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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
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IN REPLY REFER TO:
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July 8, 1997

TO: GARY GILL, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: KAZU HAYASHIDA
DIRECTOR OF TRANSPORTATION

SUBJECT: HONOAPIILANI HIGHWAY WIDENING, KAANAPALI PARKWAY TO VICINITY OF HONOKOWAI STREAM BRIDGE, PROJECT NO. 30A-02-97

In accordance with the requirements of Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Hawaii Administrative Rules, a Final Environmental Assessment has been prepared for the proposed project.

Notice of the availability of the Draft Environmental Assessment for the project was published in the March 23, 1997 edition of the Environmental Notice.

As the accepting agency, the State of Hawaii, Department of Transportation has determined that there will be no significant impacts as a result of the project. Accordingly, we are filing the Final Environmental Assessment as a Finding of No Significant Impact (FONSI).

Enclosed are four (4) copies of the Final Environmental Assessment, one (1) original of the Environmental Notice publication form, and one (1) diskette of the project summary formatted for WordPerfect 5.1. We respectfully request that notice of the Final Environmental Assessment be published in the next edition of the Environmental Notice.

Should you have any question, please contact Mr. Herbert Tao at 587-2124 or Mr. Fred Abeshima at 587-2121.

Enclosures

75

1997-08-08-MA-FEA-Honoapiilani Highway Widening

Final Environmental Assessment

Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream)

July 1997

Prepared for:

State of Hawaii
Department of Transportation

MUNEKIYO & ARAKAWA, INC.

Final
Environmental Assessment

Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream)

July 1997

Prepared for:

State of Hawaii
Department of Transportation

MUNEKIYO & ARAKAWA, INC.

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Preface

The State of Hawaii, Department of Transportation proposes road widening and related improvements to an approximately 2.2 mile segment of the Honoapiilani Highway between Kaanapali Parkway and a point approximately 1,000 feet north of the Lower Honoapiilani Road intersection in the vicinity of Honokowai Stream at Lahaina, Maui, Hawaii. Pursuant to Chapter 343, Hawaii Revised Statutes and Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement Rules, this Environmental Assessment documents the project's technical characteristics, environmental impacts and alternatives, and advances findings and conclusions relative to the project.

Summary

Proposing Agency and Landowner

The proposing and accepting agency for the Honoapiilani Highway Widening Project is the State of Hawaii, Department of Transportation (DOT). The majority of the roadway improvements will be conducted within the existing highway right-of-way (ROW). In addition, limited ROW acquisition will be required mauka of the highway from Amfac Property Investment Corp. (dba, Amfac Maui) and Pioneer Mill Company, Ltd., and makai of the highway from Amfac Maui and Tobishima Pacific, Inc.

Property Location and Description

The segment of Honoapiilani Highway to be widened begins at the intersection of Honoapiilani Highway/Kaanapali Parkway/Halelo Street and extends to a point approximately 1,000 feet north of the Honoapiilani Highway/Lower Honoapiilani Road intersection, in the vicinity of the Honokowai Stream Bridge. This section of the highway, approximately 2.2 miles in length, currently configured as a two-lane typical section.

Proposed Action

The proposed improvements will consist of widening the highway typical section from two (2) 12-foot wide travel lanes to four (4) 11-foot wide travel lanes, a 4-foot striped median, and 6-foot wide shoulders on both sides. Additionally, modifications to geometrics will be required at the intersections of Honoapiilani Highway/Kekaa Drive; Honoapiilani Highway/Puukolii Road/Kai Ala Drive; Honoapiilani Highway/Halawai Drive; and Honoapiilani Highway/Lower Honoapiilani Road. The proposed scope of improvements shall also include the construction of an approximately 720-foot long retaining wall in the vicinity of the Honoapiilani Highway/Puukolii Road/Kai Ala Drive intersection and the widening of the Honokowai Stream Bridge. In addition, fill slope activities and the demolition of existing overhead golf cart and maintenance bridges, as well as the construction of a temporary detour road, a new replacement bridge, and drainage system improvements are also proposed.

Additional ROW requirements will be obtained from the easterly or mauka side of the highway from Amfac Maui and Pioneer Mill Company, Ltd. and on the westerly or makai side from Amfac Maui and Tobishima Pacific, Inc. for right-turn/deceleration lane improvements onto Kai Ala Drive at the intersection's southbound approach.

Determination

On a short-term basis, construction related employment is anticipated to have a positive effect on the local economy. The proposed project will improve peak period traffic operations by providing additional highway capacity and reducing congestion at key intersections.

There will be no adverse drainage or other infrastructural impacts as a result of the project. Additionally, the proposed action is not anticipated to have adverse impacts upon sensitive environments and public service and facility systems.

In light of the foregoing findings, it is concluded that the proposed action will not result in significant adverse environmental effects.

Chapter I

Project Overview

I. PROJECT OVERVIEW

A. PROJECT LOCATION AND LAND OWNERSHIP

The State of Hawaii, Department of Transportation (DOT) proposes road widening and related improvements to Honoapiilani Highway from its intersection with Kaanapali Parkway to approximately 1,000 feet north of its intersection with Lower Honoapiilani Road in the vicinity of the Honokowai Stream Bridge. See Figure 1 and Appendix A.

Honoapiilani Highway is under the jurisdiction of the DOT and is the only primary north-south arterial servicing the West Maui area. This highway links West Maui with the remainder of the Island. The proposed project is approximately 2.2 miles in length and will consist of widening the highway from its existing two (2) lanes to four (4) lanes with 6-foot shoulders.

While the majority of roadway improvements will be conducted within the existing highway ROW, limited ROW acquisition will be required from Amfac Property Investment Corp. (dba, Amfac Maui) and Pioneer Mill Company, Ltd., primarily along the easterly or mauka side of the highway (TMK's 4-4-02:por. 2, 4-4-06:por. 14, por. 56, por. 59) and from Amfac Maui and Tobishima Pacific, Inc. on the westerly or makai side for right turn/deceleration lane improvements onto Kai Ala Drive (TMK 4-4-14:por. 3) at the intersection's southbound approach.

B. PROPOSED ACTION

1. Project Need

Existing traffic operating conditions along Honoapiilani Highway (within the project limits) can be characterized as heavily

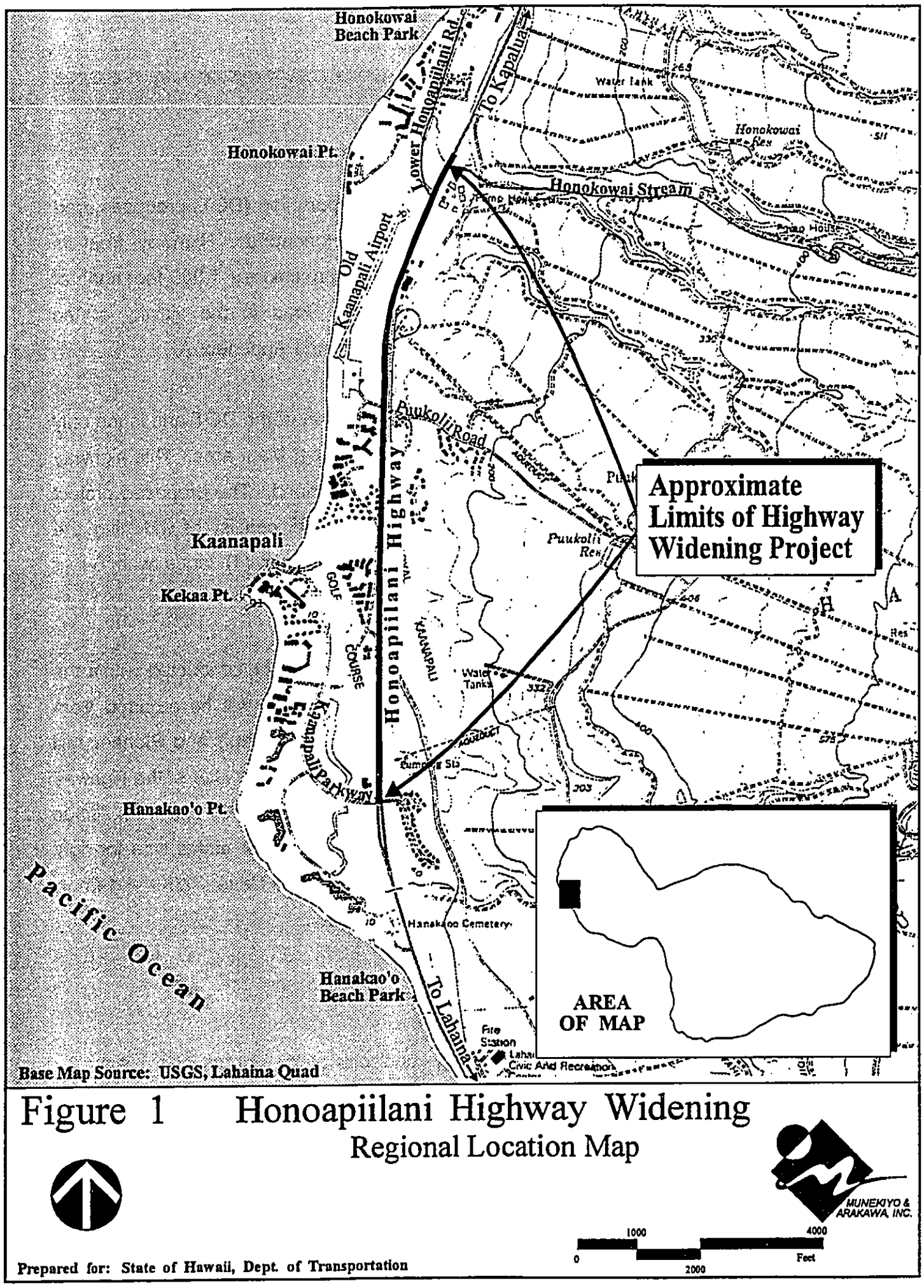


Figure 1 Honoapiilani Highway Widening

Regional Location Map

MUNEKIYO & ARAKAWA, INC.

1000 0 2000 4000 Feet

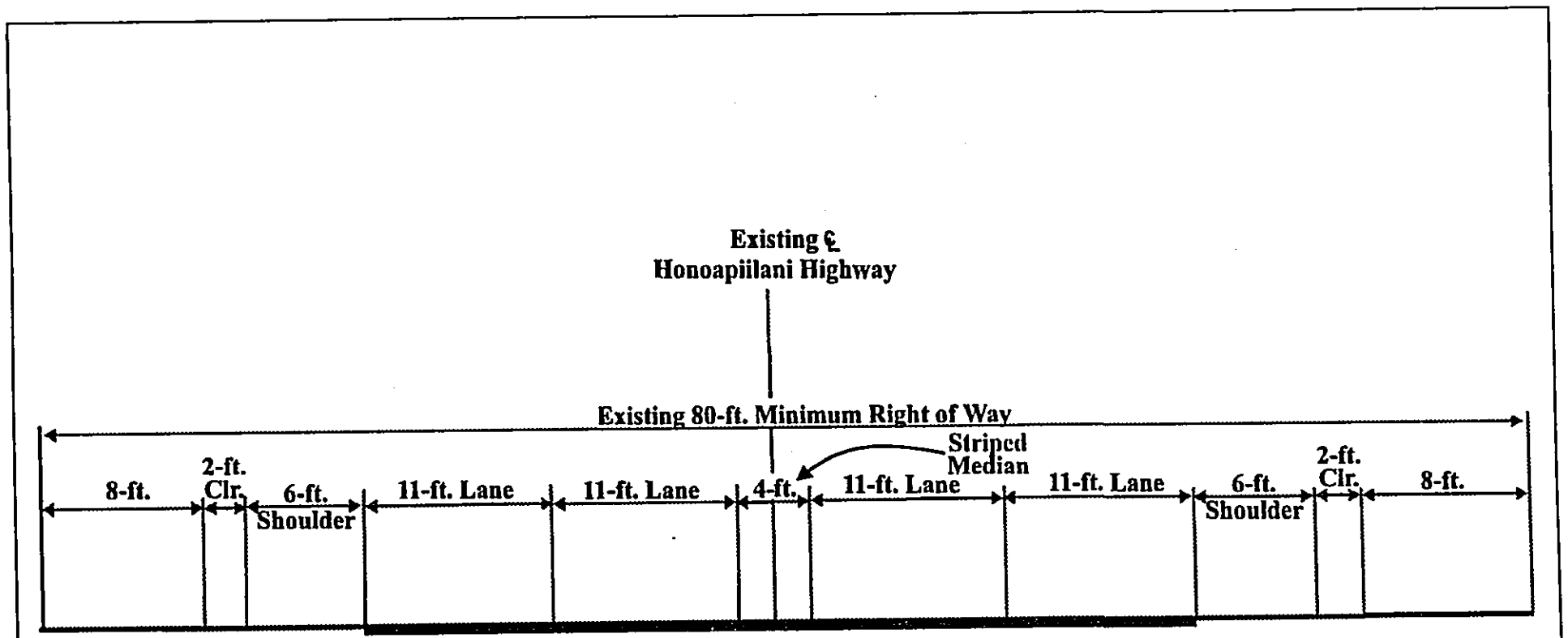
Prepared for: State of Hawaii, Dept. of Transportation

congested, particularly during peak seasonal visitor periods. A traffic analysis prepared by Austin, Tsutsumi & Associates, Inc. in December, 1994 indicates that traffic projections for the year 1997 will result in a Level of Service (LOS) "E", with the current two (2) lane configuration. This projected LOS represents operations at or near capacity, resulting in unstable flow conditions.

With the widening of the highway from the existing two (2) lanes to four (4) lanes, this LOS will improve from "E" to "B", creating a greater degree of maneuverability within the traffic stream and a more desirable level of operation. In this regard, the proposed project will relieve traffic congestion, provide additional capacity and improve overall highway operating conditions.

2. ***Proposed Highway and Intersection Improvements***

The proposed improvements will consist of widening the highway from its current two (2) lanes to four (4) lanes with 6-foot wide shoulders. The typical highway section will include four (4) 11-foot wide travel lanes, a 4-foot wide striped median, and 6-foot wide shoulders along both sides. See Figure 2. Left-turn/storage lanes are also provided at each of the existing intersections within the project limits. See Figure 3. The proposed widening improvements will affect five (5) major intersections as follows: Honoapiilani Highway/Kaanapali Parkway/Halelo Street; Honoapiilani Highway/Kekaa Drive; Honoapiilani Highway/Puukolii Road/Kai Ala Drive; Honoapiilani Highway/Halawai Drive; and Honoapiilani Highway/Lower Honoapiilani Road. In addition, a new intersection will be created with the proposed implementation of Road "A" (Kakaalaneo Road) which will offer access to the proposed Puukolii Village. A description of each intersection



Source: Austin, Tsutsumi & Associates, Inc.

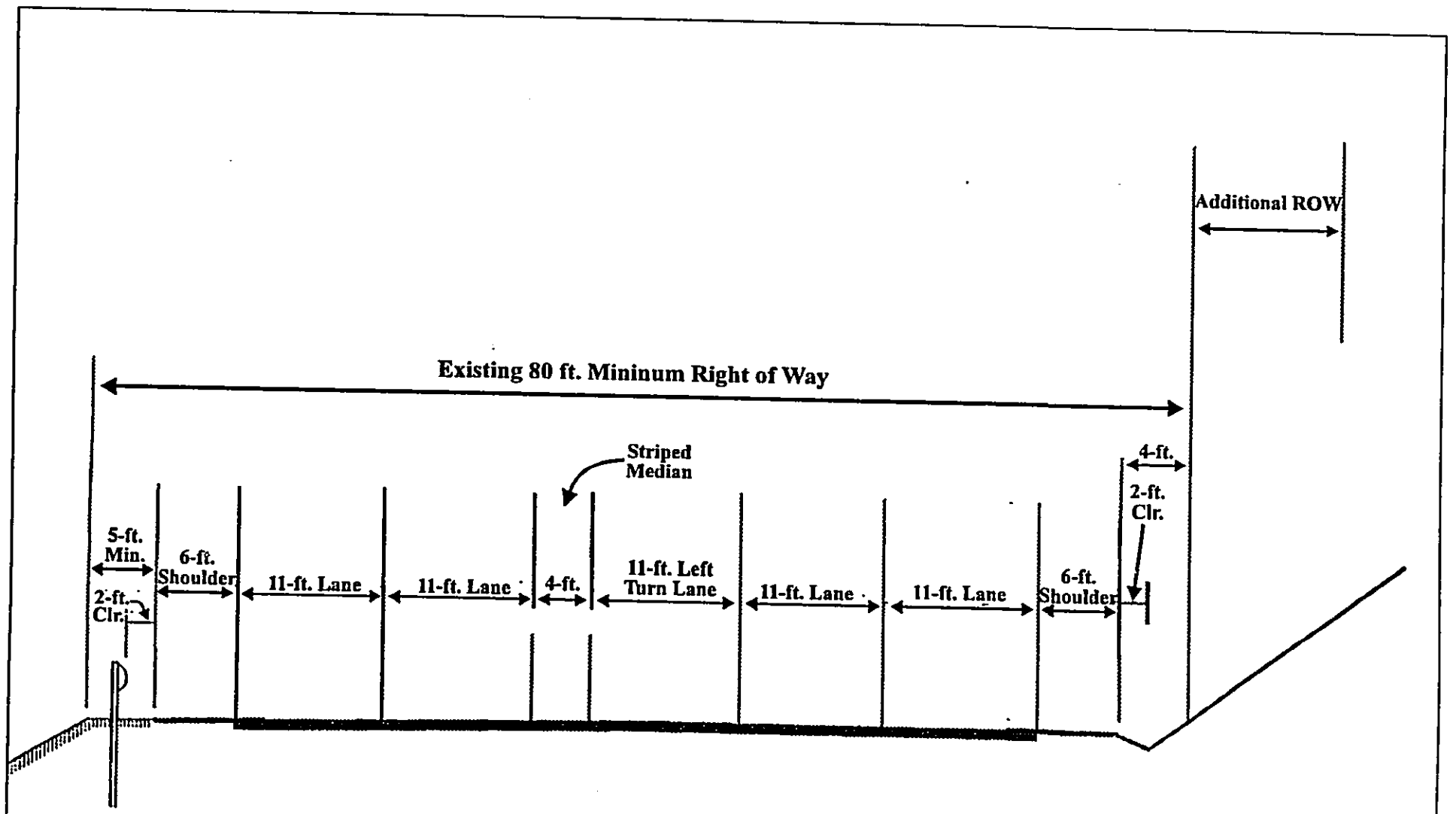
Figure 2

Honoapiilani Highway Widening
Typical Travel Section

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE



Source: Austin, Tsutsumi & Associates, Inc.

Figure 3 Honoapiilani Highway Widening
Typical Section at Intersection Approaches

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Transportation

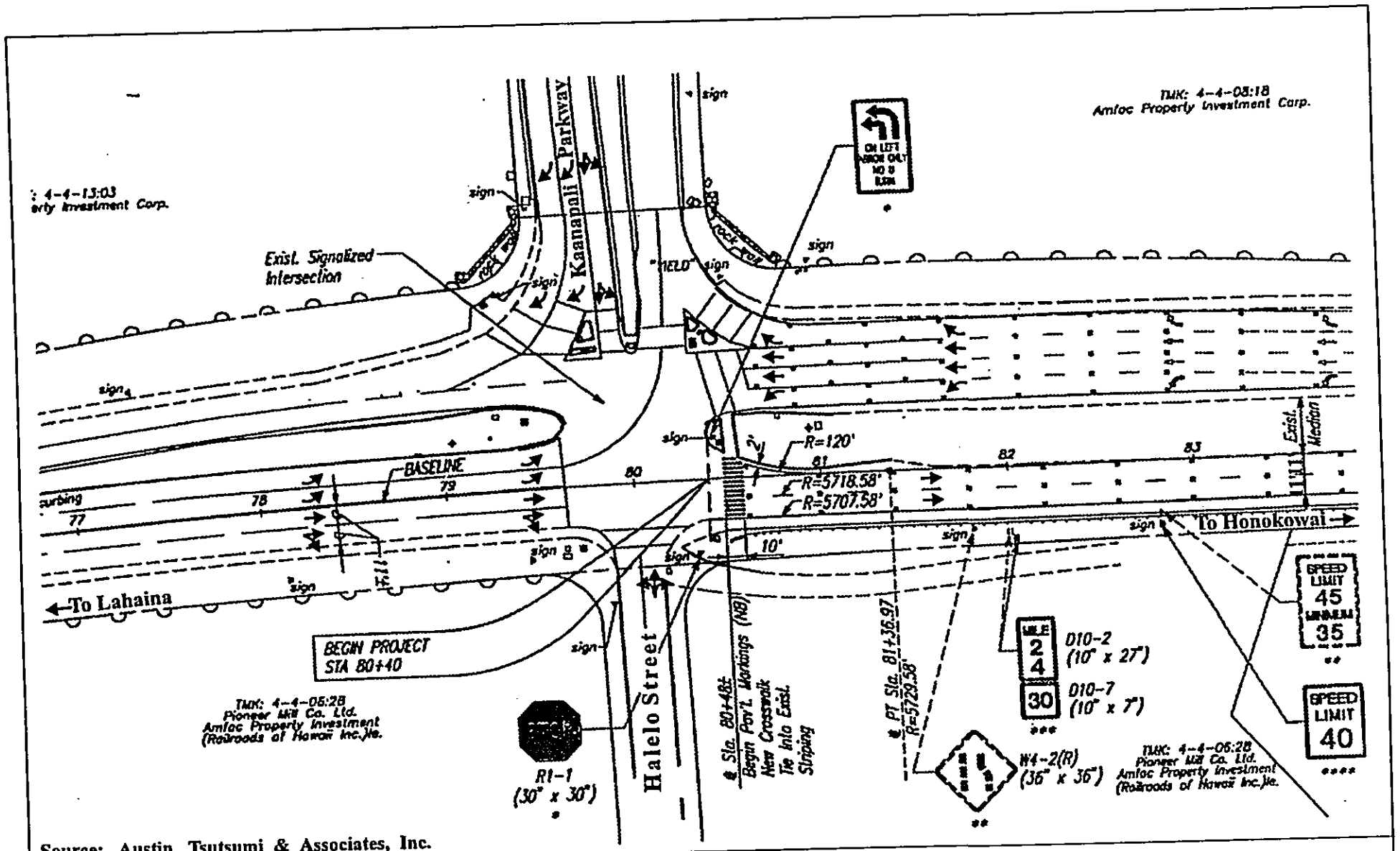
NOT TO SCALE

follows.

Honoapiilani Highway/Kaanapali Parkway/Halelo Street Intersection:

This intersection is a four-legged intersection controlled by a traffic signal. The intersection is bordered by divided roadways on both the north- and south-bound approaches and is controlled by a 5-phase traffic signal system. The north-bound approach on the mauka side (north-bound traffic) utilizes two (2) left-turn lanes onto Kaanapali Parkway, one (1) through lane and one (1) through/right-turn lane. Approximately 200 feet north of this intersection, the two (2) north-bound through lanes merge to a single lane. The Kaanapali Parkway (east-bound) traffic utilizes a combined left-turn/through lane and two (2) newly improved right-turn lanes. For the west-bound traffic on Halelo Street, which is a two-way, two-lane roadway, traffic utilizes a combined left-turn/through/right-turn lane. The south-bound approach (south-bound traffic) utilizes two (2) through lanes, one (1) right-turn deceleration lane, and one (1) left-turn/storage lane.

The project's southern limit begins at this intersection. Improvements at this terminus will consist of widening the north-bound portion of highway to two (2) 11-foot wide travel lanes with a 6-foot wide shoulder, within the existing ROW See Figure 4. Approximately 300 feet north of the intersection, both the mauka and makai sides of the highway will be widened to four (4) 11-foot wide travel lanes with two (2) 6-foot wide shoulders along each side of the highway.



Source: Austin, Tsutsumi & Associates, Inc.

Figure 4

Honoapiilani Highway Widening
Proposed Intersection Conditions at Kaanapali Parkway/Halelo Street

MUNEKIYO & ARAKAWA, INC.

NOT TO SCALE

Prepared for: State of Hawaii, Dept. of Transportation

Honoapiilani Highway/Kekaa Drive Intersection:

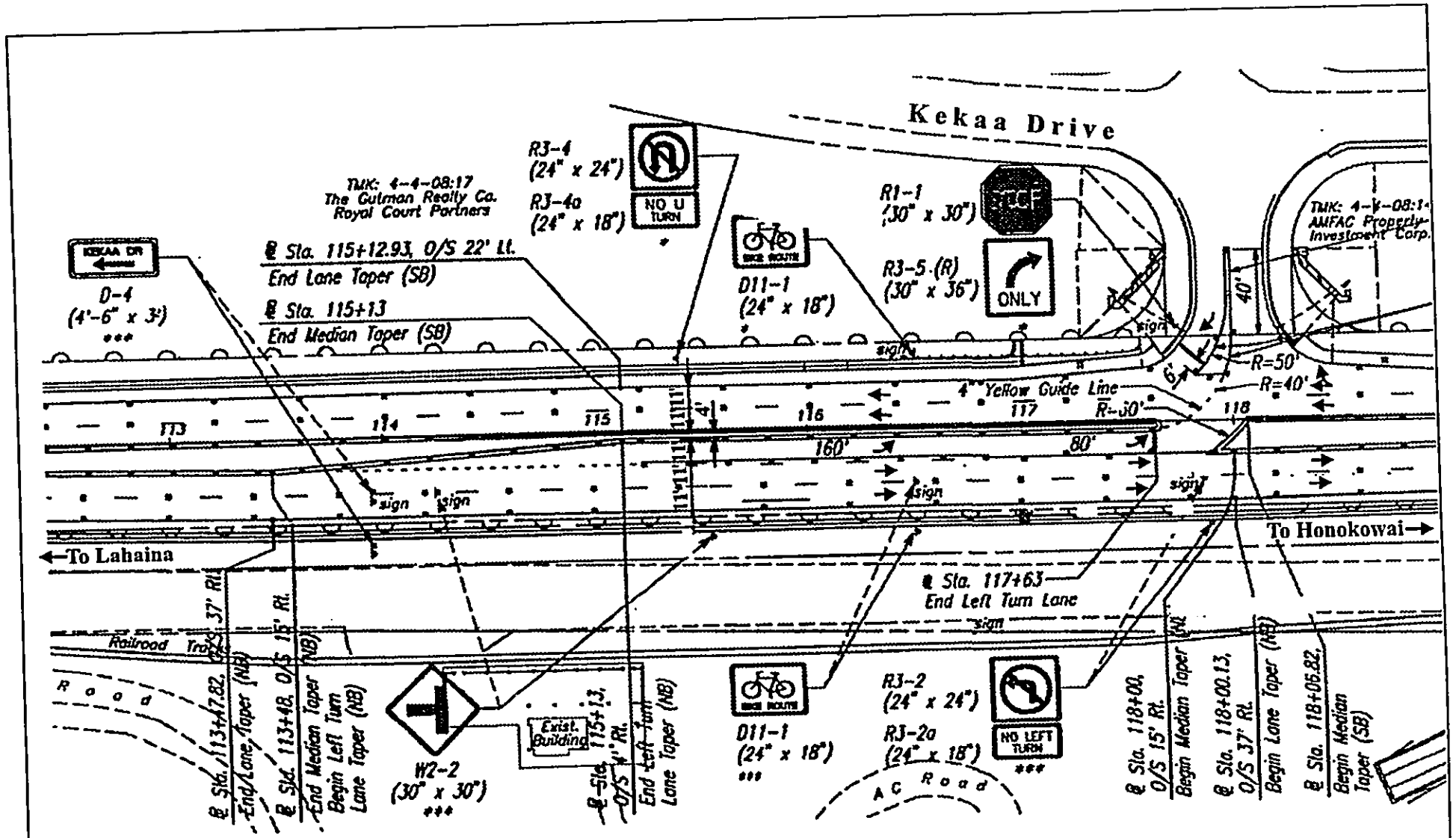
This intersection is a T-intersection with the east-bound traffic (Kekaa Drive) controlled by a stop sign. Only right turns are allowed for traffic exiting Kekaa Drive. Honoapiilani Highway in this area is two-way, two-lane with north-bound traffic utilizing an existing left-turn/storage lane to enter Kekaa Drive.

Improvements at this intersection will provide for the widening of Honoapiilani Highway to four (4) 11-foot wide travel lanes with 6-foot wide shoulders. See Figure 5. Turning movements will not be modified with the proposed improvements.

Honoapiilani Highway/Puukolii Road/Kai Ala Drive Intersection:

This intersection is a four-legged intersection controlled by a traffic signal. Both the north- and south-bound approaches on Honoapiilani Highway utilize one (1) through lane and left-turn/storage lanes to enter Kai Ala Drive and Puukolii Road, respectively. North-bound traffic also utilizes a right-turn/deceleration lane onto Puukolii Road. West-bound traffic on Puukolii Road utilizes a combined left-turn/through lane and an exclusive right-turn lane. Kai Ala Drive (east-bound traffic) utilizes one (1) exclusive right-turn lane, allowing right turns on red after stopping and one (1) through/left-turn lane.

Improvements at this intersection will provide for the widening of Honoapiilani Highway to four (4) 11-foot wide travel lanes with 6-foot wide shoulders and 11-foot wide left-turn/storage lanes at the highway's north- and south-bound approaches. Additional improvements include a channelized right-turn/deceleration lane onto Kai Ala Drive at the intersection's south-bound approach, as



Source: Austin, Tsutsumi & Associates, Inc.

Figure 5

Honoapiilani Highway Widening
Proposed Intersection Conditions at Kekaa Drive

MUNEKIYO & ARAKAWA, INC.

NOT TO SCALE

Prepared for: State of Hawaii, Dept. of Transportation

well as a shared right-turn/through lane and an exclusive left-turn lane onto the highway at the intersection's west-bound approach from Puukolii Road. See Figure 6.

