

BENJAMIN J. CAYETANO
GOVERNOR



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

FEB 24 2000

~~FEB 23 2000~~

FEB 24 REC'D

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-PA
2.7370

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: KAZU HAYASHIDA *Glenn M. Okimoto*
DIRECTOR OF TRANSPORTATION

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR INTERSTATE
ROUTE H-1 WIDENING, WESTBOUND DIRECTION, KAONOHI STREET
TO WAI'AU INTERCHANGE

The State Department of Transportation has reviewed the comments received during the 30-day public comment period which began in July 1999. We have determined that this project will not have a significant environmental effect and have issued a FONSI. Please publish this notice in the March 8, 2000 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Form and four copies of the Final Environmental Assessment.

Please contact Ronald Tsuzuki, Head Planning Engineer, Highways Division, at 587-1830, if you have any questions.

Enclosures

ATTENDANCE

Group: Public Info. Meeting	Location: Waimata Elementary School	Date: 3/3/99
NAME	ORGANIZATION / ADDRESS	PHONE
R.O. Keehau SR.	98-309 Pono Hale St.	484-9899
Arnold & Jeanne Chase	98-324 Pono Hale St	487-8862
ERIC & Amy Kaneshiro	98-336 Pono Hale St	487-3136
Fumie Tokushige	98-356 Pono Hale St	
Aiko Hirata	98-352 Pono Hale St	
Kiyoko Siso	98-322 Pono Hale St	487-2263
Silvia Kato	1340 Kaula St P.C.	455276
Jill Yamada	P.O. Box 89469 Mililani	824612
Janet Yamada	98-388 Pono Hale Loop	488 9697
DON Robbins	1034 Kilani = Leeward Cullford	621-7200 Ext. 333
Ken Lee	98-367 Pono Hale Loop	486-7628
Sumiko Namiki	98-408 Pono Hale St. Mililani	488-6578
Kay Tomura	98-1637 Honouliuli St	436-3404
Ruby Higa	98-164 Hukaha St	488-8727
Arline Uyeantem	98-332 Pono Hale St	488-1850
Jack Chalkel	98-591 MOANALUA Rd	488-0927
MIKE Okamoto	140 Pohala Pl	576-5567
Ona Kameoka	98-818 LANIKUAKA ST.	486 3272
Sharon + Melwyn Lau	98-307 Pono Hale Loop	488-4603
Leahanae Lee	98-346 Pono Hale St.	488-5576
OTON OSAKI	98-795 Kaula St	488-6888
Barbara Paulo	98-338 Pono Hale St	4521-0209
Archana S. Poon	98-321 Pono Hale St	487-3927
Angela Naito	DOT/HWYS	
Joan Izumi	DOT/HWYS	
Kate Yamada	98-454 Pono St.	487-1390
Jason Buckley	98-345 Pono St	

INTERSTATE ROUTE H-1 WIDENING, WESTBOUND DIRECTION
KAONOHI STREET OVERCROSSING TO PEARL CITY OFF-RAMP

Highways Division
Department of Transportation
State of Hawaii

Paper No. 2

March 3, 1999

DESCRIPTION: Interstate Route H-1 is presently being widened to six (6) lanes between the Halawa Interchange and the Kaonohi Street overcrossing in the westbound direction. This project proposes to extend the widening from the Kaonohi Street overcrossing to the Pearl City off-ramp, thereby providing six (6) continuous lanes from the Halawa to the Waiiau Interchange in the westbound direction. Project design includes:

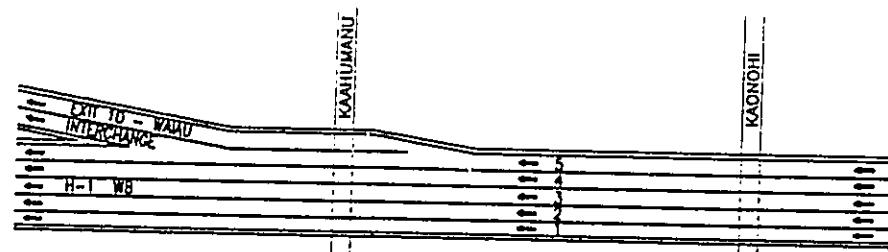
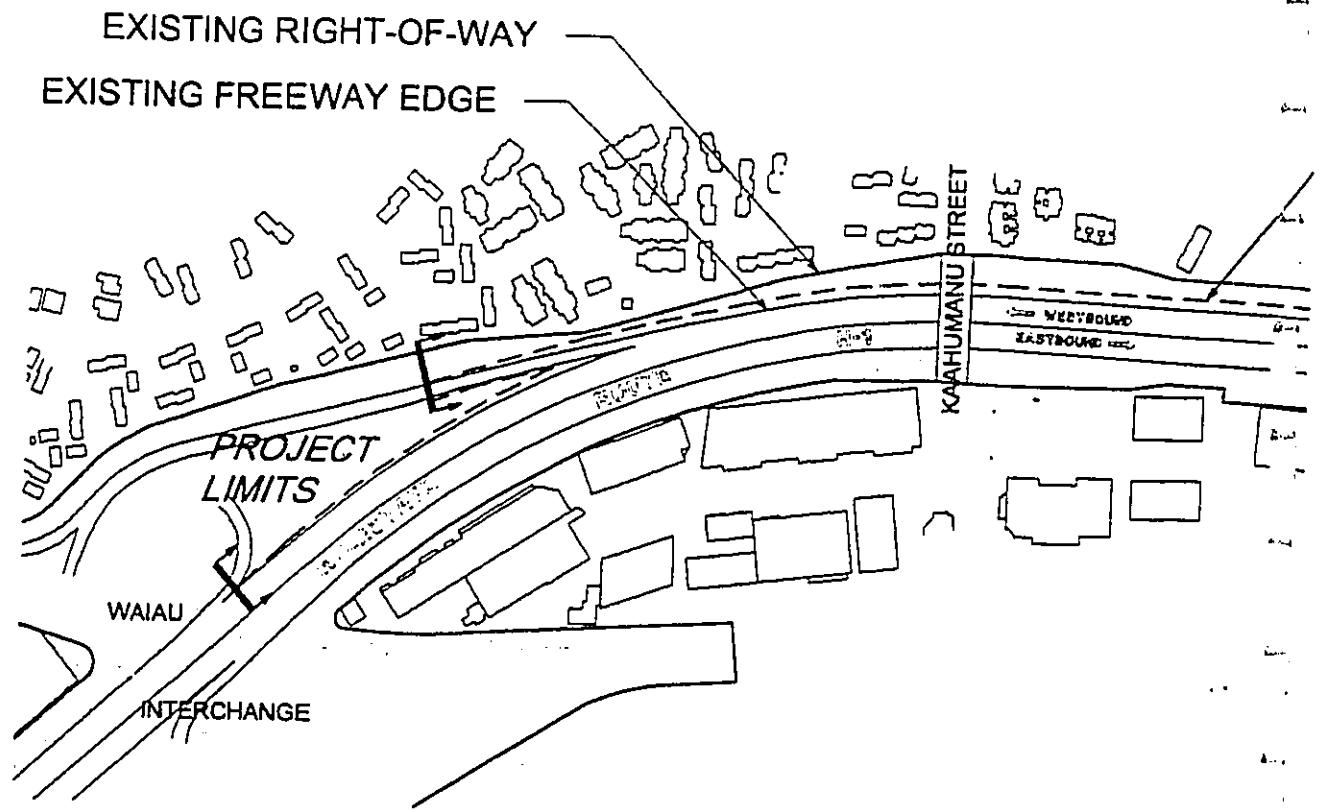
- ◆ Constructing an additional travel lane and widening shoulder widths meeting current Interstate Freeway standards;
- ◆ Installing guardrails, retaining walls, and drainage, and relocating signage;
- ◆ Providing landscape improvements where appropriate; and,
- ◆ Providing safety retro-fitting of the existing bridge structure.

OBJECTIVES:

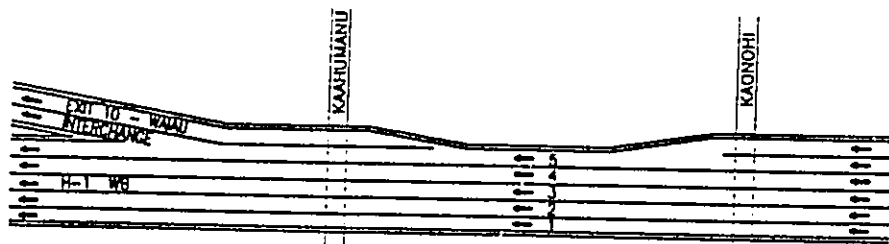
- ◆ Enhance traffic safety;
- ◆ Eliminate potential bottleneck and provide additional capacity on Interstate Route H-1, west-bound;
- ◆ Improve the level of service for current and projected increases in traffic on Interstate Route H-1;

**ISSUES/
IMPACTS**

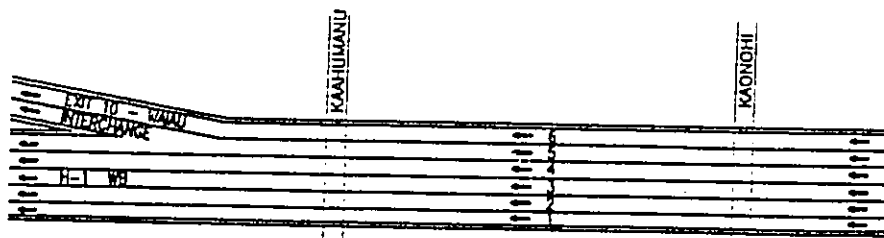
- ◆ Property Acquisition, Displacement, and Relocation of property owners
- ◆ Environmental Impact and Proposed Mitigation
- ◆ Noise and Air Quality Impacts Due to Construction
- ◆ Traffic Impacts and Benefits Resulting from the project
- ◆ Land Use
- ◆ Visual Impacts Resulting From the Project
- ◆ Construction Activity Impacts



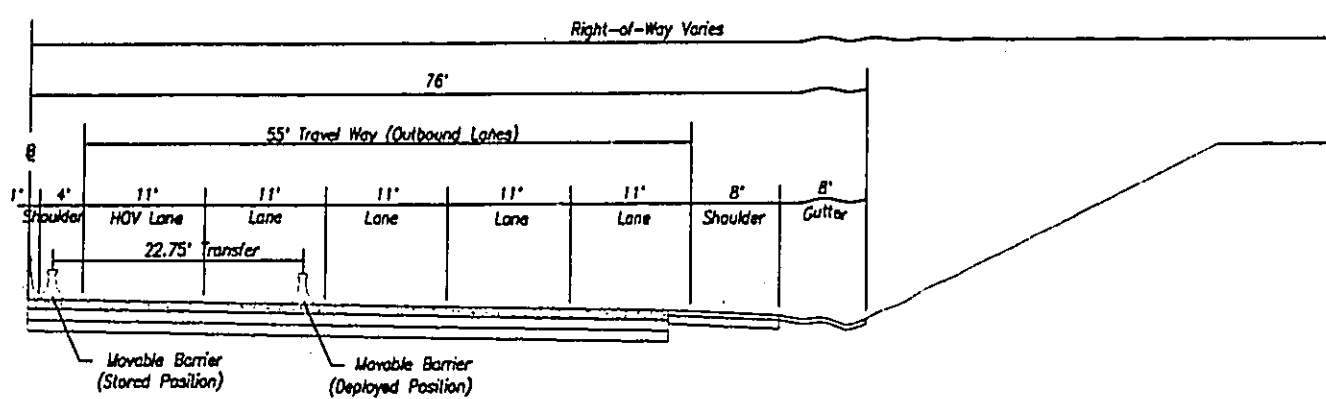
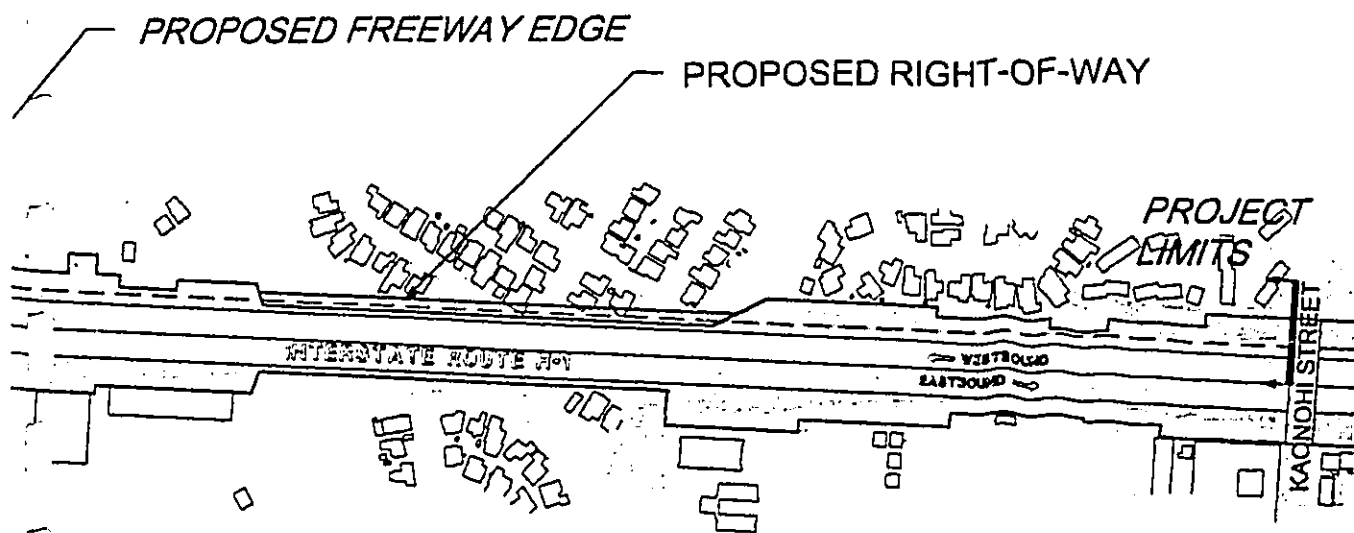
Existing Condition H-1 Westbound (under construction)



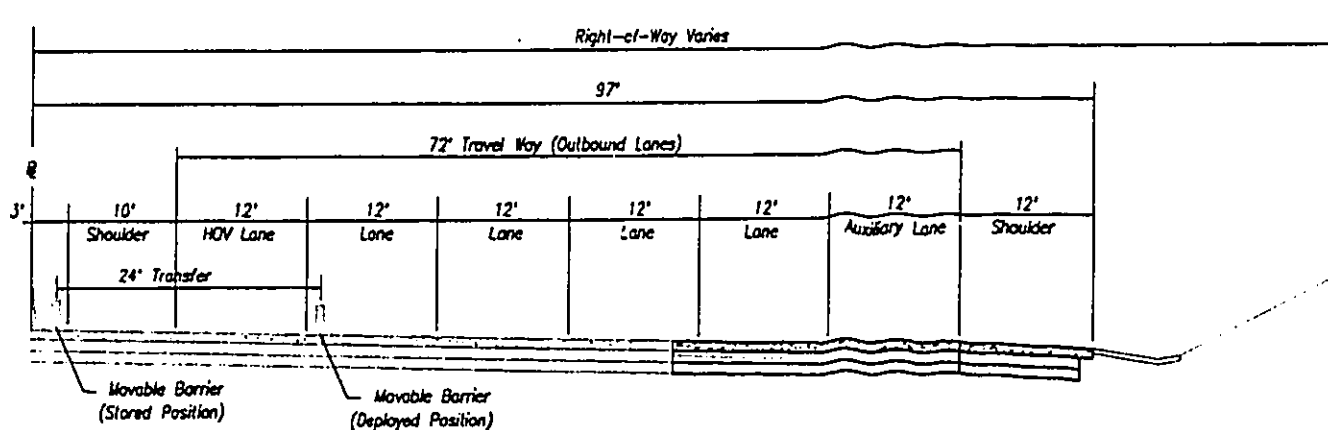
Condition Upon Completion of H-3 Construction



Condition Upon Completion of Proposed H-1 Westbound Widening



Typical Westbound Section
Existing H-1 Laneage (Kaonohi Overpass to Waiiau Interchange)



Typical Westbound Section
Proposed H-1 Laneage (Kaonohi Overpass to Waiiau Interchange)

**CURRENT
ACTIVITIES:**

- ◆ Conducting planning and engineering studies
- ◆ Preparation of an environmental assessment (EA)
- ◆ Conducting construction impact studies

SCHEDULE:

Planning	January - Summer 1999
Design	Summer 1999 - Spring 2001
ROW Activities	Summer 1999 - Spring 2001
Construction	Fall 2001 - Spring 2003

Schedule is subject to availability of state and federal funds.

CONTACT:

Planning and Environmental Concerns:

Mr. Ron Tsuzuki,
Head of Planning Branch, Highways Division, State DOT, ph. 587-1830

Acquisition, Appraisal, and Relocation Concerns:

Mr. Tom Toyama
Right-of-Way Manager, Highways Division, State DOT, ph. 692-7325

March 1999



AIEA NEIGHBORHOOD BOARD NO. 20

c/o AIEA LIBRARY • 99-143 MOANALUA ROAD • AIEA, HAWAII 96701

VISION/MISSION STATEMENT COMMITTEE MEETING NOTICE

The Alea Neighborhood Board No. 20 will meet on Monday, April 12, 1999, 7:00 p.m. at the Aiea Library to discuss the Vision/Mission Statement of the Board.

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**REGULAR MEETING AGENDA
7:30 P.M., MONDAY, APRIL 12, 1999
AIEA LIBRARY CONFERENCE ROOM
99-143 MOANALUA ROAD**

- I. Call to order - Chair William Clark
- II. Roll call of Board Members
- III. Introduction of guests
- IV. Approval of the Regular Meeting Minutes of March 8, 1999
- V. Treasurer's Report
- VI. Public Safety Reports
 - A. Honolulu Fire Department
 - B. Honolulu Police Department
- VII. Community Concerns
- VIII. Community Reports ** Please limit reports to approximately 3 minutes **
 - A. Alea Community Association - Claire Tamamoto
 - B. Aiea Recreation - Brian Yamasaki
 - C. SCBM - Webling Elementary School - Gary Okino
 - D. Pearlridge Satellite City Hall - Cheryl Tamashiro
- IX. Unfinished Business
 - A. HECO Ductline Construction on Kamehameha Highway - Tom Harrington
 - B. H-1 Paving - Brian Yoshida
 - C. Aiea/Pearl City Vision Team Report - discuss Board position
 - D. 1999 Mayor's Legislative Initiatives - discuss Board position
- X. NEW BUSINESS
 - A. One minute presentations for Neighborhood Candidates in contested Subdistricts. These include subdistricts 1,2, and the at-large position. (Please inform the Chair prior to meeting if you wish to speak.
 - B. Waimalu Tract Reconstructed Sewer - Residential area behind and adjacent to Waimalu Shopping Center

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AIEA NEIGHBORHOOD BOARD NO. 20
REGULAR MEETING AGENDA
APRIL 12, 1999
PAGE 2

- C. H-1 widening project at the Waimalu viaduct - R.M. Towill Corporation
- D. Aloha Stadium Noise Monitoring - Janet Jackson and Celine Dion concerts

XI. REPORTS BY PUBLIC OFFICIALS ** Limited to approximately 3 minutes each **

XII. COMMITTEE REPORTS

- A. Executive - Clark
- B. Transportation - Miura
- C. Human Services - Kealoha
- D. Publicity - Takehara
- E. Parks - Ho and Anderson
- F. Land Use and Zoning - Sugimura
- G. Visionary Planning - Rowland
- H. Aiea Neighborhood Boundaries - Awana
- I. Aiea Gateway Park - Hargrave
- J. Restoration Advisory Board - Miura

XIII. ANNOUNCEMENTS

XIV. ADJOURNMENT

Any disabled person requiring accommodation to participate at this meeting may call the Neighborhood Commission Office at 527-5721 for assistance.

Appendix D

Traffic Analyses for Interstate Route H-1 Widening
Kaonohi Street to Waiiau Interchange

September, 1998

Traffic Analysis for
Interstate Route H-1 Widening
Kaonohi Street to Waiiau Interchange
(Westbound Lanes)

prepared by: Julian Ng, Incorporated
P.O. Box 816
Kaneohe, Hawaii

June, 1999

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Exhibit 4 2020 Westbound Traffic, Halawa I.C. to Waiiau I.C.	

**Traffic Analyses for
Interstate Route H-1 Widening
Westbound Lanes, Kaonohi Street to Waiiau Interchange**

Aiea, Hawaii

June, 1999

The State of Hawaii Department of Transportation - Highways Division has proposed to construct improvements to the westbound lanes of the Interstate Route H-1 between the Kaonohi Street overpass and the off-ramp to Moanalua Road at the Waiiau Interchange (Figure 1). This improvement would increase the number of westbound lanes from five to six between Halawa Interchange and Waiiau Interchange.

A current construction project to improve the connection from westbound Interstate Route H-3 to westbound Interstate Route H-1 will widen the on-ramp from westbound Moanalua Road and extend it to the vicinity of the Kaonohi Street overpass. Two of the three lanes on this on-ramp will terminate and traffic from Moanalua Road would merge with the traffic already on Interstate Route H-1. Conditions at the Waiiau Interchange, where traffic using the two-lane off-ramp will be only from the far right lane of the freeway, will remain as it had been prior to the most recent construction.

With the proposed project, only one of two lanes on the on-ramp from Moanalua Road that would otherwise be terminated is dropped; the other will continue on H-1 as the sixth westbound lane, which then becomes an "EXIT ONLY" lane at the Waiiau Interchange. This report summarizes the findings of capacity analyses of existing and future conditions on Interstate Route H-1 between Halawa Interchange and Waiiau Interchange.

Introduction

The segment of the Interstate Route H-1 between Waiiau Interchange and Halawa Interchange carried a daily volume of 210,000 vehicles per day¹ in 1996. Traffic volumes on this segment of Interstate Route H-1 has remained approximately the same; the daily volumes in recent years² are:

Year:	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Daily volume:	209,158	192,838	196,512	196,164	207,103	206,595

¹ State of Hawaii, Department of Transportation, Highways Division. Reference No. TA 97-24

² State of Hawaii, Department of Transportation, Highways Division. *Traffic Summary, Island of Oahu 1995* and *Traffic Summary, Island of Oahu 1994*.

Traffic volumes on this segment of Interstate Route H-1 are expected to increase. The *Oahu Regional Transportation Plan*³ has forecasted an increase in traffic of 15% between 1990 (290,500 vehicles per day) and 2020 (334,500 vehicles per day) across the Kalauao screenline, which this segment of Interstate Route H-1 crosses. In 1990, Interstate Route H-1 carried over 70% of the vehicle trips crossing this screenline. If Interstate Route H-1 were to continue to carry a similar share of the traffic across this screenline, the long-term trend equates to an increase in traffic of approximately 0.5% per year.

The State Highways Division in August, 1998, completed and opened for use a *zipper* lane during the morning (weekday) peak period. The *zipper* lane is an additional lane on the freeway for eastbound traffic that is created by placing a moveable barrier on the westbound lanes of the freeway; the two westbound lanes closest to the median are not available for westbound traffic during the morning peak period.

A current construction project to complete Interstate Route H-3 includes the reconstruction of a connecting ramp at Halawa Interchange for westbound traffic and the widening of the ramp from Moanalua Road. This project includes the widening of a portion of Interstate Route H-1 so that highway standards for on-ramps can be maintained. The widening provided by the current project will end near the Kaonohi Street overpass, where the second lane of the three-lane on-ramp from Moanalua Road will terminate.

A new project to extend the on-ramp lane from the currently designed terminus near Kaonohi Street to the Waiiau Interchange has been proposed. With this extension, the lane drop and the resulting merging will be eliminated and diverging movements at the Waiiau Interchange can occur across two lanes, rather than in one lane, as shown in Exhibit 2. This report summarizes the traffic analyses that were conducted to evaluate the proposed lane addition. The *Highway Capacity Manual-Third Edition*⁴ analytical procedures for freeway service flows, ramp analyses, and weaving speeds were used.

Existing (1996) Traffic

The H-1 Freeway is the primary roadway carrying traffic in the east-west direction between Kapolei and Honolulu. In the segment between Waiawa Interchange and Halawa Interchange, the freeway has a basic section of ten lanes, with five in each direction; the median lane is reserved for high occupancy vehicles (HOVs) during peak periods and two westbound lanes are used for contraflow traffic (eastbound) during the morning peak period. In the eastbound direction, the shoulder is also available for use during the morning peak period to increase capacity. Additional lanes are provided at the Waiiau and Halawa interchanges to accommodate merging and diverging movements, since these interchanges have multiple-lane ramps.

³ Kaku Associates. *Oahu Regional Transportation Plan*, November, 1995. Table 2-6.

⁴ Transportation Research Board Special Report 209. *Highway Capacity Manual - Third Edition*. October, 1994.

The proposed project would make improvements to the westbound lanes between Halawa Interchange and Waiiau Interchange. Five lanes are provided for westbound traffic before and after the two-lane off-ramp at Waiiau Interchange. The number of lanes is unbalanced (lanes are "balanced" when the number of lanes after a merge is one less than the total entering the merge, or when the number of lanes entering a diverge is one less than the total number exiting the diverge).

Prior to the current construction, traffic in the westbound direction entered this segment of Interstate Route H-1 at the Halawa Interchange from westbound Interstate Route H-1 (four lanes), westbound Interstate Route H-3 (one lane), and westbound Moanalua Road (two lanes). The downstream (to the west) five-lane section forced traffic to merge at each of the ramps upstream.

In 1996, westbound traffic totaled over 108,000 vehicles per day, with weekday peak hours volumes of 4,660 vehicles per hour in the AM Peak Hour (6.5% trucks) and 11,030 vehicles per hour in the PM Peak Hour (1.5% trucks). Exhibit 3 shows the traffic volumes along the freeway. Because the counted peak hour traffic volumes do not always sum correctly, the averages of the assigned traffic for the freeway segment (shown in Exhibit 3) and the sums of the ramp volumes were averaged for the analyses.

The existing freeway was originally constructed as an eight-lane freeway but an additional lane was added in each direction. In the westbound direction, the typical section consisted of 5 lanes, each 11 feet wide, with clear distances of 2 feet on the left and at least 6 feet on the right. This section would remain between the Kaonohi Street overpass and Waiiau Interchange without the proposed project. With peak hour traffic consisting mostly of commuters, the capacities of the freeway segment are 10,260 vehicles per hour in the AM Peak Hour and 10,470 vehicles per hour in the PM Peak Hour. In 1996, conditions on the westbound lanes of the freeway between Halawa Interchange and Waiiau Interchange were Level of Service (LOS) C for the AM Peak Hour and LOS F for the PM Peak Hour.

Existing (1996) conditions at the merging of the ramp from westbound Moanalua Road with westbound Interstate Route H-1 at Halawa Interchange are determined by comparing the peak hour volumes with the service volumes for the ramp and the upstream freeway segment. No real merging occurs since no lanes terminate and each ramp lane continues on the freeway. Conditions during the AM Peak Hour are described as LOS A on Interstate Route H-1 before the on-ramp and LOS D on the on-ramp from westbound Moanalua Road. Conditions in the PM Peak Hour are LOS D on Interstate Route H-1 before the on-ramp and LOS F on the ramp from Moanalua Road.

At Waiiau Interchange, a diverge condition occurs where traffic leaves the freeway. With the existing configuration, traffic which uses the exit ramp must either be in the right lane or must change lanes into that lane. The *Highway Capacity Manual* ramp analysis diverge analysis procedure was applied to the peak hour volumes and LOS C was found for the AM Peak Hour and LOS E for the PM Peak Hour. The volumes, however, exceed the acceptable range for the analysis (the diverge analysis uses equations which are calibrated

for defined ranges of ramp and freeway volumes; since the volumes are not within these ranges, the results may not be valid).

Weaving analyses were also done. The lane configuration is that of a major weave (defined as "Type B"). The levels of service are based on speeds which are determined from the volumes and the length of the weaving section. The distance between the interchanges exceed the maximum range for the weaving analysis; this indicates that the weaving characteristics for which the analysis procedure was developed are not valid. If applied, however, the analyses show LOS B conditions in the AM Peak Hour and LOS C in the PM Peak Hour.

With the *zipper* lane in operation, there will be less lanes available for westbound traffic during the morning peak period. The moveable median barrier and new openings in the fixed median that provide a contraflow lane for eastbound high occupancy vehicles take away two lanes from the westbound traffic. If the 1996 peak hour volumes are assumed for this configuration, the levels of service findings for the AM Peak Hour will generally be one level lower (as shown under "1998" in Table 1).

Table 1
EXISTING LANEAGE (1996 VOLUMES)

	AM Peak Hour		PM Peak Hour
	1996	1998	
Freeway Conditions (1)			
volume/capacity ratio	0.45	0.75	1.02
Level of Service	C	D	F
Merge Conditions: freeway approach (2)			
volume/capacity ratio	0.23	0.45	0.77
Level of Service	A	C	D
Merge Conditions: ramp from Moanalua Road (3)			
volume/capacity ratio	0.70	0.69	1.06
Level of Service	D	D	F
Diverge Conditions (4) *			
volume/capacity ratio	0.49	0.67	0.97
Level of Service	C	D	E
Weaving Condition (5) *			
non-weaving speed (miles/hour)	59.8	55.3	53.0
non-weaving LOS	B	B	C
weaving speed (miles/hour)	53.0	49.1	47.6
weaving LOS	B	C	C

* - ramp or freeway volumes outside of normal range

The proposed widening between Kaonohi Street and Waiiau Interchange would provide one additional lane for westbound traffic and eliminate the lane drop where the ramp enters the freeway. The configuration would be similar to that of a major weave (Type B weaving area), but the distance between the ramps far exceeds that of a weaving area and drivers will have ample opportunity to change lanes. Nevertheless, the configuration would operate well, as described in the *Highway Capacity Manual*⁵:

Type B weaving areas are extremely efficient in carrying large weaving volumes, primarily because of the provision of a "through lane" for one of the weaving movements. Weaving maneuvers can be accomplished with a single lane change from the lane of lanes adjacent to this "through lane."

Table 2 summarizes the results of the analyses of the proposed laneage for the 1996 peak hour volumes. For the proposed laneage, the width of each lane has been assumed to be 12 feet, with clear distances on each side of at least 6 feet.

Table 2
PROPOSED LANEAGE (1996 VOLUMES)

	<u>AM</u> <u>Peak Hour</u>	<u>PM</u> <u>Peak Hour</u>
Freeway Conditions (1)		
volume/capacity ratio	0.52	0.78
Level of Service	C	D
Merge Conditions: freeway approach (2)		
volume/capacity ratio	0.42	0.71
Level of Service	B	D
Merge Conditions: ramp from Moanalua Road (3)		
volume/capacity ratio	0.43	0.65
Level of Service	B	C
Diverge Conditions (4) *		
volume/capacity ratio	0.52	0.84
Level of Service	C	D
Weaving Condition (5) *		
non-weaving speed (miles/hour)	58.1	55.2
non-weaving LOS	B	B
weaving speed (miles/hour)	51.4	49.1
weaving LOS	B	C

* - ramp or freeway volumes outside of normal range

⁵ Transportation Research Board Special Report 209. *Highway Capacity Manual - Third Edition*.
October, 1994. p. 4-4

Future Traffic

The regional transportation plan for Oahu indicates that vehicular volumes in the area are expected to be 15% higher in the year 2020, when compared to 1990 volumes. This increase is equivalent to an average increase in traffic volumes of 0.47% per year. If this annual rate of increase is applied to the 24 years between 1996 and 2020, the net increase would be 11.8%. Exhibit 4 shows the estimates of future volumes (a portion of the westbound traffic on the ramp from Moanalua Road was reassigned to the ramp from Interstate Route H-3).

Table 3 shows the results of the analyses for future traffic, for existing laneage (without the proposed project) and for the proposed laneage (with the project).

Table 3
FUTURE (2020) TRAFFIC VOLUMES

	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>existing</u>	<u>proposed</u>	<u>existing</u>	<u>proposed</u>
Freeway Conditions (1)				
volume/capacity ratio	0.84	0.58	1.14	0.88
Level of Service	D	C	F	E
Merge Conditions: freeway approach (2)				
volume/capacity ratio	0.71	0.66	0.94	0.87
Level of Service	D	C	E	E
Merge Conditions: ramp from Mcanalua Road (3)				
volume/capacity ratio	0.59	0.36	1.00	0.62
Level of Service	C	B	F	C
Diverge Conditions (4) *				
volume/capacity ratio	0.74	0.57	1.14	0.98
Level of Service	C	B	F	D
Weaving Condition (5) *				
non-weaving speed (miles/hour)	54.7	57.7	51.5	53.9
non-weaving LOS	B	B	C	C
weaving speed (miles/hour)	48.7	51.1	46.6	48.2
weaving LOS	C	B	C	C

* - ramp or freeway volumes outside of normal range

Future PM Peak Hour traffic demand on westbound Interstate Route H-1 would exceed capacities without the proposed project. The extension of the widening to create a sixth westbound lane from Halawa Interchange to Waiiau Interchange will provide sufficient capacity; congested conditions (LOS E), however, would occur during the PM

Peak Hour. While the results of the diverge and weaving analyses are not strictly valid, they do indicate that the proposed lane addition will improve operating conditions.

A further evaluation was done to determine if a lower increase in traffic volumes could produce acceptable (Level of Service D or better) conditions. An increase of 8% rather than the 11.8% increase over 1996 volumes that was forecasted for the period 1990 to 2020 would have generally acceptable conditions, as shown in Table 4.

Table 4
PROPOSED LANEAGE (8% INCREASE IN TRAFFIC VOLUMES OVER 1996)

	<u>Peak Hour</u>	<u>Peak Hour</u>
Freeway Conditions (1)		
volume/capacity ratio	0.56	0.85
Level of Service	C	D
Merge Conditions: freeway approach (2)		
volume/capacity ratio	0.64	0.84
Level of Service	C	D
Merge Conditions: ramp from Moanalua Road (3)		
volume/capacity ratio	0.35	0.60
Level of Service	B	C
Diverge Conditions (4) *		
volume/capacity ratio	0.55	0.95
Level of Service	B	D
Weaving Condition (5) *		
non-weaving speed (miles/hour)	58.0	54.3
non-weaving LOS	B	B
weaving speed (miles/hour)	51.3	48.4
weaving LOS	B	C

* - ramp or freeway volumes outside of normal range

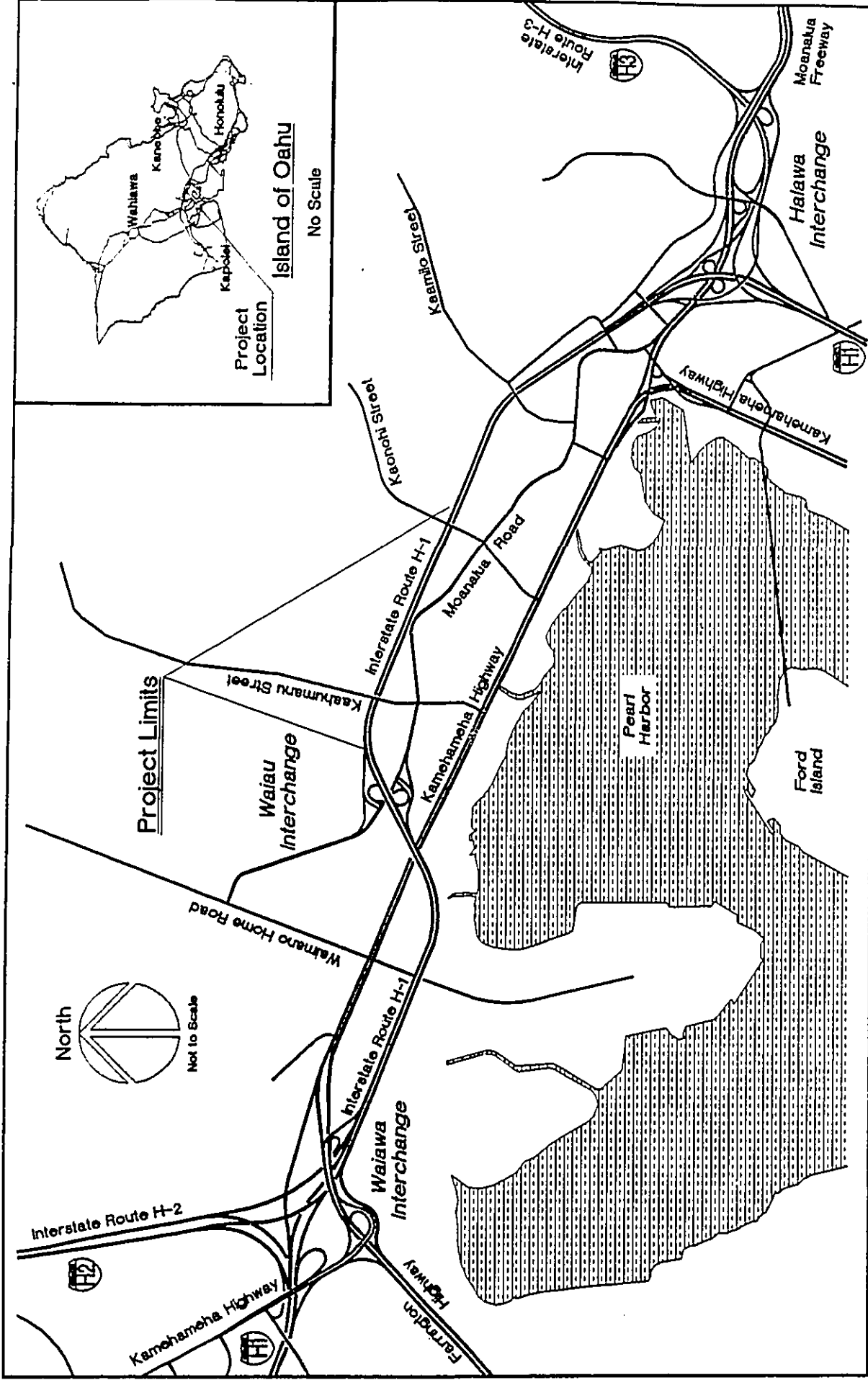
Conclusions and Recommendations

The westbound lanes of Interstate Route H-1 between Halawa Interchange and Waiuu Interchange carries over 108,000 vehicles per day. While existing AM Peak Hour conditions are acceptable (Level of Service D or better), conditions in the PM Peak Hour are described as Level of Service E or Level of Service F (theoretical capacity exceeded). The capacity of the existing freeway will be exceeded by approximately 14 percent in the PM Peak Hour if traffic increases by an average annual rate equal to that forecasted in the regional plan. Poor conditions will also occur in the AM Peak Hour as the number of lanes are reduced to accommodate contraflow operation.

To mitigate these conditions, the addition of a sixth lane on the westbound lanes of Interstate Route H-1 between the Halawa Interchange and the Waiiau Interchange has been proposed. Due to the improvements being made as part of the Halawa Interchange and the existing two-lane off-ramp at Waiiau Interchange, the widening will only be necessary between the ramp terminus near the Kaonohi Street overpass and the off-ramp.

Continued efforts to promote ride sharing and transit use, the creation of job centers in Kapolei, and improvements to parallel roadways are encouraged to ease the projected increase in peak hour traffic demands. In order to maximize the capacities on the freeway, all applicable design standards should be followed, including 12-foot lane widths, adequate shoulders, and correct approach and departure angles on all ramps.

* * *



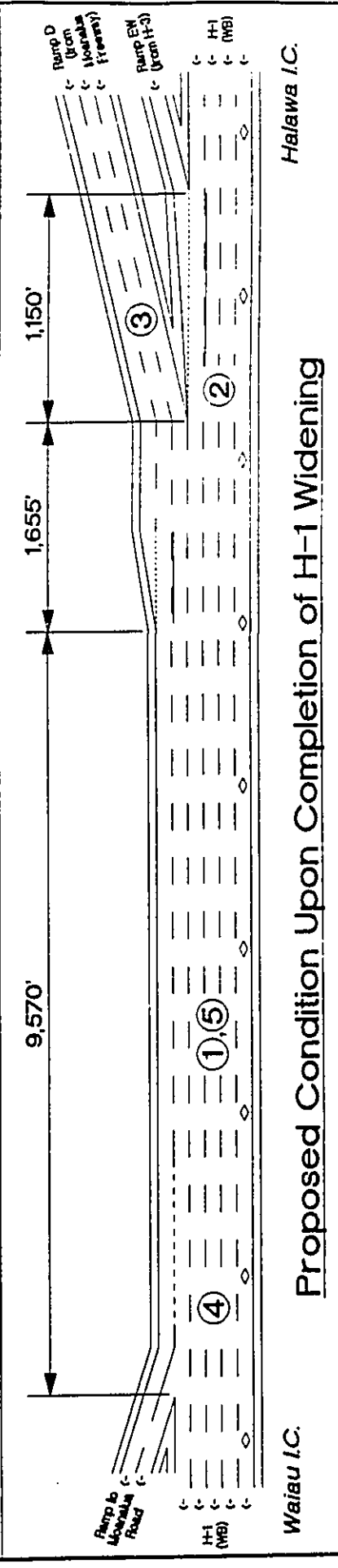
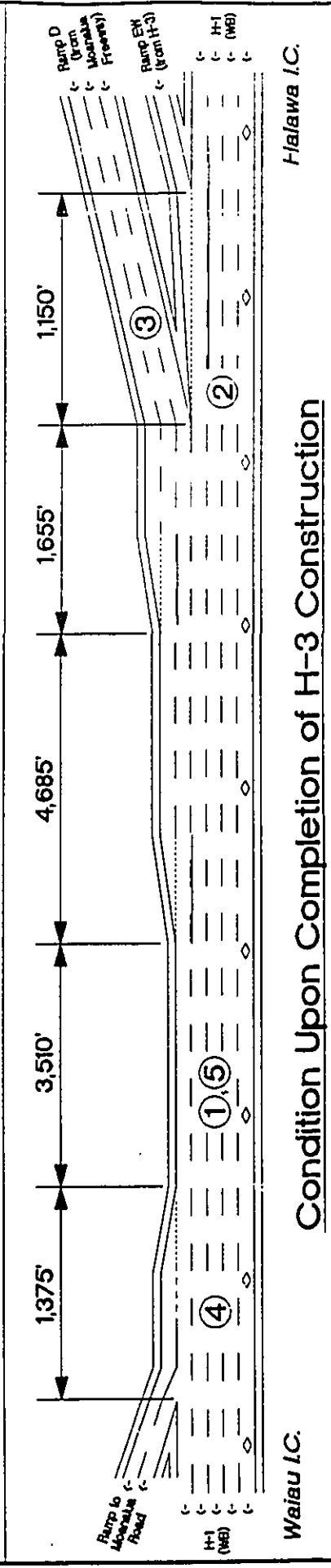
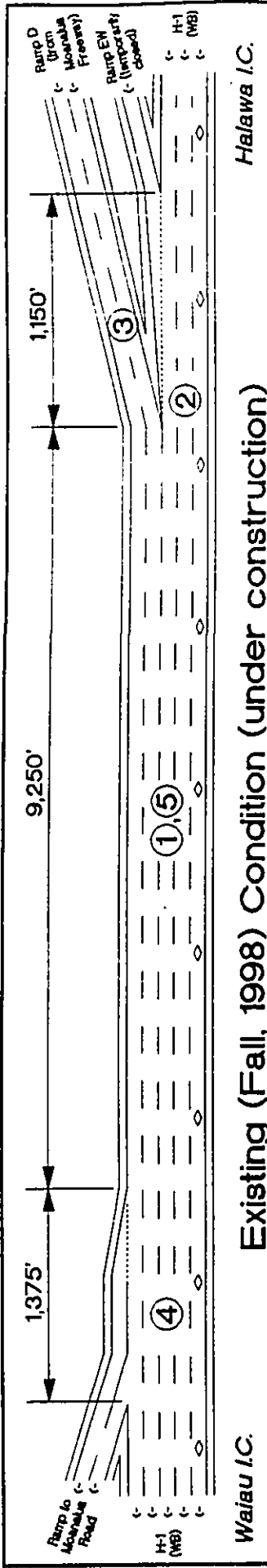
**Traffic Analyses for
Interstate Route H-1 Widening
Kaonohi Street to Waiau Interchange**

Location Map

Exhibit
1

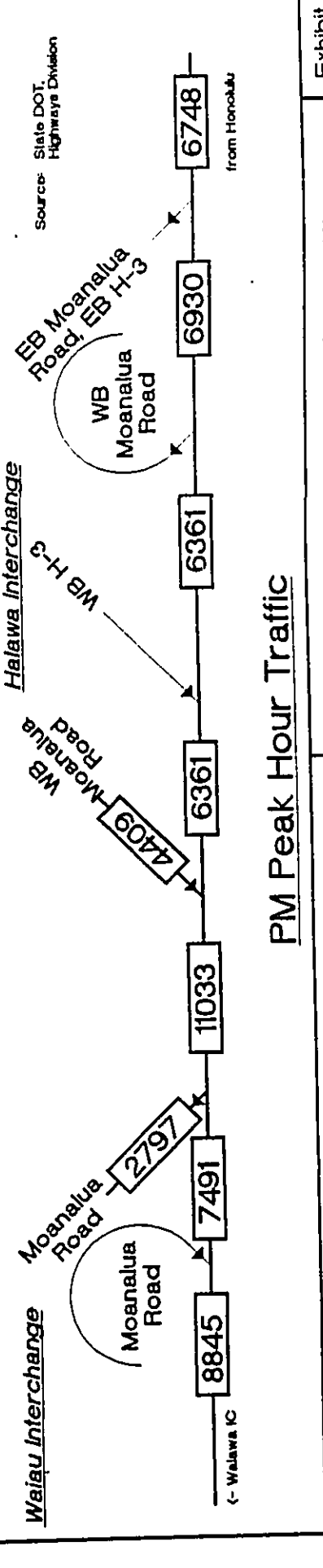
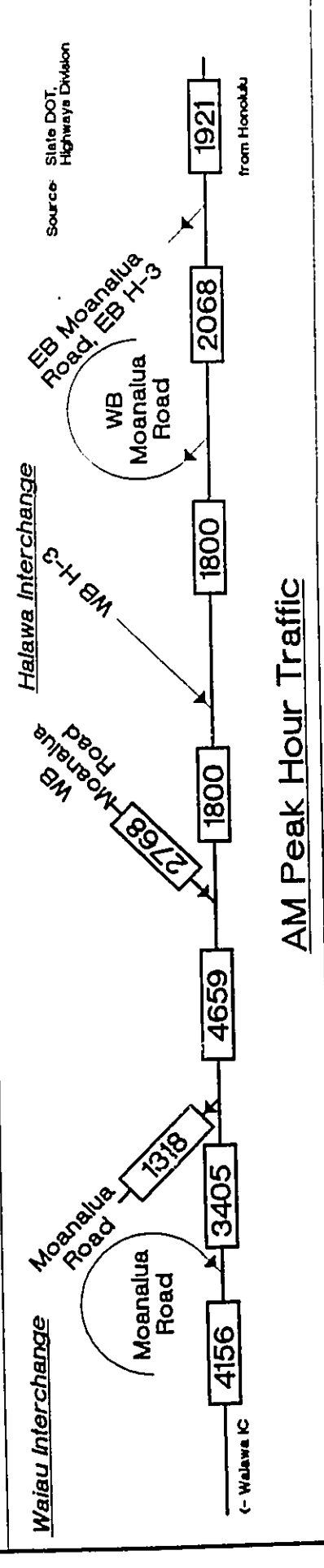
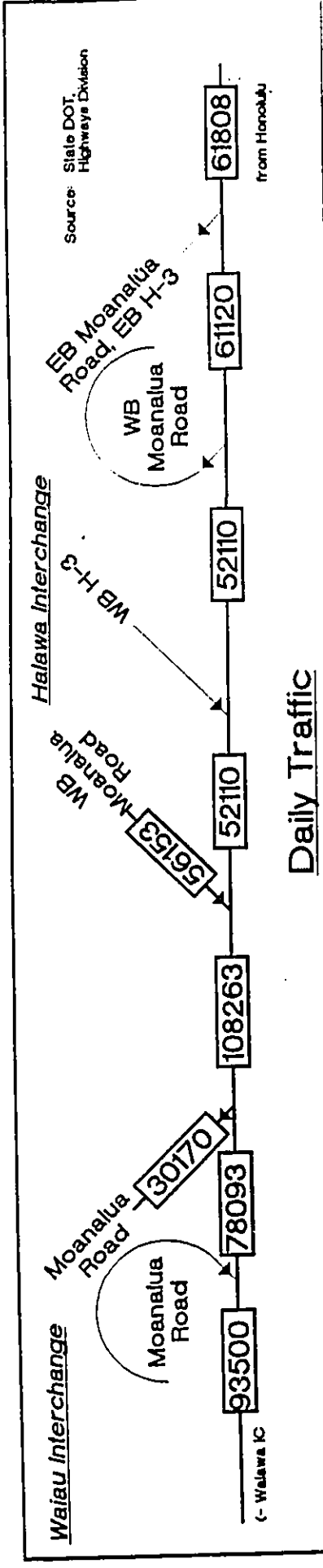
Prepared by: Julian Ng, Inc.

June, 1999
Not to Scale



<p>Traffic Analyses for Interstate Route H-1 Widening Kaonohi Street to Waiau Interchange</p>	<p>Westbound Laneage Halawa I.C. to Waiau I.C.</p>	<p>Exhibit 2</p>
<p>Prepared by: Julian Ng, Inc.</p>		<p>Not to Scale</p>
<p>June, 1999</p>		

DATE: 06/23/99



<p>Traffic Analyses for Interstate Route H-1 Widening Kaonohi Street to Waiau Interchange</p>	<p>1996 Westbound Traffic Halawa I.C. to Waiau I.C.</p>	<p>Exhibit 3</p>
	<p>Prepared by: Julian Ng, Inc.</p>	<p>June, 1999</p>

ADDENDUM A:
TRAFFIC OPERATIONAL CONDITIONS - LEVEL OF SERVICE

A qualitative measure used by traffic engineers to describe traffic operational conditions is the *level-of-service (LOS)*. Six levels have been defined, from LOS A (best operating conditions) to LOS F (worst). The Highway Capacity Manual describes analysis procedures for different types of facilities. For short segments of arterial roadways, capacities are determined at critical signalized intersections and levels of service are estimates from the ration of volume to capacity.

- LOS A represents free flow. Travel at desired speeds is unimpeded and usually limited by speed limits.
- LOS B describes stable flow. While some constraint on movement occurs, travel is at near free flow speeds.
- LOS C also describes stable flow; however, the operation of individual users becomes significantly affected by others in the traffic stream.
- LOS D represents high-density, but stable flow. Speed and freedom to maneuver are severely restricted and small increases in traffic volume are noticeable.
- LOS E represents operating conditions at or near capacity level. Speeds are reduced to low, but uniform value.
- LOS F is used to define forced or breakdown flow. LOS F is used to described conditions where the volume exceeds capacity.

* Transportation Research Board, National Research Council, Highway Capacity Manual, Special Report 209, Washington, D.C. 1985.

Appendix E

Botanical Resources Assessment
H-1 Widening Improvements Project
'Ewa District, Oahu

BOTANICAL RESOURCES ASSESSMENT
H-1 WIDENING AND IMPROVEMENTS PROJECT
'EWA DISTRICT, O'AHU

by

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Prepared for: R.M. TOWILL CORPORATION

October 1998

BOTANICAL RESOURCES ASSESSMENT
H-1 WIDENING AND IMPROVEMENTS PROJECT
'EWA DISTRICT, O'AHU

INTRODUCTION

The proposed widening and improvements to the 'Aiea/Pearl City section of the H-1 freeway begins at the Halawa Interchange (H-1/H-3 merge) and extends westward to the H-1/H-2 merge. The project also includes the freeway Off-Ramp from H-1 to Leeward Community College.

Field studies of the project area were conducted on 19 October 1998. The primary objectives of the survey were to provide a description of the vegetation along the freeway and to search for threatened and endangered plants as well as species of concern.

DESCRIPTION OF THE VEGETATION

The plant names used in this report follow Wagner et al. (1990) and Evenhuis and Miller (1995-1998) for the native and naturalized species, and St. John (1973) for the ornamental, landscape plants.

Maintained Areas

The maintained areas which are regularly mowed and contain landscape plantings are found along the freeway right-of-way and on residential and commercial lands which adjoin the freeway.

Along the freeway right-of-way, the vegetation consists of mowed, expanses of grassy lawn with scattered plantings of hardier landscape specimens. Around the Halawa Interchange for example,

the plantings include trees of monkeypod (Samanea saman), shower trees (Cassia sp.), 'opiuma (Pithecellobium dulce), fern tree (Filicium decipiens), and be-still tree (Cascabela thevetia); and shrubs of various Hibiscus cultivars and a red-flowered cultivar of Bougainvillea. By Exit 10, the plantings include oleander (Nerium oleander), African tulip tree (Spathodea campanulata), Chinese banyan (Ficus microcarpa), monkeypod, and kolomona (Senna surattensis).

Most of the ground cover is composed of Bermuda grass or manienie (Cynodon dactylon), a commonly used lawn grass in Hawai'i. In most places though, the grass cover is brown and dry with scattered patches of dusty, reddish-brown soil. Weedy species found throughout the maintained areas along the freeway include: pitted beard-grass (Bothriochloa pertusa), Calyptocarpus vialis, virgate mimosa (Desmanthus virgatus), coatbuttons (Tridax procumbens), Guinea grass (Panicum maximum), swollen fingergrass (Chloris barbata), Natal redtop grass (Melinis repens), buffel grass (Cenchrus ciliaris), 'uhaloa (Waltheria indica), and creeping indigo (Indigofera spicata). In some places along the right-of-way, such as by Leeward Community College, there are low patches of koa haole shrubs (Leucaena leucocephala), 6 to 10 inches tall; these have been kept low and stunted by the periodic mowings.

Where the freeway is elevated, commercial and residential lands are found. These contain grassy lawns and ornamental plantings and fruit trees such as mango (Mangifera indica), banana (Musa X paradisiaca), coconut (Cocos nucifera), Java plum (Syzygium cumini), African tulip, and 'opiuma. Commonly planted street trees are the rainbow shower (Cassia fistula X javanica) and monkeypod.

Unmaintained Areas

The unmaintained or undeveloped areas are found toward the western

end of the project site, from about Leeward Community College to the H-1/H-2 merge. In most places, the vegetation consists of koa haole shrubs with a dense layer of Guinea grass between the shrubs. This koa haole/Guinea grass scrub supports scattered, small stands of kiawe trees (Prosopis pallida) and a few large 'opiuma trees.

A portion of the project site along the H-1/H-2 merge and H-2 freeway was surveyed during the studies for the proposed Waiawa Gentry project (Char 1994a). Dense koa haole scrub, 10 to 15 ft. tall, occupied the former sugar cane fields. In the gulch which borders the H-2 freeway, scattered trees and shrubs of silk oak (Grevillea robusta), Java plum, and Christmas berry (Schinus terebinthifolius) were found in the koa haole scrub.

DISCUSSION AND RECOMMENDATIONS

The vegetation along the H-1 freeway in the 'Aiea to Pearl City section, from the Halawa Interchange and westward to the H-1/H-2 merge, is dominated almost exclusively by introduced or alien plants. Introduced plants are all those species which were brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is, Cook's discovery of the islands in 1778. The vegetation on the maintained areas along the freeway right-of-way and the adjacent residential and commercial lands consists of grassy lawns and plantings of ornamental shrubs and trees; fruit trees are common in the residential areas. Unmaintained or undeveloped areas are dominated by koa haole/Guinea grass scrub. Other studies conducted by the principal investigator in or adjacent to the project site (Char 1994a, 1994b) have recorded similar findings.

The proposed project to widen and improve this section of the H-1 freeway is not expected to have a significant negative impact

on the botanical resources. The majority of the vegetation is dominated by introduced species, most of them used for landscape purposes. The few native species are found primarily in the koa haole/Guinea grass scrub and are all indigenous species, that is, they are native to the Hawaiian Islands and elsewhere. These are: 'uhaloa (Waltheria indica), koali (Ipomoea indica), 'ilima (Sida fallax), popolo (Solanum americanum), and ricegrass (Paspalum scrobiculatum).

No threatened and endangered plants or species of concern (U.S. Fish and Wildlife Service 1997) were observed within the study area. No Exceptional Trees protected by City and County of Honolulu Ordinance No. 78-91 occur within the study area.

There are no botanical reasons to impose any restrictions, conditions, or impediments to the proposed project. It is recommended, however, that areas cleared of vegetation along the right-of-way be grassed over and landscaped as soon as possible to prevent dust and soil erosion problems.

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Appendix F

Archaeological Assessment of an Approximately 7.6-Kilometer Long
Portion of the H-1 Highway from Halawa to the H1-H2 Interchange at
Waiawa, 'Ewa District, Island of Oahu

ARCHAEOLOGICAL ASSESSMENT
OF AN APPROXIMATELY 7.6-KILOMETER LONG PORTION OF THE H-1
HIGHWAY FROM HĀLAWA TO THE H1-H2 INTERCHANGE AT WALAWA,
EWA DISTRICT,
ISLAND OF O`AHU

by

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Prepared for
R.M. TOWILL CORP.

Cultural Surveys Hawaii
October 1998

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I. INTRODUCTION

A. Project Description

At the request of R.M. Towill Corp., Cultural Surveys Hawaii has conducted an archaeological reconnaissance survey and assessment of an approximately 7.6-kilometer long portion of the H-1 highway in the `Ewa District, island of O`ahu. The H-1 Highway study area commences at Hālawa, extends westward along the highway corridor up to H-1/H-2 Interchange in Waiawa (Figure 1). The specific focus of the investigation are the areas immediately adjacent to the highway corridor. This portion of the H-1 Highway is proposed for traffic improvement work.

B. Scope of Work

The scope of the work for the archaeological assessment comprised:

1. Historic background research including study of historic maps, archival documents, previous archaeological and historical studies, and other sources for the purpose of identifying existing and potential historical or archaeological sites in areas adjacent to the H-1 Highway study area corridor. Special area of concern was identification of any sites currently entered on the Hawai`i Register of Historic Places and/or the National Register of Historic Places which could be impacted by future development within the present highway corridor study area.
2. Reconnaissance survey fieldwork consisting of an inspection and assessment of potential historic and archaeological sites and site areas. Present conditions along the highway study area were documented with field notes and photographs.
3. Preparation of a report detailing the results of the historic research and fieldwork.

C. Work Accomplished

Archaeological reconnaissance survey of the H-1 Highway project area was accomplished on October 7&8, 1998.

Background research included: a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural Resources; review of documents at Hamilton Library of the University of Hawai`i, the Hawai`i State Archives, the Mission Houses Museum Library, the Hawai`i Public Library, and the Archives of the Bishop Museum; study of historic photographs at the Hawai`i State Archives and the Archives of the Bishop Museum; and study of historic maps at the Survey Office of the Department of Land and Natural Resources.

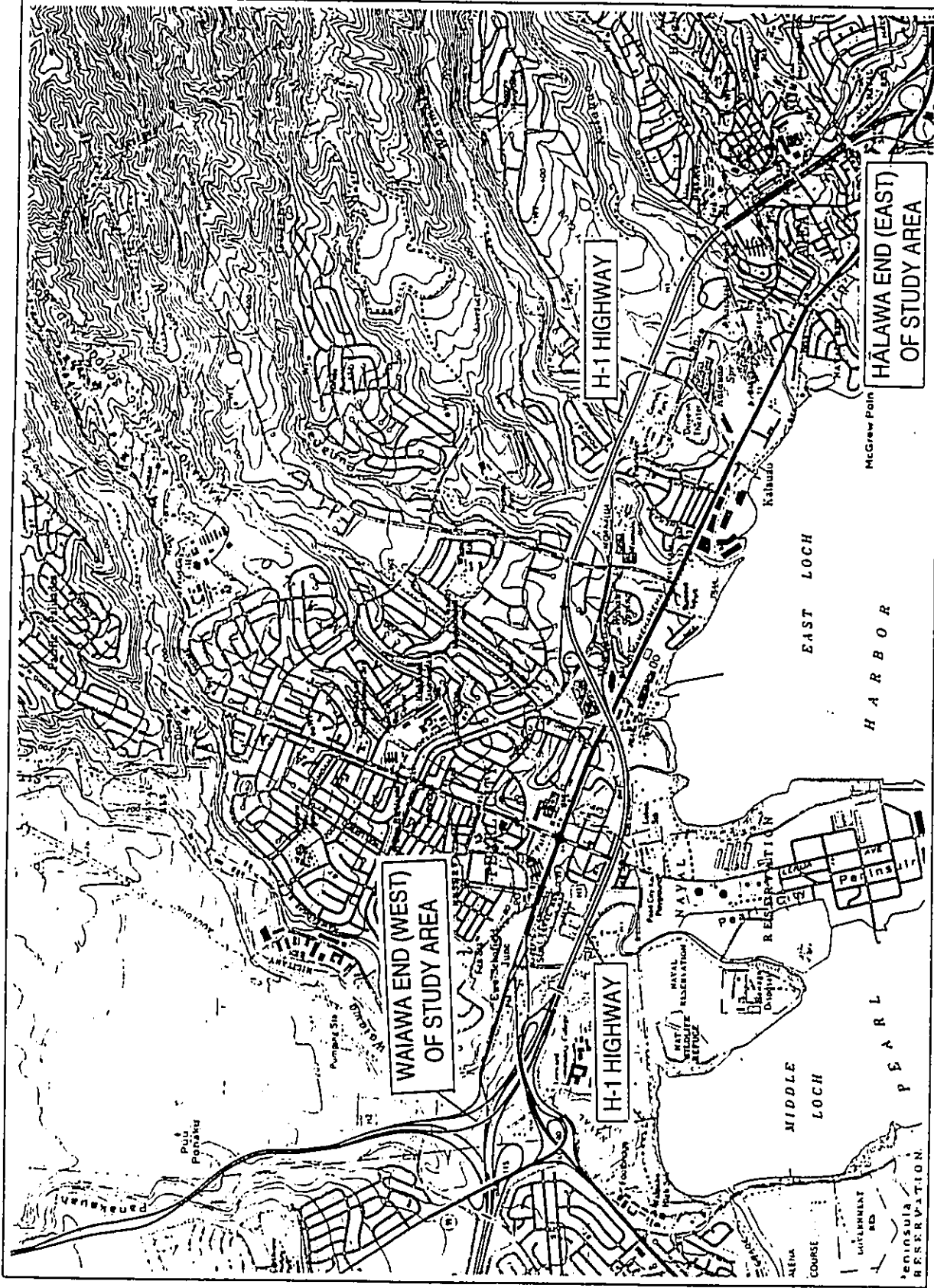


Figure 1 Portion of USGS 7.5 Minute Series Topographical Map, Waipahu Quadrangle, showing H-1 Highway study area between Halawa and H-1/H-2 interchange at Waiawa

II. H-1 HIGHWAY STUDY AREA: CULTURAL AND HISTORICAL DOCUMENTATION

This section begins with a review of the available documentary evidence for the general character of the portion of the `Ewa District traversed by the present H-1 Highway study area - between Halawa and the H-1/H-2 highway interchange at Waiawa - as it had evolved in the years before western contact in the later 18th century. The development of the `Ewa District traversed by the highway study area during the 19th century and into the early 20th century was recorded in increasingly abundant documentation - including government records, photographs and maps. Finally, during subsequent decades of the 20th century, abundant documentation of the development of `Ewa allows a more precise focus on the highway corridor study area and immediately adjacent lands.

A. Pre-Contact to Early 1800s

The present H-1 Highway study area traverses the *ahupua`a* of Hālawā, `Aiea, Kalauao, Waimalu, Waiau, Waimano, Manana, and Waiawa in the `Ewa district of O`ahu. Hawaiian traditions document the significance of the `Ewa district stretching back to the reign of Maweke during twelfth or thirteenth century:

Maweke's three sons each controlled major districts of Oahu...One, Keaunui, was the most powerful, controlling Ewa and its satellite districts of Waianae and Waialua. At this time the island apparently was not unified...

However, the descendants of the eldest of Maweke's sons (Muliēlealii) did unify and become kings of the island. Muliēlealii controlled Kona. Of his three eldest sons, Fornander...says Kumuhonua could have become *Moi* (king) of the entire island. If he did not, his immediate descendants did. His great-great-grandson Kapae-a-Lakona (or Lakona) was *Moi* of the island. Kumuhonua himself, controlled the vital Ewa District (and Waianae and Waialua); thus the power base of Oahu seems to have stayed in Ewa. (Cordy 1981:204)

The development of the `Ewa district as a power base of the *ali`i* likely paralleled the Hawaiians' development of the surrounding coastal resources; according to Handy and Handy:

The salient feature of `Ewa, and perhaps its most notable point of difference, is its spacious coastal plain, surrounding the deep bays ("lochs") of Pearl Harbor, which are actually the drowned seaward valleys of `Ewa's main streams, Waikele and Waipi`o...

These bays offered the most favorable locality in all the Hawaiian Islands for the building of fishponds and fish traps into which deep-sea fish came on the inflow of tidal waters...

The primary reason for `Ewa's prominence in history and as an *ali`i* stronghold was undoubtedly the existence of the great number of fishponds at different points around Pearl Harbor, which was `Ewa territory. Two of the largest were on the [Waipio] peninsula, and another was at its northwest corner...(Handy and Handy 1972:470)

Other resources of the `Ewa *ahupua`a* were available to promote their settlement by an expanding population:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko`olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower parts of the valley sides were excellent for the culture of yams and bananas. Farther inland grew the `awa for which the area was famous. The length or depth of the valleys and the gradual slope of the ridges made the inhabited lowlands much more distant from the *wao*, or upland jungle, than was the case on the windward coast. Yet the *wao* here was more extensive, giving greater opportunity to forage for wild foods in famine time. (*Ibid.*:469)

During the second half of the 18th century the `Ewa district became a focus of political intrigue and warfare on O`ahu. In 1783, forces of the Maui chief Kahekili gained control of the island of O`ahu by defeating the *mo`i* Kahahana, "from the powerful Ewa chiefs' line" (Cordy 1981:207). According to the pioneer 19th-century Hawaiian historian Samuel Kamakau, the defeated O`ahu chiefs laid

a plot...to murder the chiefs of Maui. . .Those in the plot were the chiefs Elani, Pupuka, Maka`i-oulu, Kona-manu, Ka-lake-o`o-nui, and a great many others. Waipi`o in `Ewa as the center of the plot got the name of "Waipi`o of secret rebellion" (Waipi`o *kimopo*). (Kamakau 1961:138)

The plot failed

...and when Ka-hekili learned that Elani of `Ewa was one of the plotters, the districts of Kona and `Ewa were attacked and men, women, and children were massacred, until the streams of Makaho and Niuhelewai in Kona and of Kahoa`ai`ai in `Ewa were choked with the bodies of the dead, and their waters became bitter to the taste, as eyewitnesses say, from the brains that turned the water bitter. All the Oahu chiefs were killed and the chiefesses tortured. (*Ibid.*:138)

If Kamakau is correct, the population of `Ewa would have been decimated during the 1780s. "The Oahu society never rose again" (Cordy 1981:208).

Kahekili and the Maui chiefs retained control of O`ahu until the 1790s. Kahekili died at Waikiki in 1794. His son, Kalanikapule, was defeated the following year at the battle of Nu`uanu by Kamehameha, who distributed the O`ahu lands - including the `Ewa district - among his favorites: "...land belonging to the old chiefs was given to strange chiefs and that of old residents on the land to their companies of soldiers, leaving the old settled families destitute" (Kamakau 1961:376-377).

During the first decades of the 19th century, western visitors begin to describe the `Ewa landscape above Pearl Harbor as it had been developed by the Hawaiians by the early decades of western contact. Archibald Campbell, travelling through `Ewa in 1809, recorded:

We passed by footpaths winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for taro beds. Where there was no water, the land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoa-nut trees, and the sides of the mountains are covered with wood to a great height. (Campbell 1967:103)

The botanist F.J.F. Meyen, visiting in 1831, confirms the profusion described by Campbell:

At the mouth of the Pearl River the ground has such a slight elevation, that at high tide the ocean encroaches far into the river, helping to form small lakes which are so deep, that the long boats from the ocean can penetrate far upstream. All around these water basins the land is extraordinarily low but also exceedingly fertile and nowhere else on the whole island of Oahu are such large and continuous stretches of land cultivated. The taro fields, the banana plantations, the plantations of sugar cane are immeasurable. (Meyen 1981:63)

A contrasting picture of `Ewa is recorded in the missionary William Ellis' description from 1823-24 of the `Ewa lands away from the coast:

The plain of Eva is nearly twenty miles in length, from the Pearl River to Waiarua, and in some parts nine or ten miles across. The soil is fertile, and watered by a number of rivulets, which wind their way along the deep water-courses that intersect its surface, and empty themselves into the sea. Though capable of a high state of improvement, a very small portion of it is enclosed or under any kind of culture, and in travelling across it, scarce a habitation is to be seen. (Ellis 1963:7)

Censuses taken by Protestant missionaries throughout the Hawaiian islands beginning in 1831 provide the earliest record of the size of the native population after the first decades of western contact. In the 1831-32 census of O`ahu, a population of 4,015 was recorded within the `Ewa district. Four years later, in 1836, the `Ewa population had dropped to 3,423 (Schmitt 1973: 9,36).

B. Mid-1800s to 1900

The Organic Acts of 1845 and 1846 initiated the process of the *Mahele* - the division of Hawaiian lands - which introduced private property into Hawaiian society. In 1848 the crown and the *ali`i* (royalty) received their land titles. Among the *ahupua`a* through which the present highway study area courses, Hālawā was awarded to Mataio Kekuanāoa, father of Alexander Liholiho (King Kamehameha IV) and Lot Kamehameha (King Kamehameha V); Aiea was retained by the Crown; and Waiawa and Waimano were awarded to Victoria Kamāmalu, daughter of Mataio Kekuanāoa and sister of Kamehameha IV and Kamehameha V.

Kuleana awards for individual parcels within the *ahupua`a* were subsequently granted in 1850. These Land Commission Awards (LCAS) were presented to tenants - native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners - who could prove occupancy on the parcels before 1845. Predominant among the

land usages in the `Ewa *ahupua`a* noted in the LCA records are *lo`i*, irrigated taro patches, of various sizes; and 43 *mo`o* or fields comprising indeterminate numbers of *lo`i*. Clearly, wetland taro cultivation was the primary agricultural pursuit within the *ahupua`a* at mid-19th century, likely reflecting a long history of taro farming. At the coast, fishponds are claimed. In the more *mauka* reaches of the *ahupua`a* claims were made for portions of *kula* (pasture land) and for "*okipu*" or *okipu`u* (forest clearing). Historic maps indicate that the majority of the awards were located in clustered complexes in the *makai* lands of the *ahupua`a* (Figures 2 & 3).

During the second half of the 19th century, traditional agricultural pursuits in `Ewa were displaced by other agricultural interests: rice and sugar cultivation. Beginning in the 1860s, rice cultivation would displace taro upon the *makai* flatlands of the `Ewa *ahupua`a*, reflecting the influx of Chinese immigrants to the Hawaiian Islands. The Chinese had been drawn to the Hawaiian kingdom as contract laborers on newly-developed sugar plantations. Contracts were for five years and pay was \$3 a month plus room and board.

Two sugar plantations would dominate the portion of the `Ewa landscape traversed by the present highway study area: the Honolulu Plantation Company and the Oahu Sugar Company. Stretching from Hālawā to Waimalu was the Honolulu Plantation Company, incorporated in 1899, which took over lands that had been cultivated decades earlier by the defunct Honolulu Sugar Company. At the eastern end of the present study area, Waiawa lands were incorporated into the Oahu Sugar Company, an "annexation plantation, a direct promotion of Benjamin F. Dillingham" (Conde and Best 1973:313), which leased 3,400 acres of the *mauka* portion of Waipi`o *ahupua`a* (adjacent to Waiawa) in 1897.

Benjamin Dillingham would also bring western transportation to `Ewa in the late 19th century. In 1889 he organized the Oahu Railway and Land (O.R.&L.) Company which connected outlying areas of O`ahu to Honolulu. During the last decade of the 19th century, the railroad would reach from Honolulu to Pearl City in 1890, to Waianae in 1895, to Waiālua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:100). Pearl City itself was a promotion of Dillingham who, in 1890, conceived a residential subdivision on and above the present Pearl City peninsula. The Pearl City development was

...one of [Dillingham's] devices to build railway traffic during the first years of the struggling Oahu Railway and Land Company.

Newspapers in 1890 carried numerous announcements of the "great land sale of Pearl City lots" at public auction, with special excursion rates on the new railway.

Lots were sold with a guarantee that O.R. and L. would transport buyers and their families between Pearl City and Honolulu for nine years at one cent per mile, second class. (Johnson 1956)

The O.R.&L. promotional map of 1890 shows the layout of the new Pearl City subdivision (Figure 4). Especially noteworthy are the house lots on roads - First, Second, Third and Fourth streets - between the railway line and the government road (the route of the present Kamehameha Highway). These lots and roads cut across the future route of the present H-1 Highway study area and represent the oldest "urban" area of O`ahu affected by the highway.

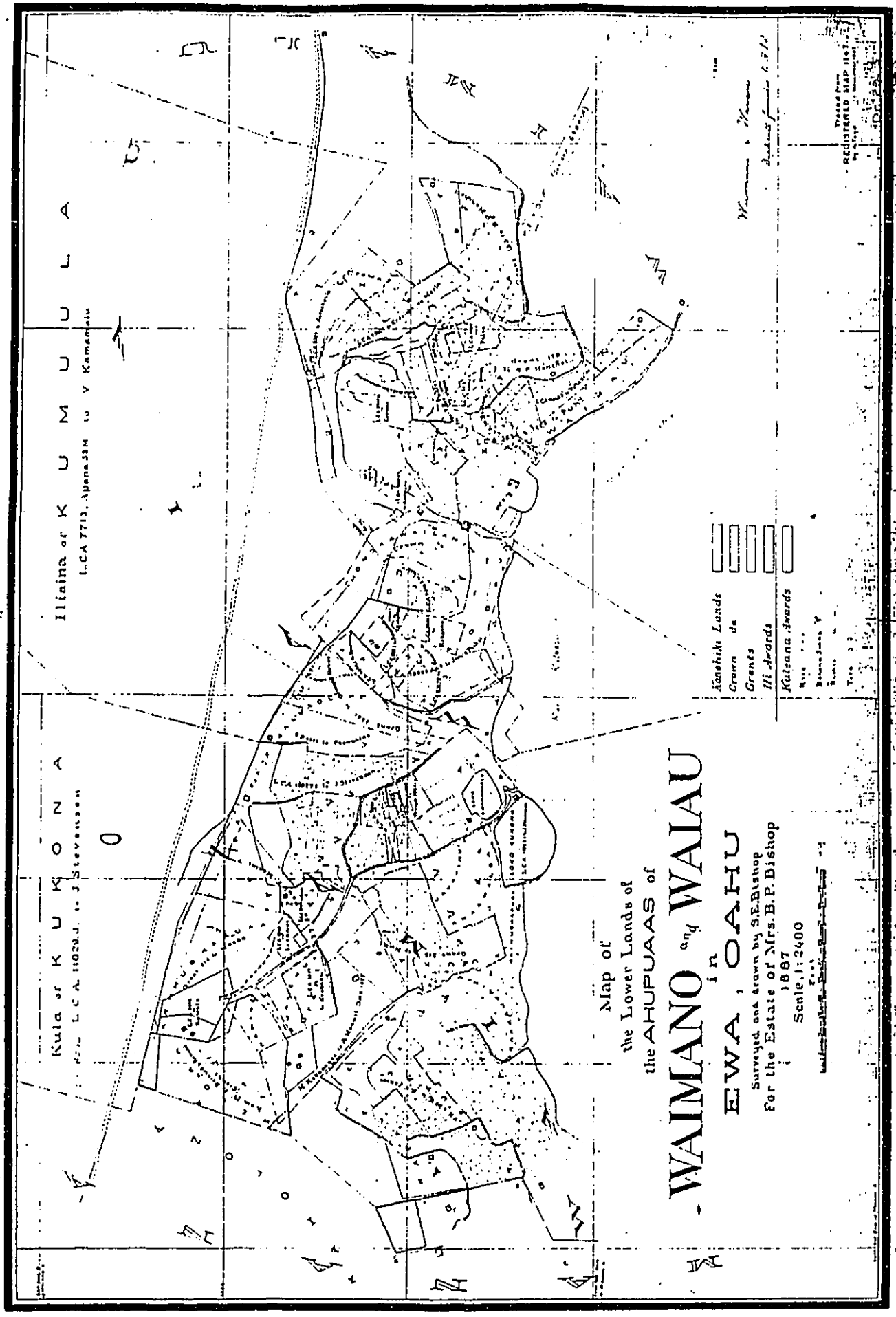


Figure 2 1887 map of makai lands of Waimano and Waiau by S.E. Bishop



Figure 3 1898 map by M.D. Monsarrat showing Aiea taro land

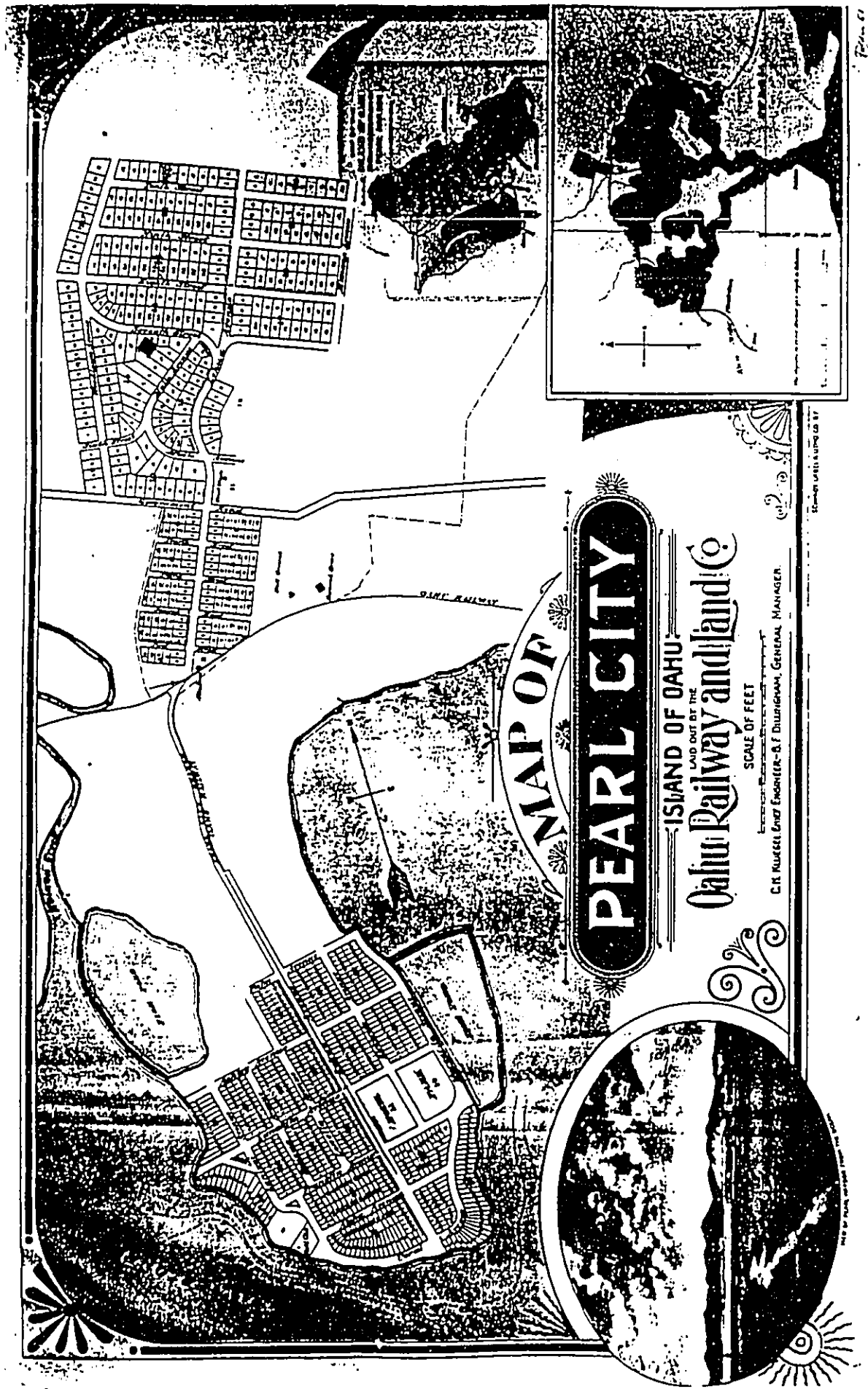


Figure 4 1890 Oahu Railway and Land Company map showing Pearl City subdivision (Bishop Museum Archives)

C. 1900 to Present

Twentieth century developments within the `Ewa district and along the route of the future H-1 Highway study are documented in historic maps and photographs. A Fire Control map of 1922 indicates that, by second decade of the century, the `Ewa landscape was dominated by sugar cane field (Figure 5). A U.S.G.S. map of the same decade shows urban development at Aiea and Pearl City along the future route of the present highway study area (Figure 6).

By the 1950s, as indicated on an aerial photograph and a U.S.G.S. map, an additional network of streets had been laid out at Waimalu, but `Ewa landscape continued to be dominated by cane lands (Figures 7 & 8). The 1950s also marked the first stages of the future H-1 Highway's development. Planning for a modern highway system on O`ahu had begun as early as the 1930s. However, it was not until 1952 that construction commenced on the first section of an expressway, designated the Mauka Arterial, from Old Waiialae Road to Isenberg Street in Honolulu. This first section opened on January 5, 1954. Subsequent segments were added incrementally and the route was renamed the Lunalilo Freeway in 1955.

Following statehood in 1959, Hawai`i became a part of the Interstate and Defense Highway System. In 1965, the Lunalilo Freeway was redesignated the H-1 Freeway, which was planned to result in a 27.2-mile long route from Waiialae to Palailai in `Ewa, above Barber's Point. Between 1968 and 1979, sections of the highway comprising the present study area were constructed at the Waiawa interchange (.2 miles); from the Waiawa Interchange to Waiiau (2.3 miles); from the Waiiau Interchange to the Hālawa Interchange (2.8 miles); and at the Hālawa Interchange (.6 miles) (Figures 9 & 10).

