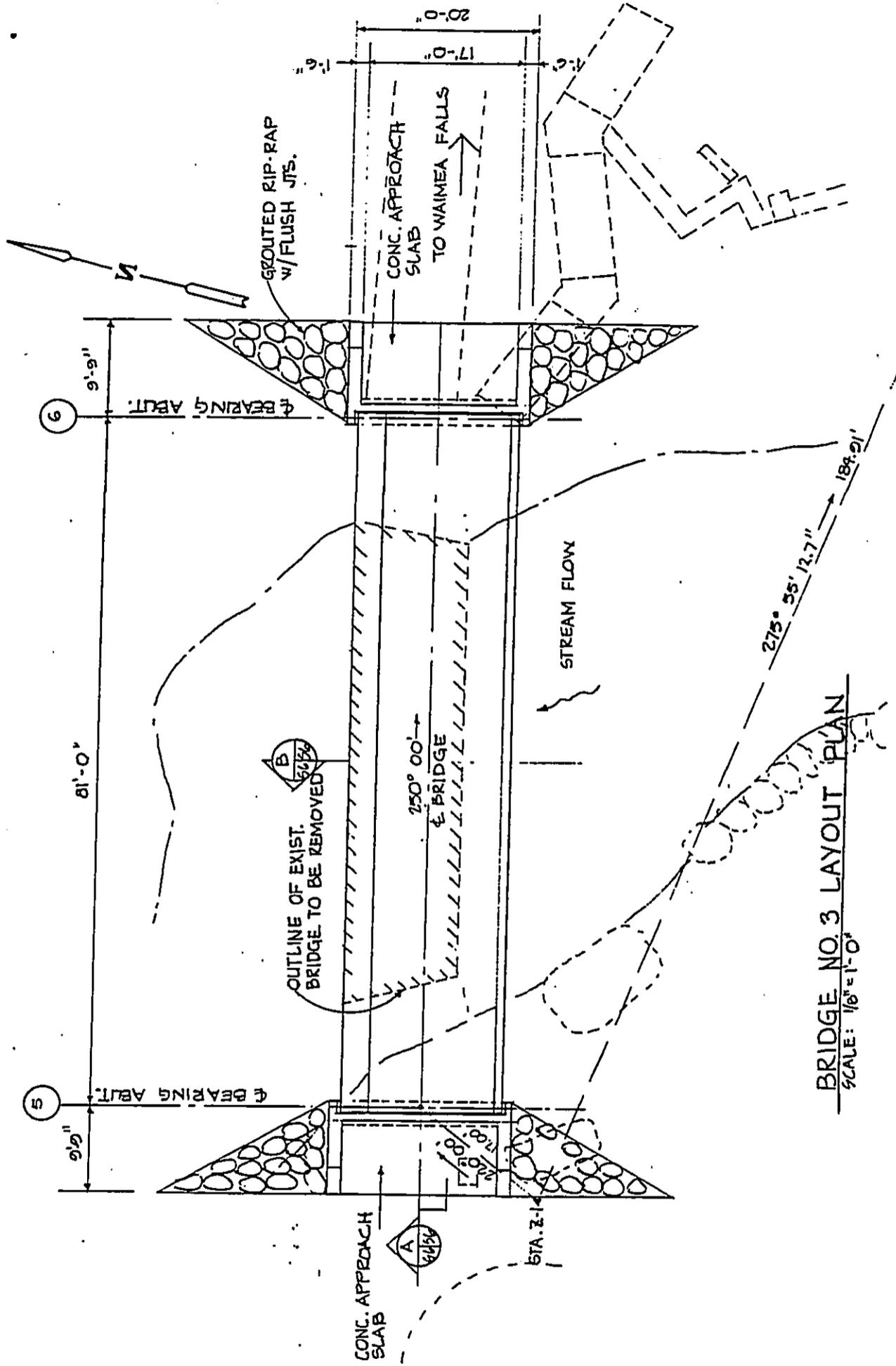


LONGITUDINAL DECK SECTION

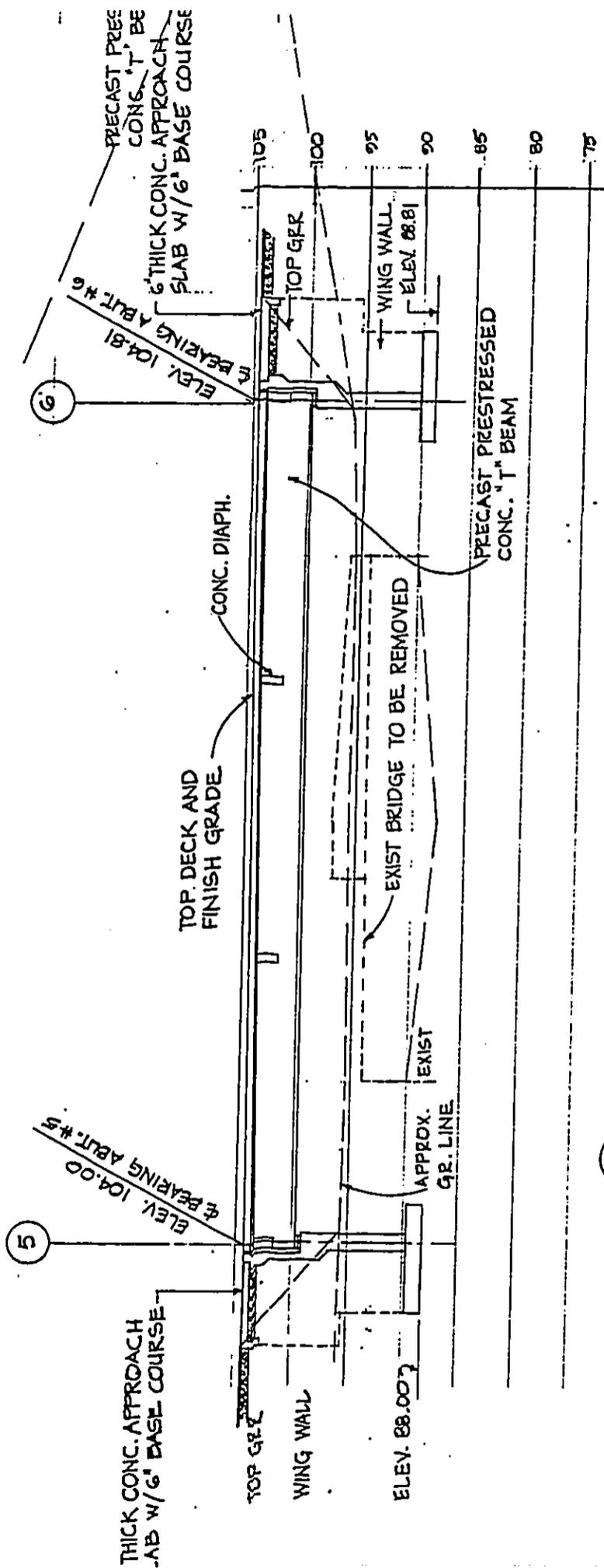