Honoapiilani Highway/Halawai Drive Intersection:

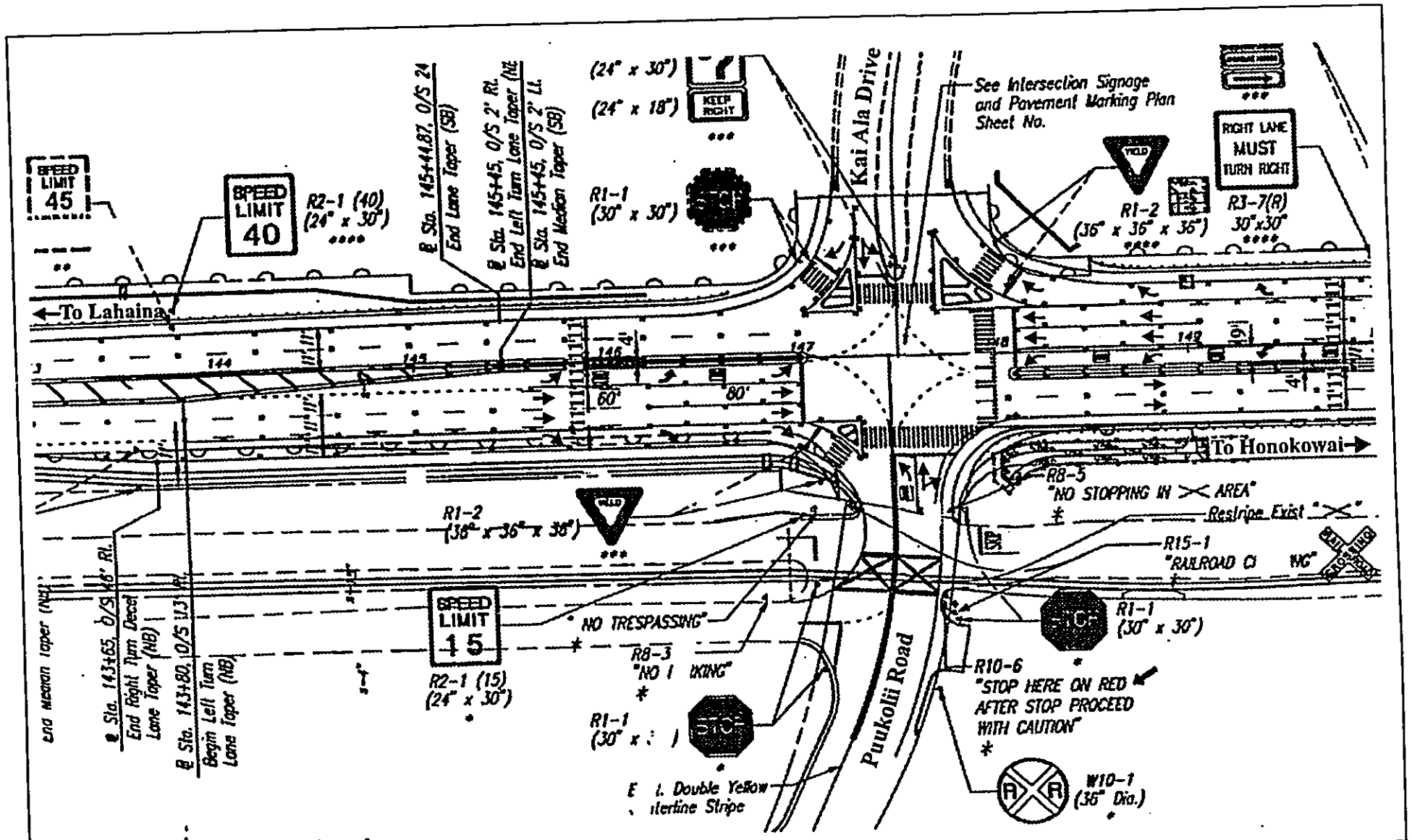
This intersection is a T-intersection with west-bound traffic (Halawai Drive) controlled by a stop sign. For south-bound traffic on Honoapiilani Highway, a left-turn/storage lane onto Halawai Drive is provided to facilitate turning movements into the car rental baseyards.

In addition to a traffic signal, improvements at this intersection will provide for the lengthening of the left-turn/storage lane to approximately 450 feet for south-bound traffic entering Halawai Drive. See Figure 7. These improvements are in addition to the proposed new traffic lanes and shoulders along Honoapiilani Highway.

Honoapiilani Highway/Lower Honoapiilani Road Intersection:

This four-legged intersection is configured with Lower Honoapiilani Road serving both east- and west-bound traffic.[a] East-bound traffic utilizes a combined left-turn/through lane and an exclusive right-turn lane. West-bound traffic utilizes a combined left-turn/through/right-turn lane. East- and west-bound traffic are currently controlled by a stop sign at this intersection. South-bound Honoapiilani Highway traffic utilizes a left-turn/storage lane, through lanes and a right-turn lane, while north-bound traffic uses a through lane and a right-turn/through lane. The County of Maui's Lahaina

[a] The Department of Transportation is currently planning to install an interim traffic signal at this intersection by Summer, 1997.



Source: Austin, Tsutsumi & Associates, Inc.

Figure 6

Honoapiilani Highway Widening
Proposed Intersection Conditions at Kai Ala Drive/Puukolii Road

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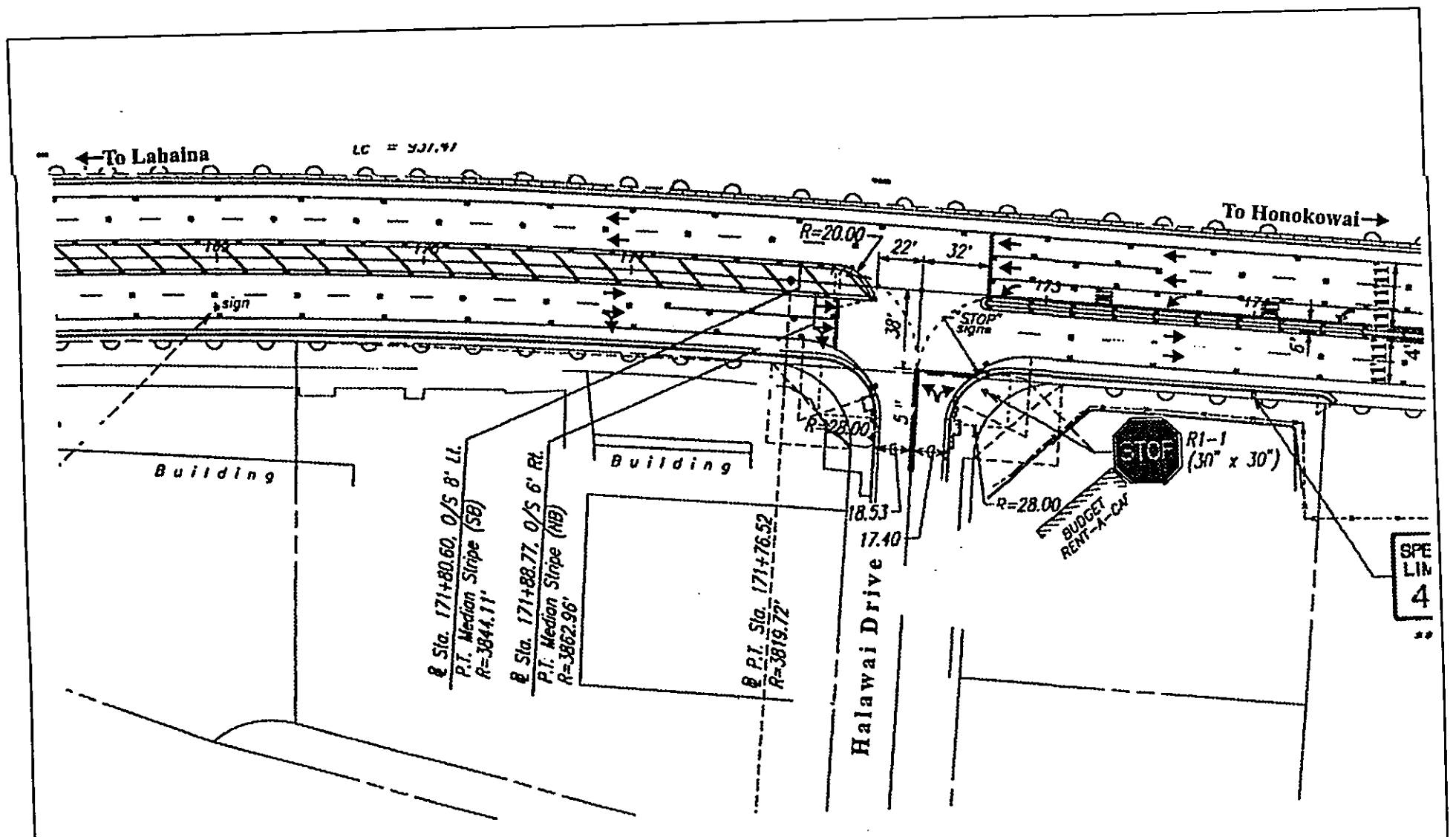

Source: Austin, Tsutsumi & Associates, Inc.

Figure 7

Honoapiilani Highway Widening
Proposed Intersection Conditions at Halawai Drive

MUNEKIYO & ARAKAWA, INC.

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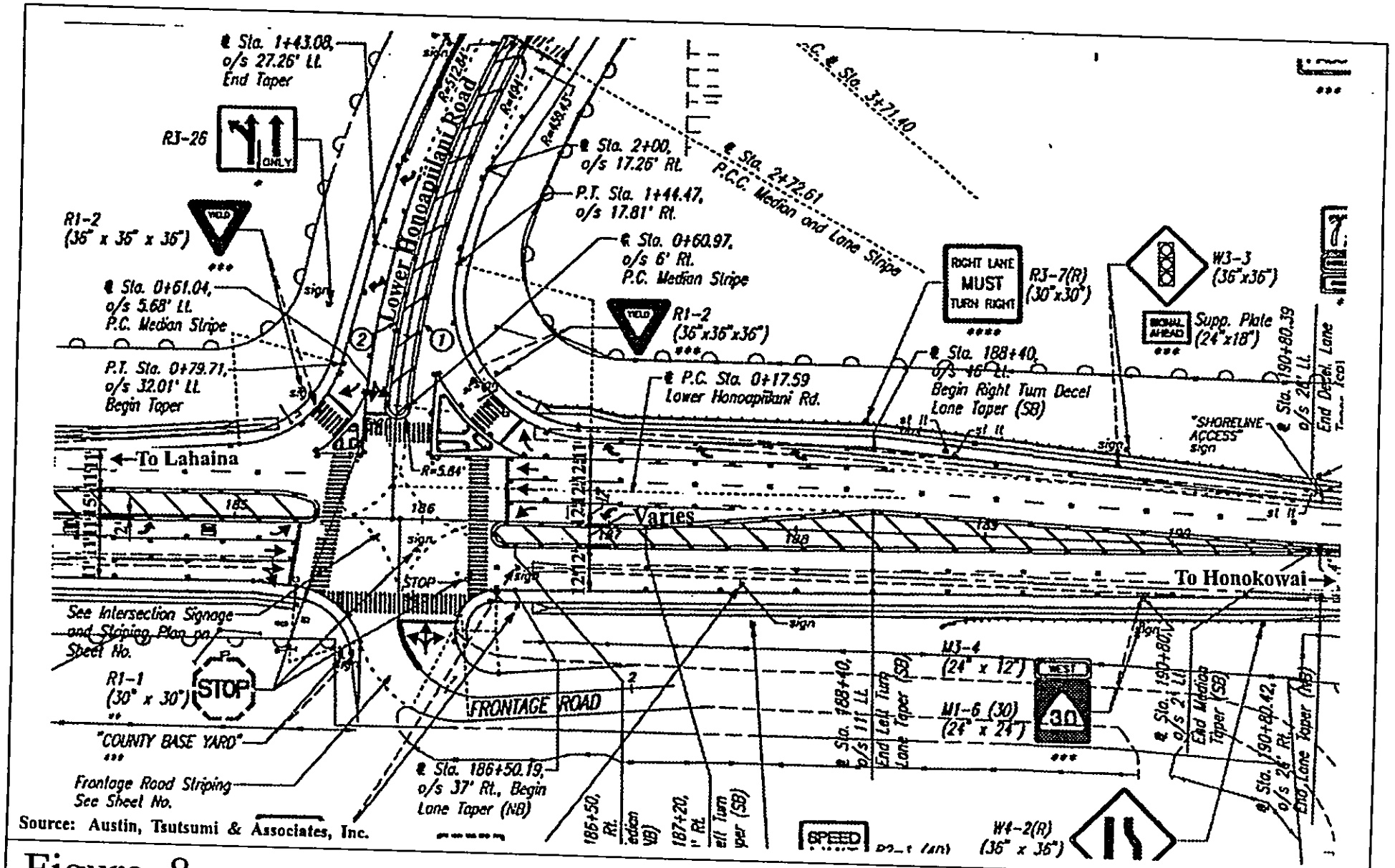
Prepared for: State of Hawaii, Dept. of Transportation

Wastewater Reclamation Facility (LWRF) and Highways Division Baseyard are both located on the mauka side of this intersection.

In addition to a permanent traffic signal at this intersection which will require modifications to the interim traffic signal, improvements at the north-bound approach of this intersection will provide for a single 11-foot wide left-turn/storage lane for traffic accessing Lower Honoapiilani Road and a 15-foot wide striped median. See Figure 8. Improvements at the south-bound approach will include a 12-foot wide left-turn/storage lane for south-bound traffic entering the LWRF and an 11-foot wide right-turn/deceleration lane for traffic entering Lower Honoapiilani Road.

Honoapiilani Highway/Proposed Road "A" (Kakaalaneo Road) Intersection

Approximately 1,200 feet north of the Honoapiilani Highway/Puukolii Road intersection, improvements will be made to accommodate the proposed Road "A". See Figure 9. Road "A" will provide access to the proposed Puukolii Village, currently in the development stages. Road "A" will also be a connecting road between Honoapiilani Highway and the proposed Lahaina Bypass. Improvements proposed for this intersection include a 550-foot right-turn/deceleration lane at the north-bound approach and a 650-foot left-turn/storage lane at the south-bound approach for traffic entering the proposed Road "A".



Source: Austin, Tsutsumi & Associates, Inc.

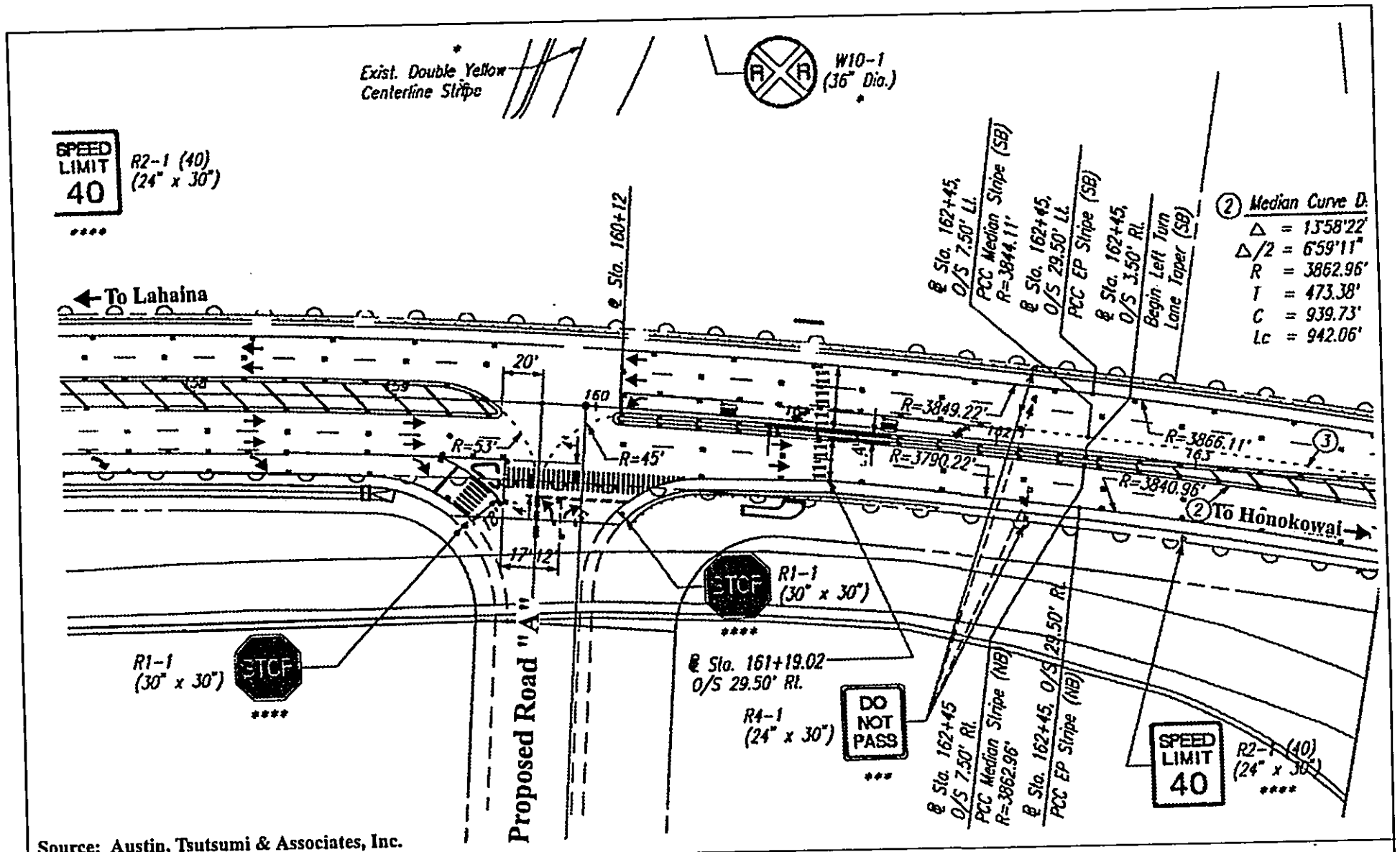
Figure 8

Honoapiilani Highway Widening
Proposed Intersection Conditions at Lower Honoapiilani Road

Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE

MUNEKIYO & ARAKAWA, INC.



Source: Austin, Tsutsumi & Associates, Inc.

Figure 9

Honoapiilani Highway Widening

Proposed Intersection Conditions at Proposed Road "A"

MUNEKIYO & ARAKAWA, INC.

NOT TO SCALE

Prepared for: State of Hawaii, Dept. of Transportation

3. ***Additional Improvements***

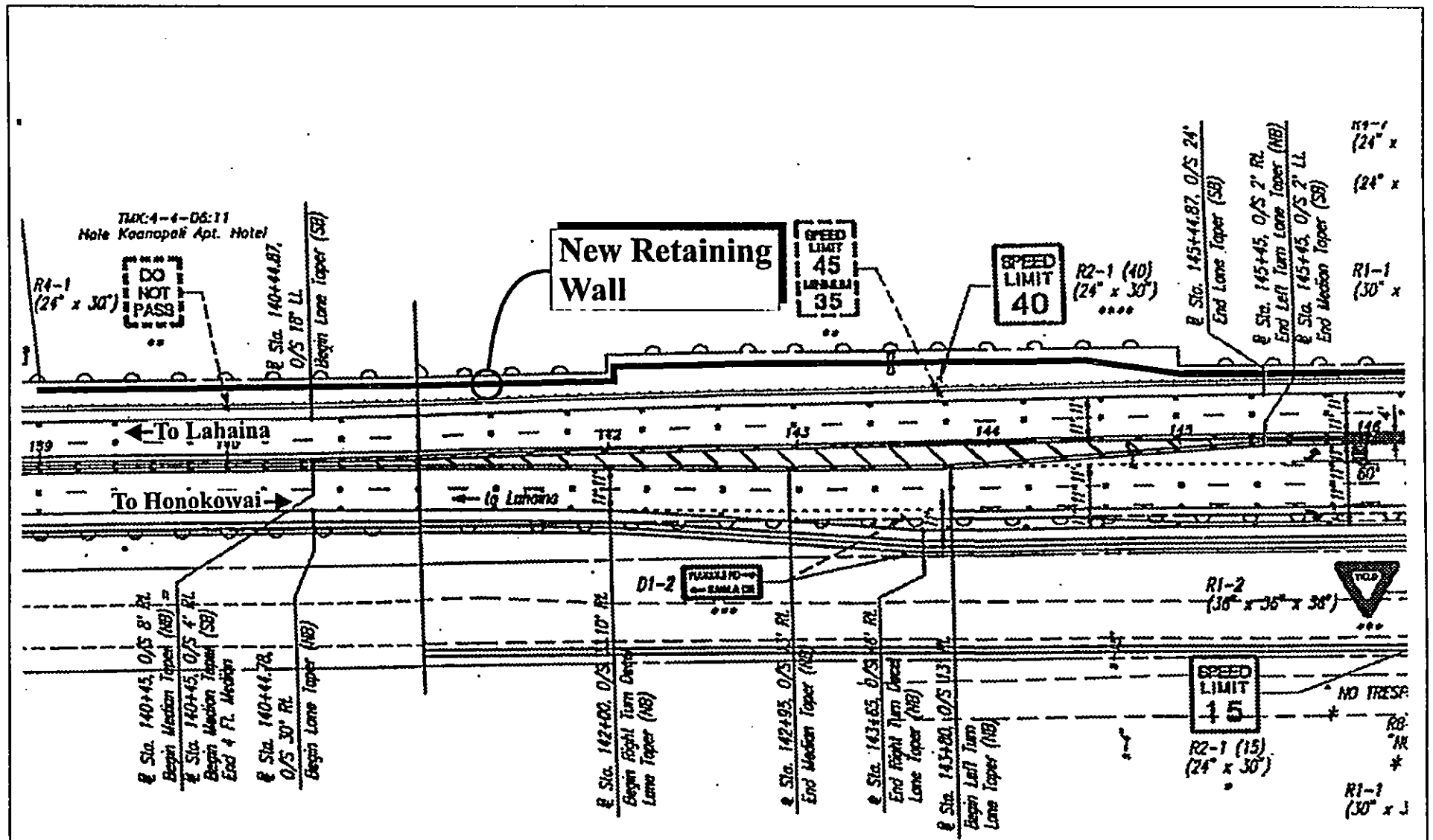
Retaining Wall South of Honoapiilani Highway/Puukolii Road/Kai Ala Drive Intersection

Located approximately 200 feet south of Kai Ala Drive, a 720-foot long retaining wall is proposed on the makai side of the highway. See Figure 10. This wall, ranging from one (1) foot to six (6) feet in height, is required to address grade differential requirements along this section of the highway. (A retaining wall in lieu of a fill slope along this segment of the highway is required due to limited ROW width.) The retaining wall will be contained within the existing ROW.

Honokowai Stream Bridge Widening

Improvements to the Honokowai Stream (Channel) Bridge are also proposed to accommodate the highway widening. The bridge will be widened to include four (4) 12-foot wide travel lanes with 6-foot wide shoulders, and a 4-foot wide, striped median. See Figure 11. Construction activities to accommodate the bridge widening will not affect existing stream channelization improvements. See early consultation comment letter from the Department of the Army, dated December 2, 1996 (Chapter X). Therefore, no stream related permits (i.e., Department of the Army, Section 401 Water Quality Certification and Ccastal Zone Management Consistency Approval) are required.

The project's northern terminus is located approximately 740 feet north of the bridge. At this point, Honoapiilani Highway will transition from four (4) to two (2) lanes to match the highway's existing two-lane section.



Source: Austin, Tsutsumi & Associates, Inc.

Figure 10

Honoapiilani Highway Widening
Proposed New Retaining Wall

MUNEKIYO & ARAKAWA, INC.

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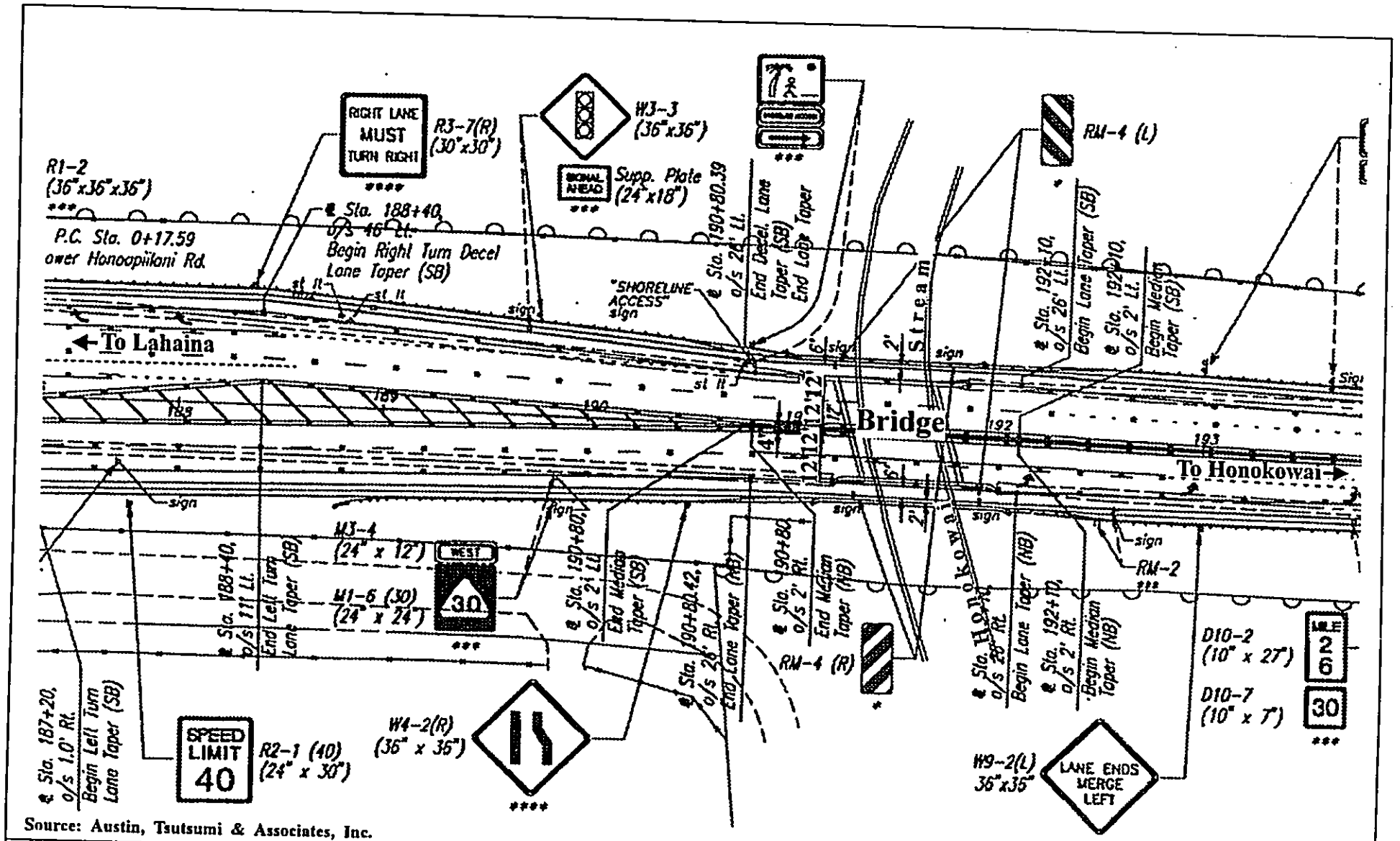

Source: Austin, Tsutsumi & Associates, Inc.

Figure 11

Honoapiilani Highway Widening
Honokowai Stream Bridge

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MUNEKIYO & ARAKAWA, INC

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Drainage System Improvements

The existing drainage system will be renovated to accommodate the widened highway section. Proposed drainage system improvements include new culverts at nine (9) locations, two (2) new catch basins, two (2) new storm drain manholes, three (3) new drain inlets, and the extension of eight (8) existing culverts, as well as the relocation of three (3) exiting drain inlets. One (1) grass swale and 12 new gutter sections are proposed mauka of the highway, while six (6) new gutter sections will be added makai of the highway.

These new drainage structures will be added where deemed necessary based on hydrologic and hydraulic analysis. Gutters and swales will be designed to collect both on-site and off-site surface runoff and convey flows to the drainage structures. .

C. *WORK PROPOSED WITHIN THE SPECIAL MANAGEMENT AREA*

Specific elements of work to be performed within the County's Special Management Area (SMA) have also been identified and are described in this section. Within the project area, lands makai of the Honoapiilani Highway ROW are encompassed by the SMA.

Limited work associated with the road widening project will fall within the County of Maui's SMA. Fill slopes along one section of the makai edge of the highway will be required to cross "makai" of the existing ROW, and into the SMA to accommodate the widening improvements. A fill slope easement will be obtained from the adjoining landowners, the Kaanapali North Beach Joint Venture (KNBJV). Approximately 2,900 cubic yards of fill will be placed along a 0.5-mile stretch on Honoapiilani Highway (from Kai Ala Drive, north) on the westerly or makai side (TMK's 4-4-14:por. 3,

por. 4, por. 5). The fill material is required to provide slope stability along this edge of the highway. See Figure 12 and Figure 13. Placement of the fill slope within the SMA is estimated to cost approximately $100,000.00.

As a result of the proposed road widening improvements, the existing overhead golf cart bridge and overhead maintenance bridge near Kekaa Drive will be demolished and replaced by a single new bridge located immediately south of the existing maintenance bridge (TMK 4-4-08:por. 20). See Figure 14. The bridge will be located approximately 800 feet south of the Kekaa Drive intersection in the vicinity of the future Kualapa Loop Road extension and will enable pedestrian, vehicular, and golf cart traffic to traverse the highway from the mauka side to Kekaa Drive on the makai side. The bridge will provide two (2) 12-foot wide vehicular travel lanes, a 10-foot wide golf cart path, and a 3-foot wide pedestrian walkway. The vehicular travel lanes will terminate at an asphalt paved cane-haul road parallel to, and approximately 50 feet mauka of the highway ROW, while the pedestrian walkway and golf cart path will connect to an existing golf cart path adjoining the cane-haul road. The bridge is to be approximately 105 feet in length and 45 feet wide and constructed with a concrete deck over reinforced concrete girders. The makai bridge approach for the Kualapa Loop Bridge is situated within the SMA (makai of the Honoapiilani Highway ROW). The total cost of the Kualapa Loop Bridge improvements will be funded by Amfac and is estimated to be approximately $1.4 million. The improvements proposed within the SMA are estimated to cost about $250,000.00.