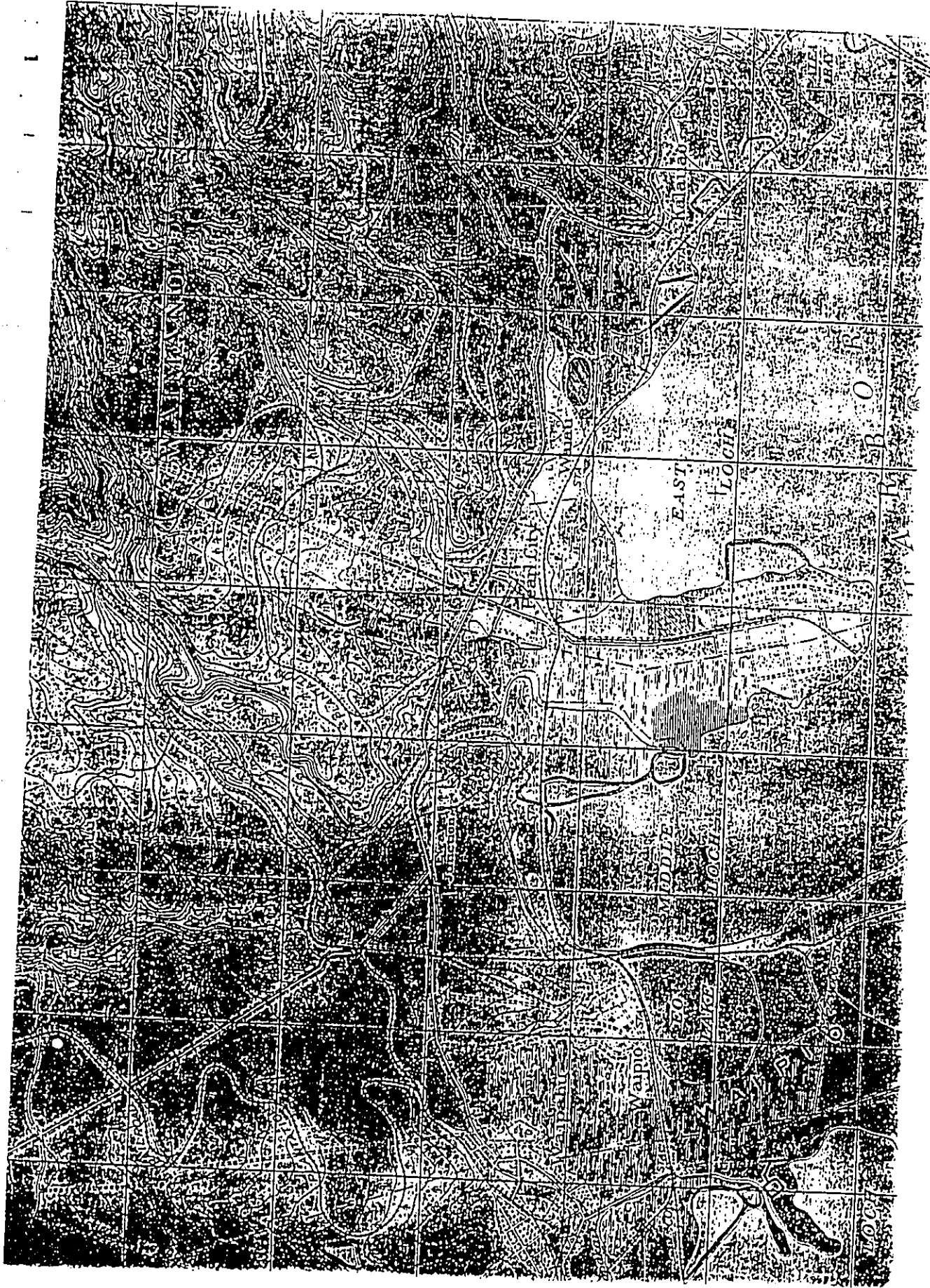


Figure 5 1922 Fire Control map showing Ewa district (Bishop Museum Archives)

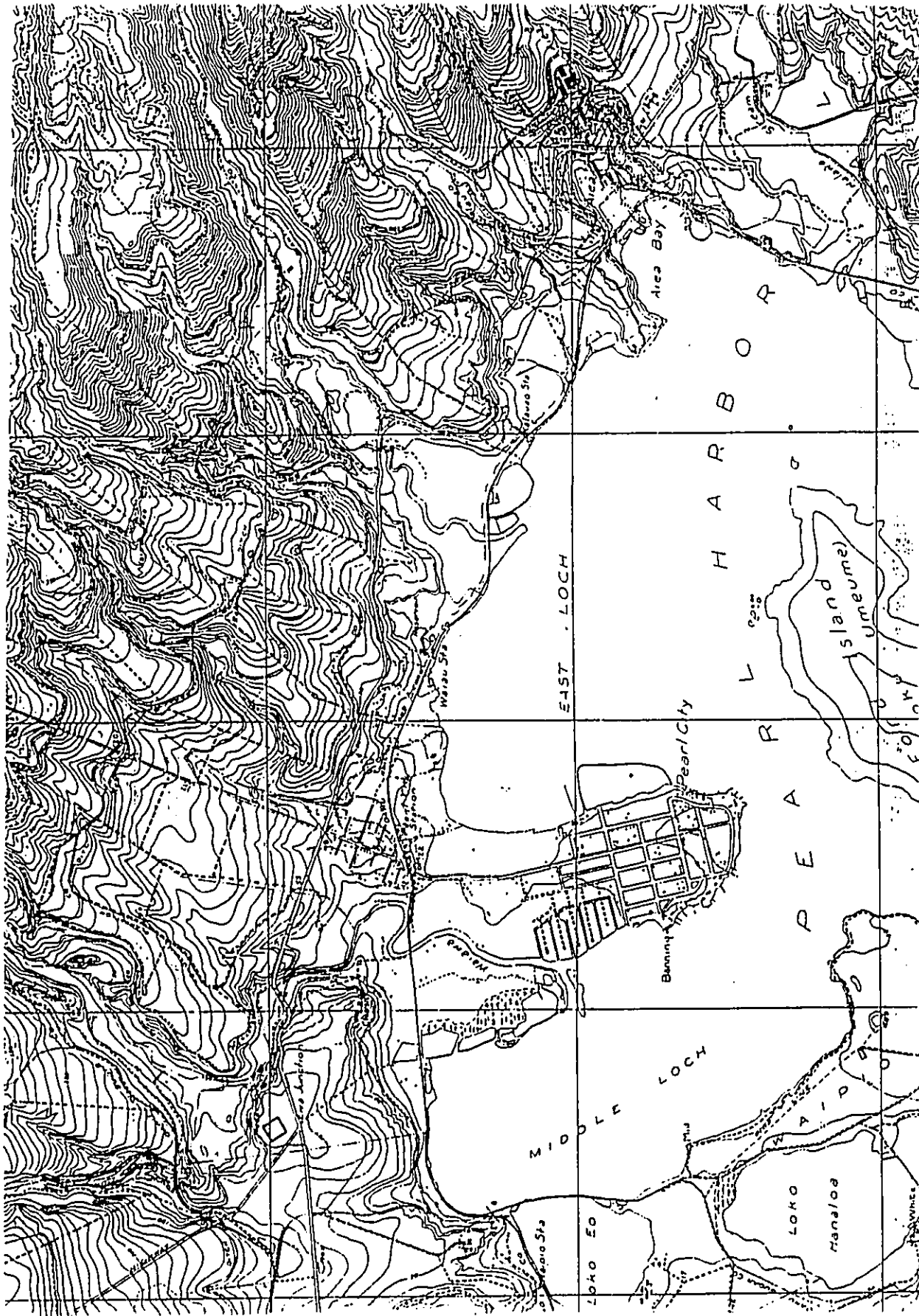


Figure 6 1928 U.S.G.S. map showing Ewa district (Bishop Museum Archives)

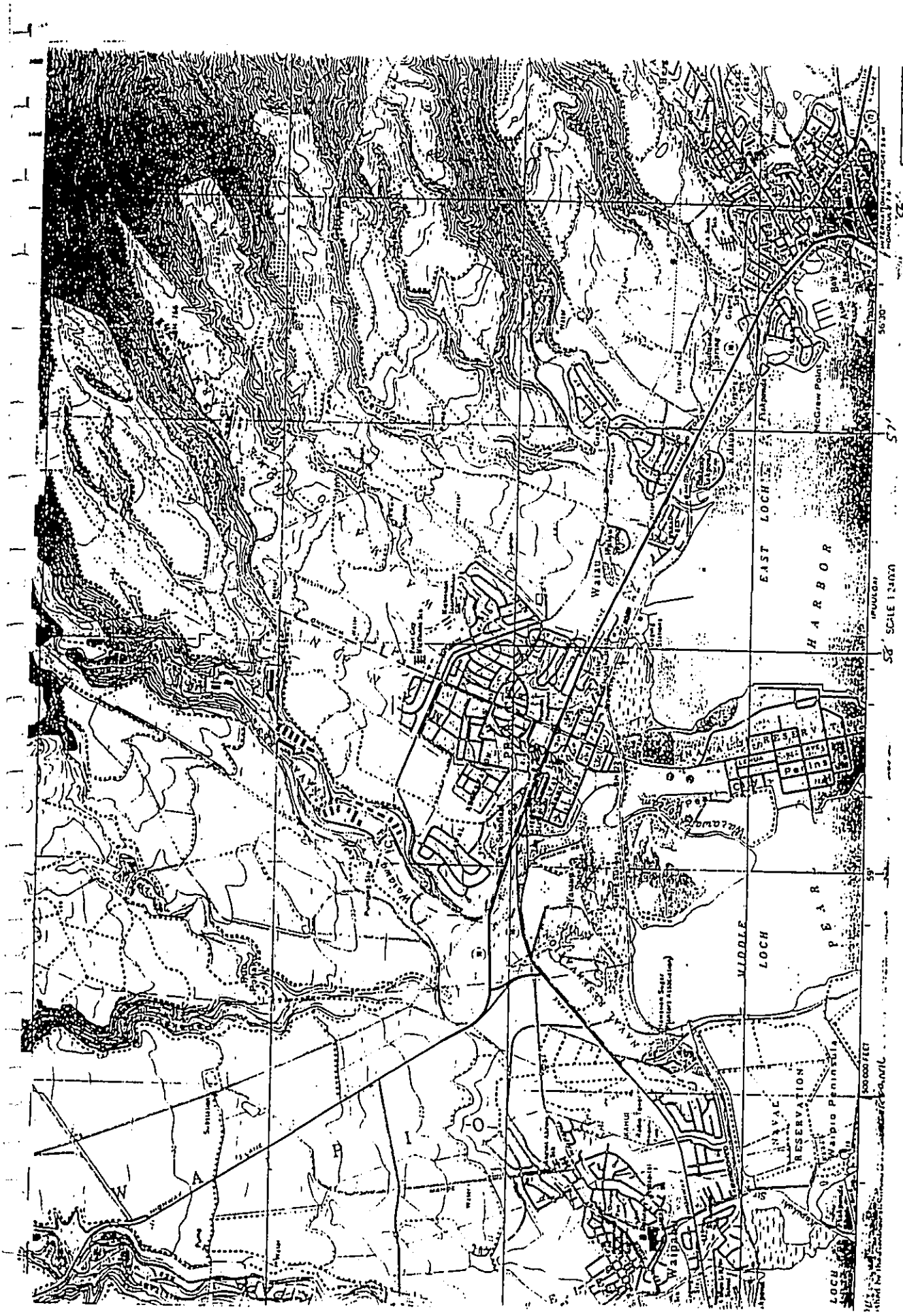


Figure 7 1959 U.S.G.S. map showing Ewa district

CORRECTION

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

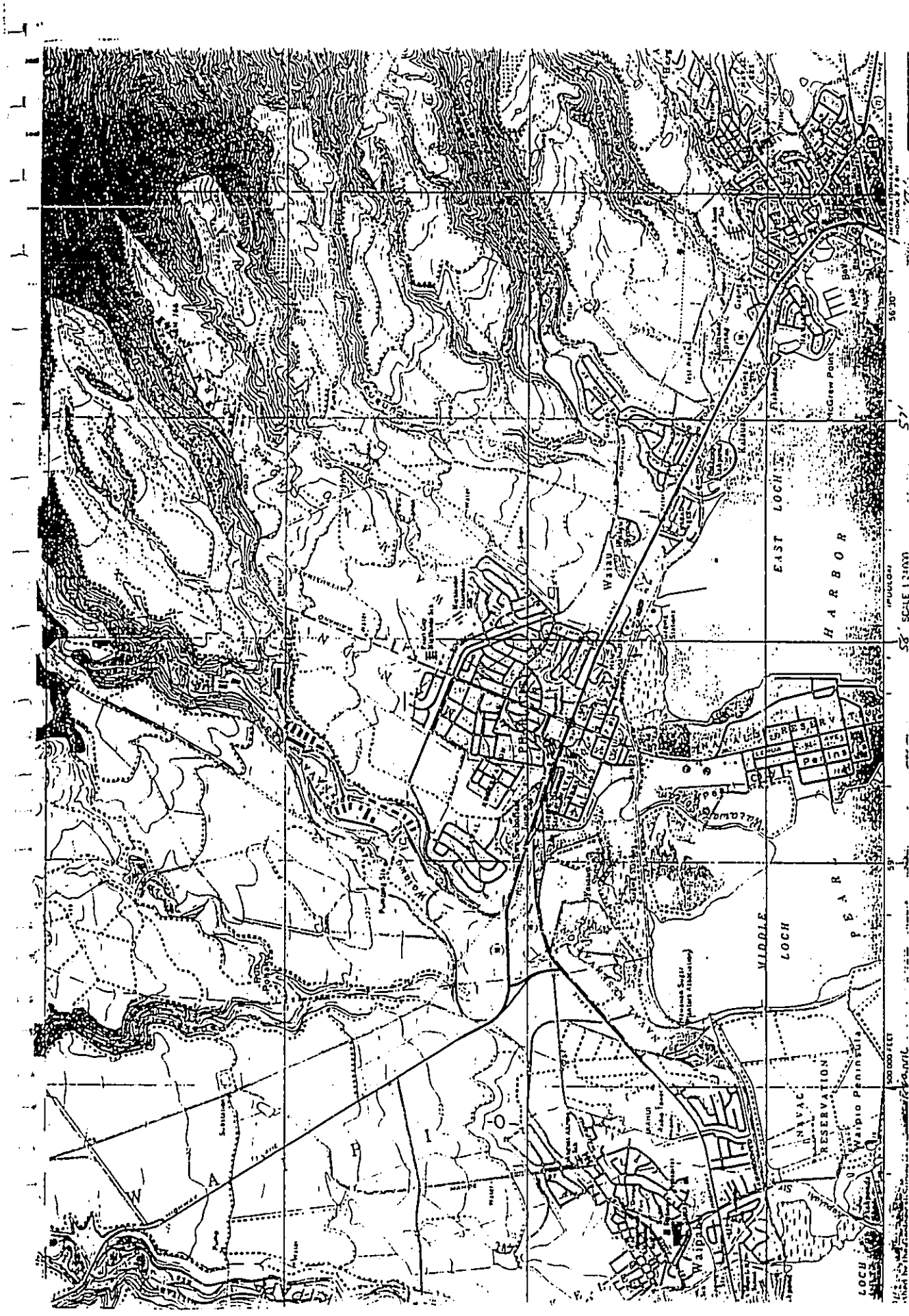


Figure 7 1959 U.S.G.S. map showing Ewa district



Figure 8 1952 aerial photograph showing portion of Ewa district between Pearl City and Aiea (Bishop Museum Archives)



Figure 9 Waiawa Interchange; Leeward Community College at right; August 1970 (Bishop Museum Archives)



Figure 10 H-1 Highway at Pearl City under construction; 1970 (Bishop Museum Archives)

III. PREVIOUS ARCHAEOLOGICAL AND HISTORICAL RESEARCH

A review of reports currently on file in the library of the State Historic Preservation Division indicates that no inventory-level archaeological surveys have been conducted within the present H-1 Highway study area or in the immediate vicinity. According to information provided by staff of the State Historic Preservation Division (SHPD), no archaeological sites have been previously recorded within the study area or in the immediate vicinity. Additionally, SHPD staff have indicated that there are no sites in the immediate vicinity of the study area currently (October 1998) entered on the Hawai'i Register of Historic Places and/or the National Register of Historic Places.

IV. RECONNAISSANCE SURVEY RESULTS

Reconnaissance survey of the H-1 Highway study area was accomplished on October 7 and 8, 1998. During inspection of the study area by automobile, sections where buildings have been constructed adjacent to the highway corridor were noted for closer inspection. Special effort focused on areas where historic documents indicated that buildings older than fifty years may be present - i.e. at Aiea, Waimalu and Pearl City. These areas were inspected by automobile and on foot by one archaeologist. Current conditions were documented by field notes and photographs.

A. Archaeological Sites

No surface archaeological sites or features were evident in any areas immediately adjacent to the highway study area corridor.

B. Building Assessment

The only locality where structures apparently older than fifty years were noted adjacent to the H-1 Highway corridor was at Pearl City. As noted in Section II above, development of Pearl City began as early as the 1890s. The H-1 Highway through Pearl City is an elevated corridor constructed between First and Second Streets; both these streets are shown on the 1890 development map (see Figure 4 above). Several wood frame houses (Figures 11 & 12) - all apparently currently occupied - on First and Second Streets appear to be the structures shown on the 1952 aerial photograph (see Figure 8 above).

At the corner of Lehua Avenue and First Street, on the *makai* side of the H-1 Highway corridor is the Pearl City Fire Station building (TMK 9-7-20:4) (Figure 13). An auxiliary engine company was put in service at Pearl City on February 2, 1942, and the company was placed under the control of the City and County of Honolulu on September 30, 1944 (Smith 1978). The present fire station building may have been constructed during that period.

On Second Street, *mauka* of the H-1 Highway corridor, is the Pearl City Hongwanji (TMK 9-7-21:1) (Figure 14). This Buddhist temple was constructed in 1937. The original temple, constructed in 1906, had been demolished by fire in 1936. The present temple building has been renovated in the 1980s (including the addition of a redesigned temple portal) but the structure retains much of its original character. It continues to serve a congregation of about 300 members.

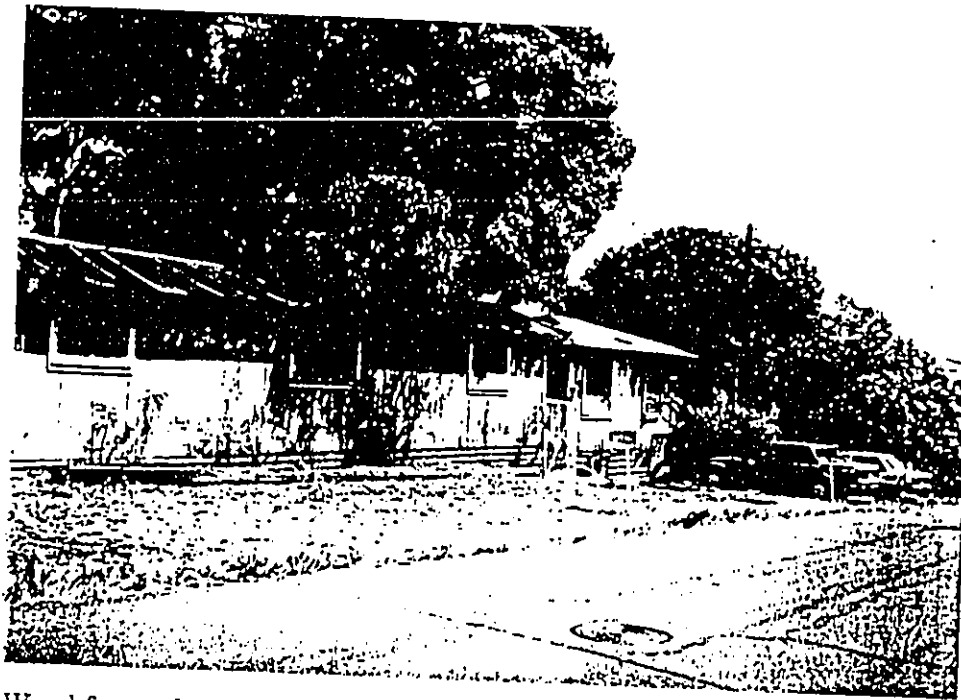


Figure 11 Wood frame houses on Second Street, adjacent to *mauka* side of H-1 Highway study area corridor; view northeast

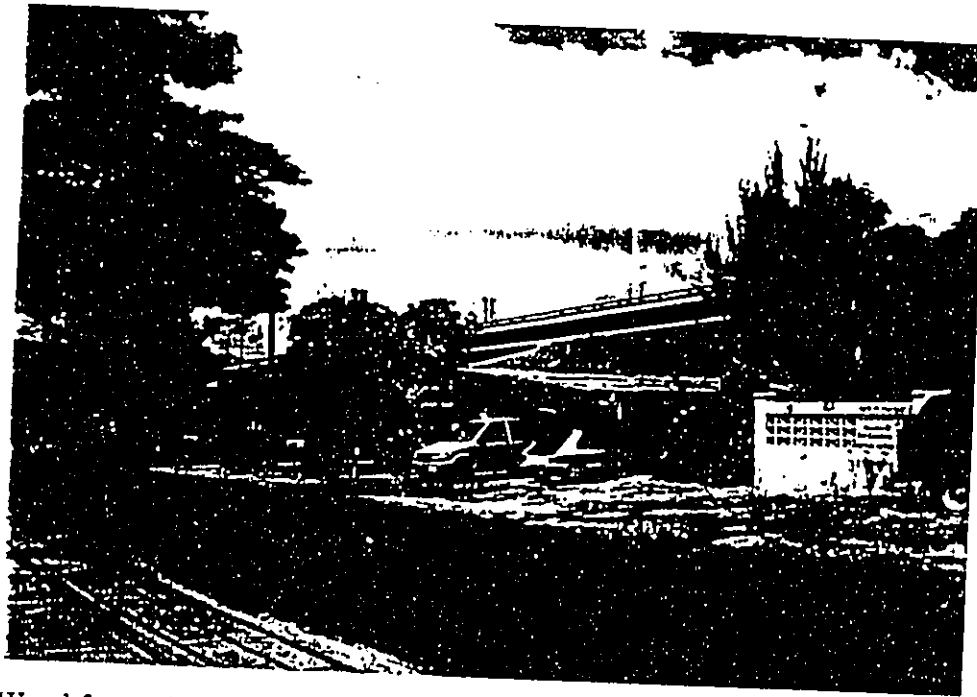


Figure 12 Wood frame houses on First Street on *makai* side of H-1 Highway study area corridor; view northwest

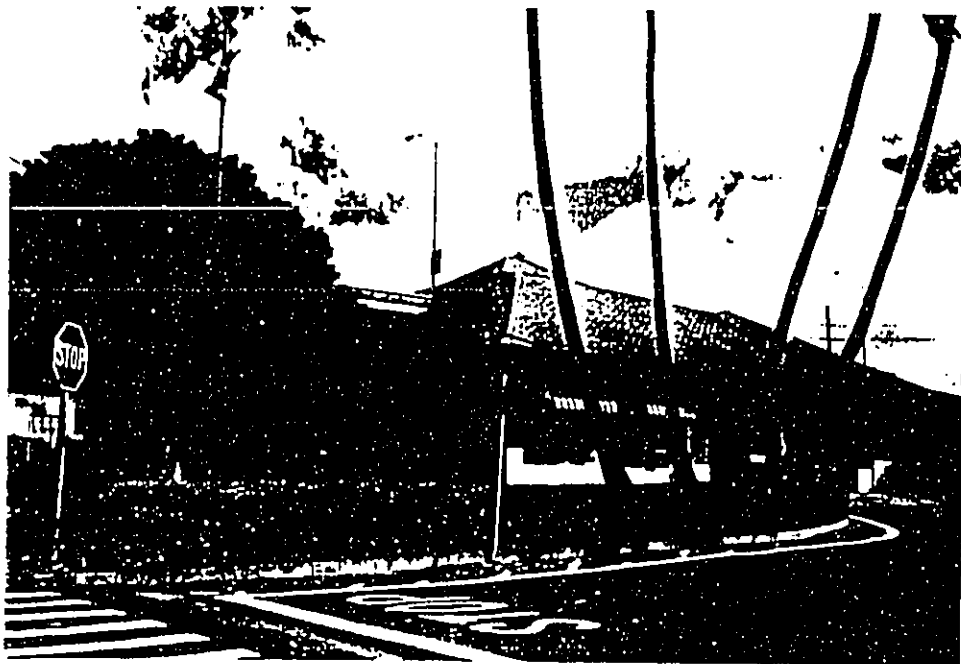


Figure 13 Pearl City Fire Station at corner of Lehua Avenue and First Street, on *makai* side of H-1 Highway study area corridor; view northeast



Figure 14 Pearl City Hongwanji temple building on Second Street, on *mauka* side of H-1 Highway study area corridor; view north

V. SUMMARY AND RECOMMENDATIONS

A. Summary

The present H-1 Highway study area traverses a portion of the `Ewa district which, until the mid-19th century comprised taro lands with associated traditional Hawaiian habitation. During the second half of the 19th century, `Ewa became the site of large-scale commercial cultivation of sugarcane. Development of the Oahu Railway and Land Company's route across `Ewa brought the first urban development at Pearl City in the late 19th century. By the 1950s, the lands traversed by the future H-1 Highway study area would include urban areas at Aiea, Waimalu and Pearl City. The portion of the H-1 Highway comprising the present study area was constructed between 1968 and 1979.

According to information provided by staff of the State Historic Preservation Division (SHPD), no archaeological sites have been previously recorded within the study area or in the immediate vicinity. Additionally, SHPD staff have indicated that there are no sites in the immediate vicinity of the study area currently (October 1998) entered on the Hawai'i Register of Historic Places and/or the National Register of Historic Places.

During reconnaissance survey of lands adjacent to the highway study area corridor, no surface archaeological sites were observed.

Buildings older than fifty years, which may be of historical concern, were noted adjacent to the highway corridor at First and Second Streets in Pearl City. These buildings include wood-frame houses and the Pearl City Fire Station. Definitely older than fifty years is the Pearl City Hongwanji, a Buddhist temple constructed in 1937.

B. Recommendations

Given the urban development along all portion of the H-1 Highway study area there is little likelihood of finding prehistoric surface or subsurface archaeological remains.

In light of these results no further archaeological investigation is recommended. However, if inadvertent discoveries are made during construction for the project, work should be halted in that immediate area and the State Historic Preservation Division (SHPD) should be notified.

If future highway improvement activities will impact the adjacent structures on First and Second Streets in Pearl City, consultation with the SHPD should be initiated to ascertain whether the structures are of historical concern. This consultation is especially pertinent in the case of the Pearl City Hongwanji temple building which may be eligible for nomination to the Hawai'i Register of Historic Places and/or the National Register of Historic Places.

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Appendix G

Acoustic Study for the H-1 Freeway Widening Project
Kaonohi Street to Waiiau Interchange

**ACOUSTIC STUDY FOR THE
H-1 FREEWAY WIDENING PROJECT
KAONOHI STREET TO WAI AU INTERCHANGE**

Prepared for:

R.M. TOWILL CORPORATION

Prepared by:

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APRIL 1999

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CHAPTER I. SUMMARY

The existing and future traffic noise levels in the environs of the proposed H-1 Freeway Widening Project between Kaonohi Street Overcrossing and Waiiau Interchange on the island of Oahu were studied to evaluate potential noise impacts associated with the proposed improvements, hereinafter referred to as the Build Alternative. Noise measurements were obtained, traffic noise predictions developed, and noise abatement alternatives evaluated.

Existing traffic noise levels in the project area currently exceed the U.S. Federal Highway Administration (FHWA) and Hawaii State Department of Transportation, Highways Division (HDOT) noise abatement criteria. Future (CY 2020) traffic noise levels with the proposed freeway improvement project are also expected to exceed the 66 Leq HDOT noise abatement criteria for Activity Category B at existing residences, at five school classroom buildings, at a community park, and at a church which are located within 166 meters (544 feet) of the freeway baseline, or under and within 20 to 35 meters of the freeway viaduct structure.

In addition, future traffic noise levels are expected to exceed HDOT's 71 Leq noise abatement criteria for Activity Category C at three industrial lots in the Waiiau Light Industrial Park.

Traffic noise mitigation measures in the form of noise barrier construction may be applied at some, but not all, of the affected residences and public use structures. When noise abatement measures are considered, they will be evaluated according to the criteria of "reasonable and feasible" as set forth in HDOT's Noise Analysis and Abatement Policy (Reference 5). Noise abatement measures should be made to achieve "substantial" noise reductions, defined by HDOT policy as a reduction of at least 5 dB. If noise barrier walls are implemented, landscaping should be used on the roadway side to mitigate visual impacts and discourage the potential for graffiti.

The following general conclusions can be made in respect to the number of impacted structures and lands which can be expected by CY 2020 under the Build Alternative. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

- HDOT's "greater than 15 dB increase" criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure. Maximum increases in traffic noise levels in the project area should not exceed 3.0 dB as a result of growth in traffic volumes and construction of additional traffic lanes.
- With or without the proposed improvements, future traffic noise levels at essentially all residences and public use structures within 166 meters (544 feet) of the freeway baseline and with direct lines-of-sight to the freeway lanes are expected to exceed HDOT's 66 Leq criteria for Activity Category B. Noise

levels along the first row of structures closest to the freeway will typically exceed the 66 Leq criteria. The noise shielding effects from this first row of structures are in the order of 5 to 15 dB for those buildings whose lines-of-sight to the freeway are partially or totally blocked.

- At least one high-rise dwelling unit, 26 mid-rise (2 or 3 story) dwellings, and 28 single story dwellings may be considered for noise mitigation measures. Of the 28 impacted single story dwellings, 10 will require either temporary or permanent relocation to accommodate the widened Right-of-Way.
- The Pearl Ridge Community Park, 5 classroom buildings at Pearl Ridge Elementary School, and 2 buildings at the Grace Brethren Church may be considered for noise mitigation measures.
- Three commercial structures at the west end of Waiiau Light Industrial Park also may be considered for noise mitigation measures.

Potential short term construction noise impacts are possible during the project construction period. Minimizing these types of noise impacts is possible using standard curfew periods, properly muffled equipment, administrative controls, and construction barriers as required. If work during the nighttime hours is required to minimize traffic congestion during the normal daytime period, noise impacts are possible at existing residences located along the freeway Right-of-Way. A variance from the existing state noise regulations will be required to perform nighttime work on this project.

CHAPTER II. GENERAL STUDY METHODOLOGY

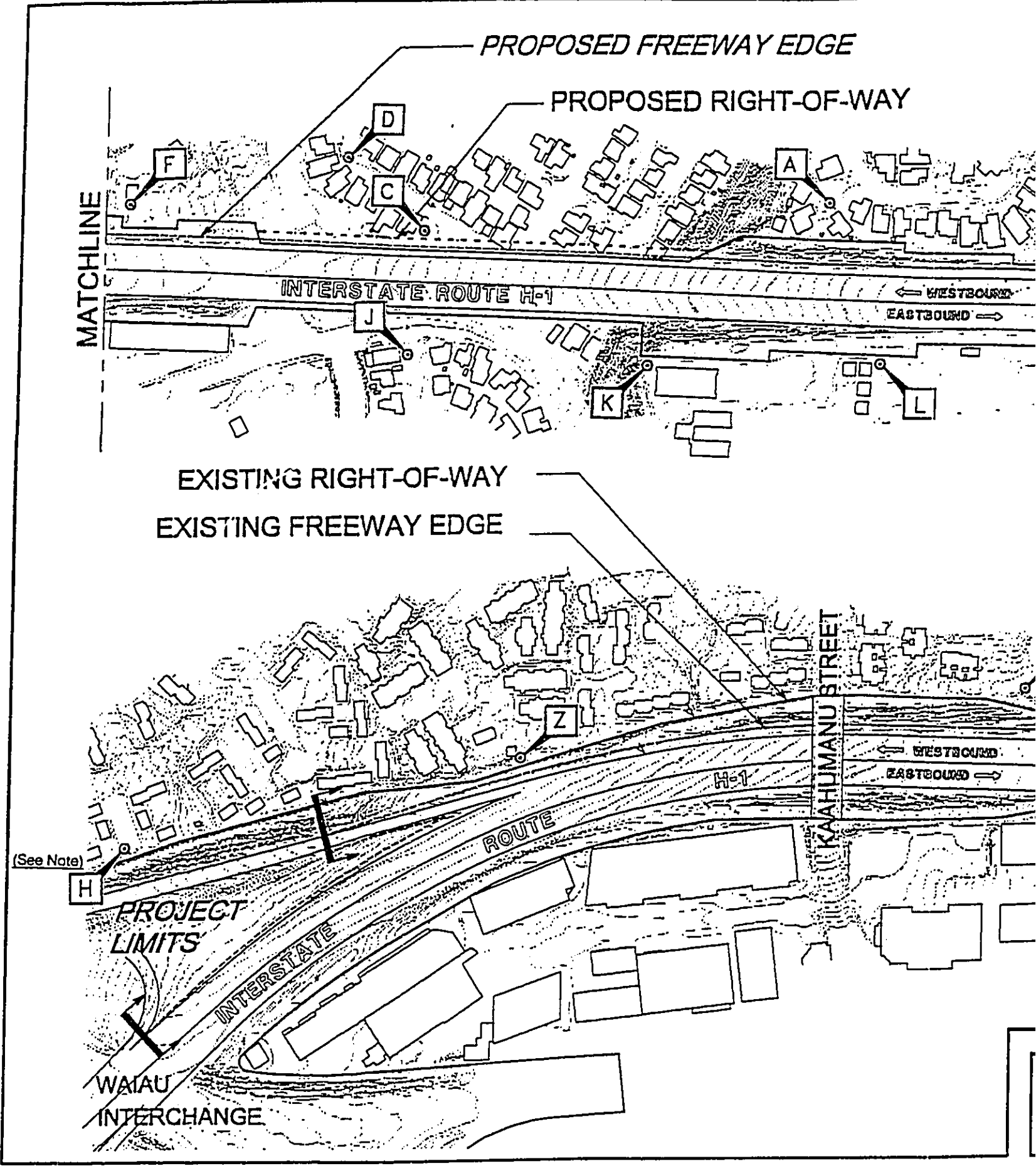
Noise Measurements. Existing traffic and background ambient noise levels at fourteen locations in the project area were measured in January 1999. The traffic noise measurements were used to validate the traffic noise model which was used to calculate the Base Year (CY 1998) and future (CY 2020) traffic noise levels under the No Build and Build Alternatives. The background ambient noise measurements were used to define existing noise levels at noise sensitive receptors which may be affected by the project. Also, the measurements were used in conjunction with forecast traffic noise levels to determine if future traffic noise levels are predicted to "substantially exceed" existing background ambient noise levels at these noise sensitive receptors, and therefore exceed FHWA and HDOT noise standards and criteria.

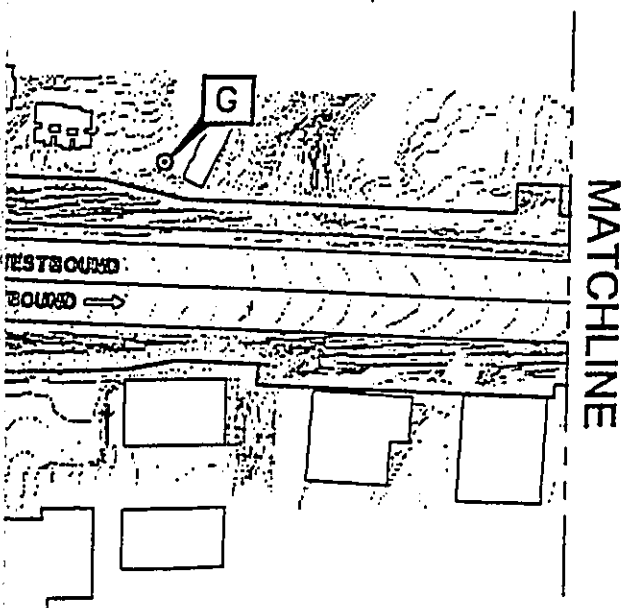
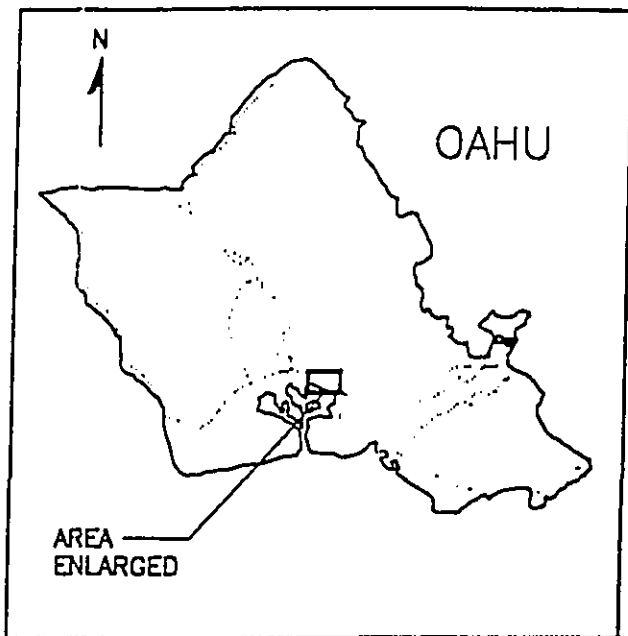
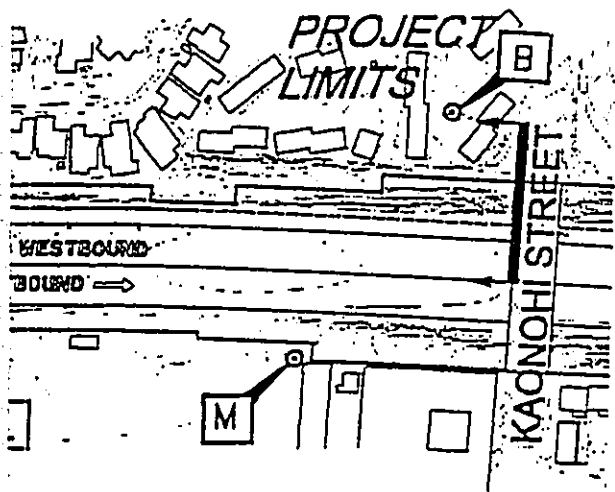
The noise measurement locations ("A" through "Z") are shown in Figure 1. The results of the traffic noise measurements are summarized in Table 1. In the table, Leq represents the average (or equivalent), A-Weighted, Sound Level. A list and description of the acoustical terminology used are contained in APPENDIX B.

Traffic Noise Predictions. The Federal Highway Administration (FHWA) Traffic Noise Model, Version 1.0 (or TNM, see Reference 1) was used as the primary method of calculating Base Year and future traffic noise levels, with model parameters adjusted to reflect terrain, ground cover, and local shielding conditions. At the fourteen traffic noise measurement locations along the project corridor (Locations "A" through "H", "I1", "I2", "J" through "M", and "Z"), the measured noise levels were compared with model predictions to insure that measured and calculated noise levels for the existing conditions were consistent and in general agreement. The State DOT traffic counts at Station No. C-7-L (Reference 2) were used to generate the Equivalent Sound Level (Leq) predictions shown in the table. The average vehicle speed entered into the TNM was adjusted to 104.6 kilometers (65 miles) per hour to achieve agreement between measured noise levels and those calculated by the TNM. With this input speed adjustment, the agreement between measured and predicted traffic noise levels was considered to be good and sufficiently accurate to formulate the Base Year and future year traffic noise levels.

Base Year traffic noise levels were then calculated along the project corridor using Base Year (1998) traffic volume data for the AM and PM peak hours from Reference 3. Traffic mix by vehicle types and average vehicle speeds for the various sections of the existing and future roadway were derived from observations during the noise monitoring periods and from Reference 2. Determinations of the periods of highest hourly traffic volumes along the project corridor were made after reviewing the AM and PM peak hour traffic volumes from References 2 and 3.

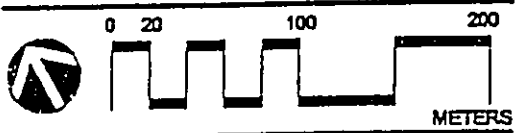
Figure 2 depicts the results of hourly noise measurements at Location "Z" on January 7 and 8, 1999. From the measurement results shown in Figure 2, it was concluded that the hourly traffic noise levels along the freeway do not vary more than





PROJECT SITE

Interstate Route H-1 Widening
 Westbound Direction
 Kaonohi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation



Note: Sites "I1" & "I2" are Located West of Site "H".

LOCATIONS OF NOISE MEASUREMENT SITES

FIGURE 1

TABLE 1

TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day	Date	Measured	Time of Day	Date	Measured	Predicted
	(HRS)		Leg (dB)	(HRS)		Leg (dB)	Leg (dB)
Z. 51.2 M from the base-- line of H-1 Freeway.	1500	1/7/99	75.6	0700	1/8/99	74.9	75.3
	TO 1600			TO 0800			
A. 77.5 M from the base-- line of H-1 Freeway.	1311	1/19/99	57.2	1300	12/9/98	58.1	67.7
	TO 1326			TO 1303			
B. 76.2 M from the base-- line of H-1 Freeway.	1250	1/19/99	66.2	1305	12/9/98	66.1	68.7
	TO 1305			TO 1310			
C. 31.5 M from the base-- line of H-1 Freeway.	1240	1/12/99	67.1	1315	12/9/98	66.2	60.3
	TO 1255			TO 1319			
D. 86.0 M from the base-- line of H-1 Freeway.	1050	1/21/99	59.5	1321	12/9/98	62.4	60.1
	TO 1116			TO 1324			
E. Directly under the viaduct of H-1 Freeway.	1210	1/12/99	69.1	1240	1/12/99	68.4	73.7
	TO 1225			TO 1255			
F. 44.5 M from the base-- line of H-1 Freeway.	1144	1/12/99	71.4	1332	12/9/98	73.0	73.0
	TO 1159			TO 1340			
G. 64.5 M from the base-- line of H-1 Freeway.	1117	1/12/99	70.0	1345	12/9/98	70.0	75.9
	TO 1132			TO 1350			

TO
07
08
09

TABLE 1 (CONTINUED)

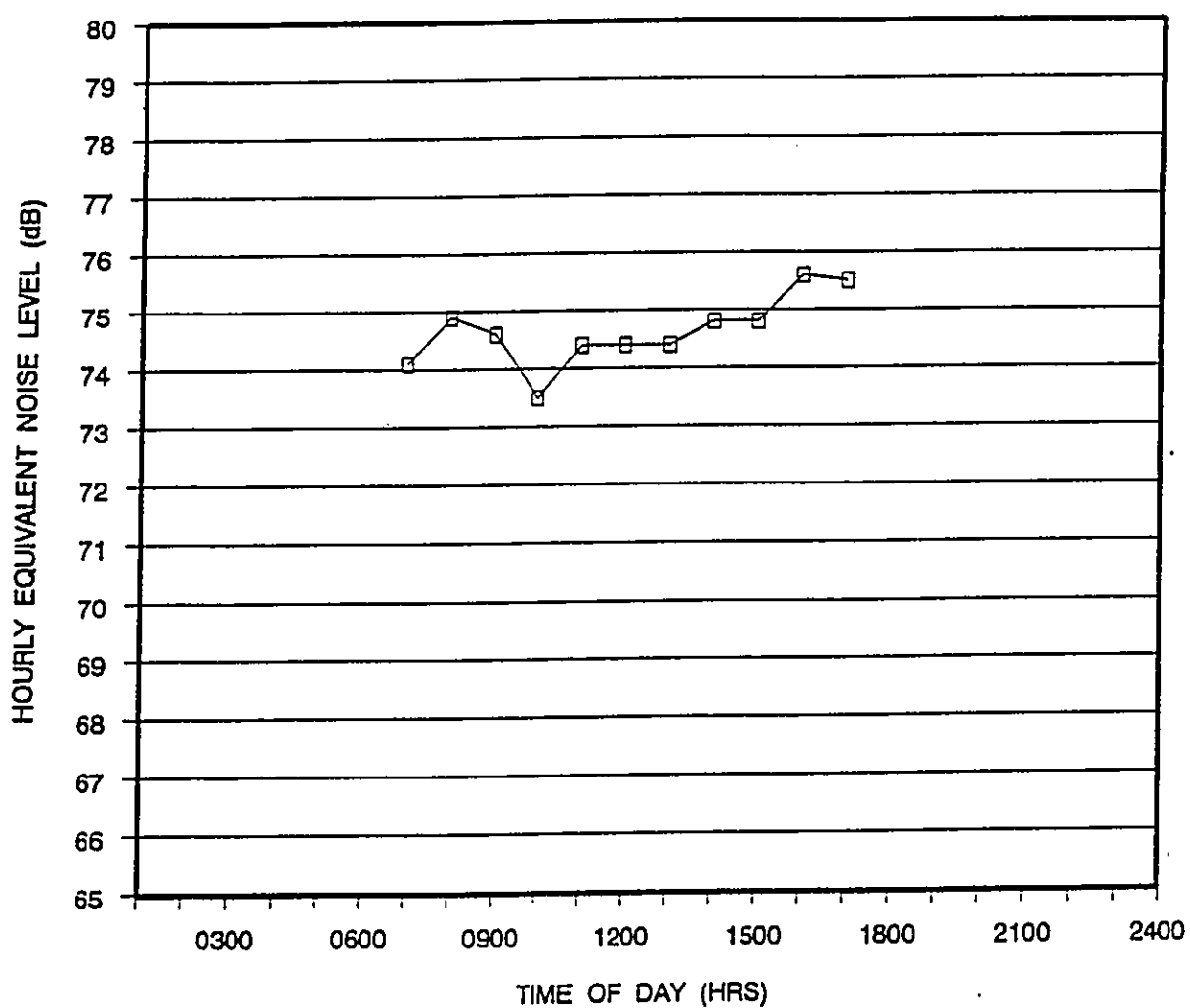
TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)		Date	Measured Leg (dB)	Time of Day (HRS)		Date	Measured Leg (dB)	Predicted Leg (dB)
H. 144.8 M from the base-line of H-1 Freeway.	1044		1/12/99	66.8	1517		1/11/99	65.7	66.6
	TO				TO				
	1100				1545				
I1. 155 M from the base-line of H-1 Freeway.	1021		1/12/99	64.6					64.2
	TO								
	1036								
I2. 204.2 M from the base-line of H-1 Freeway.	1018		1/21/99	64.6	1410		12/9/98	66.9	64.4
	TO				TO				
	1033				1415				
J. 65.0 M from the base-line of H-1 Freeway.	1105		1/19/99	68.2	1425		12/9/98	67.9	61.4
	TO				TO				
	1120				1430				
K. 62.0 M from the base-line of H-1 Freeway.	1316		1/12/99	68.7	1219		1/19/99	73.4	74.4
	TO				TO				
	1321				1234				
L. 52.0 M from the base-line of H-1 Freeway.	1340		1/12/99	65.8	1158		1/19/99	67.7	72.0
	TO				TO				
	1355				1213				
M. 42.5 M from the base-line of H-1 Freeway.	1136		1/19/99	69.9					68.3
	TO								
	1151								

Page 6

FIGURE 2

MEASURED HOURLY TRAFFIC NOISE LEVELS AT LOCATION "Z"
51.2 METERS DISTANCE FROM THE BASELINE OF
H-1 FREEWAY AT WAIKU GARDEN VILLA
(JANUARY 7 AND 8, 1999)



1.5 Leq between the AM and PM peak hours, and that the hour with the highest noise level was the PM peak hour. From Reference 2, total two-way traffic volumes, in vehicles per hour, (or vph) were generally highest during the PM peak hour (16,835 vph), with the AM peak hour volume (16,661 vph) being only slightly lower. From Reference 3, total two-way traffic volume assignments were also highest during the PM peak hour (16,496 vph), with the AM peak hour volume (15,919 vph) also being lower. For noise modeling purposes, the traffic noise levels were considered to be highest during the PM peak hour, with average hourly noise levels between the AM and PM peak hours being approximately 1 dB less than the PM peak hour value.

The Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to calculate the Base Year and CY 2020 traffic noise levels as required by Reference 4. Aerial photomaps, topographic maps, and project plans (where available) of the area were used to determine terrain, ground cover, and local shielding effects from building structures, which were entered into the noise prediction model.

Future year (2020) traffic noise levels were then developed for the No Build and Build (roadway improvement) Alternatives using the future traffic assignments of Reference 3, the topographic and existing development features described previously, and the new roadway striping under the Build Alternative. Forecast traffic volumes, mixes, and speeds for Year 2020 were assumed to be similar for the No Build and Build Alternatives. The PM peak hour volume used to model CY 2020 traffic noise levels was 18,370 vph, from Reference 3.

The CY 2020 traffic assignments for the No Build and Build Alternatives were assumed to be identical. Future traffic conditions under the No Build Alternative may worsen, with average vehicle speeds declining as a result of increased congestion. Nevertheless, under both the No Build and Build Alternatives, average vehicle speeds were assumed to remain the same as current values.

Impact Assessments and Mitigation. Following the calculation of the future traffic noise levels, evaluations of the future traffic noise levels and impacts at noise sensitive receptor locations along H-1 Freeway were made. Comparisons of predicted future traffic noise levels with FHWA and HDOT noise abatement criteria (see Table 2) were made to determine specific locations where the noise abatement criteria are expected to be exceeded. In addition, HDOT's criteria of "greater than 15 dB increase above existing background noise levels" was also used as a noise abatement threshold for this project (from Reference 5). Along the project corridor, the locations of the 66 and 71 Leq(h) traffic noise contours, without the benefit of shielding from natural terrain or man-made sound barriers, were provided for siting future land uses along the project corridor, and for defining the adequate buffer space between the roadway sections and these land uses. HDOT's 66 Leq(h) and the "greater than 15 dB increase" criteria were both applied to all noise sensitive buildings along the project corridor, since, by Reference 5, HDOT has replaced the FHWA 67 Leq(h) criteria with their 66 Leq(h) cri-

TABLE 2
FHWA NOISE ABATEMENT CRITERIA
[Hourly A-Weighted Sound Level -- Decibels (dBA)]

<u>ACTIVITY CATEGORY</u>	<u>LEQ (h)*</u>	<u>DESCRIPTION OF ACTIVITY CATEGORY</u>
A	57 (Exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the areas are to continue to serve their intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, activity sports areas, parks, residences, motels, hotels, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-----	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

 * The Hawaii State Department of Transportation, Highways Division, utilizes Noise Abatement Criteria levels which are 1 Leq unit less than the FHWA values shown.

teria. At the commercial establishments along the project corridor, HDOT's 71 Leq(h) noise abatement criteria was applied to identify commercial establishments where noise abatement measures may also be applied. Where noise mitigation measures were indicated for this project, the effectiveness of sound attenuating barriers and other possible noise mitigation measures were evaluated. The ability to meet HDOT's criteria of 5 dBA noise reduction was also examined for various noise barrier heights.

CHAPTER III. EXISTING ACOUSTICAL ENVIRONMENT

For the purposes of this study, 1998 was used as the Base Year for computing changes in traffic noise levels associated with the No Build and Build Alternatives in CY 2020. The Base Year noise environment along the project corridor was described by computing the Hourly Equivalent Sound Levels [Leq(h)] along the existing freeway during the PM peak traffic hour for the 1998 time period. The hourly sound levels, expressed in decibels, represent the average levels of traffic noise along H-1 Freeway between Kaonohi Overcrossing and Waiiau Interchange during the PM peak hour of the study's Base Year.

The traffic volume, speed, and mix assumptions used to calculate the Base Year noise levels during the PM peak hour along H-1 Freeway were as follows:

- PM Peak Hourly Volumes: 15,753 autos; 495 medium trucks; and 248 heavy trucks and buses.
- Average Vehicle Speed: 104.6 kilometers (65 miles) per hour.

The estimated distance to the 66 Leq noise contour under unobstructed, line-of-sight conditions during the PM peak hour was 150 meters (492 feet) from the freeway baseline. This estimate was based on the relatively good agreement between measured and predicted sound levels at Locations "Z", "I1", "I2", "H", and "M" as shown in Table 1. The actual distances to the 66 Leq contour line will generally be less than 150 meters when intervening structures or terrain obstructions exist between the freeway and a receptor. This reduction (or shrinkage) of the traffic noise contour distances from the roadway's centerline is the result of noise shielding (or attenuation) effects caused by the intervening structures or natural terrain features. The FHWA TNM assumes that distances to the 66 Leq contour can also be greater than 150 meters for elevated receptors. This modeling assumption may or may not be accurate for the existing conditions of this project, and the validity of this assumption could not be established from the noise measurement data.

Base Year traffic noise levels were estimated for noise-sensitive dwellings and public use structures in the project area using current traffic noise measurement data (shown in Table 1), aerial photos and project plans of existing features north and south of the project corridor, and calculations of base year traffic noise levels using the FHWA TNM. Similar evaluations were provided for those areas where commercial structures are located. A tabulation of the existing traffic noise levels at locations north and south of the freeway is shown in Table 3. The ground level receptor locations where calculations of existing traffic noise levels were made are shown in Figure 3. From the results in Table 3, it was concluded that both the FHWA and the HDOT noise abatement criteria were exceeded in the project area along the north and south Rights-of-Way during the Base Year. Base Year traffic noise levels exceed HDOT

TABLE 3

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS AT NOISE SENSITIVE RECEPTOR LOCATIONS

RECEPTOR LOCATION	DIST. FROM CENTERLINE	(CY 1998) Leq	FUTURE (CY 2020) Leq / CHANGE			
			W/O BAR.	1.8m (6ft) Wall	2.4m (8ft) Wall	3.1m (10ft) Wall
Location "A"	78 m (254 ft)	60.0	61.3 / 1.3	N/A	N/A	N/A (a)
Location "B"	76 m (250 ft)	68.2 *	68.7 / 0.5 *	68.7 / 0.5 *	68.7 / 0.5 *	68.7 / 0.5 * (b)
Location "B1"	69 m (226 ft)	75.8 *	76.4 / 0.6 *	76.4 / 0.6 *	76.4 / 0.6 *	76.4 / 0.6 * (b1)
Location "B2"	60 m (199 ft)	76.0 *	77.4 / 1.4 *	76.0 / 0.0 *	74.9 / -1.1 *	73.7 / -2.3 * (b2)
Location "B3"	47 m (154 ft)	77.8 *	79.3 / 1.5 *	78.5 / 0.7 *	76.3 / -1.5 *	72.6 / -2.2 * (b3)
Location "B4"	58 m (190 ft)	74.9 *	77.2 / 2.3 *	71.1 / -3.8 *	69.5 / -5.4 *	68.4 / -6.5 * (b4)
Location "K"	62 m (203 ft)	71.0 *	72.9 / 1.9 *	63.7 / -7.3	N/A	N/A
Location "M"	43 m (141 ft)	71.9 *	73.1 / 1.2 *	66.6 / -5.3 *	64.1 / -7.8	N/A (m)
Location "L"	52 m (171 ft)	69.0 *	70.1 / 1.1 *	66.3 / -2.7 *	65.6 / -3.4 **	65.3 / -3.7 ** (l)

Build Alternative:

Notes:

1. Sound attenuation wall locations shown in FIGURE 5.
2. * Denotes exceedance of HDOT 66 Leq criteria for Activity Category B.
3. ** HDOT 66 Leq criteria met, but 5 dB minimum noise reduction criteria not met.
 - (a) 3+ meter high barrier required for one story dwelling units along ROW.
 - (b) 7+ meter high barrier required for second floor dwelling units.
 - (b1) Use of barrier not feasible for 43-story highrise dwelling units.
 - (b2) 7+ meter high barrier required for second floor dwelling units.
 - (b3) 3+ meter high barrier required for single story dwelling units.
 - (b4) 3+ meter high barrier required for single story dwelling units.
 - (m) 9+ meter high barrier required for third floor dwelling units.
 - (l) 3+ meter high barrier required for portable classrooms.

TABLE 3 (CONTINUED)

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS AT NOISE SENSITIVE RECEPTOR LOCATIONS

RECEPTOR LOCATION	DIST. FROM CENTERLINE	(CY 1998) Leq	FUTURE (CY 2020) Leq / CHANGE		
			W/O BAR.	1.8m (6ft) Wall	2.4m (8ft) Wall
					3.1m (10ft) Wall
<u>Build Alternative:</u>					
Location "C1"	31 m (100 ft)	69.0 *	71.0 / 2.0 *	(See Note 2)	(See Note 2)
Location "C2"	46 m (150 ft)	66.0	68.0 / 2.0 *	(See Note 2)	(See Note 2)
Location "C3"	61 m (200 ft)	64.0	66.0 / 2.0	(See Note 2)	(See Note 2)
Location "C4"	91 m (300 ft)	59.1	58.9 / -0.2	(See Note 2)	(See Note 2)
Location "C5"	31 m (100 ft)	69.0 *	71.0 / 2.0 *	(See Note 2)	(See Note 2)
Location "C6"	46 m (150 ft)	66.0	68.0 / 2.0 *	(See Note 2)	(See Note 2)
Location "C7"	61 m (200 ft)	64.0	66.0 / 2.0	(See Note 2)	(See Note 2)
Location "C8"	91 m (300 ft)	59.1	58.9 / -0.2	(See Note 2)	(See Note 2)
Location "E"	1 m (3.3 ft)	71.0 *	73.0 / 2.0 *	(See Note 2)	(See Note 2)
Location "C"	32 m (103 ft)	69.0 *	71.0 / 2.0 *	(See Note 2)	(See Note 2)

Notes:

1. * Denotes exceedance of HDOT 66 Leq criteria for Activity Category B.
2. FHWA TNM probably does not predict noise contributed by the viaduct structure's radiated noise components.
3. Use of 1.2 meter high, solid concrete barriers assumed along viaduct shoulders.

TABLE 3 (CONTINUED)

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS AT NOISE SENSITIVE RECEPTOR LOCATIONS

RECEPTOR LOCATION	DIST. FROM CENTERLINE	(CY 1998) Leq	FUTURE (CY 2020) Leq / CHANGE	
			W/O BAR. 1.8m (6ft) Wall	2.4m (8ft) Wall 3.1m (10ft) Wall
Location "J"	65 m (213 ft)	69.0	69.0 / 0	N/A
Location "C9"	31 m (100 ft)	69.0 *	71.0 / 2.0 *	(See Note 2)
Location "C10"	46 m (150 ft)	66.0	68.0 / 2.0 *	(See Note 2)
Location "C11"	61 m (200 ft)	64.0	66.0 / 2.0	(See Note 2)
Location "C12"	91 m (300 ft)	59.1	58.9 / -0.2	(See Note 2)
Location "C13"	31 m (100 ft)	69.0 *	71.0 / 2.0 *	(See Note 2)
Location "C14"	46 m (150 ft)	66.0	68.0 / 2.0 *	(See Note 2)
Location "C15"	61 m (200 ft)	64.0	66.0 / 2.0	(See Note 2)
Location "C16"	91 m (300 ft)	59.1	58.9 / -0.2	(See Note 2)
Location "D"	86 m (282 ft)	61.0	60.9 / -0.1	(See Note 2)

Notes:

1. * Denotes exceedance of HDOT 66 Leq criteria for Activity Category B.
2. FHWA TNM probably does not predict noise contributed by the viaduct structure's radiated noise components.
3. Use of 1.2 meter high, solid concrete barriers assumed along viaduct shoulders.
 - (i) Noise levels at Location "J" controlled by traffic along Moanalua Road.

TABLE 3 (CONTINUED)

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS AT NOISE SENSITIVE RECEPTOR LOCATIONS

RECEPTOR LOCATION	DIST. FROM CENTERLINE	(CY 1998) Leq	FUTURE (CY 2020) Leq / CHANGE			
			W/O BAR.	1.8m (6ft) Wall	2.4m (8ft) Wall	3.1m (10ft) Wall
Location "F"	44 m (146 ft)	74.6	75.4 / 0.8	N/A	N/A	(f)
Location "D1"	51 m (167 ft)	78.5 *	80.2 / 1.7 *	78.3 / -0.2 *	74.7 / -3.8 *	71.5 / -7.0 * (d1)
Location "D3"	45 m (147 ft)	68.1	69.8 / 1.7	N/A	N/A	N/A
Location "G"	65 m (213 ft)	72.0 *	72.8 / 0.8 *	68.4 / -3.6 *	67.1 / -4.9 *	66.1 / -5.9 * (g)
Location "E3"	62 m (203 ft)	76.5 *	77.3 / 0.8 *	76.1 / -0.4 *	74.4 / -2.1 *	71.7 / -4.8 * (e3)

Build Alternative:

Notes:

1. Sound attenuation wall locations shown in FIGURE 5.
2. * Denotes exceedance of HDOT 66 Leq criteria for Activity Category B.
3. Use of 1.2 meter high, solid concrete barriers assumed along highway fill sections.
 - (f) At Driving Range area, future traffic noise levels do not exceed 71 Leq.
 - (d1) 5+ meter and 8+ meter walls required along east section of ROW for first and second floor units, respectively.
 - (g) 3+ meter and 6+ meter walls required along east section of ROW for first and second floor units, respectively.
 - (e3) 4+ meter and 7+ meter walls required along east section of ROW for first and second floor units, respectively.

TABLE 3 (CONTINUED)

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS AT NOISE SENSITIVE RECEPTOR LOCATIONS

RECEPTOR LOCATION	DIST. FROM CENTERLINE	(CY 1998) Leq	FUTURE (CY 2020) Leq / CHANGE			
			W/O BAR.	1.8m (6ft) Wall	2.4m (8ft) Wall	3.1m (10ft) Wall
Location "D2"	49 m (161ft)	67.1	68.0 / 0.9	N/A	N/A	N/A
Location "D4"	50 m (164 ft)	67.9	70.6 / 2.7	N/A	N/A	N/A
Location "D5"	52 m (169 ft)	58.9	59.5 / 0.6	N/A	N/A	N/A
Location "E4"	53 m (173 ft)	73.0 ***	74.8 / 1.8 ***	63.8 / -9.2	(See Note 3)	(See Note 3)
Location "E5"	44 m (144 ft)	70.8	72.4 / 1.6 ***	64.2 / -6.6	(See Note 3)	(See Note 3)
Location "E6"	55 m (180 ft)	73.0 ***	74.8 / 1.8 ***	69.3 / -3.7	(See Note 3)	(See Note 3)

Build Alternative:

Notes:

1. Sound attenuation wall locations shown in FIGURE 5.
2. *** Denotes exceedance of HDOT 71 Leq criteria for Activity Category C.
3. Use of retaining wall with 29 to 30 meter top elevation assumed along south ROW as shown on H-1 Widening Conceptual Plan Drawings.

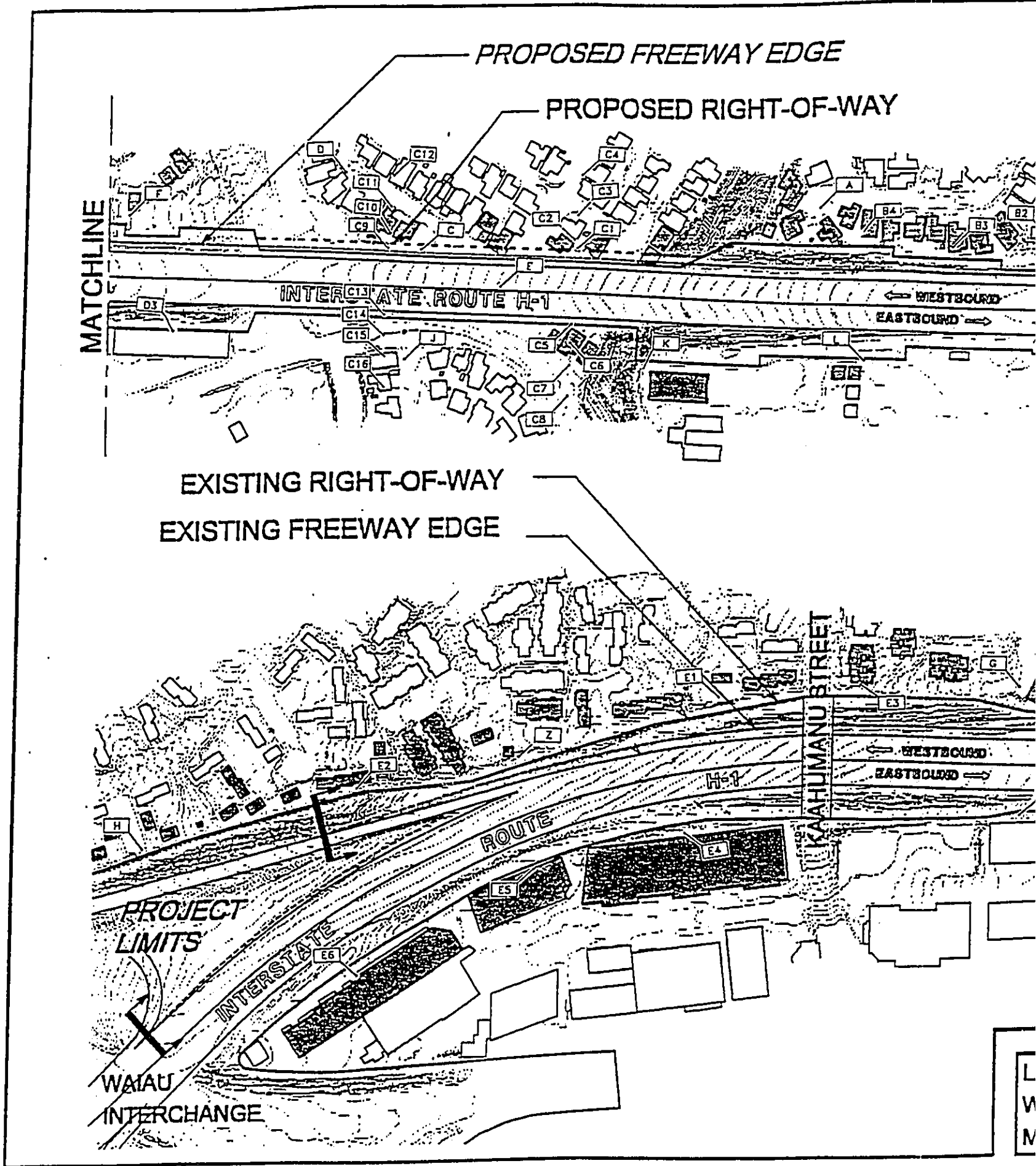
TABLE 3 (CONTINUED)

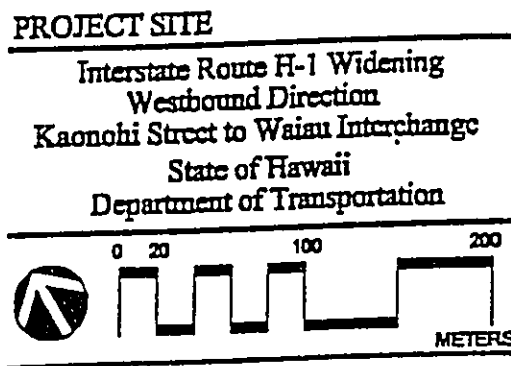
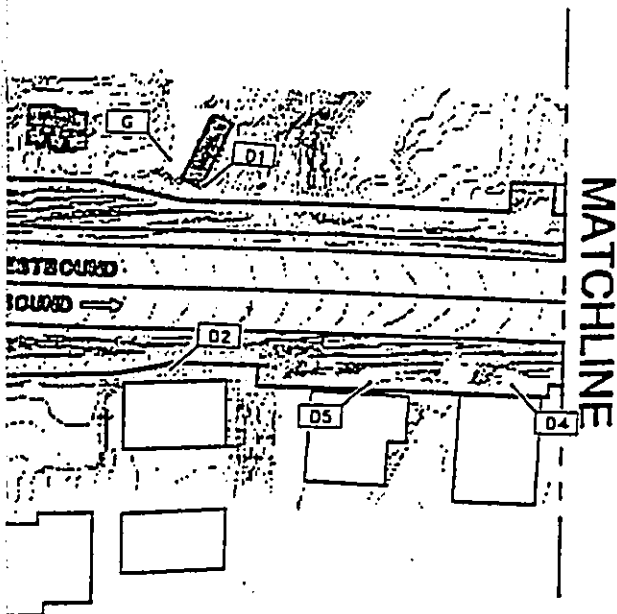
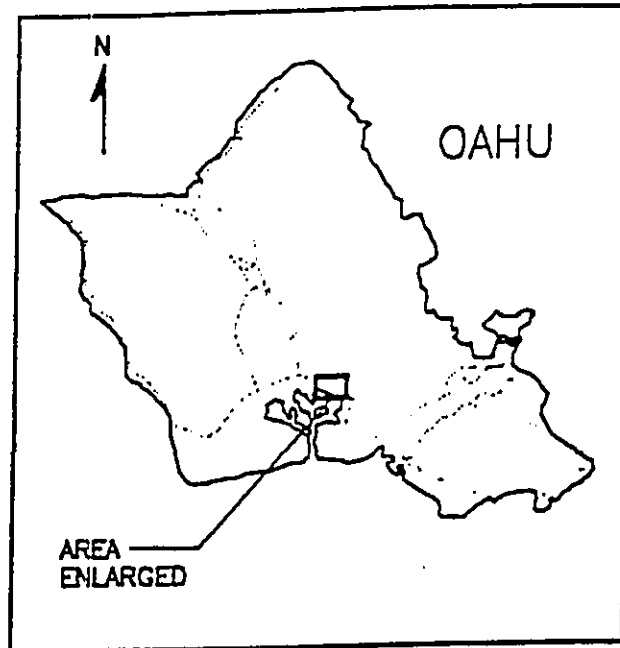
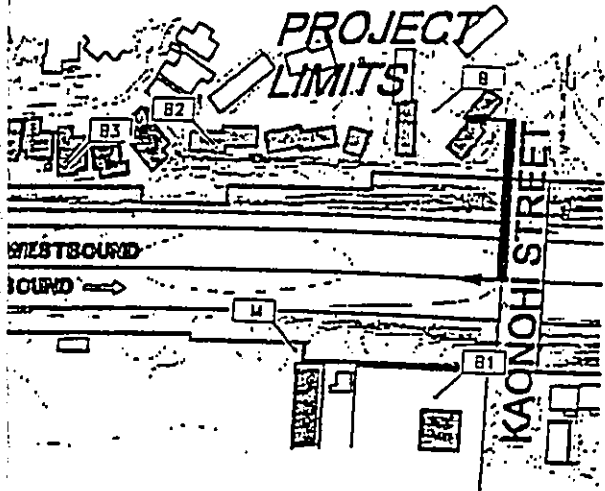
SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS AT NOISE SENSITIVE RECEPTOR LOCATIONS

RECEPTOR LOCATION	DIST. FROM CENTERLINE	(CY 1998) Leq	FUTURE (CY 2020) Leq / CHANGE			
			W/O BAR:	1.8m (6ft) Wall	2.4m (8ft) Wall	3.1m (10ft) Wall
<u>Build Alternative:</u>						
Location "H"	145 m (475 ft)	67.5 *	69.8 / 2.3 *	68.7 / 1.2 *	66.7 / -0.8 *	62.1 / -5.4 (h)
Location "E1"	56 m (184 ft)	78.0 *	79.0 / 1.0 *	79.0 / 1.0 *	78.8 / 0.8 *	77.9 / -0.1 * (e1)
Location "E2"	85 m (279 ft)	70.6 *	72.0 / 1.4 *	68.5 / -2.1 *	64.0 / -9.2	65.8 / -4.8 (e2)
Location "Z"	51 m (168 ft)	75.3 *	77.8 / 2.5 *	77.3 / 2.0 *	75.0 / -0.3 *	72.0 / -3.3 * (z)

Notes:

1. Sound attenuation wall locations shown in FIGURE 5.
2. * Denotes exceedance of HDOT 66 Leq criteria for Activity Category B.
 - (h) 5+ meter high barrier required for second floor dwelling units.
 - (e1) 10+ meter high barrier required for second floor dwelling units.
 - (e2) 9+ meter high barrier required for second floor dwelling units.
 - (z) 10+ meter high barrier required for third floor dwelling units.





Note: Shaded buildings denote locations where HDOT Noise Abatement Criteria are currently exceeded.

LOCATIONS WHERE TRAFFIC NOISE CALCULATIONS WERE PERFORMED AND WHERE NOISE ABATE-
 MENT CRITERIA ARE CURRENTLY EXCEEDED

FIGURE
 3

noise abatement criteria at essentially all of the lands in Activity Category B (see Table 2) which are within 150 meters of the freeway baseline and which have direct lines of sight to the freeway lanes. The only exception to this occurs under the viaduct section over Pono Street, where radiated traffic noise from the viaduct structure is probably causing traffic noise levels to exceed 66 Leq (see measurements at Locations "E" and "C" in Table 1) within 15 to 20 meters of the viaduct structure.

Figure 3 depicts the existing structures and lands where the 66 Leq and 71 Leq noise abatement criteria (for Activity Categories B and C, respectively, shown in Table 2) are probably being exceeded. The Activity Category B locations where the 66 Leq criteria are exceeded are typically within 150 meters of the freeway baseline with direct lines-of-sight to the freeway lanes, or under and within 15 to 20 meters of the freeway viaduct structure. The Activity Category C locations where the 71 Leq criteria are currently exceeded are located at the west end of the Waiiau Light Industrial Park.

CHAPTER IV. DESCRIPTION OF FUTURE TRAFFIC NOISE LEVELS

The future traffic noise levels in the immediate vicinity of the project during CY 2020 were evaluated for the No Build and Build Alternatives. The same methodology that was used to calculate the Base Year noise levels was also used to calculate the Year 2020 noise levels. It should be noted that forecast traffic volumes used to evaluate both the No Build and Build Alternatives were identical along the freeway segments which were evaluated for the Year 2020. Under both the No Build and Build Alternatives, average vehicle speeds and traffic mix were assumed to be identical to the Base Year values.

The traffic volume, speed, and mix assumptions (see Chapter II, General Study Methodology) used to calculate the Year 2020 noise levels during the PM peak hour along H-1 Freeway were as follows:

- PM Peak Hourly Volumes: 17,543 autos; 551 medium trucks; and 276 heavy trucks and buses.
- Average Vehicle Speed: 104.6 kilometers (65 miles) per hour.

The primary differences in freeway configuration between the No Build and Build Alternatives were the following:

- Under the Build Alternative, an additional (or sixth) lane will be added for both the eastbound and westbound directions.
- Under the Build Alternative, traffic lane widths will increase from 3.55 meters (11 feet) to 3.6 meters (11.81 feet).
- Under the Build Alternative, total travel way width (north edge to south edge) will increase from 35.95 meters (118.95 feet) to 49.8 meters (163.39 feet).

Under the No Build Alternative, the future distance from the freeway baseline to the 66 Leq noise contour under unobstructed, line-of-sight conditions during the PM peak hour was predicted to increase slightly from 150 to 157 meters, with traffic noise levels increasing slightly by 0.5 dB. The unobstructed, line-of-sight distance to the 71 Leq contour is predicted to increase from 100 to 105 meters under the No Build Alternative. A 0.5 dB increase in traffic noise levels between CY 1998 and 2020 will not be measurable since this level of change is well within the accuracy limits of this noise study (see comparisons of measured and predicted noise levels in Table 1). No significant changes are expected in the number of lands or structures exposed to noise levels above the HDOT criteria under the No Build Alternative.

Under the Build Alternative, the future distance from the freeway baseline to the 66 Leq noise contour under unobstructed, line-of-sight conditions during the PM peak

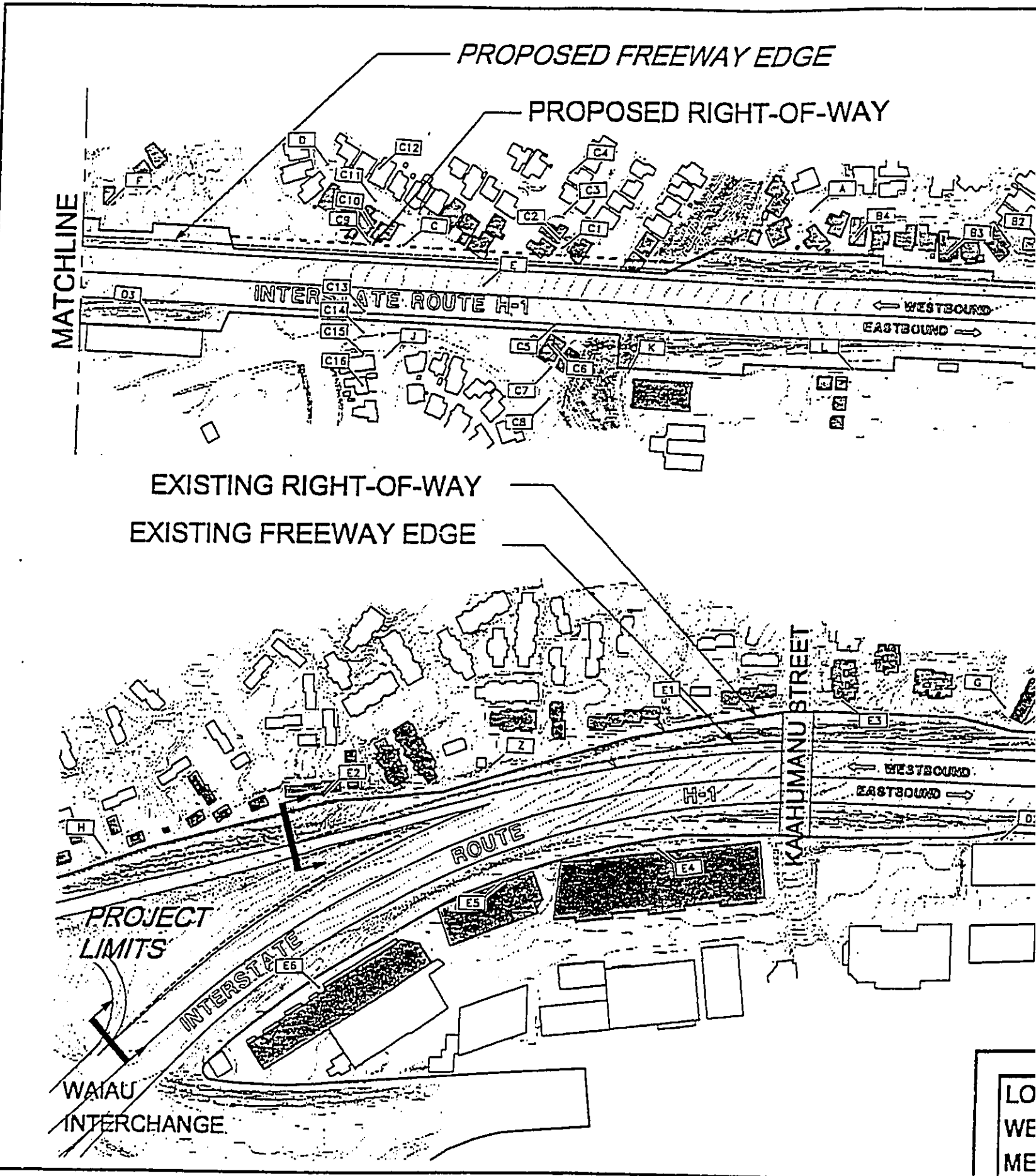
hour was predicted to increase from 150 to 165 meters. The unobstructed, line-of-sight distance to the 71 Leq contour is predicted to increase from 100 to 110 meters under the Build Alternative. Traffic noise levels near the north and south Rights-of-Way are expected to increase by 1.0 to 3.0 dB due to the increase in traffic volumes as well as due to the increases in the widths of the H-1 travel way. At the larger setback distances of 300+ meters from the freeway baseline, traffic noise level increases are expected to be similar to the No Build Alternative at 0.5 dB.

Figure 4 and Table 4 depict the existing structures and lands where the 66 Leq and 71 Leq noise abatement criteria (for Activity Categories B and C, respectively, shown in Table 2) are predicted to be exceeded under the Build Alternative. The Activity Category B locations where the 66 Leq criteria are exceeded are typically within 166 meters (544 feet) of the freeway baseline, or under or within 35 meters of the widened freeway viaduct structure. The Activity Category C locations where the 71 Leq criteria are exceeded are typically within 110 meters (360 feet) of the freeway baseline.

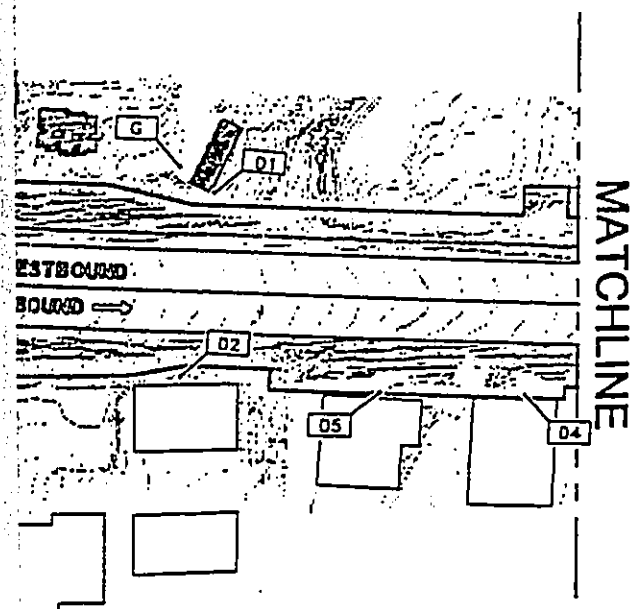
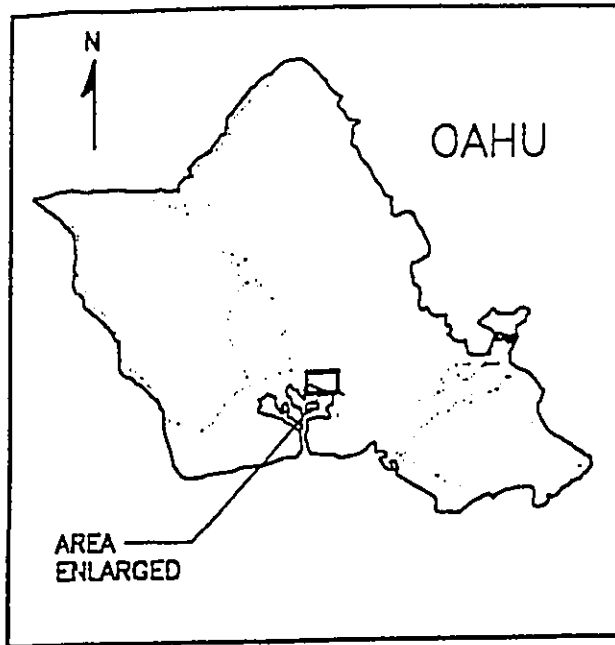
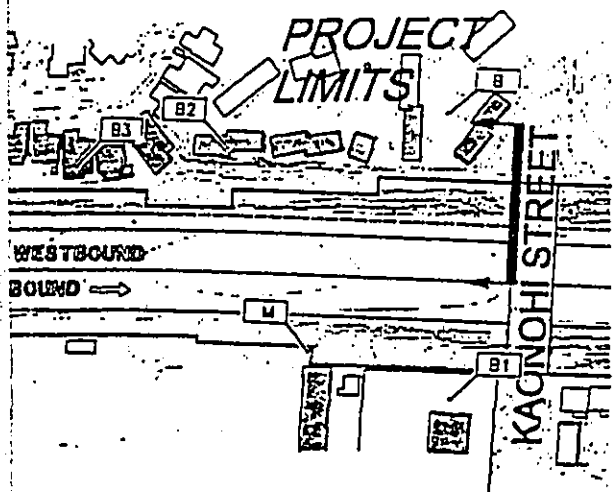
Extensive noise mitigation measures would be required to reduce CY 2020 traffic noise levels to 66 Leq or less, and to provide at least 5 dB of noise reduction at the affected properties. To a large extent, the need for future traffic noise mitigation measures is not associated with increased traffic noise levels resulting from the Build Alternative, since existing traffic noise levels currently exceed HDOT noise abatement criteria at most of the receptor locations identified in Figure 4 and Table 4. Rather, the bulk of the noise mitigation measures are essentially required to reduce existing as well as future traffic noise levels to levels below current FHWA and HDOT noise abatement criteria.

The following general conclusions can be made in respect to the number of impacted structures and lands which can be expected by CY 2020 under the Build Alternative. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

- The HDOT's "greater than 15 dB increase" criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure. Maximum increases in traffic noise levels in the project area should not exceed 3 dB as a result of growth in traffic volumes and construction of additional traffic lanes.
- Under the No Build or Build Alternatives, future traffic noise levels at many (over fifty) existing single family and multifamily (low, mid, and high-rise) dwelling units are expected to exceed the HDOT 66 Leq criteria. These dwelling units are located both north and south of the freeway Rights-of-Way.

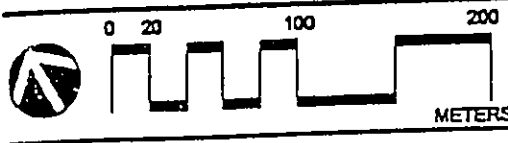


LO
WE
ME



PROJECT SITE

Interstate Route H-1 Widening
 Westbound Direction
 Kaonohi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation



Note: Shaded buildings denote locations where HDOT Noise Abatement Criteria may be exceeded in 2020.