SCALE: 1/8" = 1'-0"

NORMAL DECK SECTION

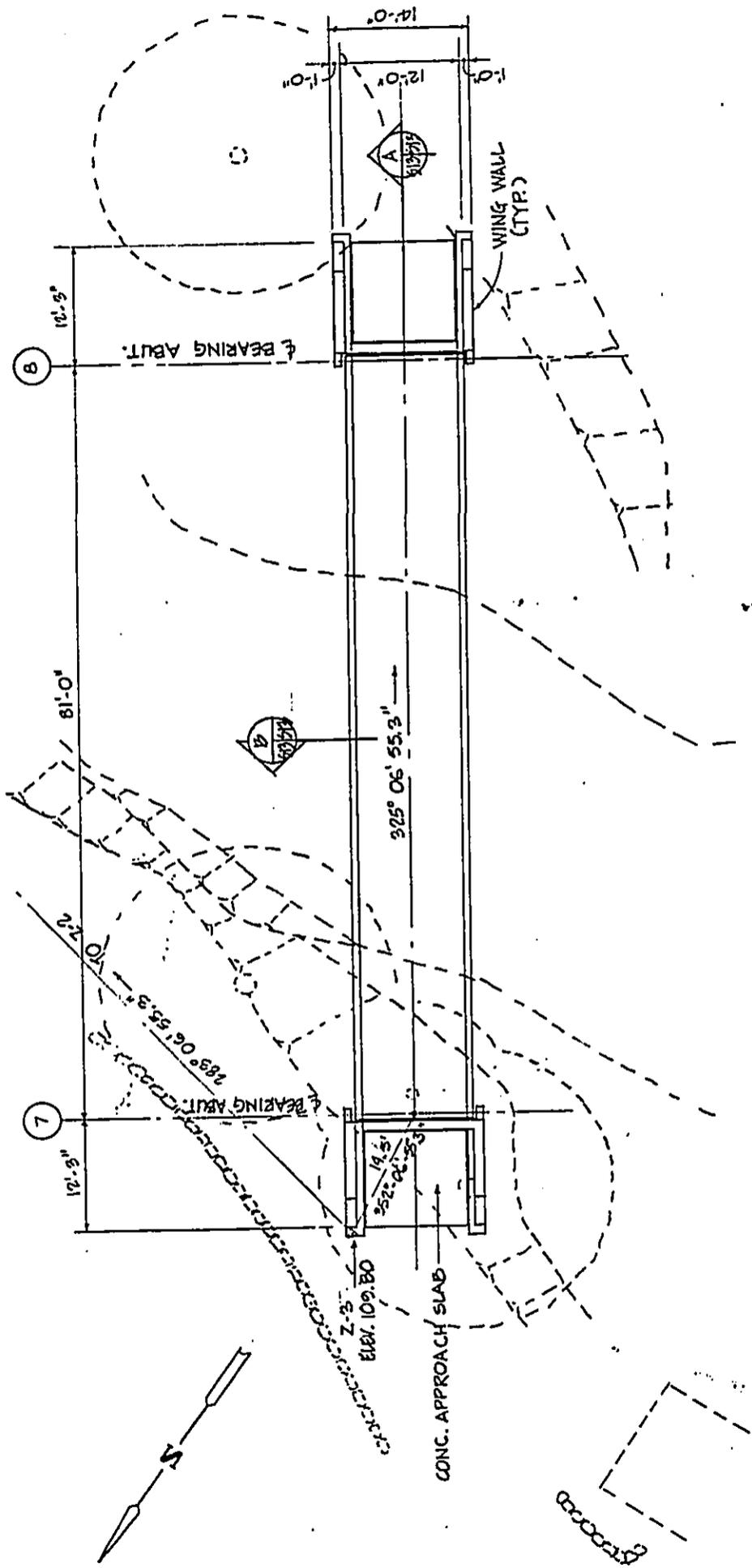
SCALE: 1/4" = 1'-0"