A temporary detour road will also be constructed within the SMA (TMK 4-4-8:por. 14). See Figure 15. With a pavement width of approximately 24 feet and a length of about 300 feet, the two-lane, asphalt-paved detour

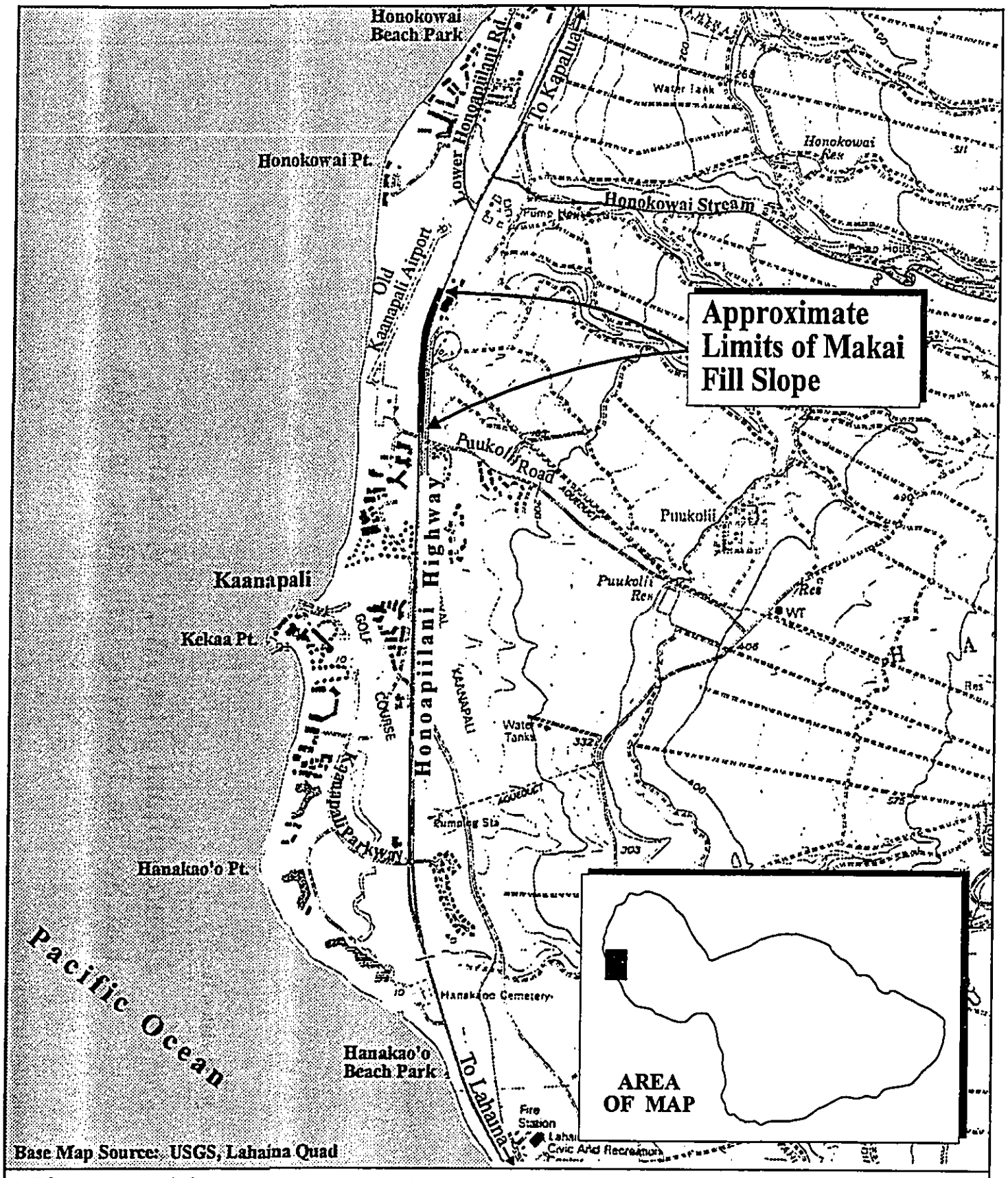

Figure 12 Honoapiilani Highway Widening

Limits of Fill Slope Within the SMA

MUNEKIYO & ARAKAWA, INC.

0 1000 2000 4000 Feet

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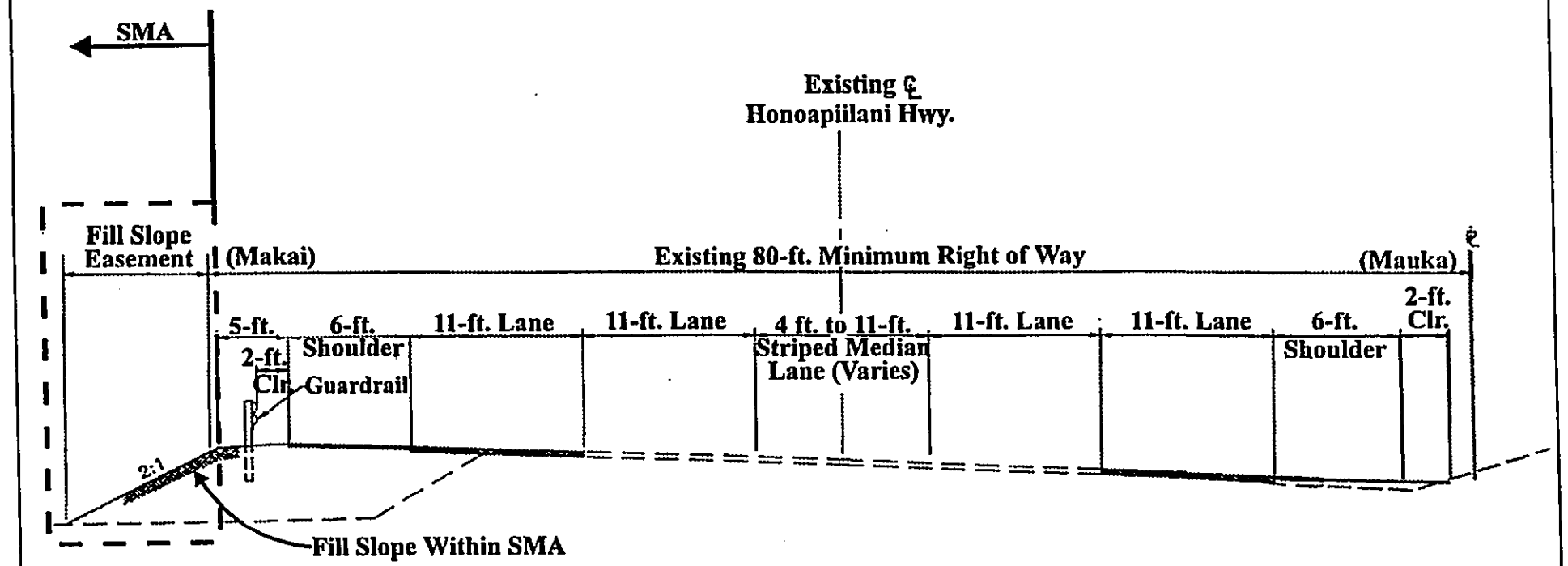


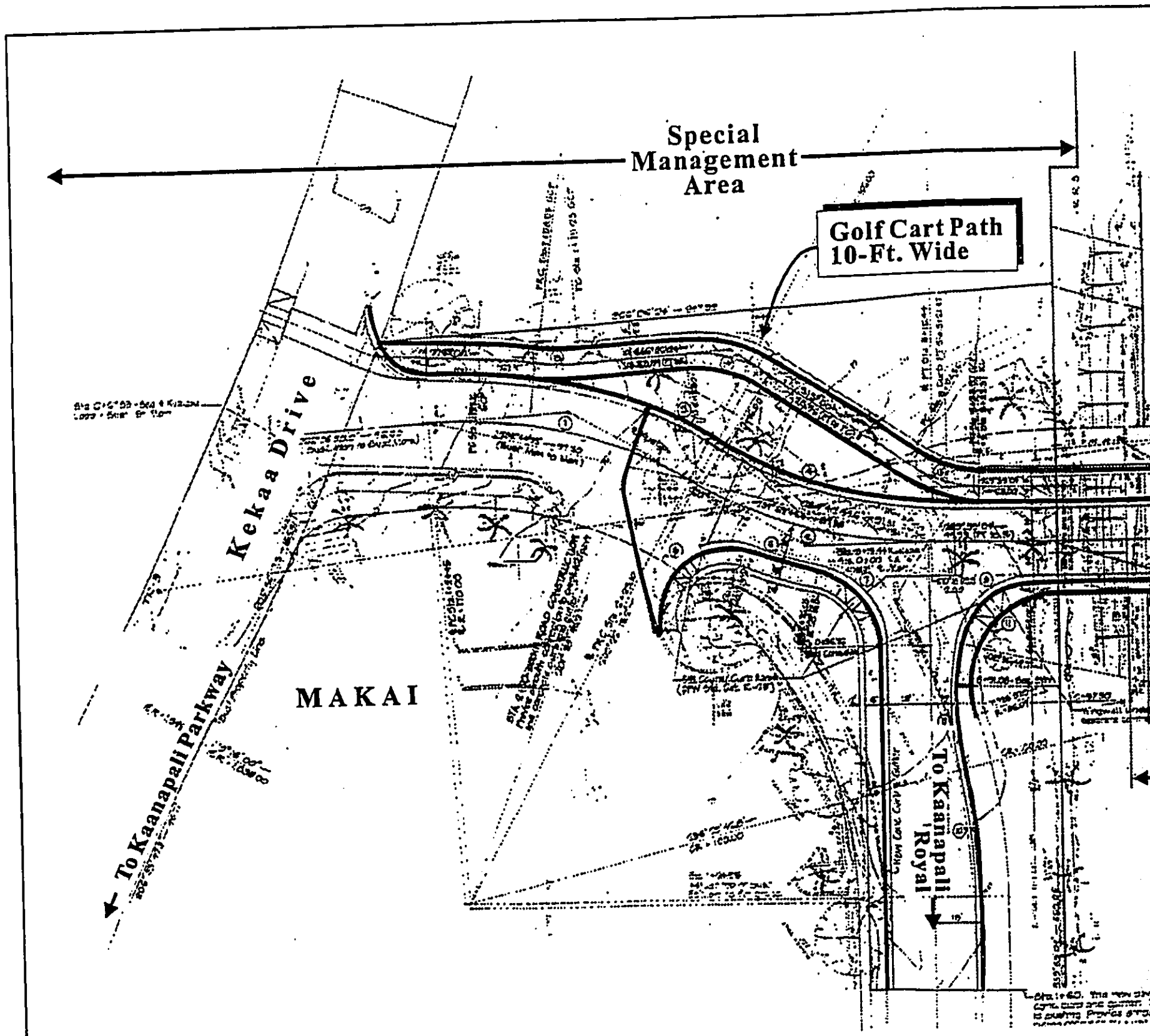
Source: Austin, Tsutsumi & Associates, Inc.

Figure 13 — Honoapiilani Highway Widening
Typical Section Depicting Fill Slope in SMA

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE

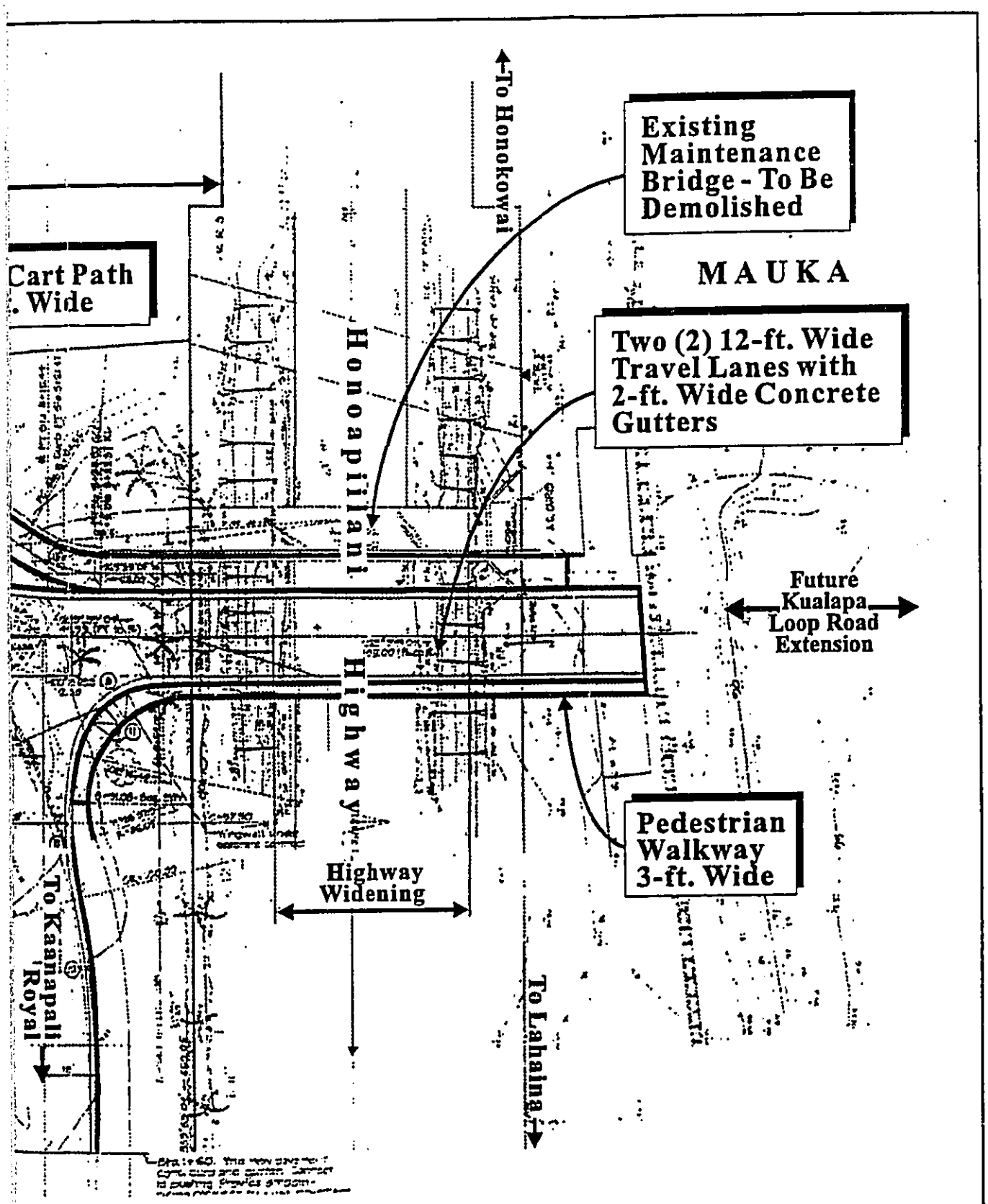


Source: Austin, Tsutsumi & Associates, Inc.

Figure 14

Honoapiilani Highway Wide
Proposed Kualapa Loop Bridge Improvements

Prepared for: State of Hawaii, Dept. of Transportation



Highway Widening

idge Improvements within the SMA

MUNEKIYO & ARAKAWA, INC.

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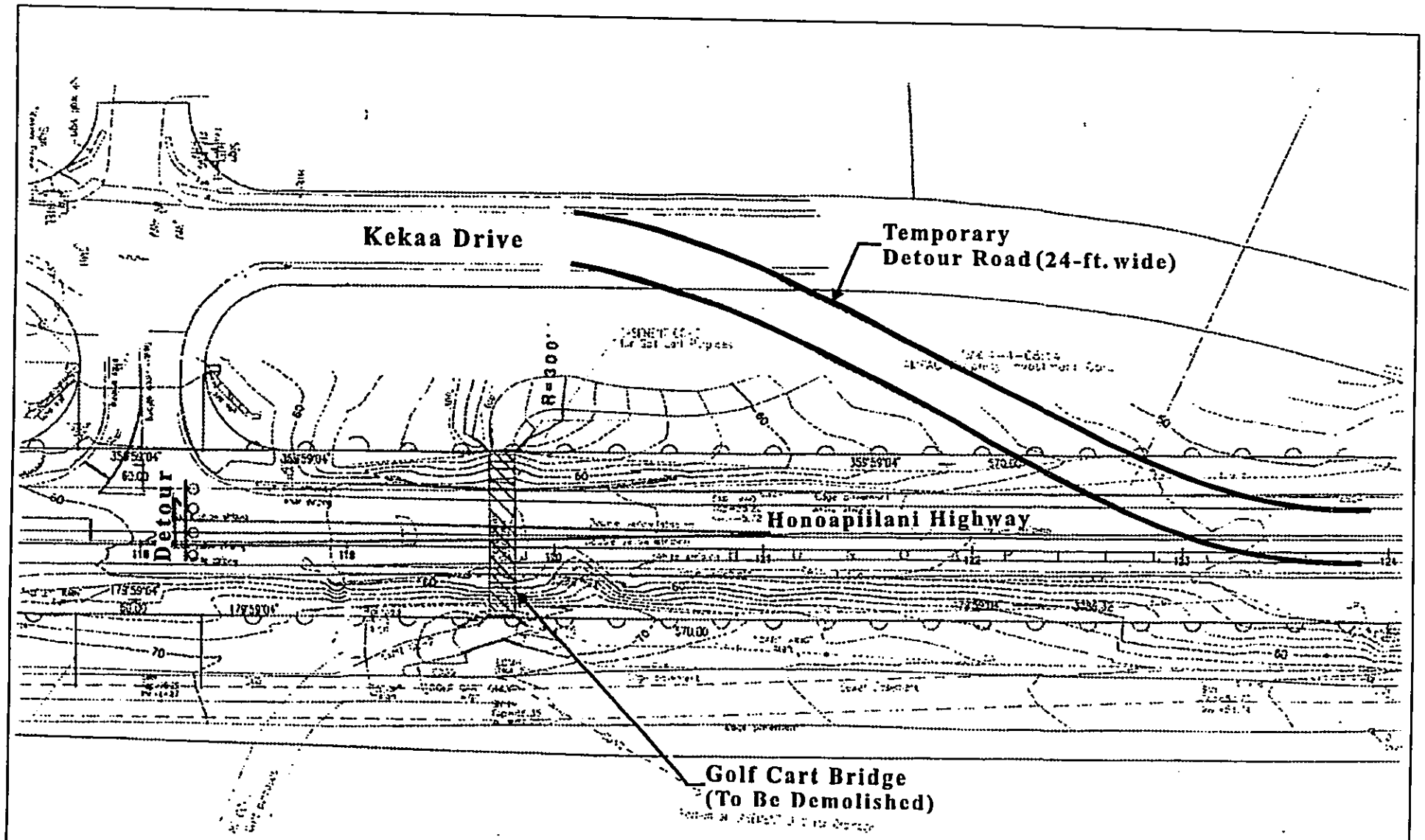


Source: Austin, Tsutsumi, & Associates, Inc.

Figure 15

Honoapiilani Highway Widening
Temporary Detour Road Plan

Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE

MUNEKIYO & ARAKAWA, INC.

road will enable two-way directional traffic to be maintained during the demolition of the existing golf cart and maintenance bridges, as well as during the construction of the new Kualapa Loop Bridge. Once the girders for the new bridge have been erected, the detour road will be demolished and pre-construction conditions will be restored. The total cost of the detour road is projected to be about $40,000.00, with improvements in the SMA estimated to cost approximately $25,000.00.

Proposed drainage system improvements within the SMA include the construction of four (4) new headwalls (TMK's 4-4-14:por. 3, 4, 5). See Appendix C for headwall locations. With an estimated cost of approximately $40,000.00, these headwalls are anticipated to facilitate the flow of surface runoff and improve existing drainage conditions.

D. *OVERALL COSTS AND TIMESCHEDULE*

Overall Costs

With the exception of the Kualapa Loop Bridge improvements, the proposed widening project will involve State funds and is anticipated to cost approximately $10.0 million, while the total cost of work elements within the SMA is approximately $415,000.00.

Timeschedule

Construction of the proposed project is anticipated to commence no later than January 1998 and is estimated to last approximately 18 months.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

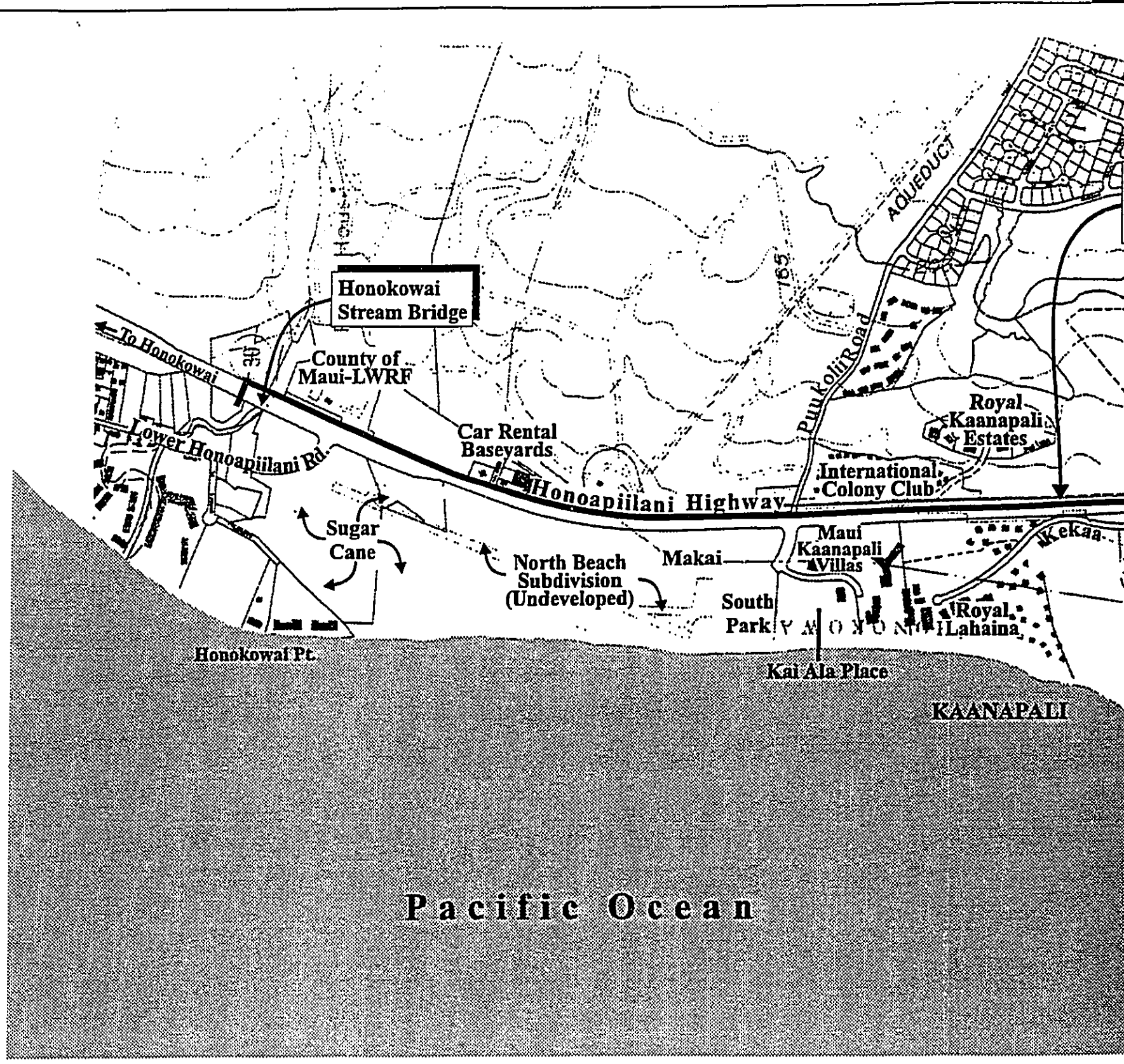
A. PHYSICAL SETTING

1. Surrounding Land Uses

The project site is located along the foothills of the West Maui Mountains. West Maui is known for its resort destinations, as well as its sugar cane and pineapple production lands. Lahaina Town, once the capitol of Hawaii and now designated a National Historic Landmark, is located approximately 2.5 miles south of the project site.

The proposed Honoapiilani Highway widening project limits encompass an approximately 2.2-mile roadway segment which services the Kaanapali and Honokowai regions of West Maui. Kaanapali is one of Maui's major destination resort areas with world class hotels, as well as a range of resort amenities such as golf courses, sand beaches and shopping facilities. Honokowai, located to the north of Kaanapali, includes a mix of hotel, residential and commercial activities.

Honoapiilani Highway, between Kaanapali Parkway and Puukolii Road, traverses the developed portion of Kaanapali. Land uses adjoining the corridor through this section of highway primarily include golf course and residential condominium uses. See Figure 16. The Maui Kaanapali Villas, International Colony Club, Maui Eldorado and Kaanapali Royal are condominium projects found along this segment of roadway. Also along this portion of the highway, on the east, is an asphalt paved cane-haul road. This road is approximately 50 feet mauka of the highway ROW and runs parallel with the highway from Kekaa Drive to about 1,500 feet

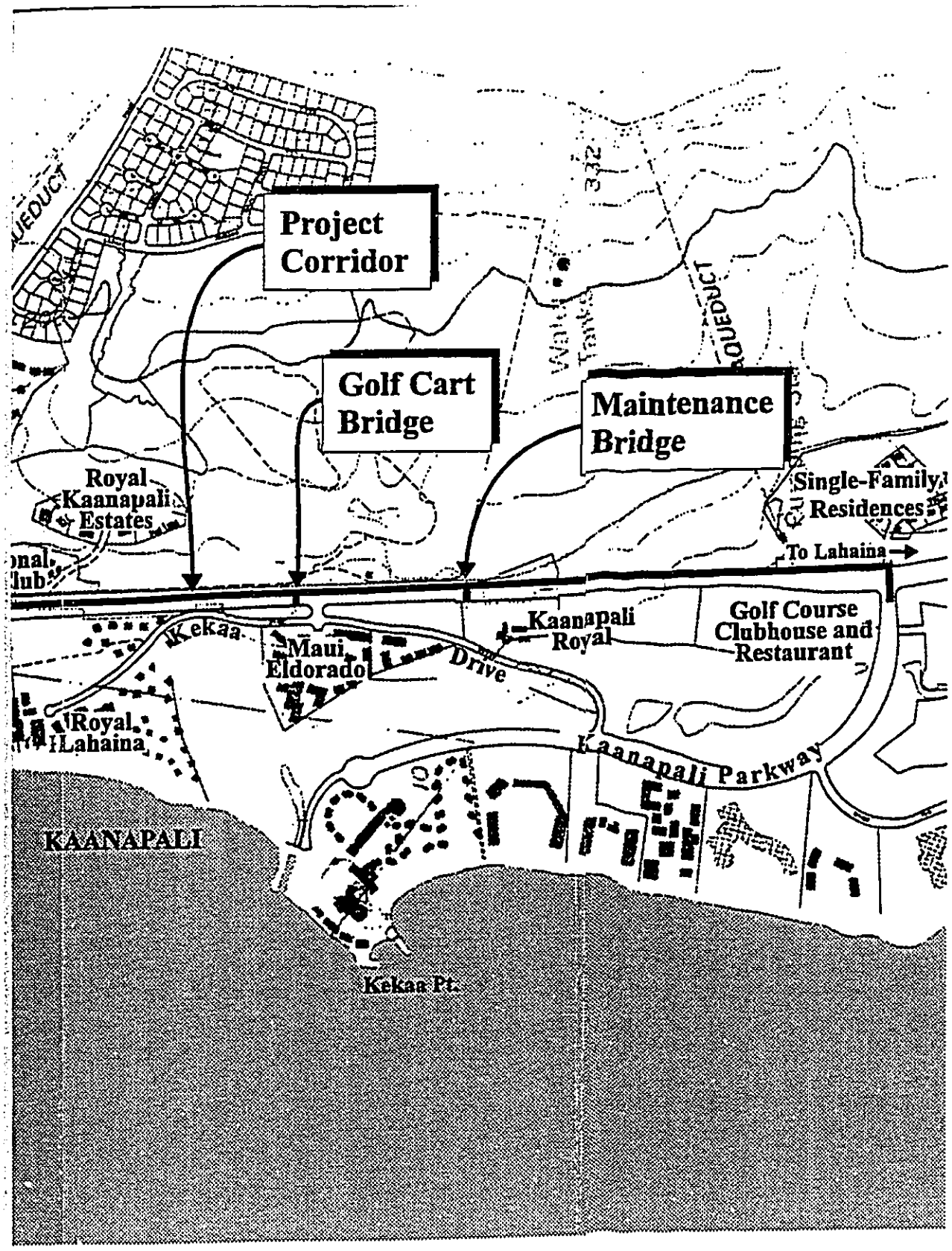


Base Map Source: County of Maui, Department of Planning

Figure 16

Honoapiilani Highway Wid
Existing Uses Along Project C

Prepared for: State of Hawaii, Dept. of Transportation



Highway Widening
Along Project Corridor

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NOT TO SCALE

north of Puukolii Road. This cane-haul road is utilized by Pioneer Mill Company for harvesting activities.

The Lahaina-Kaanapali & Pacific Railroad runs along the mauka edge of the cane-haul road. There are two (2) train depots, the first near the Royal Kaanapali Golf Course above the Kekaa Drive intersection, and the other just beyond the Puukolii Road intersection. A train track turn-around area is located 1,500 feet north of Puukolii Road.

Beyond Puukolii Road, to the north, the highway corridor is bounded by a mix of active and fallow agricultural lands, light industrial uses, and public facility uses. Bordering the westerly or makai extent of the highway (between Puukolii Road and Lower Honoapiilani Highway) is Amfac's North Beach Makai Subdivision. This undeveloped area, formerly cultivated in sugar cane, encompasses approximately 96 acres and is planned for hotel/resort uses. It is noted that the South Park (Ali'i Kahekili Nui'ahumanu Beach Park) which provides picnic and open space areas and access to beach activities, is located at the southern extent of the North Beach Makai Subdivision (in the vicinity of Kai Ala Drive). To the east are lands in pineapple cultivation and industrial and public facility uses. Located to the north of Halawai Street are facilities used by car rental companies, while the County's Lahaina Wastewater Reclamation Facility and Highways Division Baseyard are both located along Honoapiilani Highway, across its intersection with Lower Honoapiilani Road.