LOCATIONS WHERE TRAFFIC NOISE CALCULATIONS WERE PERFORMED AND WHERE NOISE ABATE-
 MENT CRITERIA ARE EXPECTED TO BE EXCEEDED

FIGURE
4

TABLE 4
IMPACTED PROPERTY IDENTIFICATION
(CY 2020 BUILD ALTERNATIVE)

<u>TAX MAP KEY</u>	<u>LAND USE CATEGORY</u>	<u>BUILDING HEIGHT</u>	<u>BUILDING COUNT</u>	<u>AMBIENT (LEQ)</u>	<u>FUTURE LEQ</u>
<u>STATION 4+240 TO 3+760:</u>					
9-8-40: 6	Dwelling	2-Story	5	76	77
9-8-45: 24	Dwelling	1-Story	1	77	78
9-8-45: 25	Dwelling	1-Story	1	78	79
9-8-45: 26	Dwelling	1-Story	1	78	79
9-8-45: 27	Dwelling	1-Story	1	75	76
9-8-45: 28	Dwelling	1-Story	1	75	76
9-8-45: 29	Dwelling	1-Story	1	75	76
9-8-45: 30	Dwelling	1-Story	1	75	77
9-8-45: 31	Dwelling	1-Story	1	70	72
9-8-45: 32	Dwelling	1-Story	1	78	79
9-8-45: 33	Dwelling	1-Story	2	78	79
9-8-45: 34	Dwelling	1-Story	1	68	70
9-8-39: 8	Dwelling	3-Story	1	72	73
9-8-39: 5/6	Dwelling	43-Story	1	76	76
9-8-13: 29	Playground	N/A	0	70	71
9-8-13: 28	School	1-Story	5	70	71
<u>STATION 3+760 TO 3+420:</u>					
9-8-26: 69	Dwelling	1-Story	1	67	69
9-8-26: 73	Dwelling	1-Story	1	69	71
	Church	1-Story	2	71	73
9-8-26: 65	Dwelling	1-Story	1	70	72
9-8-27: 2	Dwelling	1-Story	1	67	69
	Dwelling	1-Story	1	66	67
9-8-26: 63	Dwelling	1-Story	1	71	73
9-8-26: 11	Dwelling	1-Story	1	66	68
9-8-26: 9	Dwelling	1-Story	1	69	71
9-8-26: 47	Dwelling	1-Story	1	70	72
	Dwelling	1-Story	1	66	68
9-8-26: 48	Dwelling	1-Story	1	66	68
9-8-26: 49	Dwelling	1-Story	1	66	68
9-8-26: 26	Dwelling	1-Story	1	67	69
9-8-26: 27	Dwelling	1-Story	1	67	69
	Dwelling	1-Story	1	65	67
	Dwelling	1-Story	1	65	67

TABLE 4 (CONTINUED)
 IMPACTED PROPERTY IDENTIFICATION
 (CY 2020 BUILD ALTERNATIVE)

<u>TAX MAP KEY</u>	<u>LAND USE CATEGORY</u>	<u>BUILDING HEIGHT</u>	<u>BUILDING COUNT</u>	<u>AMBIENT (LEQ)</u>	<u>FUTURE LEQ</u>
<u>STATION 3+420 TO 2+900:</u>					
9-8-60: 1	Dwelling	2-Story	4	77	79
<u>STATION 2+900 TO 2+320:</u>					
9-8-59: 2	Dwelling	2-Story	3	78	80
9-8-59: 33	Dwelling	2 & 3-Story	1	71	72
9-8-59: 34	Dwelling	3-Story	2	73	75
9-8-59: 8	Dwelling	2-Story	10	68	70
9-8-59: 19	Warehouse	1-Story	1	73	75
9-8-59: 16	Warehouse	1-Story	1	73	75
9-8-59: 17	Warehouse	1-Story	1	72	75

- The Pearl Ridge Community Park, Pearl Ridge Elementary School, and the Grace Brethren Church under the viaduct at Pono Street will be affected by the proposed project and may be considered for noise mitigation measures.
- Three commercial structures south of the freeway at Waiiau Light Industrial Park may be affected by the proposed project and may be considered for noise mitigation measures.

CHAPTER V. POSSIBLE NOISE MITIGATION MEASURES

Possible noise mitigation measures considered included the following:

- A. Restricting the Growth In the Number of Noisy Buses, Heavy Trucks, Motorcycles, and Automobiles with Defective Mufflers. The percentage contribution to the total traffic noise by heavy trucks, buses, and noisy vehicles is currently less than 50 percent, and elimination of these noise sources would reduce total traffic noise levels by less than 3 Leq(h) units. Restricting the growth rate of these vehicles (to growth rates below passenger automobile growth rates) could produce noise reductions in the order of 1 or 2 dB, which are not considered significant for the level of regulatory efforts required.
- B. Alteration of the Horizontal Or Vertical Alignment of the Roadway. Major alterations of the horizontal or vertical alignment of the existing freeway was not considered appropriate due to the scope of this roadway improvement project and due to the Right-of-Way constraints on both sides of the freeway. Noise abatement measures will be required on both the north and south sides of the freeway. Vacant lands north or south of H-1 Freeway are not available to accommodate lateral displacements of the roadway alignment. Vertical realignment of the existing freeway upward would result in adverse visual impacts, and vertical realignment of the freeway via cuts would not be possible without obtaining additional Right-of-Way. For these reasons, realignment of H-1 Freeway away from the affected noise sensitive structures was not considered to be a reasonable noise mitigation measure.
- C. Acquisition of Property Rights for Construction of Noise Barriers, and/or Construction of Noise Barriers Along the Right-of-Way. For single story, noise sensitive buildings, construction of a sound attenuating wall along the Right-of-Way is normally the preferred noise mitigation measure. The 6 to 7 dB of noise attenuation achievable with a 1.83 meter (6 feet) high wall may be sufficient for single story structures. Because some of the affected homes, park lands, and public use structures are one-story structures, construction of a sound attenuating barrier could possibly provide sufficient noise reduction benefits at the affected low-rise structures and park lands. Many of the affected noise sensitive structures are in excess of 3 meters (10 feet) in height, and will not benefit from 1.83 meter high walls. In these situations, excessive barrier heights (2.5 to 10+ meters) will be required to provide sound attenuation to upper floor spaces, and height variances from local codes will be required to construct these high walls. It should also be noted that sound barriers will block the views to and from the freeway and beyond which some of the residents and business owners may enjoy and/or prefer. For these reasons, concurrence from the affected homeowners, property owners, and commercial establishments should be obtained prior to construction of sound barriers as a noise mitigation measure.

- D. Acquisition of Real Property Interests To Serve As A Noise Buffer Zone. Where tall (or multistory) structures are expected to be impacted by future traffic noise, the use of sound attenuating barriers (see para. C above) will not be practical due to the excessive heights required to shield the upper levels from traffic noise. Acquisition of the real property interests to serve as noise buffer zones were considered. However, noise buffer zones extending approximately 160+ meters (525+ feet) from the freeway's baseline and at substantial cost would be required to meet the HDOT 66 Leq criteria. In general, the acquisition of property for the creation of noise buffer zones for noise mitigation has seldom been applied in Hawaii.
- E. Noise Insulation of Public Use or Nonprofit Institutional Structures. Public school and church buildings impacted by noise as a result of this project will be considered for noise abatement measures as a result of this project. Noise insulation of public use or nonprofit institutional structures in the form of closure and air conditioning may be preferable over the construction of sound attenuating walls. Under the viaduct at Pono Street, the construction of noise barriers will not be effective, and noise insulation of the structures under the viaduct is a more feasible noise mitigation measure.

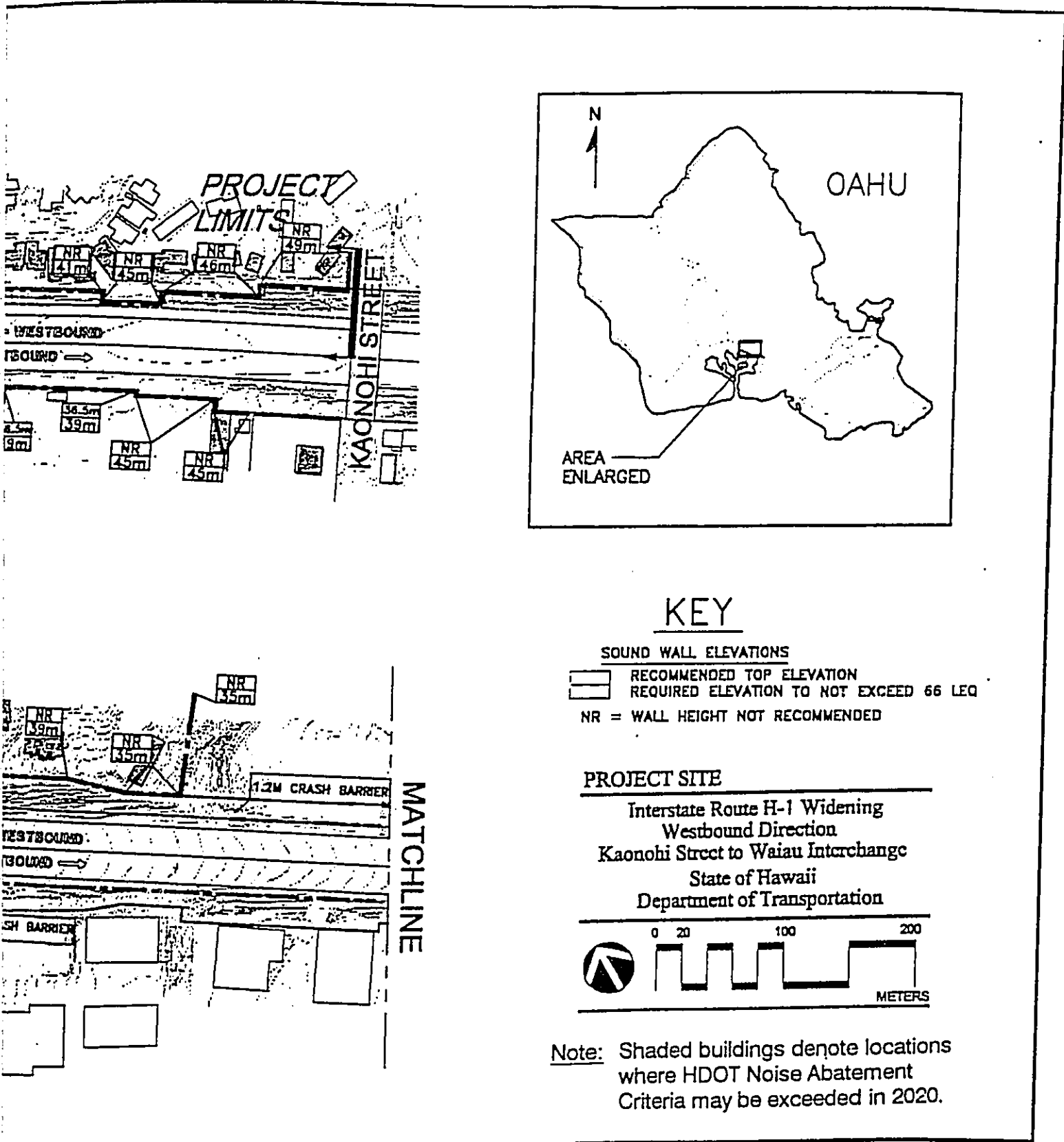
CHAPTER VI. FUTURE TRAFFIC NOISE IMPACTS AND RECOMMENDED NOISE MITIGATION MEASURES

Future traffic noise levels are predicted to continue to exceed the HDOT 66 Leq(h) noise abatement criteria for Activity Category B by CY 2020 with or without the project at existing noise sensitive structures along H-1 Freeway. Table 3 presents the predicted performances of sound attenuation walls located along the Rights-of-Way and in front of the affected homes, school buildings, and park lands assuming ground level receptors. The footnotes in Table 3 indicate the additional wall heights required to meet HDOT 66 Leq and 5 dB noise reduction criteria for second and third floor receptors.

Figure 5 depicts the locations of the affected structures and the sound attenuation walls which were evaluated for receptors located at all floors (up to the third floor) of the affected structures. The required top of wall elevations shown in Figure 5 are relatively high. Mitigation of future traffic noise at the second and third floors of existing multifamily dwelling units north of H-1 Freeway may not be feasible using a sound wall along the H-1 Freeway Right-of-Way, since wall heights in excess of 3.05 meters (10 feet) above Right-of-Way elevation are required to shield the elevated living units from traffic noise.

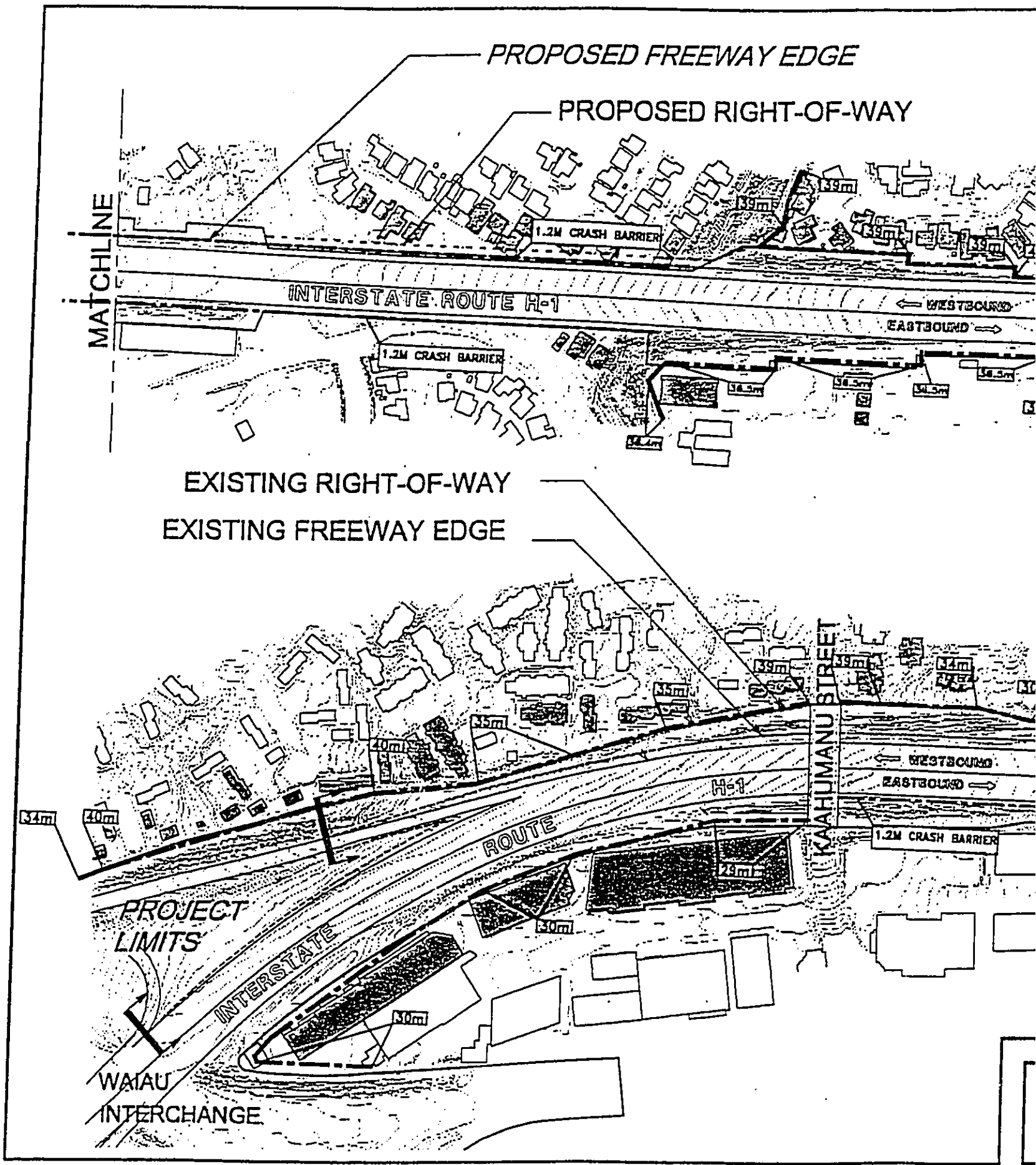
At Pearl Ridge Elementary School and Pearl Ridge Community Park, the use of 1.83 to 2.44 meter (6 to 8 foot) high sound attenuating walls is recommended where shown in Figure 5 for the Build Alternative. The predicted future noise levels for the recommended wall heights shown in Figure 5 at the school and park are estimated to be less than 66 Leq, with a minimum noise reduction performance of 5 dB. Where the HDOT "5 dBA noise reduction" criteria will not be met with 1.83 meter wall height, the construction of walls as high as 2.44 meters will be required. A variance from local codes will probably be required to construct the walls greater than 1.83 meters high which are required to achieve at least 5 dBA of noise reduction. The sound attenuating walls must be continuous without see-through openings, and may be constructed from solid materials which have a minimum surface weight of 5 pounds per square foot. Use of landscaping on the roadway side of the wall is also recommended to soften the visual impacts of the walls and to minimize the potential for graffiti.

Where required wall heights to shield upper floor or high-rise living units become excessive, HDOT policy regarding the implementation of reasonable and feasible noise mitigation measures will require that alternate mitigation measures be applied. A maximum cost of \$35,000 per dwelling unit and a minimum noise reduction of 5 dB are criteria which must be met in order to be a reasonable and feasible noise mitigation measure. The views of impacted residents will also be considered prior to implementation of noise mitigation measures. Because a sound attenuating wall, which achieves at least 5 dB of noise reduction for ground level units, may be desired by some residents, Figure 6 was developed to indicate the minimum top of wall elevations



**POSSIBLE LOCATIONS OF NOISE BARRIERS
ALONG H-1 FREEWAY**

**FIGURE
5**



required to achieve at least 5 dB of traffic noise reduction for ground level living units. Living units above the ground floor will not experience 5 dB of noise reduction from the walls shown in Figure 6.

Under the viaduct over Pono Street, radiated noise from the viaduct structure will continue to exceed 66 Leq at the Grace Brethren Church and at single family residences within 50 to 65 meters of the freeway baseline. The actual number of homes which may be affected following the freeway improvements is not known, since accurate predictions of viaduct noise radiation are not possible. Some of the residents near the viaduct structure may be relocated. The recommended noise mitigation measure for the affected church buildings is closure and air conditioning of the affected structures. The Church Sanctuary and Pre-School buildings are presently air conditioned. In addition, the planned construction of 1.2 meter high concrete barriers along both sides of the widened viaduct structure is recommended.

At the Waiiau Light Industrial Park, the future traffic noise levels at three lots may exceed the HDOT 71 Leq criteria level for Activity Category C. The use of walls above the retaining walls with minimum top elevations of 29 to 30 meters at Lots #16, #17, and #19 is recommended. The tenants and owners of the affected lots should be consulted prior to implementation of this recommendation since: the walls may block the visibility of the commercial establishments from the freeway; and the existing buildings may be providing adequate noise shielding for the industrial activities contained within the buildings. The CY 2020 traffic noise levels at the remaining lots of the industrial park are not expected to exceed 71 Leq.

It is anticipated that potential noise impacts at any new noise sensitive or commercial establishments located in the project area may be mitigated through the inclusion of sound walls or other noise mitigation measures within the individual lot development plans. In addition, any new commercial establishments or housing units which may be planned along the freeway represent areas of potential adverse noise impacts if adequate noise mitigation measures are not incorporated into the planning of these future projects. It is anticipated that the project's freeway improvements may be completed prior to any redevelopment of the areas or lots adjacent to or under the freeway, and that noise abatement measures such as adequate setbacks, sound attenuating walls or berms, or closure and air conditioning will be incorporated into these new developments along the freeway as required. In any event, new structures whose building permits were obtained after the date of this noise study will not be considered for noise abatement measures under existing HDOT procedures.

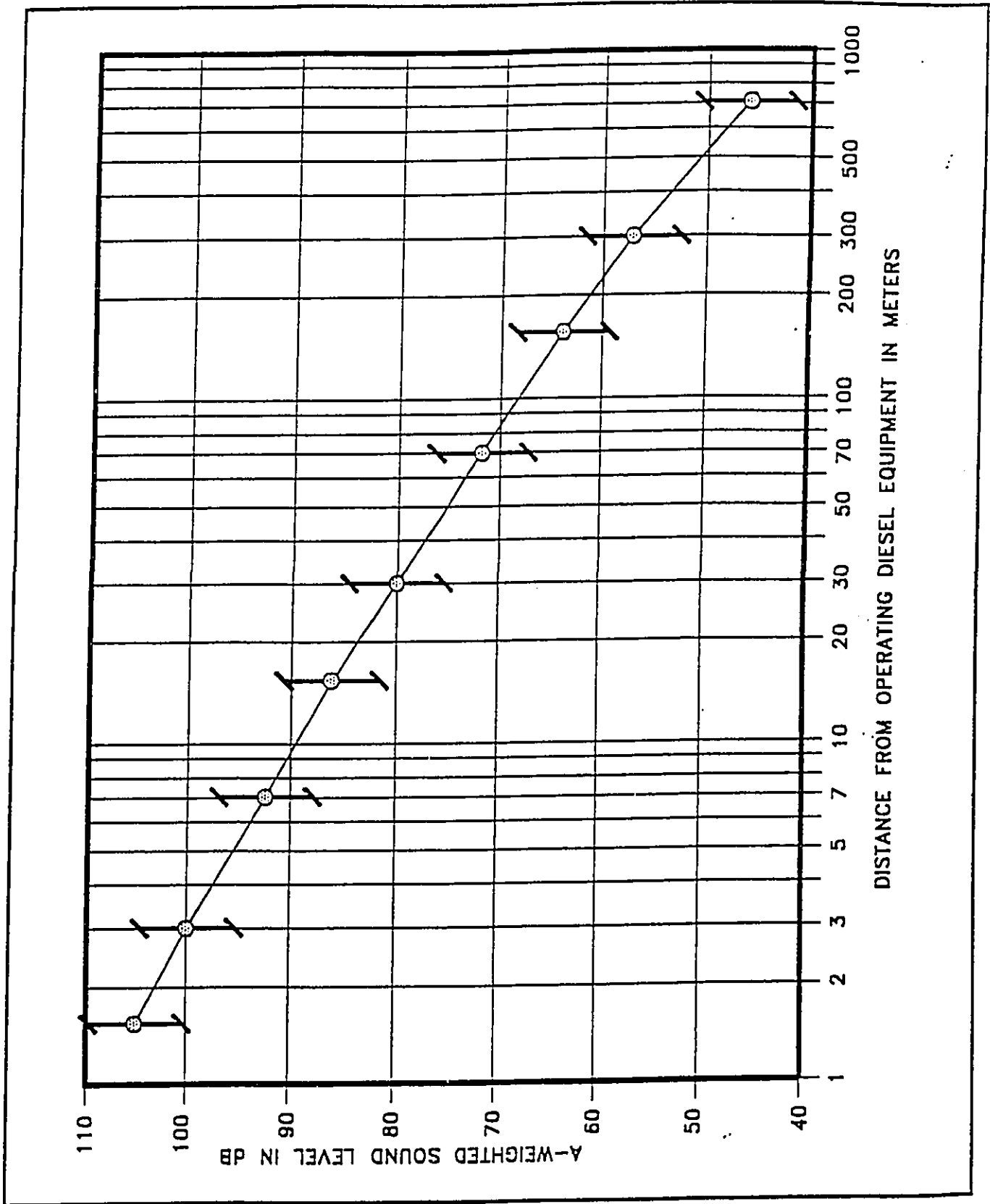
CHAPTER VII. CONSTRUCTION NOISE IMPACTS

Short-term noise impacts associated with construction activities along the existing freeway may occur, particularly if night work will be required to minimize traffic congestion along the freeway. These impacts can occur as a result of the short distances (less than 100 FT) between existing dwelling units and commercial establishments to the anticipated construction corridor. The total duration of the construction period for the proposed project is not known, but noise exposure from construction activities at any one receptor location is not expected to be continuous during the total construction period.

Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 15.2 meter (50 feet) distance. Typical levels of noise from construction activity (excluding pile driving activity) are shown in Figure 6. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and due to the administrative controls available for its regulation. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

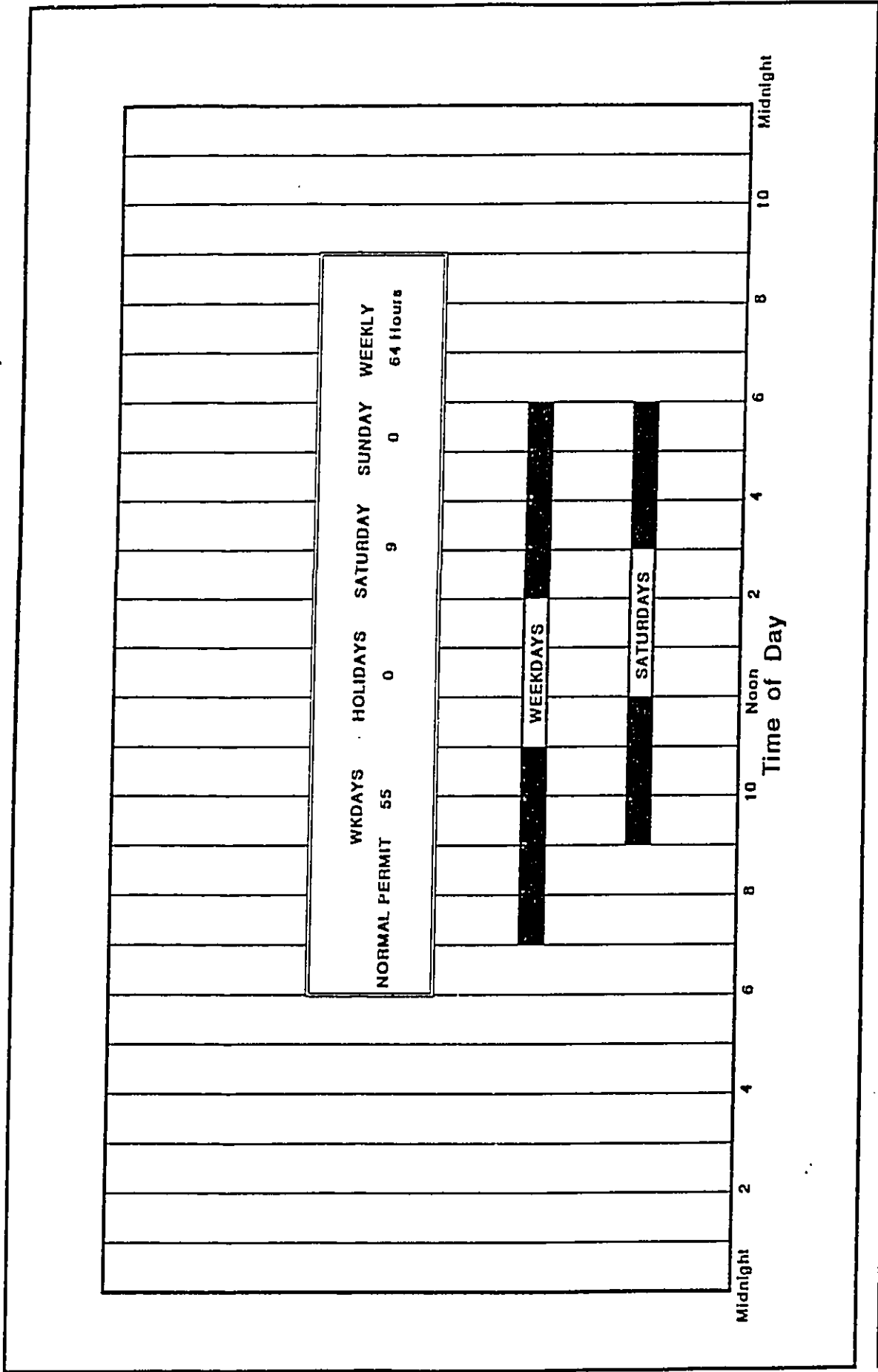
Construction noise levels at existing structures can intermittently exceed 90 dB when work is being performed at close distances in front of these structures. Along the freeway improvement project, distances between the construction sites and closest receptors are expected to range between 5 and 30 meters, and construction noise levels may intermittently exceed 90 dB. The State Department of Health currently regulates noise from construction activities under a permit system (Reference 6). Under current permit procedures (see Figure 7), noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, from Monday through Friday, and exclude certain holidays. Noisy construction activities are normally restricted to the hours of 9:00 AM to 6:00 PM on Saturdays, with construction not permitted on Sundays. These restrictions minimize construction noise impacts on noise sensitive receptors along the roadway project corridor, and have generally been successfully applied. In this way, construction noise impacts on noise sensitive receptors can be minimized.

In addition, the use of quieted portable engine generators and diesel equipment should be specified for use within 152 meters (500 feet) of noise sensitive properties. Heavy truck and equipment staging areas should also be located at areas which are at least 152 meters from noise sensitive properties whenever possible. Truck routes which avoid residential communities should be identified wherever possible. The use of 2.44 to 3.66 meter high construction noise barriers may also be used where construction work close to noise sensitive structures is unavoidable.



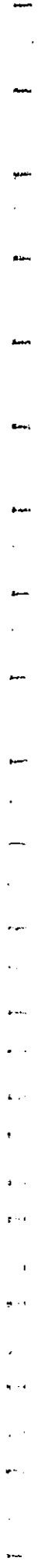
ANTICIPATED RANGE OF CONSTRUCTION
NOISE LEVELS VS. DISTANCE

FIGURE
7



AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

FIGURE 8



APPENDIX A. REFERENCES

- (1) "FHWA Highway Traffic Noise Model User's Guide;" FHWA-PD-96-009, Federal Highway Administration; Washington, D.C.; January 1998.
- (2) 24-Hour Traffic Counts and Vehicle-Type Classification, Station C-7-L, H-1 Freeway at Kaonohi Street Overpass; December 3, 1996; Hawaii State Department of Transportation.
- (3) "Traffic Analysis for Interstate Route H-1 Widening, Waiawa Interchange to Halawa Interchange"; Julian Ng, Incorporated; November 1998.
- (4) Federal Highway Administration; "Procedures for Abatement of Highway Traffic Noise and Construction Noise;" 23 CFR Chapter I, Subchapter H, Part 772; April 1, 1995.
- (5) "Noise Analysis and Abatement Policy;" Hawaii State Department of Transportation, Highways Division, Materials Testing and Research Branch; October 1996.
- (6) "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E.....). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the L_{Cdn} with the L_Adn.

Although not included in the tables, it is also recommended that "L_{pn}" and "L_{epn}" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (L_A) was measured before and after the installation of acoustical treatment. The measured L_A values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, L_{eq} is designated the "equivalent sound level". For L_d, L_n, and L_{dn}, "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, DBA, PNdB, and EPNdB are not to be used. Examples of this preferred usage are: the Perceived Noise Level (L_{pn} was found to be 75 dB, L_{pn} = 75 dB). This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of bel except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighed Loss of Hearing" (PHL) shall be used consistent with CHABA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

APPENDIX B (CONTINUED)

TABLE I
A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

<u>TERM</u>	<u>SYMBOL</u>
1. A-Weighted Sound Level	L_A
2. A-Weighted Sound Power Level	L_{WA}
3. Maximum A-Weighted Sound Level	L_{max}
4. Peak A-Weighted Sound Level	L_{Apk}
5. Level Exceeded x% of the Time	L_x
6. Equivalent Sound Level	L_{eq}
7. Equivalent Sound Level over Time (T) ⁽¹⁾	$L_{eq(T)}$
8. Day Sound Level	L_d
9. Night Sound Level	L_n
10. Day-Night Sound Level	L_{dn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$
12. Sound Exposure Level	L_{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be specified a $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78,

APPENDIX B (CONTINUED)

TABLE II
RECOMMENDED DESCRIPTOR LIST

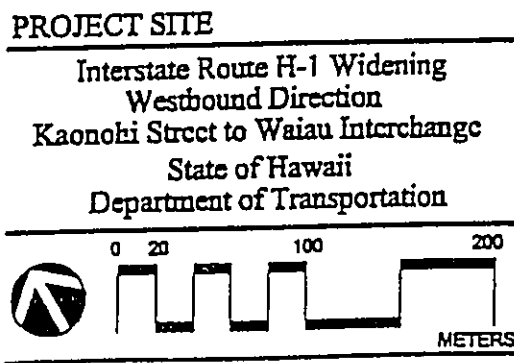
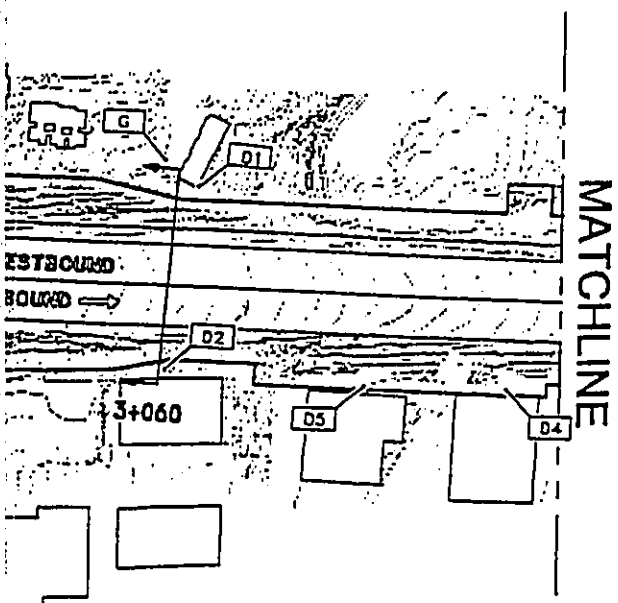
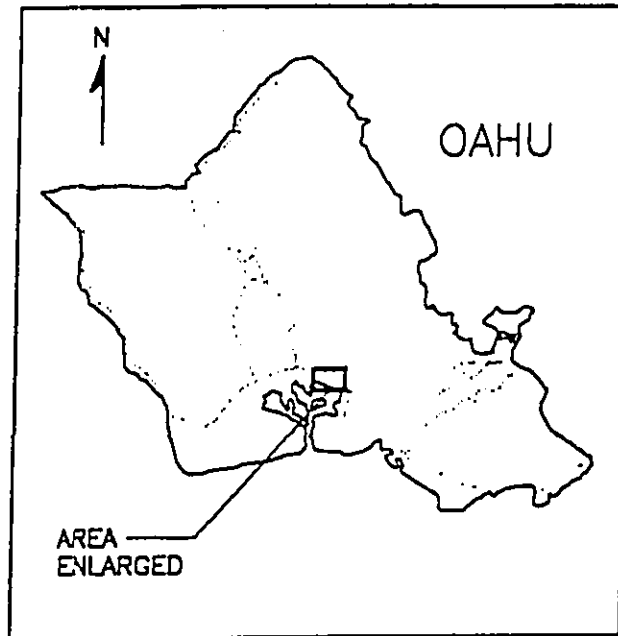
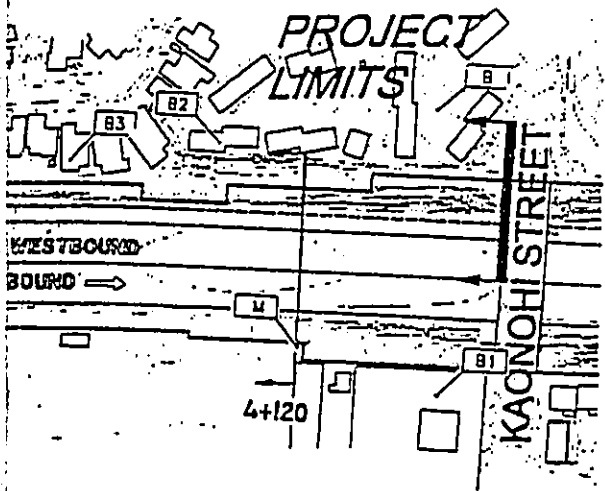
<u>TERM</u>	<u>A-WEIGHTING</u>	<u>ALTERNATIVE⁽¹⁾ A-WEIGHTING</u>	<u>OTHER⁽²⁾ WEIGHTING</u>	<u>UNWEIGHTED</u>
1. Sound (Pressure) ⁽³⁾ Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{Amax}	L_{Bmax}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{Apk}		L_{Bpk}	L_{pk}
5. Level Exceeded x% of the Time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level ⁽⁴⁾ Over Time(T)	$L_{eq(T)}$	$L_{Aeq(T)}$	$L_{Beq(T)}$	$L_{peq(T)}$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$	$L_{Adn(Y)}$	$L_{Bdn(Y)}$	$L_{pdn(Y)}$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average Value Over (Non-Time Domain) Set of Observations	$L_{eq(e)}$	$L_{Aeq(e)}$	$L_{Beq(e)}$	$L_{peq(e)}$
14. Level Exceeded x% of the Total Set of (Non-Time Domain) Observations	$L_{x(e)}$	$L_{Ax(e)}$	$L_{Bx(e)}$	$L_{px(e)}$
15. Average L_x Value	L_x	L_{Ax}	L_{Bx}	L_{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E.....weighting.

(3) The term "pressure" is used only for the unweighted level.

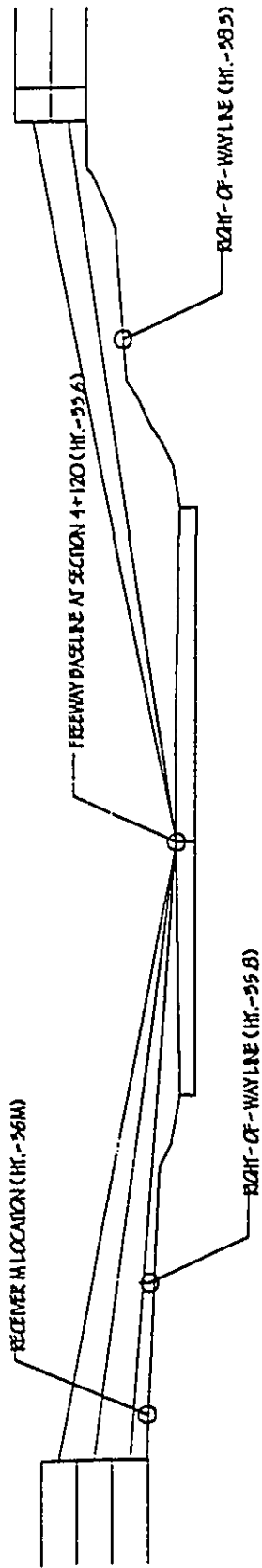
(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be specified as $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine.



Legend: 4+120 = Section at Highway Station Number

LOCATIONS OF HIGHWAY CROSS-SECTIONS

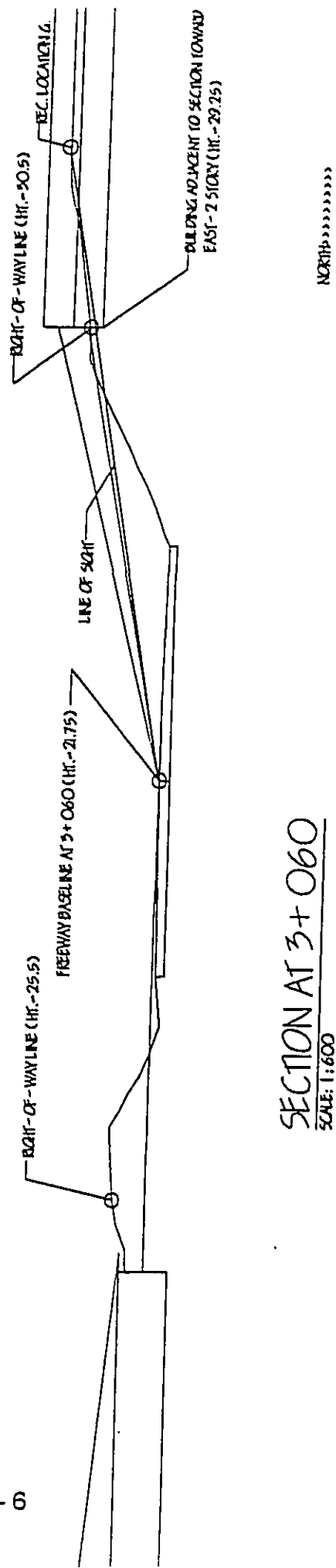
FIGURE C-1

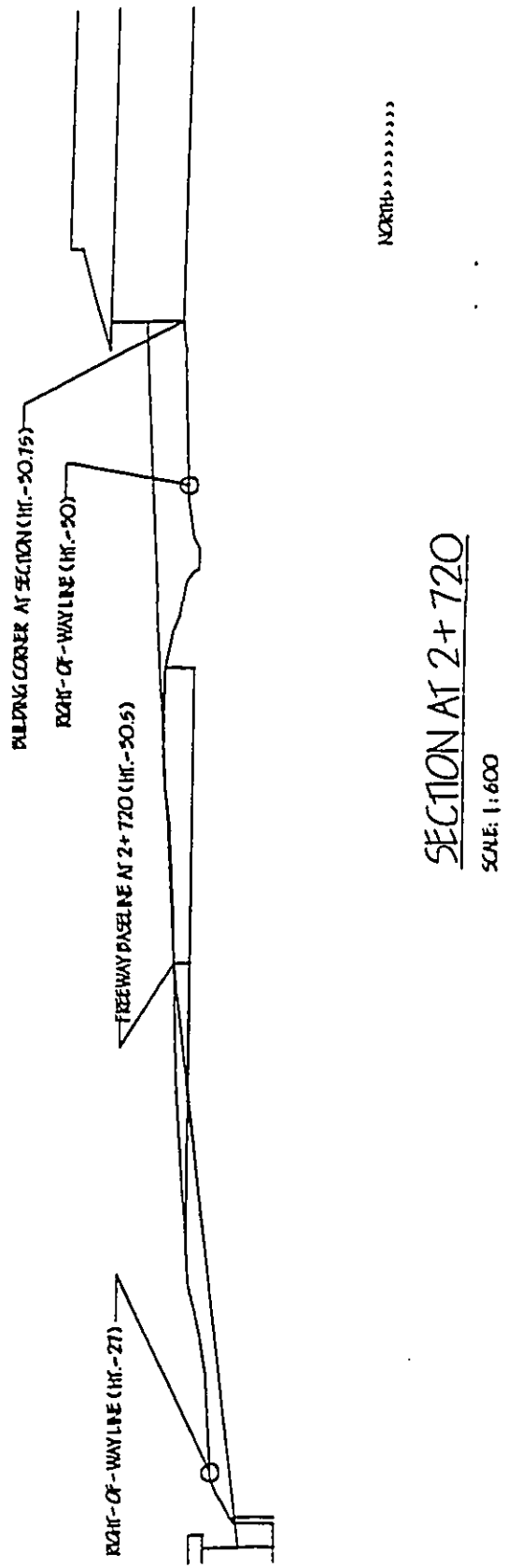


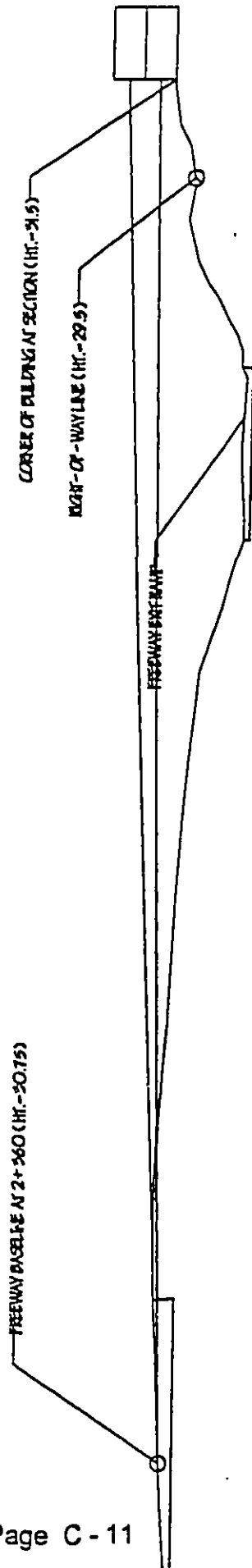
NORTH

SECTION AT 4+120

SCALE - 1:600







SECTION AT 2 + 360
SCALE - 1:600



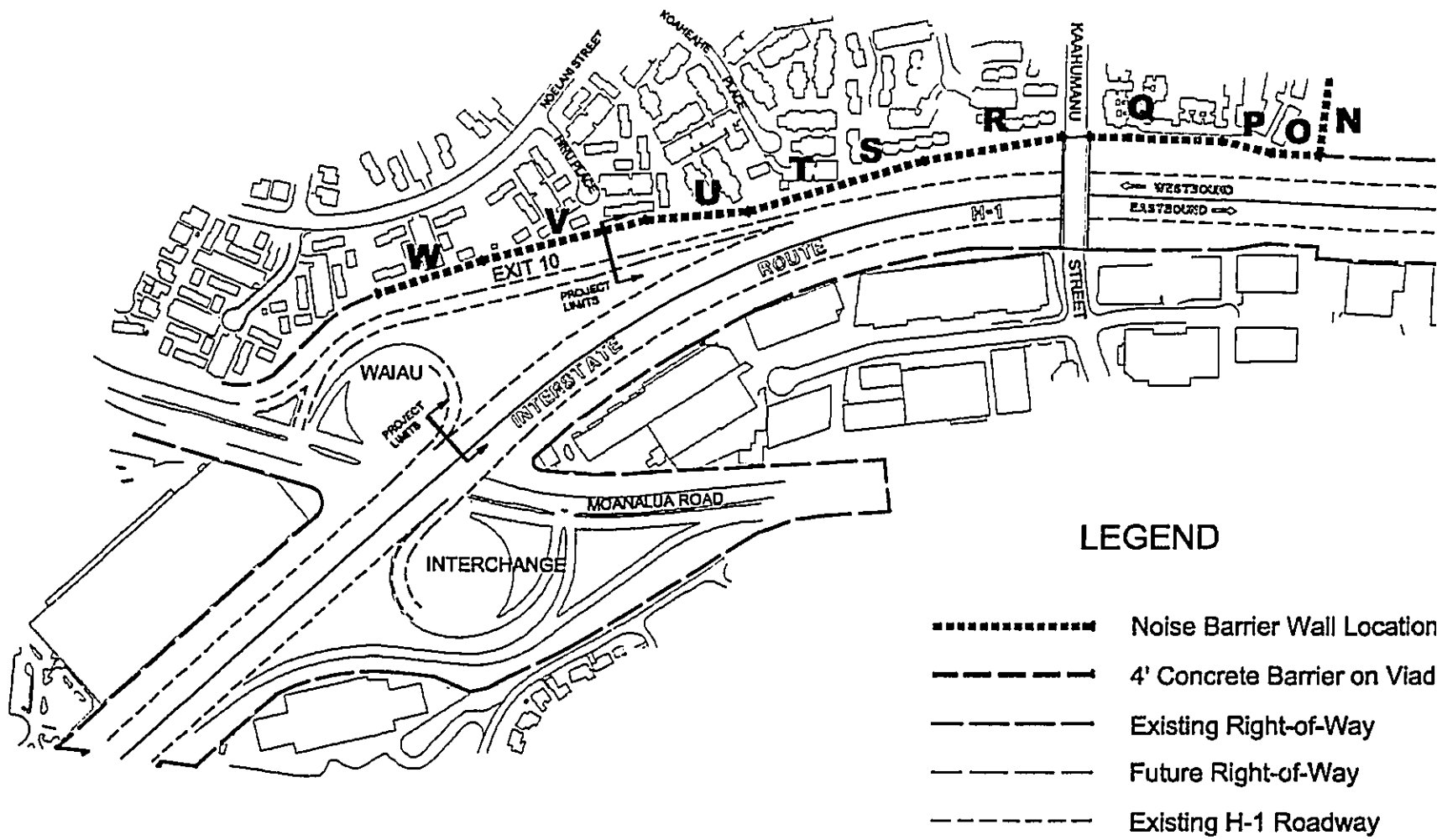
ADDENDUM A:
NOISE BARRIER WALL HEIGHT CALCULATIONS

Noise barrier wall heights described in **Section 3.3.3, Noise Impact Mitigation Measures**, were derived from Figure 5 (page 29) and Figure 6 (page 30) of the acoustical study. Figure 5 depicts top elevations of noise barriers necessary to reduce noise levels to 66 dBA. Figure 6 depicts top elevations of noise barriers necessary to reduce noise levels by 5 dBA. In both figures, elevations are measured in meters above mean sea level (msl).

NOTE: In both Figure 5 and Figure 6, top elevations for noise barrier walls makai (south) of H-1 adjacent to Pearl Ridge Elementary School are calculated to reduce noise levels to 66 dBA at the school.

Wall segments were labeled A through W (see **Figure A-1** and **Figure A-2**) and wall base elevations were identified along the right-of-way line on a 0.5-meter contour topographic map of the project area. Noise barrier wall heights are calculated as the difference between wall base and top elevations. While wall top elevations remain largely consistent across a given segment, wall heights vary to match the topography at the wall base.

Wall base and top elevations, and the difference (in meters) between the two measurements are shown below in **Table 1: Noise Barrier Wall Base / Top Elevations Above MSL in Meters**. **Table 2: Noise Barrier Walls, Height Requirements in Feet**, shows wall heights converted to english measurements. For each wall segment, a height measurement is given for both the west end and the east end of the wall reflecting variation in ground topography.



LEGEND

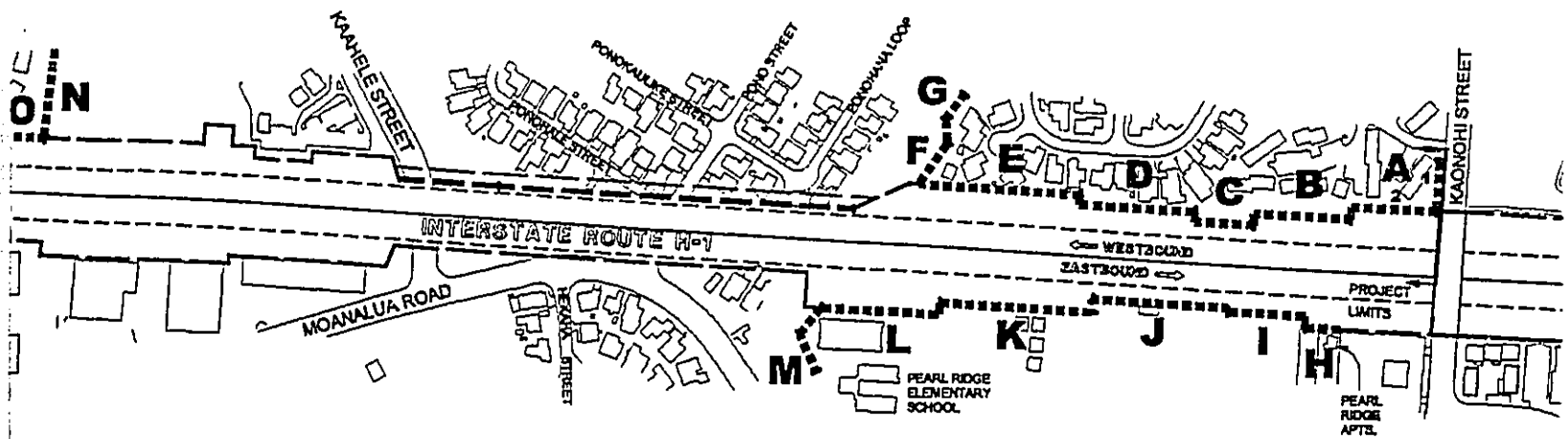
- Noise Barrier Wall Location
- 4' Concrete Barrier on Viaduct
- Existing Right-of-Way
- Future Right-of-Way
- Existing H-1 Roadway

Continuous Wall Segment				
Wall Section	Wall Height West/East	Length	Benefitted Residences	Estimated Cost
A₁	6.5 / 3	112	3	\$38,980
A₂	13 / 6.5	188	3	\$112,530
B	15 / 6.5	210	6	\$150,150
C	18 / 18	128	4	\$180,180
D	6.5 / 8	252	4	\$103,950
E	10 / 4.5	354	4	\$155,760
F	10 / 10	111	2	\$81,050
G	10 / 10	118	0	\$64,900
Total This Segment				\$865,480

Measurements in Feet

Continuous Wall Segment				
Wall Section	Wall Height West/East	Length	Benefitted Residences	Estimated Cost
H	5 / 3	78	school	\$23,595
I	8 / 11.5	167	school	\$98,443
J	8 / 8.5	292	school	\$112,420
K	8 / 9	334	school	\$148,960
L	8 / 8	255	school	\$112,200
M	8 / 8	165	school	\$72,600
Total This Segment				\$584,218

Continuous Wall Segment				
Wall Section	Wall Height West/East	Length	Benefitted Residences	Estimated Cost
N	18.5 / 10	190	4	\$172,420
O	8 / 8	117	2	\$51,480
P	0 / 4	128	0	\$31,680
Q	6.5 / 0	321	5	\$88,270
Total This Segment				\$343,860



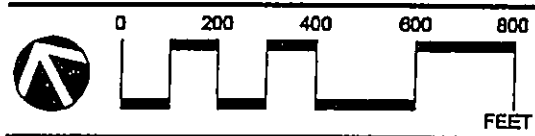
Wall Locations
 Barrier on Viaduct
 100-foot-of-Way
 150-foot-of-Way
 200-foot-of-Way


Segment	
Benefitted Residences	Estimated Cost
4	\$172,425
2	\$51,480
0	\$31,580
5	\$88,275
	\$343,860

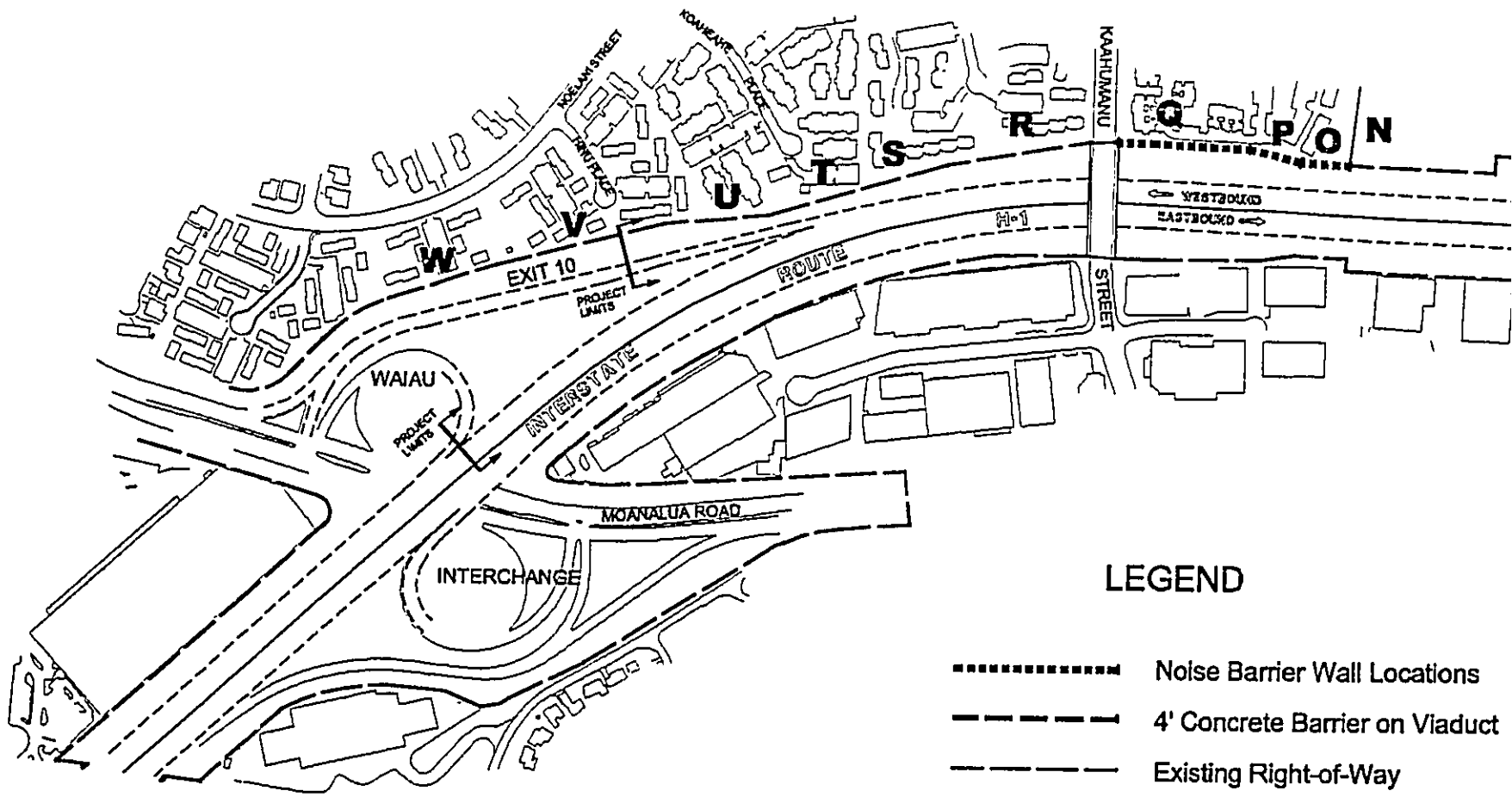
Continuous Wall Segment				
Wall Section	Wall Height West/East	Length	Benefitted Residences	Estimated Cost
R	8 / 6.5	351	3	\$144,788
S	16.5 / 8	228	6	\$192,665
T	16.5 / 16.5	228	4	\$285,890
U	15 / 16.5	255	5	\$301,538
V	36 / 13	395	11	n/a
W	28 / 36	270	6	n/a
Total This Segment				\$924,880
Total All Segments				\$2,898,438

FIGURE A-1
NOISE BARRIER WALL
ALTERNATIVES

Interstate Route H-1 Widening
 Westbound Direction
 KaonoHi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation




R. M. TOWILL CORPORATION January 2000



LEGEND

- Noise Barrier Wall Locations
- 4' Concrete Barrier on Viaduct
- Existing Right-of-Way
- Future Right-of-Way
- Existing H-1 Roadway

Continuous Wall Segment				
Wall Section	Wall Height West/East	Length	Benefitted Residences	Estimated Cost
D	6.5 / 8	252	4	\$103,950
E	10 / 4.5	354	4	\$155,760
F	10 / 10	111	2	\$81,050
Totals This Segment			10	\$320,760
Cost Per Residence			—	\$32,076

Measurements in Feet.
 Cost Per Residence ≤ \$35,000 is considered reasonable for mitigation expense.

Continuous Wall Segment				
Wall Section	Wall Height West/East	Length	Benefitted Residences	Estimated Cost
J	6 / 6.5	292	school	\$112,420
K	6 / 9	334	school	\$146,960
L	8 / 8	255	school	\$112,200
M	8 / 8	165	school	\$72,800
Total This Segment			—	\$444,180
Cost Per Residence			—	n/a

n/a - Cost Per Residence not used to determine reasonableness of mitigation costs at schools and other special use locations.

Continuous Wall Segment	
Wall Section	Wall Height West/East
O	8 / 8
P	0 / 4
Q	6.5 /
Totals This Segment	
Cost Per Residence	
Total All Segments	

Table 1: Noise Barrier Wall Base / Top Elevations			
Above MSL in Meters			
Seg	Wall Base Above MSL West / East	66 dBA	-5 dba
		Wall Height Above MSL	Wall Height Above MSL
		Wall Height: West / East	Wall Height: West / East
A ₁	42 / 43	49	44
		7 / 6	2 / 1
A ₂	40 / 42	49	44
		9 / 7	4 / 2
B	36.5 / 39	46	41
		9.5 / 7	4.5 / 2
C	34.5 / 34.5	45	40
		10.5 / 10.5	5.5 / 5.5
D	37 / 36.4	41	39
		4 / 4.6	2 / 2.6
E	36 / 37.7	41	39
		5 / 3.3	3 / 1.3
F	36 / 36	41	39
		5 / 5	3 / 3
G	36 / 36	41	39
		5 / 5	3 / 3
H	36.5 / 37	45	38
		8.5 / 6	1.5 / 1
I	34.2 / 36.5	45	38
		8.8 / 11	1.8 / 3.5
J	34.3 / 34	36.5	36.5
		2.2 / 2.5	2.2 / 2.5
K	34.8 / 33.7	36.5	36.5
		1.7 / 2.8	1.7 / 2.8

**Table 1: Noise Barrier Wall Base / Top Elevations
Above MSL in Meters (continued)**

Seg	Wall Base Above MSL West / East	66 dBA	-5 dba
		Wall Height Above MSL Wall Height: West / East	Wall Height Above MSL Wall Height: West / East
L	34 / 34	36.5	36.5
		2.5 / 2.5	2.5 / 2.5
M	34 / 34	36.4	36.4
		2.4 / 2.4	2.4 / 2.4
N	25 / 27	35	30
		10 / 8	5 / 3
O	27.5 / 27.5	35	30
		7.5 / 7.5	2.5 / 2.5
P	34 / 28.5	39 / 35	34 / 30
		5 / 6.5	0 / 1.5
Q	37 / 34	44 / 39	39 / 34
		7 / 5	2 / 0
R	32.5 / 37	43 / 44	35 / 39
		10.5 / 7	2.5 / 2
S	30 / 32.5	42 / 43	35 / 35
		12 / 10.5	5 / 2.5
T	30 / 30	42	35
		12 / 12	5 / 5
U	35.5 / 30	44 / 42	40 / 35
		8.5 / 12	4.5 / 5
V	29 / 36	43 / 44	40 / 40
		14 / 8	11 / 4
W	26 / 29	37 / 43	34 / 40
		11 / 14	8 / 11

**Table 2: Noise Barrier Walls,
Height Requirements in Feet**

Wall Section	66 dBA Wall Height: West/East	-5 dBA Wall Height: West/East
A1	23 / 19.5	6.5 / 3
A2	29.5 / 23	13 / 6.5
B	31 / 23	15 / 6.5
C	34.5 / 34.5	18 / 18
D	13 / 15	6.5 / 8
E	18 / 11	11.5 / 4.5
F	18 / 19.5	11.5 / 13
G	18 / 18	11.5 / 11.5
H	28 / 19.5	5 / 3
I	29 / 36	6 / 11.5
J	6 / 6.5	6 / 6.5
K	6 / 9	6 / 9
L	8 / 8	8 / 8
M	8 / 8	8 / 8
N	33 / 26	16.5 / 10
O	21 / 33	4 / 16.5
P	16.5 / 20.5	0 / 4
Q	23 / 16.5	6.5 / 0
R	34.5 / 23	8 / 6.5
S	39.5 / 34.5	16.5 / 8
T	39.5 / 39.5	16.5 / 16.5
U	28 / 39.5	15 / 16.5
V	46 / 26	36 / 13
W	36 / 46	26 / 36

ADDENDUM B:

SPECIAL USE AREA NOISE ABATEMENT COST CALCULATIONS

Pearl Ridge Elementary School and Pearl Ridge Park

The abatement cost factor is a derivation of a value that can give a comparative measure of cost associated with proposed abatement measures. The method takes the accepted abatement cost per residence and translates it from a residential scenario to one that can be applied to other land uses. In this equation, the "reasonable and feasible" abatement cost per residence is divided by the number of persons per residence and the number of hours of usage per day to derive a "preliminary abatement cost factor". This number is then multiplied by the size of a typical residential property noise barrier to calculate a "criteria abatement cost factor" that accounts for barrier size. The criteria abatement cost factor does not reflect real barrier costs, such as dollar value per square foot, rather, it serves as a baseline criteria against which proposed noise barrier costs can be assessed. Abatement cost is considered reasonable if the calculated "abatement cost factor" is below the "criteria abatement cost factor".

Criteria Abatement Cost Factor

Variables:

Persons per household (State Average)	2.84
Reasonable and Feasible Cost Per Residence	\$35,000
Average barrier height (estimate)	8 feet
Typical Residence Frontage (estimate)	100 feet
Usage Hours	24

Preliminary Abatement Cost Factor:

$$\frac{\$35,000}{\text{residence}} * \frac{\text{residence}}{2.84} * \frac{1}{24\text{hours}} = \$513.51/\text{person hour}$$

Criteria Abatement Cost Factor:

$$\frac{\$35,000}{\text{residence}} * \frac{\text{residence}}{2.84} * \frac{1}{24\text{hours}} * (8\text{ft} * 100\text{ft}) = \$410,800 / \text{person hour} / \text{ft}^2$$

Criteria Abatement Cost Factor = \$410,800 /person hour / ft²

Abatement Costs for Special Use Areas are calculated using # of benefitted persons in lieu of average household size. Pearl Ridge Elementary School provided the following numbers:

School Enrollment	620
School Staff	70
	<hr/>
	690

Additionally, school facilities are used after hours for extra-curricular programs, community meetings, and other group functions. A Kendo class uses the school auditorium for practice on Saturday. The park is used extensively for organized and individual sports, especially during weekday evenings and on the weekend. These activities were used to make a conservative estimate of 750 persons as the number of benefitted persons. The facilities are estimated to be used 12 hours per day.

Abatement Cost for Special Use Area

$$\frac{\text{wall cost}}{\# \text{ beneficiaries}} * \frac{1}{\text{usage hours}} * (\text{wall area } ft^2) = \text{cost / person hour / } ft^2$$

Wall Segments H through M

Variables:

Number of beneficiaries in special use area	750
Usage Hours	12
Cost of Wall Segments H - M (from Appendix F, Addendum A, Figure 2)	\$564,218
Wall Area - Wall Segments H - M (from Appendix F, Addendum A, Figure 2)	9,463 ft ²

Abatement Cost Factor:

$$\frac{\$564,218}{750 \text{ persons}} * \frac{1}{12 \text{ hours}} * (9,463 \text{ } ft^2) = \$593,244 / \text{person hour / } ft^2$$

\$564,218 Abatement Cost Factor is greater than \$410,800 Criteria Abatement Cost Factor, thus construction of noise barrier walls along the entire length of segments H through M is not considered reasonable in terms of cost. According to the noise study, noise walls are not necessary along segments H and I to reduce noise levels at the elementary school. Therefore, segments H and I were rejected and noise abatement costs were calculated for segments J through M as shown below.

Wall Segments J through M

Variables:

Number of beneficiaries in special use area*	750
Usage Hours	12
Cost of Wall Segments J - M (from Appendix F, Addendum A, Figure 2)	\$444,180
Wall Area - Wall Segments J - M (from Appendix F, Addendum A, Figure 2)	7690 ft ²

Abatement Cost Factor:

$$\frac{\$444,180}{750 \text{ persons}} * \frac{1}{12 \text{ hours}} * (7690 \text{ ft}^2) = \$379,527 / \text{person hour} / \text{ft}^2$$

\$379,527 Abatement Cost Factor is less than \$410,800 Criteria Abatement Cost Factor, thus wall segments J through M are considered reasonable in terms of cost.

Reference:

(FDOT 1997) State of Florida, Department of Transportation, *A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations*, Tallahassee, Florida, September 1997.

ADDENDUM C: ACOUSTICAL TERMINOLOGY

Sound Pressure Level

Sound or noise consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. It is measured in terms of decibels (dB) using precision instruments known as sound level meters. Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$\text{SPL} = 20 \log (P/\text{Pref}) \text{ dB}$$

where P is the sound pressure fluctuation (above or below atmospheric pressure) and Pref is the reference pressure, 20 micropascals, which is approximately the lowest sound pressure that can be detected by the human ear. For example, if P is 20 micropascals, then $\text{SPL} = 0 \text{ dB}$, or if P is 200 micropascals, the $\text{SPL} = 20 \text{ dB}$.

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound levels, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined level of 53 dB, not 100 dB; two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of a sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 5 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

The human ear is more sensitive to sound in the frequency range of 250 Hertz (Hz) and higher, than in frequencies below 250 Hz. Due to this type of frequency response, a frequency weighting system was developed to emulate the frequency response of the human ear. This system expresses sound levels in units of A-weighted decibels (dBA). A-weighted sound levels de-emphasizes the low frequency portion of the spectrum of a signal. The A-weighted level of a sound is a good measure of the loudness of that sound. Different sounds having the same A-weighted sound level are perceived as being about equally loud.

Statistical Sound Levels

The sound levels of long-term noise producing activities, such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels developed. It is known as the Exceedence Level, L_n . The Exceedence Level, L_n , represents the sound level which is exceeded for $n\%$ of the measurement time period. For example, $L_{10} = 60$ dBA indicates that for the duration at the measurement period, the sound level exceeded 60 dBA 10% of the time. Commonly used Exceedence Levels include L_1 , L_{10} , L_{50} , and L_{90} , which are widely used to assess community and environmental noise.

Equivalent Sound Level

The Equivalent Sound Level, L_{eq} , represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound being measured over a specific time period. L_{eq} is commonly used to describe community noise, traffic noise, and hearing damage potential. It has units of dBA.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, L_{dn} , is the Equivalent Sound Level, L_{eq} , measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 pm and 7 am to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations.

Source: Darby & Associates, Acoustical Consultants.

Appendix H

Environmental Protection Agency Sole Source Aquifer Review
for the Southern Oahu Basal Aquifer
Section 1424(e), Safe Drinking Water Act
Documentation and Correspondence



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION IX
 75 Hawthorne Street
 San Francisco, CA 94105

ck
 copy
 RECEIVED
 DEC 16 1998
 HAWAII DIVISION

Mail Code WTR-9

December 10, 1998

Ms. Richelle M. Suzuki, P.E.
 U.S. Department of Transportation
 Federal Highway Administration
 Hawaii Division
 300 Ala Moana Blvd., Room 3-306
 Box 50206
 Honolulu, HI 96850

Re: Sole Source Aquifer Post Designation Review
 Interstate Route H-1 Widening
 Federal Aid Project No. H1EF-01-97

Dear Ms. Suzuki:

Thank you for providing information regarding the mentioned project located within the SOBA Sole Source Aquifer designation. Under provisions of the Safe Drinking Water Act, Section 1424(e), EPA is charged with review of projects that receive federal financial assistance and are located in Sole Source Aquifer areas. This program is designed by Congress to assure that projects receiving federal financial assistance are constructed to prevent contamination of drinking water resources.

With the mitigation measures mentioned in your letter of November 30, 1998 met, it appears unlikely that the project will significantly impact the Sole Source Aquifer. Therefore, EPA approves of federal financial assistance for this project under provisions of the Safe Drinking Water Act, Section 1424(e).

If you have questions, do not hesitate to contact me at (415) 744-1890.

Sincerely,

Hillary Hecht
 Hydrogeologist
 Ground Water Office

DEC 16 3 54 PM '98
 HAWAII DIVISION
 PLANNING BRANCH
 STATE DEPARTMENT
 OF TRANSPORTATION



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50208
Honolulu, HI 98850
November 30, 1998

IN REPLY REFER TO
HDA-HI

Ms. Wendy Melgin
Regional Hydrologist
Environmental Protection Agency
75 Hawthorn Street
San Francisco, CA 94105-3901

Subject: Sole Source Aquifer Review, Section 1424(e), Safe Drinking Water Act
Interstate Route H-1 Widening, Kaonohi Street to Waiiau Interchange, Oahu, Hawaii
Federal-Aid Project No. H1EF-01-97

Dear Ms. Melgin:

This letter is written to request the EPA Region IX Administrator's determination of the subject project's compliance with the objectives of the EPA's Sole Source Aquifer program. This request is being submitted to meet the coordination requirements of Section 1424(e) of the Safe Drinking Water Act, in accordance with the 1984 Sole Source Aquifer Memorandum of Understanding between the Federal Highway Administration (FHWA) and EPA.

The State of Hawaii, Department of Transportation - Highways Division (SDOT-H), and FHWA propose to construct improvements to the westbound lanes of Interstate Route H-1 in the Pearl City/Aiea area overlying the Southern Basal Aquifer (SOBA), a designated Sole Source Aquifer.

The proposed project has been planned and designed to minimize potential damage and contamination to the SOBA. Federal, state, and local ground water protection requirements are incorporated into project plans. Proposed drainage systems, Best Management Practices (BMPs) included in the construction plans, and existing incident response procedures will minimize ground infiltration impacts to the SOBA.

The attached documentation provides a description of the proposed action, potential project-related impacts to the SOBA, and mitigation measures to minimize and prevent contamination and damage to the aquifer.

If you require additional information, please feel free to contact me at (808) 541-2530.

Sincerely yours,

Richelle M. Suzuki, P.E.
Transportation Engineer

DEC 2 11 26 AM '98
HIGHWAY DIVISION
PLANNING BRANCH

cc: Doug Orimoto, HDOT HWY-PA

Supplementary Information

Sole Source Aquifer Review Section 1424 (e), Safe Drinking Water Act

Interstate Route H-1 Widening Kaonohi Street to Waiiau Interchange Oahu, Hawaii

Federal Aid Project No. HIEF-01-97

Proposed Activity

The State of Hawaii, Department of Transportation -- Highways Division (SDOT-H), and the Federal Highways Administration (FHWA) propose to construct improvements to the westbound lanes of Interstate Route H-1 in the Pearl City / Aiea area overlying the Southern Oahu Basal Aquifer (SOBA), a designated Sole Source Aquifer. (See Figure 1, Project Location.) Interstate Route H-1 is presently being widened to six (6) lanes between the Halawa Interchange and the Kaonohi Street overcrossing in the westbound direction. This project proposes to extend the widening from the Kaonohi Street overcrossing to the Pearl City off-ramp, thereby providing six (6) continuous lanes from the Halawa Interchange to the Waiiau Interchange in the westbound direction. This improvement is recommended to maintain federal highway standards, mitigate traffic congestion, increase traffic safety, and meet the overall projected operating conditions for this segment of Interstate Route H-1.

Freeway Characteristics

The H-1 Freeway is the primary roadway carrying traffic in the east-west direction through Honolulu. In the segment between the Waiiau Interchange and the Halawa Interchange, the freeway has a basic section of ten lanes, with five in each direction. The segment between the Kaonohi Street overcrossing and the Waiiau Interchange is approximately 6,500 feet in length. The typical section for this segment in the westbound direction consists of 5 lanes, each 11 feet wide, with clear distances of 5 feet at the median and at least 6 feet on the outside shoulder. The additional westbound lane would increase the area of impermeable roadway surface on this section of the freeway by 12,420 square yards (yd²), from 100,458 yd² to 112,878 yd².

Hydro-Geologic Characteristics

The proposed project site is located inland from East Lock of Pearl Harbor, between approximately 80 to 100 feet above mean sea level (msl). The topography is characterized by gradual slopes of up to 7 percent. The most significant geographical features in the area are Waimalu Stream and Gulch, over which the freeway traverses on the Waimalu Viaduct.

The project site lies over the approximate geologic boundary between a permeable formation of Koolau Basalt and coastal plain deposits that form impermeable caprock. (See Figure 2, Basalt - Caprock Boundary.) The coastal caprock impedes the discharge of freshwater within the Koolau Basalt, impounding basal water in a hydraulic lens forming a portion of the SOBA. Aquifer recharge occurs where water infiltrates through the permeable Koolau Basalt. Where caprock occurs, rainfall, surface water, and runoff discharge are prevented from percolating into the aquifer. (See Figure 3, Schematic of Basal Aquifer Hydrogeology.)

During the original work on the existing viaduct, boring samples were taken to depths of between 40 and 90 feet below mean sea level (msl). Boring logs reveal a general geologic profile of silty clay over intermittent layers of gravel, sand, boulders, stones, and clay, over weathered rock, over basalt. Deeper borings commonly encountered very stiff clays beneath the basalt layer. Boring samples encountered no caprock layer.

Potential Impacts

Because the proposed project occurs in an area underlain with permeable Koolau Basalt, there is the potential for discharge pollution originating from construction activities and normal freeway operations to infiltrate into the SOBA. Construction impacts include the possible release of fuel and oil used by construction equipment, and paint and solvents used during restriping activities. During normal freeway operations, potential sources of contamination include surface runoff containing oil, asbestos, heavy metals, and other contaminants that accumulate on the roadway. Accidental spills on the freeway are another potential source of pollution to the underlying aquifer.

Drainage System

The proposed project design utilizes existing freeway drainage features. Freeway runoff is conveyed from the freeway to the point of discharge into the waters of Pearl Harbor via drainage ways, spill ways, and drain pipes of cement construction. No freeway runoff will be discharged onto bare ground over the aquifer recharge area. The underlying geology at the point of discharge is impermeable caprock that would prevent the discharge from percolating into the Sole Source Aquifer.

Discharge from freeway runoff is regulated by the State of Hawaii, Department of Health (DOH), Clean Water Branch, pursuant to Hawaii Administrative Rules, Title 11, Chapter 55, Water Pollution Control. Drainage systems and mitigation measures for controlling freeway runoff will comply with DOH requirements.

Spill Response

During the construction period, and during normal operations on the freeway following construction, there is always the potential for accidents and spills that could result in impacts to the underlying ground water. Spill prevention measures will be included in the site-specific BMPs to address construction-related spills.

Emergency response measures for containing and cleaning up hazardous material spills are regulated by the State. The Honolulu Fire Department maintains a hazardous material team that performs first-response and containment of any hazardous material spills. Incidents are reported to the State Department of Health, Office of Hazard Evaluation and Emergency Response, which oversees and coordinates clean-up efforts.

Construction Activities - BMPs

A site-specific Best Management Practices (BMP) plan will be prepared by the project contractor as part of the project construction plan. The BMPs will include guidelines and mitigation measures to prevent storm water runoff, discharge pollution, and other contaminants from impacting the underlying aquifer.

Fueling and maintenance of construction equipment will be performed off-site or within an area designated by the contractor. Any site designated for refueling or maintenance will be located away from all surface water, enclosed by a containment berm and constructed to contain spills and seepage and prevent storm water runoff from carrying pollutants into state coastal waters.

The project contractor will select locations for stockpiling construction material. Stockpile sites will be identified in the site-specific BMPs and construction plans. A sediment retention berm or silt fence will be installed around the down-slope side of stockpile sites to retain sediment discharge during heavy rainfall. Areas reserved for stockpiling of paint and solvents will be constructed to contain spills and prevent seepage. No fuel will be stored on the project site.

Discharge pollution prevention measures will be employed in all phases of the project. Control measures will be in place and functional before construction activities begin, and will be maintained throughout the construction period. The construction plan and site-specific BMPs will be submitted to the Director of the State of Hawaii, DOH, Clean Water Branch for review pursuant to HAR Title 11, Chapter 55.

Structural Considerations

The proposed project includes widening a 1,500-foot viaduct spanning the Waimalu subdivision. Work on the viaduct involves driving foundation piles into place to anchor bridge footings and piers. Piles for the existing viaduct were driven to various depths between 20 and 115 feet below msl, with an average depth of 70 feet below msl to contact with the underlying load-bearing basalt layer.

The proposed construction will include the installation of 13 new viaduct piers inland from the existing structure. Piles for the piers will be driven into place. Based on previous boring samples and construction work, piles will not encounter aquifer caprock and are not expected to have a negative impact on the underlying geologic structure.