BRIDGE NO. 3 LAYOUT PLAN
 SCALE: $1/8" = 1'-0"$



A
 LONGITUDINAL DECK SECTION
 SCALE: 1/8" = 1'-0"



BRIDGE NO. 4 LAYOUT PLAN
 SCALE: 1/8" = 1'-0"

T. IIDA CONTRACTING, LTD.

45-558 C KAM HWY.
KANEHOHE, OAHU, HAWAII 96744-0001

December 29, 1990

Associates Four
841 Bishop Street, Suite 1050
Honolulu, Hawaii 96813

Attn: Mr. Charles Pietsch, III

Subject: Replacement Bridges at Waimea Falls Park

Gentlemen:

The total cost for replacing the three concrete bridges at Waimea Falls Park that were damaged during the flooding several weeks ago is \$1,296,000.00 for straight time work and \$1,397,000.00 for overtime work. Due to the proximity of the footings in relation to the stream, temporary cofferdams would need to be constructed as a method of construction. The design consists of reinforced concrete wing walls on both sides of each bridge. However, the designer cautions that the shorter bridges are not designed to withstand large flooding conditions as experienced several weeks ago. Additional time would be required for rained-out days and damage due to possible future flooding during construction.

Our sheetpiling subcontractor is still in the process of determining if the needed materials are available in Hawaii or whether new materials need to be shipped from the mainland. Additional delays of about 60 days may have to be factored into the schedule if the sheetpiles are not locally available.

To alleviate the conditions at the site, it has been suggested that 18' x 80' bridges be constructed. By so doing, the need for cofferdams would be eliminated and construction can be expedited. The cost for these bridges is \$1,260,000.00 for straight time work and \$1,359,000.00 for overtime work. In addition to field work, one of the limiting factors is the manufacture of the girders which may not be available until mid March, 1991. These bridges also have reinforced concrete wing walls and are hydraulically designed to withstand most flooding conditions.

EXHIBIT B T. IIDA CONTRACTING, LTD. LETTER

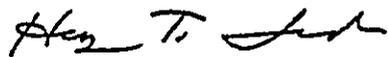
To facilitate construction, it may be advisable to delay start of field work until April, 1991 when the weather conditions, hopefully, would improve.

Cost summaries (as requested) are tabulated in Tables I and II.

If there are any questions, please call us at 247-4241.

Very truly yours,

T. IIDA CONTRACTING, LTD.



Henry T. Iida, President

HTI:lk

Replacement Bridges at Waimea Falls Park

Table I

12' x 30', 12' x 40' & 12' x 60' Bridges
Designed by Alvin Zane & Associates

<u>Bridge Designation</u>	<u>Size</u>	<u>Cost (Straight Time)</u>	<u>Cost (Overtime)</u>
1	12' x 40'	\$ 434,000.00	\$ 468,000.00
2	12' x 30'	408,000.00	442,000.00
3	12' x 60'	454,000.00	487,000.00
	Total	\$ 1,296,000.00	\$ 1,397,000.00
Time		171 days*	142 days*

*If sheet piles need to be shipped from mainland for cofferdam, add about 60 more days.

Table II

18' x 80' Bridges
Designed by Alvin Zane & Associates

<u>Bridge Designation</u>	<u>Size</u>	<u>Cost (Straight Time)</u>	<u>Cost (Overtime)</u>
1	18' x 80'	\$ 422,000.00	\$ 456,000.00
2	18' x 80'	397,000.00	429,000.00
3	18' x 80'	441,000.00	474,000.00
	Total	\$ 1,260,000.00	\$ 1,359,000.00
Time		133 days	106 days

Note: Rained-out days not included