Uses surrounding the drainage headwalls, fill slope area, and the Kualapa Loop Bridge approach (areas falling within the SMA) fit

within the land use context described above. The drainage headwalls and fill slope area are adjacent to the North Beach Makai Subdivision, while the Kualapa Loop Bridge approach is located adjacent to the existing Amfac Maui administrative offices and golf course maintenance facilities. Other uses in the immediate vicinity of the Kualapa Loop Bridge approach include the Maui Eldorado and Kaanapali Royal condominiums.

2. *Climate*

Like most areas of Hawaii, Lahaina's climate is relatively uniform year-round. Lahaina's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions, then, is largely left to local terrain.

Average temperatures in Lahaina range between 60 degrees and 88 degrees Fahrenheit. August is historically the warmest month, while January and February are the coolest.

Rainfall at Lahaina is highly seasonal, with most precipitation occurring between October and April when winter storms hit the area. Situated on the leeward side of the West Maui Mountains, this region receives most of its rainfall in late afternoon and early evening, after seabreezes take moisture upslope during the day. Precipitation data collected at the Wahikuli Station (#364) show that on average, January is the wettest month, with 3.31 inches of precipitation, while June is the driest, with just 0.25 inch. The average annual total is 18.5 inches (Environment Impact Study Corp., 1979).

Wind patterns in the Lahaina area are also seasonal. The northeasterly tradewind occurs 90 percent of the time during the summer, and just 50 percent of the time in the winter. Wind patterns also vary on a daily basis, with tradewinds generally being stronger in the afternoon. During the day, winds blow onshore toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warm ocean.

3. ***Topography and Soils***

Honoapiilani Highway is fairly flat with varying longitudinal slopes ranging between 0.5 percent and 4 percent and typical cross slope of 1.5 percent. Approximately 2,300 feet of the highway just beyond Kai Ala Drive is super-elevated with a longitudinal slope of 0.74 percent and a cross slope of 3.5 percent.

Mauka of the highway, topographic maps reveal upland slopes ranging between 1.0 percent to 10.0 percent. Makai of the highway, the lowland coastal slopes range between 1.0 percent to 3.0 percent.

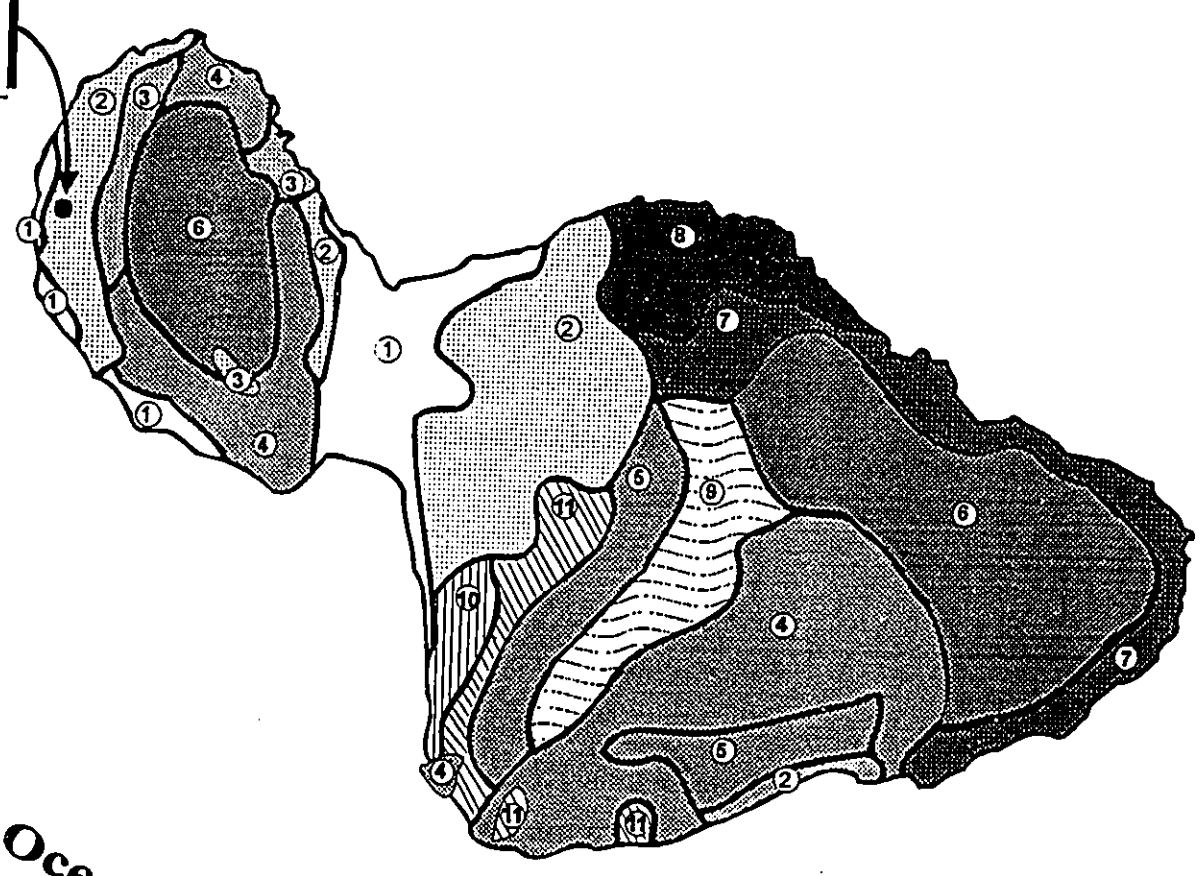
Underlying the project site are the soils of the Waiakoa-Keahua-Molokai association. The Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, characterize the soils of this association as well-drained, moderately fine textured soils which are nearly level to moderately steep. See Figure 17.

Soils underlying the project corridor are of the Wahikuli Series (CcC, WbB), Pulehu Series (PtA, PpA) and Ewa Series (EaA). See Figure 18. General characteristics of these soil types are summarized in Table 1.

LEGEND

1. Pulehu-Ewa-Jaucas association
2. Waiakoa-Keahua-Molokai association
3. Honolua-Olelo association
4. Rock land-Rough mountainous land association
5. Puu Pa-Kula-Pane association
6. Hydrandepts-Tropaquods association
7. Hana-Makaalae-Kailua association
8. Pauwela-Haiku association
9. Laumaia-Kaipoipoi-Olinda association
10. Keawakapu-Makena association
11. Kamaole-Oanapuka association

Project Vicinity



Base Map Source: USDA, Soil Conservation Service

Figure 17 Honoapiilani Highway Widening
Soil Association Map

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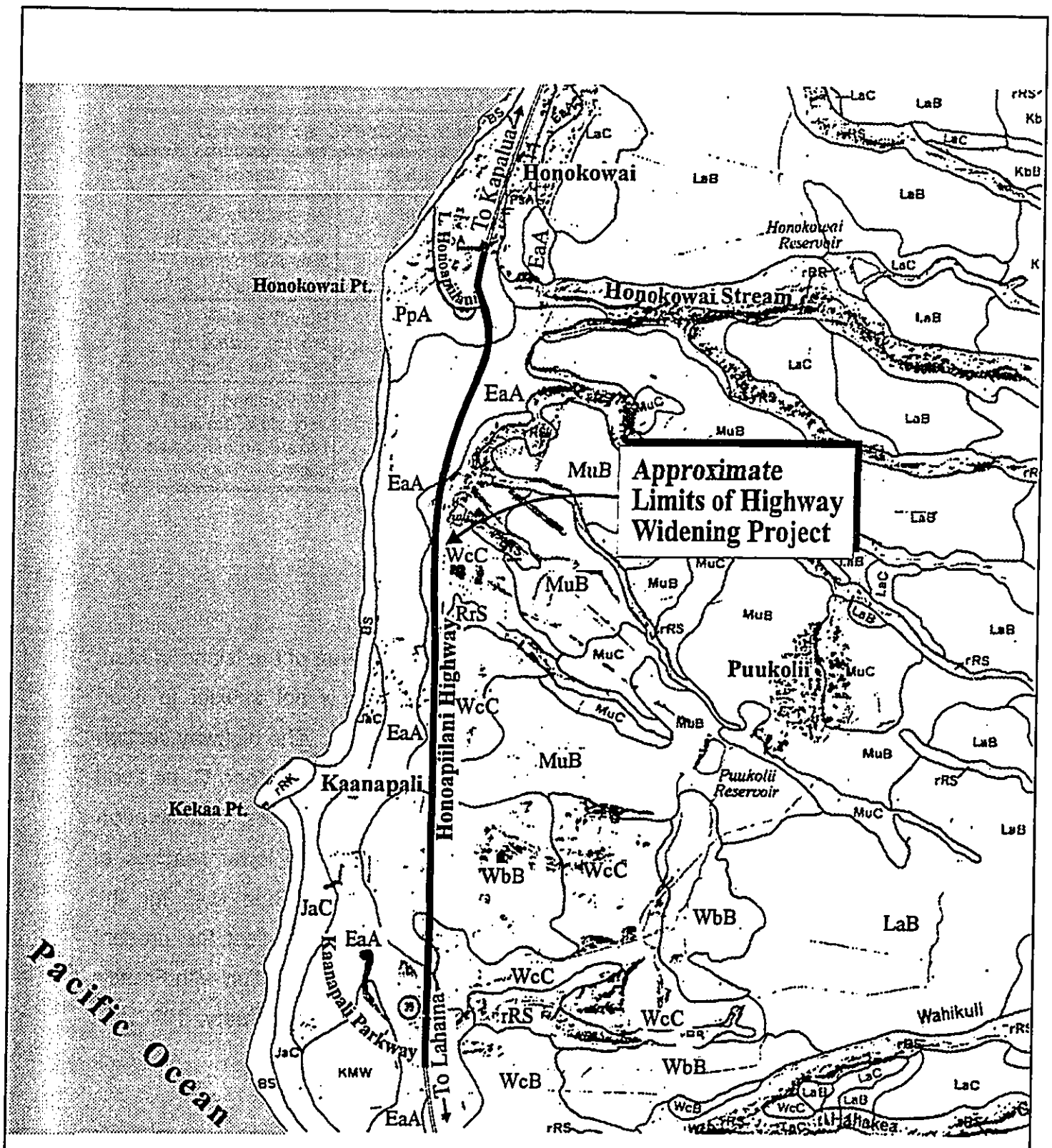
Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE



Base Map Source: USDA, Soil Conservation Service.

Figure 18 Honoapiilani Highway Widening
Soil Classification Map

MUNEKIYO & ARAKAWA, INC.

1000 0 2000 4000 Feet

Prepared for: State of Hawaii, Dept. of Transportation

Table 1

SUMMARY OF SOIL SERIES AFFECTED BY PROJECT		
Soil Series	***Map Symbol***	***Description***
Wahikuli	WcC, WbB	Permeability is moderate, runoff is slow and erosion hazard slight.
Pulehu	PpA	Runoff is slow, erosion hazard no more than slight.
Ewa	EaA	Well-drained, runoff very slow, erosion hazard no more than slight.

4. *Flood Hazard Characteristics*

The Flood Insurance Rate Maps for this area of the Island of Maui indicate that the road widening corridor is not subject to flood hazard conditions (i.e., Zone C designation). The highway section crossing Honokowai Stream is also designated Zone C, as flood channel improvements by the Natural Resources Conservation Service (NRCS) have been completed to the lower reaches of Honokowai Stream. The Flood Insurance Rate Map for the Honokowai Stream area is being revised to reflect the present improved channel conditions (telephone conversation with Francis Cerizo, Land Use and Codes Administration, February, 1996).

5. *Flora and Fauna*

The project corridor, between Kaanapali Parkway and Puukolii Road encompasses a range of ornamental landscaping which complements the surrounding resort landscape character. On the mauka side of the highway, species such as asystasia,

bougainvillea, wedelia, palm trees, and monkey pod trees are found, while in some areas the adjacent area is flat with well-kept grass. On the makai side, conditions vary between gravel with dried brush and grass, wedelia covered fill slope, and basaltic material with asystasia in cut slopes. Beyond Puukolii Road, both sides of the highway are typically medium vegetated with elephant grass, haole koa and scrub brush. In areas approaching Lower Honoapiilani Road and the Honokowai Bridge, the condition changes to well-kept grass slopes. Some areas were previously planted in sugar cane. The car rental facilities and the County's Lahaina Wastewater Reclamation Facility and Highways Division Baseyard are individually landscaped for buffer and visual relief purposes. Due to extensive agricultural and resort uses along the project limits, there are no known endangered species of plants found in this locale.

The region's wildlife include a host of avifauna, including migratory shorebirds, and numerous introduced species such as the Japanese White-eye, Zebra Dove, Spotted Dove, and Common myna. Feral mammals observed in this region include the Small Indian Mongoose, cats, mice and rats. No endangered or threatened animal species are known to inhabit the area surrounding the project corridor.

The U.S. Department of the Interior's National Wetlands inventory does not reveal any wetland areas located within or along the project corridor.

6. ***Archaeology***

The Honoapiilani Highway was originally constructed in 1959. Since then improvements have been made to the highway at various locations within the highway widening project limits. Lands along the project corridor have also been disturbed by either long-time agricultural activities or resort-related developments. There is no evidence of surface features along the proposed widening corridor. It is noted, however, that there has been one report of human skeletal remains within the LWRF. See early consultation comment letter from State Historic Preservation Division (SHPD) dated March 11, 1996 (Chapter X).

7. ***Surface Waters***

Honokowai Stream is a perennial stream stemming from atop the West Maui Mountains. Water from within the stream is diverted by Pioneer Mill Company, Ltd. for irrigation purposes (Hawaii Stream Assessment, December 1990). In the vicinity of the Honokowai Stream bridge, the stream has been previously concrete lined for flood control purposes. The proposed widening of the Honokowai Stream Bridge will be undertaken without affecting the stream channel improvements.

8. ***Air Quality***

Airborne pollutants that do exist can largely be attributed to automobile exhaust from Honoapiilani Highway and other secondary roadways. Other sources may include smoke from sugar cane burning and dust from sugar cane and pineapple operations. These sources are intermittent, however, and the prevailing tradewinds will disperse particulates generated by these temporary sources.

9. ***Noise***

Existing noise along the project corridor is primarily attributed to vehicular traffic. At less populated areas, noise contributors other than traffic are wind and foliage, birds and dogs. The West Maui-Kapalua Airport is also located about 1.5 miles to the north of the Honokowai Stream Bridge crossing. There are no adverse aircraft-related noise conditions which impinge upon the roadway widening corridor.

Results of an acoustic study prepared for the project found levels of noise along the project limits ranging from 68.4 dB for peak morning hour traffic to 73.1 dB for peak afternoon hour traffic. These levels reflect noise conditions 50 feet from the roadway centerline and are considered consistent with existing uses in the area. See Appendix A.

10. ***Scenic and Open Space Resources***

Honoapiilani Highway is the primary coastal roadway servicing the West Maui region. The segment of highway to be improved traverses the Kaanapali resort area and at its closest point is located approximately 1,000 feet from the ocean. Along the project limits, the highway offers views of the resort and mauka agricultural lands, with the West Maui Mountains serving as backdrop. Scenic ocean views are generally not available along this stretch of the roadway.

Along the southern extent of the proposed widening corridor (between Kaanapali Parkway and Puukolii Road) golf courses along either side of the highway provide visual relief for the adjacent developed hotel and condominium properties. The

northern extent of the highway corridor is bordered by the North Beach project area and light industrial and public facility uses.

The highway segment to be widened is not a part of a scenic corridor, nor does it offer significant vantage points to scenic areas.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The resident population of the West Maui region has increased dramatically in the last two (2) decades. Population gains were especially pronounced in the 1970's as the rapidly developing visitor industry attracted many new residents. According to the 1990 Census of Population and Housing, the resident population of the Lahaina District was 14,574 (U.S. Bureau of the Census). The projected resident population for the year 2010 is approximately 22,633 (Community Resources, Inc., 1992).

Growth patterns at the County level exhibit a similar pattern. The County's 1980 resident population of 71,000 has since grown to the present 100,000. The estimated County population for the year 2010 is 145,872 (Community Resources, Inc., 1992).

2. Economy

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which has emerged as one of the State's major resort destination areas.

Agriculture is another vital component of the West Maui economy, with sugar operations handled by the Pioneer Mill. Currently,

Pioneer Mill utilizes approximately 6,700 acres for agricultural cultivation. In addition, Pioneer Mill maintains a full-time, year round workforce of approximately 100 employees. During harvesting season, which begins in early June and ends in late October, sugar operations are supported by a seasonal workforce of 110 employees (P. Brodie, Pioneer Mill Company, Ltd., March 27, 1995). Given the declining economic viability of sugar production, Pioneer Mill has also diversified its agricultural operations by cultivating approximately 500 acres in coffee (P. Brodie, Pioneer Mill Company, Ltd., March 27, 1995).

Maui Land and Pineapple's fields remain an important component of the region's agricultural base. In 1988, Maui Land and Pineapple entered the fresh fruit market, air shipping pineapples to the mainland in an effort to diversify its operations.

C. PUBLIC SERVICES

1. Recreational Facilities

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. There are a number of County parks and State beach parks in West Maui. Approximately one-third of the County parks are situated along the shoreline and are excellent swimming, diving, and snorkeling areas. Popular surfing spots include Fleming Beach, Honolua Bay, and Rainbows. In addition, Kaanapali and Kapalua Resorts operate world-class golf courses which are available for public use.

Recreational areas which were identified in the general vicinity of the proposed project include Hanakao'o Beach Park, Ali'i Kahekili Nui'ahumanu Beach Park (a.k.a., South Park) in Kaanapali, and

Honokowai Beach Park in Honokowai. Recreational amenities for these parks include grassed picnic areas, paved parking and restroom/shower facilities.

Located in the proximity of the project is the Lahaina-Kaanapali & Pacific Railroad, also known as The Sugar Cane Train. This train runs adjacent to the project with boarding stations located in Lahaina, located near Limahana Street, and Puukolii, near Puukolii Road. The Sugar Cane Train operates every day of the year with the first departure at 8:55 a.m. and the last departure at 5:30 p.m.

2. ***Police and Fire Protection***

The project site is within the Lahaina Police Station service area, which services all of the Lahaina district. The Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, and was built in the early 1970's. The Lahaina Patrol includes 54 full-time personnel, consisting of one (1) captain, one (1) lieutenant, seven (7) sergeants, and 39 police officers. The remaining six (6) personnel consist of public safety aides and administrative support staff (telephone conversation with Greg Takahashi, Maui Police Department, February 1996).

Fire prevention, suppression and protection services for the Lahaina District is provided by the Lahaina Fire Station, also located in the Lahaina Civic Center, and the Napili Fire Station, located in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by 30 full-time personnel. The Napili Fire Station consists of an engine company including fifteen (15) full-time firefighting personnel (telephone conversation with Cindy Kagoshima, Maui Fire Department, February 1996).

3. *Medical Facilities*

The only major medical facility on the Island is Maui Memorial Hospital, located approximately twenty (20) miles from Lahaina, midway between Wailuku and Kahului. The 185-bed facility provides general, acute, and emergency care services.

In addition, regular hours are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente Medical Care Program.

4. *Schools*

The State of Hawaii, Department of Education operates four (4) public schools in West Maui: Lahainaluna High School; Lahaina Intermediate School; King Kamehameha Elementary School; and Princess Nahienaena Elementary School. All of the public schools are located within the Lahaina Town area.

D. *INFRASTRUCTURE*

1. *Roadways*

Honoapiilani Highway is the primary arterial serving West Maui. The highway maintains a two-lane configuration from Central Maui to within Lahaina Town, where it transitions to a four-lane section at Lahainaluna Road. This four-lane typical section continues to Kaanapali Parkway, where the roadway transitions back to a two-lane configuration. With the proposed widening improvements the facility will consist of a four-lane section from Honokowai to Lahainaluna Road. The existing ROW within the project varies from 80 feet minimum to as much as 160 feet.

Limited additional ROW will be required to accommodate the widening project. Undeveloped mauka roadside lands owned by Amfac Maui and Pioneer Mill Company, Ltd. and makai roadside lands owned by Amfac Maui and Tobishima Pacific, Inc. will be acquired for the additional ROW. There will be no displacement of residential, commercial or related urban uses as a result of the proposed project.

As previously noted, the widening of Honoapiilani Highway is needed to relieve existing traffic congestion which occurs along this segment of the highway. The proposed improvements will include the modification of existing intersections at Lower Honoapiilani Road, Kaanapali Parkway/Halelo Street, Kekaa Drive, Puukolii Road/Kai Ala Drive and Halawai Drive, as well as the construction of intersection improvements for Road "A". In this regard, the roadway widening and attendant improvements will ensure improved operation for all aspects of travel along this segment of the roadway.

2. ***Water***

The West Maui region is served by the County's Board of Water Supply water system. The County water system services the coastal areas from Launiupoko to Kaanapali and from Honokowai to Napili (County of Maui, Dept. of Water Supply, 1990). Three (3) surface sources and eight (8) wells are used to supply the County domestic system.

In addition to the County system, the West Maui region is served by private water systems, including the Kaanapali Water Corporation's (KWC) system, which services the Kaanapali Resort,

and the Kapalua Water System, which provides water service to the Kapalua Resort.

Existing water facilities within the Honoapiilani Highway ROW along the proposed widening segment include a 16-inch transmission line owned and maintained by the Department of Water Supply. There are no other major public waterlines or related facilities within or in close proximity to the highway corridor.

3. ***Wastewater Systems***

The County's wastewater collection and transmission system and the Lahaina Wastewater Reclamation Facility (LWRF) accommodate the region's wastewater needs. The LWRF, located along Honoapiilani Highway just north of Kaanapali Resort, has been recently upgraded and expanded to a design capacity of 9.0 million gallons per day (MGD).

Operating components of the Lahaina Wastewater Reclamation Facility (LWRF) include a collection and transmission system which serves the West Maui region from Lahaina to Kapalua. Portions of the transmission system are located within the Honoapiilani Highway ROW between Kaanapali Parkway and the LWRF. Located along the makai side of ROW are force mains, gravity lines, and an effluent reuse line.

4. ***Drainage***

Based on hydrologic analysis of the existing conditions in the project area, there are a total of 28 drainage areas; 24 on-site and four (4) off-site. See Appendix B.

Over the past few decades, land use changes mauka of the highway from agricultural to residential, has decreased surface permeability and interception and has altered drainage patterns. Currently, there are 11 existing culverts, a grass swale, seven (7) drain inlets, a natural roadside ditch and a concrete ditch within the project area. Most of the upland, off-site runoff is handled by two (2) trapezoidal concrete ditches which border the lower portion of the golf course, above the cane-haul road located approximately 50 *feet mauka of the highway ROW.*

In general, highway drainage flows to the edge of pavement from the centerline crown or across the entire roadway section in super-elevated sections. In cut sections, runoff is contained at the toe of the cut slope, typically in a narrow gravel or paved space, releasing at the daylight point of the cut slope. In fill sections, runoff flows over the embankment into adjoining areas. Runoff along the mauka edge of the highway collects into roadside ditches where it is transported into one of eleven culvert crossings.

An earth berm constructed outside of the State ROW along the entire length of the existing cane-haul road intercepts upland flows from the golf course and agricultural fields, preventing runoff from flowing down onto the highway.

5. ***Solid Waste Disposal***

West Maui's solid waste requirements are served by the County of Maui's Central Maui Landfill, located near Puunene. County collection service is provided to single-family residences in West Maui. Both County and private collection services utilize the Central Maui Landfill.

A refuse transfer station is located in Olowalu for West Maui residents. This station accepts household refuse and greenwaste, as well as used oil. The County has contracted Maui Disposal Company to transport these wastes to the Central Maui Landfill in Puunene. No commercial use is allowed at the Olowalu transfer station (telephone Conversation with Department of Public Works and Waste Management employee, Elaine Baker, March 1996).

6. ***Electrical and Telephone Service***

Electrical and telephone service to the West Maui region is provided by Maui Electric Company (MECO) and GTE Hawaiian Telephone Company, respectively. Cable service is provided by Hawaiian Cablevision.

MECO has overhead lines on the mauka side of the highway encompassing the entire length of the project. Also sharing MECO's poles are Pioneer Mill Company, GTE Hawaiian Tel, and Hawaiian Cablevision. GTE Hawaiian Tel utilizes these poles for their regional telephone transmission system.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. IMPACTS TO THE PHYSICAL ENVIRONMENT

1. Topography and Landform

The proposed widening project will involve grading and roadwork operations to establish the designed pavement section and structure. To facilitate the highway widening, existing slopes will be cut primarily in the mauka areas between Kaanapali Parkway to Puukolii Road and on the makai side of the highway between Kaanapali Parkway and Kekaa Drive. Retaining walls will be added to the makai side of the highway sections where slope conditions require structural support.

Due to the proximity of existing condominium development along a segment of the highway, there is insufficient area to accommodate fill slopes. Accordingly, a fill retaining wall will be constructed on the makai side of the highway, just south of Kai Ala Drive. North of Kai Ala Drive towards Kahana, existing embankments, on the makai side, will be extended with fill to support the wider highway section. Fill will also be utilized for the bridge approach improvements for the Kulapa Loop Bridge. In general, the proposed extent of earthwork for the project is not considered significant and will not alter local topographic and landform conditions.

2. Flora and Fauna

There are no sensitive native plant communities which are located in the project area. Vegetation along the project corridor is dominated by introduced plant species, and there are no known rare, endangered, or threatened species of flora along the corridor.

Similarly, there are no known rare, endangered, or threatened species of fauna or avifauna within the vicinity of the project corridor.

The proposed project is not anticipated to impact wetland areas and wildlife habitats.

3. ***Archaeological Resources***

With the construction and recent modifications to the Honoapiilani Highway, as well as the development and cultivation of surrounding lands, no archaeological artifacts or sites are anticipated along or within the project site. In addition, coordination with the SHPD during the early consultation phase of the environmental review process has indicated that the proposed project will have "no effect" on historic sites. See SHPD letter dated April 18, 1996 (Chapter X). However, should any archaeological or historic features be uncovered during construction activities, work will be halted and the SHPD will be contacted to ensure that applicable procedures relating to Chapter 6E of the Hawaii Revised Statutes (HRS), are implemented.

It is noted that human skeletal remains were uncovered at the LWRF. The proposed widening in this vicinity will generally be confined to the existing ROW away from the LWRF.

4. ***Air Quality***

Emissions from construction equipment and other vehicles involved in construction activities may temporarily affect the ambient air quality within the immediate vicinity. However, these effects can

be minimized by properly maintaining construction equipment and vehicles.

In addition, dust generated during construction, especially from earth-moving operations such as clearing, excavating, and material importing may also result in a temporary decrease in ambient air quality. Mitigation measures include utilizing dust barriers, waterwagons and/or sprinklers to control dust, and watering graded areas after construction activity has ceased for the day. Watering is also recommended during weekends and holidays to the extent practicable.

On a long-term basis, once construction activities have been completed, project-related vehicular traffic will generate automotive emissions. However, these emissions are not expected to adversely impact local and regional ambient air quality conditions.

5. ***Noise Characteristics***

In the short term, construction-related activities will be the primary source of noise along the project corridor. The duration of noise will last throughout the construction phase. A Community Noise Permit will be required for construction activities occurring during daylight hours.

Additionally, construction activities involving the existing golf cart and maintenance bridges and the new Kualapa Loop Bridge will involve night work on two (2) separate occasions. The night work will generally occur between the hours of 7:00 p.m. to 11:00 p.m. and should involve a total of no more than three (3) nights. Utilizing cranes, night work will include removing the girders of the

existing bridges on one occasion, as well as erecting the girders for the new bridge on a separate occasion (e.g., a month after the removal of the girders). The erection of the girders should involve no more than two (2) consecutive nights.

A Community Noise Variance from the State Department of Health (DOH) will be required for the proposed nighttime construction activities.

The use of quieted portable engine generators and diesel equipment, as well as other noise attenuating equipment are anticipated to mitigate construction noise impacts. Proper equipment and vehicle maintenance are also anticipated to minimize noise levels.

In the long term, vehicular traffic will continue to be the primary source of noise. Findings from the acoustic study determined that noise levels along the project corridor will increase approximately 1.1 dB with or without the project from the Base Year 1992 to 1997. Refer to Appendix A.

Two (2) areas are currently determined to be over the Federal and/or State Criteria of 66 dB and 67 dB, respectively. These areas are identified as the Royal Lahaina Resort employee housing and Building H of the Kaanapali Royal. The employee housing noise levels presently, range from 67 dB during morning peak hour to 70 dB during afternoon peak hour, while Building H measured 67 dB for both morning and afternoon peak hours.

The employee housing noise levels from the Base Year of 1992 will increase by 1 dB for both morning and afternoon peak hours with or without the project. This increase will put these units above both the Federal and State levels. Noise levels at the Kaanapali Royal will also increase 1 dB from Base Year levels. However, only Building H will increase to above Federal and State levels.

With the continued use of air conditioning units in the employee housing, as well as the Kaanapali Royal, further mitigation measures would not be necessary. As new developments occur along open or vacant areas within the project corridor, mitigation measures could include appropriate setbacks, sound attenuating walls, berms or closure and/or air conditioning.

It is also noted that estimated traffic volumes for the year 2020 with and without the project were analyzed to discern the effect projected traffic volumes would have on the conclusions of the original noise study (which utilized 1997 traffic forecasts). Refer to Appendix A.

The analysis revealed that 1997 traffic volumes with and without the widening project were identical and equal to the background ambient traffic. For this reason, and using the 1996 measured traffic noise data, equal volumes of traffic under the "no build" and "build" alternatives resulted in no increase in traffic noise levels. From the 2020 forecasts, the differences in future traffic volumes and noise levels for the year 2020 are also anticipated to result in no increase with or without the highway widening provided that two (2) lanes of the Lahaina Bypass are constructed by the year 2020.

This is also consistent with the conclusions of the original noise study for the year 1997.

In addition, with the projected completion of the Bypass, the 2020 traffic volumes along Honoapiilani Highway north of Kaanapali Parkway are forecasted to be 13 to 17 percent less than those estimated for the year 1997 in the original study and are not anticipated to result in adverse long-term noise impacts.

6. *Scenic and Open Space Resources*

As previously noted, the proposed highway improvements will not affect scenic view corridors. In addition, the widening of the highway is not anticipated to adversely affect the visual character along the highway. The proposed improvements will include landscaping to replace landscaping in areas which will be disturbed by construction. Once construction has been completed, the highway will provide a landscape and visual character similar to existing conditions.