Sole Source Aquifer Review, Section 1424 (e), Safe Drinking Water Act
 Interstate Route H-1 Widening, Kaonohi Street to Waiuu Interchange, Oahu, Hawaii
 Federal Aid Project No. H1EF-01-97

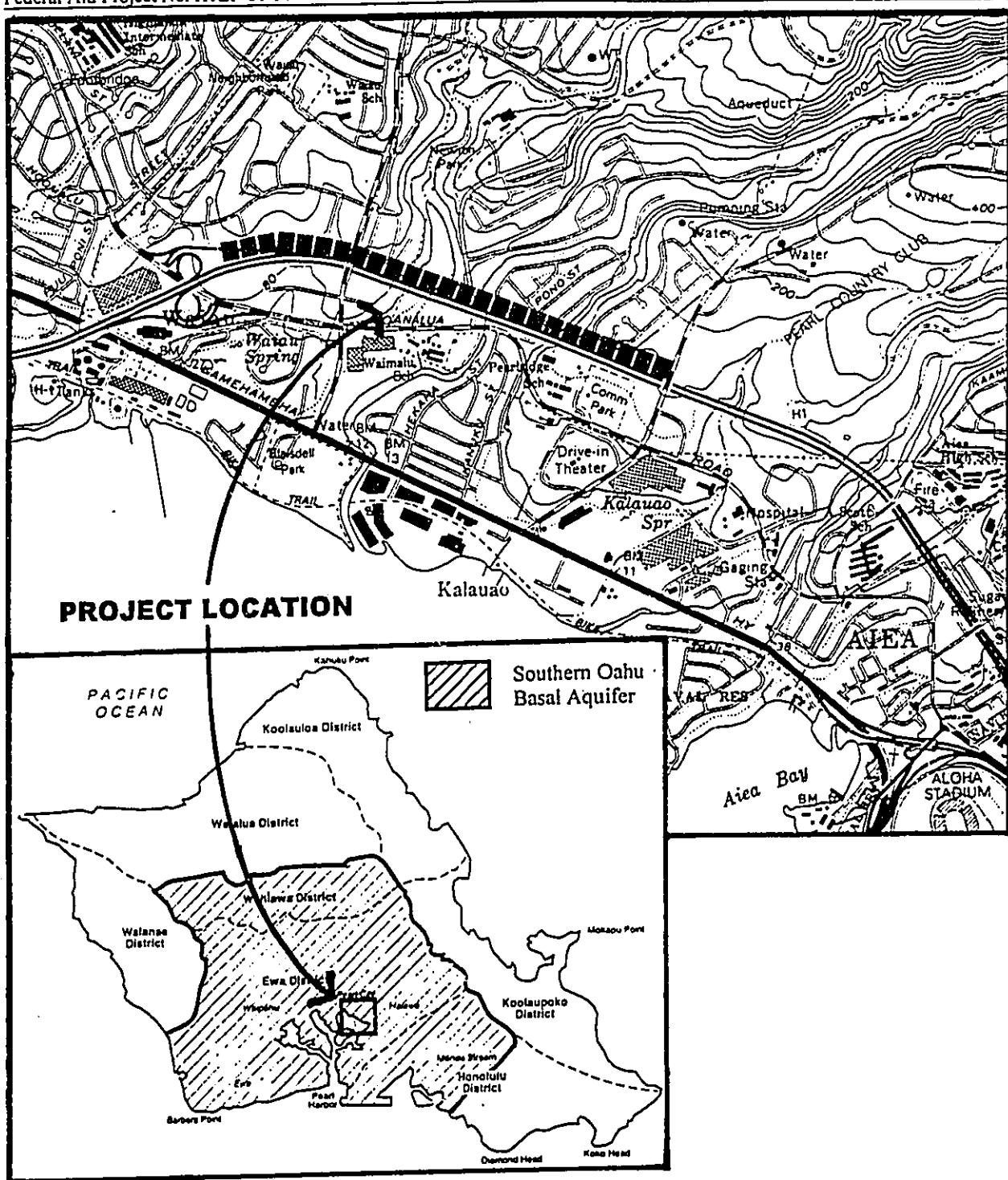
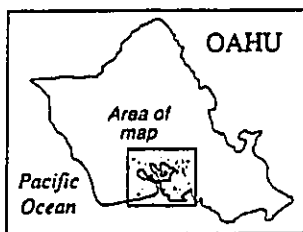
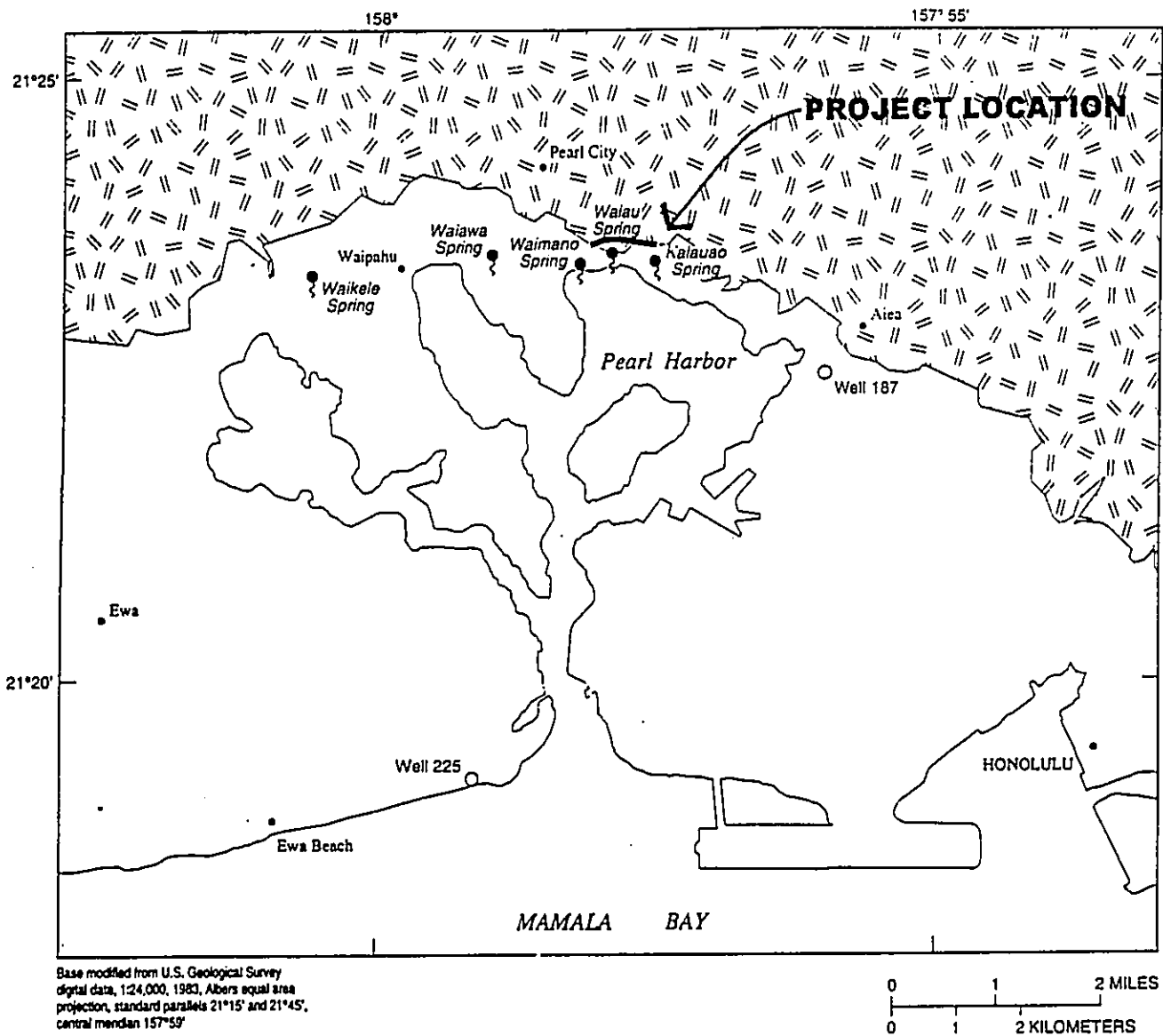


Figure 1 - Project Location

Source: Summary of the Oahu, Hawaii, Regional Aquifer-System Analysis
 U.S. Geological Survey Professional Paper 1412-A

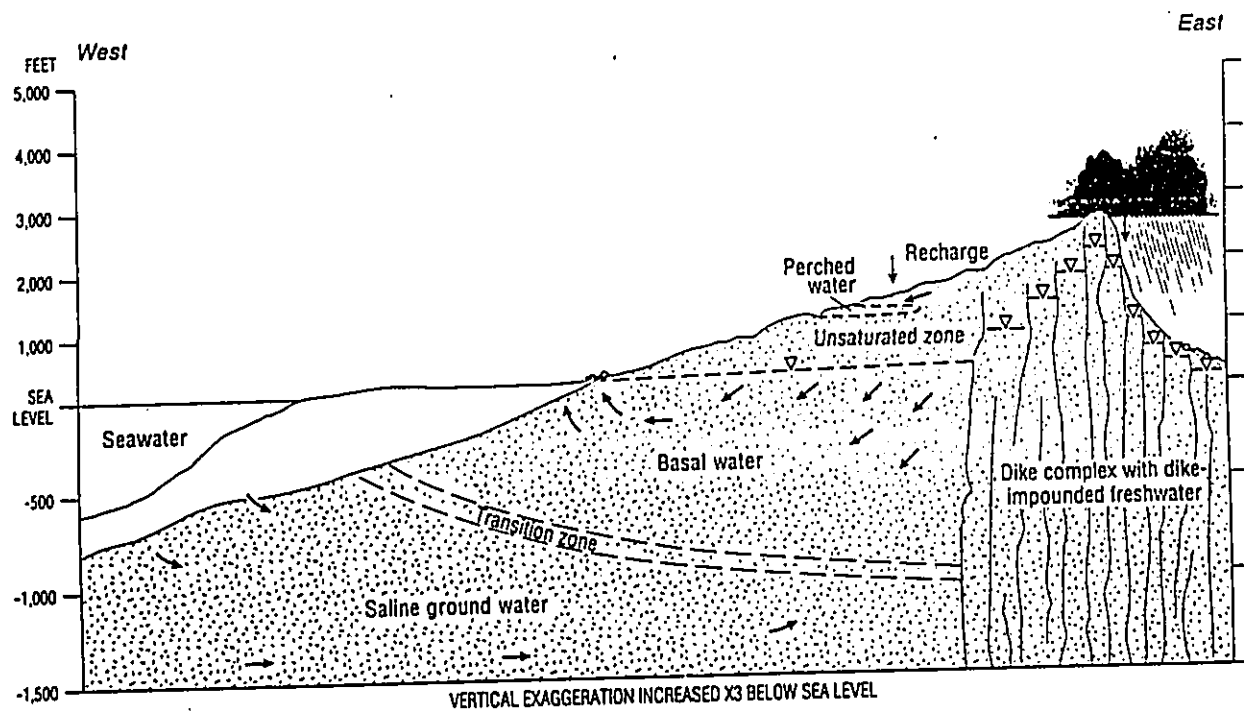
Sole Source Aquifer Review, Section 1424 (e), Safe Drinking Water Act
 Interstate Route H-1 Widening, Kaonohi Street to Waiiau Interchange, Oahu, Hawaii
 Federal Aid Project No. HIEF-01-97



- EXPLANATION**
- COASTAL-PLAIN DEPOSITS (CAPROCK)
 - KOOLAU BASALT

Figure 2 - Basalt-Caprock Boundary

Source: Summary of the Oahu, Hawaii, Regional Aquifer-System Analysis
 U.S. Geological Survey Professional Paper 1412-A



EXPLANATION






-  COASTAL-PLAIN DEPOSITS (CAPROCK)—Consists of saprolite and overlying coastal-plain sediments
-  KOOLAU BASALT
-  WATER TABLE
-  GENERALIZED DIRECTION OF GROUND-WATER FLOW
-  SPRING

Figure 3 - Schematic of Basal Aquifer Hydrogeology

Source: Summary of the Oahu, Hawaii, Regional Aquifer-System Analysis
 U.S. Geological Survey Professional Paper 1412-A

Appendix I

Available Housing - Real Estate Listing

To Select your matches, use the following keys:

<F3>More <F4>Prev <F5>Tag <F6>Rpt <F7>Detail <F8>Accept <F9>Photo <F10>Exit

MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9825965p	A 198 98-497/9	PONO ST	2232	6	5.00	\$295,000	FS
9826358p	A 198 98153	HONOMANU ST	1	5	2.00	\$299,000	FS
9902547	A 198 98488	LULU ST 85	1098	3	2.00	\$299,000	FS
9824277p	A 198 981901/G	KAHUMANU ST	1724	3	2.00	\$305,000*	FS
9902467	A 198 982019	KAHUMANU ST 63	1474	3	3.00	\$325,000	FS
9824909p	A 198 98677	LANIA PL	1907	4	3.00	\$329,000*	FS
9808711p	A 198 981285	HOHUALI PL	2604	5	3.00	\$354,000*	FS
9819754p	A 198 981681	HOOLAUA ST	1395	7	3.00	\$369,000*	FS
9824529	A 198 98148/A	HONOMANU ST	2210	3	3.50	\$369,000	FS
9826476p	A 198 981949	KAULAAO ST	1520	3	2.00	\$369,000*	FS
9824048p	A 198 981631	HAPAKI ST	2328	5	3.00	\$370,000*	FS
9825049p	A 198 981397	AKAACA ST	1886	4	2.00	\$375,000*	FS
9900974p	A 198 98-624 P	PUAILIMA ST	2564	3	2.50	\$375,000	FS

You are currently on row 65 of 124 total matches.

You currently have all matches selected.

To Select your matches, use the following keys:

<F3>More <F4>Prev <F5>Tag <F6>Rpt <F7>Detail <F8>Accept <F9>Photo <F10>Exit

MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9820809p	A 198 98835	ILIEE ST	1835	3	2.00	\$379,000*	FS
9900238p	A 198 98-131	HEKAHA ST	2902	8	4.50	\$425,000	FS
9902132p	A 198 98-903	ILIEE ST	1441	4	2.00	\$425,000	FS
9820514p	A 198 981820	NAHELE ST	2483	5	3.00	\$448,800	FS
9825799p	A 198 98682	AUPUNIMOI PL	2165	3	2.00	\$450,000	FS
9822143p	A 198 98291	PUAALII ST	3756	5	3.00	\$463,000*	FS
9821922p	A 198 98771	LEIALII ST	2740	4	3.50	\$469,000	FS
9901793p	A 198 98-814	LANIKUAKAA ST	1857	3	2.00	\$475,000	FS
9826906	A 198 98636	PUAILIMA ST	3348	4	3.00	\$489,000	FS
9901226	A 198 98-640	KUINI ST	2161	4	2.00	\$499,000	FS
9807295p	A 199 99042	IEIE PL	900	3	1.00	\$175,000	FS
9901826p	A 199 99-1655	HOAPONO PL	1874	3	2.00	\$205,000	FS
9826964	A 199 99421	AHEAHE ST	1283	3	1.50	\$247,700	FS

You are currently on row 78 of 124 total matches.

You currently have all matches selected.

To select your matches, use the following keys:

<F3>More <F4>Prev <F5>Tag <F6>Rpt <F7>Detail <F8>Accept <F9>Photo <F10>Exit

MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9902063p	A 197 1206	KOMO MAI DR	1608	3	2.50	\$310,000	FS
9822302p	A 197 803	LUEHU PL	1508	4	2.00	\$325,000	FS
9900677p	A 197 1098	LUEHU ST	1439	7	5.00	\$332,000	FS
9902001p	A 197 2257	AAMANU ST	2158	4	3.50	\$335,000	FS
9821460p	A 197 1449	NANAKAI ST	1832	4	2.00	\$339,000	FS
9901322p	A 197 949	PAAAINA ST	1575	3	2.50	\$345,000	FS
9809406p	A 197 998	MAIHA CIR	1596	6	3.00	\$350,000	FS
9900083p	A 197 1789	KUAHAKA ST	2958	6	4.00	\$359,000*	FS
9809170p	A 197 1590	KAWELOKA ST	1954	3	2.50	\$360,000*	FS
9820401p	A 197 2099	HOOLAULEA ST	2894	5	2.50	\$365,000	FS
9806971p	A 197 1390	KUAHAKA ST	2252	6	4.00	\$369,000	FS
9901321	A 198 98124A	KIHALE ST	840	3	1.00	\$203,000	FS
9821208p	A 198 98174	KAULIKE DR	954	3	1.50	\$240,000	FS

You are currently on row 39 of 124 total matches.

You currently have all matches selected.

To select your matches, use the following keys:

<F3>More <F4>Prev <F5>Tag <F6>Rpt <F7>Detail <F8>Accept <F9>Photo <F10>Exit

MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9900066	A 198 98535	LULU ST 64	1193	3	2.00	\$254,900*	FS
9827240p	A 198 98513	KILIPOHE ST	1368	4	2.00	\$255,000	FS
9826011p	A 198 98421	PONO ST	1531	3	2.00	\$259,000*	FS
9902128m	A 198 98-526	LULU ST 60	1098	3	2.00	\$259,900*	FS
9902258	A 198 98 481	KIPAEPAE ST 118	1208	3	2.00	\$265,000	FS
9826189p	A 198 981576	HOOMAHILU ST	1176	3	2.00	\$270,000	FS
9901279p	A 198 98-1901	KAHUMANU ST C	998	3	2.00	\$271,000	FS
9902564	A 198 981950/M	KAHUMANU ST	1149	3	2.50	\$279,000	FS
9901280p	A 198 98514	PONO ST	1200	4	2.00	\$279,000	FS
9825286p	A 198 98582	KAIMU LOOP	1380	3	1.50	\$280,000*	FS
9900559p	A 198 981474	HOHIKI ST	1616	3	2.00	\$285,000	FS
9902192p	A 198 98462	KILIPOHE ST	1368	4	2.00	\$289,000	FS
9809980p	A 198 98537	LULU PL	1227	3	2.00	\$289,900	FS

You are currently on row 52 of 124 total matches.

1701750000

1701750000

1701750000

1701750000

To Select your matches, use the following keys:

<F3>More <F4>Prev <F5>Tag <F6>Rpt <F7>Detail <F8>Accept <F9>Photo <F10>Exit

5/25/99

MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9827992	A 197	1342 HOOLI CIR	972	3	2.00	\$137,500*	FS
9901283p	A 197	1824A LANIKEHA PL	1208	3	1.50	\$209,000*	FS
9900522b	A 197	2547 AKEPA ST	1200	3	2.00	\$215,000	FS
9821434p	A 197	2429 KOMO MAI DR	984	3	1.50	\$225,000	FS
9901921p	A 197	1319 NOELANI ST	1548	5	2.00	\$229,000*	FS
9901895p	A 197	2263 APOEPOE ST	2184	7	3.50	\$232,500	FS
9902313	A 197	1166 AIKOO PL	1048	3	2.00	\$235,000	FS
9901750p	A 197	2251 AUMAKUA ST	1303	3	1.50	\$235,000	FS
9901955p	A 197	2030 AAMANU ST	1232	3	2.00	\$235,000	FS
9901768p	A 197	2431 AKEPA ST	1496	3	2.50	\$237,000	FS
9900097m	A 197	1851 LANIKEHA PL	1138	3	1.50	\$238,500*	FS
9902329	A 197	2051 AAMANU ST	1227	3	2.00	\$239,000	FS
9902445	A 197	1620 KALEILANI ST	2086	3	2.50	\$249,900	FS

You are currently on row 1 of 124 total matches.

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MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9900275p	A 197	948 3RD ST	2208	4	2.00	\$255,000*	FS
9901094p	A 197	1020 KAWELOKA ST	1548	3	2.00	\$260,000	FS
9902216p	A 197	1448 NOELANI ST	1892	3	2.00	\$269,500	FS
9822396p	A 197	1549 HOOLANA ST	1480	3	2.00	\$278,000	FS
9823932p	A 197	862 HOOMOANA WAY	1743	3	1.50	\$278,500	FS
9807346p	A 197	1132 INIA PL	2172	5	3.00	\$280,000	FS
9900355	A 197	1305/07 KUAHAKA ST	3216	10	5.00	\$280,000*	FS
9823192p	A 197	1102 MAIHA CIR	1540	4	3.00	\$280,000*	FS
9821541p	A 197	1165 AIKOO PL	1777	3	3.00	\$284,000*	FS
9900541p	A 197	1746 KOMO MAI DR	1724	5	3.00	\$285,000*	FS
9821499p	A 197	1792 HOOHULU ST	1456	4	2.00	\$295,000*	FS
9901249p	A 197	2238 AUHUU ST	1690	3	3.00	\$298,000*	FS
9824034p	A 197	1556/58 HOOLI CIR	1728	5	3.00	\$299,500	FS

~~To Select your matches, use the following keys:~~
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MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9826644	A 199 99803	PUAWA PL	802	3	1.00	\$260,000*	FS
9825980p	A 199 99045	OHIAKU ST	1026	3	1.50	\$265,500*	FS
9825982p	A 199 99055	OHIAKU ST	1284	3	1.50	\$265,500*	FS
9824298p	A 199 991194	HALAWA HTS RD	1824	4	2.50	\$279,000	FS
9827776p	A 199 1644	PIIKEA ST	2621	4	2.50	\$280,000	FS
9825637p	A 199 99257	OHEKANI LP	1776	4	3.00	\$289,000	FS
9900730p	A 199 1632	PIIKEA ST	2032	5	3.00	\$290,000*	FS
9902219p	A 199 99-431	FERNRIDGE PL	2693	4	2.00	\$295,000	FS
9809038p	A 199 99-1371	AIEA HTS DR	1629	3	2.50	\$305,000	FS
9900838p	A 199 99584	KAULAINAHEE PL	1338	3	2.00	\$305,000	FS
9824136p	A 199 1510	PIIKEA ST	1556	3	2.00	\$305,000*	FS
9900509p	A 199 1516	HALOA DR	1730	3	2.00	\$310,000*	FS
9902102p	A 199 99123	IWAIWA PL	1632	3	2.50	\$319,000	FS

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MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9825971p	A 199 99052	LOHEA PL	1136	3	1.00	\$325,000	FS
9900755p	A 199 99-1009	LAUOLE ST	1375	3	2.00	\$329,000*	FS
9808296p	A 199 4194	HALUPA ST	1518	3	2.50	\$330,000*	FS
9826128p	A 199 99-253	ULUNE ST	1920	7	3.00	\$338,000	FS
9808101p	A 199 99349	AHEAHE ST	2118	6	3.00	\$338,000	FS
9807650p	A 199 4334	OLALOA ST	1820	4	2.00	\$339,000	FS
9827490p	A 199 1212	HALOA DR	1267	3	2.00	\$348,500	FS
9825823p	A 199 1364	ANAPA ST	1556	3	2.00	\$349,000	FS
9809045p	A 199 99-1357	AIEA HEIGHTS DRI	1562	3	2.50	\$349,000	FS
9900306p	A 199 4303	PALAHINU PL	2448	5	3.00	\$350,000	FS
9824772p	A 199 99370	KULAWEA PL	2056	4	3.00	\$360,000	FS
9808745p	A 199 1351	ANAPA ST	1582	3	2.00	\$360,000	FS
9901052p	A 199 99251	OHIALOMI PL	2425	5	3.00	\$365,000	FS

You are currently on row 104 of 124 total matches.

To Select your matches, use the following keys:

3>More <F4>Prev <F5>Tag <F6>Rpt <F7>Detail <F8>Accept <F9>Photo <F10>Exit

MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9821962p	A 199 1343	ALA ALII ST	2826	5	3.00	\$375,000	FS
9827576p	A 199 1318	WAVE PL	1983	4	3.00	\$379,000*	FS
9827273p	A 199 99603	AIEA HTS DR	2856	6	3.00	\$389,900	FS
9821863p	A 199 99589	HOIO ST	2442	5	3.00	\$463,000	FS
9825423p	A 199 4506	LUAPELE PL	4826	9	5.50	\$479,900*	FS
9809516p	A 199 4500	LUAPELE PL	3144	6	4.00	\$499,000*	FS
9821413p	A 199 99556	ALIIPOE DR	3024	8	4.50	\$499,500	FS
9821301p	AS 197 2283	AUMAKUA ST	1628	3	1.50	\$209,900	FS
9822401p	AS 197 2039	AKAIKAI LOOP	1166	3	2.00	\$215,000	FS
9900457	AS 197 2303	APOEPOE ST	1635	4	2.50	\$222,000	FS
9900303m	AS 197 2051	AKAIKAI LOOP	2208	4	3.00	\$259,000	FS
9900288p	AS 198 98-232	PALEO WAY	1044	3	2.00	\$264,500	FS
9824537	AS 198 981607	PIKI ST	1632	3	3.00	\$369,000	FS

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MLS#	St Area	Street Address	LivSF	BR	Bath	Price	TN
9900397p	AS 198 982043	HAPAKI ST	1610	3	2.50	\$409,900	FS
9901540	AS 198 981757	IPUALA LOOP	2012	4	3.00	\$410,000	FS
9821371p	AS 198 98813	AINANUI LP	1904	3	3.00	\$468,900*	FS
9826617m	AS 198 98856	LAELUA PL	1864	3	3.00	\$469,000*	FS
9901216	AS 199 4415	HALUPA ST	1404	3	2.00	\$269,000	FS
9809042p	AS 199 99-1345	AIEA HEIGHTS DR	1545	3	2.50	\$355,000	FS
9807727p	AS 199 4275	HALUPA ST	4102	7	4.00	\$499,999	FS

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2000-03-08-0A-FEA-

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FILE COPY

Final Environmental Assessment

Interstate Route (H-1 Widening
Westbound) Direction
Kaonohi Street to
Waiiau Interchange

Project No. H1EF-01-97

January 2000

Prepared For:

State of Hawaii
Department of Transportation
Highways Division

NOTICE:

The Department of Transportation, Highways Division, Planning Branch, is moving to new office facilities. The move is scheduled for completion on March 10, 2000. Please send comments and inquiries concerning this document to the new address:

Mr. Ronald Tsuzuki, Head Planning Engineer
State Department of Transportation
Highways Division, Planning Branch
869 Punchbowl Street, 3rd Floor
Honolulu, HI 96813

#2004013

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**INTERSTATE ROUTE H-1 WIDENING, WESTBOUND DIRECTION
KAONOHI STREET OVERCROSSING TO WAIUAU INTERCHANGE
PEARL CITY, ISLAND OF OAHU, STATE OF HAWAII**

Project No. H1EF-01-97

FINAL ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 USC 4332(2)(c), and Hawaii Revised Statutes, Chapter 343, and Hawaii Administrative Rules, Title 11, Chapter 200 by the State of Hawaii Department of Transportation, Highways Division, and U.S. Department of Transportation, Federal Highway Administration.

2/15/00
Date of Approval

Kazu Hayashida
Kazu Hayashida, Director
State of Hawaii Department of Transportation

2/15/00
Date of Approval

Abraham Wong
Abraham Wong, Division Administrator
U.S. Federal Highway Administration

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Ronald Tsuzuki, Head Planning Engineer
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Highways Division
600 Kapiolani Boulevard, Room 304
Honolulu, HI 96813
(808) 587-1830

The State of Hawaii Department of Transportation, Highways Division proposes to undertake improvements to Interstate Route H-1, westbound between the Kaonohi Street overcrossing and the Waiiau Interchange, in Pearl City, Oahu. The project consists of widening the freeway to six lanes with lane and shoulders widths meeting current Interstate Freeway standards. This improvement is proposed to maintain interstate design standards, increase traffic safety, relieve traffic congestion, and meet the overall projected operating conditions on this segment of Interstate Route H-1. The proposed project requires the acquisition of property north of the freeway right-of-way and relocation of several homes and Waimalu Grace Brethren Church within the Waimalu Garden subdivision. Construction activities associated with the proposed project will generate short-term impacts including intermittent interruptions to traffic, fugitive dust, exhaust emissions, and construction noise. Construction impacts will be mitigated through best management practices. The project will not alter the character of the surrounding area and will not effect changes in land use.

**FEDERAL HIGHWAYS ADMINISTRATION (FHWA)
FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

FOR

**INTERSTATE ROUTE H-1 WIDENING
WESTBOUND DIRECTION
KAONOHI STREET TO
WAIU INTERCHANGE
PROJECT NO. H1EF-01-97**

The FHWA has determined that the proposed widening of Interstate Route H-1 from five lanes to six lanes between the Kaonohi Street overcrossing to the Waiu Interchange will not have any significant impact on the human environment. This FONSI is based on the attached Final Environmental Assessment (FEA), which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the environmental issues and impacts of the proposed project. It provides sufficient evidence and analysis for determining that an environmental impact statement is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the attached FEA.

2/15/00
Date

Abraham Wong
Abraham Wong, Division Administrator
U.S. Federal Highway Administration

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiiau Interchange

Project No. H1EF-01-97

Final Environmental Assessment

January 2000

Prepared for:

Department of Transportation
Highways Division
869 Punchbowl
Honolulu, Hawaii 96813

Prepared by:

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

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- Appendix C Summary of Public Meetings
- Appendix D Traffic Analyses for Interstate Route H-1 Widening, Kaonohi Street to Waiiau Interchange (Westbound Lanes)
- Appendix E Botanical Resources Assessment, H-1 Widening Improvements Project, 'Ewa District, Oahu
- Appendix F *Archaeological Assessment of an Approximately 7.6-Kilometer Long Portion of the H-1 Highway from Halawa to the H1-H2 Interchange at Waiawa, 'Ewa District, Island of Oahu*
- Appendix G Acoustic Study for the H-1 Freeway Widening Project, Kaonohi Street to Waiiau Interchange
- Appendix H Environmental Protection Agency, Sole Source Aquifer Review for the Southern Oahu Basal Aquifer, Section 1424(e), Safe Drinking Water Act, Documentation and Correspondence
- Appendix I Available Housing - Real Estate Listing

PROJECT SUMMARY

Project	Interstate Route H-1 Widening, Westbound, Kaonohi Street to Waiiau Interchange
Applicant:	State of Hawaii, Department of Transportation, Highways Division
Accepting Authorities:	State of Hawaii Department of Transportation U.S. Department of Transportation, Federal Highways Administration
Location:	Interstate Route H-1 Westbound from Kaonohi Street to the Waiiau Interchange in Aiea and Pearl City, Oahu, State of Hawaii
Nearby Federal Actions	Interstate Route H-1 Westbound Widening Halawa Interchange to Kaonohi Street
Major Impacts	Acquisition/relocation of homes in the Waimalu Garden subdivision Acquisition/relocation of Waimalu Grace Brethren Church and Preschool Detour of access into Waimalu Garden subdivision Traffic impacts during construction
TMKs:	9-8-26: 9, 10, 16, 23, 24, 25, 26, 27, 46, 47, 48, 57, 63, 65, 69, 71, 72, 73 9-8-27: 2 9-8-60: 15
Agent:	R. M. Towill Corporation 420 Waiakamilo Road, Suite 411 Honolulu, Hawaii 96817 Phone: (808) 842-1133 / Facsimile: (808) 842-1937
Existing Land Uses:	Public Facilities - Existing Right of Way Surrounding land uses include urban residential, apartments, preservation / parks, elementary schools, and light industry.
Proposed Action:	Widen Interstate Route H-1, westbound, by 29 feet on the Waimalu Viaduct and 21 feet on the non-viaduct sections between the Kaonohi Street Overcrossing and the Pearl City Off-Ramp, to accommodate six 12-foot travel lanes, a 10-foot median shoulder, and a 12-foot right shoulder.
Required Permits	<ul style="list-style-type: none"> • DOH Construction Noise Permit • National Pollution Discharge Elimination System Permit (NPDES)

CHAPTER 1

PURPOSE AND NEED

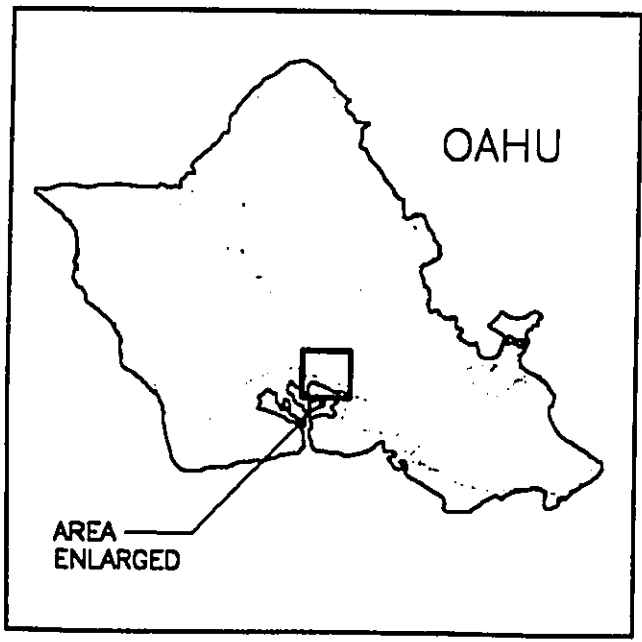
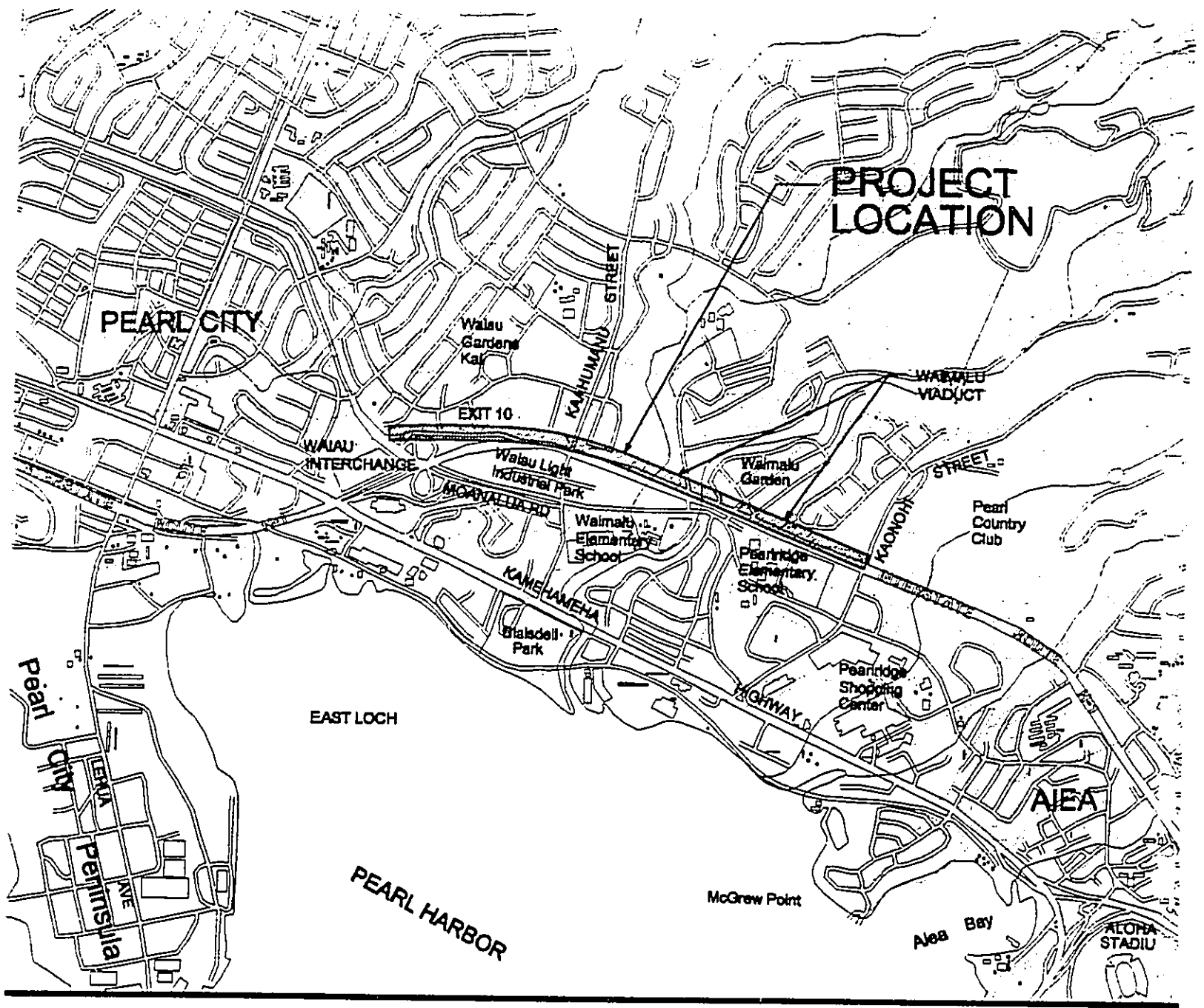
1.1 PROJECT OVERVIEW

The State Department of Transportation, Highways Division (SDOT-H) proposes to improve the westbound lanes of Interstate Route H-1 between the Kaonohi Street overcrossing and the Exit 10 off-ramp at the Waiiau Interchange (**Figure 1-1, Project Location**). The improvement would increase the number of westbound lanes on this segment of the H-1 Freeway from five to six. The project is proposed as a logical continuation of recently completed improvements to the connection between westbound Interstate Route H-3 and westbound Interstate Route H-1. The project is proposed to meet current national freeway standards, increase traffic safety, relieve traffic congestion, and meet the overall projected operating conditions on this segment of Interstate Route H-1.

Project planning included evaluation of environmental conditions and existing land uses to determine the overall impact of construction activities and the impacts of the widening on traffic safety and community activities. Additionally, community input was sought early on in project development to identify and resolve issues during the planning and design stage. All project activities will be assessed for compliance with Federal, State and County policies and land use plans.

1.2 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT


State of Hawaii and federal funds will be used for the proposed improvements. This project, therefore, is subject to preparation of environmental documentation per requirements of Chapter 200, Title 11, Hawaii Administrative Rules (HAR), Chapter 343, Hawaii Revised Statutes (HRS), and the National Environmental Protection Act (NEPA). This EA will address the environmental impacts anticipated from the proposed project.



**FIGURE 1-1
PROJECT LOCATION**

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiuku Interchange
State of Hawaii
Department of Transportation

0 500 1000 2000 4000
FEET

 R. M. TOWILL CORPORATION January 2000

1.3 PURPOSE AND NEED FOR PROJECT

The State of Hawaii Department of Transportation, Highways Division is mandated to develop and maintain Oahu's island-wide roadway system to ensure efficient, safe, convenient, and economical movement of people and goods. Towards these goals, SDOT-H has programmed major highway infrastructure projects in order to maintain a satisfactory level of service in anticipation of current and projected increases in traffic on the State's highway system.

The purpose and need for the proposed project is three-fold:

- **System Linkage** - To extend the recently constructed sixth lane from its current terminus in a forced merge at the Kaonohi Street overcrossing, to a natural lane-drop at the Exit 10 off-ramp of the Waiiau Interchange.
- **Design Standards** - To maintain a safe roadway system by ensuring that the highway meets national Interstate Standards based on American Association of State Highway and Transportation Officials (AASHTO) criteria for on-ramps, shoulders and lane widths, provides safe merge distances, and incorporates other standard design details, including guardrails, drainage features, and adequate lighting, signage, and striping.
- **Capacity** - To enhance the capacity of this section of Interstate Route H-1, in coordination with work conducted on Interstate Route H-3 at the Halawa Interchange, to meet current and future traffic demands.

1.3.1 System Linkage

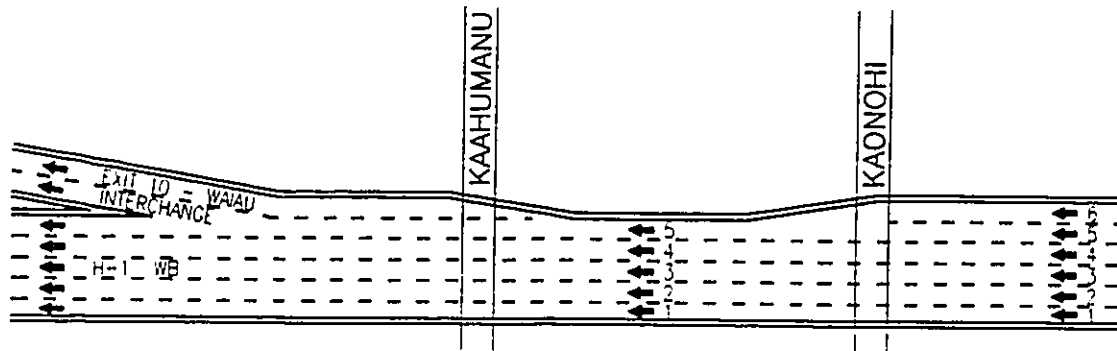
Construction on the westbound Interstate Route H-3 to H-1 merge, from the Halawa Interchange to the Kaonohi Street overcrossing was completed in Spring of 1999. That project added a sixth lane and wider shoulders to Interstate Route H-1 as an extension of the westbound Moanalua Road on-ramp. The improvement created more room for traffic entering the H-1 Freeway from Moanalua Road and Interstate Route H-3. The new sixth lane added by this project extends to the vicinity of the Kaonohi Street overcrossing where it terminates and merges before crossing the Waimalu viaduct.

The proposed improvements that are the subject of this Environmental Assessment (EA) will continue this work, extending the new sixth lane from the Kaonohi Street overcrossing to the west-bound Exit 10 off-ramp at the Waiiau Interchange. By extending the new sixth lane to the Exit 10 off-ramp, a more natural lane-drop is created than is achieved by the current configuration. Rather than terminating the sixth lane in a forced lane-drop that constricts traffic flow, the proposed project extends the sixth lane into a dedicated exit lane that continues to carry the flow of traffic. See **Figure 1-2, Existing and Proposed Lane Configuration.**

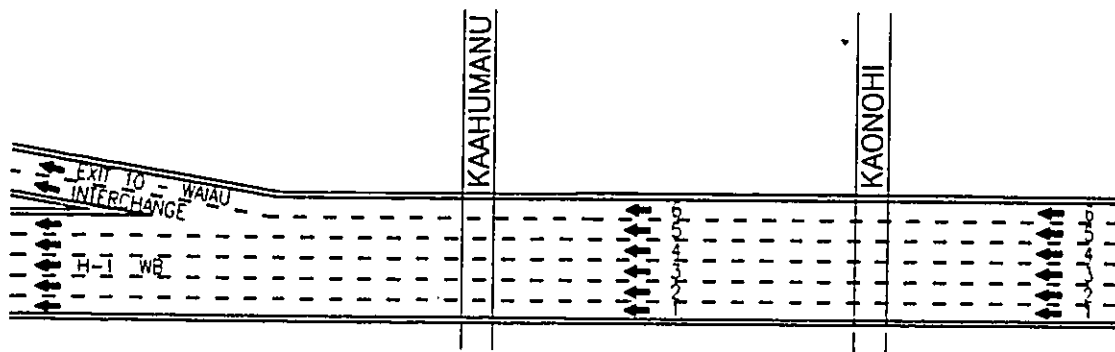
In doing so, the new lane configuration represents an improved link in the highway system that will enhance the overall operational conditions on the H-1 Freeway through the Pearl Harbor area. The elimination of the lane-drop at the Kaonohi Street overcrossing will relieve the current traffic congestion caused by the forced merge at this point. Drivers intending to exit at the Waiiau Interchange will not have to transfer from the sixth lane to the fifth and back to the sixth lane in their approach to the off-ramp. Additionally, the sixth lane will provide more room for traffic to weave prior to the Exit 10 off-ramp.

1.3.2 Design Standards

The proposed project is also recommended to address existing highway design deficiencies on this segment of the H-1 freeway. The segment of the freeway between the Kaonohi Street overcrossing and the Waiiau Interchange does not currently meet AASHTO freeway design standards for median shoulder, lane, and shoulder widths. The existing outside shoulder, at 8 feet, is less than the designated width of 10 feet for a freeway of this size. The 4-foot wide median shoulder does not provide adequate space for clearing accidents and stalled cars from the travel way. Nor does the median shoulder afford sufficient unobstructed space to meet line-of-sight standards through the highway curve. Additionally, the existing 11-foot lane widths do not comply with AASHTO standards of 12 feet.



Existing Condition H-1 Westbound



Condition Upon Completion of Proposed H-1 Westbound Widening

Figure 1-2
EXISTING AND PROPOSED
LANE CONFIGURATION

Interstate Route H-1 Widening
Westbound Direction
Kaono'hi Street to Wai'au Interchange
State of Hawaii
Department of Transportation

NOT TO SCALE

Recently completed improvements to the highway between the Halawa Interchange and Kaonohi Street overcrossing include widening of lane, median and outside shoulders to meet AASHTO (1994) criteria and SDOT-H (1980) freeway design criteria. The proposed project will continue these improvements with a minimum 12-foot outside shoulder, a 10-foot unobstructed median shoulder, and 12-foot wide lanes to maintain compliance with these criteria. Concrete barriers or guardrails will be constructed along the edge of the shoulder of Interstate Route H-1. Freeway lighting and signs will be located on or behind these structures.

1.3.3 Capacity

Highway design improvements are further proposed to assist movement of westbound traffic on this segment of the H-1 freeway. At present, traffic on this segment of the H-1 already exceeds design capacity by approximately 5 % during the PM peak hour. In 1996, westbound traffic on Interstate Route H-1 averaged over 108,000 vehicles per day (vpd), with weekday peak hour volumes of 4,660 vehicles per hour (vph) in the AM peak hour and 11,030 vph in the PM peak hour. Peak hour traffic consists mostly of commuters. The capacity of the westbound freeway segment is 10,260 vehicles per hour in the AM peak hour (without the zipper lane) and 10,470 vehicles per hour in the PM peak hour. (Ng, Julian, Inc. 1998.) See **Appendix D, Traffic Analyses.**

The proposed design will create additional lane space, increase travel way widths, and eliminate a lane-drop and forced merge at the Kaonohi Street overcrossing that creates a traffic bottleneck at this point. All of these improvements will result in enhanced roadway capacity and facilitate traffic flow in the westbound direction.

1.4 PROPOSED ACTION

The proposed project involves widening the westbound freeway corridor by one lane, from five lanes to six, along the north edge of the existing alignment between the Kaonohi Street overcrossing and the Waiiau Interchange. The new lane would pick up a dropped sixth lane, left at the Kaonohi Street overcrossing by recently completed freeway widening work, and extend it into the Exit 10 off-ramp at the Waiiau Interchange.

In addition to construction of a new lane, improvements under the proposed design include widening and restriping the existing lanes and widening the freeway shoulder and median to meet freeway design standards. When complete, this segment of Interstate Route H-1 will have a typical section of a 10-foot median shoulder, six 12-foot lanes, and a 12-foot outside shoulder. This proposed work will widen the existing freeway by a total of 29 feet.

In the proposed design, the deployed eastbound Zipper Lane would be accommodated within the two westbound lanes closest to the median, leaving four (4) open lanes for westbound traffic during peak morning hours. This configuration would also provide room for a 10-foot median during Zipper Lane deployment and improve horizontal sight distances along the curved sections of the freeway.

See: **Figure 1-3, Project Site**

Figure 1-4, Typical Cut Section - Existing and Proposed Laneage

Figure 1-5, Typical Fill Section - Existing and Proposed Laneage

Figure 1-6, Typical Viaduct Section - Existing and Proposed Laneage

Major construction activities include cut and fill along the outside shoulder to achieve grade, construction of retaining walls along segments where slope stabilization is necessary, and paving of the new lane and shoulder.

Additionally, a segment of H-1 in the vicinity of the Newtown Driving Range is paved with asphaltic-concrete. Some road deck settling has occurred on this segment, especially in the transition areas between the AC pavement and the concrete road deck of the adjacent sections, resulting in an uneven roadway surface. In areas where settling has occurred, the pavement will be reconstructed prior to restriping.

The proposed widening will affect a segment of the freeway approximately 1 1/4 miles in length, including a 1,500-foot long viaduct spanning the Waimalu Garden subdivision. Widening of the

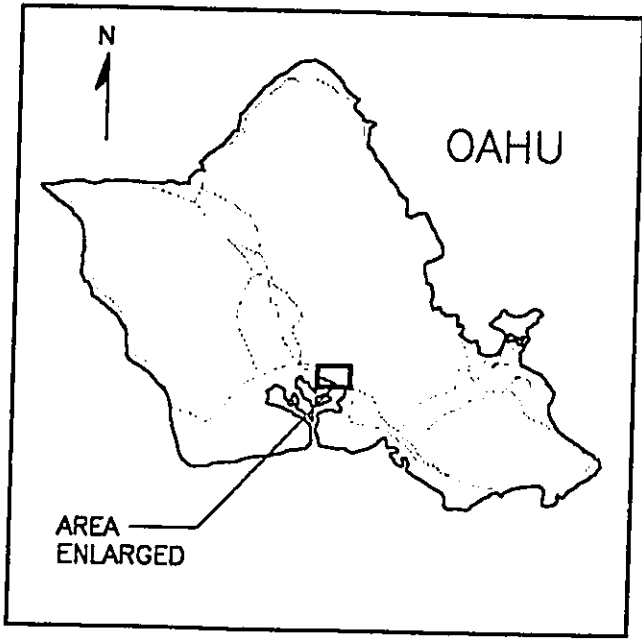
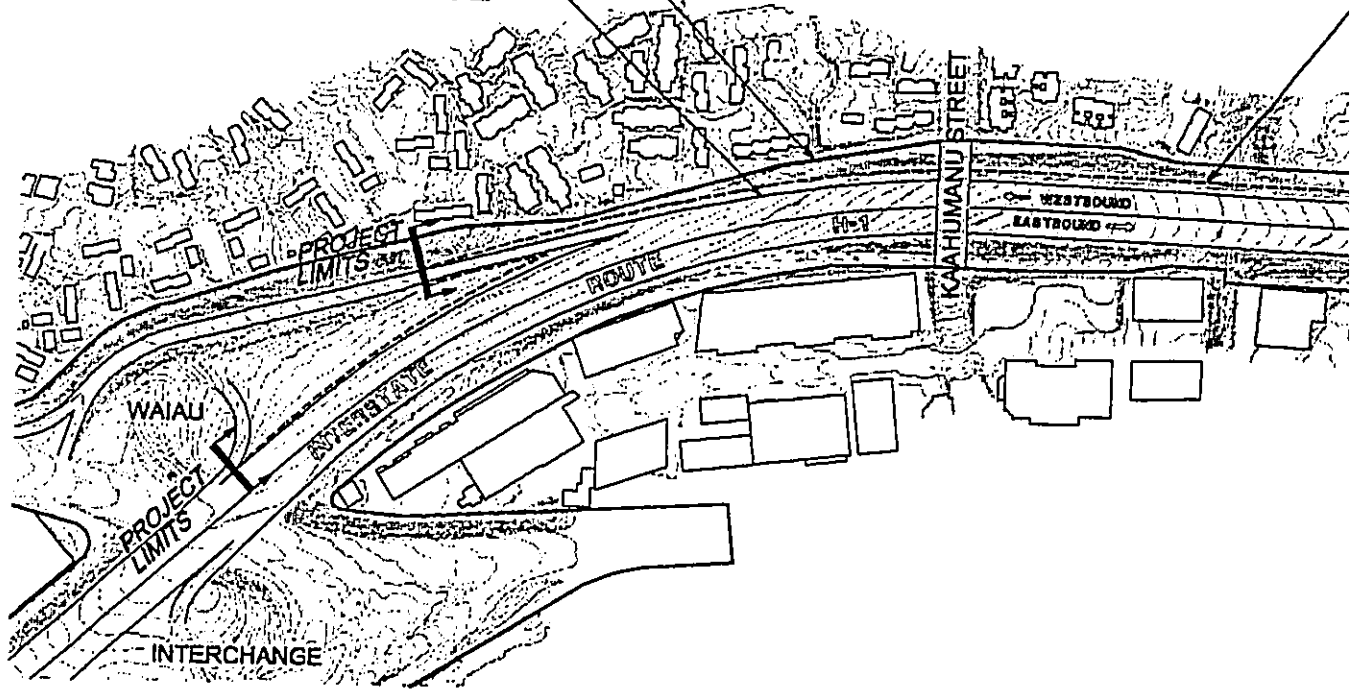
freeway viaduct involves installation of deep foundations (driven piles or drilled piers), new piers and extended decking and abutments to support widened cross-section and widened shoulders. The new length of viaduct deck will be supported by twelve new piers. New abutments will be constructed as extensions to existing viaduct abutments to accommodate the additional deck width. The piers, abutments, and viaduct deck will be constructed of reinforced concrete. Deck construction will include concrete roadway surfacing and tie-ins to existing drainage features.

Construction of the viaduct will initially be staged from the Waimalu Garden subdivision. Viaduct foundations will be installed first to support the piers on which the new road deck will rest. The foundations for most of the piers and the western abutment will be constructed of drilled piles, while the eastern abutment will be founded on a spread footing.

The new viaduct section will be structurally independent from the existing viaduct. This approach will help minimize shrinkage and settlement effects between the existing and new viaduct sections. Footing, pile cap, and deck connections between the existing and new sections will be completed in a later phase of construction in order to minimize differential effects caused by curing and settling of the new viaduct section. Concrete barrier walls will be constructed along the edge of the outside shoulder of the viaduct. SDOT-H is considering several designs for the addition of a debris barrier on top of the concrete wall to block objects thrown from the freeway. The debris barrier would likely be constructed of wire fencing. Freeway lighting and signage will be located on or behind the barrier. The final decision on the type of barrier will be made during the design phase of this project.

Also included in the project are roadway surfacing, installation of approximately 1,400 linear feet (lf) of reinforced barrier walls and 240 lf of guardrails, relocation of lighting and signage, tie-ins to existing drainage features, and landscaping. The additional westbound lane will increase the area of impermeable roadway surface on this section of the freeway by approximately 12,420 square yards (sy), from 100,458 sy to 112,878 sy.

EXISTING RIGHT-OF-WAY
EXISTING FREEWAY EDGE



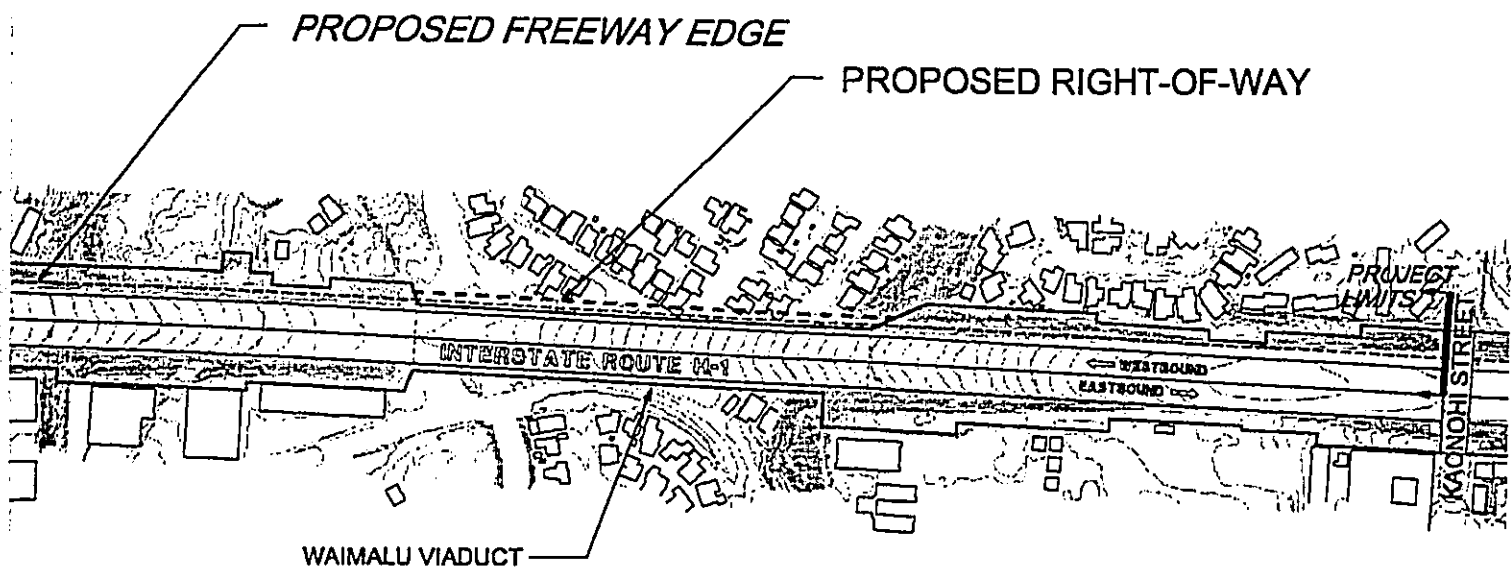
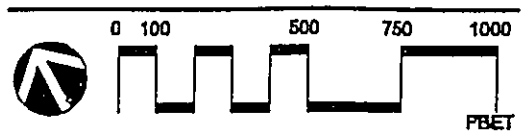


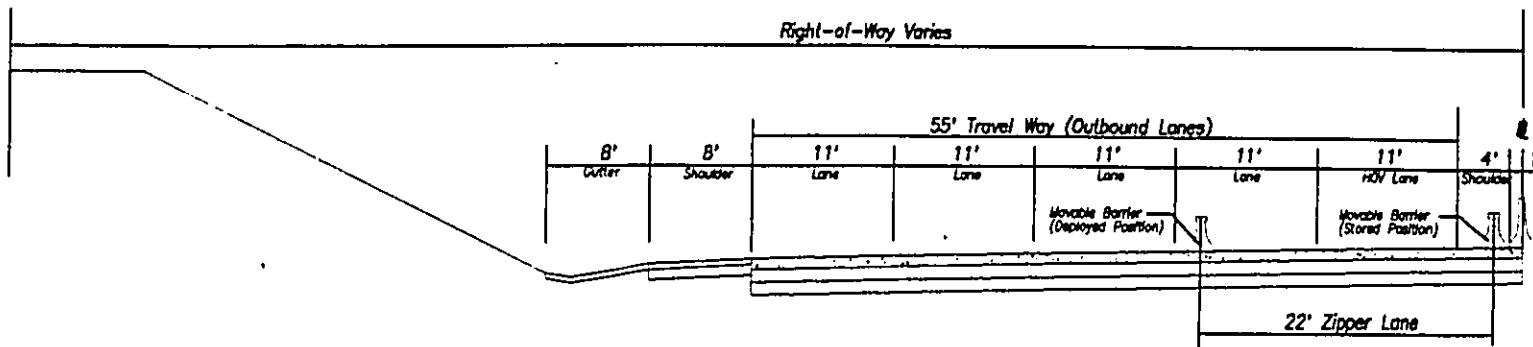
FIGURE 1-3
PROJECT SITE

Interstate Route H-1 Widening
Westbound Direction
Kaonoahi Street to Waiiau Interchange
State of Hawaii
Department of Transportation

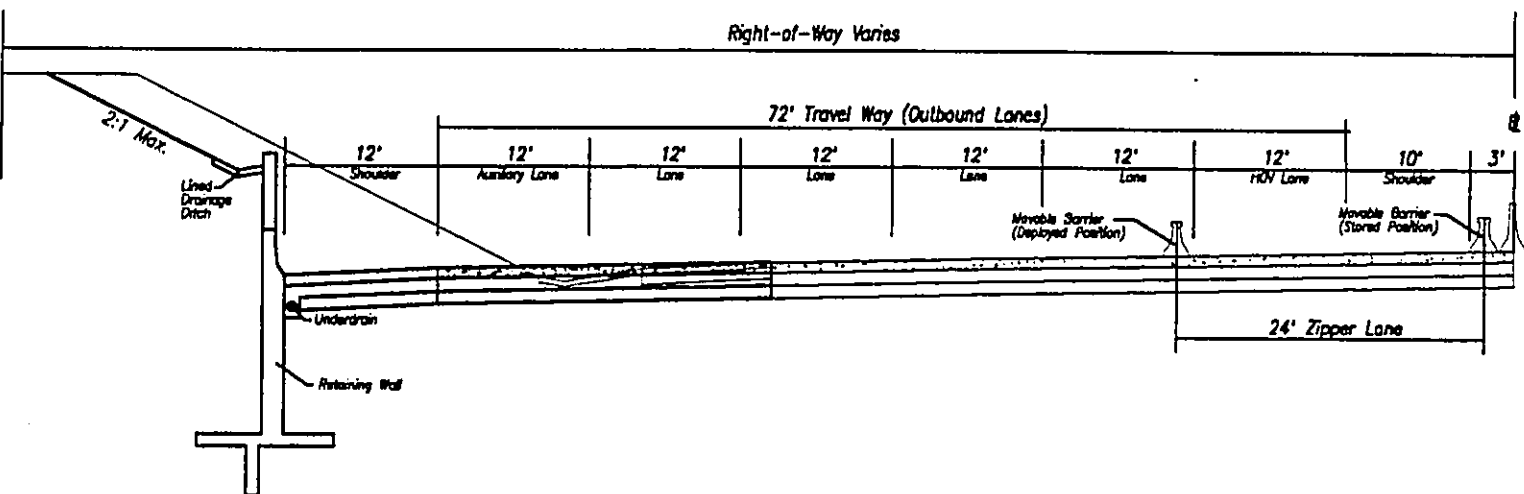


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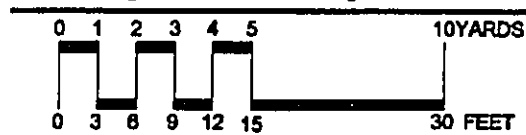
TYPICAL CUT SECTION - 1
EXISTING H-1 LANEAGE (KAONOHI OVERCROSSING TO WAIAU INTERCHANGE)
VIEW LOOKING EASTBOUND



TYPICAL CUT SECTION - 2
PROPOSED H-1 LANEAGE (KAONOHI OVERCROSSING TO WAIAU INTERCHANGE)
VIEW LOOKING EASTBOUND

FIGURE 1-4
TYPICAL CUT SECTION
EXISTING AND PROPOSED LANEAGE

Interstate Route H-1 Widening
 Westbound Direction
 Kaonoahi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation



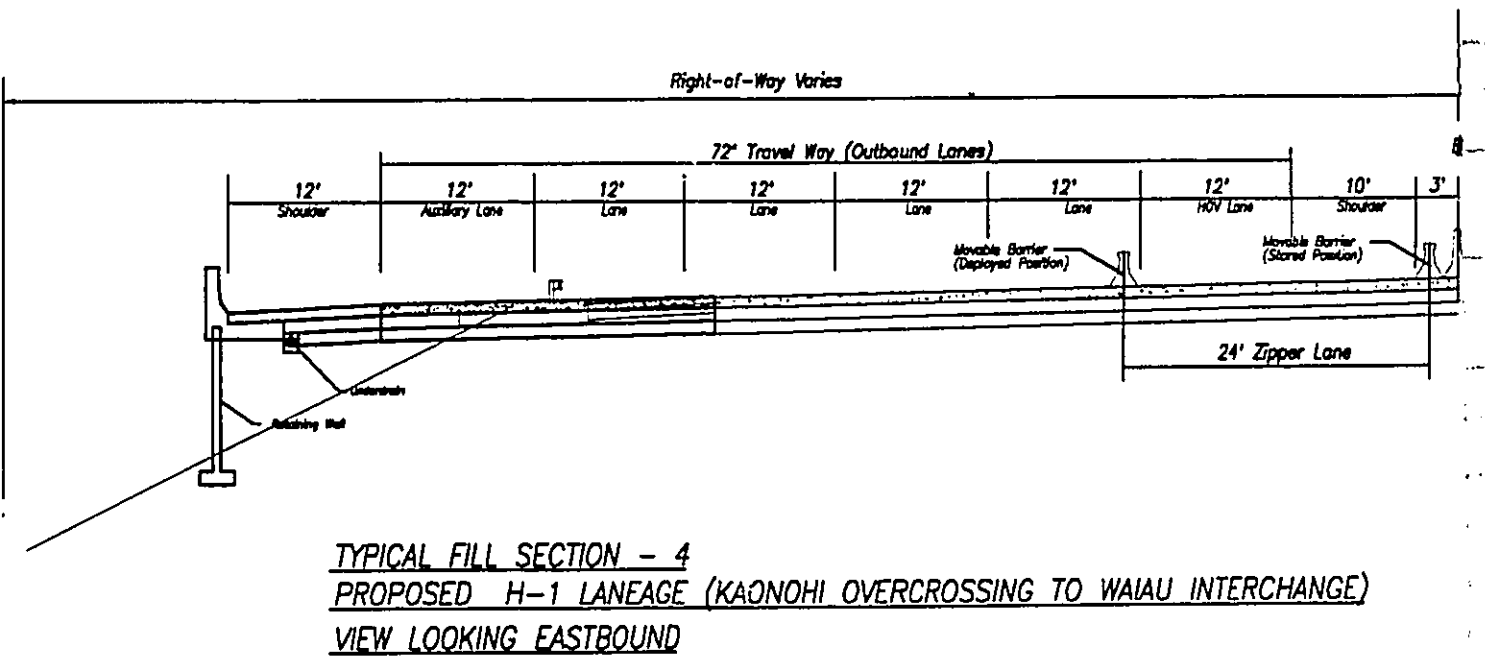
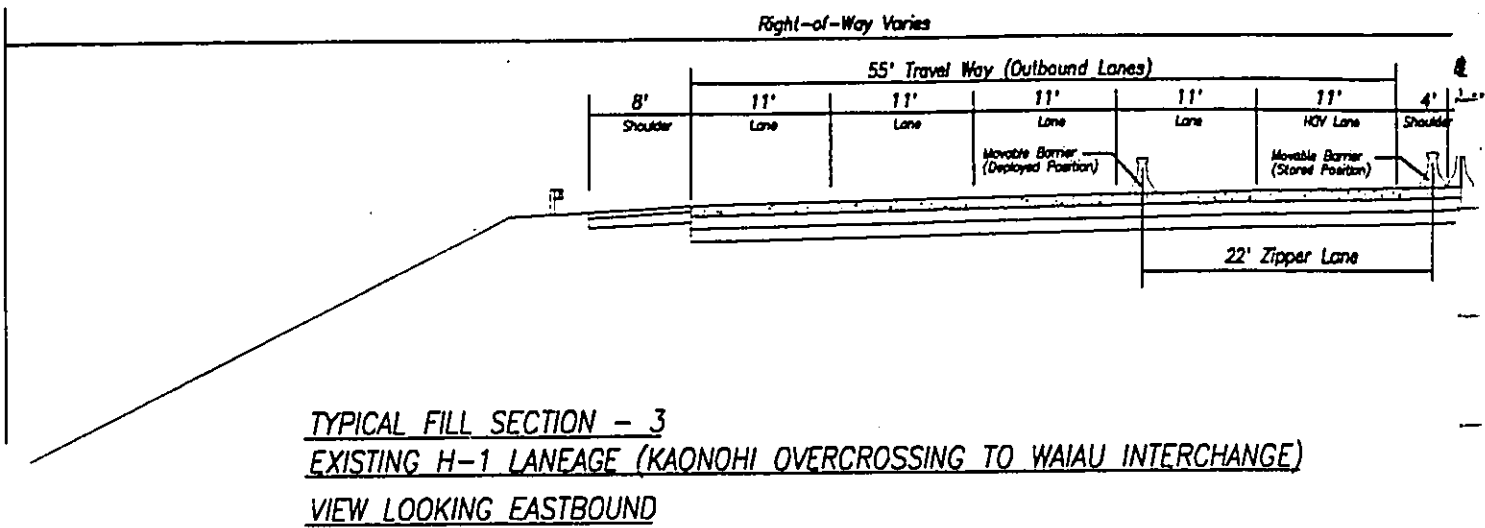
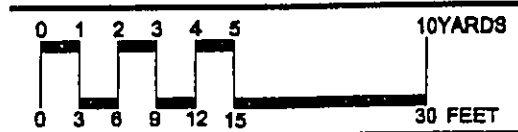
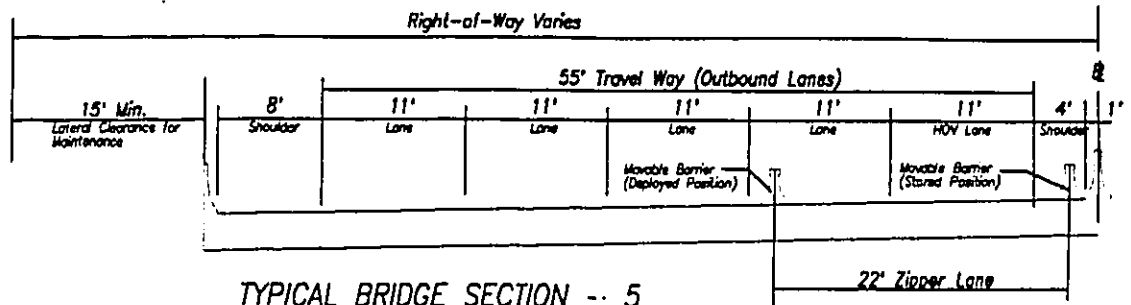


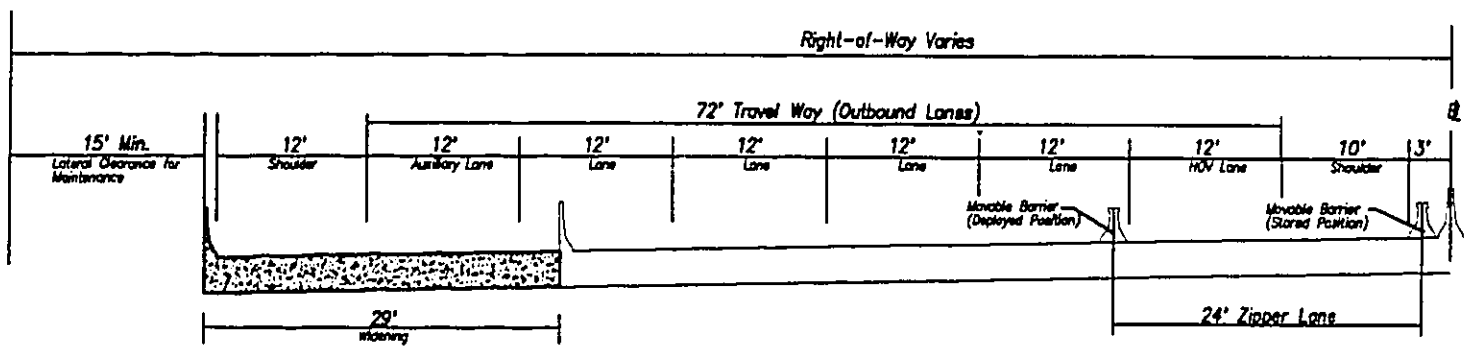
FIGURE 1-5
TYPICAL FILL SECTION
EXISTING AND PROPOSED LANEAGE

Interstate Route H-1 Widening
 Westbound Direction
 Kaonohi Street to Waiu Interchange
 State of Hawaii
 Department of Transportation





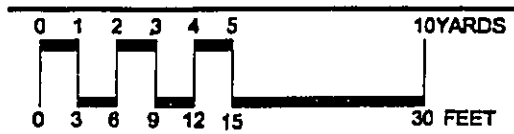
TYPICAL BRIDGE SECTION -- 5
EXISTING H-1 LANEAGE (WAIMALU VIADUCT)
VIEW LOOKING EASTBOUND



TYPICAL BRIDGE SECTION - 6
PROPOSED H-1 LANEAGE (WAIMALU VIADUCT)
VIEW LOOKING EASTBOUND

FIGURE 1-6
TYPICAL VIADUCT SECTION
EXISTING AND PROPOSED LANEAGE

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiiau Interchange
State of Hawaii
Department of Transportation



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1.5 PROJECT SCHEDULE AND COST

Project phases are tentatively scheduled as follows:

Design Spring 2000 - Spring 2002
Right-of-Way Activities Summer 1999 - Spring 2002
Construction Fall 2002 - Spring 2004

The preliminary construction cost estimate for this project is approximately \$55.5 million. The estimate is broken down in the following table:

Item	Amount (in millions)
Design	\$3.0
Right-Of-Way Acquisition	\$7.5
Construction	\$45.0
Total Estimated Project Cost	\$55.5

Funding for the project will be provided by the Department of Transportation, State of Hawaii, and the Federal Highways Administration. The federal government will contribute approximately 80 percent of the construction funds with the State providing the remaining 20 percent.

CHAPTER 2 ALTERNATIVES CONSIDERED

2.1 ALTERNATIVES CONSIDERED

In addition to the proposed project, several other alternative plans were considered for meeting the project objectives discussed above. Two general approaches underlie the alternatives considered in this document: 1) physical infrastructure improvements to bring this segment of Interstate Route H-1 up to interstate design standards and maintain efficient traffic flow in coordination with improvements recently constructed on the westbound H-1 / H-3 merge, and, 2) policy measures to encourage reductions in automobile traffic and more efficient management of transportation systems.

With regards to physical infrastructure improvements, the alternatives evaluated include the no action alternative, two different freeway widening design concepts, and improvements to parallel routes. Additionally, policy measures based on traffic systems management (TSM) and traffic demand management (TDM) are discussed, along with the potential for mass transit.

2.2 ALTERNATIVE 1: "NO-ACTION"

State and Federal legislation requires that a "no-action" alternative be considered to serve as a baseline against which potential actions can be measured. The no-action alternative would result in no effort to widen the existing freeway. Under this option, environmental impacts resulting from construction activities would be averted, and project costs would be spared. However, the highway would remain substandard with respect to interstate design requirements. Additional concerns with the "no-action" alternative are discussed as follows:

Currently, the westbound Interstate Route H-1 / H-3 merge results in a lane drop from six to five lanes in the vicinity of the Kaonohi Street overcrossing. Without mitigation, the resulting forced merge will continue to contribute to increased traffic congestion in the westbound Pearl City segment of the H-1 freeway.

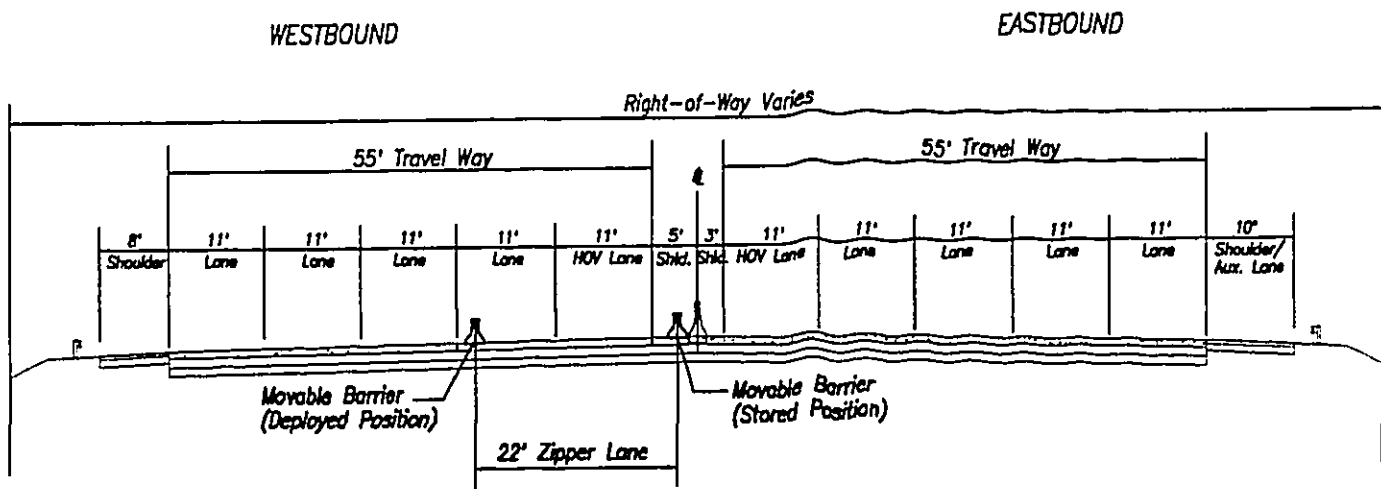
During morning peak hour traffic conditions, the two westbound lanes closest to the median are occupied by the Zipper Lane. The Zipper Lane is an eastbound, contra-flow lane that uses a moveable concrete barricade to “borrow” westbound lanes to increase capacity for eastbound (inbound) morning traffic. See **Figure 2-1, Existing Laneage with Zipper Lane.**

During deployment of the barricade, only three lanes of traffic remain open in the westbound direction. This results in reduced roadway capacity and space constraints that can hinder responses to emergency events and maintenance needs during the morning hours. Under the “no-action” alternative, no effort would be made to improve capacity and mitigate constraints resulting from use of the Zipper Lane.

Further, transportation demand will continue to increase and eventually regularly exceed level of service (LOS) standards on this segment of Interstate Route H-1. LOS is a qualitative measure used by traffic engineers to describe traffic conditions. Six levels have been defined, from LOS A (best operating conditions) to LOS F (worst). For a more detailed description of LOS, see **Appendix D, Addendum A, Traffic Operational Conditions - Level of Service.**

At present, the AM Peak Hour traffic is at LOS D. PM peak hour is currently at LOS F, which means that the theoretical capacity of the highway is exceeded during peak PM hours - resulting in gridlock and long delays for evening commuters. Without the proposed project, AM Peak Hour traffic is projected to increase to LOS E by the year 2020 and PM Peak Hour traffic is expected to remain at LOS F, although with a greater than 10 % increase in traffic volume.

Increased traffic congestion will cause deficiencies in transportation safety and reliability and will adversely affect economic activities and the overall quality of life on Oahu. The no action alternative was not considered a viable option because it does not fulfill the SDOT-H mandate to maintain a safe and efficient transportation system that will help Oahu continue to be a desirable place to live and visit.



EXISTING H-1 LANEAGE (KAONOHI OVERCROSSING TO WAIU INTERCHANGE)
VIEW LOOKING EASTBOUND

FIGURE 2-1
EXISTING LANEAGE WITH
ZIPPER LANE

Interstate Route H-1 Widening
 Westbound Direction
 Kaonohi Street to Waiu Interchange
 State of Hawaii
 Department of Transportation

NOT TO SCALE

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2.3 ALTERNATIVE 2: DESIGN CONCEPT - NO WIDENING /
UPGRADE FREEWAY LANEAGE

Under this alternative, proposed work to improve the highway to meet AASHTO standards would take place within the existing right-of-way (ROW) and no ROW acquisition would be required. To meet AASHTO standards for shoulder widths, one existing traffic lane would be eliminated to provide room for a 10-foot median shoulder and 12-foot outside shoulder. This action would decrease the number of lanes between Kaonohi Street and the Waiiau Interchange from five to four. This configuration would not allow for any additional widening of the remaining four lanes. During AM peak hour deployment of the Zipper Lane, the two westbound lanes closest to the median would be used by eastbound contra-flow traffic, thereby further reducing available westbound lanes to two (2) during peak morning hours.

This alternative would circumvent the need to acquire private property to widen the ROW and would bring this segment of the freeway up to interstate design standards. However, this design would result in reduced traffic capacity and increased congestion with related impacts on Interstate Route H-1. Therefore, this alternative was considered but rejected.

2.4 ALTERNATIVE 3: DESIGN CONCEPT - MINIMAL WIDENING /
REDUCED FREEWAY STANDARD

In this design, the westbound freeway corridor between the Kaonohi Overcrossing and Pearl City Off-Ramp would be widened by one lane, from five lanes to six. The new lane would pick up the dropped sixth lane, left at the Kaonohi Street overcrossing by the recently completed freeway widening project, and extend it into the Exit 10 off-ramp at the Waiiau Interchange. Under this alternative, no improvements would be undertaken to widen the existing lanes and shoulders to meet interstate design standards.

Improvements under this design would require widening the freeway by 12 feet to accommodate a new 12-foot lane while retaining the existing lane, median and outside shoulder widths as is. A typical section of the improved highway under this alternative would consist of 2 feet of useable median, five 11-foot lanes, one 12-foot lane, and an 8-foot outside shoulder. The two traffic

lanes closest to the median would be used by the Zipper Lane during morning deployment, leaving three lanes of traffic and 2 feet of useable median open to westbound traffic.

While the additional lane would eliminate the forced merge at the Kaonohi Street overcrossing and improve highway capacity over current conditions, it would not resolve existing highway design deficiencies. The median and outside shoulder widths would remain substandard with respect to AASHTO guidelines, providing insufficient space to accommodate stalled and accident vehicles cleared from the travel way. The substandard median shoulder would also be unable to offer unobstructed horizontal line-of-sight through the curve section of the highway.

Additionally, any widening of the highway will require significant improvements to the Waimalu Viaduct, including construction of support piers, abutments and road deck. Work on the viaduct under this design alternative will generate environmental and social impacts, including intermittent lane closures on H-1 and Kaahele Street, temporary detour of Pono Street (accessing Waimalu Gardens subdivision), and temporary noise and air quality impacts from construction equipment and activities. This alternative would also require relocation of several homes within the Waimalu Garden subdivision in order to accommodate construction activities and maintain fifteen feet of buffer space between the new freeway edge and the ROW boundary.

Although this alternative would improve freeway capacity and alleviate traffic congestion by eliminating the forced merge at the Kaonohi Street overcrossing, it would fail to correct existing design deficiencies and bring the highway up to interstate highway standards. For this reason, this alternative was considered, but rejected.

2.5 ALTERNATIVE 4: IMPROVEMENTS TO PARALLEL TRAVEL ROUTES

Infrastructure and traffic management improvements to travel routes running parallel to H-1 were also considered as an alternative to highway widening. Two major roadways, Kamehameha Highway and Moanalua Road, carry commuter traffic in an east-west direction in the vicinity of the project location. Options that were considered for increasing capacity on these roadways include:

- **Wider Roadways** - Widening the existing roadways by adding a new lane in either one or both directions would increase capacity and improve traffic flow. New lanes could also be dedicated to high-occupancy vehicle (HOV) traffic or as exclusive bus lanes, thereby boosting high-capacity transit measures. Due to the heavily developed urban environment through which both of these roadways run, however, widening either Kamehameha Highway or Moanalua Road would require extensive ROW acquisition and relocation of existing homes, structures, utilities, and other uses. Widening would also require realignment of the existing roadway and redesign of the numerous intersections along these two arterial streets.

- **High Occupancy Lanes** - HOV lanes could be established along Kamehameha Highway during peak morning and evening hours to encourage ride sharing among commuters and thereby help reduce the amount of traffic. This option could improve traffic flow on routes parallel to H-1, but would not address traffic flow and capacity concerns on the regional freeway system.

- **Restricted Vehicle Schedule** - During AM and PM peak hours, trucks and utility vehicles would be prohibited from using Kamehameha Highway and Moanalua Road in order to increase capacity for commuters at the times of greatest demand. Reserving traffic capacity for commuters when commuter demand is high while restricting truck traffic to periods when commuter demand is low allows for more efficient use of the roadways in moving people and goods.

- **Synchronization of Traffic Signals** - Traffic signalization is continually monitored and adjusted to maximize efficiencies in traffic flow across changing conditions throughout the day. Traffic signals on both Kamehameha Highway and Moanalua Road have been subject to intensive attention throughout their years of service and are already operating at the highest levels of efficiency. Adjustments to traffic signals will continue to be made periodically, but cannot be expected to generate substantial improvements in traffic flow through this area.

- **Contra-flow Lanes** - Moanalua Road provides two lanes of traffic in both directions along most of its passage in the vicinity of the project area. This limited laneage is impractical for a contra-flow lane because it would leave only one lane open to traffic heading in the direction opposite to the contra flow. Because Moanalua Road is used by commuters as a direct in-bound and out-bound corridor as well as an indirect transit route connecting Aiea and Pearl City residents with on- and off-ramps at the Waiau Interchange, traffic flow is generally heavy in both directions during AM and PM peak hours. Reducing capacity to one lane, in either direction, would cause significant congestion during peak commuting hours.

Kamehameha Highway serves as the main alternate commuter route to H-1 through the Aiea / Pearl City area, collecting arterial traffic from the residential and commercial centers between Waiawa and Halawa. Although the number of available lanes would permit a contra-flow lane to be borrowed in either direction, other roadway and traffic conditions make this option problematic. At numerous points along the travel way, commuters rely on mid-block access roads that would be cut off by a coned contra-flow lane. Closing these access roads off would place additional traffic burden on signalized block intersections, resulting in increased congestion and delays at traffic signals.

Although these measures, if implemented, could improve traffic flow on Kamehameha Highway and Moanalua Road, they would not improve traffic conditions on H-1 caused by the forced merge at the Kaonohi Street overcrossing, nor would they correct existing freeway design deficiencies to meet AASHTO standards. Thus, while they might help alleviate local traffic congestion, they would not satisfy regional traffic flow requirements.

2.6 POLICY MEASURES

In addition to the proposed physical highway improvements, policy alternatives to address traffic congestion were also considered. Policy measures are based on two approaches:

- 1) transportation systems management (TSM) measures to more efficiently utilize existing street

capacity, and 2) travel demand management (TDM) measures to encourage ridesharing, mass transit, and other alternative modes that reduce traffic demands.

TSM and TDM measures are intended to achieve the following objectives:

- Improve attractiveness of alternative travel modes;
- Provide disincentives to single-occupant automobile use;
- Reduce the need to travel during peak hours; and
- Improve roadway efficiencies through low-cost measures to increase vehicular capacity.

Some actions are already being taken to meet these objectives. The use of dedicated high-occupancy vehicle (HOV) lanes and the recently introduced HOV Zipper Lane create a rideshare incentive that helps reduce traffic demand. Additionally, the Zipper Lane functions as a contra-flow lane, utilizing existing roadway capacity more efficiently during peak hours, and at relatively low cost. Expanding the use of HOV and Zipper Lanes by adding lanes and routes and/or increasing the hours of use is also being considered. Additionally, to encourage multi-modal transportation and transit use, Park-and-Ride facilities have been developed to serve as both collection points for transit services and staging areas for formation of carpools and vanpools.

Other measures to reduce overall and peak-hour traffic demand and discourage single-occupant vehicle traffic are more challenging to implement. Among the policy actions that have been considered are measures such as variable work hours and telecommuting to encourage work behavior changes that will result in peak-hour trip reductions. Limits on parking supply and reduction in employee parking subsidies can further encourage ridesharing and use of alternative modes of transportation, including transit (The Bus, Vanpool, commercial commuter services), bicycles, and for some, walking. More extreme measures, such as road pricing, trip reduction ordinances, and vehicle use limitations have been considered as contingency plans. (Kaku Associates 1995).

Policy initiatives have been helpful in reducing the traffic burden on Oahu's transportation system, and they hold greater potential as they mature and gain acceptance by the island's commuting population. TSM and TDM measures will continue to be implemented and promoted in both the government and private sector, but they cannot be relied upon to address Oahu's transportation needs exclusive of improvements to the physical infrastructure.

In addition to enhancing traffic capacity on this segment of Interstate Route H-1, the proposed project is also being developed to address design deficiencies and maintain highway standards for on-ramps and shoulders. This latter objective requires physical improvements to the highway and cannot be addressed through the policy measures that have been considered.

2.7 HIGH-CAPACITY TRANSIT SERVICE

Alternatives for providing high-capacity transit service to meet regional mobility needs have been introduced in the 2020 Oahu Regional Transportation Plan (Kaku Associates 1995), and more recently in the Oahu Trans 2K Islandwide Mobility Concept Plan (Parsons Brinckerhoff / Carter Burgess 1999), the preliminary report of the City's Primary Corridor Transportation Project. Among the alternatives considered in these documents are an expanded bus system, a bus rapid transit system, and a light rail transit system.

A rapid transit system extending from Pearl City to the University of Hawaii at Manoa is included as part of the 2020 Oahu Regional Transportation Plan (Kaku Associates 1995). The rapid transit system is described as a high-capacity rapid transit system operating on exclusive ROW, and could be a rail rapid transit, monorail, light rail, or busway system. The plan does not specify or recommend a specific type of system, however, the rail rapid transit system was used in the transportation plan for costing purposes.

Similarly, the Trans 2K Concept Plan envisions a high-capacity transit system utilizing bus and/or fixed rail technologies to improve mobility through the Primary Urban Corridor between Ewa and downtown Honolulu. The conceptual plan includes a light rail alignment along

Kamehameha Highway in the Pearl City / Aiea area, ultimately linking with transit hubs downtown and a terminus at the University of Hawaii at Manoa. Also considered is an expanded bus system including an increased fleet, specialized buses, and improvements in bus-prioritized signals and bypass lanes. This concept is expanded in the bus rapid transit system, which could include busways, dedicated bus lanes, use of HOV lanes, bus signal priority, faster boarding measures, and the use of higher capacity articulated buses. (Parsons Brinckerhoff / Carter Burgess 1999).

Although these plans recommend high-capacity transit systems as alternatives for meeting existing and future transportation needs, implementation is not guaranteed. Rather, the inclusion of these alternatives in the plans allows them to proceed to a series of more detailed evaluations, and allows subsequent evaluation phases to be eligible for federal funding. During this period, the proposal for a high-capacity transit system could be postponed or terminated for any number of reasons, such as environmental impacts, costs, or lack of public support. (Kaku Associates 1995).

CHAPTER 3

ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION

This chapter assesses the environmental consequences of the proposed action described in Chapter 1. Potential impacts are described and evaluated. Mitigation measures that would eliminate and/or reduce potential adverse impacts are identified.

3.1 PROJECT LOCATION AND SITE CHARACTERISTICS

The proposed project involves widening Interstate Route H-1 in the westbound direction from the Kaonohi Street overcrossing to the Waiiau Interchange. This section of the H-1 freeway carries traffic from Aiea through Pearl City. It is located within Tax Map Key Zone 9, Section 8.

3.1.1 Interstate Route H-1 Characteristics

The H-1 Freeway is the primary roadway carrying traffic in the east-west direction through Honolulu. In the segment between Waiiau Interchange and Halawa Interchange, the freeway has a basic section of ten lanes, with five in each direction. The typical section for the westbound segment between Kaonohi Street and Waiiau Interchange consists of 5 lanes, each 11 feet wide, with clear distances of 2 feet at the median and at least 8 feet on the outside shoulder.

The median lane is reserved for high occupancy vehicles (HOVs) during peak hours. In the eastbound direction, the Zipper Lane is available for use during the AM peak hour to increase capacity. The Zipper Lane uses a moveable concrete barrier to "borrow" westbound lanes for eastbound morning traffic. During use of the Zipper Lane, the two westbound lanes closest to the median are not available for westbound traffic.

Traffic in the westbound direction enters this segment of Interstate Route H-1 at the Halawa Interchange from Interstate Route H-1 (three lanes), Interstate Route H-3 (one lane), and Moanalua Road (two lanes). The westbound Interstate Route H-1 carries six lanes of traffic from

the Moanalua Road merge up to the Kaonohi Street overcrossing where the outside lane terminates with a forced merge into five lanes.