B. *IMPACTS TO THE COMMUNITY SETTING*

1. *Economy*

On a short-term basis, the project will support construction and construction-related employment. Accordingly, the project will have a beneficial impact on the local economy during the construction period. The proposed project will not involve the development or relocation of any residents or structures.

From a long-term perspective, the proposed improvements will mitigate travel delays now experienced by roadway users. The reduction in delays is anticipated to benefit the visitor, business and

transportation industries. Reduction in travel time will especially benefit residents, who spend unproductive time in traffic. The conversion of travel time to productive business and personal time is anticipated to have positive impacts on regional and islandwide business operating conditions.

2. *Fire, Police and Medical Services*

The proposed project will not adversely affect regional public services. The provision of additional highway capacity on Honoapiilani Highway is anticipated to benefit emergency service providers (e.g., fire, police and ambulance service) by reducing roadway congestion and improving response times.

The widened highway will improve the capability to provide for the passage of traffic if there is an accident or other road emergency in the area.

3. *Education and Recreational Facilities*

The proposed roadway improvements are not anticipated to affect educational or recreational services. The road widening improvements will facilitate access to educational and recreational facilities. There are no service demand issues associated with the proposed action.

C. *IMPACTS TO THE INFRASTRUCTURE*

1. *Roadways*

The proposed widening of Honoapiilani Highway from its present two-lane configuration to four (4) lanes will improve traffic flow significantly. The technical measure used in assessing traffic flow is the level of service (LOS) which, in this case, will improve from

its present "E" condition to the "B" level for both the morning and afternoon peak hours. According to the traffic capacity analysis prepared for the Honoapiilani Highway, even with the proposed Lahaina Bypass, Honoapiilani Highway will continue to carry a substantial traffic load because it is the shortest route between employment and residential centers (Austin, Tsutsumi & Associates, Inc., 1994).

During the construction period, some delay in traffic is expected due to temporary detours. A traffic control plan will be prepared to facilitate traffic movement during construction by planning work sequences to minimize the effect on traffic and by using existing shoulders to provide for the passage of two-way traffic.

In addition, a temporary, asphalt-paved detour road with a pavement width of about 24 feet will be utilized to provide two-way directional traffic during the demolition of the existing golf cart and maintenance bridges and the construction of the new Kualapa Loop Bridge. During this period, southbound traffic will be routed from Honoapiilani Highway to Kekaa Drive, Kaanapali Parkway, and back to the highway, while northbound traffic will proceed in the opposite direction. The detour road will be demolished and pre-construction conditions will be restored once the girders for the new bridge have been erected.

2. ***Water***

The proposed action will not adversely affect County or private water facilities and services. The County's 16-inch waterline falls within the Honoapiilani Highway ROW while the KWC's waterlines are generally situated beyond the ROW Should construction

conditions require a need to adjust vertical or horizontal profiles of the County's 16-inch waterline, as well as KWC waterlines, such adjustments will be made in coordination with the Department of Water Supply and the KWC.

3. ***Wastewater***

The proposed widening is not expected to affect wastewater lines along the project corridor. The makai side of the project ROW contains force mains, gravity lines, effluent reuse lines and attendant 60-inch precast manholes. With the highway widening, these manholes may need to be relocated or adjusted in height. Any adjustment made to the manholes will be coordinated with the County of Maui's Wastewater Reclamation Division.

4. ***Drainage and Erosion Control***

To accommodate the widened highway section, the existing drainage system will require renovation. The addition of new drainage structures will increase the number of total drainage areas to 31, with 26 on-site and five (5) off-site. Based on hydrologic and hydraulic analysis, new drainage structures have been added where deemed necessary, and gutters and swales have been designed to collect on-site/off-site runoff and convey flows to the drainage structures. Refer to Appendix B.

The proposed project will involve new culverts at nine (9) locations, two (2) new catch basins, two (2) new storm drain manholes, three (3) new drain inlets, and the extension of eight (8) existing culverts, as well as the relocation of three (3) existing drain inlets. Mauka of the highway, a grass swale and 13 new gutter sections are

proposed, while makai of the highway, five (5) new gutter sections will be added.

Additional pipe culverts will be added parallel to existing culverts at two (2) locations, while two (2) new 24-inch culverts will be installed mauka of the highway crossing Puukolii Road. In addition, a new 24-inch culvert will be constructed beneath Road "A", while a new 18-inch culvert will be connected to two (2) new catch basins at Halawai Drive.

The 18-inch culvert will alleviate current ponding conditions at the Halawai Drive intersection by conveying runoff to an open field across the highway and makai of the intersection.

The drain inlets proposed for relocation will maintain original drainage patterns and areas are provided primarily to accommodate the widened highway. Roadside improvements proposed mauka and makai of the highway include V-shaped gutters of various widths, with gutter slopes reflecting existing drainage patterns and roadway slopes.

The erosion hazard during construction activities is anticipated to be no more than slight due to soil condition and grading work which will be implemented pursuant to NPDES requirements. The following erosion control measures will be utilized in the development of the road widening project:

1. Hydromulch graded areas not actively being graded;
2. Adequate water spraying with a water wagon or sprinkler system;

3. Construct sediment traps and siltation fences;

4. Detention swale system and earth channels; and

5. Vegetation of all exposed slopes and open areas upon completion of grading.

The proposed drainage system improvements will be designed to produce no adverse effects from stormwater runoff to adjacent and downstream properties. The proposed improvements will conform to, and be coordinated with, applicable regulatory standards and agencies.

5. Solid Waste

Solid waste disposal of cleared and grubbed material will be coordinated with the County of Maui, Department of Public Works and Waste Management's Solid Waste Division. The proposed construction activity is not anticipated to adversely impact landfill capacity conditions.

6. Electrical and Telephone Services

With the highway widening corridor, it has been determined that approximately 42 utility poles on the mauka side of the highway will need to be relocated further mauka to accommodate the widening. Relocation activities will involve the installation and re-wiring of new poles, as well as relocating utility boxes at affected intersections.

All relocation activities will be coordinated with Maui Electric Company, Pioneer Mill, GTE Hawaiian Telephone, and Hawaiian Cablevision Company, respectively.

Chapter IV

Relationship to Governmental Plans, Policies, and Controls

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The proposed project falls within the "Urban" and "Agricultural" districts. Public roadways are permissible within the "Urban" and "Agricultural" districts. See Figure 19.

B. MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As stated in the Maui County Charter, "The purpose of the General Plan is to recognize and state the major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development".

The proposed action is in keeping with the following General Plan objectives and policies:

Objective: To develop a program for anticipating and enlarging the local street and highway systems in a timely response to planned growth.

Policy: Ensure that transportation facilities are anticipated and programmed for construction in order to support planned growth.

C. STATEWIDE LAND TRANSPORTATION PLAN

The County of Maui Long Range Transportation Plan was published by the State Department of Transportation in 1996. The plan is a culmination

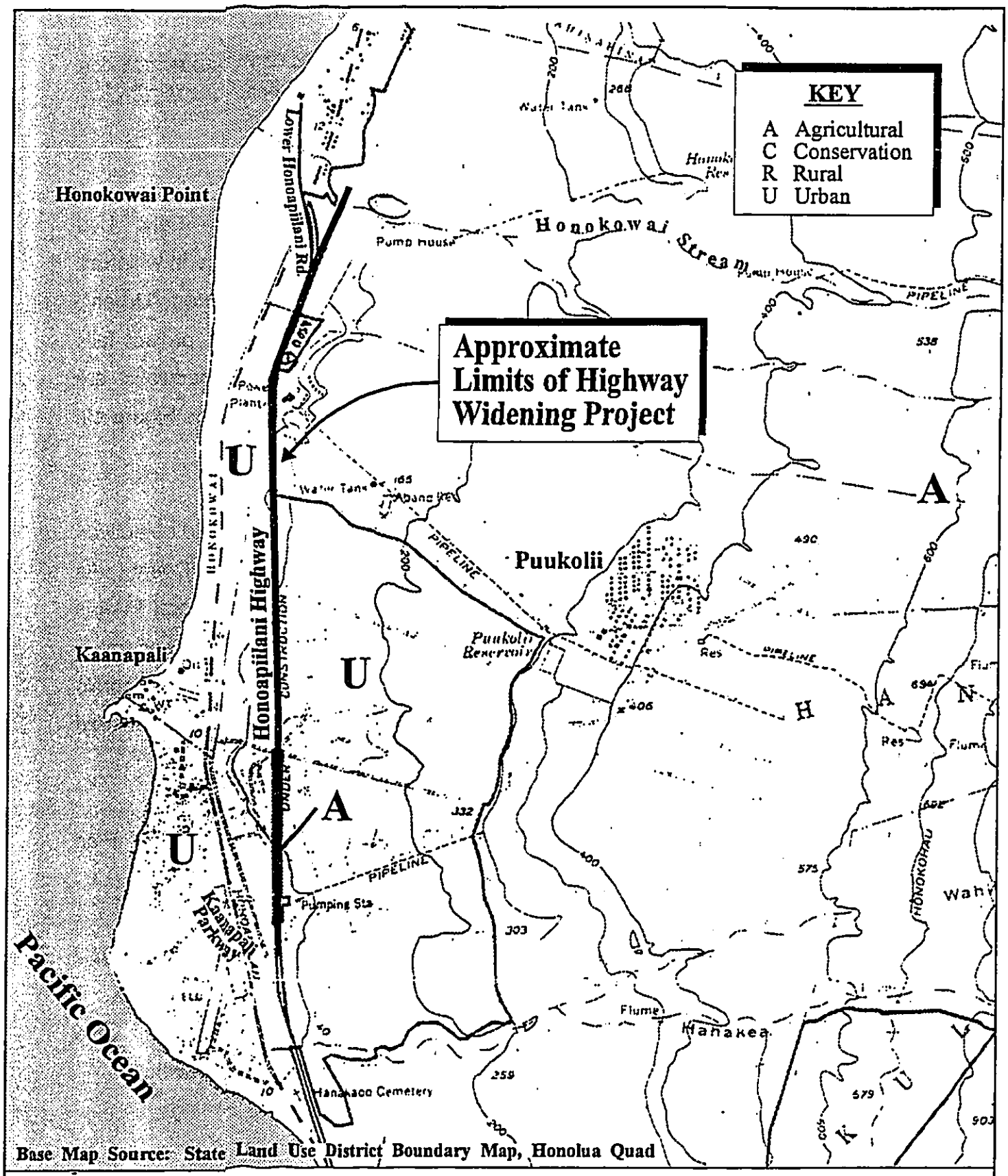


Figure 19 Honoapiilani Highway Widening

State Land Use Classifications

MUNEKIYO & ARAKAWA, INC.

1000 0 2000 4000 Feet

Prepared for: State of Hawaii, Dept. of Transportation

of a detailed planning process which included roadside surveys, travel demand forecasting, alternatives evaluation and funding evaluation. Importantly, the planning process encompasses a public involvement program which offered local input to compliment technical analysis.

The Long Range Transportation Plan identifies capital improvements required to the year 2020 to address the planning horizon's roadway capacity needs. Projects were prioritized and placed into three (3) implementation time periods: Years 1996-2000, 2001-2005 and 2006-2020. Projects placed within the first time frame are considered of highest priority and those which should be implemented first. Evaluation criteria for project placement were need, cost effectiveness, external benefits, and project readiness. The Honoapiilani Highway Widening Project has been placed in the high priority time frame of Years 1996-2000.

D. ***WEST MAUI COMMUNITY PLAN***

The project is located in the West Maui Community Plan region. This region is one (1) of nine (9) Community Plan regions established in the County of Maui. The Community Plans establish regional planning guidelines and implement the objectives and policies of the Maui County General Plan.

The County of Maui recently conducted a comprehensive update of each regional Community Plan. The proposed highway widening project is in keeping with the objectives and policies of the West Maui Community Plan. In particular, the project is in consonance with the following Community Plan objective.

> Support improvements for the safe and convenient movement of people and goods, pedestrians and bicyclists in the Lahaina region particularly along

> Honoapiilani Highway, Front Street and Lower Honoapiilani Road and seek to establish a regional network of bikeways and pedestrian paths.

The proposed project also advances an integral component of the following Community Plan recommendation:

> Widen the existing highway to four lanes from the pali to Lahaina and from Kaanapali Parkway to Office Road (Lower Honoapiilani Road).

E. ***SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES***

Pursuant to Chapter 205A, Hawaii Revised Statutes, and the Rules and Regulations of the Planning Commission of the County of Maui, projects located within the SMA are evaluated with respect to SMA objectives, policies and guidelines.

Proposed actions within the SMA include the construction of four (4) drainage headwalls, a temporary detour road and a fill slope along the makai side of the highway in the vicinity of the Kai Ala Drive intersection which extends north approximately 0.5 mile, as well as improvements to the makai bridge approach for the Kualapa Loop Bridge.

This section addresses the project's relationship to applicable coastal zone management considerations, as set forth in Chapter 205A and the Rules and Regulations of the Planning Commission.

Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

a. Improve coordination and funding of coastal recreation planning and management; and

b. Provide adequate, accessible and diverse recreational opportunities in the coastal zone management area by:

   i. Protecting coastal resources uniquely suited for recreation activities that cannot be provided in other areas;

   ii. Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

   iii. Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

   iv. Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

   v. Ensuring public recreational use of County, State, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

   vi. Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters; and

   vii. Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions, and crediting such dedication against the requirements of Section 46-6 of the Hawaii Revised Statutes.

Response: The proposed project will not impact coastal recreational resources. Access to shoreline areas will remain unaffected by the proposed action.

Historical/Cultural Resources

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

Policies:

a. Identify and analyze significant archaeological resources;

b. Maximize information retention through preservation of remains and artifacts or salvage operations; and

c. Support State goals for protection, restoration, interpretation and display of historic resources.

Response: The highway ROW and immediate adjoining areas have been previously developed. There are no surface archaeological features impacted by the proposed widening action. As indicated by the SHPD, the proposed project will have "no effect" on historical or cultural resources.

Scenic and Open Space Resources

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

Policies:

a. Identify valued scenic resources in the coastal zone management area;

b. Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural land forms and existing public views to and along the shoreline;

c. Preserve, maintain and, where desirable, improve and restore shoreline open space and scenic resources; and

d. Encourage those developments which are not coastal dependent to locate in inland areas.

Response: The proposed project will not impact coastal scenic and open space resources and will not affect scenic view corridors.

Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

a. Improve the technical basis for natural resource management;

b. Preserve valuable coastal ecosystems of significant biological or economic importance;

c. Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

d. Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Response: The proposed highway improvements are not anticipated to affect coastal ecosystems. Appropriate measures will be implemented to mitigate the impacts of soil erosion and stormwater runoff during the construction of the project.

Economic Uses

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

Policies:

a. Concentrate coastal dependent development in appropriate areas;

b. Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy-generating facilities are located, designed, and constructed to minimize adverse social, visual and environmental impacts in the coastal zone management area; and

c. Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

i. Utilization of presently designated locations is not feasible;

ii. Adverse environmental effects are minimized; and

iii. The development is important to the State's economy.

Response: The project will have a beneficial short-term impact on the local economy during construction by providing construction-related employment. The project is essential to the Lahaina/Kaanapali regional transportation network and will enhance traffic circulation and access to residential, commercial, resort and recreational destinations within the West Maui region. In this context, the proposed project is considered significant in maintaining and enhancing the region's long-term economic stability.

Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies:

a. Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

b. Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

c. Ensure that developments comply with requirements of the Federal Flood Insurance Program;

d. Prevent coastal flooding from inland projects; and

e. Develop a coastal point and nonpoint source and pollution control program.

Response: With the existing Honokowai Stream Channel improvements, the entire project corridor falls within Zone C, an area of minimal flooding. The proposed drainage system improvements are anticipated to improve existing drainage conditions and facilitate the flow of surface runoff. No adverse drainage impacts to adjoining and downstream properties are anticipated as a result of the proposed action.

Managing Development

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

Policies:

a. Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

b. Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and

c. Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

Response: This Environmental Assessment is being prepared for public review in compliance with Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement Rules, and 23 CFR 771, Environmental Impact and Related Procedures.

In addition, applicable State and County requirements will be adhered to in the design and construction of the proposed project.

Public Participation

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

a. Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;

b. Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and

c. Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: The proposed project is designed to accommodate current and projected traffic demands in the West Maui region. Public awareness and participation for this project is facilitated through the Chapter 343, HRS process. The proposed project is not contrary to the objective of public awareness, education and participation.

Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

a. Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;

b. Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

c. Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response: The proposed project will not adversely impact any beaches in the vicinity.

Chapter V

Summary of Adverse Environmental Effects Which Cannot Be Avoided

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed highway widening improvements will result in temporary construction-related impacts as described in Chapter III, Potential Impacts and Mitigation Measures.

Potential effects include noise-generated impacts occurring from site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust emissions discharged by construction equipment. These impacts are short term in nature and are not expected to create adverse environmental effects.

The proposed highway widening project is intended to improve highway operating conditions through the Honokowai and Kaanapali areas. From a long term perspective, there are no significant adverse environmental effects anticipated as a result of the proposed roadway improvements.

Chapter VI

Alternatives to the Proposed Action

VI. ALTERNATIVES TO THE PROPOSED ACTION

The widening of the Honoapiilani Highway from the Kaanapali Parkway intersection and extending past the Honokowai Stream Bridge is essential in reducing traffic congestion along this section of the highway. With its current level of operation, the highway is at or exceeds capacity, which results in unnecessary and excessive travel delays. With the proposed project, motorists will see a significant improvement in roadway operating conditions.

The proposed project is not anticipated to generate new traffic; however, it is anticipated to enhance peak period capacities and alleviate congestion at major intersections.

A. NO ACTION ALTERNATIVE

In light of the established need for the proposed improvements, the "no action alternative" does not represent a responsible option in addressing transportation system requirements for the Lahaina/Kaanapali area.

B. DEFERRED ACTION ALTERNATIVE

A "deferred action" alternative will have similar consequences as a "no action" alternative as problems relating to traffic congestion and delays will continue to persist and potentially increase. Deferring the development of the proposed improvements may also result in higher implementation costs.

Chapter VII

Irreversible and Irretrievable Commitments of Resources

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed project would involve the commitment of fuel, labor, funding, and material resources.

Development of the proposed project will also involve the commitment of land for roadway improvements. To accommodate the proposed widening, additional ROW will be acquired from Amfac Maui and Pioneer Mill Company, Ltd. mauka of the highway, while makai of the highway, the required ROW will be obtained from Amfac Maui and Tobishima Pacific, Inc. This commitment of land resources is consistent with existing and future land uses, and transportation improvement objectives for the project area.

Chapter VIII

Findings and Conclusions

VIII. FINDINGS AND CONCLUSIONS

The proposed project will involve road widening and related improvements to Honoapiilani Highway between the Kaanapali Parkway intersection and a point approximately 1,000 feet north of the Honoapiilani Highway /Lower Honoapiilani Road intersection, in the vicinity of Honokowai Stream bridge. Encompassing approximately 2.2 miles, the proposed project is intended to provide additional capacity and improve overall highway operations. The project will involve widening the highway from two (2) lanes to four (4) lanes. Additional ROW required for the project will be acquired from Amfac Maui and Pioneer Mill Company, Ltd. for mauka roadside lands and from Amfac Maui and Tobishima Pacific, Inc. for makai roadside lands.

Since State funds are proposed to be utilized for the project, an Environmental Assessment has been prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules of the State Department of Health. A County Special Management Area Use Permit is also being requested.

Every phase of the proposed action, expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action have been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Administrative Rules. Based on the analysis, the proposed project will not result in any significant impacts. Discussion of project conformance to the criteria is noted as follows:

1. ***No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resource Would Occur as a Result of the Proposed Project***

   Flora within the project area generally consists of scrub brush, grassed slopes, asystasia, haole koa, elephant grass, wedelia, and bougainvillea. No wetlands exist within the project site. Fauna and avifauna are typical

of a developed area. There are no known, rare, endangered or threatened species of flora, fauna, or avifauna within the project limits.

Coordination with the State Historic Preservation Division during the early consultation phase of the environmental review process has indicated that the proposed project will have "no effect" on historic sites.

2. ***The Proposed Action Would Not Curtail the Range of Beneficial Uses of the Environment***

The majority of improvements will occur within the highway's existing ROW Limited ROW acquisition will be required on the mauka and makai sides of the highway, while improvements for the Kualapa Loop Bridge approach and fill slopes will occur beyond the highway ROW The roadway segment encompassed by the highway widening project traverses lands which are designated for urban uses. As such, the use of these lands for additional ROW, as well as fill slope and bridge approach improvements, is not anticipated to have a significant effect on beneficial uses of the environment.

3. ***The Proposed Action Does Not Conflict With the State's Long-Term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, HRS***

The State Environmental Policy and Guidelines are set forth in Chapter 344, HRS. The proposed action is in consonance with the following policies and guidelines:

Environmental Policy:

Enhance the quality of life by:

* * *

(A) Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian.

Guidelines:

* * *

Transportation

* * *

(A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State.

4. ***The Economic or Social Welfare of the Community or State Would Not Be Substantially Affected***

The proposed project will directly benefit the local economy by providing construction and construction-related employment. The proposed project will also have a beneficial effect upon the social welfare of the community by providing for the safe and convenient movement of traffic in the West Maui region.

5. ***The Proposed Action Does Not Affect Public Health***

No adverse impacts to the public's health and welfare are anticipated.

6. ***No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities, are Anticipated***

No significant population changes are anticipated as a result of the proposed project. The project involves the provision of an additional two (2) travel lanes to address existing highway capacity constraints.

The proposed project will improve highway capacity, as well as traffic circulation and reduce traffic congestion between Kaanapali Parkway and Honokowai.

The applicant will coordinate the relocation of improvements (e.g., waterlines, utility poles) with the appropriate County agencies and utility companies to ensure that the proposed road widening activities do not impact their facilities.

Stormwater runoff is expected to be accommodated by the proposed drainage system improvements. In addition, the proposed project will facilitate access to educational and recreational resources by improving traffic circulation and is anticipated to benefit public services, such as police, fire and medical services by reducing traffic congestion and improving response times.

7. ***No Substantial Degradation of Environmental Quality is Anticipated***

Excavation, grading, and fill activities will create temporary short-term nuisances related to noise and dust. Appropriate dust control and noise mitigation measures will be implemented by the contractor to ensure that fugitive dust and noise generated in connection with construction is minimized.

No substantial degradation of environmental quality resulting from the project is anticipated.

8. ***The Proposed Action Does Not Involve a Commitment to Larger Actions, Nor Would Cumulative Impacts Result in Considerable Effects On The Environment***

The proposed project would be built in one (1) phase and will not involve a commitment to future expansion or larger actions.

9. ***No Rare, Threatened or Endangered Species or Their Habitats Would be Adversely Affected By The Proposed Action***

There are no rare, threatened or endangered species of flora, fauna, or avifauna or their habitats within the project limits.

10. ***Air Quality, Water Quality or Ambient Noise Levels Would Not Be Detrimentally Affected By The Proposed Project***

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, and erection of dust screens will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper equipment and vehicle maintenance, are anticipated to mitigate noise from construction activities.

In the long term, the project is not anticipated to have a significant impact on air quality or ambient noise conditions.

11. ***The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such As Flood Plains, Tsunami Zones, Erosion-prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters or Coastal Waters***

The road widening corridor is situated within Zone C (areas of minimal flooding) and is not subject to flood hazard conditions. The highway section crossing Honokowai Stream is also designated Zone C due to

flood channel improvements already made to the lower reaches of the stream by the NRCS.

Construction activities related to the widening of the bridge to four (4) lanes will not affect the stream channelization improvements. No stream-related permits will be required as a result.

12. ***The Proposed Project Will Not Substantially Affect Scenic Vistas and Viewplanes Identified in County or State Plans or Studies***

The proposed project will not affect coastal scenic and open space resources and will not affect scenic view corridors.

13. ***The Proposed Project Will Not Require Substantial Energy Consumption***

The proposed project will involve the commitment of fuel for construction equipment, vehicles, and machinery during construction activities. However, this use will be short term and is not anticipated to result in a substantial consumption of energy resources.

Based on the foregoing findings, it is concluded that the proposed action will not result in any significant impacts.

Chapter IX

List of Permits and Approvals

IX. LIST OF PERMITS AND APPROVALS

The following State and County permits and approvals will be required prior to the implementation of the project:

State of Hawaii

National Pollutant Discharge Elimination System (NPDES) Permit

Community Noise Permit (daytime construction activities)

Community Noise Variance (nighttime construction activities)

County of Maui

Special Management Area (SMA) Use Permit

Construction Permits (e.g., grading, building).

Chapter X

Agencies Contacted in the Preparation of the Draft Environmental Assessment; Letters Received and Responses to Substantive Comments

X. AGENCIES CONTACTED IN THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were contacted during the preparation of the Draft Environmental Assessment:

LETTERS RECEIVED & RESPONSES TO SUBSTANTIVE COMMENTS		
Federal Agencies	**Date of Letter**	**Date of Response**
Department of the Army, Corps of Engineers	12/2/96	NRR
Department of the Interior, Fish and Wildlife Service, Pacific Division	12/6/96	NRR
State Agencies	**Date of Letter**	**Date of Response**
Department of Health - Maui District Health Office	2/22/96	NRR
Department of Land and Natural Resources, Land Division - Maui	NCR	NRR
Department of Land and Natural Resources, State Historic Preservation Division	3/11/96, 4/18/96	NRR
County of Maui	**Date of Letter**	**Date of Response**
Department of Fire Control	NCR	NRR
Department of Parks and Recreation	2/15/96	NRR
Department of Planning	3/11/96	10/16/96
Department of Public Works and Waste Management	2/21/96, 2/29/96	10/16/96
Department of Water Supply	2/27/96	10/16/96
Utilities	**Date of Letter**	**Date of Response**
GTE Hawaiian Telephone Co.	3/28/96	10/16/96
Maui Electric Co., Ltd.	4/10/96	10/18/96
NCR - No Comments Received NRR - No Response Required		

Pursuant to the early consultation requirements of the environmental review process, comments received from the above-referenced agencies and utilities, as well as responses to substantive comments, are included in this section.

EARLY CONSULTATION COMMENT LETTERS

DEC 9 1996

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

REPLY TO ATTENTION OF:

December 2, 1996

Operations Branch

Mr. Glenn Tadaki
Munekiyo & Arakawa, Inc.
305 High Street
Suite 104
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

This is in response to your request for a Department of the Army (DA) jurisdictional determination for the Honoapiilani Highway Widening, Kaanapali to Honokowai, Maui, Hawaii. The proposed project involves approximately 2.2 miles of widening the existing highway with an additional two (2) lanes. At the concrete lined Honokowai Channel, the bridge widening work will span the channel.

Based on the November 27, 1996 facsimile provided by Austin, Tsutsumi & Associates, Inc., a DA permit will not be required as all work will be done outside of the channel walls. Should the project be modified to include work within the channel, please notify our office as a DA permit may be required.

File number 970000037 is assigned to this project. Please refer to this number in any future correspondence. You may call Ms. Lolly Silva at 438-9258, extension 17 if additional information is needed.

Sincerely,

Linda M. Hihara-Endo, Ph.D., P.E.
Acting Chief, Operations Branch

Copy Furnished:

Mr. Terrance Arashiro, Austin, Tsutsumi & Associates, Inc.,
501 Sumner Street, Suite 521, Honolulu, Hawaii 96817

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

In Reply Refer To: AAP

DEC 6 1996

Mr. Glenn Tadaki
Munekiyo & Arakawa, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Request for Information regarding the Honoapiilani Highway Widening, Maui, Hawaii

Dear Mr. Tadaki:

The U.S. Fish and Wildlife Service (Service) has reviewed your request for information regarding the proposed widening of Honoapiilani Highway on Maui, Hawaii. The project sponsor is the State of Hawaii Department of Transportation, and the consulting firm of Munekiyo & Arakawa, Inc. will prepare an Environmental Assessment (EA) for the project. The Service offers the following comments for your consideration.

The proposed project involves widening of the Honoapiilani Highway from two lanes to four lanes in the area between Kaanapali Parkway and the Honokowai Stream. The road widening will extend approximately 1,000 feet north of the Lower Honoapiilani Road.

Based on our review of The Nature Conservancy of Hawaii's Natural Heritage Program maps and the Service's National Wetland Inventory maps, the affected area lacks rare, threatened and endangered species and wetlands. Therefore, the Service does not anticipate significant adverse impacts to fish and wildlife resources to result from the proposed highway widening project.

We appreciate the opportunity to comment. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Arlene Pangelinan at 808/541-3441.

Sincerely,

for Brooks Harper
Field Supervisor
Ecological Supervisor

FEB 23 1996

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIKE
DIRECTOR OF HEALTH

LAWRENCE HART, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

February 22, 1996

Ms. Camille Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

Subject: Honoapiilani Highway Widening

Thank you for the opportunity to review and comment on the project. We have the following comment to offer:

Any construction discharge into state waters will require a National Pollutant Discharge Elimination System (NPDES) permit.

Should you have any questions, please call me at 243-5255.

Sincerely,

HERBERT S. MATSUBAYASHI
Chief Sanitarian

hpiilani

MAR 13 '96

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

DEPUTY
GILBERT COLOMA-AGALIAN

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

March 11, 1996

Ms. Camilla Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

LOG NO: 16706
DOC NO: 9603KD10

Dear Ms. Nakashima

SUBJECT: **Historic Preservation Review of Honoapiilani Highway Improvements, Ka'anapali Parkway to Honokawai**
Lahaina District, Island of Maui
TMK: 4-4-01, 02, 06, 08

Thank you for the opportunity to comment on the proposed Honoapiilani Highway improvements project in the Ka'anapali Resort area. The proposed project will add two traffic lanes to the existing two-lane highway, and improve four intersections between Ka'anapali Parkway and the Lower Honoapiilani Road junction at Honokawai.

Most of the improvement project passes through the Ka'anapali resort area and is bordered on two sides by the golf course and resort facilities such as condominium parking lots or landscaped buffer areas. Near Honokawai, the project is bordered by sugar cane fields and the County of Maui wastewater treatment plant.