3.1.2 Area Characteristics

Lands surrounding the proposed project area are urban in character. Lands north of the freeway alignment are primarily developed with single family residences and apartment dwellings interspersed with open-space preservation lands. Development south of the freeway segment includes single family residences, two elementary schools (Pearl Ridge and Waimalu), public parks, and the Waiiau Light Industrial Park. Moanalua Road and Kamehameha Highway are aligned to the south of the freeway in an east-west direction. These streets are lined with commercial and service activities, including the Pearl Ridge Shopping Center, Waimalu Plaza, Waimalu Center, and the West Ridge Shopping Center, and serve as major access corridors to area residents. An elevated viaduct carries the H-1 over the Waimalu subdivision, an area of single-family homes, and across Waimalu Stream. The space beneath the viaduct is occupied by the Waimalu Grace Brethren Church and Children's Center, and a fenced lot used by Pacific Oldsmobile for car storage.

3.1.3 General Environmental Characteristics

The proposed project site is located inland from East Loch of Pearl Harbor, between approximately 80 to 100 feet above mean sea level (msl). The topography is characterized by gradual slopes of up to 7 percent. The land surrounding the site has been extensively modified by grading. The most significant geographical features in the area are Waimalu Stream and Gulch, over which the freeway traverses on the Waimalu Viaduct.

The area is characterized by abundant sunshine, persistent northeast tradewinds, relatively constant temperatures, moderate humidities, and the infrequency of severe storms. Temperatures in the area range on average from 60 to 90 degrees Fahrenheit throughout the year. Annual average rainfall is less than 30 inches with most of the rainfall occurring between October and March. Monthly rainfall measured at the nearest rain gage station (in Waipahu) ranges between 2 to 5 inches. (University of Hawaii 1983).

3.1.4 Community Characteristics

Neighborhoods in the vicinity of the project site are generally well-established, tightly-knit communities. Many of the residents in the Waimalu Garden and Waimalu Tract subdivisions are the original owners of homes constructed in the late 1950's and early 1960's, or are the children of the original owners. Other housing stock in the area dates from the early and mid- 1970's. A more recent resident population entered the community in the late 1980's with the construction of several apartment buildings in the vicinity of the Pearl Ridge Shopping Center, including Pearl Horizons Apartments, and the Pearl Ridge Square Apartments. The majority of these apartments are not owner-occupied.

Two community associations are active in the area; the Waimalu Park Community Association and the Newtown Estates Community Association. Community activities and social interactions tend to be localized around immediate neighborhoods. The two elementary schools and two community parks in the vicinity of the viaduct also serve as hubs of activity for area residents. The Waimalu Grace Brethren Church (WGBC) is also an active presence in the community. The church conducts regular church services and operates a pre-school from its location on adjoining lots beneath the Waimalu viaduct.

3.2 RELOCATION IMPACTS

3.2.1 Property Ownership and Acquisition

In order to accommodate widening of the freeway and ROW, the proposed project will require the acquisition of private properties in the Waimalu Garden subdivision along the alignment of the Waimalu Viaduct. In the area spanned by the viaduct, property patterns are generally characterized by small lot fee-simple ownership and lease-hold corresponding to single-family residency. Notable exceptions include the WGBC, which leases property from the State on which it operates a church and preschool, and Pacific Oldsmobile, which leases a 38,000 square foot paved lot beneath the viaduct. The State of Hawaii and the City and County of Honolulu also own several remnant parcels in the immediate vicinity of the project site.

3.2.2 Project Impacts

ROW acquisition will affect nine (9) parcels with houses, as listed in **Table 3-1, Impacted Residential Properties**. Of these, seven (7) parcels are north of the viaduct, and two (2) parcels are south of the viaduct. The two residential parcels south of the viaduct that are to be acquired are impacted by loss of access during construction. An additional parcel (TMK# 9-8-26: 59) located south of the viaduct adjacent to the two residential properties is occupied by a Board of Water Supply pumping station. This unmanned facility has direct access to Moanalua Road and will not require relocation. In addition, the non-residential parcels listed in **Table 3-2, Impacted Wasteland, Vacant Land, and Easement Parcels**, require full or partial acquisition. The total estimated cost to the State for the acquisition of these properties is approximately \$7.5 million dollars. The estimated cost of ROW acquisition is based on a survey of current real estate prices for comparable properties being sold in the surrounding area.

Table 3-1, Impacted Residential Properties				
	TMK No.	Use	# of Bedrooms	Total Area (sq ft.)
1	9-8-26:09 9-8-26:10 [†] 9-8-26:63 [†]	SF	7	10,377 1,200 2,134
2	9-8-26:26	SF	4	5,464
3	9-8-26:27	SF	6	5,933
4	9-8-26:47	SF	3	5,207
5	9-8-26:48	SF	4	5,500
6	9-8-26:65	SF	4	4,907
7	9-8-26:69*	SF	3	7,401
8	9-8-26:73*	SF	6	6,431
9	9-8-27:02	SF	4	6,224

[†] TMK# 9-8-26: 10 (2,134 sq ft.), and 63 (1,200 sq ft.) have been dropped into parcel 9-8-26:09 for a combined total of 13,711 sq ft..

* Residential parcels TMK # 9-8-26: 69, and 73 are located south of the viaduct and are impacted only by loss of access.

SF = Single Family

Table 3-2, Impacted Wasteland, Vacant Land, and Easement Parcels			
	TMK No.	Use	Total Area (sq ft.)
1	9-8-26:16	WL	1,817
2	9-8-26:23	WL	2,309
3	9-8-26:24	VL	697
4	9-8-26:25	VL	5,140
5	9-8-26:57	VL	17,685
6	9-8-26:71	ESMT	1,350
7	9-8-26:72	VL	124,756
8	9-8-60:15	VL	18,295

WL = Wasteland, VL = Vacant Land, ESMT = Easement

Figure 3-1, Proposed Right-of-Way and Impacted Properties, depicts the proposed expanded ROW boundary and affected properties.

Acquisition of residential properties will require the relocation of impacted families. Where the new construction will result in demolition of dwelling structures or substandard lot sizes, or will otherwise negatively impact the function or safety of the property for residential use, permanent relocation of the household will be necessary. For reasons of safety, all of the impacted households will be relocated prior to the period of construction. The State will obtain title to the land required by the widened ROW. The State is currently in communication with affected residents to discuss relocation options and assistance benefits.

Operations at the WGBC and Pre-School, including services, classes, and administrative activities, will require relocation as a result of the proposed project. Currently, WGBC has a congregation of 240 people and pre-school enrollment of 54 children. Additionally, the functional relationship between the parsonage and the church will be impacted by the permanent acquisition of TMK 9-8-26: 9. Other Church relocation hardships include:

- Approximately 10% of the congregation currently resides within walking distance (½ mile) of the church and regularly walk to services and church events. These people will likely have to drive to a new facility.
- Approximately 25% of the children enrolled in the pre-school walk to the school and more than 50% of the current pre-school enrollment is location-dependent. Disruptions to pre-school activities because of relocation may result in temporary or permanent loss of enrollment at the school.
- Church facilities are used by area residents and social groups for non-church meetings. These groups will need to make arrangements at other facilities in the area, such as Waimalu or Pearl Ridge Elementary Schools.

Project activities will not interrupt the use of Waimalu Community Park or the Pearl Ridge Park. No disruptions to Waimalu Elementary School or Pearl Ridge Elementary School are anticipated.

3.2.3 Mitigation Measures

Property owners whose real property is to be acquired, and residents who will be displaced by the proposed project will be eligible for compensation and relocation assistance under the terms and rules of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (The Uniform Act), and the Uniform Relocation Act Amendments of 1987. These acts provide for the fair and equitable treatment of persons whose property will be acquired or who will be displaced because of programs or projects financed with federal funds.

Policies and provisions regarding the acquisition of real property, relocation assistance advisory services, and relocation payments are published in the Federal Register of March 2, 1989, and reprinted each year in the Code of Federal Regulations, Title 49, Part 24. (USDOT 1992, 1995). Hawaii Revised Statutes, Title 15, Chapter 264, Part 2, Federal Aid Highways, defers to federal rules and regulations regarding compensation and assistance for displaced families.

Relocation advisory services and payments will be administered by the State Department of Transportation. These services will assist displaced residents in relocating to comparable replacement housing that meets the criteria of "decent, safe, and sanitary", conforming to applicable housing and occupancy codes as established by federal regulations.

Any aggrieved person may file a written appeal with SDOT-H if the person believes SDOT-H has failed to properly determine his or her eligibility for relocation assistance advisory services, or the amount of the relocation payment. The person making the appeal has the right to be represented by legal counsel or other representative, but solely at their own expense. SDOT-H will reply with a written determination and explanation of the decision. If SDOT-H's position is still considered to be unsatisfactory, the aggrieved person may seek a judicial review.

Prior to construction, the State Department of Transportation, Highways Division (SDOT-H) will conduct negotiations with affected property owners to reach agreements on the acquisition of lands required for the expanded ROW. Property will not be acquired without just compensation that is fair and equitable to both the property owner and to the public. Just compensation will be determined through a property appraisal conducted by an independent, certified appraiser with the participation of the property owner.

The SDOT-H Rights-of-Way Branch conducted a preliminary search of real estate available in the surrounding area that could accommodate displaced residents. Property values of the impacted residences range from approximately \$250,000 to \$525,000, with most falling between

\$275,000 and \$375,000. Impacted residences range in size from 3 to 7 bedrooms (see Table 3-1). The real estate search produced 124 listings for comparably priced residential properties ranging in size from 3 to 8 bedrooms (See **Appendix I, Available Housing - Real Estate Listing**).

The State and WGBC will jointly discuss options for permanent relocation. Alternative church facilities to house church administrative functions and to accommodate services for a congregation of 240 will need to be located. Additionally, replacement facilities for pre-school operations will have to be located or constructed at a new site.

SDOT-H Rights-of-Way Branch conducted a real estate search for suitable replacement parcels within the Aiea / Pearl City area. The search found no property currently available that would suit the relocation needs of the Church. SDOT will continue to assist the Church in its search for a new location, however because the Church is classified as a business/non-profit organization, the State is not obligated to secure comparable replacement property as is required for residential properties. Responsibility for locating replacement property rests with WGBC.

Under the federal rules and regulations, the church parsonage does not meet eligibility requirements for residential relocation assistance and will be treated as an asset of WGBC. As part of its overall compensation package, WGBC will be paid the fair market value of the parsonage property as determined through an independent appraisal process.

During relocation activities, some of the children may have to be accommodated in other, nearby pre-schools. SDOT-H relocation advisory services will provide assistance in finding temporary pre-school facilities or in identifying surrogate schools that can accommodate displaced students.

Following the relocation of the Church and residences, vacated lots will be maintained by SDOT-H. Existing residential structures will be sold and removed or demolished to clear the parcels for use as open space. All of the remnant land except the State parcel beneath the viaduct are subject to disposal to abutting property owners or maintained as State Highway land.

3.3 NOISE IMPACTS

3.3.1 Noise

Ambient noise at and around the project site is dominated by vehicular traffic on Interstate Route H-1 and Moanalua Road. Remote noise from aircraft combined with naturally occurring sounds from wind and other sources generates relatively low background noise. At present, traffic noise levels regularly exceed allowable noise abatement criteria established by the U.S. Federal Highways Administration (FHWA) and Hawaii State Department of Transportation, Highways Division (see Table 3-3).

3.3.2 Project Impacts

Noise impacts are discussed in terms of traffic-related impacts and construction-related impacts.

3.3.2.1 Traffic-Related Impacts

Traffic noise levels corresponding to the morning and afternoon peak hour travel periods for the existing and future year, 2020, have been calculated for locations north and south of the project segment on the H-1 Freeway. Traffic noise levels were calculated using the FHWA Traffic Noise Model (TNM), Version 1.0, based on existing and predicted peak hour traffic levels, types of vehicles in the traffic mix, topography, structural and vegetation barriers, and other environmental factors. (See Appendix G, Acoustic Study for the H-1 Freeway Widening.)

The SDOT-H Noise Analysis and Abatement Policy considers a noise impact to occur when the predicted traffic noise levels approach or exceed the FHWA's noise abatement criteria, or when the predicted traffic noise levels substantially exceed the existing noise levels. SDOT-H defines "approach" as being at least 1 dBA less than the noise abatement criteria and a substantial increase as being at least 15 dBA. Federal noise criteria are presented in the following table.

Table 3-3, Federal Highway Administration Recommended Sound Level Based on Land Use		
Activity Category	Leq(h)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Note: Acoustical terminology described in Appendix G, Addendum C.

The following conclusions were made based on the TNM analysis:

- SDOT-H's "greater than 15 dBA increase" criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure. Maximum increases in traffic noise levels in the project area should not exceed 3.0 dBA as a result of growth in traffic volumes and construction of the additional lane.
- With or without the proposed improvements, future traffic noise levels at essentially all residences and public use structures within 166 meters (544 feet) of the freeway centerline and with direct line-of-sight to the freeway lanes are expected to exceed SDOT-H 66 Leq criteria for Activity Category B.
- The Pearl Ridge Community Park and Pearl Ridge Elementary School will be considered for noise mitigation measures.

- Three warehouse buildings at the west end of the Waiiau Light Industrial Park are impacted by traffic noise exceeding SDOT-H's noise abatement criteria.

3.3.2.2 Construction-Related Impacts

Construction of the proposed freeway widening will involve excavating, grading, pile driving, concrete casting, the placement of pre-cast structural components, and paving. The various construction phases will likely generate noise which could impact nearby areas. Noise levels of diesel powered construction equipment typically range from 80 to 90 dBA at 50 feet distance. The actual noise levels produced are dependent on the construction methods employed during each phase of the construction process. Pile drivers and earth moving equipment, including diesel engine powered bulldozers, trucks, backhoes, front-end loaders, graders, etc. will probably be the noisiest equipment used during construction. However, as construction will be temporary, no lasting impact from proposed construction activities is expected.

Nearby residential areas, particularly those units immediately adjacent to the project site, will likely be affected by noise levels exceeding the allowable daytime standards of 55 dBA set by Department of Health Rules, Title 11, Chapter 43. These areas include the Waimalu Garden, Waimalu Tract, Hillside Terrace, and Waiiau Gardens Kai subdivisions. Additionally, Pearl Ridge Elementary School and Waimalu Elementary School, located immediately south of the freeway will be affected by construction noise. Adverse impacts from construction noise are not expected to pose a hazard to "public health and welfare" due to the temporary nature of the work, and due to the mitigation measures that will be employed to minimize noise impacts.

3.3.3 Mitigation Measures

Traffic noise and construction noise mitigation measures are discussed separately below.

3.3.3.1 Traffic Noise Mitigation Measures

Future traffic noise levels (projected to the year 2020) are predicted to continue to exceed the SDOT-H 66 Leq(h) noise abatement criteria for Activity Category B at noise sensitive structures along the H-1 freeway with or without the proposed project. Noise mitigation measures are

being considered for locations that are impacted by noise levels that “approach or exceed” SDOT-H’s noise abatement criteria (see **Appendix G, Acoustic Study**, Table 3 and Figure 3). Noise mitigation measures that are likely to be incorporated into the project include constructing roadside noise barrier walls, use of landscaping or other barriers within the ROW, and noise insulation for impacted public use or non-profit institutional structures.

Noise Barrier Walls

The use of noise barrier walls was evaluated according to the criteria of “reasonable and feasible” described in SDOT-H’s Noise Analysis and Abatement Policy (1997). Noise abatement measures are evaluated for reasonableness and feasibility based on cost, engineering and design considerations, number of benefitted residences, visual impacts, other environmental impacts, and the amount of noise reduction they provide. According to FHWA and SDOT-H policy, noise abatement measures that cost \$35,000 per benefitted residence or less are deemed to be reasonable for cost. Reasonable costs for noise mitigation at Pearl Ridge Elementary School and Pearl Ridge Park were calculated using a comparative derivation method developed by the State of Florida, Department of Transportation (F-DOT 1997). See **Appendix G, Addendum B**.

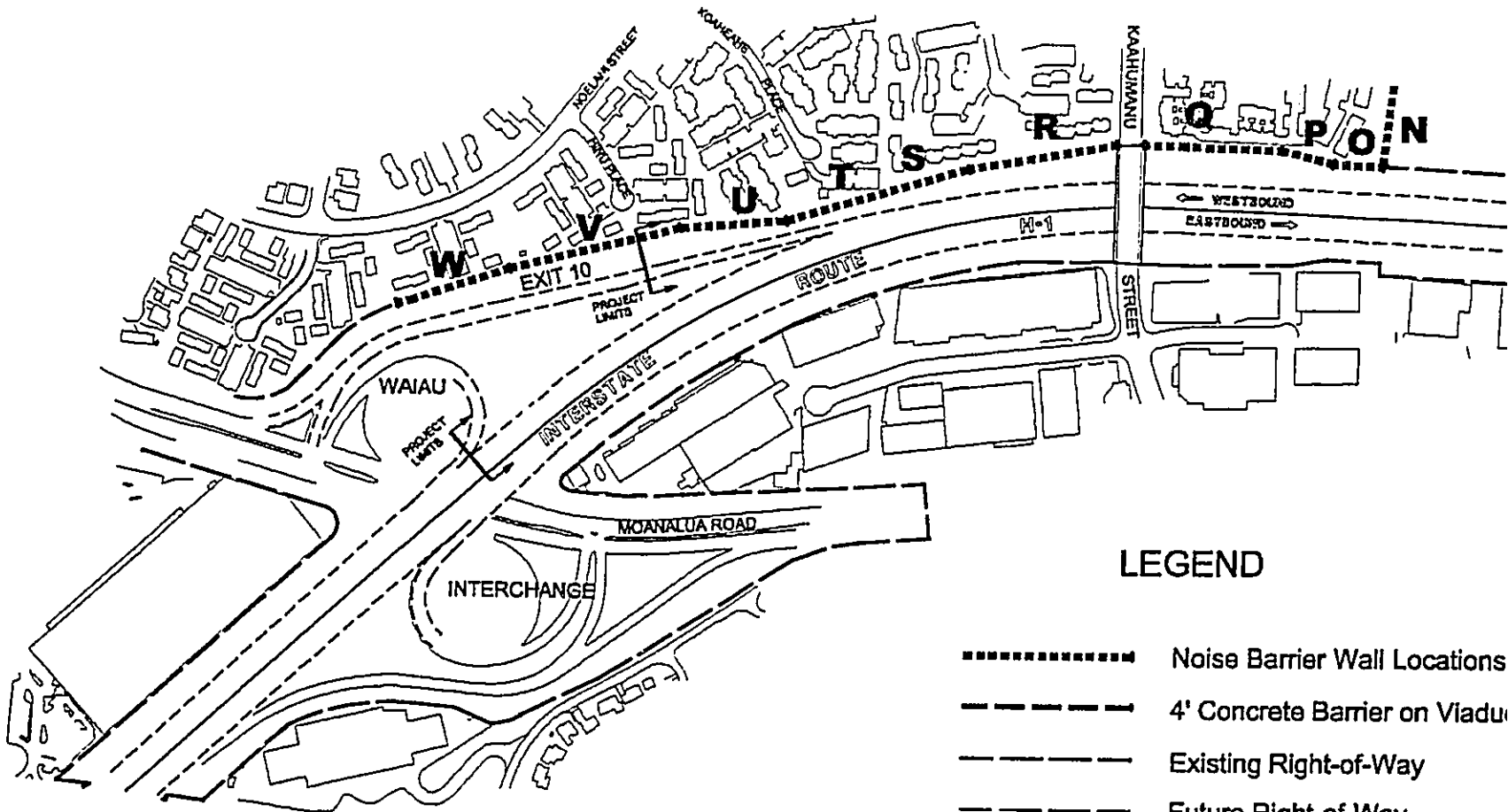
Noise abatement measures must be designed to achieve “substantial noise reductions”, defined by SDOT-H policy as a reduction of at least 5 dBA, to be considered reasonable. Visual impacts to residences are also a major consideration in determining the reasonableness of proposed noise barrier walls.

Noise barrier walls designed to achieve a reduction of 5 dBA are likely to be incorporated in the project. **Figure 3-2, Noise Barrier Wall Alternatives**, depicts wall locations and height requirements necessary to achieve a 5 dBA reduction in areas of “frequent human use” where projected noise levels meet state and federal noise mitigation criteria. Areas of “frequent human use” refer to areas such as backyards, gardens, patios, community parks, and other exterior locations where people regularly spend extended periods of times. Parking lots, landscape areas, walkways, and other areas where human use is intermittent and transient are not considered to be areas of “frequent human use”, and thus are not considered for noise mitigation.

Noise barrier wall locations and heights were determined based on an acoustic study of existing and projected noise conditions in the project area (See **Appendix G, Acoustic Study for the H-1 Freeway Widening, Addendum A, Noise Barrier Wall Height Calculations**). In some areas depicted in Figure 3-2, wall heights necessary to achieve a 5 dBA reduction were deemed to be too high to be reasonably constructed within existing cost and design constraints. Wall sections costing more than \$35,000 per benefitted residence were rejected as unreasonable based on SDOT-H abatement cost policy. In addition to cost concerns, wall heights in excess of 12 feet are not being considered due to the visual impact they would create. Areas where noise barrier walls were considered but were determined to be unreasonable to build due to cost or design concerns include: Pearl Ridge Square Apartments; Kaonohi Ridge Condominiums, Waiiau Gardens Kai subdivision, and Waiiau Garden Villa subdivision.

Figure 3-3, Noise Barrier Walls Being Considered, depicts locations and heights of noise barrier walls where they can be reasonably and feasibly constructed. Cost of wall construction and the number of benefitted residences are also shown on the figure. Benefitted residences are those that comprise the first row of houses fronting the highway where direct shielding from the noise barrier wall is projected to achieve a 5 dBA noise reduction. Residents who would be affected by the noise barrier walls were contacted by mail during preparation of the Draft EA. Their input will be taken into consideration during the final wall design. (See Appendix B, Responses to Comments Received During the Draft Environmental Assessment 30-Day Comment Period and September 15, 1999 Public Hearing).

The walls depicted in Figure 3-3 are being considered based on their ability to achieve a significant noise attenuation benefit and perceptible improvement over existing conditions within design and cost constraints that limit wall construction. If conditions substantially change during final design, the walls depicted in Figure 3-3 might not be provided. A final decision on the installation of the noise barrier walls being considered will be made upon completion of the project design.



LEGEND

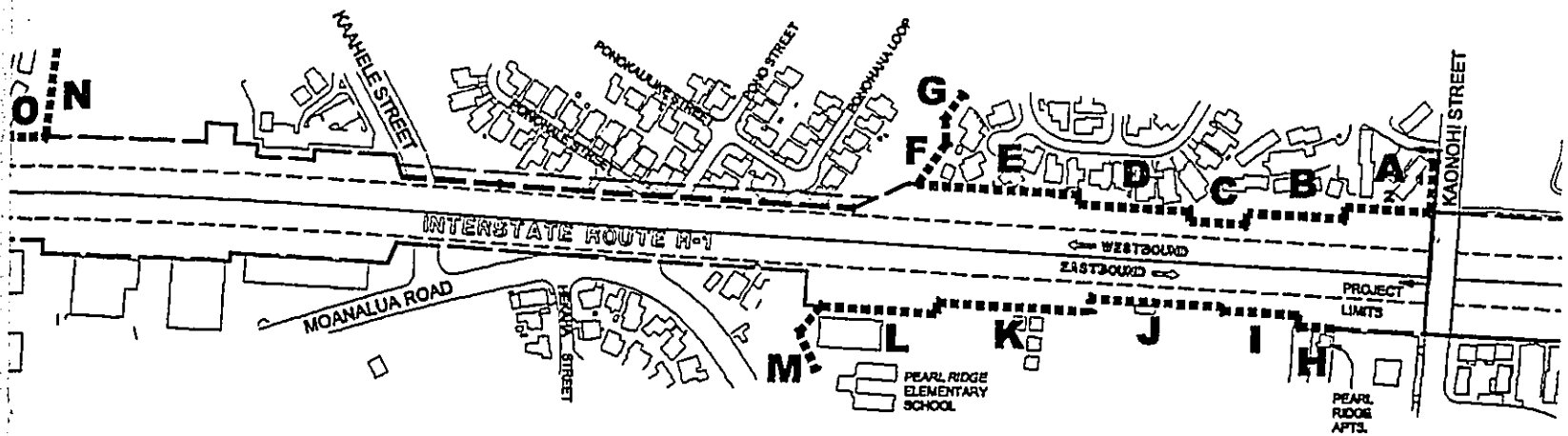
- Noise Barrier Wall Locations
- 4' Concrete Barrier on Viaduct
- Existing Right-of-Way
- Future Right-of-Way
- Existing H-1 Roadway

Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
A₁	5	112	3	\$36,960
A₂	10	186	3	\$112,530
B	11	210	6	\$150,150
C	18	128	4	\$180,180
D	7	252	4	\$103,950
E	7	354	4	\$155,760
F	10	111	2	\$61,050
G	10	118	0	\$64,900
Total This Segment				\$865,480

Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
H	4	78	school	\$23,595
I	9	167	school	\$98,443
J	8	292	school	\$112,420
K	8	334	school	\$146,860
L	8	255	school	\$112,200
M	9	165	school	\$72,600
Total This Segment				\$564,218

Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
N	13	190	4	\$172,410
O	8	117	2	\$51,480
P	4	128	0	\$31,680
Q	3	321	5	\$88,275
Total This Segment				\$343,845

Measurements in Feet
 Wall heights represent an average height for each segment.
 Wall heights vary according to topography at wall base.
 See: Appendix F, Addendum A, Noise Barrier Wall Height Calculations.



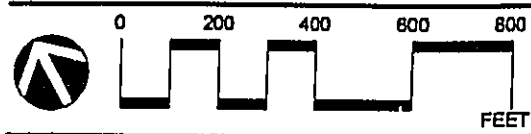
Wall Locations
 Barrier on Viaduct
 Off-Way
 On-Way
 Roadway

All Segment	
Benefitted Residences	Estimated Cost
4	\$172,425
2	\$51,480
0	\$31,880
5	\$88,275
\$343,860	

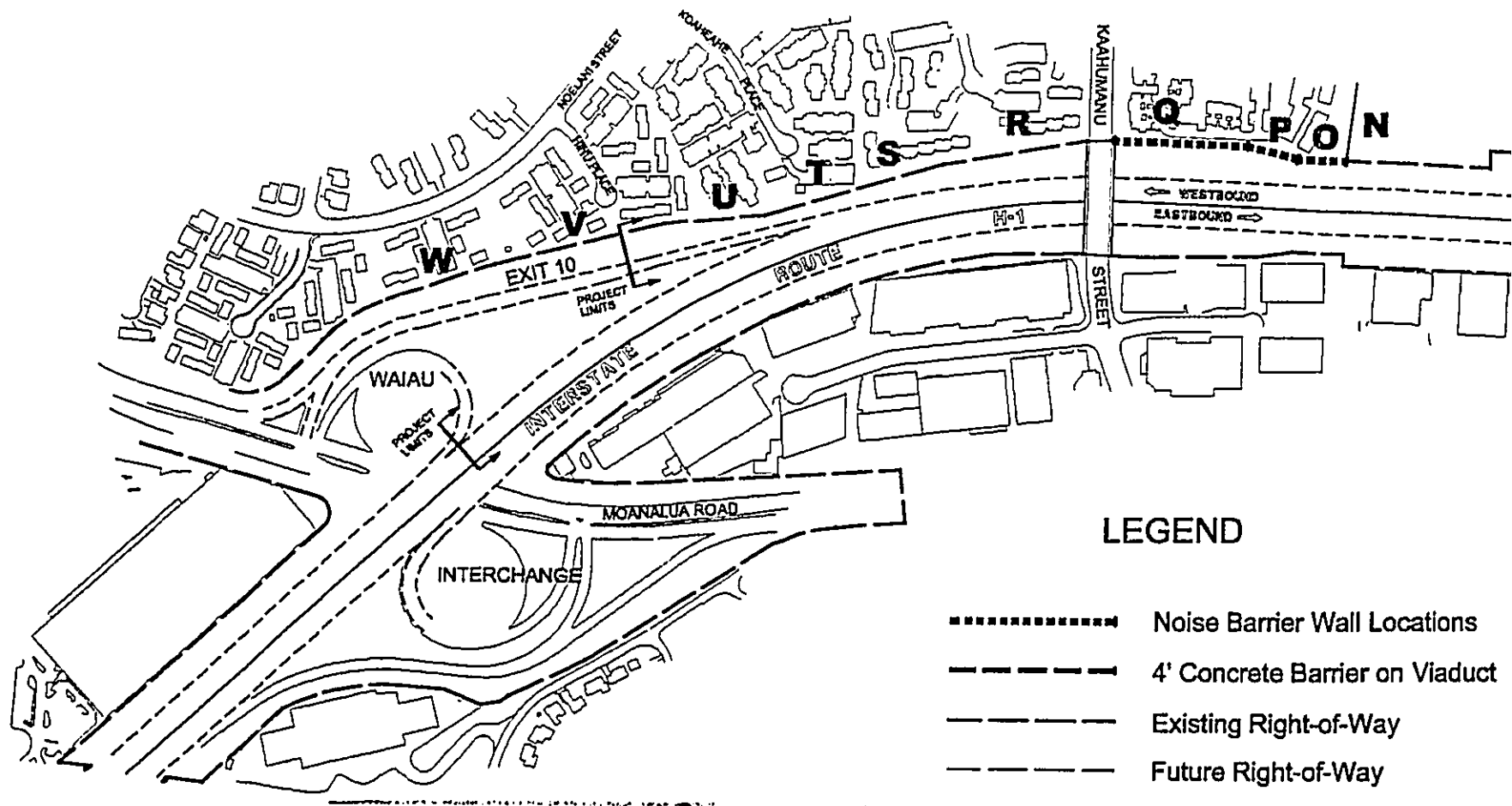
Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
R	7	351	3	\$144,788
S	12	228	6	\$192,865
T	17	226	4	\$285,890
U	18	255	5	\$301,538
V	25	395	11	n/a
W	31	270	6	n/a
Total This Segment				\$924,880
Total All Segments				\$2,698,438

FIGURE 3-2
NOISE BARRIER WALL
ALTERNATIVES

Interstate Route H-1 Widening
 Westbound Direction
 KaonoHi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation



R. M. TOWILL CORPORATION January 2000



LEGEND

- Noise Barrier Wall Locations
- 4' Concrete Barrier on Viaduct
- Existing Right-of-Way
- Future Right-of-Way
- Existing H-1 Roadway

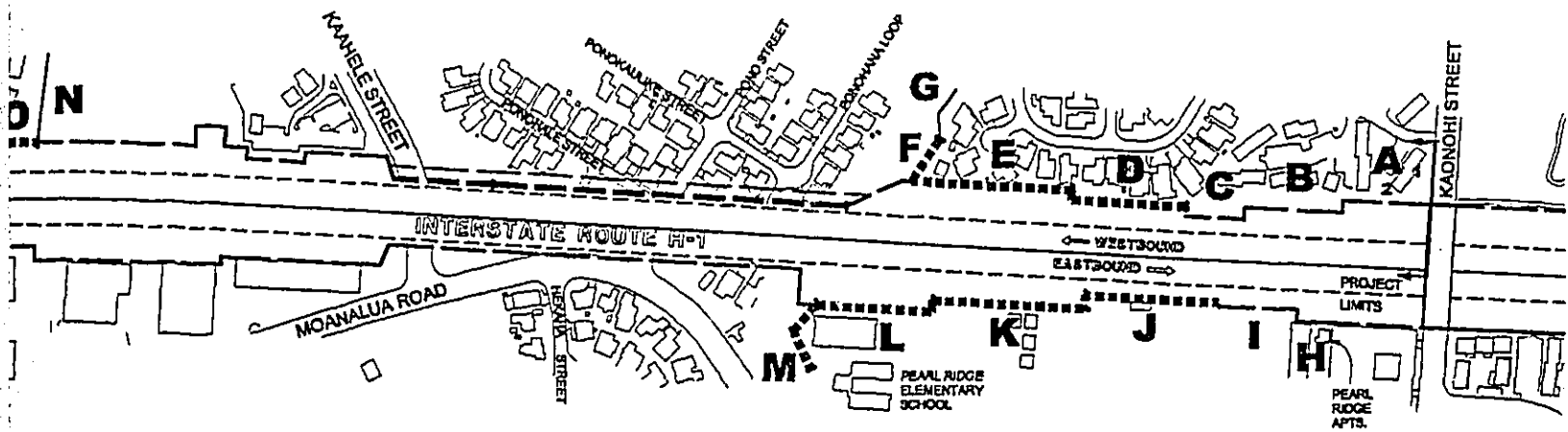
Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
D	7	252	4	\$103,950
E	7	354	4	\$155,760
F	10	111	2	\$61,050
Totals This Segment			10	\$320,760
Cost Per Residence			—	\$32,076

Measurements in Feet.
 Cost Per Residence ≤ \$35,000 is considered reasonable for mitigation expense.
 Wall heights represent an average height for each segment.
 Wall heights vary according to topography at wall base.
 See: Appendix F, Addendum A, Noise Barrier Wall Height Calculations.

Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
J	6	292	school	\$112,420
K	8	334	school	\$146,960
L	8	255	school	\$112,200
M	8	165	school	\$72,600
Total This Segment			—	\$444,180
Cost Per Residence			—	n/a

n/a - Cost Per Residence not used to determine reasonableness of mitigation costs at schools and other special use locations.

Continuous Wall Segment	
Wall Section	Wall Height (Average)
O	8
P	4
Q	3
Totals This Segment	
Cost Per Residence	
Total All Segments	

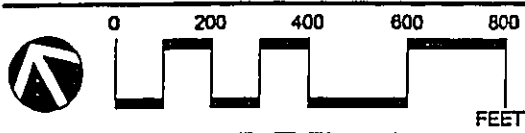


Wall Locations
 Barrier on Viaduct
 Off-Way
 On-Way
 Roadway

Continuous Wall Segment				
Wall Section	Wall Height (Average)	Length	Benefitted Residences	Estimated Cost
O	8	117	2	\$51,480
P	4	128	0	\$31,880
Q	3	321	5	\$88,275
Totals This Segment			7	\$171,435
Cost Per Residence			—	\$24,480
Total All Segments				\$938,375

FIGURE 3-3
NOISE BARRIER WALLS
BEING CONSIDERED

Interstate Route H-1 Widening
 Westbound Direction
 Kaonohi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation



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 January 2000

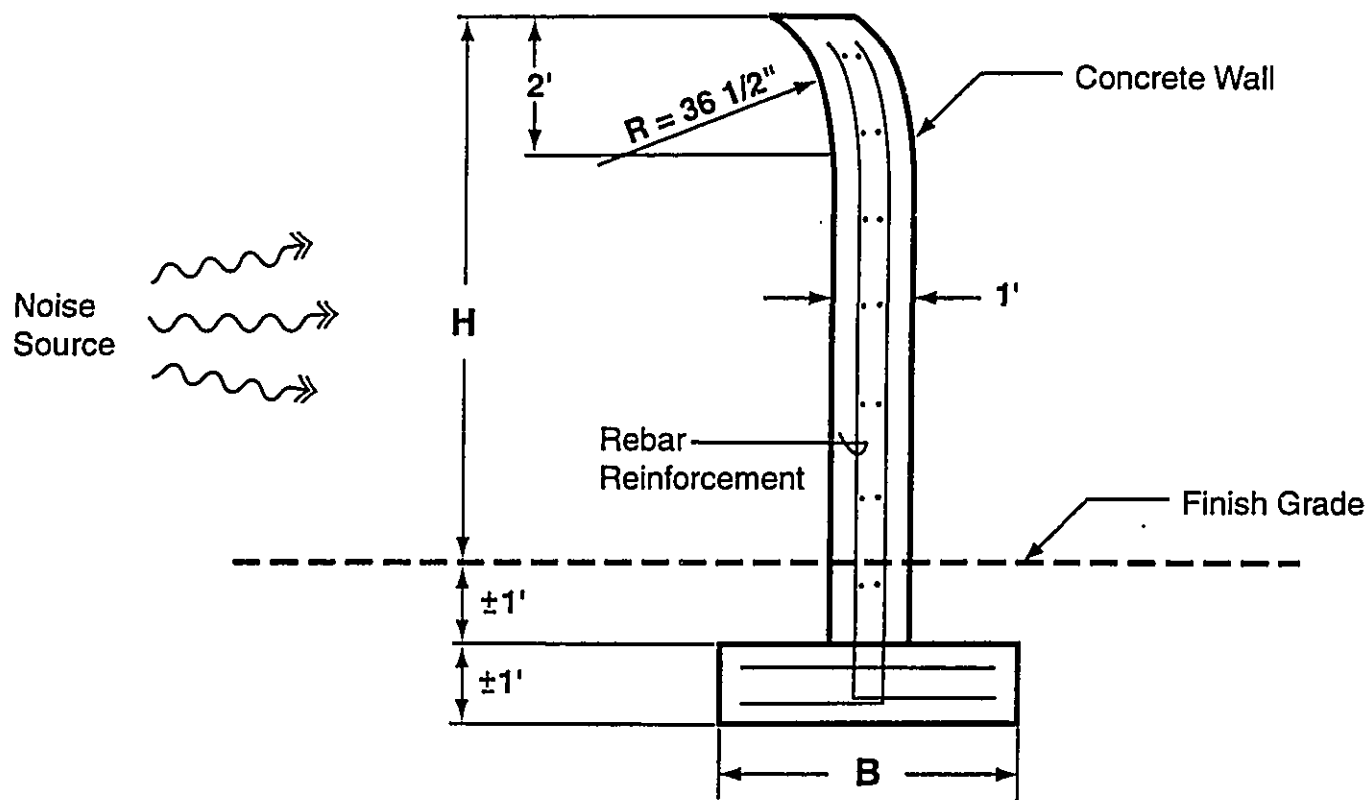
Noise barrier walls must be continuous without see-through openings and be constructed with solid materials. Wall design will include landscaping to soften the visual impacts of the walls and to discourage the potential for graffiti. Special attention to wall color and texture will be included in project design to ensure that the appearance of the structure is thematically appropriate to surrounding areas. See **Figure 3-4, Typical Noise Barrier Wall**.

Waiiau Light Industrial Park

Based on noise level projections in the acoustic study, three warehouse structures south of the freeway at Waiiau Light Industrial Park meet the conditions necessary to be considered for noise mitigation. However, the areas at the industrial park that would be impacted by traffic noise are not areas of frequent use. Areas of frequent human use at the industrial park will benefit from the shielding affect of the warehouse buildings and will not experience noise levels that trigger SDOT-H's noise abatement criteria. For this reason, no noise mitigation measures are being considered at this location.

Waimalu Tract, Waimalu Garden, and Newtown Driving Range

Sound receptors stationed in the Waimalu Tract residential neighborhood on the makai (south) side of the Waimalu Viaduct measured no noise levels in exceedence of SDOT's 66 dBA noise mitigation criteria for residential areas. Two homes located immediately adjacent to the makai freeway right-of-way meet the noise abatement criteria, however these homes are planned for acquisition and relocation under the proposed project and thus will not require mitigation. Noise level projections in the makai Waimalu Tract also remain below the 66 dBA abatement trigger. Therefore, no mitigation measures are proposed for this area.



Height / Base Ratio

<u>H</u>	<u>B</u>
6'	3'
8'	4'
10'	5'

**Figure 3-4
TYPICAL NOISE BARRIER WALL**

Not to Scale

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiiau Interchange
State of Hawaii
Department of Transportation

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January 2000

Noise level measurements at several locations within the Waimalu Garden subdivision and at the Newtown Driving Range currently exceed 66 dBA. Much of the noise adjacent to the viaduct is attributable to radiated noise from the viaduct structure, as opposed to traffic noise that travels in a direct line-of-sight. The actual number of homes in this area which may be affected following the proposed freeway improvements is not known, since accurate predictions of viaduct noise radiation are not possible. Some of the residences that are currently affected by noise levels in excess of the 66 dBA criteria are to be relocated under the proposed project. Construction of a planned 4-foot high concrete barrier along the outer edge of the viaduct is further being considered to mitigate traffic noise. Significant reductions of excessive traffic noise within Waimalu Garden and at the driving range will not be feasible however, since there is no effective means to mitigate radiated noise from the viaduct structure.

3.3.3.2 Construction Noise Mitigation

Excessive noise levels generated by construction activities will require that a noise permit be filed with DOH, Noise and Radiation Branch. The provisions of the noise permit will require that contractors muffle all construction vehicles and machinery and maintain all noise attenuation equipment in good operating condition. Faulty equipment will be repaired or replaced. Additionally, trucks and other construction vehicles will be routed to avoid residential communities wherever possible.

Under current permit procedures, noisy construction activities are normally restricted to hours between 7:00 AM and 6:00 PM, Monday through Friday, and between 9:00 AM and 6:00 PM on Saturday. Construction activities and use of heavy equipment will be scheduled as much as possible during daylight hours to avoid disturbing area residents during the evening. If work during the nighttime hours is required to minimize traffic congestion during the normal daytime period, noise impacts will occur at existing residences located along the freeway Right-of-Way. A variance from the existing state noise regulations will be requested from DOH, Noise and Radiation Branch, to perform nighttime work on this project. Construction activities will be suspended on Sundays and during Holidays.

3.4 AIR QUALITY

3.4.1 Air Quality

Air quality on Oahu is excellent overall due to prevailing northeast trade winds. The project site also benefits from these trade winds and enjoys generally good air quality. The State of Hawaii, Department of Health (SDOH), Clean Air Branch monitors ambient air quality on Oahu through nine monitoring stations located throughout the island. The stations vary in the type of pollutant measured, covering a variety of parameters.

There are no monitoring stations that measure carbon monoxide (CO) in the vicinity of the proposed project. The State operates four CO monitoring stations; one each in downtown Honolulu, Waikiki, Kapolei (Campbell Industrial Park), and West Beach (Koolina). In 1996, (the last year of official data), the highest measured CO concentration in the State was recorded in Waikiki, at an average annual level of 1,235 $\mu\text{g}/\text{m}^3$. The highest maximum 1-hour concentration in Waikiki was 5,216 $\mu\text{g}/\text{m}^3$. These concentrations fall far short of the Hawaii State 1-hour standard of 10,000 $\mu\text{g}/\text{m}^3$, and Federal standard of 40,000 $\mu\text{g}/\text{m}^3$.

In comparison to Waikiki, the proposed project site is situated in a relatively uncongested area with better exposure to prevailing north-east trade winds that disperse traffic emissions. Waikiki's CO measurement also registers a localized vehicle mix with a disproportionately greater share of buses, vans, and delivery trucks, and traffic flow characterized by stop-and-go driving and curbside idling. These factors contribute to higher CO concentrations than would be generated by freeway traffic conditions. Based on the comparison between proposed project site characteristics, and conditions at the Waikiki CO monitoring site, CO levels in the project area are anticipated to be well within state and federal air quality standards.

In the Pearl City area, approximately 1 mile west of the proposed project site, a "PM-10" air monitoring station measures particulate matter that is 10 microns or less in aerodynamic diameter. The most recent annual summary of 24-hour PM-10 data shows particulate levels at an annual hourly mean of 14 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), well below state and federal standards of 50 $\mu\text{g}/\text{m}^3$. (SDOH 1996).

The nearest monitoring station measuring ozone is located approximately 7 miles to the southeast from the proposed project site. At a measured annual 1-hour mean of $27 \mu\text{g}/\text{m}^3$, ozone levels in Oahu also fall well below state and federal standards of $100 \mu\text{g}/\text{m}^3$ and $235 \mu\text{g}/\text{m}^3$ respectively. There are no monitoring stations in the vicinity of the proposed project to measure ozone (O_3), hydrocarbons (HC), or nitrogen oxide (NO_x).

Existing air pollution at the project site is minimal, primarily resulting from vehicles on Moanalua Road and the H-1 Freeway. Stationary sources of air pollution in the area include the Hawaiian Electric Company's Waiiau Power Plant, an oil burning facility located immediately south-west of the Waiiau Interchange. Fugitive dust from human activities represents the only other potential source of negative impact to air quality.

3.4.2 Project Impacts

3.4.2.1 Short-Term Impacts

If the proposed project is given the necessary approvals to proceed, it is inevitable that some short- and long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Construction activities and the operation of vehicles and heavy equipment at the project site will generate some fugitive dust and pollution emissions. Residential areas will be temporarily affected during the period of construction by dust and pollution, however, these impacts will be temporary and will cease when construction is completed.

3.4.2.2 Long-Term Impacts

Long-term impacts to air quality will result from the continued use of the H-1 freeway. Projected traffic increases related to population growth are expected to result in increased automobile emissions that will impact air quality. As long as automobile use increases, and until new, cleaner burning automobile engine technologies are introduced, impacts from automobile exhaust can be expected to increase. Emission concentrations and, correspondingly, the level of impact to air quality, are also related to traffic flow rates. Automobile engines operate less efficiently,

burn more fuel, and emit more exhaust when operated under stop-and-go or idle conditions. Areas of greater congestion, therefore, will generally produce higher emission concentrations.

Improvements to traffic flow will have the effect of reducing emission concentrations in improved areas. One of the main objectives of the proposed project is to eliminate a potential bottle-neck caused by the lane-drop at the Kaonohi Street overcrossing. The forced merge at this point on the highway, if left uncorrected, will result in increased congestion, longer travel times, and delays to westbound automobile traffic. It will also result in increased automobile emissions in the vicinity of the Waimalu Viaduct. The addition of the proposed lane would eliminate the bottleneck, improve traffic flow, and provide the indirect benefit of relieving the area of congestion that would contribute to higher emission levels.

Normal operations on the freeway following construction will also contribute to the continued generation of fugitive dust and particulate matter released from automobile traffic; a condition which will continue with or without the proposed project. While most of this material is dispersed by the trade winds at levels that are imperceptible to the casual observer, over time some of the traffic-generated dust accumulates in areas immediately adjacent to the freeway, settling on homes, cars, and other property and creating a nuisance.

3.4.3 Mitigation Measures

Both federal and state standards have been established to maintain ambient air quality at healthy levels. At present, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone, and lead. In most cases, the State of Hawaii's air quality standards are more stringent than the comparable national limits. With proposed mitigation measures, the proposed project is not expected to directly or indirectly generate air quality impacts in excess of state and federal standards.

3.4.3.1 Short-Term Mitigation

State air pollution control regulations require that there be no visible fugitive dust emissions at the construction site boundary. Therefore, an effective dust control plan will be implemented by the project contractor to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering open-bodied trucks. Dust control measures will include, but not be limited to, the following:

- Planning phases of construction to minimize the amount of dust generating activities;
- minimizing the use of dust generating materials and centralizing material transfer points and on-site vehicle travel ways;
- locating dusty equipment in areas of least impact;
- providing an adequate water source at the site prior to start-up of construction activities;
- landscaping bare areas, including slopes, starting from the initial grading phase; and,
- providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction.

Construction-related exhaust emissions will be mitigated by ensuring that project contractors properly maintain their internal combustion engines and comply with DOH Rules Title 11, Chapter 59 and 60, regarding Air Pollution Control.

3.4.3.2 Long-Term Mitigation

Long-term impacts from pollutants emitted by motor vehicle traffic on the improved segment of the H-1 are not anticipated to cause significant increases in air pollution levels over existing levels in the project area. This conclusion was reached based on expected improvements to traffic flow that will result from the additional lane, and the relationship between decreased congestion and reduced emission levels. Additionally, anticipated improvements in engine design that will result in cleaner running automobiles will help reduce traffic-related impacts to

air quality. Because of the minimal long-term impacts the proposed improvements to H-1 are expected to cause, no long-term measures are required or recommended for mitigating automobile emission. With regards to traffic-generated fugitive dust, landscaping is being considered to intercept some of the dust that would otherwise accumulate on homes and property adjacent to the freeway.

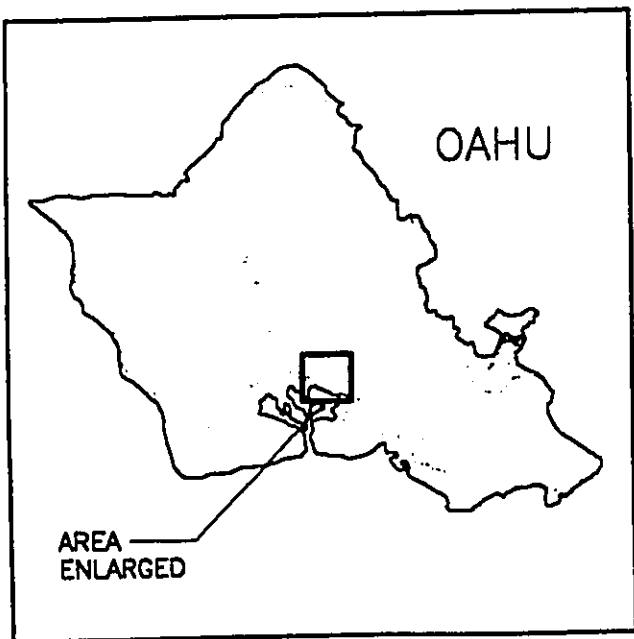
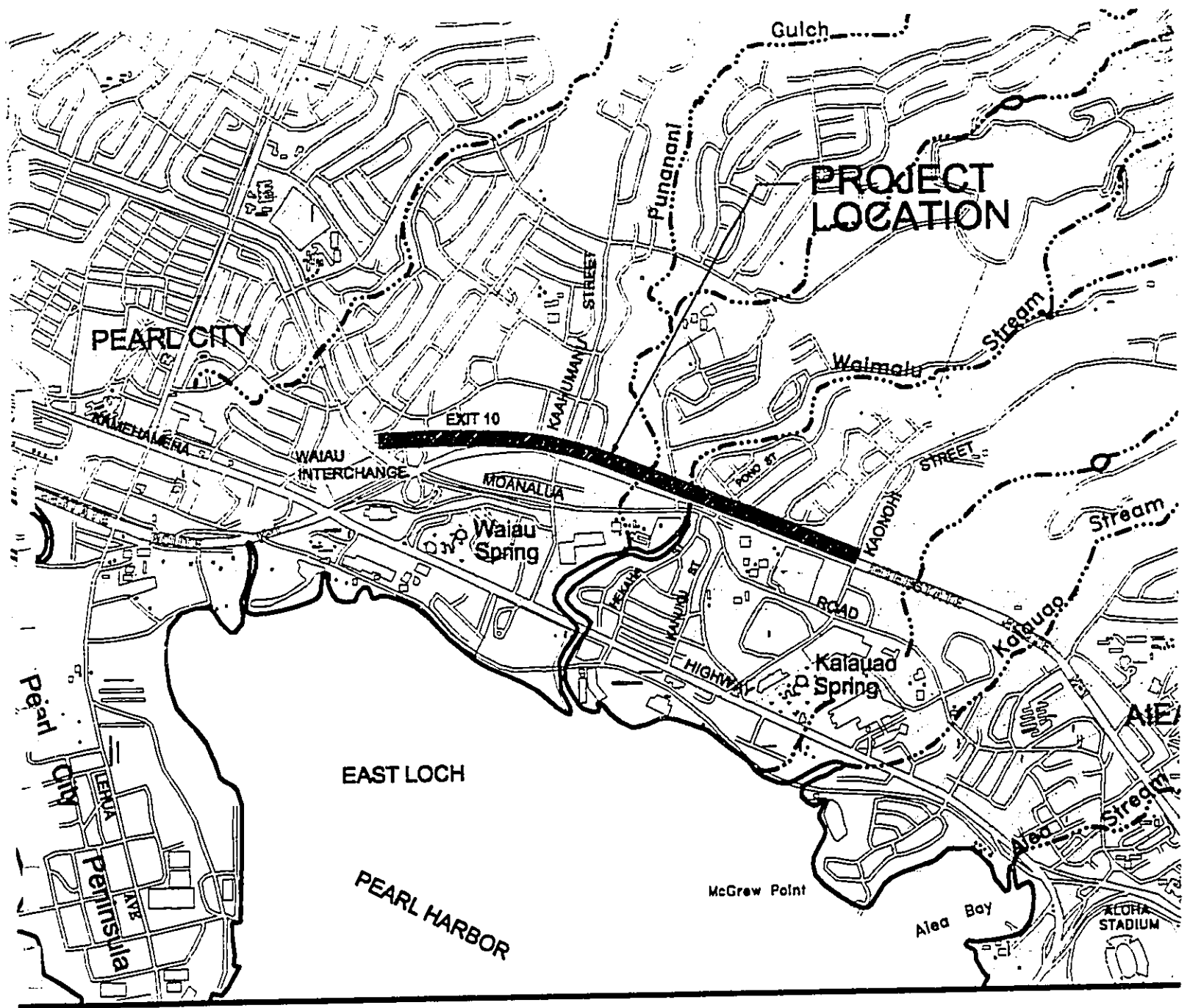
3.5 WATER

3.5.1 Surface Water

The proposed project site is located inland from East Loch of Pearl Harbor, between approximately 80 to 100 feet above mean sea level (msl). The topography is characterized by gradual slopes of up to 7 percent. The most significant geographical features in the area are Waimalu Stream and Gulch, over which the freeway traverses on the Waimalu Viaduct. Waimalu Stream flows through the project site in a channelized stream. This perennial stream originates in the Koolau Mountains in Waimalu Gulch. Downstream from the project site it is joined by runoff captured in Punanani Gulch before entering Pearl Harbor. See **Figure 3-5, Surface Water.**

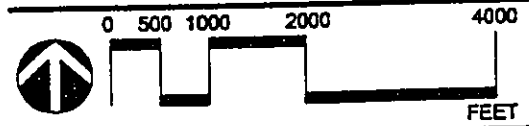
3.5.2 Ground Water / Southern Oahu Basal Aquifer

The project site lies within the Southern Oahu Basal Aquifer (SOBA) over the approximate geologic boundary between a permeable formation of Koolau Basalt and coastal plain deposits that form impermeable caprock. The coastal caprock impedes the discharge of fresh water within the Koolau Basalt, impounding basal water in a hydraulic lens that forms a portion of the SOBA. Aquifer recharge occurs where water infiltrates through the permeable Koolau Basalt. Where caprock occurs, rainfall, surface water, and runoff discharge are prevented from percolating into the aquifer.



**FIGURE 3-5
SURFACE WATER**

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiau Interchange
State of Hawaii
Department of Transportation



R. M. TOWILL CORPORATION January 2000

During the original work on the existing viaduct, boring samples were taken to depths of between 40 and 90 feet below mean sea level (msl). Boring logs reveal a general geologic profile of silty clay over intermittent layers of gravel, sand, boulders, stones, and clay, over weathered rock, over basalt. Deeper borings commonly encountered very stiff clays beneath the basalt layer. Boring samples encountered no caprock layer.

3.5.3 EPA Sole Source Aquifer Protection Program

The SOBA is designated for protection by the EPA under the Sole Source Aquifer (SSA) Protection Program (Safe Drinking Water Act of 1974, Section 1424(e)). The SSA Protection Program is established to prevent contamination or degradation of aquifers which are the sole or principal drinking water source for an area. Any proposed project which might contaminate an SSA so as to create a significant hazard to public health, as determined by the EPA, is prohibited from receiving federal funding.

The EPA Region IX Ground Water Office was consulted regarding the proposed project's compliance with the SSA Protection Program. Based on descriptions of the proposed construction, potential project-related impacts to the SOBA, and mitigation measures proposed to prevent contamination and damage to the aquifer, the EPA has determined that the project is in compliance with the SSA Protection Program. (See Appendix H, U.S. DOT Letter dated 11/30/98, and U.S. EPA Letter dated 12/10/98.)

3.5.4 Springs and Wetlands

In the Pearl Harbor area, basal ground water outflows as springs. The springs closest to the project site include Waiiau Spring, Kalauao Spring, and Waiawa Spring. Waiiau Spring is located on the north shore of Pearl Harbor's East Loch, approximately 500 yards south and west of the project site. Kalauao Spring is located approximately 600 yards south of the project site. Waiawa Spring is situated at the top of the Pearl City Peninsula adjacent to Pearl Harbor's Middle Loch, approximately 1½ miles west of the project site. Where the springs emerge, wetlands are formed that provide valuable habitat for aquatic bird species, including native and migratory waterfowl. No wetlands occur within the project site boundaries.

The U.S. Fish and Wildlife Service (USFWS) was contacted to review the proposed project for potential impacts to wetland resources. Based on information provided by SDOT-H, and information and maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program, USFWS determined that there are no wetlands in the immediate project area and no adverse impacts to wetland areas are anticipated from this project. (See Appendix A, Correspondence, Letter from USFWS dated April 23, 1998.)

3.5.5 Project Impacts

Water will be used on the project primarily for dust control, concrete mixing, and limited landscaping. The quantity of water used will be comparable to other projects of similar scope. Water trucks (6,000 gallon capacity) will be used for most watering activities. Water will be provided by temporary hydrant meter. If feasible, however, the contractor will use non-potable water for the freeway construction and landscaping.

Water demand is not expected to increase as a result of the proposed project. In fact, water demand may decrease due to the relocation of 10 single-family housing units and the Waimalu Grace Brethren Church and Pre-school. Long-term water use following completion of the project will include watering of landscaped areas along the highway. Eventually, landscaping will rely on rain water for irrigation, however, it will be necessary to regularly water new landscaping until it becomes established. If feasible, the contractor will use non-potable water for the freeway construction and landscaping. More precise water demands will not be known until project design is complete. At that time, water demands and water demand calculations will be provided to the Engineering Branch, Land Division.

The proposed project is not anticipated to affect any BWS water mains. If it is determined that any mains will be affected, construction drawings showing relocation of water mains will be submitted to BWS for review and approval prior to commencement of construction activities.

Because the proposed project involves construction activities in proximity to Waimalu Stream, the potential for discharge pollution entering state waters does exist. Near-stream work includes installation of temporary sediment retention features, construction staging, excavation and installation of pier footings, construction of piers, abutments, and road deck. Potential for pollutant discharge into State waters of Waimalu Stream during construction would primarily result from release of silt and suspended sediments during excavation and grading activities or during extreme storm conditions.

Materials that may potentially enter State waters due to construction activities include soil and vegetation from grading and excavation activities, concrete and building materials used in construction of the viaduct, fuel and oil used by construction equipment, and sediment carried in storm water runoff from areas exposed by construction grading or excavation. No structures or materials will be placed in Waimalu Stream or other State waters.

Based on information from test borings conducted during the original H-1 construction, no caprock will be encountered and no impact to the coastal caprock is expected to result from the proposed installation of viaduct support piles. Because the proposed project occurs in an area underlain with permeable Koolau Basalt, there is the potential for discharge pollution originating from construction activities and normal freeway operations to infiltrate into the SOBA.

Construction impacts include the possible release of fuel and oil used by construction equipment, and paint and solvents used during restriping activities. During normal freeway operations, potential sources of contamination include surface runoff containing oil, traces of asbestos, heavy metals, and other contaminants that accumulate on the roadway. Accidental spills on the freeway are another potential source of pollution to the underlying aquifer.

3.5.6 Mitigation Measures

Discharge pollution prevention measures and freeway drainage systems will be installed for each project action as required by the construction activities and project scheduling. Mitigation measures will conform to State of Hawaii, Department of Health (DOH) regulations pursuant to

Hawaii Administrative Rules, Title 11, Chapter 55, Water Pollution Control. Measures to prevent runoff and the release of sediment into Waimalu Stream during construction will be in place and functional before project activities begin and will be maintained throughout the construction period. A site-specific plan to prevent runoff and discharge of other pollutants into State waters, including removal procedures for the construction site BMPs, will be prepared by the project contractor as part of the project construction plan. A National Pollution Discharge Elimination System (NPDES) Permit will be filed with DOH, Clean Water Branch.

The proposed project design utilizes existing freeway drainage features. Freeway runoff is conveyed from the freeway to the point of discharge into the waters of Pearl Harbor via drainage ways, spill ways, and drain pipes of cement construction. No freeway runoff will be discharged onto bare ground over the aquifer recharge area. The underlying geology at the point of discharge is impermeable caprock that would prevent the discharge from percolating into the Sole Source Aquifer.

During the construction period, and during normal operations on the freeway following construction, there is always the potential for accidents and spills that could result in impacts to the underlying ground water. Spill prevention measures will be included in the site-specific BMPs to address construction-related spills. Emergency response measures for containing and cleaning up hazardous material spills are regulated by the State. The Honolulu Fire Department maintains a hazardous material team that performs first-response and containment of any hazardous material spills occurring during normal freeway operations. Incidents are reported to the State Department of Health, Office of Hazard Evaluation and Emergency Response, which oversees and coordinates clean-up efforts.

3.5.7 Best Management Practices

A site-specific Best Management Practices (BMP) plan will be prepared by the project contractor as part of the project construction plan. The BMPs will include guidelines and mitigation

measures to prevent runoff, discharge pollution, and other detrimental impacts caused by construction activities.

Mitigation measures shall include, but not be limited to the following:

- Clearing and excavation shall be held to a minimum necessary to meet project design and construction plan requirements.
- Construction shall be phased to minimize the exposure time of cleared or excavated areas. Existing ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to the start of construction.
- Stabilization shall be accomplished by temporarily or permanently protecting the disturbed surface from rainfall impacts and runoff.
- Storm water flowing toward active project areas shall be diverted as much as practicable using appropriate controls, including berms and silt fences, as determined by the contractor according to site conditions.
- Discharge controls shall be shaped to trap sediment before it leaves the active work areas, and shall be sized to accommodate the volume of runoff generated by a one-inch storm.
- Bank areas that remain unfinished for more than 30 calendar days shall be hydro-mulched or seeded to provide temporary soil stabilization.
- Potential stockpile sites will be identified in the construction plans. The project contractor will select the actual locations for stockpiling construction material based on professional discretion and site conditions.

- Fueling of construction equipment will only be performed off-site or within an area designated by the contractor. Any site designated for refueling shall be located away from water sources, enclosed by a containment berm and constructed to contain spills and seepage and prevent storm water runoff from carrying pollutants into state coastal waters.
- If groundwater is encountered during excavation for the pier footings, dewatering will be required. An NPDES Permit will be filed with DOH, Clean Water Branch for construction dewatering.
- All discharge pollution controls shall be regularly monitored and maintained by the project contractor. In the event of rainfall of ½ inch or greater within a 24 hour period, discharge pollution control measures will be checked within 24 hours of the event. During prolonged rainfall, control measures will be checked daily. If a severe storm event such as a 100-year storm occurs, then construction activities shall stop, equipment and materials will be stored, relocated, or otherwise secured against storm impacts.
- The contractor shall be responsible for recovering any materials or equipment washed away by storm flow.

The contractor, based on professional experience and expertise, may modify the proposed BMP mitigation measures as necessary to account for unanticipated or changed site conditions.

3.6 LAND USE

3.6.1 Land Use

The proposed project is located within the Honolulu Primary Urban Center. Lands surrounding the project site are under City and County zoning for single family dwelling (R-5), low-density apartments (A-1 & A-2), light industry (I-2), and general preservation (P-2).

North of the H-1, land use primarily consists of residential development comprised of low-density apartments, town houses, and single family homes. North lands also include parcels zoned for preservation. These lands are utilized for recreational purposes, including a golf course, a driving range, as well as open space. South of the freeway, land uses include residential communities of single family homes and high-rise apartment buildings. Two elementary schools, Waimalu Elementary and Pearl Ridge Elementary, are sited adjacent to two public parks. Additionally, a light-industry park is located south of the freeway immediately east of the Waiiau Interchange. See Figure 3-6, Land Use.

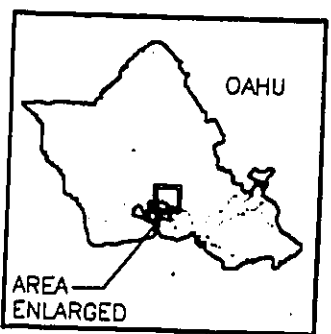
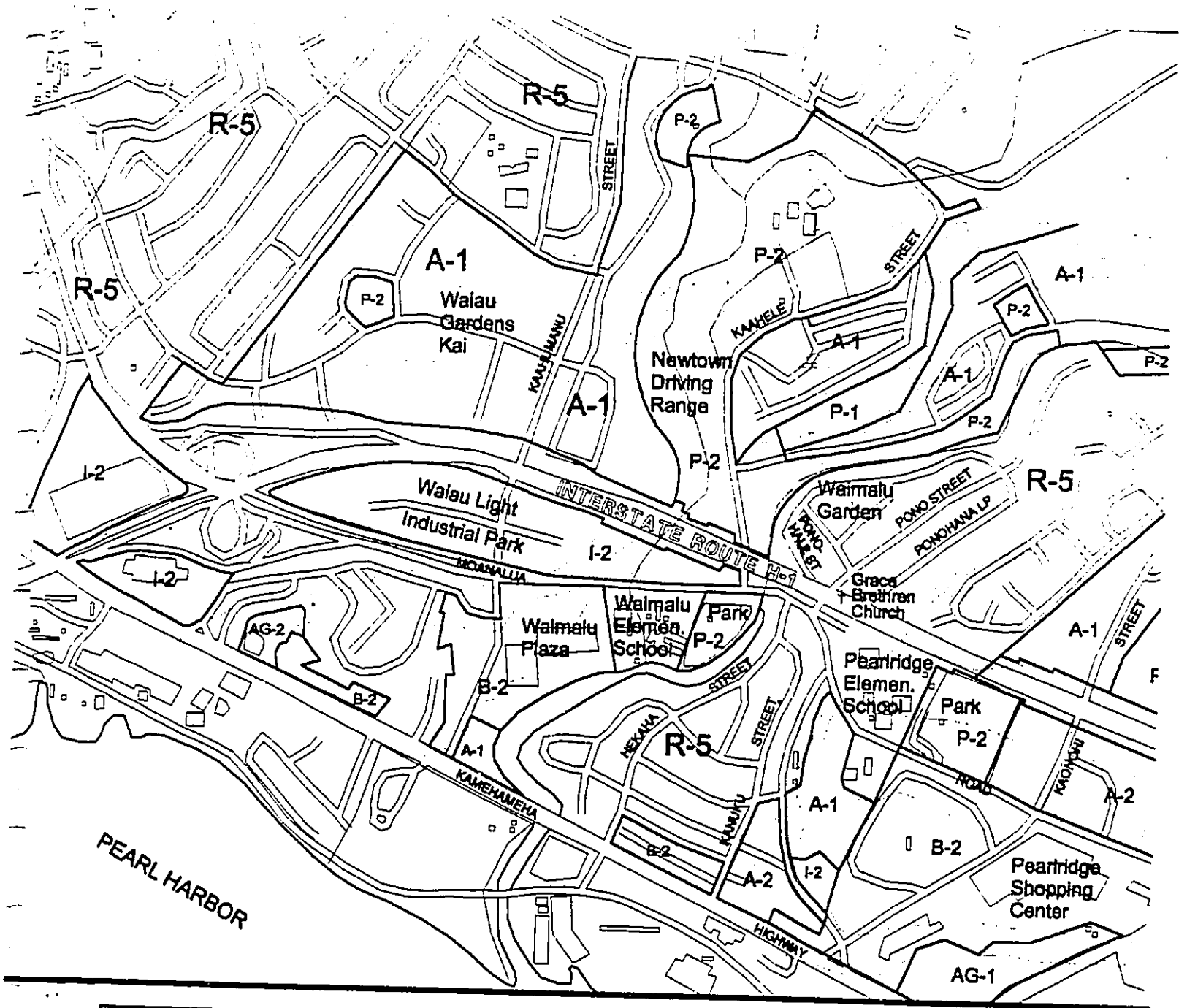
3.6.2 Project Impacts

The proposed project is being developed as part of the State Department of Transportation's long-term regional traffic plan. The proposed project is consistent with existing State and County land use plans for the region. The project will require no land use zoning changes and is not expected to be a stimulus to unplanned growth. The lane widening will help alleviate traffic congestion on this segment of the Interstate Route H-1 corridor through Pearl City. In contrast, the "no-action" alternative would not support existing land use policies in that it would fail to maintain the necessary level of infrastructure service.

The project will not significantly change the character of the surrounding area: no zoning changes are required or presaged by the widening.

3.6.3 Mitigation Measures

No mitigation measures are recommended or required for land use impacts.



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

**FIGURE 3-6
LAND USE**

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiu Interchange
State of Hawaii
Department of Transportation

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3.7 BIOLOGICAL RESOURCES

3.7.1 Flora

A botanical resources assessment conducted in the project area in October 1998 to provide a description of the vegetation along the roadway and to search for threatened and endangered plants and species of concern (Char & Associates 1998). See **Appendix E, Botanical Resource Assessment**.

Due to the extensive land modifications from previous grading and construction, the original flora at the project site and surrounding area has been almost entirely replaced by introduced weed species and grass cover. The maintained areas along the freeway ROW and residential and commercial lands adjoining the freeway contain mowed expanses of grassy lawns and landscape plantings. Most of the ground cover consists of Bermuda grass or manienie (*Cynodon dactylon*) interspersed with numerous weedy species. The latter include: pitted beardgrass (*Bothriochloa pertusa*), *Calyptocarpus vialis*, coat-buttons (*Tridax procumbens*), virgate mimosa (*Desmanthus virgatus*), Guinea grass (*Panicum maximum*), swollen fingergrass (*Chloris barbata*), Natal redtop grass (*Melinis repens*), buffel grass (*Cenchrus ciliaris*), 'uhaloa (*Waltheria indica*), and creeping indigo (*Indigofera spicata*). Koa haole shrubs (*Leucaena leucocephala*) also occur in stunted patches along the ROW.

Ornamental and fruit tree plantings in commercial and residential areas include mango (*Mangifera indica*), avocado (*Persea americana*), banana (*Musa X Paradisiaca*), coconut (*Cocos nucifera*), and African tulip (*Spathodea campanulata*). Commonly planted street trees are the rainbow shower (*Cassia fistula X javanica*), monkeypod (*Samanea saman*), 'opiuma (*Pithecellobium dulce*), fern tree (*Filicium decipiens*), and be-still tree (*Cascabela thevetia*), as well as shrubs of various *Hibiscus* cultivars and red-flowered cultivar of Bougainvillea. By Exit 10, the plantings include oleander (*Nerium oleander*), African tulip tree (*Spathodea campanulata*), Chinese banyan (*Ficus microcarpa*), monkeypod, and kolomona (*Senna surattensis*).

In the unmaintained areas are found small stands of kiawe trees (*Prosopis pallida*), and a few large 'opiuma trees as well as scattered trees and shrubs of silk oak (*Grevillea robusta*), Java plum (*Syzygium cumini*), and Christmas berry (*Schinus terebinthifolius*).

Plants found at the site are common, naturalized species. Many are popularly grown for ornamentation and home gardening. None of the plants found during the field study are listed or proposed as threatened and endangered species or species of concern (U.S. Fish and Wildlife Service 1997). No Exceptional Trees protected by City and County of Honolulu Ordinance No. 78-91 occur within the study area. Because the site has been so greatly disturbed by past human activities, any remnants of vegetation types dominated by native plants no longer exist on the site. (Char & Associates 1998).

3.7.2 Fauna

Urban development around the project site has almost entirely replaced the native fauna and their associated habitats. No endemic birds or waterfowl were identified at the site. The only native bird that would be likely to frequent the area is the migratory Pacific Golden-Plover or Kolea (*Pluvialis fulva*). The Kolea is often observed resting on grass expanses, such as golf courses and park lawns. Numerous exotic birds are known from the area, the most abundant of which include the Spotted Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), Common Waxbill (*Estrilda astrild*), Java Sparrow (*Padda oryzivora*) and House Finch (*Carpodacus mexicanus*). Other faunal resources at the project site consists of common feral animals, including cats (*Felis catus*) and mongooses (*Herpestes auropunctatus*).

None of the fauna known from the project site and vicinity are listed, proposed, or threatened and endangered species (U.S. Fish and Wildlife Service 1997). All species noted above are common and occur widely throughout central Oahu. Endangered native species that do, on rare occasions occur in lowland areas of Oahu, such as the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) and Short-eared Owl or Pu'eo (*Asio flammeus sandwichensis*) are highly unlikely to visit the proposed project site or its vicinity.

3.7.3 Project Impacts

USFWS was contacted to review the proposed project for potential impacts to biological resources. Based on information provided by SDOT, and information and maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program, USFWS determined that there are no federally endangered, threatened, or candidate species in the project area and no adverse impacts are anticipated from this project. (See Appendix A, Correspondence, Letter from USFWS dated April 23, 1998.)

Given the above findings, the proposed project will not have a significant negative impact on botanical or faunal resources. Project activities might alter the local distribution and abundance of birds presently using the land, but will not impact the overall abundance of these species on Oahu.

3.7.4 Mitigation Measures

There are no reasons to impose restrictions, or impediments to the proposed project based on biological resources at the site. It is recommended that areas cleared of vegetation during construction be grassed over as soon as possible to prevent erosion. No other mitigation measures are required or recommended for botanical and faunal resources.

3.8 ECONOMIC CONDITIONS

3.8.1 Economic Conditions

Hawaii's economy is currently undergoing a structural change in which the once dominant sectors of agriculture and the military have given way to growth in service sectors. Today, sugar and pineapple, the historic mainstays of Hawaii's agricultural economy, comprise just 1% of the GSP, while defense accounts for just under 11%. This transformation is further reflected in the growth of the visitor economy, which peaked in 1990 at approximately 26% of the GSP and has since tapered off to 24% of the GSP. The movement towards a service- and trade-based economy is also apparent in the distribution of Hawaii's jobs across sectors. The share of the economy's jobs accounted for by manufacturing and agriculture have declined steadily and

currently make up approximately 8% of total jobs in the economy. By comparison, the shares of jobs in wholesale and retail trade and in services have risen to a current position of approximately 23% and 28% respectively.

Accompanying this change, state government has expanded, as indicated by the rise in the ratio of state expenditures to GSP and the number of state jobs as a percentage of total jobs (from approximately 9.7% in 1989 to over 11% in 1994). This growth in the public sector has been a source of some concern, and has caused a refocusing of attention on the need to stimulate greater productive capacity and more diverse business opportunities in the economy. (DBEDT 1996).

3.8.2 Project Impacts

The purpose and primary impact of the proposed project will be to improve freeway capacity and traffic safety conditions for vehicles traveling westbound on H-1. The proposed widening will help maintain a level of service that supports social and economic activities in the area. Short-term economic impacts from the proposed project will result from construction jobs, services, and procurements in the form of construction supplies and equipment, however these benefits will be temporary and will primarily be realized outside of the local community. Additionally, federal funding available for the project will save the State the costs of improvements to the freeway in the future.

3.8.3 Mitigation Measures

No mitigation measures are required or recommended.

3.9 DEMOGRAPHICS

3.9.1 Population, Housing, and Employment

The proposed project crosses the following Census Tracts:

Pearl City:	78.03	78.06	78.07	78.08
Aiea:	78.05	80.02		

These five tracts lie within the Pearl City and Aiea Neighborhood Statistics Program Areas and are part of the Census Bureau's Ewa Division Statistic. According to the U.S. Census, the Ewa Division population grew 12.4% between 1990 and 1994, increasing from 230,189 to 258,700 residents. By the year 2010, the Ewa Division population is expected to grow an additional 6% to approximately 273,900 persons.

According to the 1990 Census, the Pearl City Neighborhood Statistics Program Area contained 13,540 households with an average household size of 3.44 persons. The average annual household income in Pearl City was \$55,053. The Aiea Neighborhood Statistics Program Area contained 10,680 households with an average household size of 2.93 persons and an average annual household income of \$45,585. Less than 4 % of the population in all of the census tracts surrounding the project site except one are living below the national poverty level. The exception is census tract 78.08, which encompasses the area south of Moanalua Road between Waimalu Stream and Kalauao Stream to the east, where approximately 12.5% of the population is living at or below the national poverty level. See **Figure 3-7, Neighborhood Statistics Program Area.**

The ethnic make-up of the population in the project area generally mirrors the overall State profile as shown in the table below. The most pronounced difference is the larger Japanese population and corresponding smaller White and Hawaiian populations.

%	White	Black	Nat Amer	Chinese	Filipino	Japanese	Hawaiian	Other
State Avg	33.4	2.5	0.5	6.2	15.2	22.3	12.5	7.5
Proj Area	26.35	2.25	0.38	6.45	13.92	35.70	7.37	7.52

Source: U.S. Bureau of the Census, 1990 Census STF1A, produced by the Hawaii State Data Center.

Note: Figures averaged from census tracts 78.03, 78.05, 78.06, 78.07, 78.08, and 80.02

Developable land in the area is not in demand for additional housing, rather, additional shopping, medical, and other service facilities and more employment opportunities proximate to existing housing are in demand. Demands for new housing will primarily be met by development in Ewa and Central Oahu. (PKF Hawaii & PBR Hawaii 1996).

Employment in this area includes commercial and retail services along Moanalua Road and Kamehameha Highway, in the Waiiau Light Industrial Center, and at Pearl Ridge Shopping Center; services and skilled labor at Pearl Harbor and the Hawaiian Electric Company's Waiiau Station; and teaching, service and administrative jobs in area schools and Hale Mohalu Senior Apartments.

3.9.2 Project Impacts

The proposed H-1 widening project will involve a small amount of temporary construction work. This work may include job opportunities for area residents. Existing and future population and employment in the project vicinity will be unaffected by this project. The proposed project will not impact overall housing supply or development patterns, however it will require the acquisition of private property and the relocation of some homes currently located within the proposed ROW.

3.9.3 Environmental Justice

Federal Executive Order 12898 requires that disproportionately high and adverse human health or environmental effects to minority and low-income populations, including interrelated social and economic effects, generated by federally funded projects be identified and addressed through the planning process during project development. Additionally, access to public information and meaningful opportunities for public involvement by minorities and low-income populations must be provided during project planning and development.

Based on analysis of demographic data obtained from the 1990 U.S. Census, the proposed project will not result in disproportionately high and adverse human health or environmental effects to minority or low-income populations. The ethnic profile in the area surrounding the proposed project closely reflects the average State profile. No single ethnicity is in the majority. Black, Chinese, Filipino, Hawaiian, Native American, and other ethnicities that comprise smaller portions of the overall population are not disproportionately represented compared to state averages.

Average household income levels in the project area are also typical, compared to the 1990 state average of \$45,383. Proposed freeway construction and property that will likely need to be acquired does not occur within an area containing a disproportionately high percentage of the population living below poverty level. (DBEDT 1996)

3.9.4 Mitigation Measures

Mitigation measures related to property acquisition and resident relocation are described in Section 3.1. No other mitigation measures are required or recommended.

3.10 SCENIC AND RECREATIONAL RESOURCES

3.10.1 Scenic Resources

The State and County have identified no view planes or scenic vistas in the project vicinity. The project site is located on the slope above East Lock of Pearl Harbor. The harbor is visible from the freeway, however views are interrupted by development along the south side of H-1.

3.10.2 Recreational Resources

There are no recreational activities at the project site itself. The surrounding area contains several recreational facilities:

- The Pearl County Club golf course is located north of the freeway on the Diamond Head side of Kaonohi Street. The course offers eighteen holes of golf and is open to the public.
- The Newtown Golf Driving Range is situated north of the freeway on the Ewa side of Kaahele Street.
- Pearl Ridge Park is located immediately adjacent to the freeway on the south side. Park facilities include six tennis courts, two basketball courts, handball courts, a baseball diamond and playing field.

- Waimalu Playground is located south of the freeway next to Waimalu Elementary School. Facilities include one tennis court, one basketball court, and a baseball diamond.

Waimalu Stream is not used for swimming, fishing, or other recreational activities at the project site. The stream is channelized beginning upstream of the freeway viaduct downstream to Kamehameha Highway.

3.10.3 Project Impacts

The new lane will not intrude on recreational facilities in the vicinity and no significant negative impacts to recreational resources are anticipated from the proposed project. Scenic impacts associated with the construction and use of the expanded freeway are discussed in terms of short-term and long-term effects.

3.10.3.1 Short-Term Scenic Impacts

Short-term visual impacts associated with the project primarily relate to construction activities. Temporary signage, nighttime lighting, the presence of heavy construction equipment and ongoing modifications to the existing landscape will all create short-term impacts on the visual setting surrounding the project site. Construction activities will be apparent to commuters on the freeway and from surrounding residential areas. Visual impacts related to construction activities are temporary in nature, however, and not considered significant.

3.10.3.2 Long-Term Scenic Impacts

Long-term visual impacts will result from the construction of noise barrier walls. Noise barrier walls are proposed in areas where noise analysis indicates they could achieve substantial reductions in overall noise levels (See Section 3.3, Noise Impacts).

Proposed wall heights typically range from 6 to 8 feet above grade at the edge of the right-of-way. In two locations, 10-foot walls are proposed. Walls constructed to these heights would impose upon views of Pearl Harbor from first-floor and backyard locations of residential

properties located along the northern right-of-way of the freeway. The aesthetic quality of the immediate surroundings would also be encumbered with the presence of a large concrete structure. Additionally, it is common for exposed concrete walls to attract graffiti and other unsolicited ornamentation of questionable aesthetic merit.

The proposed project will also result in long-term visual impacts in the form of an expanded freeway and viaduct. The new lane and shoulder will be noticeable, but will not intrude on any existing view planes. In general, the appearance of the new lane would be similar to the visual impact created by the existing freeway lanes and would not detract significantly from existing views.

3.10.4 Mitigation Measures

To minimize the visual impact of construction activities, the project contractor will ensure that work crews, heavy equipment, signage and lighting will be utilized only to the extent required for project operations. Additionally, nighttime lighting shall be focused on work areas and shielded from adjacent residential areas as much as possible.

Measures to mitigate the visual impacts of noise barrier walls include special attention to wall color and texture to ensure that the appearance of the structure is compatible with the architecture in the surrounding area. Landscaping will also be used to soften the visual impact of the wall and discourage graffiti by hindering access and minimizing the amount of exposed wall area.

As an additional consideration, various landscape designs are being considered to better integrate the widened freeway into the surrounding scenery. The inclusion of tree boxes into the viaduct design would create a visual bridge linking landside vegetation on both ends of the span, and provide visual relief to commuters traversing the otherwise spare concrete expanse.

3.11 AREA STREETS AND ACCESS

3.11.1 Area Streets and Access

Major transit corridors in the project area include Kamehameha Highway and Moanalua Road, both of which run east-west roughly parallel to the H-1 freeway. Both are used as thoroughfares by commuters and also provide general access to residential communities, and commercial and service centers.