There are no previously recorded archaeological sites within the area of the present highway. Archaeological surveys have been conducted for portions of the land which borders the project corridor. The eastern side of the existing highway between Ka'anapali Parkway and Pu'ukolii Road was included in a survey for the South Beach Mauka development (*Archaeological Inventory Survey, South Beach Mauka Development Site, Hanakao'o, Lahaina District, Island of Maui*, P. Jensen 1990). The area along the west side of the existing highway at Honokawai was examined as part of an inventory survey for a proposed development (*Archaeological Inventory Survey of TMK: 4-4-01: 2, 11 and 12, Honokawai, Maui*, A. Sinoto and J. Pantaleo 1992).

In addition to these surveys, there has been one report of an inadvertent discovery of human skeletal remains within the County of Maui wastewater treatment plant area. This site was located a short distance east from the existing highway right of way, just south of the Honokawai junction.

It appears that the highway widening project will have "no effect" on historic sites in the area between Ka'anapali Parkway and Pu'ukolii Road. The remainder of the project corridor will need to be more closely examined in order to determine whether the presence of historic sites is likely. Much of this area is in cane cultivation or has been developed for light industrial use, and the presence of historic sites is not likely. However, we would like more information on the specific location of the project corridor north of Pu'ukolii Road, so that we can confirm current land uses, and determine the project corridor location in relation to the previously identified human burial site.

If you have any questions, please contact Ms. Theresa K. Donham at 243-5169.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

KD:jen

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

APR 25 1996

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

DEPUTY
GILBERT COLOMA-AGARAN

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

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

April 18, 1996

LOG NO: 16946
DOC NO: 9604KD11

Ms. Camilla Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

SUBJECT: Historic Preservation Review of Honoapiilani Highway Improvements, Ka'anapali Parkway to Honokawai, Lahaina District, Island of Maui
TMK: 4-4-01, 02, 06, 08

Thank you for additional information regarding the proposed Honoapiilani Highway widening project in the Ka'anapali area, as requested in our letter of March 11 1996. Based on the information provided in the project plans, it appears that the proposed work north of Pu'ukoili Road will not extend into undisturbed areas, or areas that have a high potential for subsurface historic sites.

In our previous review of this project, we indicated that the portion of the road widening between Ka'anapali Parkway and Pu'ukoili Road would have "no effect" on historic sites. Based on the new information, we also believe that the portion of the project north of Pu'ukoili Road will have "no effect" on historic sites.

If you have any questions, please contact Ms. Theresa K. Donham at 243-5169.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

KD:jen

FEB 20 1996

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580-C Kaahumanu Avenue, Wailuku, Hawaii 96793

LINDA CROCKETT LINGLE
Mayor
HENRY OLIVA
Director
ALLEN SHISHIDO
Deputy Director

(808) 243-7230
FAX (808) 243-7934

February 15, 1996

Camilla Nakashima, Junior Planner
Munekiyo & Arakawa, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

SUBJECT: Honoapiilani Highway Widening

We have reviewed the above-referenced project and have no objections or comments to the proposed action.

If you require additional information, please contact Patrick Matsui at 243-7387.

Sincerely,

HENRY OLIVA
Director

PTM

c: Patrick Matsui

LINDA CROCKETT LINGLE
Mayor

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

MAR 14 1996

DAVID W. BLANE
Director

GWEN OHASHI HIRAGA
Deputy Director

March 11, 1996

Ms. Camilla Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells Street
Suite 3
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

RE: Honoapiilani Highway Widening

We have reviewed your request for Environmental Assessment of the subject project and offer the following comments:

1. The information provided is too preliminary to offer any reasonable comments on the environmental assessment of the project at this time. A comprehensive assessment of environmental impacts will be possible following the preparation of preliminary plans illustrating the extent of disturbance.

2. The proposed project will not require an SMA permit, provided, the disturbance remains within the existing right-of-way. Should the disturbance encroach makai of the existing right-of-way, an SMA permit will be required for the area of disturbance.

3. Appropriate measures should be implemented during construction to mitigate the short-term impacts of the project relative to soil erosion from wind and water, ambient noise levels, and traffic disruptions.

4. Attention should be given to the compatibility of the project with the recently approved West Maui Community Plan Update.

Should you need additional information on this subject, please contact Don A. Schneider of this office at 243-7735.

Very truly yours,

Gwen Ohashi Hiraga

DAVID W. BLANE
Planning Director

DWB:ds
cc:Colleen Suyama
Don Schneider
Project File
(k:\letter.wpd)

LINDA CROCKETT LINGLE
Mayor

CHARLES JENCKS
Director

DAVID C. GOODE
Deputy Director

AARON SHINMOTO, P.E.
Chief Staff Engineer

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Land Use and Codes Administration

EASSIE MILLER, P.E.
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.
Engineering Division

DAVID WISSMAR, P.E.
Solid Waste Division

BRIAN HASHIRO, P.E.
Highways Division

FEB 23 1996

February 21, 1996

Ms. Camilla Nakashima
MUNEKIYO & ARAKAWA, INC.
1823 Wells Street, Suite 3
Wailuku, HI 96793

SUBJECT: HONOAPI'ILANI HIGHWAY WIDENING

Dear Mr. Nakashima:

In response to your letter dated February 9, 1996, we offer the following comments:

1. That Honoapi'ilani Highway at all intersections (private and government) be improved to standards as specified in the T.I.A.R. and as approved by the County; and

2. That construction plans be submitted for County's review and approval prior to construction.

Please contact me at (808) 243-7745 if you have any questions.

Very truly yours,

Cary Yamamoto

for Lloyd P.C.W. Lee

MAR 5 1996

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

February 29, 1996

Ms. Camilla Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

SUBJECT: Environmental Assessment
HONOAPIILANI HIGHWAY WIDENING

We reviewed the subject environmental assessment and have the following comments:

1. There are existing wastewater gravity lines, force mains and effluent reuse lines on the makai side of this project for the entire length. The gravity lines have 60" precast manholes with PVC liners. Any raising or lowering of manholes will need to be relined as approved by our Wastewater Reclamation Division.

2. There is a possibility that we will be extending the existing Lahaina Wastewater Pump Station #3 force main across the Kaanapali Parkway within the next 4 to 5 years.

3. Existing roadway and traffic conditions at the intersection of Honoapiilani Highway and Lower Honoapiilani Road and the Lahaina Wastewater Reclamation Facility are difficult as is and makes for risky and dangerous left turns out of the plant. What improvements are planned to improve ingress/egress to the plant and Lower Honoapiilani Road? We have daily hauling of sludge with tractor trailers and need to make the left turn out of the plant. Left turns out of the plant would be made easier by installation of a traffic signal.

4. The cleared and grubbed material to be disposed at our landfill must be suitable as cover material.

   Please contact Mike Souza, Central Maui Landfill, at 877-5319 prior to disposing the material at the landfill.

Very truly yours,

CHARLES JENCKS
Director of Public Works and Waste Management

AS:ey/mt
xc: Engineering Division
Solid Waste Division
Wastewater Reclamation Division
g:\land\camihpilani.ea

MAR 4 1996

BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

February 27, 1996

Ms. Camilla Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells Street, Suite 3
Wailuku, Hawaii 96793

Dear Ms. Nakashima:

Subject: HONOAPIILANI HIGHWAY WIDENING

In response to your letter dated February 8, 1996 regarding the above project, the Department of Water Supply has a 16-inch water transmission line that may be affected by the roadway widening. Relocation of the transmission line may be required depending on the location of the new pavement relative to the waterline. Construction plans of the existing transmission line are available at our department for reference.

Should you have any questions please contact our engineering division at 243-7835.

Sincerely,

for David R. Craddick
Director

HC:sc

APR 01 1996

GTE Hawaiian Tel

GTE Hawaiian Telephone Company Incorporated
60 South Church Street • Wailuku, HI 96793 • 808 242-5102

Beyond the call

March 28, 1996

Munekiyo & Arakawa, Inc.
Planning, Environmental Studies,
Project Management
1823 Wells St., Suite 3
Wailuku, Hawaii 96793
Attn: Ms. Camilla Nakashima

Subject: Honoapiilani Highway Widening
From Kaanapali Parkway Intersection
to Honokowai Stream

Dear Ms. Nakashima,

This letter is in response to your letter dated March 21, 1996 inquiring about the existing telephone facilities which are attached to the poleline mauka of this proposed project.

We presently have four (4) sheaths of metallic exchange feeder cables which serve this area. The host is the GTD-5 base unit Lahaina Central Office which is located along Dickenson St., in Lahaina Town. Also, we have one (1) sheath of a HI-CAP metallic cable which serve as a host to remote link for our digital line concentrators (DLC's) at Puukolii as well as T-1 service for HI-CAP users.

This route also supports our inter-office trunking facilities between the Lahaina Central Office and our Napili Remote Switching Unit (RSU). These I.O.F. facilities consist of two (2) sheaths of HI-CAP metallic cables as well as one (1) sheath of a fiber optic cable consisting of 48 fiber strands.

As I mentioned during our telephone conversation on Wed., March 27, 1996, we presently have two (2) digital line concentrators and a cross-connect cabinet located at the Puukolii intersection which are going to be impacted by this project.

If you have any further questions, please call me at (808) 242-5289.

Sincerely,

Daniel K. Smith
Sr. OSP Engineer

DKS/dng

cc: bics
d.smith

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96732-0398 • (808) 871-8461

APR 15 1996

April 10, 1996

Ms. Camilla Nakashima
Munekiyo & Arakawa, Inc.
1823 Wells St., Suite 3
Wailuku, HI 96793

Dear Ms. Nakashima:

Subject: Honoapiilani Highway Widening

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we offer the following comments:

1) Our existing overhead and underground lines may need to be relocated. Note for your information that the existing overhead line has two distribution circuits on it - one is MECO's and the other is Pioneer Mill's.

2) Since coordination of the relocation and placement of the existing electrical lines to the highway alignment is required, we encourage the developer's consultant to meet with us as soon as practical to verify the project's electrical requirements so that service can be provided on a timely basis

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Edward L. Reinhardt

Edward L. Reinhardt
Manager, Engineering

EARLY CONSULTATION RESPONSE LETTERS

October 16, 1996

Charles Jencks, Director
Department of Public Works
and Waste Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Honoapiilani Highway Widening Project
(Kaanapali Parkway to the Vicinity of Honokowai Stream)

Dear Mr. Jencks:

Thank you for your letters of February 21, 1996 and February 29, 1996 concerning the proposed highway widening project. On behalf of the applicant, the State Department of Transportation, we would like to note the following.

All proposed intersection improvements will be coordinated with the Department of Public Works and Waste Management (DPWWM) and implemented in accordance with applicable design standards. In addition, construction plans for the proposed project will be submitted for review and approval by the DPWWM prior to the start of construction.

It is also understood that the relining of manhole covers resulting from the raising or lowering of manhole covers will require coordination with the DPWWM's Wastewater Reclamation Division, and that the No. 3 force main from the Lahaina Wastewater Pump Station may be extended across Honoapiilani Highway within the next four or five years.

In addition to a traffic signal at the Honoapiilani Highway/Lower Honoapiilani Road/Lahaina Wastewater Reclamation Facility (LWRF) intersection, improvements proposed at the northbound approach to the intersection will provide for a single 11-foot wide left-turn/storage lane for vehicles accessing Lower Honoapiilani Road and a 11-foot striped median. Improvements at the southbound approach to this intersection will include a 11-foot left-turn storage lane for traffic entering the LWRF and a 11-foot right-turn deceleration lane for traffic entering Lower Honoapiilani Road.

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

Also, coordination with the DPWWM's Solid Waste Division will be undertaken for the disposal of cleared and grubbed material for disposal at the Central Maui Landfill.

A copy of the Draft Environmental Assessment will be provided to your agency. Thank you again for commenting on the proposed project.

Sincerely,

Glenn Tadaki, Planner

GT:tav
cc: Herb Tao, Department of Transportation, Highways Division

October 16, 1996

David Craddick, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Hawaii 96793

SUBJECT: Honoapiilani Highway Widening Project
(Kaanapali Parkway to the Vicinity of Honokowai Stream)

Dear Mr. Craddick:

Thank you for your letter of February 27, 1996 concerning the proposed highway widening project. On behalf of the applicant, the State Department of Transportation, we would like to note the following.

It is our understanding that an existing 16-inch water transmission line may be affected by the proposed road widening improvements and that relocation of the transmission line may be required depending on the location of the new pavement relative to the waterline. Please note that coordination with the Department of Water Supply will be undertaken to arrange for the relocation and placement of the existing transmission line as necessary.

A copy of the Draft Environmental Assessment will be provided to your agency. Thank you again for commenting on the proposed project.

Sincerely,

Glenn Tadaki, Planner

GT:tav
cc: Herb Tao, Department of Transportation, Highways Division

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305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

October 18, 1996

Daniel K. Smith, Sr. OSP Engineer
GTE Hawaiian Tel Company, Inc.
60 South Church Street
Wailuku, Hawaii 96793

SUBJECT: Honoapiilani Highway Widening Project
(Kaanapali Parkway to the Vicinity of Honokowai Stream)

Dear Mr. Smith:

Thank you for your letter of March 28, 1996 concerning the proposed highway widening project. On behalf of the applicant, the State Department of Transportation, we would like to note the following.

It is our understanding that the proposed improvements to the Honoapiilani Highway/Puukolii Road/Kai Ala Drive intersection are going to affect the existing two (2) digital line concentrators and a cross-connect cabinet located at this intersection.

Please be advised that coordination with GTE Hawaiian Tel will be undertaken to arrange for the relocation and placement of these existing telephone facilities.

A copy of the Draft Environmental Assessment will be provided to GTE Hawaiian Tel. Thank you again for commenting on the proposed project.

Sincerely,

Glenn Tadaki, Planner

GT:tav
cc: Herb Tao, Department of Transportation, Highways Division

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

October 16, 1996

Herbert Matsubayashi, Chief Sanitarian
Maui District Health Office
State Department of Health
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Honoapiilani Highway Widening Project
(Kaanapali Parkway to the Vicinity of Honokowai Stream)

Dear Mr. Matsubayashi:

Thank you for your letter of February 22, 1996 concerning the proposed highway widening project. On behalf of the applicant, the State Department of Transportation (DOT), we would like to note the following.

The DOT will comply with the requirements for a National Pollutant Discharge Elimination Systems (NPDES) permit for any discharge into the waters of the State and discharges relating to construction and industrial activities, as well as for dewatering, ground water remediation, and hydrotesting activities.

A copy of the Draft Environmental Assessment will be provided to your agency. Thank you again for commenting on the proposed project.

Sincerely,

Glenn Tadaki, Planner

GT:tav
cc: Herb Tao, Department of Transportation, Highways Division

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

March 19, 1996

MEMORANDUM

To: Theresa Donham
State Historic Preservation Division

From: Camilla Nakashima

Subject: Honoapiilani Highway Widening

The State of Hawaii, Department of Transportation is proposing the widening of the Honoapiilani Highway from its current two (2) lanes to four (4). The project will begin at the intersection of the Ka'anapali Parkway/Halelo Street/Honoapiilani Highway and extend approximately 2.2 miles north, in the vicinity of the Honokowai Stream bridge.

In accordance with Chapter 343, HRS, an Environmental Assessment (EA) is being prepared for the proposed project. Our previous correspondence with the State Historic Preservation Division indicated "no effect" between Ka'anapali Parkway and Pu'ukolii Road. See attached letter dated March 11, 1996 from Don Hibbard. However, additional information was requested for the section of the corridor north of Pu'ukolii Road.

In this regard, we are transmitting preliminary alignment plans for your review. In general, the road widening work will follow the existing right-of-way. May we request your assistance in determining whether a "no effect" conclusion would also be applied to this section of the highway.

I appreciate your assistance in this matter. If you need additional information or have any questions, please call me. Thank you.

Camilla Nakashima

Attachments

Planning • Environmental Studies • Project Management
1823 Wells Street, Suite 3 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

MUNEKIYO & ARAKAWA INC.

October 16, 1996

David W. Blane, Director
Planning Department
County of Maui
250 South High Street
Walluku, Hawaii 96793

SUBJECT: Honoapiilani Highway Widening Project
(Kaanapali Parkway to the Vicinity of Honokowai Stream)

Dear Mr. Blane:

Thank you for your letter of March 11, 1996 concerning the proposed highway widening project. On behalf of the applicant, the State Department of Transportation, we would like to note the following.

1. The Draft Environmental Assessment for the proposed project will address potential impacts and identify appropriate mitigative measures related to the development of the project.

2. The majority of the proposed road widening improvements will occur within the existing highway right-of-way. Fill slope improvements adjoining the makai side of the highway right-of-way (extending 0.5 mile north from the Kai Ala Drive intersection), as well as improvements to the makai side of the Kualapa Loop Bridge approach will occur within the Special Management Area (SMA). Accordingly, an application for a SMA Use Permit will be filed for the proposed fill slope and bridge approach improvements.

3. Appropriate measures to mitigate the short-term impacts of the project relating to soil erosion, noise, and traffic will be examined in the Draft Environmental Assessment.

4. The Draft Environmental Assessment will address the project's relationship to the West Maui Community Plan.

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

A copy of the Draft Environmental Assessment will be provided to your agency. Thank you again for commenting on the proposed project.

Sincerely,

Glenn Tadaki, Planner

Gl:tav
cc: Herb Tao, Department of Transportation, Highways Division

October 16, 1996

Edward Reinhardt, Manager
Engineering Division
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawaii 96732-0398

SUBJECT: Honoapiilani Highway Widening Project
(Kaanapali Parkway to the Vicinity of Honokowai Stream)

Dear Mr. Reinhardt:

Thank you for your letter of April 10, 1996 concerning the proposed highway widening project. On behalf of the applicant, the State Department of Transportation, we would like to note the following.

It is our understanding that existing overhead and underground electrical lines along the highway alignment may need to be relocated. In this regard, coordination with Maui Electric Company, as well as Pioneer Mill Company will be undertaken to arrange for the relocation and placement of the existing electrical lines as necessary.

A copy of the Draft Environmental Assessment will be provided to Maui Electric. Thank you again for commenting on the proposed project.

Sincerely,

Glenn Tadaki, Planner

GT:tav
cc: Herb Tao, Department of Transportation, Highways Division

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

Chapter XI

Letters Received During the Draft Environmental Assessment Public Comment Period and Responses to Substantive Comments

XI. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

HONOAPIILANI HIGHWAY WIDENING PROJECT-LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD* AND RESPONSES TO SUBSTANTIVE COMMENTS		
Federal Agencies	***Date of Letter***	***Date of Response***
Department of the Army, Corps of Engineers	3/28/97	NRR
Department of the Interior, Fish and Wildlife Service, Pacific Division	NCR	NRR
State Agencies	***Date of Letter***	***Date of Response***
Department of Health, Maui District Health Office	4/16/97	NRR
Department of Health, West Maui Watershed Coordinator	4/21/97	7/11/97
Department of Land and Natural Resources, Land Division - Maui	NCR	NRR
Office of Environmental Quality Control	4/21/97	7/11/97
Office of Hawaiian Affairs	4/7/97	NRR
County Agencies	***Date of Letter***	***Date of Response***
Department of Parks and Recreation	4/22/97	NRR
Department of Planning	4/10/97	NRR
Department of Public Works and Waste Management	6/18/97	7/11/97
Department of Water Supply	4/25/97	NRR
Utilities	***Date of Letter***	***Date of Response***
GTE Hawaiian Telephone Co.	NCR	NRR
Maui Electric Co., Ltd.	4/1/97	NRR
Organizations	***Date of Letter***	***Date of Response***
Lahaina Open Space Society	4/13/97	7/11/97
Na Kupuna O Maui - Nation of Hawaii	4/13/97	7/11/97
West Maui Taxpayers Association	4/22/97	7/11/97

HONOAPIILANI HIGHWAY WIDENING PROJECT-LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS*		
Individuals	***Date of Letter***	***Date of Response***
Rose Bartholomew	4/18/97	NRR
Herman and Janis Casco	4/17/97	7/11/97
Dave Chenoweth	4/13/97	7/11/97
Randy Draper	4/18/97	7/11/97
James Johnson	4/18/97	7/11/97
Diane Patterson	News Article	NRR

NCR - No Comments Received
NRR - No Response Required
* The Notice of Availability of the Draft EA appeared in the March 23, 1997 edition of the Environmental Notice. Copies of the Draft EA were concurrently distributed to the above-referenced agencies and utilities for review and comment, as well as the Lahaina Public Library for purposes of public review. The 30-day comment period on the Draft EA expired on April 22, 1997.

Pursuant to the requirements of the environmental review process, comments received from the above-referenced agencies, utilities, organizations, and individuals, as well as responses to substantive comments, are included in this section.

DRAFT ENVIRONMENTAL ASSESSMENT COMMENT LETTERS

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

March 28, 1997

Planning and Operations Division

Mr. Herbert Tao
State of Hawaii
Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Tao:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Honoapiilani Highway Widening Project, Kaanapali Parkway to Honokowai Stream, Maui. The following comments are provided pursuant to U.S. Army Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. As stated in our previous letter dated December 2, 1996, a DA permit will not be required for the project (file number 970000037).

b. The flood hazard information provided on page 33 of the DEA is correct.

Sincerely,

for Paul Mizue, P.E.
Acting Chief of Planning
and Operations Division

Copies Furnished:

Mr. Michael Munekiyo
Munekiyo and Arakawa, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

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

BENJAMIN J. CAYETANO
GOVERNOR

LAWRENCE MIIKE
DIRECTOR OF HEALTH

LAWRENCE HART, M.D., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793

April 16, 1997

Herbert Tao
State Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Tao:

Subject: Draft Eavironmental Assessment - Honoapiilani Highway Widening

We have completed our review of the Draft Environmental Assessment. Our concerns have been addressed; we have no further comments to offer.

Should you have any questions, please call me at 984-8230.

Sincerely,

HERBERT S. MATSUBAYASHI
District Environmental Health Program Chief

c: Michael Munekiyo

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

LAWRENCE MIKE
DIRECTOR OF HEALTH

In reply, please refer

April 21, 1997

State Department of Transportation
869 Punchbowl St.
Honolulu, HI 96813

Subject: Draft Environmental Assessment: Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream) March 1997.

Dear Sir:

Thank you for the opportunity to comment on the Draft Environmental Assessment for the Honoapiilani Highway Widening Project. This is an important and visible project that will improve traffic flow in a congested area of West Maui. My comments pertain to the Preliminary Drainage Report and the Erosion and Sediment Hazard Assessment.

Preliminary Drainage Report

1. Presently the highway runoff is directed to landscaped shoulder areas where part of the water infiltrates into the ground and the remaining is transported through vegetation to mauka-makai culverts. This appears to be a good system, except in the areas noted where runoff from mauka sugarcane fields overwhelms the storm drain inlets. One benefit of the existing system is that the vegetated areas remove sediment particles, nutrients, and hydrocarbons and allow part of the runoff to infiltrate into the ground. The highway widening will convert 8.33 acres of vegetation to impervious roadway and direct water primarily over concrete gutters. This will increase the quantity of runoff and the pollutant loads entering mauka-makai drainage channels.

   What detention, filtration and treatment will be provided to remove sediments and other pollutants from runoff before it enters stream channels or the ocean? The Kaanapali shoreline makai of the Highway Widening Project is a pristine beach and reef environment that presently has no surface water discharge to the ocean, except for the channel on the north side of Black Rock. In order to preserve the quality of sensitive coastal waters, it is essential that current drainage patterns be preserved, i.e. no increase in the number or volume of discharges to the ocean, and that runoff from the highway and mauka lands receive treatment to remove pollutants before discharge.

2. The Preliminary Drainage Report does not provide sufficient detail to evaluate the flow of runoff. How much, if any, runoff will be discharged onto land or to drainage channels makai of the highway?

3. The highway shoulder will be primarily concrete gutter, with one section of grass swale. The grass swale is an effective and inexpensive way to remove pollutants from highway runoff. The drainage plan should maximize the use of grass swales and minimize the concrete gutters.

4. The EA is internally inconsistent in it's description of drainage improvements. Page 19 of the EA describes "new culverts at five (5) locations...and the relocation of seven (7) existing drain inlets. One (1) grass swale and 12 new gutter sections are proposed..." Page 9 of the Preliminary Drainage Report says the project will "add 9 new culverts...and relocate 3 existing drain inlets. One grass swale and thirteen new gutter sections will be added..." Which description is accurate?

5. The EA is incomplete. Appendix D, Hydraulic Computations, summary of Procedures is not included. Although Appendix D is referenced on page 7 of Appendix C, it is not included in the Table of Contents or the report.

Erosion and Sedimentation Hazard Assessment

1. The construction work will require a Grading Permit from Maui County and an NPDES Construction Activities Storm Water Permit. Maui County is presently revising its grading ordinance to increase protection of the natural environment, including coastal water quality. These new provisions are expected to be in effect before the end of 1997.

   If grading begins in October 1997, this project will be very vulnerable to erosion and runoff during the winter rainy season. Given the high public visibility of this project, the contractors should consider using an effective erosion control program that complies fully with the requirements of the proposed County grading ordinance.

2. The Erosion Control Plan in the Environmental Assessment (EA) merely consists of 5 lines describing permanent and temporary erosion control measures. This information is not sufficient to evaluate the adequacy of the erosion control measures that must be employed during construction to retain soil on site and prevent discharge of polluted runoff. For example, where and when will sediment traps and siltation fences be used? Will they be adequate in size to contain sediments from an average winter storm? How will road runoff be routed during construction of culverts? How will runoff from mauka areas be diverted during construction? How will storm drain inlets be protected to prevent discharge of sediments? Will there be stockpiles of soil, where will they be placed, and how will they be stabilized? Will the proposed "earth channels" be lined to prevent in-channel erosion from high velocity flows?

Thank you for the opportunity to comment on the EA. If you should wish to discuss these comments, please call me at (808) 661-7856.

Sincerely,

Wendy Wiltse

Wendy Wiltse, Ph.D.
West Maui Watershed Coordinator

cc: Dr. June Harrigan-Lum, EPO

BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

April 21, 1997

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

Dear Mr. Hayashida:

Subject: Draft Environmental Assessment for the Honoapiilani Highway Widening from Kaanapali Parkway to Honokowai Stream, Maui.

Thank you for the opportunity review the subject document. We have the following questions and comments.

1. Please describe the relationship between this project and other roadway projects in the region, including the Lahaina Bypass.

2. Please describe how the proposed widening may affect future land use along the highway corridor.

3. State policy (HRS Chapters 26, 226, 264, 344) requires the promotion of alternative forms of transportation systems that reduce reliance on the private automobile, conserve energy, reduce pollution and provide safe accommodations for their users. Pursuant to this policy, what provisions are being made to create bicycle lanes or facilities, promote pedestrian safety and/or encourage other non-motorized modes of transportation?

4. We recommend that native Hawaiian plants be used in landscaping areas which will be disturbed during construction.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185. Mahalo.

Sincerely,

Gary Gill
Director

c: Munekiyo & Arakawa

PHONE (808) 594-1888

FAX (808) 594-1865

APR 30 1997

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

April 07, 1996

Mr. Glenn Tadaki
Muneyiko & Arakawa
305 High Street, Suite 104
Wailuku, HI 96793

Subject: Draft Environmental Assessment (DEA) for Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream), Island of Maui.

Dear Sir/Madam:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream), Island of Maui. The Department of Transportation proposes road widening and related improvements to an approximately 2.2 mile segment of the Honoapiilani Highway.

The Office of Hawaiian Affairs has no objections to the proposed road widening and related improvement at this time. Based on information contained in the DEA, the development apparently bears no significant long-term adverse impacts on either adjacent ecosystems or upon existing urban settlements. There are no known rare, endangered, or threatened wildlife species and no known archaeological remains exist in the area. Furthermore, the proposed road improvements will neither significantly affect scenic resources nor air quality or noise level.

Please contact Lynn Lee, Acting Officer of the Land and Natural Resources Division, or Luis A. Manrique, should you have any questions on this matter.

Sincerely yours,

Martha Ross
Deputy Administrator, Programs

LM:lm

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580-C KAAHUMANU AVENUE WAILUKU, HAWAII 96793

Mayor

HENRY OLIVA
Director

ALLEN SHISHIDO
Deputy Director

(808) 243-7230
FAX (808) 243-7934

April 22, 1997

Mr. Herbert Tao
State Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813

Subject: **Honoapiilani Highway Widening**
(Kaanapali Parkway to Honokowai Stream)
Draft Environmental Assessment Comments

Dear Mr. Tao:

We have reviewed the subject draft EA application and have no comments or objections to the proposed highway widening.

Thank you for the opportunity to comment. Should you have any questions, you may contact me at 243-7626.

Sincerely,

HENRY OLIVA
Director

HO:PTM:GU:ecq

c: Michael Munekiyo, Munekiyo & Arakawa, Inc.
Project Files

honowidn.wpd

LINDA CROCKETT LINGLE
Mayor

DAVID W. BLANE
Director

GWEN OHASHI HIRAGA
Deputy Director

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

April 10, 1997

Mr. Michael Munekiyo
Munekiyo & Arakawa, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Munekiyo:

RE: Draft Environmental Assessment - Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream)

Thank you for the opportunity to comment on the *Draft Environmental Assessment - Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream).*

The proposed action is in keeping with the General Plan of the County of Maui, *Objectives and Policies, Section IV, Transportation, (A) Transportation (1) To support an advanced and environmentally sensitive transportation system which will enable people and goods to move safely, efficiently and economically.*

The proposed action is also in keeping with the West Maui Community Plan: *Part III, Policy Recommendations, Implementing Actions, and Standards for the West Maui Region, Infrastructure, Transportation, Objectives and Policies, (3) Support improvements for the safe and convenient movement of people and goods, pedestrians and bicyclists in the Lahaina region particularly along Honoapiilani Highway, Front Street and Lower Honoapiilani Road and seek to establish a regional network of bikeways and pedestrian paths.*

The review of the *Draft Environmental Assessment,- Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream),* has not identified any significantly adverse impacts based on the significance criteria listed in §11-200-12 of the Environmental Impact Statement Rules. Therefore, the Planning Department has no further comments on this project.

If additional clarification is required, please contact Don Schneider of this office at 243-7735.

Very truly yours,

Clayton Yoshida

for DAVID W. BLANE
Planning Director

DWB:DAS
cc: Clayton Yoshida, Acting Deputy Director of Planning
Don Schneider, Planner
General File
(F:honoea.dft)

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND WASTE MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

June 18, 1997

Mr. Herbert Tao
State Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Tao:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
HONOAPIILANI HIGHWAY WIDENING
(KAANAPALI PARKWAY TO HONOKOWAI STREAM)

We reviewed the subject submittal and have the following comments.

1. The County Engineering Division of the Department of Public Works and Waste Management is planning railroad crossing improvements at Puukolii Road. The State Department of Transportation should discuss design/construction details with the County to enhance speedy construction of both projects.

2. Excess asphalt and other construction waste shall be taken to the Maui Demolition and Construction Landfill on North Kihei Road near its intersection with Honoapiilani Highway.

3. The proposed road widening lots are required to be subdivided in accordance with Title 18 of the Maui County Code.

4. A final detailed drainage and erosion control plan, including, but not limited to, hydrologic and hydraulic calculations, scheme for controlling erosion and disposal of runoff water, and an analysis of the soil loss using the HESL erosion formula, shall be submitted for our review and approval. The plan shall provide verification that runoff water generated by this project will not have an adverse effect on the adjacent and downstream properties. Additional flows created by this project must be mitigated.

If you have any questions, please call David Goode at 243-7845.

Very truly yours,

CHARLES JENCKS
Director of Public Works
and Waste Management

DG:co/mt
xc: Engineering Division
Solid Waste Division
Wastewater Reclamation Division
S:\LUCA\ALL\CZM\WDEN

BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

April 25, 1997

State of Hawaii
Department of Transportation, Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813

Attn.: Herbert Tao

Re: Draft Environmental Assessment - Honoapiilani Highway Widening (Kaanapali Parkway to Honokawai Stream).

Dear Mr. Tao,

Thank you for the opportunity review this assessment. The Board of Water Supply has the following comments.

Source and System

As stated in the assessment, the Board of Water Supply owns and maintains a 16" transmission line in the right-of-way running the entire length of highway to be widened. The applicants should contact our engineering division at 243-7835 to coordinate construction details, possible pipeline relocation, and to minimize the potential for disruption of water service.

Conservation

Use Non-Potable Water: - We ask that the applicants assist in water conservation by using non-potable water, where possible, for dust control during the construction process.

Use Climate-adapted Plants: When the highway corridor is revegetated, to the extent practical, the applicants should consider revegatating with native or Polynesian climate-adapted and salt-tolerant plants. Native plants adapted to the area, conserve water and further protect the watershed from degradation due to invasive alien species. The project site is located in "Maui County Planting Plan" - Plant Zones 3 and 5. Please refer to the "Maui County Planting Plan", and to the attached documents, "XERISCAPE: Water Conservation Through Creative Landscaping" and "Some of Maui's Native and Polynesian Plants." The applicants are encouraged to contact the West Maui Watershed Coordinator, Dr. Wendy Wiltse, for further information on watershed and drainage issues in this region. She can be reached at 661-7856.

Sincerely,

for David Craddick
Director

"By Water All Things Find Life"

Printed on recycled paper

wef

cc: Michael Munekiyo, Munekiyo and Arakawa, Inc.
Gary Gill, Office of Environmental Quality Control

attachments:
"Some of Maui's Native and Polynesian Plants" - Maui
"XERISCAPE - Water Conservation through Creative Landscaping"

April 1, 1997

Mr. Herbert Tao
State of Hawaii
Department of Transportation, Highways Division
869 Punchbowl Street
Honolulu, HI 96813

Dear Mr. Tao:

Subject: Draft Environmental Assessment - Honoapiilani Highway Widening
(Kaanapali Parkway to Honokowai Stream)

Thank you for allowing us to comment on the subject project. We have no additional comments to our April 10, 1996 letter to Munekiyo & Arakawa, Inc.

If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

Edward L. Reinhardt
Manager, Engineering

DT:rt

cc: Michael Munekiyo, Munekiyo & Arakawa, Inc.
Gary Gill, Office of Environmental Quality Control

April 13, 1997

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
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HIGHWAYS DIVISION

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State Dept. of Transportation
869 Punchbowl St.
Honolulu, Hi. 96813

Re: Honoapiilani Hwy.Widening Project and construction of access to Road "A" for Puukolii Village - Environmental Assessment

Dear Sirs:
In response and upon review of the Draft Environmental Assessment with regard to the above subject proposed road project, please note the following concerns, which should be addressed to avoid problems during and upon completion of this project.

1) The manner of notification to the public concerning this project eliminated much of the opportunity for public comment With limited opportunity/ time for comment it creates an extremely difficult situation for the residents who will be directly affected by this project . We urge you to please keep lines of communication open so that the public may be included in the process of safe and responsible roadway development. Many of the comments/suggestions that are offered by the public are extremely helpful in facilitating the smooth implementation of public projects.

2) It was mentioned by more than one person at DOT that exactions relating to development at North Beach were contained in the widening of Honoapiilani Highway project. Could you please identify what those exactions are?

3) Can project construction be done over a shorter period of time than the 18 months projected? Can work begin at an earlier hour and continue into the early evening hours, ending at 10:00 PM ? Contrary to the findings of the EA, there will be an adverse economic impact on tourism revenue during the construction phase of the project. Tourists become very disgruntled with having to be delayed in traffic for extended periods of time.Tourists have even commented to us that they no longer stay in West Maui because of the traffic congestion. While the completion of the widened roadway may alleviate this problem, we will most certainly lose visitors to other parts of the island or from Maui altogether, during the construction phase. What can be done to mitigate this serious problem? Also every effort should be made to provide Maui workers with an opportunity for jobs, and local companies with contracts, rather than giving the contracts to off-island companies and workers, which hurts us economically.

4) The aesthetic aspects of the roadway design need to be addressed. Please try to make the retaining walls look as "attractive" as possible.Since existing vegetation will be lost and the "green" view of this area will be dramatically altered it would be helpful to have walls built that would allow vegetation to drape down them to provide a "curtain of color." This would enhance the area in a manner similar to that of the present vegetation. Also the large trees that overhang the area should be preserved to provide additional shade and color for the roadway. It would be a tragedy if this

beautiful "green corridor" would be lost to concrete and steel - we don't want to do anything that would degrade the area to the detriment of our tourism industry.

5) The access to "Road A - Kaka'alaneo" will be included in this project. This road will access directly onto the Highway and over the train tracks, creating a dangerous situation. The LKP Train Station had learned through a contractor that the roadway will cross directly over their "switches." Even if this "switching" area can be avoided, it will create a hazard for their passengers, the buses entering/exiting the area and the train itself.

The traffic exiting/entering onto the highway from Road "A" will create one more "slowdown" on the newly widened highway, which will cause a deterioration of the level of service. The primary purpose of the highway widening is to increase the "LOS" so that existing traffic may move smoothly through this area. If we immediately clog the area or create safety hazards for the general public, what is the purpose of widening the highway?

Additional hazards for those vehicles turning from Puukolii and Kai Ala Drive headed North on the highway should be addressed. Since Road "A" is located so close to the Puukolii intersection, vehicles turning onto the highway headed North would normally accelerate through the Road "A" junction, creating collision potential. To avoid such a situation, vehicles will have to slow, which impairs the smooth/efficient flow of traffic. In either event, the traffic will have to slow and degrade "traffic flow" or it will accelerate normally and risk a collision.

The same is true for the Halawai intersection to the North of Road "A." The car rental exit and entrance at Halawai is very dangerous.To add to a serious existing problem is not in the best interests of the public. The interests of a private developer should not take precedent over public interest and safety issues. Safe alternatives to the access point of this roadway are available and have been recommended, and they need to be considered as a possible "safe" and responsible solution.

6) The preliminary grading/grubbing/location for Road "A" needs re-evaluation as this area recently contributed to a flood hazard for LKP Trains, car rental agencies, and the general public. The recent flooding caused the mud and debris to flow onto the LKP Train tracks and shut down their operation. The National Car Rental people reported that the culvert blocked up (with debris and mud flowing from the Road "A" area)in half an hour and caused severe damage to their operation. The Honoapiilani Hwy (after the culvert became blocked) then flooded, resulting in damage and loss of many vehicles which were trapped in the rising water on the Highway. (Pua Martin was one of those whose car was totalled). The environmental damage was also severe to the dune area on North Beach and the adjacent reef. We have photographs and video showing the damage to the roadway, the dunes, and the reef area. The runoff and debris that flowed from the cane fields caused severe damage to the marine environment and perhaps economic damage as well. All of these detrimental effects, while still in the process of revealing themselves, may have even more devastating long term effects on our economy if they have damaged the sensitive reef areas and marine ecosystems. Please address these critical drainage issues before proceeding.

7) Per my conversation with Mr. Herbert Tao of the DOT, I would also like to confirm his statement that no public funds are being used in the construction of the new overhead bridge that is an extension of the Kualapa Loop Road, joining the Kaanapali Golf Estates with the overpass bridge ($1.4 million cost estimate). Mr. Tao also mentioned that the Kekaa Drive detour described in the EA would only be for one or two nights at the most, and this does not seem to pose any serious problems. If it is to be for a longer period of time, please be kind enough to advise the Maui Eldorado and other parties affected by this detour.

In summary, I would like to refer to comments made by one of your own DOT officials. As Mr. Hugh Ono, recently mentioned at a Planning Commission workshop, he did not want any more "STEALTH" projects undertaken, because it ultimately subjected the DOT to severe public criticism.
While this project has been widely publicized and is supported by the community, the details regarding the implementation of the project should be revealed to the public. There should be minimal disruption and inconvenience, no new serious safety hazards (such as have been experienced on other Maui DOT projects), no decrease in the "level of service" (on our newly widened roadway) due to the addition of private development roads, minimal economic hardship on businesses in the immediate area, and no damage to our environment and marine ecosystems.
You have an opportunity to bring this issue before the public and conduct this project in a manner that is far less subject to criticism and "finger pointing." The DOT has recently come under fire for their lack of planning and concern for public safety. If you wish to correct that image and truly wish to place public interests above those of private developers, you need to better inform the public of what you intend to do and provide an opportunity for input from those who may be adversely affected by the project. We look forward to reviewing your final EIS, and we believe we have some meaningful contributions that can be made in seeing that this project goes forward in a manner that benefits our entire community.

Mahalo for listening to our concerns,

JoAnne Johnson
Lahaina Open Space Society
50 PuuAnoano St. - #508
Lahaina, Hi. 96761-1955

April 13, 1997

State Dept. of Transportation
869 Punchbowl St.
Honolulu, Hi. 96813

Re: Honoapiilani Hwy.Widening Project and construction of access to Road "A" for Puukolii Village - Environmental Assessment

Gentlemen-

I am a native Hawaiian and I am concerned that we do not have enough time to comment on projects such as this one, because we are not given any proper notice. We need to feel that we are included in the planning process and that our voices will be heard and listened to by your office.

I read in the Environmental Assessment on the Archaeological findings of the State Dept. of Land and Natural Resources Historic Preservation Office that remains were found in the vicinity of the wastewater plant and in the area of the path for the highway widening, yet no mention was ever made of what happened to those remains. Also, isn't there an existing law that states all construction must stop if remains are found? How can you say that there is not a potential for signifigant impact in the area when it has been proven that there were remains found?

It is written in historical documents that battles raged in this area, and therefore the possibility is high that remains <u>are</u> in the area. What provisions have you made to have local Hawaiians monitor the construction activity to make certain that no remains are "Inadvertently" uncovered (to use the words in the report of Mr. Don Hibbard on March 11, 1996)?

You need to treat this situation with more respect and you need to let the local people know what is being done to their land and how it will affect their lives. We want to make certain that the mistakes of the past are not repeated again.

Please let us know when you will be considering the comments that we have made and what you will do about them.

Mahalo,
Patty Nishiyama
Patty Nishiyama
for Na Kupuna O Maui - Nation of Hawaii
320 Kaeo St.
Lahaina, Maui, Hi. 96761
(808)667-6936

WEST MAUI TAXPAYERS ASSOCIATION

April 22, 1997

Department of Transportation
869 Punchbowl Street
Honolulu HI 96813
ATTN: Herbert Tao

SUBJECT: Honoapiilani Highway Widening Draft Environmental Assessment

Dear Mr Tao:

Thank you for the opportunity to comment on the above project.

One of the areas of priority for the West Maui Taxpayers Association (WMTA) is infrastructure, and to this end the widening of Honoapiilani Highway is a project which we support wholeheartedly. We are well aware, however, based on previous experience with both state and county roadway projects in West Maui, that there will be many challenges associated with construction. First, we would like to have a breakdown of the anticipated phases of the project and a justification for the length of time the project is expected to take. WMTA is especially sensitive to the fact that Honoapiilani Highway is our only artery to Kahului Airport, Maui Memorial Hospital, and other destinations to which our community requires access. With every project associated with this vital roadway having significant bearing on the quality of the visitor experience and daily life of our residents, we are afraid of the impact that 18 months of construction will have on both. Therefore, we would like to see construction conducted during night hours wherever possible, particularly if night work might expedite the overall process. Also, the Environmental Assessment (EA) notes that for a portion of the project, traffic will be routed through Kekaa Drive. We would like to request that the Maui Eldorado, Kaanapali Royal, and other affected business and residential properties be directly informed of the State DOT's plans in this regard, and that the DOT work with them to anticipate the most efficient and least intrusive traffic plan for the duration of the detour.

DOT is currently installing a temporary traffic signal at the intersection of Honoapiilani Highway and Lower Honoapiilani Road. The EA calls for another light at the Halawai t-intersection just north. If current plans for the development of North Beach proceed, there may be as many as five traffic lights between Halawai and Puukolii Road. It seems to us that this may be a case of "overkill" and could lead to an immediate deterioration of the conditions the widening is seeking to improve.

Finally, WMTA is concerned about the environmental controls on a project of this magnitude. West Maui has considerable problems with drainage and erosion control,

POST OFFICE BOX 10000

which have led to ocean degradation from runoff. Construction site runoff, in particular, is an area we feel must be monitored far more closely than has been the case on other projects currently underway in West Maui. The area of construction will occur mauka of an important beach and reef environment, and there will be a significant increase in the impervious surface area from the widening project. Any changes to existing drainage patterns, therefore, may well have a negative effect on the shoreline. While the EA seems to address these concerns through a series of comprehensive improvements to the drainage system, we would like assurances that best management practices designed to control pollutants to the ocean will be utilized throughout the construction site, and for its duration.

Thank you for your attention and consideration of these comments.

Sincerely,

Gina Aranki
Executive Director

State Department of Transportation
869 Punchbowl St.
Honolulu, HI 96813

TO WHOM IT MAY CONCERN:

RE: HONOAPIILANI WIDENING PROJECT-

I can't see that expanding the highway from Kaanapali Parkway to Honokowai Stream would have any or very little unfavorable impact on the Environment of the area as things stand now.

For years the edges and the center of this stretch of highway has been dug up over and over again; to lay pipes, and then again pipes in place of the pipes which were laid previously. Most recently the whole surfacing of that part of the present highway was completed. All the past digging of holes in the middle, the sides, and the ditches dug over and over again should have already taken care of providing for whatever unfavorable impact that could possibly have occurred over the years in the designated area.

I say build the four lane highway. We plain, old, everyday working people who live north of Kaanapali Parkway have suffered enough over the years in the battle of the highway, getting to and from work, or to our Dr. appointments and stores. And when we have emergency vehicles trying to get through the maze it is a nerve racking experience for the drivers of the emergency vehicles as well as the ordinary driver trying to find a place to pull over, out of the way of the ambulance, fire truck or police cars.

Give us a four lane highway....PLEASE! PLEASE! PLEASE!

Rose Bartholomew

Rose A. Bartholomew
E-112
3788 L. Honoapiilani Hwy.
Lahaina, Hi. 96761

HWY 202

Janis & Herman Cacco
P. O. Box 1585
Lahaina, HI 96767

April 17, 1997

State Dept. of Transportation
869 Punchbowl Street
Honolulu, Hawaii 86813

RE: HONOAPIILANI HIGHWAY WIDENING PROJECT ENVIRONMENTAL ASSESSMENT

Several months ago, my husband and I attended a public meeting between the residents of Kaanapali Hillside and AMFAC regarding their project at Puukolii.

The result of the meeting was the dedication of a separate feeder road for the Puukolii Village, identified as Road "A" (Kaka'alaneo).

We expressed concern for public safety (as did several other homeowners) where the road meets Honoapiilani Highway, and several of us at the meeting recommended re-aligning the terminus north of the car rental agencies at the intersection of lower Honoapiilani Road, thereby solving several safety and costly concerns:

1. A second dissection of the railroad could be avoided as shown in the current plan which creates yet another intersection near the train turn-around.

2. The stop light planned for this intersection would then be unnecessary, enhancing traffic flow, and saving tax dollars.

3. Car rental access could be safely diverted to the mauka feeder road, correcting current problems of a) dangerous highway entry and exit and b) slowing traffic again to accommodate merging vehicles.

4. The traffic light at the Halawai intersection would not be necessary, enhancing traffic flow and saving us tax dollars.

Hopefully, the department will give serious consideration to our suggestions - they seem awfully simple, common sense, and cost effective to us.

We are avid canoe paddlers, and we are acutely aware of the run-off issue associated with construction and the agriculture industry. From Kaanapali Villas to the Mahana condominiums, red soil rushes into the ocean every time it rains on the mountains. This can't be healthy, and will only get worse with construction activity. We hope your plans will include some serious silt basins mauka of the highway widening and/or re-alignment of Road "A".

Lastly, the Environment Assessment indicates there are no public funds associated with this project. Last fall, I met with Tenny Takahashi as a representative of the west side canoe paddlers, trying to find a safe solution to the traffic problems associated with regattas at Hanakao'o Beach. We discussed a potential pedestrian overpass like AMFAC's golf bridges to cross the highway.

In that meeting Mr. Takahashi told me the cost AMFAC would bear to replace each bridge to accommodate the four-lane widening would be in excess of $1 million each.

We understand AMFAC will be paying for the re-construction of the bridge at Kaanapali Royal to accommodate vehicular traffic, and a road will connect the bridge to the Golf Estates and AMFAC's future developments mauka of this area.

If this is true, perhaps the Environment Assessment should be modified to reflect this fact.

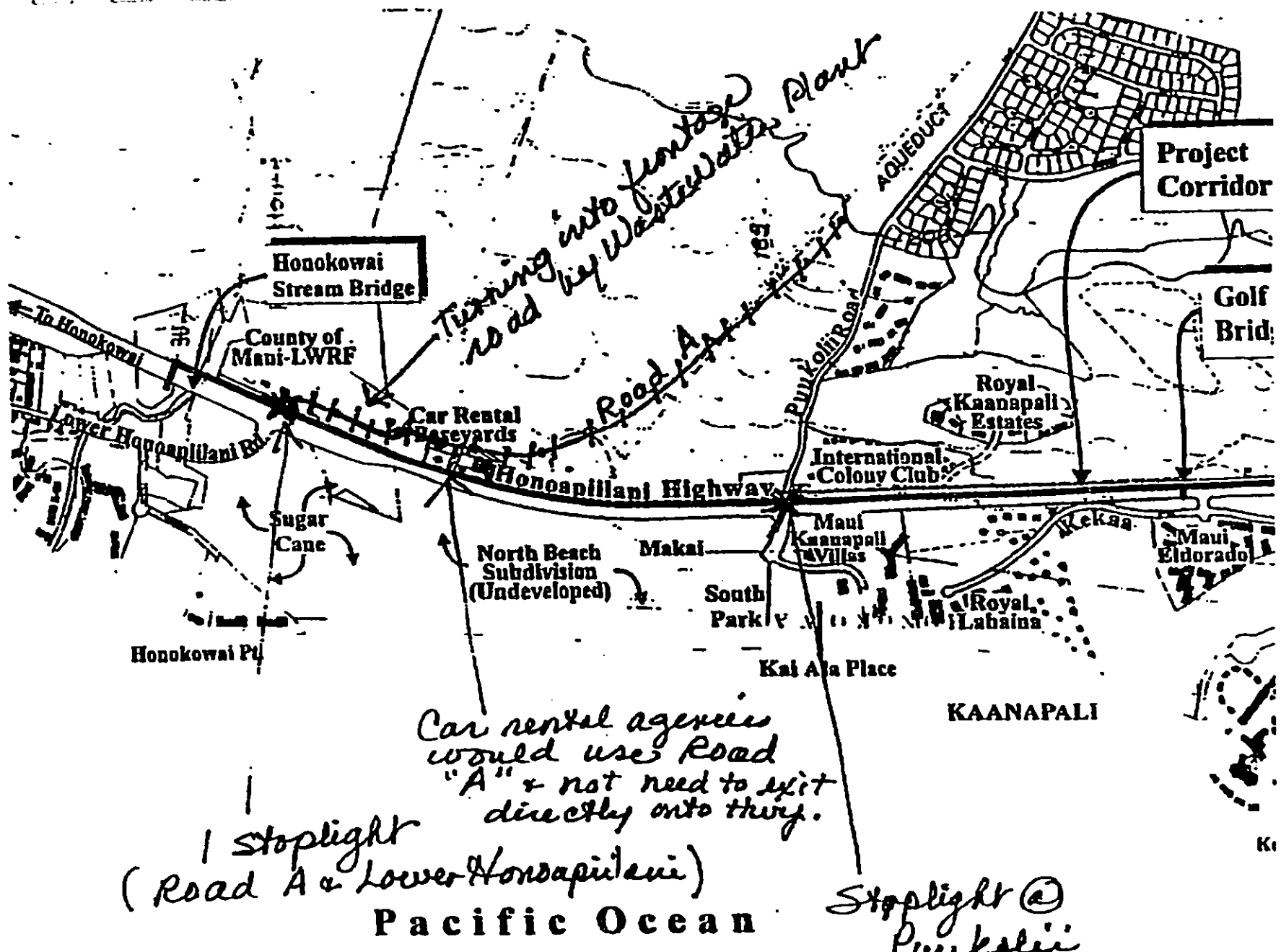
Thank you for your consideration.

Aloha pumehana,

Janis & Herman Casco

enc: map reflecting suggested improvements

proposed amendment



Car rental agencies would use Road "A" & not need to exit directly onto thwy.

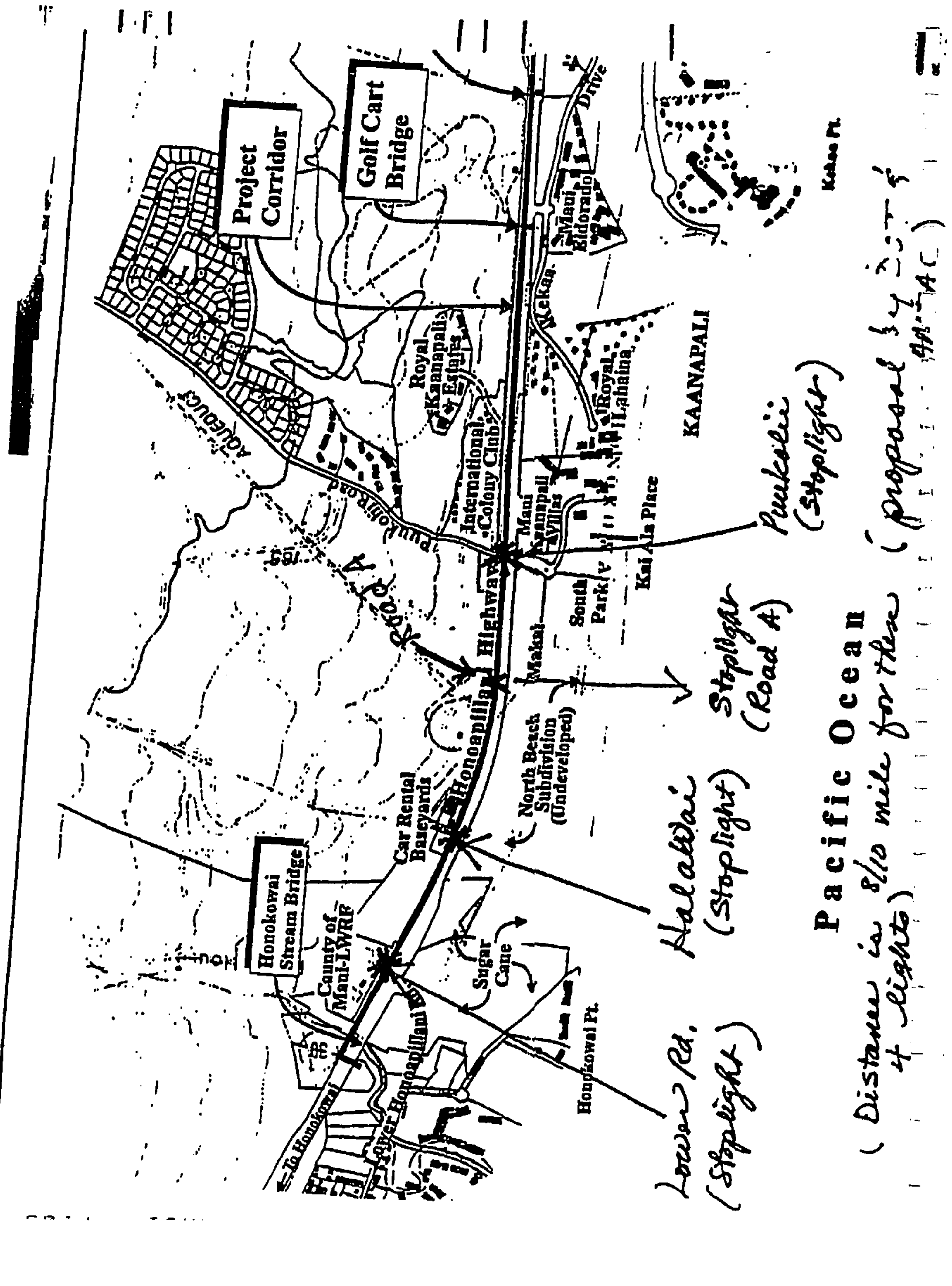
1 stoplight (Road A & Lower Honoapiilani)

Stoplight @ Puukolii

Road A would come behind car rental agencies & then come into a frontage road just in front of sewage plant.

ONE SUGGESTION:

AS PROPOSED



Project Corridor
Golf Cart Bridge
Honokowai Stream Bridge
Aqueduct
Puukolii Road
Road A
Royal Kaanapali Estates
International Colony Club
Car Rental Baseyards
County of Maui-LWRF
Honoapiilani Highway
North Beach Subdivision (Undeveloped)
Makai
South Park
Kai Ala Place
Maui Kaanapali Villas
Royal Lahaina
Kekaa
Maui Eldorado
Drive
KAANAPALI
Kekaa Pt.
Sugar Cane
Honokowai Pt.
Lower Honoapiilani Rd.
To Honokowai
Pacific Ocean
Lower Rd. (Stoplight)
Halawai (Stoplight)
Stoplight (Road A)
Puukolii (Stoplight)
Distance is 8/10 mile for these 4 lights
(proposal

April 13, 1997

'97 APR 24 A9:48

RECEIVED
APR 23 10 03 AM '97
DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION

DEPT. OF TRANSPORTATION

State Dept. of Transportation
869 Punchbowl St.
Honolulu, Hi. 96813

Re: Honoapiilani Hwy.Widening Project and construction of access to Road "A" for Puukolii Village - Environmental Assessment

Dear Sirs:

We need to keep Honoapiilani Highway attractive to locals and tourists, since the value of the landscape does affect our tourism economy. Please discuss saving the trees that are now along the upper part of the roadway with the County Arborist Committee, before removing anything. Also discuss the type of "cover" for the retaining wall with the committee.

I do not support the construction of Road "A" or the development that it would be connected to.

I would like to have the Department of Transportation fulfill their obligation to the public by planning safe and efficient roadways, rather than turning over this responsibility to developers.

Thank you,

David Chenoweth
340 Front St.
Lahaina, Hi. 96761
808 (661-8327)

cc:File

DAVE CHENOWETH

April 18, 1997

RECEIVED '97 APR 24 A9:47

APR 23 10 03 AM '97 DEPT. OF TRANSPORTATION HIGHWAYS DIVISION

State Dept. of Transportation
869 Punchbowl St.
Honolulu, Hi. 96813

Re: Honoapiilani Hwy.Widening Project and construction of access to Road "A" for Puukolii Village - Environmental Assessment

Dear Sirs:

After reviewing the EA on the proposed Highway widening project at Kaanapali, Maui, Hawaii, I have the following comments.

The addition of 8.33 acres of pavement, plus spilling of other flood "problem" areas will exacerbate an already bad situation. This will contribute to an increase in polluted run-off, which will add to to North Beach flooding problem and erosion, as well as dumping more untreated contaminants onto our fragile nearshore reef areas.

This also applies to the proposed ditch through the golf course to the ocean, where pollutants will be discharged directly onto the reef.

At this time, I demand that an indepth EIS be done to address pollution of our ocean, degradation of sensitive reef areas, destruction of possible burial grounds (through erosion or construction), impacts of construction on the wetland areas as well as the economic impacts of these factors. I am also concerned as to what effect construction will have on the beach park use and where construction equipment and employee vehicles will be stored during the construction of the highway widening.

Please advise when the final EIS will be ready for review.

Thank you,
Randy Draper

Randy Draper
P.O. Box 10123
Lahaina, Maui, Hi. 96761
808 - 669-7776

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
APR 22 2 35 PM '97

'97 APR 24 A9 :46 DIRECTOR'S OFFICE
DEPT. OF TRANSPORTATION

April 18, 1997

APR 22 2 37 PM '97
DEPT. OF TRANSPORTATION HIGHWAYS DIVISION

RECEIVED
APR 23 10 03 AM '97

State Dept. of Transportation
869 Punchbowl St.
Honolulu, Hi. 96813

Re: Honoapiilani Hwy.Widening Project and construction of access to Road "A" for Puukolii Village - Environmental Assessment

Dear Sirs:

With regard to the above subject project, I would like to voice my objection to the lack of notice given to the public. I am not on the OEQC mailing list and that was the only formal notification. If it had not been for the fact that someone saw the EA on the list and put a brief article in the Lahaina News, no one would have had a chance to comment.

I do feel that after reviewing the EA, the access roads between Puukolii Rd. and Lower Honoapiilani Road will undoubtedly bottleneck the newly widened highway. I would recommend that the Road A run behind the LKP Train yard and the car rental agencies and join a frontage road near the sewage wastewater plant. That would solve the problem of the dangerous exit of vehicles from the car rental agencies and also eliminate the need for yet another stoplight.