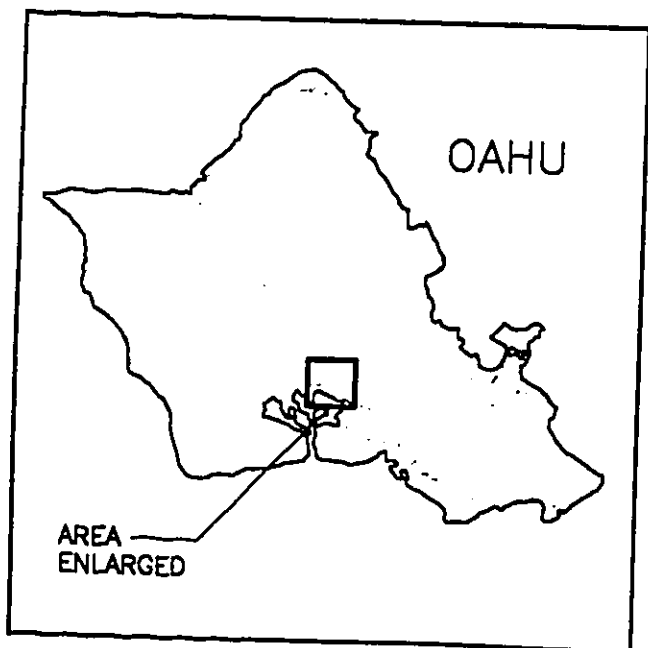
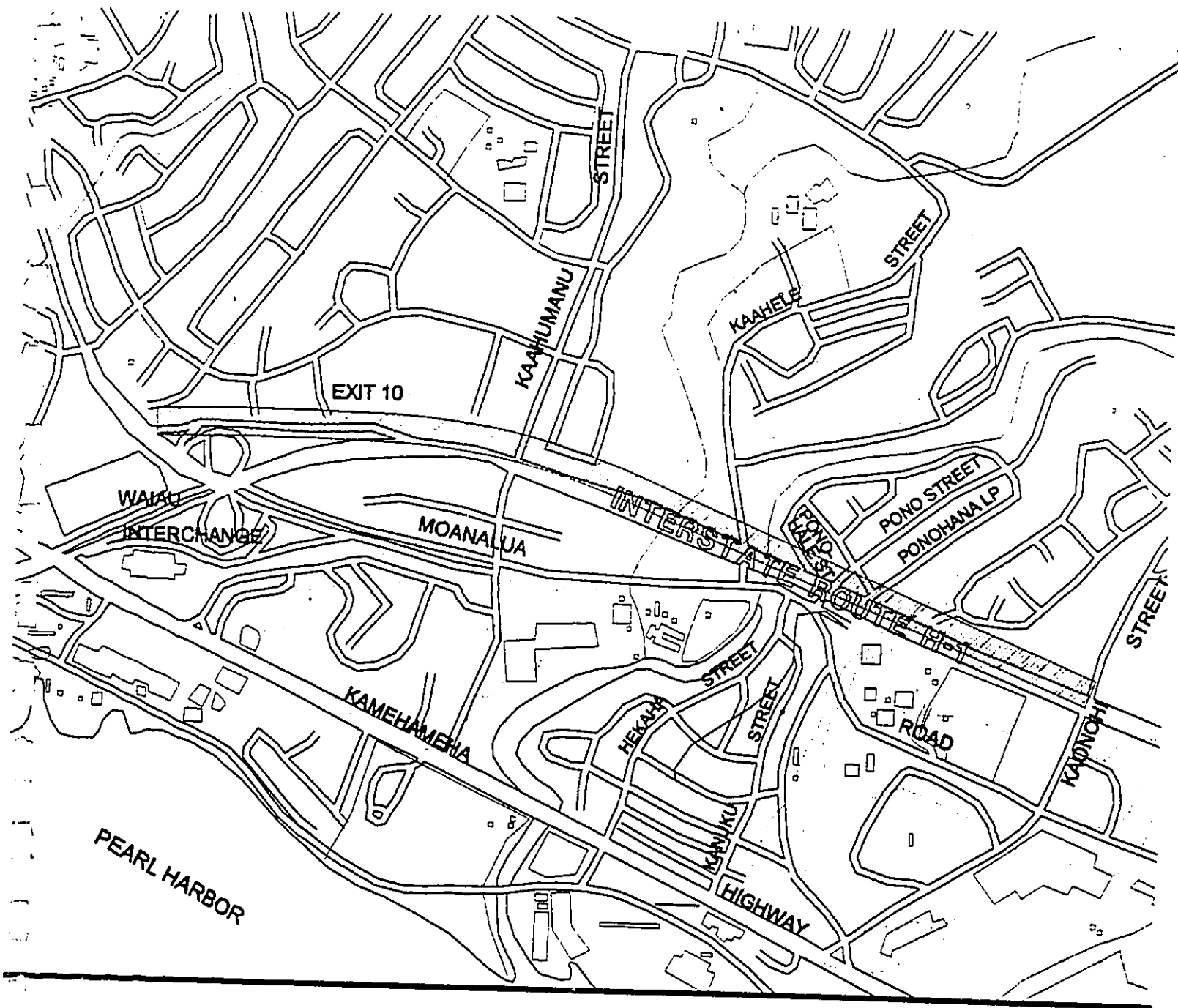
Major surface streets in the area include Kaonohi Street, Kaahele Street, and Kaahumanu Street. Each of these streets runs perpendicular to the H-1 Freeway and Moanalua Road. Kaonohi Street and Kaahumanu Street also intersect Kamehameha Highway. All three of these streets serve primarily to provide access to surrounding residential communities, functioning as tributaries to the major transit corridors. Waimalu Subdivision is accessed from Moanalua Road via Pono Street, which services homes north of the freeway, and Hekaha Street, which services homes south of the freeway.

Because construction activities will primarily be conducted immediately adjacent to the H-1 Freeway, construction access will be from the H-1 Freeway itself. During work on the viaduct, construction staging will be required within the Waimalu Subdivision north of the freeway. Construction traffic will access the subdivision via Moanalua Road and Pono Street, entering and exiting Moanalua Road at the Waiiau Interchange. See **Figure 3-8, Area Road Map**.

3.11.2 Project Impacts

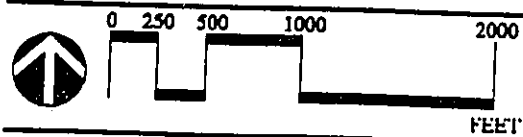
Work on the H-1 Freeway widening will result in a temporary rise in heavy truck traffic, particularly during construction mobilization and demobilization. Heavy equipment operations during grading and lane construction will require the periodic closure of one or two westbound lanes on the H-1 Freeway. However, five lanes of through-traffic will remain open during peak hours.

Work on the viaduct will also require staging within the Waimalu Garden subdivision and along Kaahele Street that will impact local traffic. In particular, Moanalua Road, Kaahele Street and



**FIGURE 3-8
AREA ROAD MAP**

Interstate Route H-1 Widening
Westbound Direction
Kaonohi Street to Waiou Interchange
State of Hawaii
Department of Transportation



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residential streets within the subdivision, including Pono Street, Ponohale Street, Ponokaulike Street, and Ponohana Loop, will be impacted. Intersections along Moanalua Road, at Hekaha Street, Kaahele Street, and Kaahumanu Street will also be affected by the increased presence of construction vehicles and detoured local traffic.

Construction traffic on area streets will include movement of heavy equipment between the staging areas and the active construction site, transportation of work crews, and truck traffic during removal of excavation spoils and demolition work. These activities are expected to impact regular traffic on surface streets with temporary delays and the presence of large, slow-moving vehicles on the main roadways.

Construction work on the viaduct piers might require the temporary closure of Pono Street at its intersection with Ponohale Street within the Waimalu Garden subdivision. Because Pono Street provides the only access into and out of the subdivision, an alternate access route will have to be established for the duration of construction on the piers. In addition to motor vehicle traffic, bicycle and pedestrian traffic will also have to make use of the alternate route for the duration of project activities, but will otherwise not be significantly affected by either construction or freeway operations following project completion.

3.11.3 Mitigation Measures

Construction of the new lane and shoulder will require periodic closure of the outside lane (lane #5) of the highway for construction staging and activities. Occasionally, two lanes (lane #5 and #4) will have to be closed to accommodate construction activities. During peak traffic hours, five through-lanes will remain open. Restriping of the existing lanes will require that traffic be diverted in stages around the project areas. Traffic control barricades, cones, signage, and lighting will be used as necessary to alert drivers and delineate construction boundaries. Police officers from the Honolulu Police Department (HPD) will also be employed to monitor and direct traffic during construction periods.

To minimize traffic impacts to the nearby residents, the contractor will schedule heavy truck activity as much as possible between the hours of 9:00 a.m. and 3:00 p.m. on weekdays and will suspend activity on weekends and State holidays. The contractor will be advised to avoid using residential streets unless absolutely necessary. The HPD will be notified prior to periods of heavy truck activity or during transport and operation of heavy equipment. Additionally, area residents and other users of State and City streets and roadways will be informed of planned closures and detours. Detour routes will be clearly indicated and conform to Part VI of the manual on Uniform Traffic Control Devices. A "Notice to Motorists" will be published in the daily newspaper(s) informing motorists of upcoming road closures. Approach signs and a flag person will be positioned to direct traffic through temporary traffic control zones as necessary. *Officers from HPD will be employed to direct traffic at intersections.*

If work on the viaduct piers requires the closure of Pono Street, a temporary access route to Ponohale Street will be created beneath the viaduct in alignment with the intersection at Hekaha Street. The detour would pass through an open lot that is used by Pacific Oldsmobile for car storage. If a detour is required, all necessary signage, barricades, lighting, and traffic signalization will be maintained. Pono Street will be reopened when work on the nearby viaduct piers is complete and conditions are safe for vehicle traffic.

3.12 SECTION 4(f)

The purpose of Section 4(f) of the Department of Transportation Act (49 U.S.C. 303 and 23 U.S.C. 138) is to preserve parkland, recreation areas, wildlife refuges, and historic sites by limiting the circumstances under which such land can be used for transportation programs or projects. Section 4(f) permits the use of land for a transportation project from a significant publicly owned park, recreation lands, wildlife or waterfowl refuge, or any significant historic site only when FHWA and the Urban Mass Transportation Administration has determined that (1) there is no feasible and prudent alternative to such use, and (2) the project includes all possible planning to minimize harm to the property resulting from such use.

There will be no use by this project of lands protected under Section 4(f). No lands protected under Section 4(f) exist within the boundaries of the proposed project site on the north side of the freeway. All lands within the project site are in urban development. Pearl Ridge Park, located on the south side of the freeway is protected under Section 4(f), however this and other public parks and playgrounds in the project vicinity will not be impaired in function or use by project activities. Mitigation measures are planned for possible environmental and social impacts resulting from this project, as discussed in this environmental assessment.

3.13 HISTORIC AND ARCHAEOLOGICAL RESOURCES

3.13.1 Historic and Archaeological Resources

A cultural resources assessment was conducted in the project area in October, 1998 (Cultural Surveys Hawaii). During reconnaissance survey of lands adjacent to the highway study area corridor, no surface archaeological sites were observed. According to information provided by staff of the State Historic Preservation Division (SHPD) no archaeological sites have been previously recorded within the project area or in the immediate vicinity. Additionally, SHPD staff have indicated that there are no sites in the immediate vicinity of the project area currently entered on the Hawai'i Register of Historic Places and/or the National Register of Historic Places. See Appendix F, Archaeological Assessment.

3.13.2 Project Impacts

Given the urban development along all portions of the H-1 Freeway study area, there is little likelihood of finding historic, prehistoric surface or subsurface archaeological remains. Further, the proposed work is not expected to impact buildings which may be of historical concern.

3.13.3 Mitigation Measures

In light of these results, no further archaeological investigation is recommended. However, there is always the possibility that previously unknown or unexpected subsurface cultural features, deposits, or burials may be encountered. In the unlikely event that archaeologically significant remains are encountered, work will cease in the immediate area and the DLNR, State Historic

Preservation Division would be notified at (808) 692-8029 to determine significance and treatment of any findings.

3.14 NATURAL HAZARDS

3.14.1 Earthquake

The Uniform Building Code (UBC) provides minimum design criteria to address potential for damages due to seismic disturbances. The UBC scale is rated from Seismic Zone 1 through Zone 4, with 1 the lowest level for potential seismic induced ground movement. Oahu has been designated within Seismic Zone 2a.

3.14.2 Flood Zones

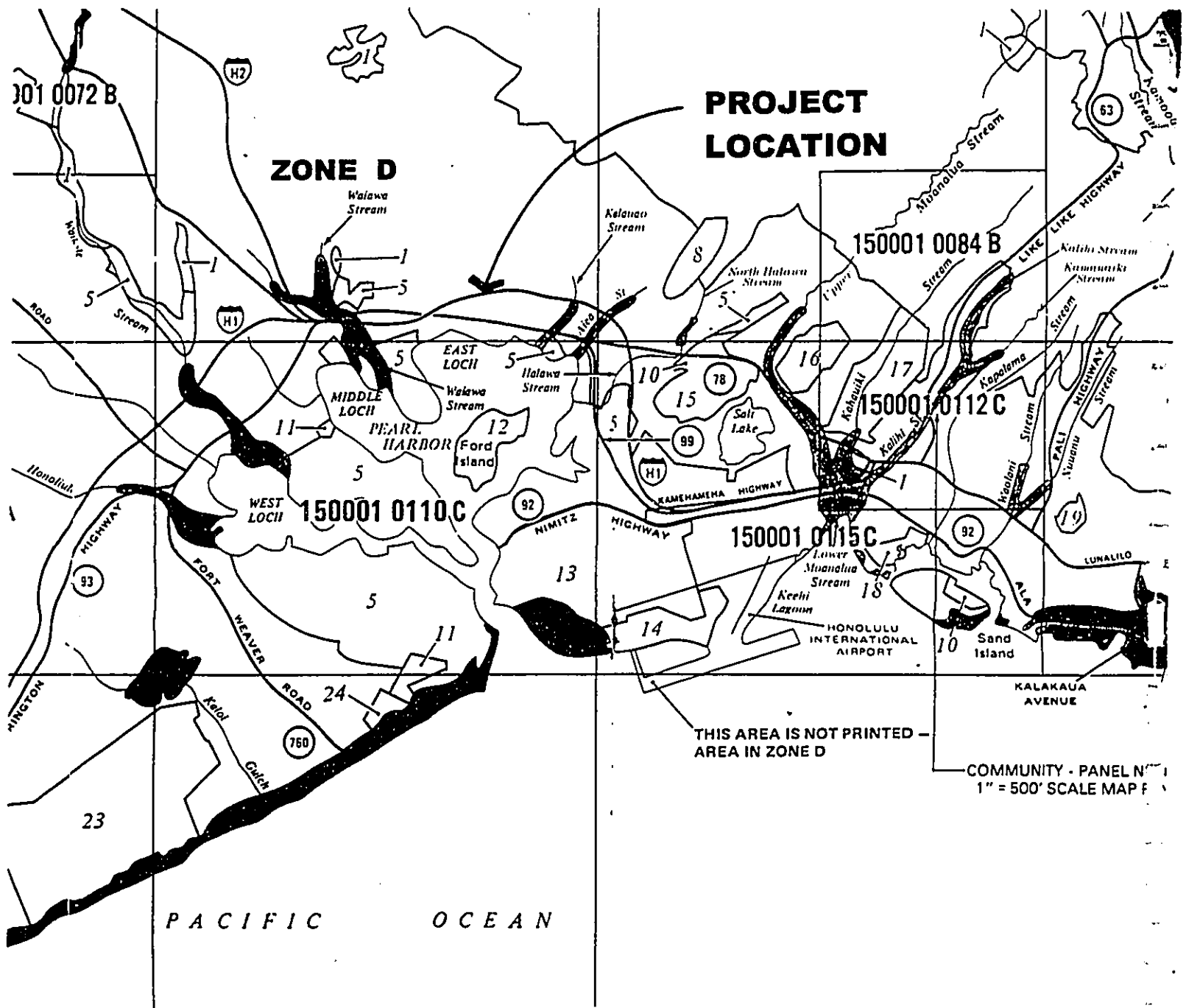
The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) of September 30, 1995, identifies the project site as lying within "Zone D", an area in which flood hazards have not been determined. (National Flood Insurance Program 1995). See **Figure 3-9, FEMA/FIRM Map.**

3.14.3 Project Impacts

The proposed project involves no alteration to the existing stream channel, nor will the project exacerbate conditions that would contribute to flooding. Additionally, because seismic risk at the project site is minimal, the proposed project is not likely to be affected by seismic activity.

3.14.4 Mitigation Measures

All structures proposed for this project will be built, at a minimum according to equivalent standards for seismic zone 2a, as established by the Uniform Building Code. Site-specific BMPs will include contingency plans to respond to heavy rainfall conditions and high-water flows.



LEGEND

ZONE D - Areas in which flood hazards are undetermined..

Source: FEMA Flood Insurance Rate Map
 Revised: September 30, 1995

**FIGURE 3-9
 FEMA/FIRM MAP**

Interstate Route H-1 Widening
 Westbound Direction
 Kaonohi Street to Waiiau Interchange
 State of Hawaii
 Department of Transportation



NOT TO SCALE



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3.15 SOILS

3.15.1 Soils

The Pearl Harbor Coastal Plain was primarily developed from alluvium deposited on the highly permeable Koolau basalt formations, and on the coral reefs that formed when sea level was higher than the present level. The project site is located on the leeward flank of the Koolau volcanic shield. The project site is comprised of numerous soil types, most of which are varieties of silty clay including Lahaina (LaB, LaC, LaC3), Hanalei (HnB), Molokai (MuB, MuC), and Helemano (HLMG) types. Soil types adjacent to Waimalu Stream include Rock Land (rRK) and Pearl Harbor Clay (Ph). Characteristics of these soil types are summarized below:

Lahaina Silty Clay, 3 to 7 percent slope (LaB), 7 to 15 percent slope (LaC), and 7 to 15 percent eroded (LaC3). This general soil type is generally located within upland areas with slight slope. Permeability is moderate, runoff is slow, and the erosion hazard is slight to moderate. The available water capacity is about 1.3 inches per foot in the surface layer and about 1.4 inches per foot in the subsoil.

Hanalei Silty Clay, 2 to 6 percent slope (HnB). This soil type is somewhat poorly drained on level to gentle slopes. Runoff is generally slow and the erosion hazard is slight.

Molokai Silty Clay, 3 to 7 percent slope (MuB), 7 to 15 percent slope (MuC). This type consists of well-drained soils that range from nearly level to moderate slopes. Runoff is slow to medium and the erosion hazard is slight to moderate.

Helemano Silty Clay, 30 to 90 percent slope (HLMG). This soil type is on the sides of V-shaped gulches and areas of rock outcrop. Permeability is moderately rapid. Runoff is medium to very rapid, and the erosion hazard is severe to very severe.

Pearl Harbor Clay (Ph). This soil type consists of very poorly drained soils on nearly level coastal plains. Permeability is very slow. Runoff is very slow to ponded and the erosion hazard is no more than slight.

Rock Land (rRK). This type is made up of areas where exposed rock covers 25 to 90 percent of the surfaces. The soils are generally very shallow and the soil material is very sticky and plastic with a high shrink-swell potential. When saturated, this soil type is susceptible to sliding.

Figure 3-10, Soils Map identifies the U.S. Department of Agriculture, Soil Conservation Service soil typology for the proposed project site. (U.S. Department of Agriculture 1972).

3.15.2 Project Impacts

No impacts to area soils are expected.

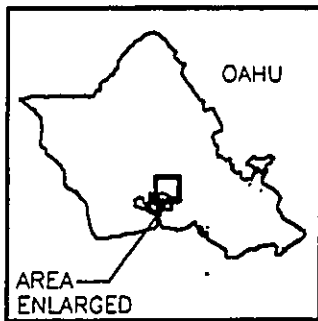
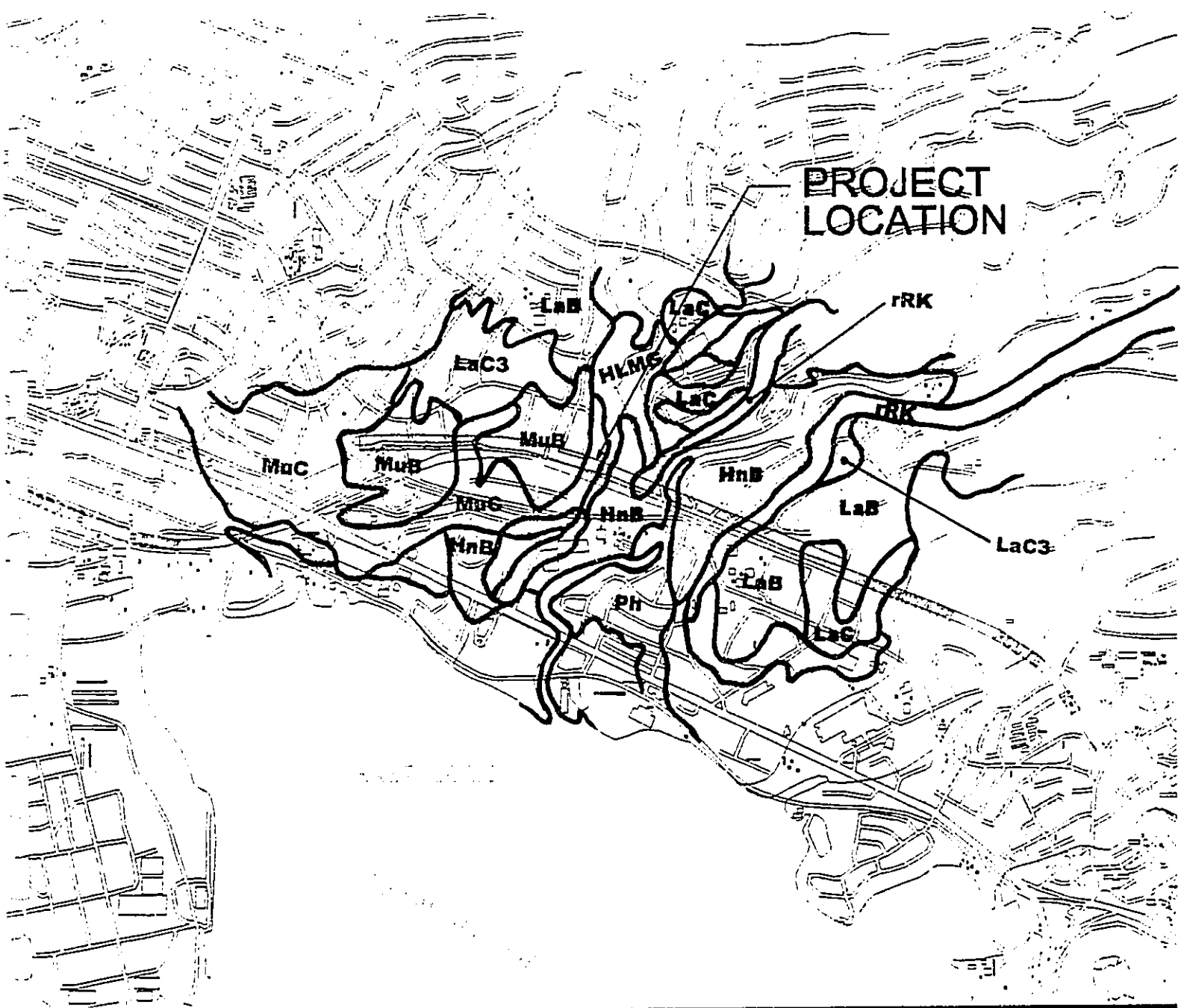
3.15.3 Mitigation Measures

Surface soil stabilization measures will be employed in all areas affected by clearing and grading. Stabilization will be accomplished by temporarily or permanently protecting the disturbed surface from rainfall impacts and runoff. Storm water will be diverted as much as practicable using the appropriate controls, including berms and silt fences. Disturbed areas that remain unfinished for more than 30 calendar days will be hydro-mulched or seeded. When construction is complete, work areas will be landscaped and seeded to provide permanent soil stabilization.

3.16 FARMLANDS

3.16.1 Farmlands

No farmlands exist within the project area. The segment of Interstate Route H-1 affected by the project lies entirely within an urban corridor.

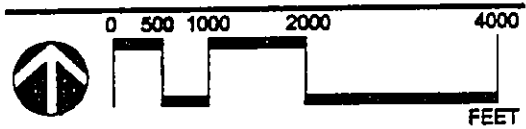


LEGEND

- LaB - Lahaina Silty Clay, 3-7% Slope
- LaC - Lahaina Silty Clay, 7-15% Slope
- LaC3 - Lahaina Silty Clay, 7-15% Eroded
- HnB - Hanalei Silty Clay, 2-6% Slope
- MuB - Molokai Silty Clay, 3-7% Slope
- MuC - Molokai Silty Clay, 7-15% Slope
- HLMG - Helemano Silty Clay, 30-90% Slope
- Ph - Pearl Harbor Clay
- rRK - Rock Land

**FIGURE 3-10
SOILS MAP**

Interstate Route H-1 Widening
Westbound Direction
Kaonoiki Street to Waiiau Interchange
State of Hawaii
Department of Transportation



R. M. TOWILL CORPORATION January 2000

3.16.2 Project Impacts

No direct or indirect impacts to farmlands will occur as a result of this project.

3.16.3 Mitigation Measures

No mitigation measures are recommended or required.

3.17 MOBILIZATION, DEMOBILIZATION, AND RESTORATION

3.17.1 Mobilization

Mobilization of equipment, materials, and workforce shall occur on an as needed basis, in schedule with the phases of construction. Staging areas will be established on the existing shoulder and outside lane of Interstate Route H-1.

Prior to mobilization, the project contractor will identify staging and stockpiling areas for construction equipment and materials based on site conditions, project requirements, and the contractor's experience and expertise. The contractor will obtain necessary rights of access to private property used for this purpose. The contractor shall bear the liability for meeting property owners' terms for right of entry.

Staging and stockpile areas shall be prepared as necessary with appropriate discharge pollution prevention features, refuse containment, parking areas for workers, and clearly marked transit paths for heavy equipment. During mobilization, ground disturbance shall be held to the minimum area necessary to accommodate the heavy equipment and materials required for construction activities.

3.17.2 Demobilization and Restoration

Upon completion of the proposed improvements, the contractor shall restore the project site as much as possible to pre-project conditions:

- All construction-related material, including excavated material, fill material, and refuse shall be removed from the project site and disposed of properly by the contractor.
- All construction equipment shall be removed from the project site promptly after construction is complete.
- Any modifications to existing utilities, such as power lines or water sources, shall be repaired to their pre-existing condition.
- Roadways providing access to the site shall be cleared of construction debris and any damage from construction traffic will be repaired. Gates and/or fencing removed to provide access to the site shall be replaced and/or repaired.
- All areas damaged by construction staging shall be restored. Exposed ground areas shall be seeded or hydro-mulched as appropriate.

CHAPTER 4
RELATIONSHIP TO LAND USE POLICIES
AND CONTROLS OF THE AFFECTED AREA

4.1 OVERVIEW

State and County policy plans and land use plans and controls are established to guide development in a manner that enhances the overall living environment of Hawaii, and that ensures that long-term social, economic, environmental, and land use needs of the people of Hawaii are met.

4.2 STATE OF HAWAII

4.2.1 State Plan

The State Plan, adopted in 1978, consists of three parts:

- (1) an overall theme together with broad goals, objectives, and policies;
- (2) a system designed to coordinate public planning to implement the goals, objectives, and policies of the State Plan;
- (3) priority guidelines which are statements of Statewide interrelated problems deserving immediate attention.

Three broad goals in the areas of the economy, the physical environment, and the physical, social and economic well-being of the people express the ideal end-states of the State Plan. The freeway widening project supports the State Plan's general objectives and policies for a modern, statewide transportation system. The proposed project will be financed under the Federal Aid Highway Program with 80 percent of the funds contributed by the Federal Department of Transportation and 20 percent contributed by the State of Hawaii. Community needs, environmental concerns and cultural resources are considered in the Environmental Assessment and design process.

4.2.2 State Functional Plans

The State functional plans are intended to provide more detail to the State Plan. They serve to guide State and County actions under specific functional topics of governance. Applicable objectives and policies from the Transportation Plan are discussed below.

Transportation

Objective I.A: Widening of the transportation system.

Policy I.A.1: Increase transportation capacity and modernize transportation infrastructure in accordance with existing master plans.

The proposed widening project will enhance transportation capacity on Interstate Route H-1 westbound by adding a sixth, auxiliary lane between the Kaonohi Street overcrossing and Waiiau Interchange. The new lane configuration will further improve safety standards on the freeway by providing additional distance for merging and diverging movements of westbound drivers approaching the Waiiau Interchange from the Moanalua Road and Interstate Route H-3 on-ramps and the Interstate Route H-1 through lanes. The project is being conducted in compliance with existing state and county master plans and land use ordinances.

4.2.3 State Land Use Commission

The State Land Use Commission classifies all lands in the State of Hawaii into one of four land use designations: Urban, Rural, Agricultural, and Conservation. The proposed project is located within the State Urban District within Honolulu's Primary Urban Center. According to State Law, Chapter 205, HRS, land use controls in the Urban Districts on the Island of Oahu are under the jurisdiction of the City and County of Honolulu. No action from the State Land Use Commission is required to implement the proposed H-1 Freeway widening.

4.2.4 Hawaii Coastal Zone Management (CZM) Program

Federal funding of a local project, such as the proposed H-1 widening, is considered to be a federal action under the Coastal Zone Management Act (CZMA) of 1972. The CZMA mandates

that all federal actions be consistent with applicable state CZM programs. The objectives of the Hawaii CZM program are set forth in Chapter 205A, Hawaii Revised Statutes. The objectives of the program are intended to promote the protection and maintenance of valuable coastal resources. All lands in Hawaii are classified as valuable coastal resources. The pertinent CZM objectives and the proposed project's consistency with them are discussed below.

Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

The State of Hawaii, Department of Transportation, Highways Division has programmed major highway infrastructure improvement projects in order to maintain a satisfactory level of service in anticipation of current and projected increases in traffic on the State's highway system. The proposed improvements are necessary to maintain efficient, safe, convenient, and economical transportation of people and goods along this segment of the westbound H-1 freeway.

Managing Development

Objective: Improve the development review process, communication and public participation in the management of coastal resources and hazards.

The proposed project conforms to all State and County land use designations. Public participation in project development has occurred through a series of public meetings held during the preparation of the Draft EA. Additional meetings and a public hearing has been held in concert with publication of the project proposal in the Office of Environmental Quality Control (OEQC) Environmental Notice.

Additionally, the proposed project will require a Construction Noise Permit and a National Pollution Discharge Elimination System Permit (NPDES) from the State Department of Health.

Scenic and Open Space Resources

Objective: Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

CORRECTION

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

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Scenic and Open Space Resources

Objective: Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

The State and County have identified no scenic vistas or view planes in the project vicinity. Upon completion of construction, the appearance of the proposed improvements would be similar to the visual impact created by the existing freeway lanes and would not detract significantly from existing views. Proposed noise barrier walls, if constructed, would impose on views of Pearl Harbor from first-floor and backyard locations of residential properties located along the northern right-of-way of the freeway at Kaonohi Ridge. Visual impacts related to construction activities are temporary in nature and will cease when project activities are complete. No open space resources will be adversely affected by the proposed project.

Historic Resources

Objective: Protect, preserve, and where desirable, restore those natural and man made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Given the extensive urban development along all portions of the project area, there is little likelihood of finding historic, prehistoric surface or subsurface archaeological resources. A cultural resources study conducted for the project found no records of archaeological sites in the project area. A reconnaissance survey observed no surface features of historic or archaeological significance. The State Historic Preservation Division has determined that construction of the proposed improvements will have "no effect" on historic resources. (See Appendix A, Correspondence, letter from SHPD dated 4/24/98.)

Based on the above analysis the State DOT certifies that the proposed activity complies with the approved HCZM program and will be conducted in a manner consistent with the program. Appendix A, Correspondence, includes a copy of the letter from the State of Hawaii, Office of Planning offering their determination that a CZM consistency review is not necessary for this project.

4.3 CITY AND COUNTY OF HONOLULU LAND USE DESIGNATIONS AND CONTROLS

Land uses in the Urban District are controlled by the City and County of Honolulu's General Plan, Development Plan and Land Use Ordinances.

4.3.1 City and County of Honolulu General Plan

The General Plan for the City and County of Honolulu provides a statement of the long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of Oahu. Using a 20-year time horizon, broad policies are also specified to facilitate attainment of the objectives of the Plan. The H-1 Freeway widening will be consistent with the following objectives and policies of the General Plan:

Population

Objective B: To plan for future population growth.

Policy 1: Allocate efficiently the money and resources of the City and County in order to meet the needs of Oahu's anticipated future population.

Objective C: To establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony.

Policy 1: Facilitate the full development of the Primary Urban Center.

Transportation and Utilities

Objective A: To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.

Policy 5: Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.

Objective D: To maintain transportation and utility systems which will help Oahu continue to be a desirable place to live and visit.

Policy 1: Give primary emphasis in capital-improvement program to the maintenance and improvement of existing roads and utilities.

Policy 4: Evaluate the social, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.

Physical Development and Urban Design

Objective A: To coordinate all changes in the physical environment of Oahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Objective B: To develop Honolulu (Waialae-Kahala to Halawa), Aiea, and Pearl City as the Island's primary urban center.

4.3.2 Land Use Plans

The Development Plans help to implement the objectives and policies of the General Plan by providing relatively detailed development schemes for geographical regions of the island. The Development Plan Land Use Maps depict land use patterns which are consistent with the objectives and policies of the General Plan.

The H-1 Freeway Widening project site is located within the Primary Urban Center (PUC) Development Plan. The PUC is the most populated region in the State of Hawaii and is Oahu's largest employment center. The PUC Land Use Map designates the land proposed for the widening as Public Facilities. Roadway improvements are acceptable under such designation when required to meet a public need.

The Development Plan Public Facilities Map identifies public and private proposals for improvements and additions to the streets and highway system. It is utilized by the City to plan for future public expenditures and capital improvements. On the Primary Urban Center Development Plan Public Facilities Map, the project site is designated as Improvements Within

Existing Right of Way. This designation is compatible with the objectives of the proposed widening. The project is located outside of the County delineated Special Management Area.

4.3.3 City and County of Honolulu Land Use Ordinance

The City and County of Honolulu Land Use Ordinance (LUO) regulates land use in accordance with adopted land use policies, including the Oahu General Plan and City and County of Honolulu Development Plans.

Lands surrounding the project site are under City and County zoning for single family dwelling (R-5), low-density apartments (A-1 & A-2), light industry (I-2), and general preservation (P-2). The use of the site to expand the H-1 Freeway is in accord with City and County zoning and land use plans and policies.

CHAPTER 5
NECESSARY PERMITS AND APPROVALS

5.1 STATE OF HAWAII

5.1.1 Department of Health

An National Pollution Discharge Elimination System (NPDES) Permit will be obtained from DOH, Clean Water Branch for dewatering and discharge of ground water encountered during excavation activities.

Excessive noise levels generated by project activities will require that a noise permit be filed with DOH, Noise and Radiation Branch. The provisions of the noise permit will require that contractors muffle all construction vehicles and machinery and maintain all noise attenuation equipment in good operating condition.

The State Department of Transportation, Highways Division and project contractor will obtain a right-of-entry from the surrounding land owners prior to conducting any site reconnaissance or construction activities.

CHAPTER 6
RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND
MAINTENANCE AND ENHANCEMENT OF
LONG-TERM PRODUCTIVITY

Development of the proposed project will commit the necessary construction materials, human effort, and fiscal resource. Use of these resources will benefit residents and visitors to the Island of Oahu by improving transportation service and safety on Interstate Route H-1.

Long-term gains resulting from the proposed project include maintaining safety standards and a satisfactory level of service on the Interstate Route H-1. Additionally, the availability of federal funding for this project preserves significant fiscal resources for the State and County, which can be used for other local benefit.

CHAPTER 7
IRREVERSIBLE AND IRRETRIEVABLE
COMMITMENT OF RESOURCES

Development of the proposed project will involve the irretrievable loss of certain environmental and fiscal resources. However, the costs associated with the use of these resources should be evaluated in light of recurring benefits to the residents of Oahu.

It is anticipated that the construction of the proposed project will commit the necessary construction materials and human resources (in the form of planning, engineering, construction and labor). Reuse for much of these resources is not practicable. Although labor is compensated during the various stages of the project, labor expended for project activities is non-retrievable.

CHAPTER 8
ORGANIZATIONS AND AGENCIES CONSULTED
DURING PREPARATION OF THE EA

8.1 FEDERAL AGENCIES

U.S. Army Corps of Engineers
U.S. Department of the Interior - Fish and Wildlife Service
U.S. Environmental Protection Agency

8.2 STATE AGENCIES

Department of Health
 Clean Water Branch
 Noise and Radiation Branch
Department of Land and Natural Resources
 State Historic Preservation Division

8.3 CITY AND COUNTY OF HONOLULU

Department of Planning and Permitting
Department of Transportation Services

8.4 OTHER ORGANIZATIONS AND ELECTED OFFICIALS

8.4.1 Consultants

Char & Associates, Botanical Consultants
Cultural Surveys Hawaii, Archaeological Consultants
Julian Ng, Incorporated, Traffic Consultant
Kai Hawaii, Inc., Structural Engineering Consultants
Y. Ebisu & Associates, Acoustic Consultants

8.4.2 Other Organizations

Aiea Neighborhood Board No. 20
Hawaiian Electric Company
Pearl City Neighborhood Board No. 21
Pearl Ridge Elementary School
Waimalu Grace Brethren Church and Children's Center
Waimalu Elementary School
Waimalu Residents' Association

8.4.3 Elected Officials

State Senators

Norman Mizuguchi, 15th District
David Ige, 17th District
Cal Kawamoto, 19th District

State Representatives

Tom Okumura, 33rd District
Mark Takai, 34th District
Nobu Yonamine, 35th District
Roy Takumi, 36th District

CHAPTER 9 DETERMINATION

9.1 OVERVIEW

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, and in Section 11-200-12 of Title 11, Chapter 200, Hawaii Administrative Rules (HAR), the proposed H-1 Freeway widening has been assessed for short- and long-term and cumulative effects on the environment.

9.2 SIGNIFICANCE CRITERIA

Significance criteria set forth in Section 11-200-12 of Title 11, Chapter 200 HAR were used to evaluate the potential impacts of the proposed project on the environment. The thirteen criteria are listed below along with a brief discussion.

Criteria 1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

An assessment of flora and fauna, and historic and archaeological sites at and near the project area found no presence of natural or cultural resources that would be jeopardized by the proposed freeway widening. Under consultation with DLNR, Historic Preservation Division, it has been determined that the proposed project design will have "no effect" on any historic or cultural resources.

Criteria 2. Curtails the range of beneficial uses of the environment;

The proposed project site is located primarily within the existing traffic corridor. The freeway widening will require the relocation of nine residential parcels adjacent to the viaduct on the north side. Waimalu Grace Brethren Church and Pre-School, which are located beneath the viaduct, will also be permanently relocated as a result of this project. Improvements to the freeway will not significantly alter the function or existing use of the environment.

Criteria 3. Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS;

The project proposal has been prepared according to State and County guidelines, plans, and policies and has been found to be in compliance with all relevant provisions.

Criteria 4. Substantially affects the economic or social welfare of the community or State; The proposed project is expected to have little effect on the social and economic environment. In general, the widening will serve to meet level of service needs and safety standards for transportation infrastructure required by area residents, businesses, and visitors.

Criteria 5. Substantially affects the public health;

Factors affecting public health, including air quality, water quality, and noise levels are anticipated to be only minimally affected or unaffected by the construction and use of the new lane. Appropriate mitigation measures for short-term impacts to water quality are contained in Best Management Practices to be followed by the project contractor. Noise mitigation measures will be considered for locations that are impacted by noise levels that "approach or exceed" FHWA's noise abatement criteria or where noise levels are substantially increased because of project activities.

Criteria 6. Involves substantial secondary impacts, such as population changes or effects on public facilities;

The proposed project will not, in its own right, stimulate unexpected change in the population, but will accommodate current and future vehicle use associated with economic and social activities in the area.

Criteria 7. Involves a substantial degradation of environmental quality;

Impacts to air and water quality, noise levels, natural resources, and land use associated with the construction and use of the new lane are anticipated to be minimal. Mitigation measures will be employed as practicable to further minimize potentially detrimental effects to the environment

resulting from project activities. The proposed project does not involve substantial degradation to environmental quality.

Criteria 8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The proposed widening represents the State's commitment to maintain a safe and efficient transportation infrastructure. It is being developed as part of the State's ongoing effort to upgrade and expand the capacity of the transportation system to meet existing and projected service demands. The proposed project will not, of itself, involve a commitment for larger actions. However, the remaining length of Interstate Route H-1 from the Waiiau Interchange to the H-1 / H-2 merge is planned for widening.

The proposed project will not result in changes in land use or traffic patterns. The project will require no land use zoning changes and is not expected to be a stimulus to unplanned growth. The project will help alleviate congestion on this segment of the H-1 freeway, but will not alter regional transportation routes. Project related impacts from construction activities and the use of the improved freeway section following construction include residential relocation, noise, construction dust, and traffic. These impacts are individually limited and will be mitigated through measures outlined in this document.

Criteria 9. Substantially affects a rare, threatened, or endangered species, or its habitat; An investigation of flora and fauna in the project vicinity discovered no species that are listed as rare, threatened, or endangered by the State or Federal government. Urban development and intensive modifications in the project area have long since replaced native habitat.

Criteria 10. Detrimentially affects air or water quality or ambient noise levels; No impacts to water quality are anticipated from the proposed project. No project activities will encroach into Waimalu Stream. Consistent trade winds in the area help maintain good air quality. Noise mitigation measures will be considered for locations that are impacted by noise

levels that "approach or exceed" FHWA's noise abatement criteria, or where noise levels are substantially increased because of project activities. Impacts associated with the proposed freeway widening are expected to be minimal or temporary.

Criteria 11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

The project site is located inland from any coastal waters within an area in which flood hazards have not been determined by the Federal Emergency Management Agency. Based on area topography, the project site is unlikely to be affected by flooding. All structures proposed for this project will be built, at a minimum according to equivalent standards for seismic zone 2a, as established by the Uniform Building Code. The project is not located in an environmentally sensitive area and is unlikely to affect or suffer damage from natural forces.

Criteria 12. Substantially affects scenic vistas and view planes identified in County or State plans or studies;

The project site is not located within any scenic vista or view plane identified in County or State Plans. The proposed project will result in long-term visual impacts in the form of a wider freeway and viaduct. The new lane and shoulder will be noticeable, but will not intrude on any existing view planes. In general, the appearance of the new lane would be similar to the visual impact created by the existing freeway lanes and would not detract from existing views. Visual impacts associated with construction activities will be temporary.

Criteria 13. Requires substantial energy consumption.

Construction activities associated with the freeway widening would require high, short-term energy use, however, the project would reduce energy consumption associated with delayed and idling traffic under current congested conditions.

9.3 FINDINGS

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, it is anticipated that the project will have no significant adverse impact to water quality, air quality, existing utilities, noise levels, social welfare, archaeological sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area. It has been determined that an Environmental Impact Statement (EIS) will not be required, and that a Finding of No Significant Impact (FONSI) be issued for this project.

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Appendices

Appendix A

Correspondence

420 Waiakamilo Road
Suite 411
Honolulu Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmtowill@i-one.com



R. M. TOWILL CORPORATION
SINCE 1930

Planning
Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management

March 23, 1999

Mr. George Young
Chief, Operations Branch
US Army Corps of Engineers, POD
Building 230
Ft. Shafter, HI 96858-5440

SUBJECT: Interstate Route H-1 Widening, Westbound Direction
Kaonohi Street to Waiiau Interchange
Honolulu, Island of Oahu, Hawaii

Dear Mr. Young,

The State Department of Transportation, Highways Division proposes to improve the westbound lanes of Interstate Route H-1 between the Kaonohi Street overcrossing and the Exit 10 off-ramp at Waiiau Interchange. The proposed widening would affect a segment of the freeway approximately 1 1/4-miles in length, including a 1,500-foot viaduct that spans Waimalu Stream.

The proposed project involves construction activities above the banks and normal high water mark of Waimalu Stream. It will also involve work on the viaduct crossing above the stream channel. No construction activities and no structural work will be undertaken within the stream channel. Best Management Practices will be employed to contain construction and storm water run-off and prevent discharge into Waimalu Stream.

This letter is written to request confirmation of our understanding that a Department of the Army Permit will not be required for this project.

Thank you for your assistance. If you have any questions, please contact me at 842-1133.

Sincerely,

Chester Koga, AICP
Project Manager

cc: State Department of Transportation



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

REPLY TO
ATTENTION OF

March 30, 1999

Operations Branch

REC'D	AP		
REC'D	WAR 3	1999	RMTC
			<u>CMS</u>

Mr. Chester Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

This letter responds to your request for a jurisdictional determination for the Interstate H-1 Widening, Westbound Direction project, dated March 16, 1999. Based on the information you provided, I agree with your conclusion that a DA permit will not be required for this project.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-9258, extension 13, and reference File No. 990000241.

Sincerely,

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

PERICLES MANTHOS

STATE OF HAWAII
RECEIVED
MAY 4 6 17 AM '98
DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

April 24, 1998

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

DEPUTIES

GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND


RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION

DIVISION
LAND DIVISION
STATE PARKS
WATER AND LAND DEVELOPMENT

MEMORANDUM

LOG NO: 21397 ✓
DOC NO: 9804EJ16

TO: Pericles Manthos, Administrator
Highways Division

FROM: Don Hibbard, Administrator
Historic Preservation Division 

SUBJECT: Chapter 6E-8 Historic Preservation Review H-1 Widening, Westbound,
Waimalu Viaduct to Pearl City Off-Ramp (File No. HWY-PA 2.8758)
Waimalu, 'Ewa, O'ahu
TMK: 9-8

A review of our records shows that there are no known historic sites at the project location. The sections of the highway at ground level have been significantly altered during construction of the highway and it is unlikely that historic sites will be found in these sections. The remaining portion of the proposed widening occurs in elevated sections of H-1 where historic sites will not exist. Therefore, we believe that this project will have "no effect" on historic sites.

This is our concurrence letter under Chapter 6E-8, Hawaii Revised Statutes.

EJ:jk

HIGHWAYS DIVISION
PLANNING BRANCH
MAY 4 11 22 AM '98
STATE DEPARTMENT
OF TRANSPORTATION



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

APR 11 9 41 AM '98
RECEIVED
CL. GUY
HIGHWAYS DIVISION
DEPT. OF TRANSPORTATION

In Reply Refer To: CMC

APR 23 1998

Pericles Manthos
Administrator
Highways Division
State of Hawaii Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Re: H-1 Widening, Westbound, Waimalu Viaduct and the Pearl City Off-Ramp

Dear Pericles Manthos:

The U.S. Fish and Wildlife Service (Service) has reviewed the information provided in your letter received on April 9, 1998. The project proposed by the State of Hawaii, Department of Transportation, Highways Division is to widen the H-1 Freeway in the westbound direction between the Waimalu Viaduct and the Pearl City Off-Ramp. The Highways Division is seeking Federal-aid funding for this project.

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 federally endangered, threatened, or candidate species or wetlands directly within the referenced project site. The Service does not anticipate any adverse impacts to Federal trust resources to result from this project.

Your obligations under 7 of the Endangered Species Act (Act) have been satisfied. However, obligations under section 7 of the Act must be reconsidered, if 1) new information reveals impacts of this defined action that may affect 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.

RECEIVED
STATE DEPARTMENT
OF TRANSPORTATION
APR 27 4 20 PM '98
HIGHWAYS DIVISION
PLANNING BRANCH

The Service appreciates the opportunity to provide comments on the proposed project. If you have questions or comments, please contact Fish and Wildlife Biologist Christina Crooker at (808) 541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

420 Waiakamilo Road
Suite 411
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Construction Management

December 14, 1999

Mr. Rick Egged, Director
Office of Planning
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

SUBJECT: Interstate Route H-1 Widening, Westbound Direction
Kaonohi Street to Waiiau Interchange
Honolulu, Island of Oahu, Hawaii

Dear Mr. Egged,

The State Department of Transportation, Highways Division proposes to improve the westbound lanes of Interstate Route H-1 between the Kaonohi Street overcrossing and the Exit 10 off-ramp at the Waiiau Interchange. All improvements and work activities related to the proposed project will occur outside of the Shoreline Management Area (SMA) boundary established by the City and County of Honolulu. The attached map shows the project location in relation to the SMA boundary.

Federal involvement in this project is through a direct Federal Highways Administration appropriation for this specific project. Federal grants are not being used.

This letter is written to request confirmation from your office that a Coastal Zone Management Program consistency determination is not required for the proposed work.

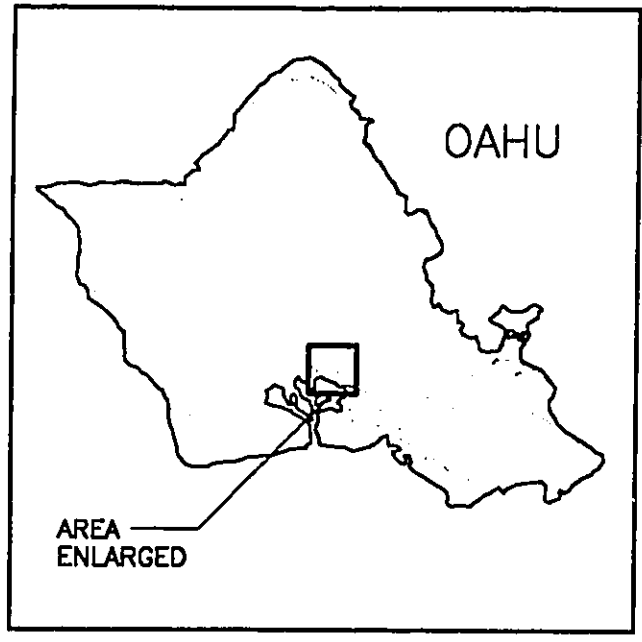
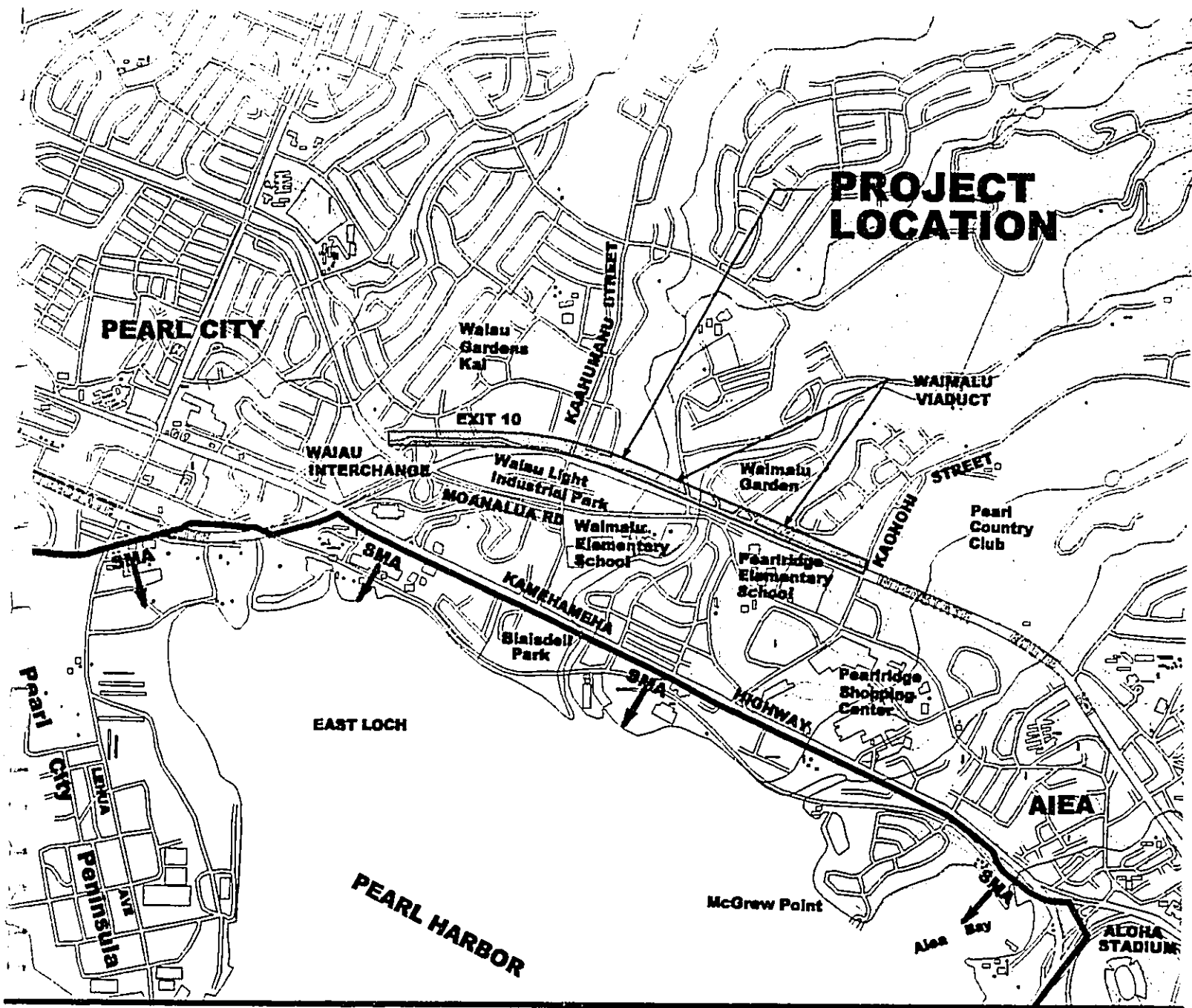
Thank you for your assistance. If you have any questions, please contact me at 842-1133.

Sincerely,

Greg Hiyakumoto, P.E.
Project Manager



GH: JN


attachments

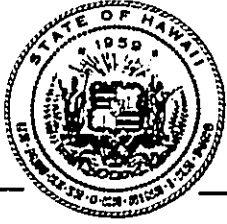


SPECIAL MANAGEMENT AREA
 Interstate Route H-1 Widening
 Westbound Direction
 Kaonohe Street to Waiu Interchange
 State of Hawaii
 Department of Transportation

0 500 1000 2000 4000
 FEET

 R. M. TOWILL CORPORATION January 2000



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

BENJAMIN J. CAYETANO
GOVERNOR
SEIJI 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) 587-2846
Fax: (808) 587-2824

Ref. No. P-8404

December 23, 1999

Mr. Greg Hiyakumoto
Project Manager
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

DK		KTS	
WMS	h	WY	
BIT			
DEC 30 1999 RMT			
<i>[Handwritten signature]</i>			

Dear Mr. Hiyakumoto:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency for the Interstate Route H-1 Widening, Westbound - Kaonohi Street to Waiau Interchange, Honolulu, Oahu

This responds to your letter dated December 14, 1999, requesting confirmation that a CZM federal consistency review is not required for the Interstate Route H-1 widening project, westbound - Kaonohi Street to Waiau Interchange. According to the information you provided, the project does not involve federal funding from sources that require CZM consistency review. Also, it is our understanding that the project is not likely to need any federal permits, such as the Corps of Engineers Department of the Army Permit. On this basis, we confirm that a CZM consistency review is not required for this project. However, in the event that a federal permit is in fact required, then a CZM consistency review will also be needed. Please note that the State Department of Transportation is obligated by Chapter 205A, HRS, to ensure that all its actions undertaken for this project are conducted in a manner consistent with Hawaii's CZM Program.

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

Sincerely,

[Handwritten signature of David W. Blane]
David W. Blane
Director
Office of Planning

- c: U.S. Army Corps of Engineers, Regulatory Branch
Department of Transportation, Highways Division
Department of Planning and Permitting, City & County of Honolulu

Appendix B

Responses to Comments Received During the Draft Environmental Assessment 30-Day Comment Period and September 15, 1999 Public Hearing

- Federal, State, City, and Other Agency Comments
- Residents' Comments
- Waimalu Grace Brethren Church Congregation Comments
- Noise Wall Questionnaire Responses

Federal, State, City, and Other Agency Comments

DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT HONOLULU
PT. SHIPPEA, NATALI HAWAII 96813

July 27, 1999

ATTENTION OF

Civil Works Technical Branch

Mr. Ronald Tsuzuki
Head Planning Engineer
State Department of Transportation
Highways Division
600 Kapiolani Boulevard, Room 504
Honolulu, Hawaii 96813

Dear Mr. Tsuzuki:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Interstate Route HI Widening Project, Oahu. The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

- a. Based on the information provided, a DA permit will not be required for the project.
- b. The flood hazard information provided on page 72 of the DEA is correct.

Sincerely,

James K. Hatashima
James K. Hatashima
Acting Chief, Civil Works
Technical Branch

HONOLULU
PLANNING
DIVISION

JUL 28 1999

Postnet File No	7871	Date	12/17/99
To	John Nicosmanos	From	Richard L. Jones
Company	R.M. Towill Corp.	City	Honolulu, HI
Phone	842-1133	Phone	842-1535
Fax	842-1927	Phone	587-1781

420 Wai'anae Road
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http://www.rmto.com



R. M. TOWILL CORPORATION
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Photogrammetry
Surveying
Construction Management

February 17, 2000

Mr James K. Hatashima, Acting Chief
Civil Works, Technical Branch
U.S. Army Corps of Engineers
Fort Shafter, HI 96858-5440

SUBJECT: Your Letter Dated July 27, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kamehohi Street to Waiau Interchange

Dear Mr. Hatashima:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1 Widening project.

The State Department of Transportation (SDOT) acknowledges that a Department of the Army permit is not required for the proposed project. In addition, SDOT notes that the flood hazard information provided on page 72 of the Draft IEA is correct.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830

Very truly yours,

Greg H. Hiyakumoto
Greg H. Hiyakumoto, P.E.
Project Manager

GHH:JN



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecogroup
300 Ala Moana Boulevard, Room 3122
Box 50088
Honolulu, Hawaii 96850

The Service appreciates the opportunity to comment on the DEA. If you have any questions regarding these comments, please contact Fish and Wildlife Biologist Christina Crooker by telephone at (808) 541-341 or by facsimile transmission at (808) 541-3470.

Sincerely,

Robert P. Smith
Pacific Islands Manager

AUG 21 1999
SEP 2 11 13 AM '99
HIGHWAYS DIVISION
PLANNING BRANCH
STATE DEPARTMENT
OF TRANSPORTATION

In Reply Refer To: CMC

Ronald Tsuzuki
Head Planning Engineer, Highways Division
Hawaii Department of Transportation
600 Kapiolani Blvd., Room 304
Honolulu, Hawaii 96813

cc: USEPA-Region IX, Honolulu
DLNR, Hawaii
CZMP, Hawaii

Re: Draft Environmental Assessment for Interstate Route H-1 Widening Westbound Direction,
Kaonohi Street to Waiau Interchange, Aiea and Pearl City, Oahu, Hawaii

Dear Mr. Tsuzuki:

The U.S. Fish and Wildlife Service (Service) has reviewed the referenced Draft Environmental Assessment (DEA). The proposed project is sponsored by the Hawaii Department of Transportation, Highways Division, in partnership with the U.S. Department of Transportation, Federal Highway Administration. This letter has been prepared under the authority of and in accordance with provisions of the National Environmental Policy Act of 1969 [42 USC 4321 *et seq.*; 83 Stat. 852], as amended, the Fish and Wildlife Coordination Act of 1973 [16 USC 661 *et seq.*; 48 Stat. 401], as amended, the Endangered Species Act of 1973 [16 USC 1531 *et seq.*; 87 Stat. 884], as amended, and other authorities mandating Service concern for environmental values. Based on these authorities the Service offers the following comments for your consideration.

The proposed project involves the widening of a portion of an existing west bound side of Freeway H-1 to six lanes with lane and shoulder widths meeting current Interstate Freeway standards. Construction impacts will be mitigated through the implementation of Best Management Practices.

The Service believes that the DEA adequately identifies the major flora and fauna species and habitats occurring at the proposed project site, sufficiently assesses anticipated project-related impacts to those species, and proposes appropriate mitigation measures to minimize unavoidable impacts. On April 23, 1999, the Service concluded that no federally endangered, threatened, or candidate species existed at the proposed project site. In addition, there are no wetlands or coral-reef ecosystems that will be affected by the project. Based on this, we do not anticipate any adverse impacts to Federal trust resources to result from the project.

470 Waiwale Road
Suite 411
Honolulu, Hawaii 96817-4041
Telephone 808 542 1133
Fax 808 542 1937
eMail rmowill@r-m.com



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Construction Management

February 17, 2000

Mr. Robert P. Smith
Pacific Islands Manager
Fish & Wildlife Service
U.S. Department of the Interior
300 Ala Moana Boulevard, Room 3122
Honolulu HI 96850

SUBJECT: Your Letter Dated August 31, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiiau Interchange

Dear Mr. Smith:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1
Widening project.

The State Department of Transportation acknowledges that you anticipate no adverse impacts to federal
trust resources to result from the proposed project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of
Transportation, Highways Division, at 587-4830.

Very truly yours,

Greg H. Hyakumoto, P.E.
Project Manager

GHH:JN



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96819

(P) 1603.9

420 Waiakamohi Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 908 842 1131
Fax 808 842 1937
eMail matowill@one.com

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INCORPORATED IN CALIFORNIA

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Construction Management

February 17, 2000

Mr. Gordon Matsuoka
Public Works Administrator
Department of Accounting and General Services
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Your Letter Dated August 27, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiau Interchange

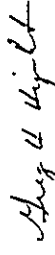
Dear Mr. Matsuoka:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route
H-1 Widening project.

The State Department of Transportation acknowledges that you have no comments concerning the
proposed project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of
Transportation, Highways Division, at 587-1830.

Very truly yours,


Greg H. Hyakumoto, P.E.
Project Manager

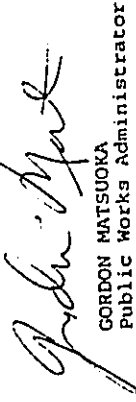
GHH:JN

TO: Mr. Ronald Tsuzuki, Head Planning Engineer
Highways Division
Department of Transportation

SUBJECT: H-1 Widening, Westbound
Kaunohi Street to Waiau Interchange
Draft Environmental Assessment

Thank you for the opportunity to review the subject document.
The proposed project will have no impact on our facilities.
Therefore, we have no comments to offer.

Should you have any questions, please have your staff contact
Mr. Ralph Yukumoto of the Planning Branch at 546-0498.


GORDON MATSUOKA
Public Works Administrator

RY:MO
C: R.M. Towill Corp

RECEIVED
AUG 30 10 50 AM '99
HIGHWAYS DIVISION
PLANNING BRANCH

WILLIAM J. CAVETANO
DIRECTOR

MAJOR GENERAL EDWARD V. MCLENDON
CHIEF OF STAFF

ROY C. PRICE SR.
VICE DIRECTOR



STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
DARDANON/HEADROAD
HONOLULU, HAWAII 96816-4495

July 27, 1999



PH 04 (808) 733 4300
FAX (808) 733 4181

420 Waiakama Road
Suite 411
Honolulu, Hawaii 96817-4911
Telephone 808 842 1133
Fax 808 842 1931
email: info@tdc.org.com



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Construction Management

February 17, 2000

Mr. Roy C. Price, Sr.
Vice Director of Civil Defense
Department of Defense
State of Hawaii
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

SUBJECT: Your Letter Dated July 27, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaonoahi Street to Waiuu Interchange

Dear Mr. Price:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1
Widening project.

The State Department of Transportation acknowledges that you have no comments concerning the
proposed project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of
Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hayakumoto, P.E.
Project Manager

GHH:JN

TO: Mr. Ronald Tsuzuki
Head Planning Engineer
Highways Division
Department of Transportation
State of Hawaii

FROM: Roy C. Price, Sr.
Vice Director of Civil Defense

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR INTERSTATE
ROUTE H-1 WIDENING, WESTBOUND DIRECTION, KAONOHI STREET
TO WAIUU

We appreciate the opportunity to review and comment on the draft Environmental
Assessment on the subject document.

State Civil Defense (SCD) does not wish to make any comments on this project.

Our SCD 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.

We appreciate your consideration and expression of interest on this matter.

c: Oahu Civil Defense Agency

DEPARTMENT
STATE DEPARTMENT
OF TRANSPORTATION
JUL 29 3 47 PM '99
HIGHWAYS DIVISION
PLANNING BRANCH



STATE OF HAWAII
DEPARTMENT OF EDUCATION
PO BOX 2160
HONOLULU HAWAII 96820

OFFICE OF THE SUPERINTENDENT

July 23, 1999

MEMO TO Mr. Ronald Tsuzuki, Head Planning Engineer
Highways Division, DOT
FROM Paul G. LeMahieu, Ph.D., Superintendent
Department of Education

SUBJECT H-1 Widening
Kaunohi Street to Waiuu Interchange - Draft EA

The Department of Education has no comment on the subject draft environmental assessment.

Thank you for the opportunity to respond
PLEMSB by

cc A Suga, OBS
K Kawaguchi, CDO (Interim Dist. Supt)

420 Waiuu Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 832 1133
Fax 808 542 1937
eMail plemahieu@doe.com



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Construction Management

February 17, 2000

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

SUBJECT: Your Letter Dated July 23, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiuu Interchange

Dear Dr. LeMahieu:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1 Widening project.

The State Department of Transportation acknowledges that you have no comments concerning the proposed project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1838.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GHH:JN





STATE OF HAWAII
DEPARTMENT OF HEALTH
PO BOX 3378
HONOLULU HAWAII 96801

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

BY FAX, 9/16/99 10:10 AM

Mr. Ronald Tsuzuki
September 16, 1999
Page 2
99-154/epo

Questions regarding these comments should be directed to
Mr. Lane Otsu of the Office of Solid Waste Management at
586-4240.

Air Pollution

The proposed project would affect a portion of the freeway
approximately 1 1/4 miles in length, which will include a
1,500 foot long viaduct within the Waimalu Garden Subdivision.

Proposed actions affecting air quality include removing
vegetation, grading, excavation, and other construction
activities. Due to the nature of the project, there is a
significant potential for fugitive dust to be generated during
the removal of debris and during the grading, excavating and
construction activities that would impact residential and
business establishments and nearby thoroughfares. It is
suggested that a dust control management plan be developed
which identifies and addresses activities that have a
significant potential for fugitive dust to be generated.
Implementation of adequate dust control measures during all
phases of the project is warranted.

Construction activities must comply with provisions of
Chapter 11-60.1, Hawaii Administrative Rules, Air Pollution
Control, section 11-60.1-33 on Fugitive Dust. The contractor
should provide adequate measures to control dust from road
areas and during the various phases of construction activities.
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 material transfer points and 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, project entrances, throughout project site, access roads; and
- e. providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities.

Mr. Ronald Tsuzuki
Head Planning Engineer
Highways Division
Department of Transportation
600 Kapiolani Boulevard, Room 304
Honolulu, Hawaii 96813

Dear Mr. Tsuzuki:

Subject: Draft Environmental Assessment (DEA)
Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiiau Interchange
(Project No. HIEF-01-97)
Oahu

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

Solid Waste

We request that the applicant address all opportunities to
incorporate recycling efforts in its planning process. The
State has a goal of reducing its solid waste stream by 50% by
the year 2000. Therefore the Department of Health encourages
the State Department of Transportation to incorporate waste
reduction and recycling principles in the planning and
implementation phases of this project.

As part of these efforts State statutes require state agencies
undertaking roadway paving projects to purchase materials with
a minimum of ten percent (10%) crushed recycled glass aggregate
in all basecourse (treated and untreated) and subbase, when the
glass is available at a price no greater than that of the
equivalent aggregate. Additionally, non-structural backfill
shall utilize one hundred percent crushed glass when available
at a cost equal to or lower than the equivalent aggregate.


SEP 20 1999
HIGHER PLANNING CHAIRMAN

3. After construction of the proposed facility is completed, a NPDES individual permit will be required if the operation of the facility involves any wastewater discharge into State waters.

Questions regarding air permits for equipment with the potential of discharging emissions may be addressed to the Engineering Section of the Clean Air Branch at 586-4200.
If you have any questions regarding fugitive dust, please contact Mr. Ronald Ho of the Clean Air Branch at 586-4200.

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

Sincerely,


GARY GILL
Deputy Director for
Environmental Health

c: OSWH
CAB
CWB

Water Pollution

1. The applicant should contact the Army Corps of Engineers to identify whether a federal permit (including a Department of Army permit) is required for this project. If a federal permit is required, then a Section 401 Water Quality Certification is required from the State Department of Health, Clean Water Branch.
2. A National Pollutant Discharge Elimination System (NPDES) general permit is required for the following discharges to waters of the State:
 - a. Storm water discharges relating to construction activities, such as clearing, grading, and excavation, for projects equal to or greater than five acres;
 - b. Storm water discharges from industrial activities;
 - c. Construction dewatering activities;
 - d. Noncontact cooling water discharges less than one million gallons per day;
 - e. Treated groundwater from underground storage tank remedial activities;
 - f. Hydrotesting water;
 - g. Treated effluent from petroleum bulk stations and terminals; and
 - h. Treated effluent from well drilling activities.

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

470 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4041
Telephone 808 842 1131
Fax 808 842 1937
www.rmto.com



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Department of Health
February 17, 2000
Page 2

February 17, 2000

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

SUBJECT: Your Letter Dated September 16, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Wai'anae Interchange

Dear Mr. Gill:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1 widening project. In response to your specific comments the State Department of Transportation (SDOT) offers the following information:

Item 1. Solid Waste

To support the State's efforts to reduce its solid waste stream, SDOT will instruct the project contractor to use materials with a minimum of ten percent (10%) crushed recycled glass aggregate in all base course (treated and untreated) and subbase, when the glass is available at a price no greater than that of the equivalent aggregate. Additionally, the contractor will be instructed to use one hundred percent (100%) crushed glass for non-structural backfill when available at a cost equal to or lower than the equivalent aggregate.

Item 2. Air Pollution

As stated in Section 3.4.3.1 of the Draft E.A., a dust control plan will be implemented by the project contractor to ensure compliance with State regulations. Construction activities will comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules, Air Pollution Control, section 11-60.1-33 on fugitive dust. Fugitive dust will be controlled during all phases of the project through watering of active work areas, use of wind screens, covering of open-bodied trucks, timely landscaping of exposed areas, and keeping paved roads clean of dirt and debris. Additionally, construction planning will focus on minimizing the amount of dust-generating materials and activities.

Item 3. Water Pollution

The Army Corps of Engineers was contacted regarding federal permit requirements for the subject project. They determined that the project, as described in the Draft E.A., does not require a Department of the Army Permit (See Final E.A., Appendix A, Correspondence, Letter from ACOE dated March 30, 1999).

Additionally, as stated in Section 5.1.1 of the Draft E.A., a National Pollution Discharge Elimination System general permit will be obtained from DOH, Clean Water Branch for dewatering and discharge of ground water encountered during excavation activities.

If, following construction, operation of the facility involves any wastewater discharge into State waters, an NPDES individual permit will be obtained from DOH.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hijakumoto, P.E.
Project Manager

GHI:JN



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND DIVISION
HONOLULU, HAWAII 96809
September 8, 1999

LD-NAV
REF.: DEAHI.RCM

R. M. Towill Corporation
Mr. Chester Koga, AICP
420 Waiakamilo Road No. 411
Honolulu, Hawaii 96809

SEP 11 1999
C. Y. Uchida

PSF\99-261

AGRICULTURE DEVELOPMENT
PROGRAMS
AQUATIC RESOURCES
BOATING AND OCCUPATIONAL
CONSERVATION AND
RECREATION
CONSERVATION AND
RECREATION
FORESTRY AND WILDLIFE
LAND DIVISION
STATE PLANTS
WATER RESOURCE MANAGEMENT

Ref: PS:EH

MEMORANDUM

JUL 20 1999

Suspense Date: 8/20/99
99-261

Dear Mr. Koga:

SUBJECT: Review of Draft Environmental Assessment (DEA) for
Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Wai'au Intersection

Thank you for the opportunity to review and comment on the
subject matter.

Please be informed that our Land Division submitted the
subject DEA to our Historic Preservation Division, Division of
Division of Aquatic Resources and our Land Division's Engineering
Branch, Oahu District Land Office and Commission on Water Resource
Management for their review and comments on the proposed project.

Attached herewith are copies of responses (comments) received
from the Historic Preservation Division, Engineering Branch, Oahu
District Land Office and Commission on Water Resource Management.

The Department of Land and Natural Resources has no other
comments to offer on the subject matter at this time. Should you
have any questions, please contact Nick Vaccaro at 587-0433.

Very truly yours,

Dean Y. Uchida
DEAN Y. UCHIDA
Administrator

c: Oahu District Land Office



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND DIVISION
HONOLULU, HAWAII 96809

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CONSERVATION AND
RECREATION
CONSERVATION AND
RECREATION
FORESTRY AND WILDLIFE
LAND DIVISION
STATE PLANTS
WATER RESOURCE MANAGEMENT

TO:

Historic Preservation Division
Division of Aquatic Resources
Commission on Water Resource Management
Land Division
Engineering Branch
Oahu District Land Office

FROM:

Dean Uchida, Administrator

SUBJECT:

Draft Environmental Assessment for Interstate Route
H-1 Widening, Westbound Direction, Kaonohi Street to
Wai'au Interchange

We have received one copy of the subject DEA document for our
review and comment. A copy of the Table of Contents and Chapter
1, Purpose and Need, are attached. Please contact Ed Henry should
you wish to review the entire report.

Please submit your comments (if any) within the time requested
above.

If we do not receive your comments on or before the suspense date
we will assume there are no comments.

Should you have any questions, please contact Ed Henry at 587-
0380.

() We have no comments.

() Comments attached.

Signed: *Ed Henry*

Date: 7/22/99

Attachment

RECEIVED
DIVISION OF
MANAGEMENT
JUL 23 7 58 AM '99



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND DIVISION
PO BOX 217
HONOLULU HAWAII 96808

LAND AND NATURAL RESOURCES
PROGRAMS
AQUATIC RESOURCES
SOILS AND CLIMATE PROTECTION
CONSERVATION
LAND AND NATURAL RESOURCES MANAGEMENT
FORESTRY AND WILDLIFE
HAWAIIAN CULTURE
PLANNING
STATE PARKS
WATER RESOURCES MANAGEMENT

ENGINEERING BRANCH

Ref: PS:EH

MEMORANDUM

JUL 20 1999

Suspense Date: 8/20/99
99-261

TO: Historic Preservation Division
Division of Aquatic Resources
Commission on Water Resource Management
Land Division
Engineering Branch
Oahu District Land Office

FROM: Dean Uchida, Administrator *Dean Uchida*

SUBJECT: Draft Environmental Assessment for Interstate Route
H-1 Widening, Westbound Direction, Kaonohi Street-to
Waiau Interchange

COMMENTS

We confirm that the project site, according to FEMA Community Panel Number 150001 0065 C, is located in Zone D. This is an area in which flood hazards are undetermined. The FIRM map referenced in the DEA is outdated, the latest FIRM Map is dated September 30, 1995.

The DEA should include the water demands for the proposed project. Also, please clarify if water will be provided by an existing BWS water meter.

For your information, if there is an increase in water demands (gpd) for the project site, then a water allocation from the Engineering Branch (EB) is required to obtain a building permit and/or water meter. Please provide the water demands (gpd) and water demand calculation to EB, Land Division. The water demands will be included in the Water Master Plan for Oahu being prepared by Fukunaga and Associates for the Department of Land and Natural Resources.

We have received one copy of the subject DEA document for our review and comment. A copy of the Table of Contents and Chapter 1, Purpose and Need, are attached. Please contact Ed Henry should you wish to review the entire report.

Please submit your comments (if any) within the time requested above.

If we do not receive your comments on or before the suspense date we will assume there are no comments.

Should you have any questions, please contact Ed Henry at 587-0380.

() We have no comments.

(X) Comments attached.

Signed: *Andrew M. Monden*
ANDREW M. MONDEN, Chief Engineer

Date: *7/20/99*

Attachment

470 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4741
Telephone 808 842 1133
Fax 808 842 1937
eMail rmt@towill.com



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DLNR - Land Division
February 17, 2000
Page 2

February 17, 2000

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

SUBJECT: Your Letter Dated September 8, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaunohii Street to Waiau Interchange

Dear Mr. Uchida:

Thank you for reviewing the Draft Environmental Assessment for the proposed H-1 widening project. The State Department of Transportation (SDOT) acknowledges that the Oahu District Land Office has no comment on the subject project. The Department will respond through separate correspondence to comments from the Historic Preservation Division and the Commission on Water Resource Management. With regards to comments from the Land Division, Engineering Branch (in italics) SDOT offers the following responses:

The FIRM Map referenced in the DE-1 is outdated.

The FIRM Map referenced in Section 3.14.2 of the EA has been updated to September 30, 1995, the date of latest issuance.

The DE-1 should include the water demands for the proposed project. Please clarify if water will be provided by an existing 800'S water meter.

Water demands for the proposed project will not be known until completion of the design phase. Water will be used on the project primarily for dust control, concrete mixing, and limited landscaping. Quantity of use will be comparable to other projects of similar scope. Water trucks (6,000 gallon capacity) will be used for most watering activities. Water will be provided by temporary hydrant meter.

If there is an increase in water demands (q_{sp}) for the project site, then a water allocation from the Engineering Branch (E/B) is required to obtain a building permit and/or water meter. Please provide the water demands (q_{sp}) and water demands calculation to E/B, Land Division.

Water demand is not expected to increase as a result of the proposed project. In fact, water demand may decrease due to the relocation of 10 single-family housing units and a church and pre-school building. Long-term water use following completion of the project will include watering of landscaped

areas along the highway. In most cases, landscaping will rely on rain water for irrigation, however, it will be necessary to regularly water new landscaping until it becomes established. More precise water demands will not be known until project design is complete. At that time, water demands and water demand calculations will be provided to the Engineering Branch, Land Division.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

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R. M. TOWILL CORPORATION
SINCE 1930

470 Waialae Road
Suite 411
Honolulu Hawaii 96817-4911
Telephone 808 842 1133
Fax 808 842 1937
email rmtowill@one.com

THOMAS E. JOHNS
BRUCE S. JENSEN
DAVID A. HOBBS
DAVID A. HOBBS, JR.
LAWRENCE H. HOBBS
LAWYERS



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

July 27, 1999

7 27 1999

Mr. Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu HI 96809

SUBJECT: Your Letter Dated July 27, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange

Dear Mr. Nishioka:

Thank you for reviewing the Draft Environmental Assessment for the proposed H-1 widening project.

The State Department of Transportation (SDOT) acknowledges your concern about the potential for ground and surface water contamination from project activities. The Department further notes your interest in continuing approvals for the project on a review by the State Department of Health (DOH). A copy of the Draft EA for the project was sent to DOH for review. The Department will comply with DOH's comments and requirements related to water quality.

Additionally, the EPA Region IX Ground Water Office was also consulted regarding the proposed project's compliance with the Safe Source Aquifer (SSA) Protection Program (Safe Drinking Water Act of 1974, Section 1424(c)). Based on descriptions of the proposed construction, potential project-related impacts to the Southern Oahu Basal Aquifer, and mitigation measures proposed to prevent contamination and damage to the aquifer, the EPA has determined that the project is in compliance with the SSA Protection Program.

Regarding Stream Channel Alteration Permit (SCAP) requirements, the proposed project will not alter the bed or banks of Waimalu Stream. A SCAP is, therefore, not required. If during the design stage, it becomes apparent that project activities will require alteration to the bed or banks of the stream, SDOT will contact CWRM and submit an application for a SCAP.

TO: Mr. Dean Uchida, Administrator
Land Division

FROM: Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Draft Environmental Assessment for Interstate Route H-1 Widening, Westbound Direction
Kaonohi Street to Waiau Interchange

FILE NO: 99-261

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

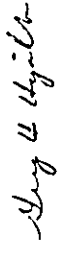
In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

- [] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- [] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Project Plan.
- [X] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's adherence of any resulting requirements related to water quality.
- [] A Wet Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- [] The proposed water supply source for the project is located in a designated water management area and a Water Use Permit from the Commission would be required prior to use of this source.
- [] Groundwater withdrawals from this project may affect streamflow which may require an instream flow standard amendment.
- [] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.
- [] If the proposed project includes construction of a stream diversion, the project may require a stream diversion work's permit and amend the instream flow standard for the affected stream(s).
- [X] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- [] OTHER

If there are any questions, please contact the Commission staff at 597-0218.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hiyakumoto, P.E.
Project Manager

GHE:JN

DLNR - Commission on Water Resource Management
February 17, 2000
Page 2



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Estimote Building, Room 555
600 Kapiolani Boulevard
Honolulu, Hawaii 96813

DEPUTY
JANET F. GORTLE

PLANNING
ENGINEERING
ENVIRONMENTAL SCIENCES
PHOTOGRAMMETRY
SURVEYING
CONSTRUCTION MANAGEMENT

July 28, 1999

Mr. Ronald Tsuzuki, Head Planning Engineer
State Department of Transportation
Highways Division
600 Kapiolani Boulevard, Room 304
Honolulu, Hawaii 96813

Dear Mr Tsuzuki:

SUBJECT: Chapter 6E-8 Historic Preservation Review -- Draft Environmental Assessment (DEA) for Interstate Route H-1 Widening Westbound Direction, Kaonoahi Street to Waiawa Interchange
Waiawa to Halaawa, Ewa, O'ahu
TMK: 9-6-10-9-9

LOG NO: 23858
DOC NO: 9907EJ25

Thank you for the opportunity to review the DEA for the H-1 Widening Project between Kaonoahi Street and the Waiawa Interchange. A review of our records shows that there are no known historic sites at the project location.

An archaeological assessment to determine the likelihood of finding historic sites was conducted for this project, included as Appendix E in the DEA. This study concluded that no historic sites were found within the proposed widening corridor. The assessment also determined that subsurface historic sites are also unlikely to be found because of the large amount of development disturbance with the existing H-1 construction activities and urbanization of the area. The study identified that historic structures exist in the vicinity and that at least one, the Pearl City Hongwanji temple, may be eligible for inclusion on the State and National Register of Historic Places and should be further investigated if future highway improvements are necessary.

Consequently, we believe that the project, as described in the DEA, will have "no effect" on historic sites. Should plans change in any way we request that our office be consulted about such changes at the earliest possible opportunity in order to evaluate the possible effects, if any, on significant historic sites in this area of Pearl City.

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

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJjk

RECEIVED
PLANNING DIVISION
AUG 9 1999
STATE OF HAWAII

470 Waiakama Road
Suite 411
Honolulu, Hawaii 96817-4911
Telephone 808 842 1133
Fax 808 842 1937
eMail mtowill@hawaii.net



R. M. TOWILL CORPORATION
SINCE 1930

February 17, 2000

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

SUBJECT: Your Letter Dated July 28, 1999 Regarding the Draft Environmental Assessment, Interstate Route H-1 Widening, Westbound Direction, Kaonoahi Street to Waiawa Interchange

Dear Mr. Hibbard:

Thank you for reviewing the Draft Environmental Assessment for the proposed H-1 widening project. The State Department of Transportation (SDOT) notes that DLNR Historic Preservation Division has determined that the proposed project, as described in the Draft EA, will have "no effect" on historic sites.

Should project boundaries change, SDOT will consult your office about possible effects, if any, on significant historic sites in the area.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN



University of Hawaii'i at Mānoa

Environmental Center
A Unit of Waiwai Resources Research Center
2150 Campus Road • Chavira 317 • Honolulu, Hawaii 96822
Telephone: (808) 956-7181 • Facsimile: (808) 956-7980

Mr. Ronald Tsuchida, Head Planning Engineer
State Department of Transportation
Highways Division
600 Kapiolani Boulevard, Room 304
Honolulu, Hawaii 96813

January 18, 2000
EA-0191

Dear Mr. Tsuchida:

Draft Environmental Assessment
Interstate Route H-1 Widening, Westbound Direction
(Kaooaha Street Overcrossing to Waiau Interchange)
Pearl City, Oahu

The State of Hawaii Department of Transportation is proposing to widen the H-1 freeway in the westbound direction at the Kaooaha Street overcrossing to the Waiau Interchange in Pearl City, Oahu. The proposed widening will maintain interstate design standards and increase traffic safety by reducing traffic congestion. The project will require the acquisition of several homes and Grace Brethren Church and will generate some temporary construction associated impacts.

The review of this Draft Environmental Assessment has been prepared with the assistance of Jon Matsunaka, School of Social Work; Karl Kim, Urban and Regional Planning; and Jolie Wanger, Environmental Center.

General Comments

In general, the Draft EA provides an adequate job of identifying the various traffic and construction related impacts in the immediate vicinity of the proposed widening project. However, our reviewers have identified several deficiencies in the discussion of impacts with regard to coverage of regional impacts of the project. There appears to be little information provided as to how this project will impact the overall transportation system and how it will affect traffic conditions beyond the immediate area of the project. There is no discussion of future growth issues and the widening effort as a feasible long-term solution to traffic problems. The final EA should address the widening in the context of planned future subdivision development in the Ewa area, Mililani, and the proposal by Castle & Cooke to build hundreds of homes northwest of the area. Attention should be given in the final EA as to how this project fits in with the overall systematic and holistic transportation planning needs for Oahu.

Social Issues

Probably the most significant issue with respect to this project is the proposed displacement of homes, families and the church. There is minimal discussion of the actual costs and benefits with respect to

Mr. Ron Tsuchida
January 18, 2000
Page 1

the social issues. For example, the displacement of the church and pre-school is acknowledged but no information is provided as to the actual impacts and full costs of that relocation. How many children will be able to attend the school if the location is moved? What impacts will that move have on the enrollment at the pre-school and consequent economic costs? What will be the social and economic impacts to the families of children presently attending the school? The full costs and benefits must be evaluated, not just in terms of dollars lost or gained, but in family issues as well. Will the move require families to seek alternative means of transporting children to and from pre-school? Are there any children that will no longer be able to attend pre-school due to the move? Similar questions can be asked as to impacts on its members of the relocation of the church. The DEA (pg. 31) alludes to these issues in general terms of percentages, but there is no indication of the actual numbers of people that will be affected nor the costs to those individuals or how these costs will be mitigated.

Physical relocation costs are mentioned on page 33 but again the social implications of these moves are not assessed. Furthermore, we note particularly that the economic costs for relocating individuals that will be directly affected will be determined by an independent appraiser and that "any aggrieved person may file a written appeal..." if they do not concur with the appraiser's evaluation. However, we also note that the costs for any such appeal must be borne by the person making the appeal. It would appear that this provision would significantly limit the ability of most individuals to appeal a decision as to the value or "appropriate" compensation for their dwellings. There was no information as to the compensation, if any, for those that are indirectly affected by the widening. For example, what mitigation provisions are proposed for those residents that will not lose land per se, but who will have a significantly reduced "quality of life" due to increased noise, air pollution, and overall degradation of the value of their property due to their closer proximity to a freeway?

We appreciate the opportunity to provide these letters comments and look forward to your response in the final EA.

Sincerely,

Josephine N. Miller, Ph.D.
Associate Environmental Coordinator

- cc: Richele Suzuki, U.S. Department of Transportation
Greg Hynkaumoto, R.M. Towill Corp.
OEQC
James Mooker
Jon Matsunaka
Karl Kim
Jolie Wanger

470 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4241
Telephone 808 847 1133
Fax 808 842 1937
e-mail: rmc@towill.com



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Surveying
Construction Management

Ms. Jacquelin N. Miller, Ph.D.
February 17, 2000
Page 2

February 17, 2000

Ms. Jacquelin N. Miller, Ph.D.
Associate Environmental Coordinator
Environmental Center
University of Hawaii at Manoa
2550 Campus Road, Crawford 317
Honolulu, HI 96822

SUBJECT: Your Letter Dated January 18, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaaunohi Street to Wai'anae Interchange

Dear Ms. Miller:

Thank you for reviewing the Draft Environmental Assessment (DEA) for the proposed Interstate Route H-1 Widening project. In response to your comments (in *italics*), the State Department of Transportation (SDOT) offers the following information:

There appears to be little information provided as to how this project will impact the overall transportation system and how it will affect traffic conditions beyond the immediate area of the project. There is no discussion of future growth issues and the widening effort as a feasible long term solution to traffic problems. The final E-1 should address the widening in the context of planned future subdivision development in the I-awa area, Mililani and the proposal by Castle & Cooke to build hundreds of homes northwest of the area. Attention should be given in the final E-1 as to how this project fits in with the overall, systematic and holistic transportation planning needs for Oahu.

As stated in Section 1.3 of the DEA, this project is being proposed for three primary reasons:

1. **System Linkage** - To extend the recently constructed sixth lane from its current terminus in a forced merge at the Kaaunohi Street overcrossing, to a natural lane-drop at the Exit 10 off-ramp of the Wai'anae Interchange.
2. **Design Standards** - To maintain a safe roadway system by ensuring that the highway meets national Interstate Standards based on American Association of State Highway and Transportation Officials (AASHTO) criteria for on-ramps, shoulders and lane widths, provides safe merge distances, and incorporates other standard design details, including guardrails, drainage features, and adequate lighting, signage, and striping.
3. **Capacity** - To enhance the capacity of this section of Interstate Route H-1, in coordination with work conducted on Interstate Route H-3 at the Halawa Interchange, to meet current and future traffic demands.

Underlying each of these objectives is the goal of maintaining a satisfactory level of service on Interstate Route H-1 which, at present, constrains the primary means of transportation through the urban corridor. The proposed project does not purport to be the solution to Oahu's long-term transportation problems. Rather, the project is proposed to correct problems along a localized segment of the freeway in order to improve current and future operating conditions of the H-1 freeway in general, and through the Aiea/Pearl City corridor in particular.

The proposed action is supported by Appendix C, *Traffic Analysis for Interstate Route H-1 Widening, Kaaunohi Street to Wai'anae Interchange*, of the DEA (Appendix D in the Final EA), which analyzes future traffic growth through the Central Oahu area and assesses the project's positive impacts on traffic flow, safety, and system linkage. The Department maintains that the context of planned future subdivision development in the Ewa area, Mililani, and proposed Castle & Cooke residential development is implicit in this analysis.

The State Department of Transportation recognizes the inherent limitation of the existing highway system to continue accommodating traffic increases indefinitely and is actively engaged in developing and promoting measures to address apparent problems in meeting Oahu's future transportation needs. Some of these measures are discussed in Section 2.6, Policy Measures, and 2.7, High-Capacity Transit Service, of the DEA and Final EA. Further discussion of these issues, however, is beyond the scope of this document.

There is minimal discussion of the actual costs and benefits with respect to the social issues. How many children will be able to attend the school if the location is moved? What impacts will that move have on the enrollment at the pre-school and consequent economic costs? What will be the social and economic impacts to the families of children presently attending the school? Will the move require families to seek alternative means of transporting children to and from pre-school? Are there any children that will no longer be able to attend pre-school due to the move? Similar questions can be asked as to impacts on its members of the relocation of the church. The DEA alludes to these issues in general terms of percentages, but there is no indication of the actual numbers of people that will be affected nor the costs to those individuals or how these costs will be mitigated.

The State understands the importance of location to Waimalu Grace Brethren Church (WGB) and Pre-School operations and will continue to assist WGB in searching for a suitable site within a reasonable distance from WGB's existing location. Based on the results of real estate searches to date, however, it is very possible that the Church and pre-school will have to relocate away from their current service area, and subsequently incur losses in membership, pre-school enrollment, and income.

During the move, pre-school operations will have to be relocated to temporary facilities or suspended. While pre-school operations are interrupted, some or all of the children currently enrolled at Grace Brethren would have to be accommodated in other schools. There are at least five pre-schools operating in the near vicinity of Waimalu that might absorb some of the displaced children. SDOT relocation advisory services will provide assistance in finding temporary pre-school facilities or in identifying surrogate schools that can accommodate displaced children.

The Department recognizes the hardship this might cause to the Church and pre-school. However, the State is acting in accordance with the lease agreement made with WGHC and is providing the maximum amount of relocation compensation and assistance allowed under the terms of the Uniform Relocation Act of 1970. Under these guidelines, WGHC is classified as a business/non-profit organization.

SDOT is required to provide compensation that is fair and equitable both to the Church and with respect to the State's fiduciary duty to the public. Thus, the type and amount of assistance the State can offer the Church is also limited by the guidelines. The State is unable to provide additional financial compensation for loss of pre-school enrollment and related income. SDOT can provide relocation costs and advisory assistance to help WGHC with its transition and reestablishment in a new location.

Details of the specific compensation package will be worked out through formal communication between SDOT Rights-of-Way Branch and WGHC. Compensation will include:

- moving and reestablishment costs and related expenses;
- reimbursement of search expenses in finding a replacement location;
- limited lease differential payment if relocating to property with higher lease rates;
- reimbursement for cost of improvements made on lease lands (TMK: 9-8-26: 60);
- fair market value for fee-simple property (TMK: 9-8-26: 09); and,
- relocation advisory services.

...we note particularly that the economic costs for relocating individuals that will be directly affected will be determined by an independent appraiser and that "any aggrieved person may file a written appeal..." if they do not concur with the appraiser's evaluation. However, we also note that the costs for any such appeal must be borne by the person making the appeal. It would appear that this provision would significantly limit the ability of most individuals to appeal a decision as to the value or "appropriate" compensation for their dwelling.

Because the proposed project will receive federal funding, the Department of Transportation must follow federal policy regarding the appraisal and acquisition of real property, as set forth in the Code of Federal Regulations, Title 49, Part 24. Hawaii Revised Statutes, Title 15, Chapter 264, Part 2, Federal Aid Highways, defers to federal rules and regulations regarding relocation compensation and assistance.

The Department of Transportation, Rights-of-Way Branch makes every effort to provide displaced residents with fair and satisfactory compensation and assistance to the maximum extent allowed by the federal guidelines. Even so, the State is aware that it is not possible to satisfy everybody.

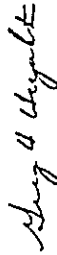
The appeal process set forth in the federal guidelines provides a means for an aggrieved resident to challenge the assumptions on which a compensation package is based. If the aggrieved person chooses to enlist legal or other professional representation in making their appeal to the judicial level, then they must bear the cost of doing so. If the judicial review finds in favor of the resident, then SDOT must compensate the resident for all costs incurred in making the appeal. It is not reasonable for the State to bear the costs of a resident's appeal because such a policy would create an incentive for residents to appeal as a matter of course regardless of the grounds. As a result, a significant amount of State resources would be exhausted in both asserting and defending against residents' appeals.

There was no information as to the compensation, if any, for those that are indirectly affected by the widening. For example, what mitigation provisions are proposed for those residents that will not lose land per se, but who will have a significantly reduced "quality of life" due to increased noise, air pollution, and overall degradation of the value of their property due to their closer proximity to a freeway?

The State has no evidence that property values will be reduced as a result of this project. Typically, concerns about impacts to property values from such highway projects focus on noise, air quality, and visual impacts. State and Federal policies require that mitigation measures be considered to minimize potential adverse impacts to air quality, ambient sound levels, visual setting, and other environmental conditions. The Environmental Assessment prepared for this project addresses potential impacts and provides recommendations for minimizing or preventing adverse effects from project activities. Except where relocation is required, however, there is no State or Federal policy regarding property compensation to residents for impacts related to highway improvement projects.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hiyakumoto, P.E.
Project Manager

GHT:JN



August 31, 1999

Mr. Ronald Tsuzuki, Head Planning Engineer
 Highways Division
 Department of Transportation
 State of Hawaii
 600 Kapiolani Boulevard, Room 304
 Honolulu, Hawaii 96813

Dear Mr. Tsuzuki:

Subject: Draft Environmental Assessment for the Proposed
 Interstate Route H-1 Widening, Westbound
 Direction, Kaonohi Street to Kaiu Interchange

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

We provide the following comments:

1. The applicant will be required to obtain a water allocation
 from the Department of Land and Natural Resources.

2. There are existing water services to the following TMKs:

TMK	Premise ID Number	Meter Size
9-8-26: 9	1135670	5/8"
9-8-26: 9	1135908	5/8"
9-8-26: 26	1135784	5/8"
9-8-26: 27	1135785	5/8"
9-8-26: 46	1135669	5/8"
9-8-26: 47	1135668	5/8"
9-8-26: 48	1135780	5/8"
9-8-26: 65	1135858	5/8"
9-8-26: 69	1135907	5/8"
9-8-26: 73	1135906	3/4"
9-8-27: 2	1135859	5/8"

There are no existing water services to TMKs: 9-8-26: 10, 16,
 23, 24, 25, 57, 63, 71, 72 and 9-8-60: 15.

Mr. Ronald Tsuzuki
 August 31, 1999
 Page 2

3. There are existing 42-inch, 36-inch, and two 12-inch water
 mains within the proposed project limits. If any of the mains
 are affected by the road widening project, the affected water
 mains shall be relocated. The construction drawings should be
 submitted for our review and approval.

4. The developer should examine the feasibility of using
 nonpotable water for irrigation of the freeway landscaping.
 If nonpotable water is not available, the availability of
 potable water will be confirmed when the construction drawings
 are submitted for our review and approval. When water is made
 available, the applicant will be required to pay our Water
 System Facilities Charges for transmission and daily storage.

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

Very truly yours,

CLIFFORD S. JAMILE
 Manager and Chief Engineer

Attachment

SEP 3 10 25 AM '99
 HIGHWAY DIVISION
 PLANNING BRANCH

170 Waiakama Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail info@rm-towill.com



R. M. TOWILL CORPORATION
SINCE 1938

Planning
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Construction Management

February 17, 2000

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

SUBJECT: Your Letter Dated August 31, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange

Dear Mr. Jamile:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1 Widening project. The State Department of Transportation (SDOT) offers the following response to your comments:

1. The Department of Transportation notes that it will be required to obtain a water allocation from the Department of Land and Natural Resources.
2. The proposed project is not anticipated to affect any BWS water mains. If it is determined that any mains will be affected, construction drawings showing relocation of water mains will be submitted to BWS for review and approval prior to commencement of construction activities.
3. If feasible, the contractor will use non-potable water for the freeway construction and landscaping. The Department notes that Water System Facility charges for transmission and storage will be assessed for water use on this project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-4830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GHH:JN

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

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



ARLENE HARRIS
MANAGER

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

DGP 99-532

July 19, 1999

Mr. Ronald Tsuzuki, Head Planning Engineer
State Department of Transportation
Highways Division
600 Kapiolani Boulevard, Room 304
Honolulu, Hawaii 96813

Dear Mr. Tsuzuki:

Subject: Draft Environmental Assessment (EA) for Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiau Interchange

We have no comments at this time on the Draft Environmental Assessment (EA) for Interstate
Route H-1 Widening, Westbound Direction, Kaunohi Street to Waiau Interchange.

Thank you for allowing us to review this draft EA and we would appreciate your continued
coordination efforts. If there are any questions, please call Lance Manabe at 523-4551.

Sincerely,

Randall K. Fujiki
RANDALL K. FUJIKI
Director

cc: Chester Koga, R.M. Towill Corp.

JUL 20 11 48 AM '99
HIGHWAYS DIVISION
PLANNING BRANCH

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Construction Management



R. M. TOWILL CORPORATION
SINCE 1939

420 Wai'anae Road
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Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail mtowill@hawaii.rr.com

February 17, 2000

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

SUBJECT: Letter Dated July 19, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiau Interchange

Dear Mr. Yee:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route
H-1 Widening project.

The State Department of Transportation acknowledges that you have no comments concerning the
proposed project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of
Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto
Greg H. Hiyakumoto, P.E.
Project Manager

GHE:JN

420 Waialua Road
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Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
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eMail info@tmc-one.com



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eMail info@tmc-one.com



Planning
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Construction Management

July 8, 1999

Mr. Ross Sasamura, Director
Dept. of Facility Maintenance
City & County of Honolulu
650 S. King Street, 11th Floor
Honolulu, Hawaii 96813

SUBJECT: Public Review of Draft Environmental Assessment (E.A.) for Interstate Route H-1
Widening, Westbound Direction, Kaonohe Street to Waiau Interchanges

Dear Mr. Sasamura:

Please find attached a copy of the subject Draft EA. Availability of this document for public review was published in the Office of Environmental Quality Control Environmental Notice for the comment period commencing July 8, 1999.

We ask that any comments be forwarded in writing by August 31, 1999.

Comments may be forwarded to:

Mr. Ronald Tsuzuki, Head Planning Engineer
State Department of Transportation
Highways Division
600 Kapiolani Boulevard, Room 304
Honolulu, HI 96813

To:

A public hearing on the subject project will be held during the comment period. Notice will be publicized at least thirty days prior to the public hearing after the hearing date and location have been finalized.

Sincerely,

Charter Koyga
Charter Koyga, AICP
Project Manager

July 13, 1999

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

Laverne Higa
Ross S. Sasamura
Director and Chief Engineer
Department of Facility Maintenance

February 17, 2000

Mr. Ross Sasamura, Director
Department of Facility Maintenance
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

SUBJECT: Your Letter Dated July 13, 1999 Regarding the Draft Environmental Assessment, Interstate Route H-1 Widening, Westbound Direction, Kaonohe Street to Waiau Interchange

Dear Mr. Sasamura:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1 Widening project.

The State Department of Transportation acknowledges that you have no comments concerning the proposed project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Miyakumoto
Greg H. Miyakumoto, P.E.
Project Manager

GHE/JN

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, HONOLULU, HAWAII 96813
TELEPHONE: (808) 521-3111 FAX: (808) 521-3111



10/19/99 HARRIS

JAN NAOE SULLIVAN
DIRECTOR
LORRETTA C. CHIEE
ADMINISTRATIVE

Mr. Ronald Tsuzuki
Page 2
August 31, 1999

If you have any questions regarding this letter, please contact
Ms. Dana Teramoto of our staff at 523-4648.

August 31, 1999
1999/CLOG-4552 (DT)
'99 EA Comments Zone 9

Mr. Ronald Tsuzuki
Head Planning Engineer
Highways Division
Department of Transportation
State of Hawaii
600 Kapiolani Boulevard, Room 304
Honolulu, Hawaii 96813

Dear Mr. Tsuzuki:

Draft Environmental Assessment (EA)
Interstate H-1 Widening, Westbound Direction
Kaonohi Street To Kalia Interchange

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

1. The final EA should address impacts to City roadway facilities to identify the extent and duration of possible street closures and detours resulting from the project. The areas that will be impacted should be identified and measures to inform motorists prior to the closures and detours should be specified.
2. Construction plans for any work on City streets should be submitted for review and approval by our Traffic Review Branch. Traffic control plans for work during construction should also be submitted.
3. The EA states that Pono Street may be closed temporarily and that an alternate route to Moanalua Road would be provided. We suggest closing Pono Street and redirecting traffic to an extension of Hekaha Street. This would eliminate one traffic signal at the intersection of Pono Street and Moanalua Road.

Very truly yours,

JAN NAOE SULLIVAN
Director of Planning
and Permitting

JNS:am
CC: Chester Koga, R.M. Towill Corporation
Office of Environmental Quality Control
kaonohi.djt
paste document (49)

EO Waikaloa Paid
Suite 211
Honolulu, Hawaii 96817-4541
Telephone 808 942 1133
Fax 808 842 1837
e-mail: info@towill.com



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Department of Planning and Permitting
February 17, 2000
Page 2

February 17, 2000

Mr. Randall K. Fujiki, Director
Department of Planning and Permitting
City and County of Honolulu
Kakuhikewa Building, Room 555
601 Kamehaha Blvd
Kapolei, Hawaii 96707

SUBJECT: Letter from your Department Dated August 31, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiau Interchange

Dear Mr. Fujiki:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1
Widening project. The State Department of Transportation (SDOT) understands the concerns of your
department regarding impacts to traffic on City roadways and shares your interest in minimizing
inconveniences to motorists transiting the project area. In response to your specific comments SDOT
offers the following information:

Areas that will be impacted by the proposed project are identified in Section 3.11 of the Draft E.A. The
extent and duration of possible street closures will be determined following completion of the project
design phase and selection of the project contractor. Measures to notify motorists prior to street
closures and detours will include the use of signs along the affected streets and notices published in the
daily newspaper. These measures will be specified in the Final E.A.

Construction plans and traffic control plans for work on City streets will be submitted for review to the
City and County, Department of Planning and Permitting, Traffic Review Branch.

With regards to access to Waimalu Gardens Subdivision, the proposed project might not require the
temporary closure of Pono Street. A final determination will be made following the project design
phase based on the location of the new viaduct support columns and the methods to be employed in
their construction. If it becomes necessary to detour Pono Street and provide an alternate temporary
access for Waimalu Gardens Subdivision at the Hekaha Street intersection, SDOT will initiate
coordination with the City during the design phase of this project.

The Department recognize the merits of permanently closing Pono Street and extending Hekaha Street
to provide access for Waimalu Gardens Subdivision. However, because Pono Street, Hekaha Street,
and Moanalua Road are City and County roadways, the City Department of Transportation Services
will have to take the lead on studying the feasibility of opening a permanent extension of Hekaha Street
into Waimalu Gardens Subdivision.

If you have any questions, please contact Mr. Ron Tsuruki, Head Planning Engineer, Department of
Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GHH:JN

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PUBLIC WORKS DEPARTMENT - 211 KAPOLANI BOULEVARD, SUITE 1200 - HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4553 FAX: (808) 523-4370



Mr. Ronald Tsuzuki
September 28, 1999
Page 2

CHERYL SPOM
DIRECTOR
APRIL M. HARRIS, JR.
STREET MANAGER

September 28, 1999

TPD99-00562

Mr. Ronald Tsuzuki, Head Planning Engineer
Highways Division
State Department of Transportation
600 Kapiolani Boulevard, Room 304
Honolulu, Hawaii 96813

Dear Mr. Tsuzuki:

Subject: Interstate Route H-1 Widening,
Westbound Direction,
Kaonohi Street to Waiyu Interchange

In response to the July 8, 1999 letter from R.M. Towill Corporation, the draft environmental assessment (EA) for the subject project was reviewed. The following comments are the result of this review:

1. The bus rapid transit components of the City's Primary Corridor Transportation Project include bus priority ramps at the Kaonohi Street Overpass which may require the reduction of the lane and shoulder widths illustrated in the draft EA. Construction of the ramps would also require widening of the makai side of the Waimalu Viaduct. Parcels on the makai side of the viaduct that would be acquired as part of the subject project (TMK: 9-8-26:69 and 73) would be affected by the construction of the bus priority ramps. Continued coordination of the two projects will be essential.
2. Should the right-of-way acquisition for the subject project result in dead-end City streets, standard City turnaround areas need to be provided at the dead-ends.
3. Figure J-1 on Page 30 of the draft EA shows the proposed right-of-way and impacted properties. Consideration should be given to closing off Pono Hale Place. The ownership and control of the affected roadways should be clarified to facilitate their future maintenance.

4. Area residents and other users of any affected City street (e.g. Moanalua Road, Kaahale Street, Pono Street, Pono Hale Street, etc.) should be informed of any roadway closures or detours required by the project. Detour routes should be clearly indicated and conform to Part VI of the Manual on Uniform Traffic Control Devices. A "Notice to Motorists" should be published in the daily newspaper(s) informing the motoring public of such detours/road closures. In addition to notifying the police, fire and emergency services of the construction activities and scheduling, please provide the same information to this department. We can then alert Oahu Transit Services of the construction activity.

5. On Page 45 of the draft EA, it is stated that trucks will be routed to avoid residential communities wherever possible. To minimize the project's impact on area residents and possible complaints, the contractor should be advised not to use residential City streets unless absolutely necessary.

6. On Page 70 of the draft EA, it is stated that a flag person will be positioned to direct traffic as necessary. It should be noted that only police officers can control/direct traffic at intersections. Flagmen only use hand-signaling devices (STOP/SLOW signs or flags) to control traffic through temporary traffic control zones.

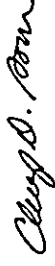
7. The contractor should designate a phone number that is to be used to report project traffic concerns. Roadway signs with this phone number should be posted in the vicinity of the project area.

8. The draft EA states that Pono Street may need to be temporarily closed and that an alternate route to Moanalua Road may need to be provided. The City had, in the past, examined the possibility of closing Pono Street and redirecting traffic to an extension of Hekaha Street. This would, in effect, eliminate one traffic signal at the intersection of Pono Street and Moanalua Road. It appears that within the parameters of the subject project, it may be viable and advantageous to pursue the subject project in an effort to improve traffic flow along this section of roadway. Any assistance the subject project could provide, in this regard, would be appreciated.

Mr. Ronald Tsuzuki
September 28, 1999
Page 3

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

Sincerely,



CHERYL D. SOON
Director

cc: Office of Environmental
Quality Control
Mr. Chester Koga,
R.M. Towill Corporation

420 Waiulani Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1131
Fax 808 842 1937
E-Mail rmto@hawaii.com



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February 17, 2000

Ms. Cheryl D. Soon, Director
Department of Transportation Services
City and County of Honolulu
711 Kapiolani Blvd., Suite 1200
Honolulu, Hawaii 96813

SUBJECT: Your Letter Dated September 28, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaomohi Street to Waiau Interchange

Dear Ms. Soon:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1 Widening project. The State Department of Transportation (SDOT) understands the concerns of your department regarding impacts to traffic on City roadways and shares your interest in minimizing inconveniences to motorists transiting the project area. In response to your specific comments (in italic) SDOT offers the following information:

1. *The bus rapid transit components of the City's Primary Corridor Transportation Project include bus priority ramps at the Kaomohi Street overcrossing which may require the reduction of the lane and shoulder widths illustrated in the Draft E.A. Construction of the ramps would also require widening of the median side of the Waimalu viaduct. Ramps on the median side of the viaduct that would be acquired as part of the subject project (TAK-9-36-69 and 73) would be affected by the construction of the bus priority ramps. Continued coordination of the two projects will be essential.*

The Federal Highways Administration (FHWA) requires that the proposed project meet national Interstate Standards based on the American Association of State Highway and Transportation Officials (AASHTO) criteria for shoulder and lane widths. Any reduction of the lane and shoulder widths proposed by this project would fail to meet these standards and, thus, preclude federal participation in this project.

Long-range highway improvement plans call for widening the H-1 eastbound lanes through Pearl City and Aiea, including the Waimalu viaduct. Federal participation will be necessary to realize planned improvements. The Department of Transportation welcomes DOT's initiative in coordinating the City's Primary Corridor Transportation Project with planned State highway improvements.

2. *Should the right-of-way acquisition for the subject project result in dead end City streets, standard City turnaround areas need to be provided at the dead-ends.*

It is not anticipated that the proposed project will result in dead-end City streets. In the event that dead-ends do result from project design, standard City turnaround areas will be provided at the dead-ends.

3. *Consideration should be given to closing off Ponohana Place. The ownership and control of the affected roadway should be clarified to facilitate their future maintenance.*

Under the current plan, Ponohana Place, which currently provides access to two residential parcels (TMK: 9-8-26-69-73) and Waimalu Grace Brethren Church, will be closed to traffic. Ponohana Place is owned by the State up to its connection with Ponohana Loop, which is owned by the City. The State also owns and maintains the portion of Pono Street that lies within the Interstate Route H-1 right-of-way. The remaining residential streets in the Waimalu Gardens subdivision are owned by the City.

4. *Area residents and other users of any affected City street should be informed of any roadway closures or detours required by the project.*

The contractor will be instructed to inform area residents and other users of City streets of any roadway closures or detours required by the project prior to commencing work activities. Detour routes will be clearly indicated and conform to Part VI of the manual on Uniform Traffic Control Devices. A "Notice to Motorists" will be published in the daily newspaper(s) informing motorists of upcoming road closures. Additionally, the contractor shall notify the police, fire and emergency services, and DTS of construction activities and scheduling.

5. *The contractor should be advised not to use residential City streets unless absolutely necessary.*

To minimize traffic impacts to the nearby residents, the contractor will schedule heavy truck activity as much as possible between the hours of 9:00 a.m. and 3:00 p.m. on weekdays and will suspend activity on weekends and State holidays. The contractor will also be advised to avoid using residential streets unless absolutely necessary.

6. *It should be noted that only police officers can control / direct traffic at intersections...*

The Environmental Assessment has been revised to state: "Approach signs and a flag person will be positioned to direct traffic through temporary traffic control zones as necessary. Officers from HPD will be employed to direct traffic at intersections as necessary."

7. *The contractor should designate a phone number that is to be used to report project traffic concerns...*

The contractor will be instructed to designate a phone number that is to be used to report project traffic concerns. Signs with this phone number will be posted in the vicinity of the project area.

8. *The Draft E-1 states that Pono Street may need to be temporarily closed and that an alternate route to Moanalua Road may need to be provided. The City had, in the past, examined the possibility of closing Pono Street and redirecting traffic to an extension of Hekaha Street... Any assistance the subject project could provide, in this regard, would be appreciated.*

It is uncertain that the proposed project will require the closure of Pono Street. A final determination will be made following the project design phase based on the location of the new viaduct support columns and the methods to be employed in their construction. If it becomes necessary to detour Pono Street and provide alternate access for Waimalu Gardens Subdivision, SIDOT will establish temporary access at the Hekaha Street intersection until Pono Street is reopened.

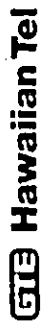
We recognize the merits of permanently closing Pono Street and extending Hekaha Street to provide access for Waimalu Gardens Subdivision. However, because Pono Street, Hekaha Street, and Moanalua Road are City and County roadways, DTS will have to take the lead on studying the feasibility of opening a permanent extension of Hekaha Street into Waimalu Gardens Subdivision. The Department of Transportation welcomes discussion with DTS on this issue.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Elyakumun, P.E.
Project Manager

GHE:JN



Beyond the call

420 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4911
Telephone 808-842-1133
Fax 808-842-1937
email mt@towill.com

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HIGHWAY DIVISION
PLANNING BRANCH

August 10, 1999

Mr. Ronald Tsuzuki, Head Planning Engineer
State Department of Transportation
Highways Division
600 Kapiolani Boulevard, Room 304
Honolulu, HI 96813

Dear Mr. Tsuzuki,

I have reviewed the "Interstate Route H-1 Widening Westbound Direction
Kaonohi Street to Wai'au Interchange (Project No. H1EF-01-97)" draft
environmental assessment prepared by R.M. Towill Corporation.

Section 3.17.2 Demobilization and Restoration discusses modifications to
existing utilities during the construction activity. Please contact our telephone
cable permit group at 483-8085 to identify underground lines in the vicinity. This
will minimize accidental damage to our extensive network

I appreciate the opportunity to communicate my concern

Very truly yours,

Harlan Hashimoto
Environmental Affairs
546-2562

February 17, 2000

Mr. Harlan Hashimoto
Environmental Affairs
GTE Hawaiian Tel
P.O. Box 2200
Honolulu, Hawaii 96841

SUBJECT: Your Letter Dated August 10, 1999 Regarding the
Draft Environmental Assessment, Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Wai'au Interchange

Dear Mr. Hashimoto:

Thank you for reviewing the Draft Environmental Assessment for the proposed Interstate Route H-1
Widening project.

The State Department of Transportation acknowledges your concern regarding possible modifications
to GTE's existing utilities in the project area. The contractor will be instructed to coordinate with
GTE's telephone cable permit group to identify underground lines prior to commencement of any
work.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of
Transportation, Highways Division, at 547-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

Residents' Comments

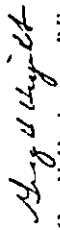
Mr. Jack Endo
February 17, 2000
Page 2

Dust and noise during construction is a major concern for us because we have two elderly parents living on our property.

All construction activities must comply State Department of Health regulations concerning noise control and air quality, as provided in Hawaii Administrative Rules Chapter 11-43, Community Noise Control for Oahu, and Chapter 11-60.1, Air Pollution Control. Measures designed to minimize impacts from construction-related noise and dust are outlined in Section 3.3, Noise Impacts, and Section 3.4, Air Quality, of the Draft EA.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hayakumoto, P.E.
Project Manager

GHI:JN

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: RON LEE Address: 98-367 PONOHAHA LOOP
Phone: 426-7628 day AIEA, HI 96701 eve

Please write comments below:

AS A RESIDENT OF WAIMALU FROM THE DAYS BEFORE THE BUILT
FREEWAY I KNOW THAT THE ADDITIONAL LANE IS NOT GOING
TO MAKE OUR NEIGHBORHOOD ANY BETTER. NOISY, NOTERBOUS ARE
BEING ESCALATED. A NEIGHBORHOOD CHURCH AND DAYCARE
WILL BE LOST. FREEWAY DUST AND NOISE WILL INCREASE.
NO WONDER THAT WE ARE NOT HAPPY ABOUT THE PROJECT.
I CAN'T SEE SOME POSITIVE CHANGES WITH THIS
PROJECT.

1) IT IS COMPLETELY LOGICAL TO MAKE THE "TEMPORARY"
ACCESS INTO WAIMALU GARDENS PERMANENT. IT WILL
MAKE ONE LESS TRAFFIC LIGHT ON MOANAIWA ROAD
BY ALIGNING THE ACCESS ROAD WITH HEKALA ST. THIS
WOULD IMPROVE THE FLOW ON MOANAIWA AND WOULD
IMPROVE ACCESS AND EGRESS INTO THE SUBDIVISION.

2) WE WOULD LIKE TO SEE MAJOR LANDSCAPING WITH TREES
IN THE RIGHT OF WAY TO VENUE THE VISUAL IMPACT
OF THE INTERUSION OF THE EXPANDED BUILT
FREEWAY IN A SINGLE FAMILY NEIGHBORHOOD.

3) WE WOULD LIKE TO SEE DESIGN CONSIDERATION GIVEN TO
PEDESTRIAN ACCESS IN AND OUT OF THE SUBDIVISION
WITH ADEQUATE SIDEWALKS AND LIGHTING FIXTURES AT
A HUMAN SCALE.

Signature: Ron Lee Date: 9/15/99

September 15, 1999

420 Waihale Road
Suite 411
Hekaha Hawaii 96717-4911
Telephone 808 842 1133
Fax 808 842 1937
email rmtowill@hawaii.com



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February 17, 2000

Mr. Ron Lee
98-367 Ponoaha Loop
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiau Interchange

Dear Mr. Lee:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in *italics*) concerning potential project impacts, SDOT offers the following information:

...make the "temporary" access into Waimalu Gardens permanent...by aligning the access road with Hekaha St., this would improve the flow on Moanaiwa Road and avoid improve the access and egress into the subdivision.

The Department of Transportation recognizes the merits of permanently closing Pono Street and extending Hekaha Street to provide access for Waimalu Gardens Subdivision. However, because Pono Street, Hekaha Street, and Moanaiwa Road are City and County roadways, the City and County Department of Transportation Services will have to take the lead on studying the feasibility of opening a permanent extension of Hekaha Street into the Subdivision. The Department welcomes discussion with DTS on this issue during the design phase of this project.

We would like to see major landscaping with trees in the right-of-way to reduce the visual impact of the intrusion of the expanded elevated highway in a single family neighborhood.

As stated in section 3.11.4 of the Draft E.A., various landscape designs are being considered to better integrate the widened freeway into the surrounding scenery. Remnant space in the State right-of-way will be landscaped with drought-resistant plants and maintained by SDOT.

We would like to see design consideration given to pedestrian access in and out of the subdivision with adequate sidewalks and lighting fixtures at a human scale.

The State Department of Transportation owns and maintains only those access ways that fall within the Interstate Route H-1 right-of-way. For those areas over which SDOT does have responsibility, such as the segment of Pono Street that passes beneath the H-1 viaduct, or the Hekaha Street extension into Waimalu Gardens should that access become permanent, SDOT will provide sidewalks and lighting.

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Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
email: rmtowill@towill.com

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Randy Lum Address: 99-738 MEA-ALA STREET
AIEA
Phone: 484-9330 day 94701
eve

Please write comments below:

1) TIMING OF PROJECT: WILL START DURING THE INTERSECTION OF LAIEN MAIUS ON KAMEHAMEHA HWY.
REASON: TRAFFIC WILL ON HIGH BE BLOCKED BY THE TRAFFIC ON ROUTE H-1 MAIN THROUGHOUT DURING THE HOLIDAY SEASON OF 2000.
SUGGESTION: WORK NOT START AFTER THE WATER MAINS ARE INSTALLED. REMEMBER TOO THAT HOME DEPOT IN PEARL CITY WILL ALSO BE RECONSTRUCTING THE MAIN INTERSECTION DURING THE SAME PERIOD.
CLAIM: - MORE WITH BOARD OF WATER SUPPLY AND HOME DEPOT TO HAVE PROJECT BE CONCURRENT, NOT CONCURRENT.
THANKS.

Signature Randy Lum Date 9-15-99

September 15, 1999

February 17, 2000

Mr. Randy Lum
99-738 Mea-ala Street
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiuu Interchange

Dear Mr. Lum:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments concerning potential project conflicts with planned Board of Water Supply (BWS) water main work on Kamehameha Highway, SDOT offers the following information:

The Department has notified BWS about the proposed project and will keep them apprised of the project schedule and construction phasing. Because project schedules are determined in large part by the fiscal calendar year and availability of funding, it may not be feasible to postpone the H-1 widening to accommodate a particular BWS project. However, SDOT will keep BWS and other agencies informed of its project activities in order to minimize potential impacts from coincidental projects as much as possible.

The Draft Environmental Assessment contains mitigation measures for controlling traffic (see Section 3.11, Area Streets and Access) and minimizing project-related congestion. Honolulu Police Officers and flagmen will be employed to direct traffic movement through the project area will be available to respond to concerns from area motorists.

Thank you for your understanding and cooperation.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

*PLS ASSIST IN WRITING
TO COMMENTS

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Wesley Sawamura Address: 98-343 Pono St HI 96701
Phone: 259-8822 day 487-7600 eve
(only house that will be left in block)

Please write comments below:

- 1) The rain water draining off the freeway is pulling near the corner of Pono St & Pono Loop. The small storm drain on Pono St is inadequate to drain off rain water (it's usually plugged) what will be done to alleviate the problem.
- 2) Will we have to move out of residence while demo/construction is in progress?
- 3) If dust and/or noise are excessive will we be compensated?
- 4) Will there be a fence or barrier erected to stop any trash/noise from flowing down to the valley area. At the present time the neighbors closer to freeway have things thrown through ceiling (lumber, big rocks, surfboards, bottles, etc). Also, there can be a lot of noise during the evening hours (people pulling over elvers people yelling, etc).
- 5) What will happen to property surrounding our home. Will property be maintained or will we be expected to maintain the area (if so, will we be given right of way to area?)
- 6) Will Pono Street entrance be closed permanently or will it be used as an entrance-only, right-turn exit to the subdivision?

Signature: Wesley Sawamura Date: 9/15/99

September 15, 1999

420 Waiulani Road
Suite 411
Honolulu, Hawaii 96817-6941
Telephone 808 842 1133
Fax 808 842 1937
email: rmt@towill.com



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February 17, 2000

Mr. Wesley Sawamura
98-343 Pono St
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiiau Interchange

Dear Mr. Sawamura:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in *italic*) concerning potential project impacts, SDOT offers the following information:

The rain water draining off the freeway is pulling near the corner of Pono St. and Pono Loop. The small storm drain on Pono St. is inadequate to drain off rain water (it's usually plugged). What will be done to alleviate the problem?

The storm drain at the intersection of Pono Street and Pono Loop is outside of State right-of-way, therefore SDOT does not have control over the cleaning and maintenance of the drain. The City and County of Honolulu, Department of Facility Maintenance (523-4341) has been contacted regarding the flooding problem and will inspect the drain.

The Department of Transportation is responsible for the transmittal and discharge of drainage from the freeway. During the design phase of this project, a drainage system will be developed to convey freeway runoff from the viaduct to the point of discharge into the waters of Pearl Harbor via concrete spill ways, drainage ways, and drain pipes that tie into the City and County storm sewer system. Drainage design will assess the capacity of the City and County system to handle runoff from the freeway and, where necessary, include improvements as part of the proposed project.

Will we have to move out of residence while demolition / construction is in progress?

Only those residents who will be permanently relocated will have to move during construction. Your family will not have to move out during project activities.

If dust and/or noise are excessive, will we be compensated?

There is no State or Federal policy regarding compensation to residents for noise or dust impacts. Both State and Federal policy require that mitigation measures be undertaken to minimize such impacts to meet specific standards for health. The project must comply with State Department of

Mr. Wesley Sawamura
February 17, 2000
Page 2

Health regulations concerning noise control and air quality, as provided in Hawaii Administrative Rules, Chapter 11-43, Community Noise Control for Oahu, and Chapter 11-60.1, Air Pollution Control. Measures designed to minimize impacts from project-related noise and dust are outlined in Section 3.3, Noise Impacts, and Section 3.4, Air Quality, of the Environmental Assessment.

Will there be a fence or barrier erected to stop any trouble noise from flowing down to the valley area...?...there can be a lot of noise, especially during the evening hours.

The Department is considering several designs for the installation of a debris barrier along the Waimalu Viaduct. The barrier will likely be constructed with a combination of solid, concrete "Jersey-barrier" type wall topped with fencing to block thrown debris. The solid wall will function to block out some of the traffic related noise. However, much of the noise adjacent to the viaduct is attributable to radiated noise from the viaduct structure, as opposed to traffic noise that travels in a direct line-of-sight. Because there is no effective means to mitigate radiated noise from the viaduct structure, significant reductions of traffic noise will not be feasible.

What will happen to property surrounding our homes? Will property be maintained or will we be expected to maintain the area...will we be given right-of-way to the street

Following relocation of the residents and Waimalu Grace Brethren Church, vacant lots will be maintained by SDOIT. Existing residential structures will be sold and removed or demolished to clear the parcels for use as open space. All of the remaining land except the State parcel beneath the viaduct are subject to disposal to abutting property owners or will be maintained as State Highway Land.

Will Pono Street entrance be closed permanently or will it be used as an entrance only, right-turn exit to the subdivision?

It is uncertain that the proposed project will require the closure of Pono Street. A final determination will be made during the project design phase based on the location of the new viaduct support columns and the methods to be employed in their construction. If it becomes necessary to temporarily detour Pono Street and provide alternate access for Waimalu Gardens Subdivision, SDOIT will coordinate with the City and County, Department of Transportation (DTS) to establish a temporary access at the Hehaha Street intersection.

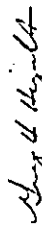
The Department recognizes the merits of permanently closing Pono Street and extending Hehaha Street to provide access for Waimalu Gardens Subdivision. However, because Pono Street, Hehaha Street, and Moanalua Road are City and County roadways, the City and County, Department of Transportation (DTS) will have to take the lead on studying the feasibility of opening a permanent extension of Hehaha Street into Waimalu Gardens Subdivision.

Mr. Wesley Sawamura
February 17, 2000
Page 3

Following project completion, any temporary detours created by SDOIT will be closed and Pono Street will be reopened unless DTS coordinates an alternative program for establishing permanent access at Hehaha. The Department of Transportation will initiate discussions with DTS on this subject during the design phase of this project.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,


Greg H. Hyakumoto, P.E.
Project Manager

GHH:JN

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Betty Ann Tokuno Address: 98-3267 Ponehale St
Aiea, HI
Phone: 488-3209 day 98701 eve

Please write comments below:

Widening the Interstate will not solve the problem. A few months ago in the Sunday paper on the front page I read that the new law in Germany solved this problem and that the loss cars on the freeway - will solve traffic to make faster. This idea could be adjusted to the Interstate Route H-1 freeway project. A idea to correct the traffic on the freeway is to have a shoulder on it - what ever fits - Federal Law.

I am concerned about the widening. It seems like the future idea is a necessity for us all. It seems in happens to the other pumps - or springs. This well really has to be fixed.

February 17, 2000

Ms. Betty Ann Tokuno
98-367 Ponehale Street
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiuu Interchange

Dear Ms. Tokuno:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in *italics*) concerning potential project impacts, SDOT offers the following information:

Widening the Interstate Route H-1 will not solve the problem... (lower) cars on the freeway will enable traffic to move faster... Controlling the quantity of traffic on the freeway is ideal... charging a toll - whatever works).

Policy alternatives, such as highway toll charges, have also been considered as an alternative to physical improvements to the highway. Policy measures are based on two approaches:
1) transportation systems management (TSM) measures to more efficiently utilize existing street capacity, and 2) travel demand management (TDM) measures to encourage ride-sharing, mass transit, and other alternative modes that reduce traffic demands.

TSM and TDM measures are intended to achieve the following objectives:

- Improve attractiveness of alternative modes of transportation;
- Provide disincentives to single-occupant automobile use;
- Reduce the need to travel during peak hours; and
- Improve roadway efficiencies through low-cost measures to increase vehicular capacity.

Some actions are already being taken to meet these objectives. The use of dedicated high-occupancy vehicle (HOV) lanes and the recently introduced HOV Zipper Lane create a rideshare incentive that helps reduce traffic demand. Additionally, the Zipper Lane functions as a contra-flow lane, utilizing existing roadway capacity more efficiently during peak hours, and at relatively low cost. Expanding the use of HOV and Zipper Lanes by adding lanes and routes and/or increasing the hours of use is also being considered. Additionally, to encourage multi-modal transportation and transit use, Park-and-Ride facilities have been developed to serve as both collection points for transit services and staging areas for formation of carpools and vanpools.

Signature: Betty Ann Tokuno Date: September 23, 1999

September 15, 1999

Ms. Betty Ann Tokano
February 17, 2000
Page 2

Other measures to reduce overall and peak-hour traffic demand and discourage single-occupant vehicle traffic are more challenging to implement. Among the policy actions that have been considered are measures such as variable work hours and telecommuting to encourage work behavior changes that will result in peak-hour trip reductions. Limits on parking supply and reduction in employee parking subsidies can further encourage ridesharing and use of alternative modes of transportation, including transit (The Bus, Vanpool, commercial commuter services), bicycles, and for some, walking. More extreme measures, such as road pricing, trip reduction ordinances, and vehicle use limitations have been considered as contingency plans. (Kaku Associates 1995).

Policy initiatives have been helpful in reducing the traffic burden on Oahu's transportation system, and they hold greater potential as they mature and gain acceptance by the island's commuting population. TSM and TDM measures will continue to be implemented and promoted in both the government and private sector, but they cannot be relied upon to address Oahu's transportation needs exclusive of improvements to the physical infrastructure.

In addition to enhancing traffic capacity on this segment of Interstate Route H-1, the proposed project is also being developed to address design deficiencies, maintain highway standards for lane and shoulder widths, and to eliminate the bottleneck caused by the forced lane drop at the Kaunohi Street overpassing. These latter objectives require physical improvements to the highway and cannot be addressed through the policy measures that have been considered.

I am concerned about the Waumahu Wells II future. Water is a necessity for all.

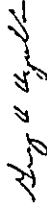
The Waumahu Wells II will not be affected by the proposed project. The City and County Board of Water Supply, the State Commission on Water Resources Management, and the State Department of Health, Water Quality Branch, have all reviewed the Draft Environmental Assessment for the proposed project to ensure that project activities are compliant with water quality regulations.

Additionally, the Federal Environmental Protection Agency, Region IX Ground Water Office was consulted regarding the proposed project's compliance with the Sole Source Aquifer (SSA) Protection Program (Safe Drinking Water Act of 1974, Section 1424(e)). Based on descriptions of the proposed project and mitigation measures proposed to prevent contamination and damage to the aquifer underlying the project site, the EPA has determined that the project is in compliance with the SSA Protection Program.

Ms. Betty Ann Tokano
February 17, 2000
Page 3

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hyakumori, P.E.
Project Manager

GHI:JN



420 Waihulu Road
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Hoeolu Hawaii 96817-4811
Telephone 808 842 1133
Fax 808 842 1937
email rmto@towill.com

Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

PUBLIC COMMENT FORM

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: LYN YOSHIOKA Address: 98-322 PONO ST
AREA, HI 96701
Phone: 498-1595 day
cvc

Please write comments below:
I LIVE WITH MY RETIRED PARENTS, ROBERT & LINDA
KAY YOSHIOKA
1) OUR NEIGHBOURS + WINDMILL AND PRO-GRADE MUST
BE TAKEN OUT - WITHOUT TOO MUCH NOTICE + MUCH BULLSTP.
CHANGES IN THE FUTURE THAT WILL CAUSE
MORE DISPLACEMENTS IN OUR AREA.
2) WITH THE FREWAY BEING BUILT TO OUR HOUSE,
WILL THE VALUE OF OUR PROPERTY DECREASE?
3) WERE CONCERNED ABOUT THE NOISE THE POLLUTION,
4) MY PARENTS ARE ALLERGY IN THE YARD
IS THERE MEANS TO PREVENT DUST FROM FALLING
INTO OUR YARD, DURING LATER CONSTRUCTION?
WHAT IS RESPONSIBLE FOR DUSTS + INJURY
FROM FALLING DEBRIS?
5) WHAT ARE THE PLANS FOR NEIGHBORHOODS?

Signature Lyn Yoshoka Date 9/24/99

September 15, 1999

February 17, 2000

Ms. Lyn Yoshoka
98-322 Pono Street
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Waiuu Interchange

Dear Ms. Yoshoka:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in italic) concerning potential project impacts, SDOT offers the following information:

... Will there be additional improvements or changes in the future that will cause more displacements in our area?

No other future displacements in the Waimalu Gardens subdivision are anticipated.

With the freeway coming closer to our home, will the value of our property decrease?

The Department of Transportation has no evidence to indicate that property values will decrease with this widening. Typically, concerns about impacts to property values from such highway projects focus on noise, air quality, and visual impacts. State and Federal policies require that mitigation measures be considered to minimize potential adverse impacts to air quality, ambient sound levels, visual setting, and other environmental conditions. However, there is no State or Federal policy regarding property compensation to residents for impacts related to highway improvement projects.

Are we concerned about the noise, the pollution, and pounding of the pillars, etc., of the construction?

Noise and dust impacts from construction activities are unavoidable. However, all construction activities will comply with State Department of Health regulations concerning noise control and air quality, as provided in Hawaii Administrative Rules, Chapter 11-43, Community Noise Control for Oahu, and Chapter 11-601, Air Pollution Control. Measures designed to minimize impacts from project-related noise and dust are outlined in Section 3.3, Noise Impacts, and Section 3.4, Air Quality, of the Environmental Assessment.

Ms. Lynn Yoshioka
February 17, 2000
Page 2

*...Is there going to be netting of some kind to prevent debris from falling into our yard during and after construction?
Who is responsible for damages and injury from falling debris?*

SDOT is considering several designs for the installation of a debris barrier along the Waimalu Viaduct. The barrier will likely be constructed with a combination of solid, concrete "Jersey-barrier" type wall topped with fencing to block traffic debris. During construction, the project contractor will ensure that all necessary safety precautions are employed to avoid damage or injury from falling debris. The actual measures employed will be determined by the contractor based on their experience and expertise, and will comply with Occupational Safety and Health Agency (OSHA) regulations.

Damages or injuries incurred from debris falling from the H-1 viaduct are the responsibility of State of Hawaii and can be addressed by filing a claim with SDOT.

What are the plans for the vacant lots?

Following relocation of the residents and Waimalu Grace Brethren Church, vacant lots will be maintained by SDOT. Existing residential structures will be sold and removed or demolished to clear the parcels for use as open space. All of the remnant land except the State parcel beneath the viaduct are subject to disposal to abutting property owners or will be maintained as State Highway Land.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1831.

Very truly yours,

Greg H. Hiyakumoto

Greg H. Hiyakumoto, P.E.
Project Manager

GHE:JN

Planning
Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management



R. M. TOWILL CORPORATION

1999-1998

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Honolulu, Hawaii 96817-5911
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Fax 808 842 1937
email: mtowill@mtowill.com

February 17, 2000

Ms. Marcia Atakawa
99-514 Kahohi Place
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Waiuu Interchange

Dear Ms. Atakawa:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in italics) concerning potential project impacts, SDOT offers the following information:

Not enough study has been done to warrant the freeway expansion.

The purpose and need for the proposed project is three-fold: (1) to maintain a safe roadway system by ensuring that the highway design meets national Interstate Standards; (2) to relieve traffic congestion by eliminating the forced merge at the Kaunohi Street overcrossing; and (3) to improve the capacity of this section of Interstate Route H-1 to meet current and future traffic demands.

A traffic study was conducted for the proposed project and is included in the Draft and Final Environmental Assessment. The Study found that westbound traffic through the project area currently exceeds design capacity during evening rush hour traffic and approaches capacity during peak morning hours resulting in long delays and occasional gridlock for commuters. Unless improvements are made to the freeway, traffic conditions will worsen causing deficiencies in transportation safety and reliability that will ultimately adversely affect economic activities and the overall quality of life on Oahu.

(The project) would be a major disruption to both individuals, families, and businesses. It would cause major hardships for people.

With any project of this scope, especially one requiring residential relocation, impacts are unavoidable and some disruption of normal routines is expected. The Department of Transportation has developed mitigation measures in order to reduce or, where possible, eliminate potential adverse environmental impacts. Support services will also be in place in order to help ease the transition for people facing relocation. The State will do whatever it can to relieve any hardships related to project activities.

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Marcia Atakawa Address: 99-514 A Kahohi Place
Aiea, HI 96701
Phone: 438-6006 day 438-3575 eve

Please write comments below:

I don't feel that enough study has been done to warrant the freeway expansion. The widening at the Hukunui interchange has not made a significant difference to those people who commute from about 7 AM to 7 PM. The traffic is not flowing better and the area around the interchange is affected. A significant need to widen the freeway - do the same but log at that point to need the extra lanes? In the times (during rush hour) that I have traveled that portion of the freeway I have seen a lot of congestion. It hinders the freeway would be a major improvement to both individuals, families & businesses. It would cause major hardships for people and I think it needs to be studied further before it is pursued. You are widening in an area of major subdivisions and the cost to keep roads and relocation down would be a great investment. Would the additional convenience, cost and hassle be worthwhile? The widening cost be passed on to innocent taxpayers? The widening project doesn't seem to be well thought out - it just seems that the state has decided to do it and doesn't want to lose federal funds so they're just doing it.

Signature Marcia Atakawa Date 9/27/99

September 15, 1999

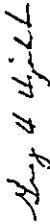
Ms. Marcia Arakawa
February 17, 2000
Page 2

The cost to keep noise and pollution down would be a great undertaking. Would the additional investment, cost, and hassle be worthwhile? Would the cost be passed on to innocent taxpayers?

The proposed measures for controlling project-related environmental impacts were developed within cost constraints. Mitigation costs are factored into the overall project budget. Approximately eighty percent of the project budget will come from the federal government with the remaining twenty percent coming from the State of Hawaii.

If you have any questions, please contact Mr. Ron Tsuruki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hayakumoto, P.E.
Project Manager

GHL:JN

Transcript of Oral Testimony
Recorded by Audio Tape

Public Hearing for the proposed Interstate Route H-1 Widening,
Westbound, Kaonohi Overcrossing to Waiau Viaduct

Held on September 15, 1999 at
Waimalu Elementary School Cafeterium
98-825 Moanalua Road

Mel Ho
98-441 Ponoahale Street

My name is Mel Ho. I know that they are proposing to close Pono Street temporarily and to make another entrance replacing Pono Street temporarily. I hear rumors that people want to make the temporary street open into our entrance to our subdivision permanently, and I just want to be on record to say that I am opposed to it and still have the entrance back on Pono.

What's the name of the church....

My name is Mel Ho again. I'm in favor of leaving the Grace, I think it's the Grace Brethren Church that's underneath the freeway leading into Pono Street. From what I hear, I think they have to relocate and they would not be able to move back. I don't go to that church myself and I'm not a member, but you know, but I don't see any reason why they should move because they've been here all these years. You know. You still have other permanent structures under other viaducts so I don't see any harm. That's it. That's all.

420 Waiakama Road
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Honolulu, Hawaii 96817-6941
Telephone 808-842-1133
Fax 808-842-1937
eh@atm.com/hawaii@atm.com



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Environmental Services
Photogrammetry
Surveying
Construction Management

February 17, 2000

Mr. Mel Ho
98-441 Ponoahale Street
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiau Interchange

Dear Mr. Ho:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in *italics*) concerning potential project impacts, SDOT offers the following information:

I know that they are proposing to close Pono Street temporarily and to make another entrance replacing Pono Street temporarily. I hear rumors that people want to make the temporary street open into our entrance to our subdivision permanently, and I just want to be on record to say that I am opposed to it...

It is uncertain that the proposed project will require the closure of Pono Street. A final determination will be made during the project design phase based on the location of the new viaduct support columns and the methods to be employed in their construction. If it becomes necessary to temporarily detour Pono Street and provide alternate access for Waimalu Gardens Subdivision, SDOT will coordinate with the City and County, Department of Transportation (DYS) to establish a temporary access at the Hekaha Street intersection until Pono Street is reopened.

The Department recognizes merits in permanently closing Pono Street and extending Hekaha Street to provide access for Waimalu Gardens Subdivision. However, because Pono Street, Hekaha Street, and Moanalua Road are City and County roadways, DYS will have to take the lead on studying the feasibility of opening a permanent extension of Hekaha Street into Waimalu Gardens Subdivision.

Following project completion, any temporary detours created by SDOT will be closed and Pono Street will be reopened unless DYS coordinates an alternative program for establishing permanent access at Hekaha.

Mr. Mel Hio
February 17, 2000
Page 2

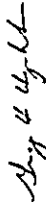
They (Waimalu Grace Brethren Church) have to relocate and they would not be able to move back... I don't see any reason why they should move...

The Department realizes that the decision of not allowing the church to remain at the site will create some hardships for congregation members and for church and pre-school operations, however, the need for this highway improvement and emerging concerns about human safety under viaduct structures compels the SDOF to establish a position withdrawing all of the lands under the lease for this project.

Because program funding is not generally dedicated for relocating uses that currently exist under State highways, SDOF must take advantage of funding opportunities as they arise. The proposed H-1 widening project presents an opportunity for funding the permanent relocation of Waimalu Grace Brethren Church and Pre-School in accordance with SDOF's position on withdrawing their lease.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

PUBLIC TESTIMONY

SPEAKER: My name is Barbara Paulo. I live at 98-338 Ponohale Street which is in close proximity of the freeway. My main concerns are the noise, air and trash pollution that would increase upon the widening of this freeway.

In the proposals shown here there are no noise barriers planned for the Waimalu residents. It seems that we are being left out of any of the improvements phase of this freeway.

My son has asthma. And to bring this freeway closer will increase his inability to breathe. I want to know what can be done to keep our quality of life as it is. The freeway is already creating a lot of noise, a lot of crash. And to bring it closer is an unfairness to our community.

The dust and trash is already tremendous. It flies off the freeway and no one bothers to clean it up. I want to know what can be done to prevent the increase of trash that will probably fall into our backyards.

The noise of the freeway is already terrible. The residents of Waimalu has lived with this for many.

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many years. And to widen the freeway will bring it closer to the residents who remain behind. What can be done to cut the noise from our homes? It seems that in all the proposals nothing is being done for us.

The property value will decrease on the remaining homes that are left behind. And I just want to know that. I just want to know if there's anything they can do to keep our home value at its market. What it is now I should say. I'm not looking for monetary compensation. I'm just looking for. for my quality of life to remain as it is.

I just want to protect my community where I have lived here for over 40 years. I do not intend to move as which was suggested to me by councilman's person who is in his office. I just want to protect my living environment and my family. Thank you.

Another thing I'd like to add is that during all these hearings I've been attending all my questions have gone unanswered. The only responses I get is, "I don't know" or "We can't answer it at this time. Everything is in the planning."

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1 No suggestions have been brought up by any of
2 the DOT people or any of our politicians that have
3 attended. I feel like it's wasting my time, and I
4 don't even know if they're going to listen to this or
5 even address my comments from this meeting. This
6 meeting is supposed to be very impersonal. If we go
7 up and ask them a question I am sure I'll still get
8 the same answers. I don't know. Thank you.

9 (This concludes the public testimony.)
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5
C E R T I F I C A T E

1 I, HOLLY M. HACKETT, R.P.R., C.S.R., do hereby
2 certify:

3 That I was acting as shorthand reporter in the
4 foregoing matter on the 15th day of September, 1999.

5 That the proceedings were taken in
6 computerized machine shorthand by me and were
7 thereafter reduced to print under my supervision; that
8 the foregoing represents, to the best of my ability, a
9 correct transcript of the proceedings had in the
10 foregoing matter;

11 Dated: 21 September 1999

12 *Holly M. Hackett*

13 C.S.R. #130

14 Certified Shorthand Reporter
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21
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420 Koa'uama Road
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Honolulu, Hawaii 96817-4041
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Construction Management

February 17, 2000

Ms. Barbara Paulo
98-338 Ponoahale Street
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaono'hi Street to Waiau Interchange

Dear Ms. Paulo:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in *italic*) concerning potential project impacts, SDOT offers the following information:

In the proposals, show here there are no noise barriers planned for the Waimalu residents. It seems that we are being left out of any of the improvements phase of this freeway. My son has asthma. And to bring this freeway closer will increase his inability to breathe. I want to know what can be done to keep our quality of life as it is...

Both State and Federal policy require that mitigation measures be undertaken to minimize noise and air quality impacts to meet specific standards for health. The project must comply with State Department of Health regulations concerning noise control and air quality, as provided in Hawaii Administrative Rules, Chapter 11-43, Community Noise Control for Oahu, and Chapter 11-60.1, Air Pollution Control. Measures designed to minimize impacts from project-related noise and dust are outlined in Section 3.3, Noise Impacts, and Section 3.4, Air Quality, of the Environmental Assessment (EA).

The freeway is already creating a lot of noise, a lot of trash. And to bring it closer is an injustice to our community. The dirt and trash is already tremendous. It flies off the freeway, and no one bothers to clean it up. I want to know what can be done to prevent the increase of trash that will probably fall into our backyards.

The Department is considering several designs for the installation of a debris barrier along the Waimalu Viaduct. The barrier will likely be constructed with a combination of a solid, concrete "Jersey-barrier" type wall topped with fencing to block thrown debris. A final decision on the type of barrier wall will be made during the design phase of this project.

Ms. Barbara Paulo
February 17, 2000
Page 2

The noise of the freeway is already terrible. The residents of Waimalu have lived with this for many, many years. And to widen the freeway will bring it closer to the residents who remain behind. What can be done to cut the noise from our homes?

The homes in the Waimalu Garden subdivision that are currently affected by noise levels in excess of the Department of Health's 66 dBA noise abatement criteria are identified for relocation under the current project. Of the adjacent homes that will be not be relocated, five are projected to be impacted by noise levels in excess of 66 dBA following project completion (Draft EA, Appendix F, Acoustic Study for the H-1 Freeway Widening Project, Kaono'hi Street to Waiau Interchange, Figure 4).

The proposed debris barrier wall along the top of the viaduct will function to block out some of the traffic related noise. However, as stated in Section 3.3.3.1 of the Environmental Assessment, much of the noise adjacent to the viaduct is attributable to radiated noise from the viaduct structure, as opposed to traffic noise that travels in a direct line-of-sight. Because there is no effective means to mitigate radiated noise from the viaduct structure, significant reductions of traffic noise will not be feasible.

The property value will decrease on the remaining homes that are left behind...I just want to know if there's anything they can do to keep our home value at its market, what it is now...

The Department of Transportation has no evidence to indicate that property values will decrease with this widening. Typically, concerns about impacts to property values from such highway projects focus on noise, air quality, and visual impacts. State and Federal policies require that mitigation measures be considered to minimize potential adverse impacts to air quality, ambient sound levels, visual setting, and other environmental conditions. The Environmental Assessment prepared for this project addresses potential impacts and provides recommendations for minimizing or preventing adverse effects from project activities.

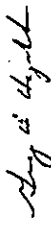
...during all these hearings I've been attending, all my questions have gone unanswered. The only response I get is, "I don't know" or "We can't answer it at this time. Everything is in the planning."

Community input is sought early on in the planning stage of project development in order to identify issues and community concerns that the Department of Transportation might not otherwise anticipate. Often, SDOT representatives do not have enough information to meaningfully respond to questions that emerge during the public meetings. The Department hopes that this letter provides acceptable responses to your questions.

Ms. Barbara Paulo
February 17, 2000
Page 3

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



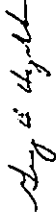
Greg H. Hiyakumoto, P.E.
Project Manager

GHT: JN

Ms. Barbara Paulo
February 17, 2000
Page 3

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

Waimalu Grace Brethren Church Congregation Comments

PUBLIC COMMENT FORM

Interstate Route II-1 Widening,
Westbound Direction, Kaonohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route II-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: PAMELO C. ARIZKAWA Address: 48-222 Pono Street
Aiea, HI 96701
Phone: 488-6006 day
487-1081 eve
584-8948 Pager

Please write comments below:

Dear Sirs,
I am the director of Waimalu Grace Brethren Children's Center and represent a current enrollment of at least 53 families and nearly 20 employees and volunteers (a separate church entity and staff also exist). I have worked here for 10 years among several staff that have been here for 15+ years and it is with much shock and disappointment that I write this concern.
In all of my 10 years here, I have not known a whole year to go by when we were not fully enrolled at most points during that year. Often we had wait lists of more families that we could not accommodate due to our limited licensing and classroom space. I have modified the program to try to accommodate as many children as possible within the restrictions set up for us by the Department of Human Services. We operate as a non-profit organization and exist with one purpose in mind - to provide a positive preschool and daycare experience with a Christian emphasis in order that we can minister to whole families and not just individual children. I believe that we are a unique school and parents that selected our school over others will not easily place their child in just any other preschool. This is proven with our yearly wait list even though schools in our area have run simultaneously with vacancies at the same times that we have been taking wait lists (I have kept specific data to document this occurrence).
Continued on back -- over

Signature Pamelo C. Arizkawa Date 9/20/99

September 15, 1999

Moving to another community would require a possible change in our outreach and teaching strategies as you know each community has its own personality and needs. I understand the state's position with lack of funds and the national deficit that makes federal funds also tight but we need your help. Displacing all of these families and employees may cause serious impact to the community. I know studies have been made but there does not seem to be the concern for the school that I would expect to see unless someone is trying to down play the impact of the school closing. The church actually has greater significance to the whole program but it's not easy to communicate to outsiders how much the church really does sustain the school.

My concern involves a question of "Have we really explored all options and do the officials really care what impact this will do to the community?" The following is my understanding of concerns brought by the state listed with my question of whether we've addressed some of these possible solutions:

- * Safety factor due to falling concrete: Have we explored the cheaper solution of a safety net or adequate covering or aving for outdoor areas?
- * Desire to not have others want to lease under-freeway-land: Could we require other organizations to invest in an approved covering or netting for public safety as part of the lease agreement or a waiver of state liability if warning is issued. The state could also consider our situation as a test situation (grandfathered in) and experiment with possible safety modifications.
- * Move to affordable location: Are we doing everything we can in working out a swappable State or Government property in the area that could continue the lease? Could consideration be given to set a sizable amount that could help with the set up of another location in our area with the justification that the community and public using the freeway will greatly benefit by our move?
- * Compensation: Are we being considered for the losses we are incurring from additional/extensive time and money invested for improvements and investments? Only three years prior to our notice to move, we were renegotiated the lease price and sold an adjoining vacant property now being included in the land being condemned. Much hours and expenses went into improving the properties which we are now being told will be condemned. I believe we have increased the value of the property we are now being told to leave for a mere moving and minimal reset-up cost. How can this be something that we could consider as the state doing everything they can to help? Please also factor in the hardship cost of unemployment if we should have to close our doors even temporarily.
- * Location is crucial to any business: Location is everything to most businesses. I believe we have enough quality to carry quite a bit of loyalty because parents know we work to provide a quality program and some of them will follow us where ever we relocate within reason. Many of them also come from all parts of the island. However, a location change even within the community is bound to affect the early stages of enrollment and losses will be significant. Often

because our school is only a two year process, we gain and lose families every year. It isn't until a family often accidentally stumbles upon us that they realize the quality we promote to their favor. Our location has to be favorable before many new families even look into considering us. We need your help to consider this a primary concern with the decisions being made.

* Losses will be great in any situation: Whether we move permanently or temporarily, we will suffer many losses:

- Unemployment to terminate or lay off workers
- Parent concern for move will affect our enrollment from as early as 2 years prior as parents do not favor disrupting a child's enrollment midway.
- Permanent move will add losses of two buildings, landscaping, large pavement areas, electrical/plumbing hook-ups, and other repairs and renovations to the actual buildings (e.g. new carpeting August 98)
- Loss of tuition income: During temporary move or relocation
- Labor and expenses to remove equipment (play structure, swings, etc.) that can be taken with us to relocation site.
- Possible loss of staff may force us to run at lower than maximum enrollment or cut the hours of operation even before the move.

Please, I ask for your help to find some solid unbiased answers to the above concerns. I am working on a report to better document our need to this community by providing financial statements and enrollment histories. Please let me know if you have any further questions or reports I can provide to help you best assess the situation and solution. I appreciate all you can do to help us.

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiolu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Pricilla C. Arakawa Address: 99-506 Kohala Place
Phone: 488-6006 day ALP, HI 96701
487-1081 eve

Please write comments below:

Dear Sirs,

I was very disappointed with the style chosen to present the "Public Hearing" on September 15, 1999 at Waimalu Elementary School concerning the H-1 Widening Project. There was no warning to the "Open House" format chosen which was unfamiliar to many of us. Because it was so different in nature, it would have been nice to have been informed that a new format was going to take place.

My interpretation of what happened was that a testimony written ahead of time and dropped off by someone else would have been just as effective. I would not have had to make arrangements for my 4 young children for a three hour evening. In fact I did not have to skip dinner in my urgent need to be on time for fear of missing something significant. I don't mean to sound sarcastic but the way this meeting was conducted and promoted added to the disappointment and feeling that the state was trying to minimize their attempt to meet the public's needs. I left with the feeling that my opinion like all the others would probably be pacified with a nice letter that says thanks for writing and end. I would never know how many others may have felt as I did and thus the feeling of a lone voice in the middle of a big government was strong.

Continued on back — over

Signature Pricilla C. Arakawa Date 9/24/99

September 15, 1999

I realize that the above paragraph is presumptuous and inaccurate but I wrote it to tell you how the meeting made me feel. Over and over I fought feelings that it was a waste of time and "do I really want to waste more by putting in more time to write this comment?" I fear that instead of a public ear to my concerns, one state worker would read my comments and tally it into one statistic of "for" or "against" comments. I feel a meeting of this nature should not be called a "Public Hearing." The Public in fact does not really hear it. A few amount may read about it if they request transcripts but all the feelings and emotions behind them would be lost. Please, if these meetings are considered successful as the spokesman said they were, can we rename them to prevent wrong impressions and expectations?

So far, I have attended three meetings for this freeway and been disappointed each time because I felt someone else planned and strategized the meeting to minimize public reaction. There is an overwhelming feeling of no adequate voice for my feelings. After this meeting I am even more disappointed since the meeting at Aliah Scott Elementary encouraged us to take some of the concerns voiced there, to this meeting. We should have been told instead to write them down and mail them in at that time since this meeting was not going to be designed to address them any better. I hope others will write concerning this so you can better access how the group really felt.

In summary I conclude with a request for the original "Public Hearing" format and if any future meetings of this new style are selected, that the public be informed and prepared for it.

HIGHWAY DIVISION
PLANNING BRANCH
SEP 27 10 10 AM '99
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Marcia Aukawa Address: 99-5114 A Kahoiki Place
Phone: 486-6008 Day 486-3575 Eve
486-3575

Please write comments below:

I don't feel that enough study has been done to warrant the newly expansion. The widening at the Hawaii Interchange has not made a significant difference to those people who commute from town to the freeway and back between 3 PM and 7 PM each day. The traffic is not flowing better and the area around the interchange is still affected. These signs need to be moved to the highway - don't even bother me that point to need the extra lanes. In the times (during rush hour) that I have traveled that portion traffic slows to a flow very slowly. To widen the freeway would be a major disaster to both individuals, families & businesses. It would cause major disruption for people and I think it needs to be studied further before it is approved. We are under no means of major subdivisions and the cost to keep roads and bridges down would be a great undertaking. Would the additional lanes be used and travel be worthwhile. Would the cost be passed on to innocent taxpayers? The widening project doesn't seem to be well thought out - it just seems that the stretchers decided to do so and doesn't want to be funded so they just do it.

Signature Marcia Aukawa Date 9/27/99

September 15, 1999

September 27, 1999

Comments to the Draft Environmental Assessment
Interstate Route H-1 Widening Westbound Direction Kaonohi Street
to Waiiau Interchange,
Project No. 488-01-97, dated June 1999

1. Paragraph 3.2.2 Project Impacts: Relocation of the Waimalu Grace Brethren Church and Preschool will be expensive. Over 15 years ago, church leaders working with state officials agreed to a fifty five year lease agreement making the decision not to buy land at another location. The history of the church is full of examples of cautious money management in line with Grace Brethren doctrine. The long term of the lease affixed in time with Grace Brethren doctrine. The long term of the lease affixed in time for church leaders to plan for the eventual need to move at the end of the lease term. Thus, the maintenance and steady growth of the "Guiding Fund." This fund is not adequate at this time to move the church, pre-school, and parsonages as forty more years were expected. The probable requirement of moving out never to return within 40 years seriously impacts the financial viability of the church and the preschool. The church, its members, and the preschool are vital contributors to the surrounding community. The church has been a fixture in the valley with many members in walking distance. The pre-school over recent years has had a waiting list with many of its students also in walking distance. There are youth programs on weekends and weeknights, especially the national Amana program for children from preschool to junior high. A neighborhood family lost their home to a fire a couple of years ago the church provided food, clothing, and shelter. The church and its members regularly contribute time, funds, and its facilities in support of the community. The Environmental Assessment (EA) should address these vital contributions as an impact and provide financial mitigation. This request additional mitigation consideration would not have been necessary under the original lease agreement as church leaders and members have proven over the years that they are committed to financial responsibility.

2. Paragraph 3.2.3: The paragraph discussing mitigation measures for the Waimalu Grace Brethren Church states that the two parsonage homes will be treated as a residential property relocation and will be arranged under terms separate from the church and preschool relocation. The parsonages are used as residences, but they are an integral part of church operations including Sunday school classrooms, leadership meetings, youth meetings, and counseling. Separation will increase the negative impact on Waimalu Grace Brethren Church and must be considered for additional mitigation under the EA.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Please feel free to call me at 488-2469, to discuss any other these comments.

Marcia Aukawa
Nicolas C. Dixon
Waimalu Grace Brethren

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form:

Name: Rodney Ishikawa Address: 98-1234 Kapaeha St
Daily Ishikawa Alaia HI 96801
Phone: 488-3086 day 488-3086 eve

Please write comments below:

No. 2 young child attended Waialeale. Great children
Childcare Center. Currently, I have a 4-year old attending
There are other children that were available. I believe that
at the time because of the caring & loving environment
they create for the youngsters. Their tuition is reasonable
same time they provide lunch & snacks. Their location
is very convenient for people living in the area. Even
for folks that don't live here, they travel to attend it.
But it's not just the wonderful facilities, it's the people
I have that make Waialeale place. I believe as well.
The director & teachers are so loving and patient with the
children and their parents. They truly love the kids and
for each child. They care for them! I believe that
I see you just how it affects me. I've had "education" before
around. I was impressed when they said "I'd like to
receive the money all day long, it's that good. I'd like to
see you playing & working. They truly care for the kids."
They received his thoughts & comment to the director.
I'd be glad to see the child who was "a good" one in the
moment. They did what for each child. And that's
how much time they are willing to spend for the children. They're
all so dedicated & work hard in a family. I would
love to see the staff. They're all so wonderful & so
of many & convenience. "I believe" provides a child for school.
I'm a teacher (begin) & I can tell you. I believe that
child has attended a loving, nurturing preschool or home.

Signature Rodney Ishikawa Date Sept. 25, 1999

September 15, 1999

This first experience to school spent a child's future attitude
toward school. They will enjoy school if they enjoyed preschool.
They will try new things if they have a positive concept about
themselves. That's what these teachers do for all of the
children.

Some of my former students have attended Waialeale Grace
Children. They all remember & talk about how wonderful the teachers
were to them. They're in intermediate & high school now.
I know there are other preschools that people can send their
children to, but I tell them that Waialeale Grace Children
Children's Center has the best teachers. Loving & caring
family. We are entering an era when we have to learn. I know
they are in good hands!

Please remember me when someone is providing top quality
education in a loving, nurturing environment. Why would
you want to break up a family? There are too many & much
to their community? People are more important than money.
Rodney Ishikawa

SEP 23 1999
HIC
PLANNING
SECTION

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiou Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: CHERYL KURUWA Address: 2395 KOMO MAI DR
PEARL CITY, HI 96782
Phone: 598-7645 (43) day eve

Please write comments below:

To Whom It May Concern:
We have one of our children attending Māmala Grace
Brother Children Center because of excellent
preschool program and location. We would like the
preschool to remain open during and after the
construction of the freeway so that our 3rd child
will attend Māmala Grace Brother Children
Center (WBBCC).
The location is ideal and convenient for us. It's
under the freeway which means we don't have to
worry about the weather affecting outdoor
motor skill development activities provided by the
preschool.
The preschool provides an excellent social, emotional,
physical and developmentally appropriate academic
program which has benefited the child. It would
be a great shame and detriment to our
family and community to close WBBCC.
Please keep the preschool open!!!

Signature _____ Date _____

September 15, 1999

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiou Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: CHERYL KURUWA Address: 2395 KOMO MAI DR
PEARL CITY, HI 96782
Phone: 598-7645 (43) day eve

Please write comments below:

To Whom It May Concern:
We have one of our children attending Māmala Grace
Brother Children Center because of excellent
preschool program and location. We would like the
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Center (WBBCC).
The location is ideal and convenient for us. It's
under the freeway which means we don't have to
worry about the weather affecting outdoor
motor skill development activities provided by the
preschool.
The preschool provides an excellent social, emotional,
physical and developmentally appropriate academic
program which has benefited the child. It would
be a great shame and detriment to our
family and community to close WBBCC.
Please keep the preschool open!!!

Signature Cheryl Kuruwa Date 9-27-99

September 15, 1999

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Laura Lee Poony Address: 98-470 K.I. Hwy Way
Asa HI 96701
Phone: 422-9488 day
426-4161 eve

Please write comments below:

Both of my children were involved in activities that they loved. My son was involved in sports and my daughter was involved in music. They were both very active and enjoyed every minute of it. They were also very helpful and kind to others. They were always helping me with my housework and taking care of their own things. They were also very responsible and always did their homework on time. They were also very creative and always had something new to show me. They were also very kind and always helped others in need. They were also very brave and always stood up for what was right. They were also very hardworking and always gave their best effort in everything they did. They were also very loving and always showed their love to everyone they met. They were also very respectful and always treated others with respect. They were also very honest and always told the truth. They were also very generous and always shared with others. They were also very kind and always helped others in need. They were also very brave and always stood up for what was right. They were also very hardworking and always gave their best effort in everything they did. They were also very loving and always showed their love to everyone they met. They were also very respectful and always treated others with respect. They were also very honest and always told the truth. They were also very generous and always shared with others.

Signature: Laura Lee Poony Date: 9-23-99

September 15, 1999

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Bea Nishikawa Address: 44-117 Kapiolani Jr.
Waipahu HI 96797
Phone: 453-6675 day
272-3416 eve

Please write comments below:

As parents of three young children we would like to express our concern over the future of Waianu since Bremen Church and Children Center (WBCC) will be closed. We would like to see WBCC continue to provide special and nursing to this community for many more years and generations to come. WBCC is truly an excellent Children's Center that fills a much needed void in our community. We have visited many other preschools in this community and have also experienced their food and activities. We are very happy and we can say unequivocally that WBCC is the best. Make the effort to attract and retain the parents and the well-trained staff. The children at WBCC learn values, concepts, and skills that will help mold them into caring and contributing members of society. There are many things about WBCC that impress us - the dedicated staff, nurturing environment, objectives/curriculum etc. The staff are genuinely warm, caring and loving to the children. Parents can feel so reassured when they drop their children off that they are leaving them in a safe and nurturing environment. WBCC is clean, organized, neat & well-maintained. Regarding the curriculum/objectives, the staff helps the children to develop a positive, wholesome attitude and appreciation toward self and others, to develop a thirst for knowledge in areas of language development, reading, math, science and writing. As a Christian, the most important thing for me is to have my children develop a beginning understanding of God and His love. Founded in the Son Jesus Christ - WBCC has given my children an understanding of Christianity. We wish we knew about WBCC when we were looking for a preschool for our child. It was through a Christian with a neighbor that we learned about WBCC. In conclusion, we would like to see the preservation of WBCC for the sake of our children and the generations to come.

Signature: Bea Nishikawa Date: 9-26-99

September 15, 1999

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Paul R. Trupiano Address: 92-098 Lanaki Place
Via N. An Gwin Mililani, Hawaii 96789
Phone: 808-623-3716 ext 207
(leave phone #)

Please write comments below:

We value the childcare service that Waiwale Grace Brethren provides. My husband and I are civilians who both work at Pearl Harbor. We needed to find a childcare center that was close to where we work that would enable us to pick up our toddler (3yr child) quickly in the event of a natural disaster or emergency situation. Waiwale Grace Brethren offers the flexibility in our busy work schedules and the loss of its service would cause a hardship for our family.

We selected Waiwale Grace Brethren Children's Center after much researching on other childcare centers. We looked at location, business hours, financial facilities, and what type of program the childcare center offered. We found Waiwale Grace Brethren Children's Center to be perfect for our family needs.

If you have ever been a part of a Christian Church or have children or had children - you would know and appreciate all the many hours of volunteer work - as well as donation of time and money that many people have given through the years to assist the childcare center in providing its quality services.

Through the years my husband and I have volunteered to put up a slide, paint school grounds, help with and clean classrooms for our other three children. We do volunteer work for Waiwale Grace Brethren's Center. If you visit the Waiwale Grace Brethren Children's Center you will see the fruits of the labor of love with the children in mind that many parents and people have given through the years. We humbly request that you allow Waiwale Grace Brethren Children's Center to continue providing the quality childcare that you have been providing on location.

Signature Paul R. Trupiano Date 26 Sept 1999
26 Sept 1999
September 15, 1999

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Noreen Murata Address: 98-882 Kaahale St
Waiwale Murata Aiea, HI 96701
Phone: 436-6231 day
eve

Please write comments below:

We support the relocation of Waiwale Grace Brethren Church and Preschool. Our son currently attends the school; conveniently located just 5 minutes from our home. The nurturing staff, comfortable classrooms, Bible-based emphasis, age appropriate activities and spacious play area provide a very positive environment.

Today we have not read about children killing households. Children break homes, shake abuse and some get households. So why spend valuable time and money closing a facility that teaches about the importance of God and family? Let's work together in making our neighborhood a better place for our kids.

Please assist in finding an alternate site for the Waiwale Grace Brethren Church and Preschool so that it can continue its mission to serve our community.

Signature Noreen Murata Date 9/26/99

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Jill S. Hiyamilla Address: 98 374 Penchale St.
Phone: 408 7497 day ALEA HI 910701
eve

Please write comments below:

My name is Jill Hiyamilla and I am a first year student at Leeward Community College. First of all, I would like to thank you for your willingness to help and serve our community in the spirit of service that I would like to share a few things with you about the Waimalu Grace Brethren Church at the age of 10. I have been a member of the church since I was 10 years old. I have participated in many church activities such as childrens programs, church picnics, youth group, and many more activities. I can say that the Waimalu Grace Brethren Church has provided me with a place to go to when I need help, love, and knowledge of the world. As a member of the church, I have attended the Waimalu Grace Brethren Church and have been a member of the church since I was 10 years old. I would like to see if there are any other ways that we can help the church and the community. To find a reliable location for the preschool, I

Signature Jill S. Hiyamilla Date Sept. 15, 1999

September 15, 1999

We are a non-profit organization also servicing the community. Socially and environmentally, I feel we are working together, for the good of the State, to turn out youths who have morals and not swayed by the evil influences of today. However, we need your support and assistance. We're keeping them off the streets, offer them an alternative to hanging out at shopping malls or looking for ways of "having fun."

I'd also like to address the reason given by the State for the church not being allowed to return to the present location after the completion of the expansion project. The reason was because of the age and deterioration of the existing freeway and incidences of chunks of concrete falling under the Pearl City viaduct. It concerns me to think that the State is adding onto something that might be unstable and deteriorating. God has been protecting us and we trust that He will continue to keep us safe in the future. We have been there since 1983 and only have experienced pigeon poop falling onto our property from the nesting pigeons above.

Even though we are leasing the land under the freeway, my plea is for the State to work together with us in locating another temporary site to continue our church ministry and preschool for the duration of the construction. Also, please consider the possibility of us returning to the present location once the project is completed. For many of our youths, they call this place home. From all the members of the Waimalu Grace Brethren Church, friends, and future generation, I thank you for your time.

95-374 Ponohele St.
Aiea, HI 96701 Ph: 488-2433

My name is Judy Hiromura. My family and I have lived in the Waimalu Garden Tract for over 27 years. The Waimalu Grace Brethren Church and preschool, along with two residences that currently house our pastors, are being affected by the freeway expansion project. I am here tonight to share how the relocation of our church, whether permanent or temporary, will have a social and environmental effect on the community. Our church has an excellent youth ministry program. The leaders are all adults committed to raising up the youths in learning what God's Will is and what God commands in the Bible. Even from a very young age, they are taught how God wants them to obey and respect their parents, and about the love He has for them. They learn how God wants them to love one another and live their lives in a manner pleasing to our Lord. On Friday evenings, youths from Kindergarten to the 8th grade meet for 2 hours of council time, handbook time, and game time. Approximately 80-100 kids from all over the community turn up for this activity. On Wednesday evenings the high school and college age young adults meet with their respective youth leaders for Bible study and activities.

I am a parent of two children: my son has been attending WGBC since age 5 (he is 22 years old today), and my daughter since she was 1-1/2 years old (she is 18 today). They both grew up in the church, attending all the programs mentioned above and are today leaders in the church for the younger youths. As a parent, it is comforting to see how they are walking in God's ways and not influenced by peer pressure or the negative activities this world has to offer, i.e., drugs, violence, sex, etc. that are so rampant in this world today.

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Weisau Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: Judy S Cury Address: 95-374 Ponohele St
Aiea, HI 96701
Phone: _____ day _____ eve _____

Please write comments below:
For my husband and I, it was very important to further instill in our children strong morals, family values, respect and religion. Our son benefited greatly while he attended Waimalu Grace Brethren. Our daughter is now enjoying her learning process. We were very much looking forward to enrolling our third child in the fall of 2002, so she too could experience what her two siblings were able to.
We are so fortunate to have become a part of the Waimalu Grace Brethren - their strong commitment to the children and families of our community.
In the times that we live in today, with our declining economy, the break down of family unity, drugs, children leaving children, etc. Wouldn't it be a tragedy to take away our church and school something that represents positive spiritual teachings to our children for the sake of progress? Please consider the people you'll affect when making your decision.

Signature: Judy S Cury Date: 9-24-99

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kuaohij Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: David S. Jan Lee Address: 28-1465 A Leannumauhi
Phone: 433-6000 day 433-701
eve

Please write comments below:

SEE ATTACHED SHEET

Lined area for writing comments, currently blank.

Signature Jan Lee David Lee Date 9-27-99

September 15, 1999

The public was misled when the State declared that only 9-10 homes and a church will be affected. A Preschool and Children's Center (Waimalu Grace Brethren Church and Children's Center) located under the freeway is also affected.

Has there been any studies made regarding the impact to the community for the potential loss of the WGBC-CC/Pre-school? The impact would result in a loss of day care services and pre-school education provided to approximately 60 kids. This will also cause a loss of approximately 15 jobs to staff workers. This consideration should be addressed and included in the environmental impact statement to determine impact and recovery from this loss.

The State is supposedly working with WGBC church leaders for a possible relocation. However, if relocation is not attained, there remains a loss of the WGBC Church and WGBC Children's Center, along with the jobs, and services provided which would weigh heavily on the community. To date, no relocation alternatives have been identified and no action has been taken, only talks of possibilities.

The State has also mentioned that they want the church and children's center to relocate because they don't want to risk the possibility of injury to pedestrians under the freeway. Has there been any studies made in determining the incidences/causes/frequency/risks of injury to pedestrians under the freeway due to falling debris?

In life situations, we are always confronted with risks. Would the risk of being under a freeway be any greater than say driving on Moanalua Road? Could the State conduct studies and reviews for impact before completely ruing out WGBC Church and WGBC Children's Center returning back to the site? Perhaps with continued inspections and repairs made where necessary in the area of high pedestrian traffic under the freeway, impact of risk to injury can be significantly diminished.

If the WGBC Church and WGBC Children's Center would not be allowed to return, the community would be facing a spiritual and social loss. This is very significant in a time where breakdown in family and moral values is becoming more prevalent in our society. The church offers and provides the community a wealth of ministry opportunities, especially to the youth to grow spirituality and socially, and for the youth to be able to contribute back into outreach and service opportunities in the community. There is also a loss of preferred day care to approximately 60 kids as well as a loss of approximately 15 jobs that could cause the community to look elsewhere, outside of a reasonable area. At this location, the WGBC Church and WGBC Children's Center has been and is an asset to the surrounding community. Keeping the area vacant would not better serve the community, and it would not be the desire of the Waimalu community.

In conclusion, if the WGBC Church and WGBC Children's Center are unable to relocate to a permanent location prior to construction, request that they be allowed to return and continue to service the community. The WGBC Church and WGBC Children's Center is a non-profit organization and remains an important and vital asset to the community, especially to its youth. Please help to allow the WGBC Church and WGBC Children's Center and its youth to make a difference for this community. Please, your help is needed now!

David S. Jan Lee

July 6, 1999

Ms. Pricilla Arakawa
Waimalu Grace Brethrens Children's Center
98-323 Pono St
Aiea, HI 96701

Dear Pricilla:

We are sorry that we were unable to attend the public hearing regarding the relocation of Waimalu Grace Brethrens Children's Center (preschool). We would like to emphasize that we selected your preschool for the following reasons:

- 1) The location of the school. We chose Waimalu Grace because of its central location. Being that I work in town and my husband works in Kapolei, we felt that a central location would best suit our needs.
- 2) The nurturing environment at Waimalu Grace. The teachers and staff really care about the students.
- 3) The moral values that are taught at Waimalu Grace. We feel that there needs to be more schools like Waimalu Grace which emphasize good moral values.
- 4) The educational curriculum at Waimalu Grace. We love the way the school intertwines the academic with the social aspects of learning.

Please note that the reasons stated above are listed in the order of importance to us. The relocation of the school is very important to us since our son Jonathan will be starting preschool during the fall of 2000. We hope that this letter will help you in your efforts with the Department of Transportation. Our thoughts and prayers are with you.

Very truly yours,



Debra Abe
Waipahu, HI 96797

PUBLIC COMMENT FORM

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

Your comments will help the State Department of Transportation to assess concerns regarding the proposed Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

Name: NANCY L LONG Address: 91-059 Pahuku Way
Phone: 423-3801 day 423-6726 eve
PO Box 4196706

Please write comments below:

We are sending our daughter Catalin to Waimalu Grace Brethren Children's Center because it is such a warm cozy & loving environment for her to be in. There are not many preschools in the I-99 area that have the same warm & loving atmosphere. In each the word of God and morals to our small children. In circumstances this service would be very good thing for parents and children alike now and in the future.

The children's center is also in a very convenient location with quick freeway access. It is not far from the Grace Brethren I would love my 3-year-old daughter into town which would be a healthy situation in her life. I'm 17 years old.

Waimalu Grace Brethren should be given a chance to remain open to serve many more families in the future.

Signature: Nancy Long Date: 7-23-99

WE NEED YOUR HELP!

If you are unable to attend tonight's school and church meeting with the Department of Transportation, please print and sign your name below if you feel that location played a significant part in your decision to enroll your child(ren) in our school. By doing so, we hope to communicate to the state that a temporary nearby location during the construction will be important as well as a need to renew our lease so we can continue to successfully serve our community in this established location for years to come. Thank you.

Print Name	Signature	Comments (optional)
1 Tim Sinn	<i>Tim Sinn</i>	
2 Denise Sakuma	<i>denise sakuma</i>	
3 Cheryl Kuroiwa	<i>Cheryl Kuroiwa</i>	
4 Jill Keenan	<i>Jill Keenan</i>	
5 Noreen Marata	<i>Noreen Marata</i>	
6		
7 Sunnie Kushi	<i>Sunnie Kushi</i>	
8 Debra Ake	<i>Debra Ake</i>	
9 Mike MacLellan	<i>Mike MacLellan</i>	
10		
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16		
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18		

WE NEED YOUR HELP!

If you are unable to attend tonight's school and church meeting with the Department of Transportation, please print and sign your name below if you feel that location played a significant part in your decision to enroll your child(ren) in our school. By doing so, we hope to communicate to the state that a temporary nearby location during the construction will be important as well as a need to renew our lease so we can continue to successfully serve our community in this established location for years to come. Thank you.

Print Name	Signature	Comments (optional)
1 Keith Fukukuni	<i>Keith Fukukuni</i>	
2 Roxanne Kuroiwa	<i>Roxanne Kuroiwa</i>	
3		
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Pastor Ted Kimbauer and Congregation

HWY-PA 2.6941

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April 21 2000

HWY-PA
2.6941

April 21 2000

Pastor Ted Kimbauer
and Congregation
Waimalu Grace Brethren Church
98-323 Pono Street
Aiea, Hawaii 96701

Dear Church Members:

Subject: Interstate Route H-1 Widening, Westbound Direction
Kaonohi Street to Wai'au Interchange

The State Department of Transportation (SDOT) appreciates your comments regarding the Interstate Route H-1 Widening project. We understand the concerns of the congregation regarding the permanent relocation of the church and pre-school and share your interest in minimizing relocation impacts and providing a smooth transition to a new location.

SDOT realizes that our decision to not allow the church to remain at the site will create some hardships for congregation members and for church and pre-school operations. However, the need for this highway improvement and emerging concerns about human safety under viaduct structures compels the Department to establish a position withdrawing all of the lands under the lease for this project.

Because program funding is not generally dedicated for relocating uses that currently exist under State highways, SDOT must take advantage of funding opportunities as they arise. The proposed H-1 widening project presents an opportunity for funding the permanent relocation of Waimalu Grace Brethren Church and Pre-School (WGBC) that would not be available if SDOT simply withdrew the lease for safety reasons.

The State's responsibilities for providing property compensation and relocation assistance to WGBC are prescribed by state and federal guidelines according to the Uniform Relocation Act of 1970.

Policies and provisions regarding the acquisition of real property, relocation assistance advisory services, and relocation payments are published in the Federal Register of March 2, 1989, and reprinted each year in the Code of Federal Regulations, Title 49, Part 24. Hawaii Revised Statutes, Title 15, Chapter 264, Part 2, Federal Aid Highways, defers to federal rules and regulations regarding relocation compensation and assistance. Under these guidelines, WGBC is classified as a business/non-profit organization.

SDOT is required to provide compensation that is fair and equitable both to the Church and with respect to the State's fiduciary duty to the public. Thus, the type and amount of assistance the State can offer the Church is also limited by the guidelines. Details of the specific compensation package will be worked out through formal communication between SDOT Rights-of-Way Branch and WGBC. Compensation will include:

- moving and reestablishment costs and related expenses;
- reimbursement of search expenses in finding a replacement location
- limited lease differential payment if relocating to property with higher lease rates;
- reimbursement for cost of improvements made on lease lands (TMK: 9-8-26: 60);
- fair market value for fee-simple property (TMK: 9-8-26: 09); and
- relocation advisory services.

SDOT's responses to specific concerns raised by congregation members are discussed below.

Property Search Assistance

SDOT Right-of-Way Branch conducted a real estate search for suitable replacement parcels within the Aiea/Pearl City area. The search found no property currently available that would suit the relocation needs of the Church. SDOT will continue to assist the Church in its search for a new location, however, because the Church is classified as a business/non-profit organization, the State is not obliged to secure comparable replacement property as is required for residential properties. Responsibility for locating replacement property rests with WGBC.

Parsonage

The Draft EA contains an error regarding the disposition of the parsonage (TMK: 9-8-26: 09). In section 3.2.3 it states, "Relocation of the parsonage will be treated as a residential property relocation and will be arranged under terms separate from church and pre-school relocation."

JAN 21 2000

According to the federal rules and regulations regarding relocation assistance, the parsonage is recognized as the property of WGBC, a non-profit organization. The parsonage, therefore, does not meet eligibility as a residential property and must be treated as a business asset of the Church. As part of its overall compensation package, WGBC will be paid the fair market value of the parsonage property as determined through an independent appraisal process.

Loss of Pre-school Enrollment/Business Income

The State understands the importance of location to WGBC pre-school operations and will continue to assist WGBC in searching for a suitable size within a reasonable distance from the pre-school's existing location. Based on the results of real estate searches to date, however, it is very possible that the Church and pre-school will have to relocate away from their current service area, and subsequently incur losses in enrollment and income.

We recognize the hardship this might cause to the Church and pre-school. However, the State is acting in accordance with the lease agreement made with WGBC and is providing the maximum amount of relocation compensation and assistance allowed under the terms of the Uniform Relocation Act of 1970. The State is unable to provide additional financial compensation for loss of enrollment and related income. SDOT can provide relocation costs and advisory assistance to help WGBC with its transition and reestablishment in a new location.

Loss of Employment

In the event that the relocation of WGBC results in temporary or permanent loss of employment for some of the Church or pre-school staff, SDOT relocation advisory services will be available to direct WGBC staff to unemployment assistance and other support services offered by the State.

Pre-school Operations

During the transition period, pre-school operations will have to be relocated to temporary facilities or suspended. While pre-school operations are interrupted, some or all of the children currently enrolled at Grace Brethren would have to be accommodated in other schools. There are at least five pre-schools operating in the near vicinity of Waimalu that might absorb some of the displaced children. SDOT relocation advisory services will provide assistance in finding temporary pre-school facilities or in identifying surrogate schools that can accommodate displaced children.

JAN 21 2000

Youth Outreach

Youth programs offered by the Church might be temporarily housed in City and County recreational facilities or other facilities in the area during relocation activities. SDOT relocation advisors can assist the Church in contacting the City and County regional Park Director to determine availability and requirements. As an alternative, the Hawaii Council of Churches maintains a list of all churches on Oahu and can help locate parishes in the Waimalu area that support youth programs.

Vacant Land

Vacant lots remaining following the relocation of the Church will be maintained by SDOT. Existing residential structures will be sold and removed or demolished to clear the parcels for use as open space. All of the remaining land, except the State parcel beneath the viaduct, are subject to disposal to abutting property owners or maintained as State highway land.

The State appreciates the many services and benefits WGBC has provided to the Waimalu community through its active ministry, youth programs and pre-school operations. In light of WGBC's well-established presence in the neighborhood, the decision to permanently relocate the Church is not one that we take lightly. However, the need for the project and other safety concerns make it imperative that we take this course of action. The State will assist you in making the transition to a new location with the hope that you will continue to prosper and provide benefits to the community you serve.

We thank you for your understanding and cooperation.

If you have any questions, please contact Ronald Tsuzuki, our Head Planning Engineer, at 587-1830 or Thomas Toyama, our Right-of-Way Manager, at 692-7325.

Very truly yours,



KAZU HAYASHIDA
Director of Transportation

DO:gf

cc: HWY-R, -D, -PA

Comments to the Draft Environmental Assessment
Interstate Route H-1 Widening Westbound Direction Kaonohi Street
to Waiuu Interchange.

Project No. H1EF-01-97, dated June 1999 SEP 22 1999

1. Paragraph 3.2.2 Project Impacts: Relocation of the Waimalu Grace Brethren Church and Preschool will be expensive. Without adequate compensation from the State, the church and preschool may not be able to afford to relocate to other facilities, and could in fact have to disband the church and/or close the preschool. The church invested significant resources to construct the facilities on the leased land, based on being able to use the land for the 55 year duration of the lease. The Environmental Assessment (EA) should address this as a possible impact and reinforce necessary mitigation. Mitigations should also address unemployment of the preschool staff if the school is shut down temporarily or permanently.

2. Paragraph 3.2.2 Project Impacts: There are several other residential properties which will be negatively impacted by the proposed action which are not addressed in the EA. These are the properties which will become immediately adjacent to the expanded freeway as a result of this project. The homes will be impacted by debris falling from the freeway, louder noise, and have newly created vacant lots next door.

As the freeway is expanded, the "impact zone" of debris coming off the freeway moves out to encompass these homes. The debris which has come off this section of H-1 in the past includes a light pole, a pickup truck bed liner, tires and pieces of tires, beer bottles, cans and rocks. This is a serious safety hazard for the families living in the "impact zone". According to the draft assessment, no debris barrier is planned, even though this problem was discussed extensively during an initial State meeting with residents.

The homes will be subjected to an increase in noise which currently exceeds the allowable criteria in the area. Some of these homes will be next to newly created vacant lots. Generally, vacant lots are not well maintained, presenting a potential safety and security hazard and an eyesore.

At a neighborhood board meeting, Mr. Ron Tsuzuki stated that Federal funds could not be used to compensate area residences who were not being displaced. This is not an acceptable reason to ignore the impacts. Federal Law requires the environmental documentation to address all significant impacts! These impacts present serious safety concerns and will result in reduced property values. The assessment must address these impacts, and identify appropriate mitigations or compensation.

3. Table 3-2: TMK No. 9-8-26:10 is shown as a wasteland on Table 3-2. This parcel was purchased by the Waimalu Grace Brethren Church and consolidated with the property at TMK No. 9-8-26:09, similarly to the parcel TMK No. 9-8-26:63.

4. Paragraph 3.2.3: The paragraph discussing mitigation measures for the

Waimalu Grace Brethren Church states that the two parsonage homes will be treated as a residential property relocations and will be arranged under terms separate from the church and preschool relocation. The parsonages are used as residences, but they are also used for church activities such as Sunday school classes, leadership meetings, and youth meeting. They are an integral part of the church facilities and must be considered as part of the church and preschool facilities for relocation. If replacement homes are not located within close walking distance of the new church facilities, an additional four classrooms will be needed at the church to compensate for the lost use. If the resident properties are handled separately from the church, there will be an impact which must be addressed in the EA, along with an appropriate mitigation.

5. Paragraph 3.3.3.1, Traffic Noise Mitigation Measures: Page 44 states that some residences in the Waimalu Garden subdivision are currently affected by noise levels in excess of the 66 dBA criteria. The remaining homes adjacent to the widen freeway have a high probability of also exceeding the criteria. According to the EA, no mitigations are planned. Again, value of the adjacent home is negatively impacted, but not address in the EA. This must be address in the EA with appropriate mitigation or compensation.

6. Paragraph 9.2, Criteria 2: Include the church and preschool as parcels requiring relocation.

7. App B: Informational Meeting, December 2, 1998, page 4. Question/Answer 8 states that impacts to remaining adjacent homes would be evaluated on a case-by-case basis and appropriate mitigation measures sought. Include the evaluations and mitigations in this EA.

8. App B: Public Information Meeting, March 3, 1999, page 12. Question by Mr. Scully asked if there was a reimbursement policy for loss of property value for remaining residence adjacent to the widened freeway. Mr. Tsuzuki answered that it needed to be looked into. He also stated that the State was looking into the matter of things falling from the freeway and possible mitigations. This was not addressed in the EA, but must be.

9. I was very disappointed with the "Public Hearing" held on September 15, 1999. I fully expected a public forum with comments made publicly! I did not gain any new information at the meeting, and feel our time was wasted. The meeting was not necessary to submit written comments.

Thank you for the opportunity to comments on the Draft Environmental Assessment. Please feel free to call me at 433-7098, to discuss any other these comments.

Bradley L. Scully
Bradley L. Scully
Waimalu Grace Brethren Church

420 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmc@towill.com



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Mr. Brad Scully
February 17, 2000
Page 2

February 17, 2000

Mr. Brad Scully
c/o Waimalu Grace Brethren Church
98-323 Pono Street
Honolulu, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaunolu Street to Waiau Interchange

Dear Mr. Scully:

The State Department of Transportation (SDOT) appreciates your comments regarding the Interstate Route H-1 Widening project. The Department understands your concerns about project-related impacts to the Waimalu Gardens community, particularly impacts related to the planned relocation of Waimalu Grace Brethren Church and Pre-school.

A separate letter has been sent to the church addressing concerns raised by congregation members (see attachment). In response to your specific comments SDOT offers the following information:

Item #1 - ...Without adequate compensation from the State, the Church and Pre-school may not be able to afford to relocate to other facilities, and could in fact have to abandon the church and/or close the pre-school. The church invested significant resources to construct the facilities on the leased land, based on being able to use the land for the 55 year duration of the lease. The Environmental Assessment (E.A.) should address this as a possible impact and require necessary mitigation. Mitigations should also address unemployment of the pre-school staff in the school is shut down temporarily or permanently.

The State is acting in accordance with the lease agreement made with WGBC, and will provide the maximum amount of relocation compensation and assistance allowed under the terms of the Uniform Relocation Act of 1970. The State is unable to provide additional financial compensation for loss of enrollment and related income. SDOT can provide relocation costs and advisory assistance to help WGBC with it's transition and reestablishment in a new location.

In the event that the relocation of WGBC results in temporary or permanent loss of employment for some of the church or pre-school staff, SDOT relocation advisory services will be available to direct WGBC staff to unemployment assistance and other support services offered by the State.

Item #2 - (Regarding) properties which will become immediately adjacent to the expanded freeway as a result of this project. The homes will be impacted by debris falling from the freeway, louder noise, and have newly created vacant lots next door... The assessment must address these impacts, and identify appropriate mitigations or compensation.

SDOT is considering several designs for the installation of a debris barrier along the Waimalu Viaduct. The barrier will likely be constructed with a combination of a solid, concrete "Jersey-barrier" type wall topped with fencing to block thrown debris.

The solid wall will function to block out some of the traffic related noise. However, much of the noise adjacent to the viaduct is attributable to radiated noise from the viaduct structure, as opposed to traffic noise that travels in a direct line-of-sight. Because there is no effective means to mitigate radiated noise from the viaduct structure, significant reductions of traffic noise will not be feasible.

Following relocation of the residents and Waimalu Grace Brethren Church, vacant lots will be maintained by SDOT. Existing residential structures will be sold and removed or demolished to clear the parcels for use as open space. All of the remnant land except the State parcel beneath the viaduct are subject to disposal to abutting property owners or will be maintained as State Highway land.

Item #3 - (TMK: 9-8-26: 10) is shown as a sustinald on Table 3-2. This parcel was purchased by the Waimalu Grace Brethren Church and consolidated with the property at TMK No. 9-8-26: 09, similarly to the parcel TMK No. 9-8-26: 61.

Table 3-2 has been revised to show the consolidation of TMK: 9-8-26: 10 and TMK: 9-8-26: 09.

Item #4 - The parsonage discussing mitigation measures for the Waimalu Grace Brethren Church states that the two parsonage homes will be treated as a residential property relocation and will be arranged under terms separate from the church and pre-school relocation... (The parsonages) are an integral part of the church facilities and must be considered as part of the church and pre-school facilities for relocation...

The Draft EA contains an error regarding the disposition of the parsonage (TMK 9-8-26: 09). In section 3.2.3 it states, "Relocation of the parsonage will be treated as a residential property relocation and will be arranged under terms separate from church and pre-school relocation."

According to the federal rules and regulations regarding relocation assistance, the parsonage is recognized as the property of WGBC, a non-profit business organization. The parsonage, therefore, does not meet eligibility requirements as a residential property and must be treated as a business asset of the Church.

Because the Church is classified as a business/non-profit organization, the State is not obligated to secure comparable replacement property as is required for residential properties. Responsibility for locating replacement property rests with WGBC. As part of it's overall compensation package, WGBC will be paid the fair market value of the parsonage property as determined through an independent appraisal process.

Mr. Brad Scully
February 17, 2000
Page 3

Item 5 - Paragraph 3.3.3.1, Traffic Noise Mitigation Measures: Page 44 states that some residences in the Waimalu Garden subdivision are currently affected by noise levels in excess of the 66 dBA-1 criteria. The remaining homes adjacent to the widen freeway have a high probability of also exceeding the criteria. According to the E-1, no mitigations are planned. Again, value of the adjacent home is negatively impacted, but not addressed in the E-1...

The homes in the Waimalu Garden subdivision that are currently affected by noise levels in excess of the 66 dBA criteria are identified for relocation under the current project. Of the adjacent homes that will be not be relocated, five are projected to be impacted by noise levels in excess of 66 dBA following project completion (Draft EA, Appendix F, Acoustic Study for the H-1 Freeway Widening Project, Kaonohi Street to Waiau Interchange, Figure 4). However, as stated in Section 3.3.3.1 of the Draft EA, much of the noise adjacent to the viaduct is radiated noise for which there is no effective mitigation.

Item 6 - Paragraph 9.2, Criteria 2: Include the Church and preschool as parcels requiring relocation.

Paragraph 9.2, Criteria 2 will be revised in the Final EA to include the Church and preschool as parcels requiring relocation.

Item 7 - App. B: Informational Meeting, December 2, 1998, page 4. Question: Answer's states that impacts to remaining adjacent homes would be evaluated on a use-by-use basis and appropriate mitigation measures sought. Include the evaluations and mitigations in this E-1.

The mitigation measures considered in the EA are designed to address potential impacts on both a broad scope and at the individual household level. They are based on studies and evaluations made of the overall project area and with consideration given to the individual residences within the subdivision. Individual household profiles are beyond the scope of the environmental assessment.

Item 8 - App. B: Public Information Meeting, March 3, 1999, page 12. Question by Mr. Scully asked if there was a reimbursement policy for loss of property value for remaining residence adjacent to the widened freeway. Mr. Tsuzuki answered that it needed to be looked into. He also stated that the State was looking into the matter of things falling from the freeway and possible mitigations. This was not addressed in the E-1, but must be!

There are no State or Federal policies regarding financial compensation to property owners whose property value might be impacted by the proximity of a highway or viaduct. State and Federal policies require that mitigation measures be undertaken to minimize potential adverse impacts to air quality, ambient sound levels, visual setting, and other environmental conditions on which concerns about property value impacts are typically focused.

With respect to the debris falling from the freeway, a debris barrier wall is being planned for the viaduct. The design is undetermined at present. The plan for a debris barrier will be included in the Final EA.

Mr. Brad Scully
February 17, 2000
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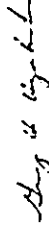
Item 9 - I was very disappointed with the "Public Hearing" held on September 15, 1999. I fully expected a public forum with comments made publicly. I did not gain any new information at the meeting, and feel our time was wasted. The meeting was not necessary to submit written comments.

The Department was trying out a new format at the September 15, 1999 public hearing. Some of the features were effective, others were not. Your comment and the comments of others will help us to improve the format for future public hearings.

The Department thanks you for your understanding and cooperation.

If you have any questions, please contact Mr. Ron Tsuzuki, Lead Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,



Greg H. Hiyakumuro, P.E.
Project Manager

GHL:JN

Noise Wall Questionnaire Responses

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiiau Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions until at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

I support construction of the noise barrier wall.

I do not support construction of the noise barrier wall.

I support the noise wall concept, but need more information.

I have no opinion about the proposed noise wall.

Please write any additional comments below:

I paid an additional \$10,000.00 for this view lot. I do not want my view obscured unless the wall is added my view.

August 10 1999



NAME: ROBERT C. KNOX
ADDRESS: 98-301 Puuahi
Area 46 96701
PH 488 9726

R. M. Towill Corporation
Attn: Chester Koga
420 Waiakamilo Road, #411
Honolulu, Hawaii 96817

470 Waiakamohi Road
Suite 411
Honolulu, Hawaii 96817-4111
Telephone 808 842 1133
Fax 808 842 1977
eMail rmc@towill.com



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February 17, 2000

Mr. Robert C. Kimoto
98-381 Puualii Street
Aiea, Hawaii 96701

SUBJECT: Noise Barrier Walls Under Consideration
Interstate Route H-1 Widening, Westbound Direction,
Kaomohi Street to Waiau Interchange

Dear Mr. Kimoto:

The State Department of Transportation (SDOT) appreciates your response to the August 10, 1999 Noise Wall Questionnaire. The questionnaire was sent to residents who might have an interest in noise walls being considered for construction as part of the proposed Interstate Route H-1 widening project. In reply, SDOT offers the following information:

A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puuhoku Place and Puualii Street. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier walls will be made during the design phase of the project.

If you have any questions or comments, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaunohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions unit at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

I support construction of the noise barrier wall.

I do not support construction of the noise barrier wall.

I support the noise wall concept, but need more information.

I have no opinion about the proposed noise wall.

Please write any additional comments below:



NAME: Alvin C.F. Teas
ADDRESS: 98-395 Puuoli St
Aiea, HI, 96701

R. M. Towill Corporation
Attn: Chester Koga
420 Waiakamilo Road, #411
Honolulu, Hawaii 96817

36517-4353 21

420 Waialua Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone: 808 842 1133
Fax: 808 842 1937
eMail: mtowill@hawaii.rr.com



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Environmental Services
Photogrammetry
Surveying
Construction Management

February 17, 2000

Mr. Alvin C. F. Tam
98-395 Puuallii Street
Aiea, Hawaii 96701

SUBJECT: Noise Barrier Walls Under Consideration
Interstate Route H-1 Widening, Westbound Direction,
Kaonohi Street to Waiau Interchange

Dear Mr. Tam:

The State Department of Transportation (SDOT) appreciates your response to the August 10, 1999 Noise Wall Questionnaire. The questionnaire was sent to residents who might have an interest in noise walls being considered for construction as part of the proposed Interstate Route H-1 widening project. In reply, SDOT offers the following information:

A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puuhoku Place and Puuallii Street. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier wall will be made during the design phase of the project.

If you have any questions or comments, please contact Mr. Ron Tsuruki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiuu Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

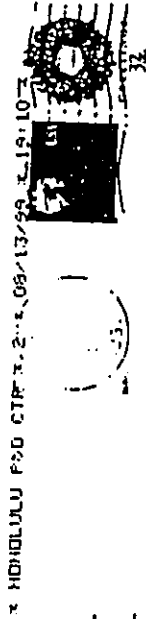
- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions until at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

- I support construction of the noise barrier wall.
- I do not support construction of the noise barrier wall.
- I support the noise wall concept, but need more information.
- I have no opinion about the proposed noise wall.

Please write any additional comments below:

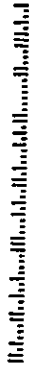


NAME: **Ruth Kaulahine**
01-560 PEARL DR
APT. 111 96817-2113

ADDRESS:

R. M. Towill Corporation
Attn: Chester Koga
420 Waiakamilo Road, #411
Honolulu, Hawaii 96817

35617-4359 21



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eMail rm.towill@towill.com

February 17, 2000

Ms. Ruth Kunishima
98-359 Puu'ali Street
Aiea, Hawaii 96701

SUBJECT: Noise Barrier Walls Under Consideration
Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Wai'au Interchange

Dear Ms. Kunishima:

The State Department of Transportation (SDOT) appreciates your response to the August 10, 1999 Noise Wall Questionnaire. The questionnaire was sent to residents who might have an interest in noise walls being considered for construction as part of the proposed Interstate Route H-1 widening project. In reply, SDOT offers the following information:

A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puuhoku Place and Puu'ali Street. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier walls will be made during the design phase of the project.

If you have any questions or comments, please contact Mr. Ron Tszuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Wai'au Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions until at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

- I support construction of the noise barrier wall.
- I do not support construction of the noise barrier wall.
- I support the noise wall concept but need more information.
- I have no opinion about the proposed noise wall.

Please write any additional comments below:



R. M. Towill Corporation
Attn: Chester Koga
420 Waiala Road, #411
Honolulu, Hawaii 96817

Name: _____
Address: _____
Phone: _____
Fax: _____
E-mail: _____

420 Waialae Road
Suite 411
Honolulu, Hawaii 96817-4911
Telephone 808 842 1133
Fax 808 842 1937
eMail info@twill.com



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Construction Management

February 17, 2000

Mr. Harry H. Higa
98-346 Puahoku Pl
Aiea HI 96701

SUBJECT: Noise Barrier Walls Under Consideration
Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Waiuu Interchange

Dear Mr. Higa:

The State Department of Transportation (SDOT) appreciates your response to the August 10, 1999 Noise Wall Questionnaire. The questionnaire was sent to residents who might have an interest in noise walls being considered for construction as part of the proposed Interstate Route H-1 widening project. In reply, SDOT offers the following information:

A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puahoku Place and Puualii Street. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier walls will be made during the design phase of the project.

If you have any questions or comments, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH: JN

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions until at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

- I support construction of the noise barrier wall.
- I do not support construction of the noise barrier wall.
- I support the noise wall concept, but need more information.
- I have no opinion about the proposed noise wall.

Please write any additional comments below:

- need to provide more info to the public re:
 - noise of just neighborhood will have to endure
 - timing duration of project
 - work hours of construction
 - how long project will take

August 10, 1999



R. M. Towill Corporation
 Attn: Chester Koga
 420 Waiakamilo Road, #411
 Honolulu, Hawaii 96817

NAME: Mr. Ruben Au
 ADDRESS: 981369 Kauhahama St Apt 1
 Aiea, HI 96701



420 Waijanda Road
Suite 411
Hoopulu, Hawaii 96712-4941
Telephone: 808 842 1133
Fax: 808 842 1937
eMail: rtm@rmtowill.com



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February 17, 2000

Mr. Nathan Au
98-1369 Kaahumanu Street, Apt. F
Aiea, Hawaii 96701

SUBJECT: Noise Barrier Walls Under Consideration
Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Waijau Interchange

Dear Mr. Au:

The State Department of Transportation (SDOT) appreciates your response to the August 10, 1999 Noise Wall Questionnaire. The questionnaire was sent to residents who might have an interest in noise walls being considered for construction as part of the proposed Interstate Route H-1 widening project. In reply, SDOT offers the following information:

A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puuhoku Place and Puuahi Street. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier walls will be made during the design phase of the project.

If you would like additional information about the proposed Interstate Route H-1 Widening, a copy of the Draft Environmental Assessment for the project is currently available at the reference desk of both the Pearl City and Aiea Public Libraries.

If you have any questions or comments, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GHT:JN

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Wai'au Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions until at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

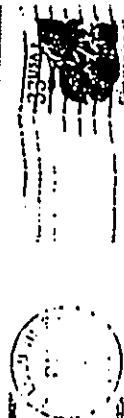
- I support construction of the noise barrier wall.
- I do not support construction of the noise barrier wall.
- I support the noise wall concept, but need more information.
- I have no opinion about the proposed noise wall.

Please write any additional comments below:

If construction of the noise barrier wall restricts view of Pearl Harbor from my home, I do not support its construction. If, however, it does not, I do not have any objections.

Larry K. Honda
98-1371-D Kualakoua St.
Hwa, HI 96701

August 10, 1999



Name: Larry K. Honda
Address: 98-1371-D Kualakoua St.
Hwa, HI 96701

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Attn: Chester Koga
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February 17, 2000

Mr. Larry K. Honda
98-1371 Kaahumanu Street
Aiea, Hawaii 96701

SUBJECT: Noise Barrier Walls Under Consideration
Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Waiuu Interchange

Dear Mr. Honda:

The State Department of Transportation (SDOT) appreciates your response to the August 10, 1999 Noise Wall Questionnaire. The questionnaire was sent to residents who might have an interest in noise walls being considered for construction as part of the proposed Interstate Route H-1 widening project. In reply, SDOT offers the following information:

No noise barrier walls are being considered adjacent to the Hillside Terrace Apartments. A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puuhoku Place and Puuailii Street. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier walls will be made during the design phase of the project.

If you would like additional information about the proposed Interstate Route H-1 Widening, a copy of the Draft Environmental Assessment for the project is currently available at the reference desk of both the Pearl City and Aiea Public Libraries.

If you have any questions or comments, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GH:JN

NOISE WALL QUESTIONNAIRE

Interstate Route H-1 Widening,
Westbound Direction, Kaonohi Street to Waiau Interchange
Department of Transportation, Highways Division, State of Hawaii

The information you provide in this questionnaire will help the State Department of Transportation to assess concerns regarding noise walls proposed for construction as part of the Interstate Route H-1 widening project. We appreciate your assistance in filling out and returning this form.

The State recognizes the nuisance created by excessive traffic noise along Interstate Route H-1 in the project area. To help reduce existing and future (projected to year 2020) noise levels, the State is considering to construct noise barrier walls within the State right-of-way adjacent to your residence. The accompanying map (Figure 1) depicts noise wall locations and characteristics.

Please consider the following two alternatives and check one of the boxes below:

Construct Noise Barrier Wall

- Exterior noise levels will be reduced by 5 decibels, a moderate reduction in loudness that will prevent noise levels from increasing above existing conditions until at least the year 2020.
- Wall heights of 3 to 10 feet will impact first-floor views.

No Noise Barrier Wall

- Future noise levels will increase above existing conditions by 2 to 3 decibels, (regarded as the smallest perceptible change in noise level).
- Existing views will be unaffected.

- I support construction of the noise barrier wall.
- I do not support construction of the noise barrier wall.
- I support the noise wall concept, but need more information.
- I have no opinion about the proposed noise wall.

Please write any additional comments below:



NAME: MRK ENDO
ADDRESS: 95-341 KUMURU AVE
AREA H1 96701

R. M. Towill Corporation
Attn: Chester Koga
420 Waiakamilo Road, #411
Honolulu, Hawaii 96817

Honolulu HI 96801

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eMail rm@towill.com



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Mr. Jack Endo
February 17, 2000
Page 2

Dust and noise during construction is a major concern for us because we have two elderly parents living on our property.

All construction activities must comply State Department of Health regulations concerning noise control and air quality, as provided in Hawaii Administrative Rules, Chapter 11-43, Community Noise Control for Oahu, and Chapter 11-60.1, Air Pollution Control. Measures designed to minimize impacts from construction-related noise and dust are outlined in Section 3.3, Noise Impacts, and Section 3.4, Air Quality, of the Draft EA.

If you have any questions, please contact Mr. Ron Tsuzuki, Head Planning Engineer, Department of Transportation, Highways Division, at 587-1830.

Very truly yours,

Greg H. Hiyakumoto, P.E.
Project Manager

GHE:JN

February 17, 2000

Mr. Jack Endo
98-341 Puuhoku Place
Aiea, Hawaii 96701

SUBJECT: Interstate Route H-1 Widening, Westbound Direction,
Kaunohi Street to Waiau Interchange

Dear Mr. Endo:

The State Department of Transportation (SDOT) appreciates your participation in the September 15, 1999 Public Hearing on the proposed H-1 widening. In response to your comments (in *italics*) concerning potential project impacts, SDOT offers the following information:

Maximum height of the noise barrier wall along our property line should be no higher than 7 feet to maintain our trees/plant.

A seven-foot high noise barrier wall is being considered along the freeway frontage adjacent to Puuhoku Place. Seven feet represents an average wall height. Actual height will vary according to the topography at the wall base along the H-1 right-of-way line. If conditions substantially change during the design process, the noise barrier under consideration walls might not be provided. A final decision on the installation of the noise barrier walls will be made during the design phase of the project.

Chain link fence should be removed before construction of the noise barrier wall.

If noise barrier walls are provided, the existing chain link fence will be removed from those segments where walls are being installed.

The hill alongside the freeway needs to (be) better landscaped. Landscaping efforts to date have not been successful.

As stated in section 3.3.3 of the Draft EA, wall design will include landscaping to soften the visual impacts of the walls and to discourage the potential for graffiti.

Appendix C

Summary of Public Meetings

Summary of Public Meetings

During preparation of the Draft Environmental Assessment, representatives from the State Department of Transportation, Highways Division presented project information and solicited community input at two specially held public meetings and at two regularly scheduled Neighborhood Board meetings in Pearl City and Aiea. The meetings were held in order to disclose community concerns about potential project impacts so that they can be addressed during the early stages of project. Meetings were held at the following times and locations:

<u>Date</u>	<u>Audience</u>	<u>Location</u>
December 1, 1998	Waimalu Residents' Association	Waimalu Elementary School
March 3, 1999	Public Information Meeting	Waimalu Elementary School
March 25, 1999	Pearl City Neighborhood Board	Pearl City Library
April 12, 1999	Aiea Neighborhood Board	Aiea Library
September 15, 1999	Public Hearing	Waimalu Elementary School

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**INFORMATIONAL MEETING
INTERSTATE H-1 WIDENING
(Kaonohi Street Overcrossing to Pearl City Off Ramp)
Waimalu Elementary School Library
December 2, 1998**

PRESENT: See Attached

PURPOSE: The purpose of the meeting was to present information to residents in the vicinity of the proposed project that may be impacted (relocation or dislocation action).

INTRODUCTION: Mr. R. Tsuzuki (Dept. Of Transportation, Highway Division) opened the meeting at 7:00 p.m. The purpose of this initial meeting was to present information about ongoing planning activities of the State Department of Transportation regarding improvements on the Interstate H-1 Freeway. The project he described was the continued widening of the H-1 Freeway from the Kaonohi Overcrossing to the Pearl City off-ramp. The purpose of the project was described as a continuation of the work being conducted in Aiea as part of the H-3 completion project. The project would include the continuation of an auxiliary lane from the Kaonohi overcrossing to the Pearl City off ramp. Mr. Tsuzuki noted that the project is at the beginning planning stages and it was appropriate to present information to affected owners early. Mr. Tsuzuki also noted that presentations will be made to the Aiea and Pearl City Neighborhood Boards in January. Further, other residents in the valley will be notified of the project.

PROJECT DESCRIPTION/IMPACTS: Mr. G. Hiyakumoto (R.M. Towill Corporation) provided further detail description of the proposed widening project. He went on to note that this project was part of a large feasibility study that included the area between the Halawa Interchange and the H-1/H-2 merge at Waiawa. This planning study will examine the requirements for improving the existing freeway to Federal Interstate Standards as well as providing design guidance for increasing the capacity of the Freeway.

This widening project will entail the addition of an additional travel lane (increase from 5 to 6 lanes westbound), widening of the outside and median shoulders, seismic retrofit of the viaduct structure, and other appurtenant structures. The widening will mean the addition of the existing structure by

an additional 28-29 feet. This work will bring the existing roadway up to Federal standards.

Mr. C. Koga (R.M. Towill Corporation) explained that the roadway widening will have impact to properties adjoining the existing freeway rights-of-way. He pointed to a map that indicated that several homes will be impacted by this widening. An estimated 9-11 properties will be impacted. The properties that are impacted may mean the dislocation of these residents. In addition, the car dealership located under the viaduct and the church and preschool will also be displaced. The two commercial users will have their leases terminated and provisions made for their relocation. The proposed project is scheduled for design in 1999 with construction proposed for late 2000.

RELOCATION ASSISTANCE. Mr. M. Amuro (Dept. of Transportation, Highways Division Rights-of-Way Branch) explained the rights and benefits that will be made available to residents and businesses that are impacted by the project. A brochure "Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program" was distributed.

It was noted that prior to any action being taken by the State, several actions were needed and they included: 1) completion of an environmental assessment and finding of no significant impact, 2) the State Legislature must appropriate funds for this project, 3) the preparation of a final rights-of-way map by the State, and 4) the Federal Highway Administration (FHWA) must fund this project. This project is part of the State's High Priority Projects Funds and is supported by 80 percent funding from the FHWA. The remaining funds are State funds. Action to acquire properties is usually not taken until the design phase of work has begun and the final right-of-way is defined.

Mr. Amuro noted that the general procedure for acquisition is based on 1) an appraisal being done on the property in question, 2) an offer to purchase is made based on the appraisal, 3) when an agreement is reached with the owner the "deal" is closed. Other assistance provided include: moving costs, storage costs, financing costs, closing costs, or in other words costs that the owner would not have incurred if it were not for the project.

The State will work with the various owners to assist in finding new dwellings that meets their individual requirements.

DISCUSSION

1. Q. Can the State provide advance assistance, e.g. prior to the right-of-way has been defined at there are properties that are clearly within the impacted area. This action would allow property owners time to look for a new place of their choosing.

A. This matter will be researched by the Planning Branch. It was noted that should the State use funds prior to the approval of the environmental assessment for project activities (e.g. land acquisition), the State cannot request reimbursement from the FHWA. The general consensus among the residents was that if they are to be relocated, the State should give them adequate lead time to find a suitable relocation site. Advance acquisition should start as soon as possible.

2. Q. How long will the acquisition process take?

A. Generally the process takes 9-12 months once the project parameters are defined and funds are in place for design.

3. Q. Is there a chance that the project will not proceed?

A. In all likelihood the project will proceed because it is a logical extension of the H-3 work already being done. However, there is that possibility that the funding or the environmental assessment not being approved.

4. C. The freeway is now a source of debris being tossed from the viaduct. In addition, the facility is a source of noise. The zipper structure, as it is being deployed, causes "thumping" on the freeway that can be heard by residents.

5. C. This residential area is more than 40 years old and have an number of elderly and to have to move and start over is of concern. Further, consideration should be given to the sense of home and history of the families.

6. Q. When will the State funding be available?

A. Funds will be asked of the 1999 Legislature. This funds will be available after July 1, 1999. The federal funds will also need to be requested based on an approved environmental assessment. The costs of the project, however, exceeds the amount available and therefore additional or other Federal funds will be required to complete the project.

7. Q. Why is an environmental assessment (EA) required when the freeway already exists?

A. The EA is required by State and Federal laws whenever state or federal funds are utilized and there will be impacts associated with the proposed project. The EA will be available for public review and must be approved by the FHWA. The EA is scheduled to be completed next spring. The exception to this processing schedule is if an environmental impact statement (EIS) is required. If an EIS is required (because of severe environmental and social impacts - community opposition) then the process will be extended beyond July 1999.

8. Q. What about homes that are adjacent to the project but not directly impacted by the freeway structure. Can these residents also be considered for relocation?
A. This matter will need to be evaluated on a case-by-case basis. Generally, the procedure is to ascertain if there is a problem, then appropriate mitigation measures is sought, e.g. air conditioning for noise concerns. If the problem cannot be mitigated than acquisition is considered.

9. Q. My property is along the slopes on the Halawa side of the valley and on occasion rock fall down onto my property. Will something be done to prevent this? Further, the drainage swale in back of the house is always filled with debris.
A. This matter will be investigated.

10. Q. When is the next time this group should meet and be updated?
A. Approximately 3 months would be appropriate. At this time the EA will be published and an update can be provided at that time.

11. C. Additional transportation alternatives are being discussed as part of the Trans 2K public meeting process.

12. C. Representatives of the Grace Bible Church indicted that they would be interested in returning to the site after construction is completed.

Prepared by:

C.T. Koga, AICP

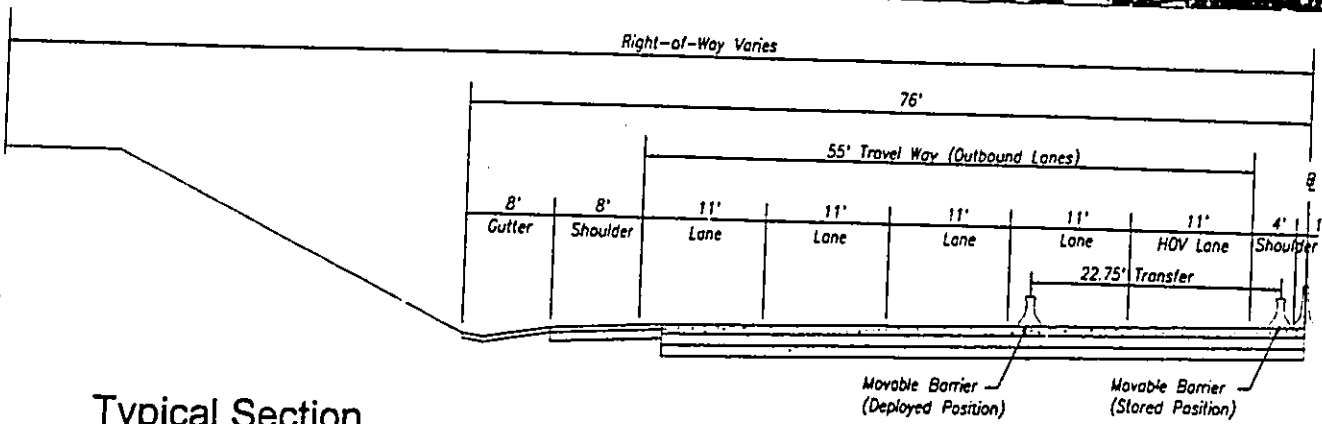
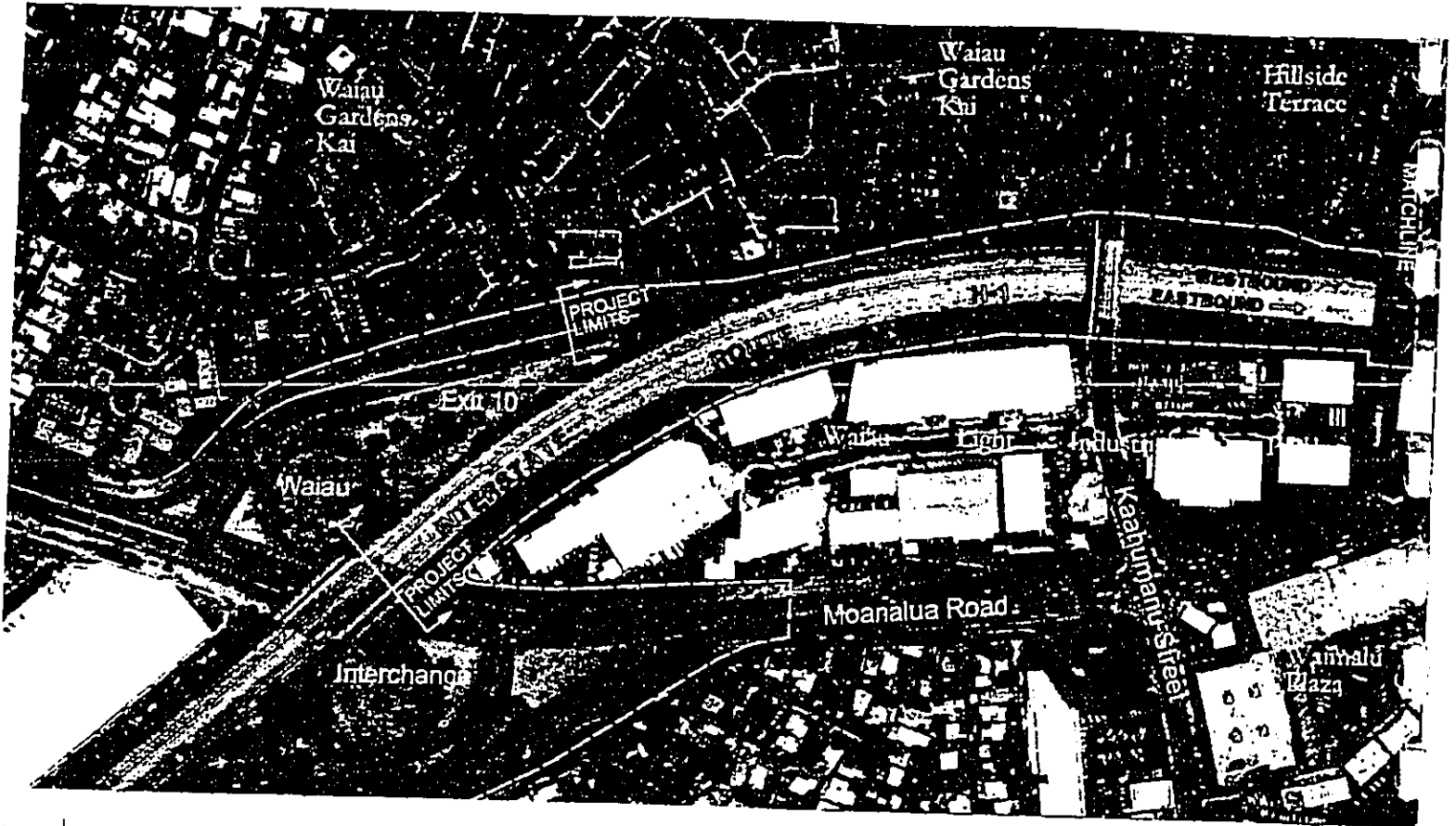
ATTENDANCE

GROUP:		LOCATION: Waimalu Elem.	DATE: 12/1/98
NAME	ORGANIZATION/ADDRESS	PHONE NO.	
PO Kauhala	99-309 Ponohele St	488 4068	
TABARAJO	98-318 Pono St	488-3978	
JIM NIEMANN	RMITC	842-1133	
LARRY LEOPARDI	Hwy-D	692-7557	
Dean Takiguchi	DOT - BRIDGE DESIGN	587 2209	
Richelle Suzuki	PAWA	541-2530	
✓ Kiyoko Gabe	98-322 Ponohele St	487-2263	
✓ Mark Shimizu	98-321 Ponohele Pl.	488-3789	
✓ Kenneth Chang	98-324 Ponohele St.	487-8862	
✓ Bill and Jennifer Tobin	98-361 Ponohele Loop	487-8810	
✓ Annal W. Kauhala	98-309 Ponohele St Area	488 4068	
✓ Ti-Chi Kauhala	98-309 Ponohele St Area	488 4068	
✓ Ted Kauhala	98-342 Ponohele Pl. Area	487-5707	
✓ Israd Scully	Waimalu Grace Brethren Church	433-7078	
✓ Roy Shroyer	"	523-5866	
✓ Wayne Aoki	"	535-6969	
✓ Steven K. Tanaka	98-359 PONOHELE LOOP	488-7693	
✓ Sal. Laguanio	98-321 Ponohele Pl. by Shimizu		
Joann Izumi	601 Kamokila Blvd (HWY-K)	692 7331	
MIKE OKAMOTO	140 POLULANI PL. (Hwy-Rm)	"	
KENNETH AU	869 PUNCH BOWL ST	587-1843	
Greg Hayakawa	RMITC	842-1133	
Chesteri Kerye	RMITC	842-1137	
Rep. Mark Terkari			

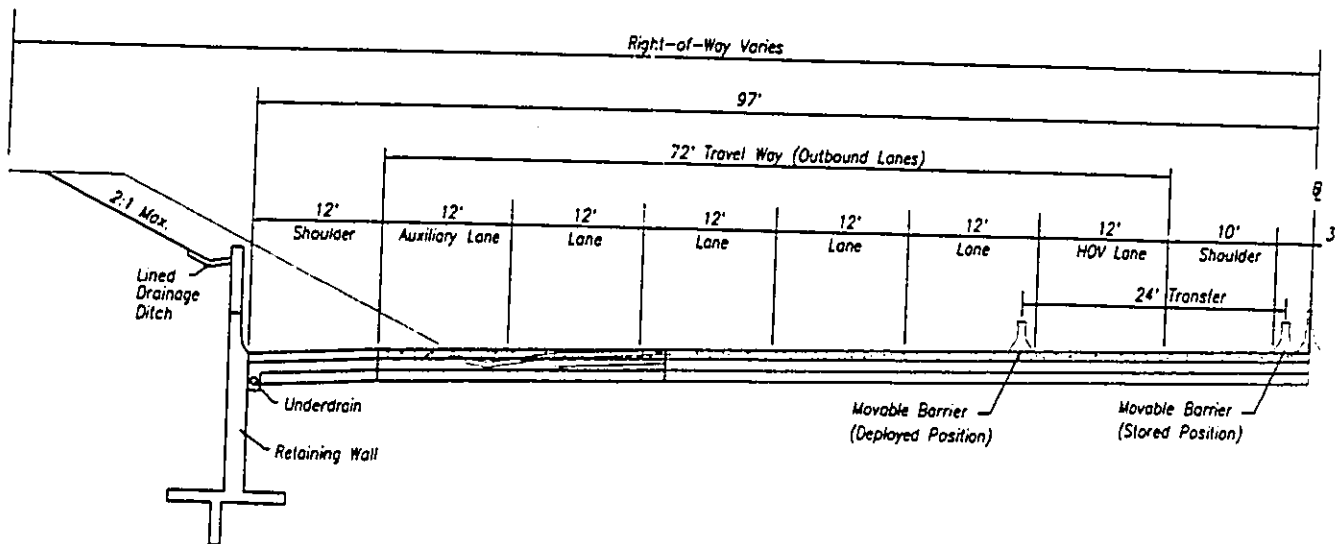
**INTERSTATE ROUTE H-1 WIDENING, WESTBOUND DIRECTION
KAONOHI STREET OVERCROSSING TO PEARL CITY OFF-RAMP**

Highways Division
Department of Transportation
State of Hawaii

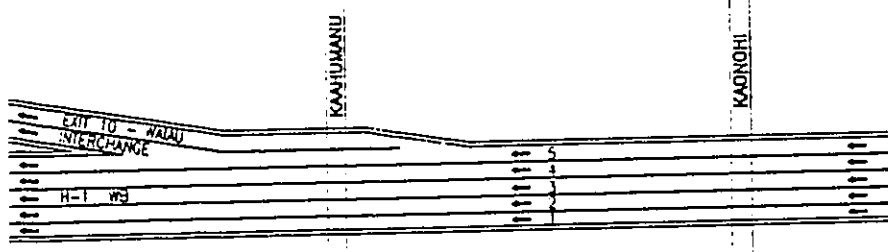
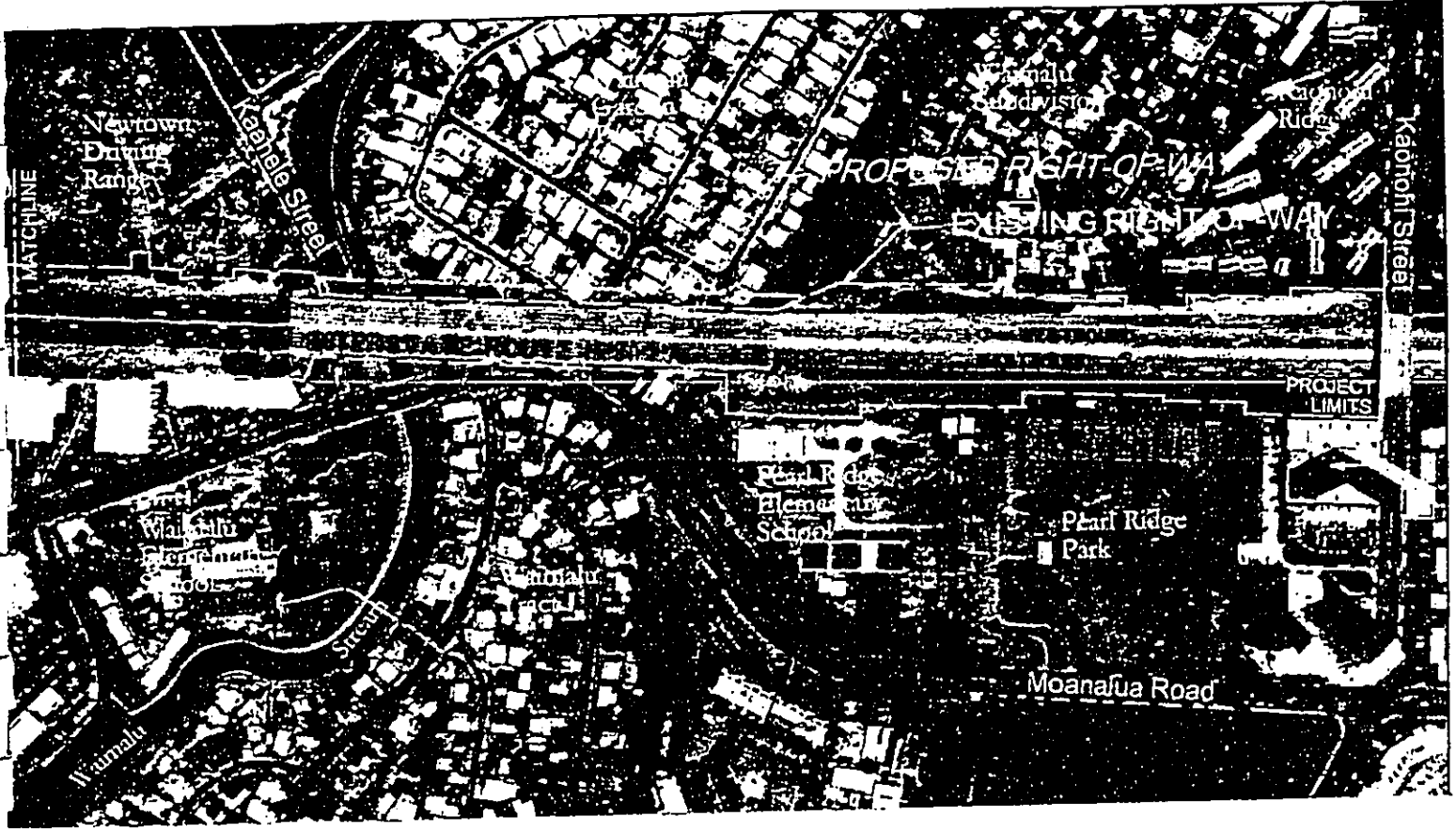
- DESCRIPTION:** Interstate Route H-1 is presently being widened to six (6) lanes between the Halawa Interchange and the Kaonohi Street overcrossing in the westbound direction. This project proposes to extend the widening from the Kaonohi Street overcrossing to the Pearl City off-ramp, thereby providing six (6) continuous lanes from the Halawa to the Waiiau Interchange in the westbound direction. Project design includes:
- ◆ Constructing Lane and shoulder widths meeting current Interstate Freeway standards;
 - ◆ Installing guardrails, retaining walls, and drainage, and relocating signage;
 - ◆ Landscaping.
- OBJECTIVES:**
- ◆ Enhance traffic safety;
 - ◆ Eliminate potential bottleneck and provide additional capacity on Interstate Route H-1, west-bound;
 - ◆ Improve the level of service for current and projected increases in traffic on Interstate Route H-1;
- ISSUES:**
- ◆ Property Acquisition, Displacement, and Relocation
 - ◆ Community Activities
 - ◆ Noise and Air Quality
 - ◆ Traffic Impacts
 - ◆ Land Use
 - ◆ Visual Impacts
 - ◆ Construction Activity Impacts
- SCHEDULE:** Begin construction Fall of 2000.



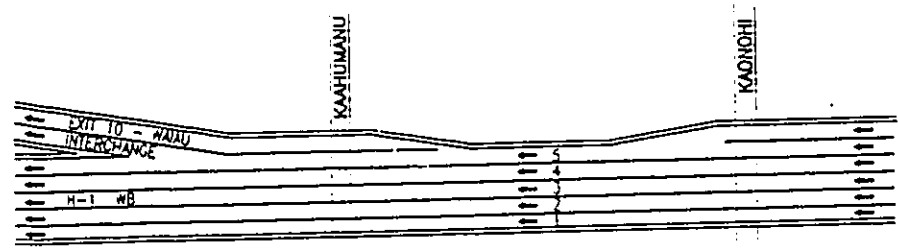
Typical Section
Existing H-1 Laneage (Kaonohi Overpass to Waiau Interchange)



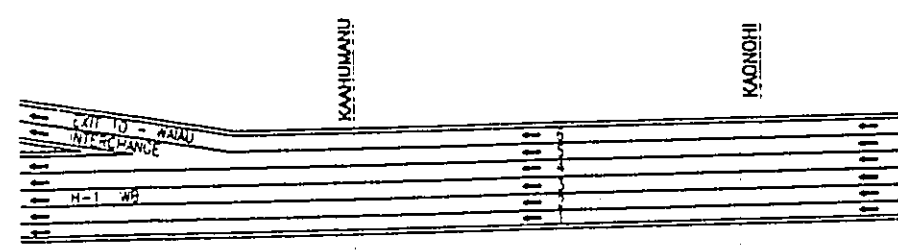
Typical Section
Proposed H-1 Laneage (Kaonohi Overpass to Waiau Interchange)



Existing Condition H-1 Westbound (under construction)



Condition Upon Completion of H-3 Construction



Condition Upon Completion of Proposed H-1 Westbound Widening

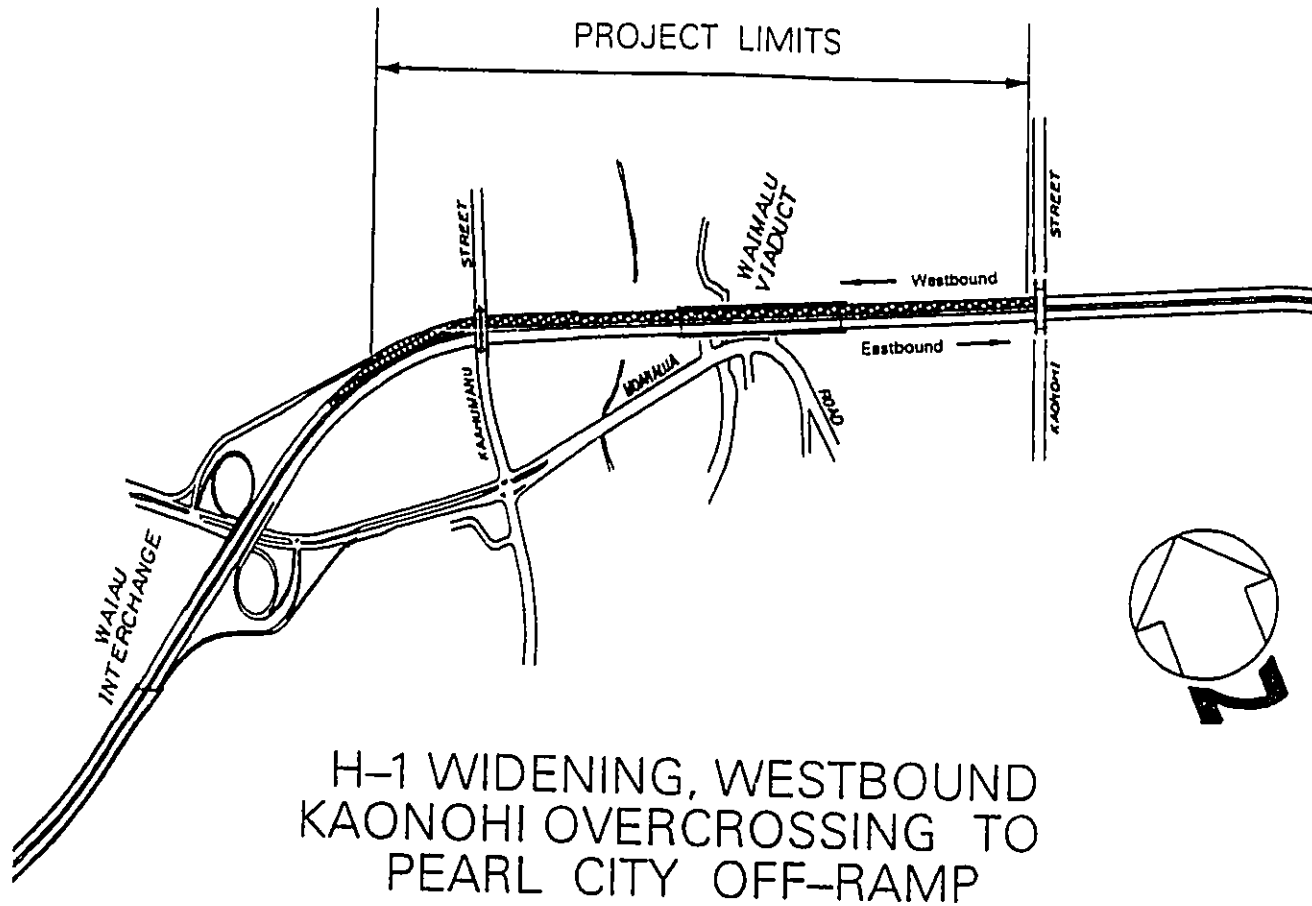
COORDINATION: Agencies and organizations to be contacted:

Aiea Neighborhood Board No. 20
Newtown Estates Community Association
Newtown Golf Driving Range
Pearl City Neighborhood Board No. 21
Pearl Ridge Elementary School
Pearl Ridge Square Apartment Owner's Association
Waiau Gardens Kai Condominiums
Waimalu Grace Brethren Church and Children's Center
Waimalu Elementary School
Waimalu Park Community Association

CONTACT:

Mr. Douglas Orimoto, Highways Division, DOT, ph. 587-1835
Mr. Chester T. Koga, R. M. Towill Corporation, ph. 842-1133

October 1998



H-1 WIDENING, WESTBOUND
KAONOHI OVERCROSSING TO
PEARL CITY OFF-RAMP

NOTICE

The State of Hawaii Department of Transportation (DOT), Highways Division will hold a public informational meeting on the proposed Interstate Route H-1 Widening, Westbound, Kaonohi Overpass to the Pearl City Off-Ramp project. The meeting will be held at the Waimalu Elementary School Cafetorium, 98-825 Moanalua Road, on March 3, 1999, at 7:00 pm. The purpose of this meeting is to inform the public of the DOT's plans and to solicit early input in the planning of this highway improvement.

Interstate Route H-1 is presently being widened to six (6) lanes between the Halawa Interchange and the Kaonohi Street overcrossing in the westbound direction. This project proposes to extend the widening from the Kaonohi Street overcrossing to the Pearl City off-ramp, thereby providing six (6) continuous lanes from the Halawa to the Waiiau Interchange in the westbound direction.

Kazu Hayashida

Director

Department of Transportation

TRANSCRIPT
PUBLIC INFORMATION MEETING
H-1 WIDENING FROM THE KAONOHI OVERCROSSING TO
THE PEARL CITY OFF-RAMP
Waimalu Elementary School Cafetorium
March 3, 1999, 7:00 p.m.

Attendance: Attached

INTRODUCTION

- Mr. Ron Tsuzuki, Chief Planning Engineer, Department of Transportation

Good evening, I want to welcome you to this public information meeting, my name is Ron Tsuzuki, and I am the head planning engineer for the State Highway Division and on behalf of my director Kazu Hayashida I want to welcome all of you to this meeting tonight to find out more about this project that we are working on. Before I get started I want to encourage some of you in the back of the room to move forward in order that late-comers can sit in the back. Thank you.

The purpose of tonight's meeting is to cover the proposed project to widen the H-1 freeway between the Kaonohi overpass and the Pearl City off-ramp. I am sure many of you have seen the construction right now on the freeway and what we are doing is adding another lane to the freeway in the Ewa direction of the freeway. As you may have noticed, construction ends slightly past the Kaonohi overpass. The purpose of this project is to extend six lanes to the Pearl City off-ramp.

The purpose of the meeting is to give the public, you, more information about the project and to give the Department of Transportation information about what you are concerned about. What I will now go into is a basic agenda for this meeting, how we are going to run it and what is going

to happen at this meeting. There are five ways on how all of you can get information. The first, as you entered you were given an opportunity to pick up one of these handouts about of the project. Secondly, we will be having a slide presentation by our consultant, R. M. Towill Corporation, who will present more information on the project.

Thirdly, after the presentation we will take a break to give you an opportunity to review the exhibits placed on the walls. Project staff will be available to assist you with your questions. The fourth method will be through a panel that we will be convening to answer questions that you may have about the project. The last is after the meeting has been formally concluded, if you still have questions, we will stay to answer your questions then.

At this time I would like to introduce some people. Public representatives include Representative Mark Takai. We have a representative of the Federal Highways Administration, Ms. Richelle Suzuki. The Federal Highway Administration is involved because we will be using federal funds for this project. From the Department of Transportation, Planning Branch, Douglas Orimoto and Kenneth Au. From the Design Branch, Mr. Larry Leopardi, Mr. Donald Ornellas, and Dean Takeguchi. From Rights-of-Way Branch, Mr. Tom Toyama, Cary Yamaoka, and Mr. Amuro.

From R. M. Towill Corporation, Mr. Greg Hiyakumoto, Mr. John Sato and Mr. Chester Koga.

At this time I will turn the project over to Greg Hiyakumoto from R.M. Towill Corporation

PRESENTATION

- Mr. Greg Hiyakumoto, Project Manager, R.M. Towill Corporation

Good evening everyone. My name is Greg Hiyakumoto and I am a Civil Engineer with the R. M.

Towill Corporation. Welcome and thank you very much for taking the time out of your busy schedules to help us by being here at tonight's meeting. We have a short slide presentation to describe what the widening project is about.

Slide #1 *Title Text* *Oblique aerial photo*

This project proposes to widen the westbound side of the freeway between the Kaonohi Street overpass and the Pearl City off-ramp. The work will involve widening on the mauka side of the Waimalu Viaduct.

Slide #2 *Overview* *View of Viaduct*

Tonight's presentation will provide:

- an overview of existing freeway conditions
- a description of proposed work involved with the widening project
- an overview of some of the impacts and benefits of the project
- and a review of the tentative project schedule.

At the end of the presentation, we will take a short break to allow everyone to look at the displays and speak with project staff from the Department of Transportation. After the break, we would like to gather again to hear any questions or comments you may have.

Slide #3 *Interstate Route H-1* *Large Aerial Photo*

This is an aerial photo of the H-1 freeway through Aiea and Pearl City, showing the location the project.

This segment of the H-1 Freeway serves as the primary transportation corridor for Central and Leeward Oahu commuters traveling to and from Honolulu.

Slide #4 *Existing Freeway Conditions* *Viaduct Photo*
Viaduct Photo

- enhance traffic safety by widening lanes and shoulders to Interstate standards
- continue the widening work to the Pearl City off-ramp to eliminate a potential bottleneck over the viaduct
- and enhance the overall the level of service in this section of the freeway.

Slide #10 Major Components

*Typical Sections
(existing and proposed)*

These are cross-section views of the freeway's westbound lanes. The freeway will be widened by approximately 30 feet on the mauka side. The completed section will have 6 lanes, each 12 approximately feet wide. Lanes are currently only 11 feet wide. The wider lanes will enhance freeway capacity. There will also be a 12-foot wide right-hand shoulder and a 10-foot wide median shoulder. These wider shoulders will greatly improve safety of stopped motorists. This drawing is shown in your handout.

Slide #11 Laneage

Line Diagram of Laneage

This slide shows the various stages of the H-1 widening work. The top diagram shows the present condition with 5 lanes. The middle diagram shows the condition upon completion of the H-3 widening work. At this point, only the Waimalu Viaduct section will have 5 lanes. Finally, the bottom diagram shows how this project will extend 6 continuous lanes across the viaduct, thereby eliminating the constriction across the viaduct. This drawing is also shown in your handout.

Slide #12 Project Impacts

*Viaduct photo
House Photo
Construction photo*

Impacts are expected for any project of this size. Some the many issues being studied include:

- displacement and relocation of property owners

Pono Street

Construction will also affect travel on local streets that pass under and near the viaduct. These are views of the viaduct as seen from Moanalua Road and from Pono Street.

Slide #17 Project Benefits

Freeway

Freeway

The project will enhance freeway capacity, provide greater safety and provide commuters with indirect long-term benefits.

Slide #18 Mitigation Measures

Relocation Map

Tree landscaping

The State will work with and help affected residents on acquisition and relocation issues. The acquisition and relocation program will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. A goal of the State is to give as much lead time as possible for impacted residents to prepare. Use of noise barriers and landscaping will also be considered to help minimize noise and visual impacts.

Slide #19 Construction Detours

Detour Diagram

This slide shows a possible detour route under the viaduct for the residents of the Waimalu Gardens subdivision. Detours and controlled work hours will be used to minimize traffic and noise impacts during construction. At no time will access be cut off to any of the residents. Access for emergency services will not be affected. The project will also be sensitive to bus and pedestrian routes.

Slide #20 Planning Activities

No photos

The activities planned for the upcoming months include preliminary engineering, environmental

assessment work, and more community meetings. Input received through meetings such as this will help us to identify other issues and mitigation measures.

Slide #21 Tentative Project Schedule Schedule diagram

The tentative project schedule calls for planning and environmental assessment work to continue through summer of this year.

Design and right-of-way activities will take about 1-1/2 years after the planning phase, and last through spring of 2001. Construction will follow design and is anticipated last about 2 years. If all goes as planned, the project should be complete by spring of 2003.

This schedule is dependent on the availability of state and federal funds.

Slide #22 Oblique aerial

We will now take a 10-minute break.

I encourage everyone to look at the various displays along the side and back walls. Please feel free to ask questions to project staff who are situated with name tags around the room. After our break, we would like to hear any questions or comments you may have.

Thank you.

QUESTION AND ANSWER

Mr. Ron Tsuzuki: At this time I would like to introduce the panel members: Mr. Larry Leopardi, Head of the Design Branch; Mr. Tom Toyama, Head of the Rights-of-Way Branch, and Mr. Greg Hiyakumoto, Project Manager from R.M. Towill Corporation.

I would like to point out that we have earlier met with the property owners in December who

may be directly impacted by this project. At that time we shared information we are presenting tonight and made a commitment to them to work with them and to have subsequent meetings with them. We will work with them to address their individual concerns.

Are there any comments or questions at this time? If you have any questions or comments, please come up to the mike and introduce yourself. We want you to use the mike in order that others can hear your comments and questions.

Mr. Albert Fukushima, Pearl City Neighborhood Board

I am the Transportation Chair of the Pearl City Neighborhood Board and would like to know the total costs of the project and, secondly, will there be an environmental assessment done for the project.

Mr. Tsuzuki: The estimated construction cost of the project is \$40 million. As part of the consultants' task, they are charged with the preparation of an environmental assessment. According to our tentative schedule, the draft EA will be done by July 1999.

Mr. Mark Hewlett

Hi, I'm Mark Hewlett and I live just off Pono Street on Ponokaulike and I have notice some traffic problems in the area and noted that traffic on Moanalua Road and note that what would greatly benefit this area is not this project as it would benefit more the Central areas of the Island; but if we had off-ramps say at Kaonohi or at Kaahumanu this would serve the thousands who live up in the hills. Because now they get off in Aiea, travel along Moanalua Road to this area and this traffic congests Moanalua Road.

Mr. Tsuzuki:

I can understand your concerns as I lived in the Pearl City area before I moved into town. I

don't have an answer for your comment because it is not in our current scope of the project.

Mr. Hewlett: I believe this can be done because I have studied the traffic situation and have video taped some solutions and believe that on the mauka side of the highway is not a problem unless there is a traffic accident. If your going to do a project you should do it right and not come back later to do the project.

Mr. Tsuzuki: The purpose of the project is to eliminate the potential bottleneck when we open up the new lane. We will take your suggestions under consideration.

Ms. Holly Ho

Hi, I'm Holly Ho and I live on Ponohale Street, and this Alternative 1, does this mean that you're going to create a new access to our street? And are we going to have only one entrance and exit to the area? And will this be to Moanalua Road?

Mr. Tsuzuki: The alternative that you are referring to is temporary alternative for entry and exit from the valley during construction. During construction, Pono Street will need to be closed at one time and the alternate road schemes shown are access for the residents. Details for the construction will be further studied and announced later.

Ms. Barbara Paulo

Hello, my name is Barbara Paulo and I live on Ponohale Street. I will be one of the three homes left on the street. In your environmental assessment what actions are being taken for the noise and pollution. I lived there before the freeway and have seen the results of pollution and if you are close enough, you can paint your house and in three months your house will be black and have to repaint constantly. And the dust is horrendous, if you dust in the morning it is dusty by the end of the day. The noise and dust is a problem. Bringing the freeway 30 feet closer will be

a major impact. My son has asthma and you are only worsening. What can be done to make it a better environment.

Mr. Tsuzuki: As it said earlier, our consultants will be examining the noise and air pollution issues. I know that you are asking what can be done, but we do not have any specific answers at this time. We will have other meetings and a public hearing at which time we will be able to answer your questions more directly and offer mitigation measures.

Ms. Paulo: When you get to that stage, am I correct to say that there is no stopping the project? Therefore no matter what you proposed as mitigation, there will be no stopping this project. It's a go, isn't it? We want to know what are our options. I would think that your studies would be done previous to this meeting. Why are we asking questions, if you don't have answers.

Mr. Hiyakumoto: Part of our asking for your comments and questions is to learn and hear of your concerns so that they may be considered as we do our planning work. We ask for your comments because we don't know all the concerns you have since we don't live in the area. We are doing separate noise and air quality studies and don't have answers for you now.

Ms. Paulo: My concern is that later may be too late, because the project is happening. The project will change the environment and we would like to see what can be done because I have lived there for 40 years, some of my neighbors longer. This is the second time its being done.

Mr. Ron Lee

My name is Ron Lee and have always lived in the shadow of the viaduct. I share the concerns of the previous woman and suggest that it is very important to address mitigation such as noise barriers, or can nothing be done? My other concern is that our subdivision and living environment have just been made ugly. Any design should consider sidewalks at the human level. Another concern should be to seriously keeping the alternative access that connects to

Hekaha Street which might make it easier for residents to go in and out of the valley and ease traffic flow on Moanalua. Finally, serious consideration should be given to environmental improvements not only because its required.

Mr. Tsuzuki: One of the things I mentioned to our consultants is that we want to give back to the community and have some benefit. We only have limited responsibility to the area around the freeway and we will improve the area such as access. We will look into this if it benefits the community and include sidewalks and landscaping around the viaduct.

Ms. Holly Ho: This is a long standing community of second and third generation residents. Consider the value of this community to the State.

Mr. Brad Scully

Hi, I am Brad Scully and belong to the Waimalu Grace Brethren Church, I know you have a plan for assisting persons that are being displaced what I would like to know if there is any program for persons that lose value in their property for living next to the freeway? Reduction because stuff comes from the freeway. Is there a reimbursement policy?

Mr. Tsuzuki: Are you asking about loss of property value? We will need to research this question. With regard to things falling from the freeway, we are looking into this matter and will look into how we can mitigate this matter.

Mr. Jack Chauker

My name is Jack Chauker and have lived for 40 years on Moanalua Road and when I came here it was all cane fields and we had a two-lane road, then a four-lane road and now you're proposing a six -lane road, I say you don ' t need another lane, you need a by-pass so the out-bound folks can by-pass this traffic. You can do this by building over the existing structure. You are not

going to eliminate traffic by this solution.

Mr. Tsuzuki: If we could double-deck the freeway we would certainly consider it. But the cost would be prohibitive, because, if we are talking about \$40 million for one lane, you can imagine what it would cost for a double-deck structure.

Mr. Chauker: It may cost \$40 million now, but imagine the cost 20 years from now. I know I paid \$18,000 for my house 40 years ago, and now have a \$180,000 mortgage on my same house.

CLOSING

Mr. Tsuzuki: If there are no other comments or questions I am now closing this meeting at this time. It is 8:05 p.m. We will be having more meetings, especially with people that are going to be directly affected by the project. After I close this meeting and if you have specific questions, the project staff will be able to answer more of your specific questions.

Thank you all for coming and drive safely home.

Waimala Elementary School
ATTENDANCE Wednesday 3/3/99

Group: Public Info. Meeting	Location: Waimala Elementary School	Date: 3/3/99
NAME	ORGANIZATION / ADDRESS	PHONE
Holly H Ho	98-441 Pono Hale St Area	488-5232
Miyu Nakasone	98-347 " " "	488-4474
Jenny Nakasone	" " "	" "
LYN YOSHIOKA	98-322 PONO ST. AREA	488-1595
Judy Hiromura	98-374 Pono Hale St., Area	488-2433
Hiromasa Zebunishi	98-315 Pono Hale St. Area	488-2577
Marie Okazaki	98-315 Pono Hale Loop	487-2567
Albert Fukushima	1841 Palamou St P.C.	455-7783
EUGENE SODETON	1069 LANANA ST KAUAI	487-1561
Ad Layronio	98-323 PONOANA PL. AREA, HI	488-1935
JAMES KATAOKA	98-346 PONOKEWILA ST AREA HI 96701	488-3961
MARK HULETT	98-330 Pono Kaula St. Area	486-2519
LARRY LEONARD	DOT	697-7559
Mr & Mrs Ronald Wakatauki	98-312 Pono Kewila PL	unlisted
Edward Saurama	98-343 Pono Hale Loop Area	488-7933
CARL UNGUENTEN	98-332 PONOHALE ST. AREA	488-1890
Dennis O'Connell	98-145 AKAMA ST - AREA	488-4278
Harold Morse	Star-Bulletin	525-8600
ROSS SAITO	98-326 PONO ST AREA	488-2644
Serene Kame	98-441 Pono Hale St Area	488-5201
Simon Aoto	98-607 Pono St Area	488-4103
Makiko Aoto	"	"
LLOYD NAICHA	98396 Pono Hale Lp Area	488-75300
H. Haida	98-393 Pono Hale Lp.	488-4897
Shirley Hara	99-026 Lanikula St	576-5901
Bro. J. Scully	Waimala SBC	433-7093
98-315	Waimala SBC	488-2567
Paulway Saito	98-315 Pono Hale St	-
Shirley Hara	99-026 Lanikula St	576-5901
Paul Hara	98-315 Pono Hale St	488-2567
T. A. Kikuchi	98-315 Pono Hale St	488-2567

ATTENDANCE

Group: Public Info. Meeting	Location: Waimalu Elementary School	Date: 5/3/99
NAME	ORGANIZATION / ADDRESS	PHONE
K. Mark Takai	STATE HOUSE / STATE CAPITOL	586 8455
EVA MATSUYOSHI	98-342 PONOHALE ST	488-2259
MARK SHIMIZU	98-321 PONOHALE PL	488-3789
Jane Wong	98-408 PonoHana Ln	488-1209
Mona Quintana	98-403 PonoHana Loop	488-1209
Billand Jennifer Tobin	98-361 PonoHana Loop	487-2810
Debra Swanson	98-343 PonoHana Ln	
Wesley Swanson	98-363 PonoHana Loop	487-7500
FRED Miggins	98-364 PONOHALE LP.	488-4762
Nolan Nympha	STATE HOUSE / STATE CAPITOL	586-8455
JUNIA LAUREL	98-386 PONOHALE ST	488-3523
Danny Kamigawa	98-388 PonoHana Ln	488-6664
MARK VON WRONSKI	909 Ala Liliiko'i # 501 NB# 18	839-7247
Deborah Kareschies	98-336 PonoHale St.	487-3136
Steven & Sarie Uechi	98-1745 B Kaahumanu St 96701	455-2704
Grace & Richard Kamiyama	98-313 PonoHale St. 96701	488-4941
WALTER M. MANIUKA	98-408 PONOHALE ST 96701	488-6578
Takechi Matsumoto	98-334 PonoHale St	488-6153
Earl Young	98-139 Olope Ln. 96701	488-3180
Ray Oato Sr	98-325 PONOHALE ST 96701	488-3519
Tamara Jos	98-318 Pono St. 96701	486-5286
Richard Miyamoto	98-560 Kiliolu Ln	486-6997
Heleen Neukate	98-396 PonoHana Ln	487-5300
David Lee	WECB	455-6536
Staci Ishikawa	95-1060 Pakau St. 96749	626-9721
Keith Yamata	98-454 Pono St	487-1390
Shailini Gauri	Channel Two News	
Laura Muel	POT / News	
RANDALL YAJATA	98-454 PONO ST	487-1390