The distance from Puukolii Rd. and Lower Honoapiilani Rd. is approximately 8/10 of a mile. To spend our tax dollars to widen the highway and then immediately clog it up by adding two more stoplights that are not well planned is not in the public interest. Also to endanger more lives is inexcusable.

There are other problems with the roadway widening, such as the addtiional traffic that will now be funneled into Kaanapali Royal from the new roadway that will run over the highway; the need for preservation of the trees/bushes that line theupper area of the proposed project; the massive drainage modifications that will be made by the project where culverts will channel water at a faster rate into the ocean and onto the reefs.

Please notify me when the full EIS is available and advise me if you need additional assistance addressing these issues.

Sincerely,

James W. Johnson
50 PuuAnoano St. - #508
Lahaina, Hi. 96761-1955 (808)661-3237

Lahaina News
March 27 • April 2, 1997

Letters TO

Voice concerns about roadwork

I work in a store in Lahaina, and I have been listening to tourists and employees complain of 45-minute road delays due to construction.

I phoned the Department of Highways, and they were not aware of any road delays. Department of Highways then confirmed they are taking bids on a one-year highway widening project. I asked if night work was a requirement, and he said no. So we are setting ourselves up for another year of alienating tourists with road delays, because of the poor organization of the highway department.

Tourism is our present and our future. Bungled sewer projects, paid parking, road delays, high hotel taxes and time share sales pitches are turning Maui into a second-class vacation destination. Don't let this continue without a fight. Phone and write our mayor and state Department of Highways.

DIANE PATTERSON
Lahaina

DRAFT ENVIRONMENTAL ASSESSMENT RESPONSE LETTERS

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

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

July 11, 1997

IN REPLY REFER TO:

HWY-DS
2.5263

Ms. Wendy Wiltse, Ph.D.
West Maui Watershed Coordinator
State Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Wiltse:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 21, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following:

<u>Preliminary Drainage Report</u>

1. Various factors must be considered in the design of a highway's drainage system. For example, runoff velocities associated with major design storms which are beyond the acceptable limits for highway drainage standards must be considered, as well as the effects of rutting, deterioration, and runoff encroaching into travel lanes. To the extent practicable, grass swales (instead of concrete swales) will be utilized to slow runoff, trap sediments, and provide stormwater filtration. It should also be noted that runoff flowing onto lands makai of the highway traverse landscaped and undeveloped areas which serves to slow-down runoff and enhance filtration.

2. The increase in runoff will be detained in drainage swales and basins in the highway right-of-way. The incremental increase in runoff due to the transition from vegetated to paved areas is estimated at 11 cubic feet per second (cfs).

   The proposed drainage system improvements within the highway right-of-way will be designed in accordance with applicable regulatory design criteria to ensure that adjoining and downstream properties are not adversely affected by runoff generated by the highway widening. To ensure conformance with these

standards, construction plans for the project will be distributed to appropriate governmental agencies and utilities for review and comment.

3. As previously noted, grass swales will be implemented where feasible.

4. The description of the proposed drainage improvements reflected on page 19 of the Draft Environmental Assessment (EA) has been updated for consistency (i.e., reflect the improvements described on page 9 of the Preliminary Drainage Summary Report). Please note the drainage improvements reflected on pages 53 and 54 of the Draft EA are correctly described.

5. The reference to Appendix D, Hydraulic Computations on page 7 of the Preliminary Drainage Summary Report was inadvertantly listed and should have been omitted since it is not a component of the report.

Erosion and Sedimentation Hazard

1. The State Department of Transportation (DOT) will comply with the State Department of Health (DOH) requirements for a National Pollutant Discharge Elimination Systems (NPDES) permit pertaining to construction activities and stormwater runoff. Best Management Practices (BMPs) will be utilized to ensure that concerns relating to runoff generated by construction activities are addressed and that adequate mitigation measures are implemented.

   In addition, grading and construction activities will be conducted in accordance with all applicable County standards, ordinances, and regulations in effect at the time.

2. In addition to the temporary (e.g., hydromulching, spraying or sprinklering, sediment traps, siltation fences) and permanent (e.g., detention swales, earth channels, vegetate open and exposed areas) erosion control measures described in the Erosion Control Plan, additional erosion control measures may include but are not necessarily limited to the following:

   a. Minimize the time of construction to the maximum extent practicable.

   b. Retain existing ground cover until the latest date practicable.

   c. Construct drainage control features at the earliest extent practicable.

d. Suspend grading operations during heavy rains.

e. Utilize energy dissipators at culvert outlets as warranted based on ongoing evaluations and discharge velocities.

It should be noted that the measures outlined in the Erosion and Sedimentation Hazard Assessment are preliminary and reflect measures which are generally required of the contractor. The contractor will be required to implement erosion control measures in accordance with DOH requirements.

Thank you again for providing us with your comments. We welcome the opportunity to meet with you and discuss your specific comments regarding the planning and implementation of appropriate drainage system improvements and erosion control measures. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

HWY-DS
2.5259

July 11, 1997

TO: GARY GILL, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: KAZU HAYASHIDA, DIRECTOR
DEPARTMENT OF TRANSPORTATION

Subject: HONOAPIILANI HIGHWAY WIDENING PROJECT (KAANAPALI PARKWAY TO HONOKOWAI STREAM), PROJECT NO. 30A-02-97 - DRAFT ENVIRONMENTAL ASSESSMENT

Thank you for your letter of April 21, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following:

Regional Roadway Projects

Aside from the proposed highway widening project, the Lahaina Bypass is another major transportation project currently planned for the West Maui region. Extending from Launiupoko to Honokowai, the proposed Bypass will afford motorists the opportunity to utilize a bypass route which will facilitate north-south traffic movement from Lahaina to Honokowai.

It should be noted that the widening of Honoapiilani Highway from Ka`anapali to Honokowai was an integral component of the original Lahaina Bypass design. However, this segment was excluded from further consideration since widening the highway beyond four (4) lanes in this area is constrained by right-of-way and highway capacity limitations.

As part of the overall regional transportation improvements, the State Department of Transportation (DOT) is also planning to upgrade the existing traffic signal system on Honoapiilani Highway between Shaw Street in Lahaina and the Lahaina Civic Center access road. Scheduled for implementation by the end of 1997, this upgrade will enable the DOT's traffic signal engineer in Kahului to monitor traffic flow and signalization equipment and quickly respond to changing traffic conditions and equipment problems. The system upgrade will alleviate congestion caused by

stop-and-go traffic between Shaw Street and the Civic Center by coordinating traffic signal operations and improving the flow of traffic.

Future Land Use

Master-planned projects (e.g., Villages at Lei`ali`i, Puukolii Village, South Beach Mauka, North Beach Makai, North Beach Mauka) adjoining or in the vicinity of the highway widening corridor have either received necessary land use approvals for development or are recognized as long-term development areas by the West Maui Community Plan.

Although there may be other areas in the West Maui region which may be considered suitable for urban expansion, any new projects proposed for future development within these areas must have the appropriate State land use and community plan designations, as well as the applicable County zoning. The implementation of new land use proposals along the highway widening corridor will require approvals from the State Land Use Commission, Maui Planning Commission, and the Maui County Council. In this regard, the decision-making processes established by these governmental bodies will provide the mechanism for implementing the growth policies of the West Maui region.

Alternative Transportation

As reflected in the State bicycling master plan (Bike Plan Hawaii, April 1994), the existing segment of Honoapiilani Highway from Lahaina to Kapalua, (including the highway widening corridor) is designated as a bicycle route. This bicycle use designation will continue with the proposed widening improvements.

Landscaping

To the maximum extent practicable, native Hawaiian plants will be utilized in landscaping revegetated areas.

Thank you again for providing us with your comments. A copy of the Final Environmental Assessment will be provided to you.

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

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

July 11, 1997

IN REPLY REFER TO:
HWY-DS
2.5264

Mr. Charles Jencks, Director
Department of Public Works
and Waste Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Dear Mr. Jencks:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of June 18, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following:

1. To facilitate the construction of the proposed project and railroad crossing improvements planned by the Department of Public Works and Waste Management (DPWWM) at Puukolii Road, the State Department of Transportation (DOT) will discuss design and construction details of the highway widening project with the DPWWM's Engineering Division.

2. Excess asphalt and other construction waste will be transported to the Maui Demolition and Construction Landfill for disposal.

3. The proposed road widening lots will be subdivided in accordance with Title 18 of the Maui County Code pertaining to subdivisions.

4. The proposed drainage system improvements will be designed in accordance with applicable regulatory design criteria. A detailed drainage and erosion control plan will be provided to the DPWWM for review and approval in connection with the submittal of construction plans for the project.

HWY-DS
2.5264

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

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

IN REPLY REFER TO

HWY-DS
2.5261

July 11, 1997

Ms. JoAnne Johnson
Lahaina Open Space Society
50 Puu Anoano Street, #508
Lahaina, Hawaii 96761

Dear Ms. Johnson:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 13, 1997 concerning the proposed highway widening project. In response to your comments, we would like to note the following.

Public Notice

Public input is an important aspect of project development for the DOT. In this regard, we feel that the Environmental Assessment (EA) process serves as an excellent early consultation and public awareness mechanism.

Towards this end, the notice of availability of the Draft EA was published in accordance with the provisions of Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules of the State Department of Health pertaining to Environmental Impact Statement Rules. In addition, a copy of the document was provided to the Lahaina Public Library for purposes of public review.

Project Funding

The State Department of Transportation (DOT) is responsible for the design and construction of the highway widening project. It should also be noted that Amfac has contributed a total commitment of nearly $0.75 million towards the design of this project.

Construction Activities

As with any major highway construction project, traffic delays are anticipated to occur.

The DOT recognizes the economic contributions provided by the visitor industry, and to the maximum extent practicable, will phase and schedule construction activities to minimize traffic disruptions and to minimize overall construction duration.

Local businesses will be afforded an opportunity to submit bids for contracts through the State government's open procurement process.

Landscaping

To the maximum extent practicable, appropriate landscaping will be relocated or utilized to revegetate landscaped areas and drought tolerant plants will be considered in the selection of landscape plantings. In addition, the proposed retaining wall will be shielded by landscape planting.

Railroad Crossing

In order to manage traffic and caution motorists at the Lahaina Ka`anapaii & Pacific (LK&P) Railroad crossing with Kaka'alaneo Road (north of the train depot), the developer of Kaka'alaneo Road (Amfac) will coordinate the implementation of appropriate improvements (e.g., signage, striping, warning lights) with the LK&P Railroad.

Intersection Improvements

Kaka'alaneo Road (aka, Road A) will provide an east-west link between the proposed Lahaina Bypass and Honoapiilani Highway which will facilitate traffic circulation in the West Maui region.

In addition to providing safe access to and from side road, traffic signals are utilized to facilitate the safe and efficient flow of traffic through intersections, as well as along roadways. By interconnecting and synchronizing traffic signals at intersections for optimal signal timing, the proposed signal system will alleviate congestion, as well as provide for the safe and efficient flow of traffic along the highway. While the basic infrastructure for the Kaka'alaneo Road signal will be installed for this project, the installation and activation of this signal will occur only when traffic volume warrants are met. It should be noted that current traffic volumes and sight distance

requirements warrant the installation of the proposed signal at the Halawai Drive intersection.

Drainage System Improvements

Drainage system improvements within the highway right-of-way will be designed in accordance with applicable regulatory design criteria to ensure that adjoining and downstream properties are not adversely affected by stormwater runoff generated by the highway widening. To ensure conformance with these standards, construction plans for the project will be distributed to appropriate governmental agencies and utilities for review and comment.

The current level of stormwater runoff is the result of rainfall collecting in Hanakao'o Gulch and adjacent agricultural lands mauka of the highway. During major storms, the runoff volume from these mauka lands occasionally exceeds the maximum capacity of the highway's existing drainage system improvements. To examine the effects of this runoff in the context of the proposed highway widening, the design of the proposed drainage system improvements will be reviewed by the appropriate regulatory agencies and coordinated with the applicable adjoining property owners to minimize the effects of runoff to adjacent and downstream properties. It should also be noted that runoff generated from within the highway right-of-way is minimal when compared to the total runoff volume attributable to the drainage areas mauka of the highway.

The DOT will also comply with State Department of Health (DOH) requirements for a National Pollutant Discharge Elimination System (NPDES) permit pertaining to construction activities and stormwater runoff. Best Management Practices (BMPs) will be utilized to ensure that concerns relating to runoff generated by construction activities are addressed and that adequate mitigation measures are implemented.

Overhead Bridge

To accommodate the widening of Honoapiilani Highway from two (2) to four (4) lanes, the existing overhead golf cart and maintenance bridges must be demolished. Since the functions that these bridges provide are essential to the operation of the Royal Ka`anapali Golf Course, Amfac will be replacing these facilities with an overhead bridge, or bridges, which will enable golf cart, pedestrian, and vehicular traffic to safely cross Honoapiilani Highway.

Night Construction

Residential and condominium properties in the area will be directly notified of night construction activities involving the demolition of the existing overhead golf cart and maintenance bridges, as well as the construction of any proposed overhead replacement bridge(s). While extending construction into the night would shorten the anticipated construction period, the proximity of neighboring residential, properties must be considered. It should be noted, however, that the implementation of night construction for certain segments of the highway will be considered during the detailed engineering design phase of project development.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

HWY-DS
2.5262

July 11, 1997

Ms. Patty Nishiyama
Na Kupuna O Maui - Nation of Hawaii
320 Kaeo Street
Lahaina, Hawaii 96761

Dear Ms. Nishiyama:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 13, 1997 concerning the proposed highway widening project. In response to your comments, we would like to note that the State Historic Preservation Division (SHPD) has indicated that the human skeletal remains which were located in the vicinity of the Lahaina Wastewater Treatment Plant were re-interred at a burial site in Honokohua.

With regard to the highway widening project, should any human remains be inadvertently discovered during construction activities, work will cease at once in the immediate vicinity of the find, and the find will be protected from further damage. The State Department of Transportation (DOT) will immediately notify the SHPD and procedures for the treatment of inadvertently discovered human remains will be followed pursuant to Chapter 6E-43.6, HRS.

In addition, construction plans for the project will be reviewed by the SHPD and other governmental agencies in connection with the project's grading permit application. We will work with the SHPD to ensure compliance with specific recommendations they may have relative to construction implementation.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

HWY-DS
2.5255

July 11, 1997

Ms. Gina Aranki, Executive Director
West Maui Taxpayers Association
P.O. Box 10338
Lahaina, Hawaii 96761

Dear Ms. Aranki:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 22, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following.

Construction Activities

As with any major highway construction project, traffic delays are anticipated to occur. It should be noted, however, that construction activities will be phased and scheduled to provide minimal disruption to traffic operations to the maximum extent practicable. In this context, the implementation of nighttime work scheduling will be considered (as one possible construction mitigation measure) during the detailed engineering design review phase of project development.

In addition, residential, condominium, and commercial properties in the vicinity will be directly notified of night construction activities involving the demolition of the existing overhead golf cart and maintenance bridges, as well as, the construction of any proposed overhead replacement bridge, or bridges.

Intersection Improvements

Traffic signals are utilized to provide safe access to and from side roads, and to facilitate the safe and efficient flow of traffic through intersections, as well as along the roadways. By interconnecting and synchronizing traffic signals for optimal signal timing, the proposed signal system will alleviate congestion, as well as provide for the safe and efficient flow of traffic along the highway. While the basic infrastructure for

the Kaka'alaneo Road signal will be installed for this project, the implementation and activation of this signal depends on meeting future traffic volumes. It should be noted that current traffic volumes warrant the installation of the proposed signal at the Halawai Drive intersection.

Drainage System Improvements

To ensure that stormwater runoff will not adversely affect adjoining and downstream properties, drainage system improvements for the project will be designed in accordance with applicable regulatory design standards. In addition, construction plans for the project will be distributed to appropriate governmental agencies and utilities for conformance with these standards.

The State Department of Transportation (DOT) will also comply with State Department of Health (DOH) requirements for a National Pollutant Discharge Elimination System (NPDES) permit pertaining to construction activities and stormwater runoff. Best Management Practices (BMPs) will be utilized to ensure that concerns relating to runoff generated by construction activities are addressed and that adequate mitigation measures are implemented.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

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

July 11, 1997

IN REPLY REFER TO:

HWY-DS
2.5256

Mr. and Mrs. Herman Casco
P.O. Box 1585
Lahaina, Hawaii 96767

Dear Mr. and Mrs. Casco:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 17, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following:

Kaka`alaneo Road

a. Kaka`alaneo Road (aka, Road A) will provide an east-west link between the proposed Lahaina Bypass and Honoapiilani Highway which will facilitate traffic circulation in the West Maui region. The location of the Honoapiilani Highway access for Kaka`alaneo Road meets State Department of Transportation (DOT) criteria. The extension of Kaka`alaneo Road to the Lower Honoapiilani Road intersection would require the relocation of the Lahaina Wastewater Reclamation Facility (LWRF) due to the alignment modifications required to accommodate the intersection approach and the length of the turning lanes.

b. In order to manage traffic and caution motorists at the Lahaina Ka`anapali & Pacific (LK&P) Railroad crossing with Kaka`alaneo Road (north of the train depot), the developer of Kaka`alaneo Road (Amfac) will coordinate the implementation of appropriate improvements (e.g., signage, striping, warning lights) with the LK&P Railroad.

c. Traffic signals are utilized to provide safe access to and from side roads, and to facilitate the safe and efficient flow of traffic through intersections, as well as along the roadways. By interconnecting and synchronizing traffic signals for optimal signal timing, the proposed signal system will alleviate congestion, as well as provide for the safe and efficient flow of traffic along the highway.

While the basic infrastructure for the Kaka`alaneo Road signal will be installed for this project, the installation and activation of this signal depends on meeting future traffic volumes. It should be noted that current traffic volumes and sight distance requirements warrant the installation of the proposed signal at the Halawai Drive intersection.

Drainage System Improvements

Drainage system improvements within the highway right-of-way will be designed in accordance with applicable regulatory design criteria to ensure that adjoining and downstream properties are not adversely affected by stormwater runoff generated by the highway widening. To ensure conformance with these standards, construction plans for the project will be distributed to appropriate governmental agencies and utilities for review and comment.

The DOT will also comply with the State Department of Health (DOH) requirements for a National Pollutant Discharge Elimination System (NPDES) permit pertaining to construction activities and stormwater runoff. Best Management Practices (BMPs) will be utilized to ensure that concerns relating to runoff generated by construction activities are addressed and that adequate mitigation measures are implemented.

Project Funding

The DOT is responsible for the design and construction of the highway widening project. It should also be noted that, Amfac has contributed a total of nearly $0.75 million towards the design of this project.

Overhead Bridge

To accommodate the widening of Honoapiilani Highway from two (2) to four (4) lanes, the existing overhead golf cart and maintenance bridges will need to be demolished. Since the functions that these bridges provide are essential to the operation of the Royal Ka`anapali Golf Course, Amfac will replace these facilities with an overhead bridge, or bridges, which will enable golf cart, pedestrian, and vehicular traffic to safely cross Honoapiilani Highway. Ultimately the bridge(s) will allow properties mauka of Honoapiilani Highway to access Ka`anapali Resort areas makai of the highway via a grade separated condition.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

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

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

IN REPLY REFER TO:

July 11, 1997

HWY-DS
2.5257

Mr. David Chenoweth
340 Front Street
Lahaina, Hawaii 96761

Dear Mr. Chenoweth:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 13, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following:

Landscaping

The Maui County Arborist Committee generally reviews landscape plans and street tree planting plans in connection with applications submitted for subdivision approval, as well as actions involving significant landscape features (e.g., monkeypod trees along Puunene Avenue). With regard to the proposed project, appropriate landscaping will be relocated or utilized to revegetate landscaped areas to the maximum extent practicable to ensure that the landscape character along the highway is not disrupted. In addition, the proposed retaining wall will be shielded by landscape planting.

Kaka`alaneo Road

Kaka`alaneo Road (aka, Road A) or any development that it may be related to, are not included within the scope of the highway widening project. From a regional perspective we note that Kaka`alaneo Road will provide an east-west link between the proposed Lahaina Bypass and Honoapiilani Highway which will improve traffic circulation in the West Maui region. It should also be noted that basic infrastructure improvements for the Kaka`alaneo Road intersection will be constructed (within the highway right-of-way) in connection with the highway widening project to minimize traffic disruptions upon the future development of Kaka`alaneo Road.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
JVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
~~JERRY M. MATSUDA~~
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

HWY-DS
2.5258

July 11, 1997

Mr. Randy Draper
P.O. Box 10123
Lahaina, Hawaii 96761

Dear Mr. Draper:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 18, 1997 concerning the proposed highway widening project. In response to your comments we would like to note the following.

Drainage system improvements will be designed in accordance with applicable regulatory design criteria to ensure that adjoining and downstream properties are not adversely affected by stormwater runoff. To ensure conformance with these standards, construction plans for the project will be distributed to appropriate governmental agencies and utilities for review and comment.

The State Department of Transportation (DOT) will also comply with State Department of Health (DOH) requirements for a National Pollutant Discharge Elimination System (NPDES) permit pertaining to construction activities and stormwater runoff. Best Management Practices (BMPs) will be utilized to ensure that concerns relating to runoff generated by construction activities are addressed and that adequate mitigation measures are implemented. BMPs will address equipment and material storage as it relates to construction activities and storm runoff.

With regard to construction employee parking, off-street parking areas will be identified as part of the detailed engineering phase of work. Please be assured, however, that construction employees will not be permitted to park at Kahekili Park.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

HWY-DS
2.5260

July 11, 1997

Mr. James W. Johnson
50 Puu Anoano Street, #508
Lahaina, Hawaii 96761

Dear Mr. Johnson:

Subject: Honoapiilani Highway Widening Project (Kaanapali Parkway to Honokowai Stream), Project No. 30A-02-97 - Draft Environmental Assessment

Thank you for your letter of April 18, 1997 concerning the proposed highway widening project. In response to your comments, we would like to note the following.

Public Notice

The notice of availability of the Draft Environmental Assessment (EA) was published in accordance with the provisions of Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules of the State Department of Health pertaining to Environmental Impact Statement Rules. In addition, a copy of the document was provided to the Lahaina Public Library for purposes of public review.

Kaka'alaneo Road

Kaka'alaneo Road (aka, Road A) is not included within the scope of the highway widening project. It should be noted, however, that Kaka'alaneo Road will serve as an east-west link between the proposed Lahaina Bypass and Honoapiilani Highway that will improve traffic circulation in the West Maui region.

It should also be noted that Honoapiilani Highway is a controlled access State facility with accesses permitted by the State Department of Transportation (DOT) only at designated intersections and no private driveway accesses are allowed. The Honoapiilani Highway access point for Kaka'alaneo Road was approved with full consideration given to operating parameters for the roadway section between Puukoli'i Road and Lower Honoapiilani Road.

Intersection Improvements

The implementation of the proposed traffic signal system will alleviate low operating levels of service at intersections, as well as facilitate the safe and efficient flow of traffic along the highway by interconnecting and synchronizing traffic signals for optimal signal timing. While the basic infrastructure for the Kaka'alaneo Road signal will be installed for this project, the implementation and activation of this signal is dependent on meeting future traffic warrants. It should be noted that current traffic volumes and sight distance requirements warrant the installation of the proposed signal at the Halawai Drive intersection.

Landscaping

Landscaping improvements will be implemented in keeping with the existing highway landscape character.

Drainage System Improvements

Drainage system improvements related to the project are limited to the extension of existing culverts, as well as the placement of new culverts in areas where problems with ponding occur. The proposed improvements will be designed in conformance with appropriate regulatory design standards to ensure that stormwater runoff will not adversely impact adjoining or downstream properties.

Thank you again for providing us with your comments. Should you have any questions, please contact Mr. Robert Siarot of the Highways Division at (808) 877-5061.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

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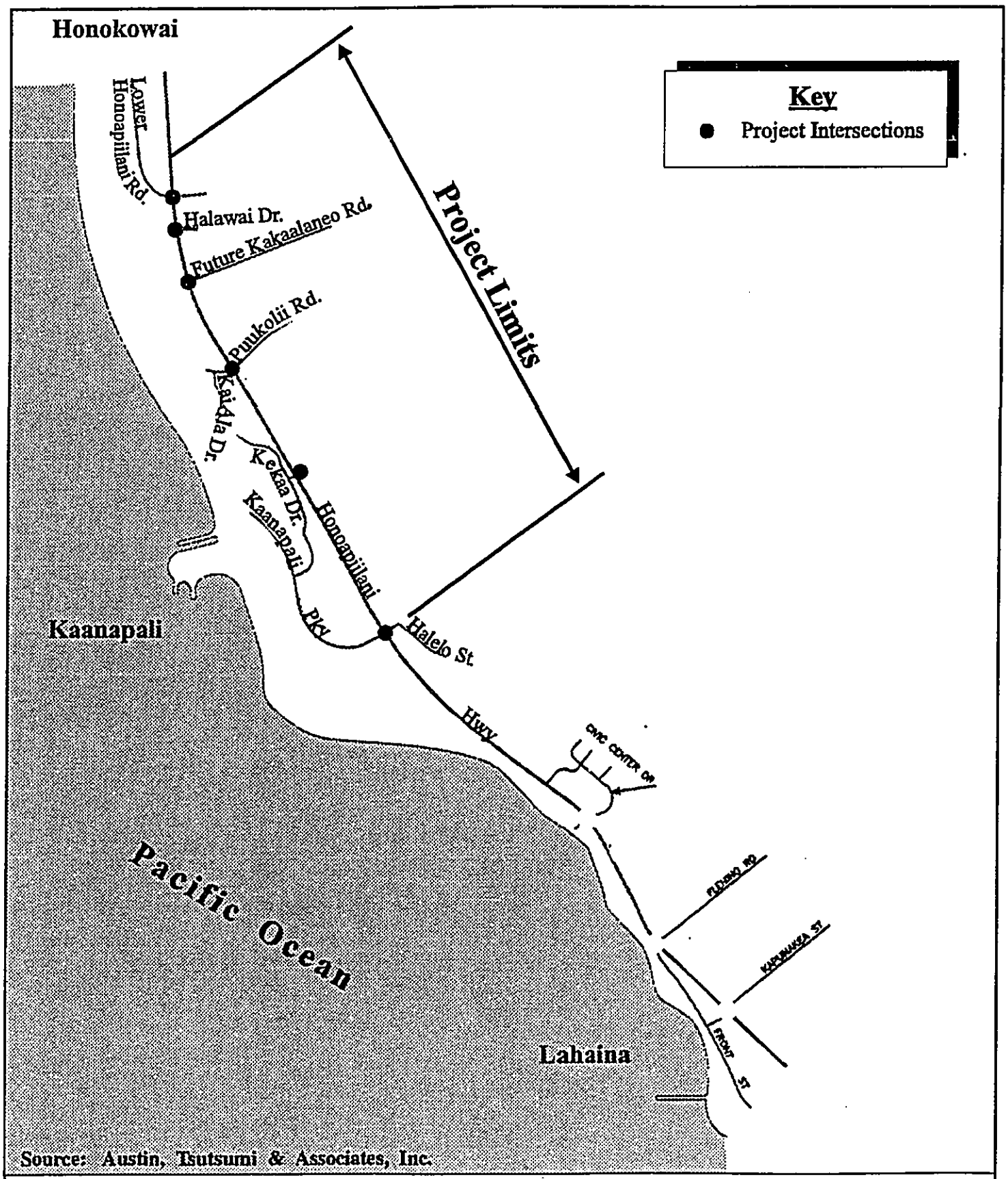
Appendices

Appendix A

Map of Project Area



Appendix A Honoapiilani Highway Widening

Project Area

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE

Appendix B

Acoustic Study for the Honoapiilani Highway Improvements-Honokowai Bridge to Kaanapali Parkway and Supplemental Data

ACOUSTIC STUDY
FOR THE
HONOAPIILANI HIGHWAY IMPROVEMENTS
HONOKOWAI BRIDGE TO KAANAPALI PKWY.
KAANAPALI, MAUI

Prepared for:

MUNEKIYO & ARAKAWA, INC.

Prepared by:

Y. EBISU & ASSOCIATES
1126 12th Avenue, Room 305
Honolulu, Hawaii 96816

MARCH 1996

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CHAPTER I. SUMMARY

The existing and future traffic noise along the corridor of the proposed Honoapiilani Highway Improvement Project from Kaanapali Parkway to Honokawai Bridge in Kaanapali on the island of Maui were studied to evaluate potential noise impacts associated with the No Build and Build Alternatives of the highway improvement project. Noise measurements were obtained, traffic noise predictions developed, and noise abatement alternatives evaluated.

Existing traffic noise levels along Honoapiilani Highway between Honokawai Bridge and Puukolii Road do not exceed the Federal Highway Administration (FHWA) or State Department of Transportation, Highways Division (DOT) noise abatement criteria. Between Puukolii Road and Kaanapali Parkway, existing traffic noise levels do exceed state and federal noise abatement criteria at two locations: the employee housing units at the Royal Lahaina Resort; and some guest units at the Kaanapalli Royal. At areas removed from Honoapiilani Highway, existing traffic noise levels are very low, typically less than 57 Leq(h), and possibly as low as 50 Leq(h). In these less populated areas, local or distant highway traffic, birds, dogs, or wind and foliage tend to be the dominant noise sources.

The following general conclusions can be made in respect to the potential traffic noise impacts and recommended noise mitigation measures associated with the highway improvement (or Build) alternative:

A. Future traffic noise levels are predicted to increase by 1.1 dB between CY 1992 and 1997 with or without the highway improvement project. If traffic flow conditions increase during the PM peak hour north of the Kaanapali Parkway intersection following the completion of the proposed highway improvements, an additional 1.5 dB of increase may occur as a result of the project.

B. Adverse traffic noise impacts resulting from the project are avoidable if continued use of air conditioning units occur at existing dwelling and resort hotel units which are located within 146 FT of the highway centerline. Existing employee housing units of the Royal Lahaina Resort and some guest units of the Kaanapali Royal are predicted to experience traffic noise levels above federal and state noise abatement criteria. These future increases in traffic noise levels are unavoidable with or without the highway improvement project as traffic volumes increase along the highway. Use of air conditioning at these affected noise sensitive units as a noise mitigation measure is anticipated to continue. Therefore, additional noise mitigation measures should not be required.

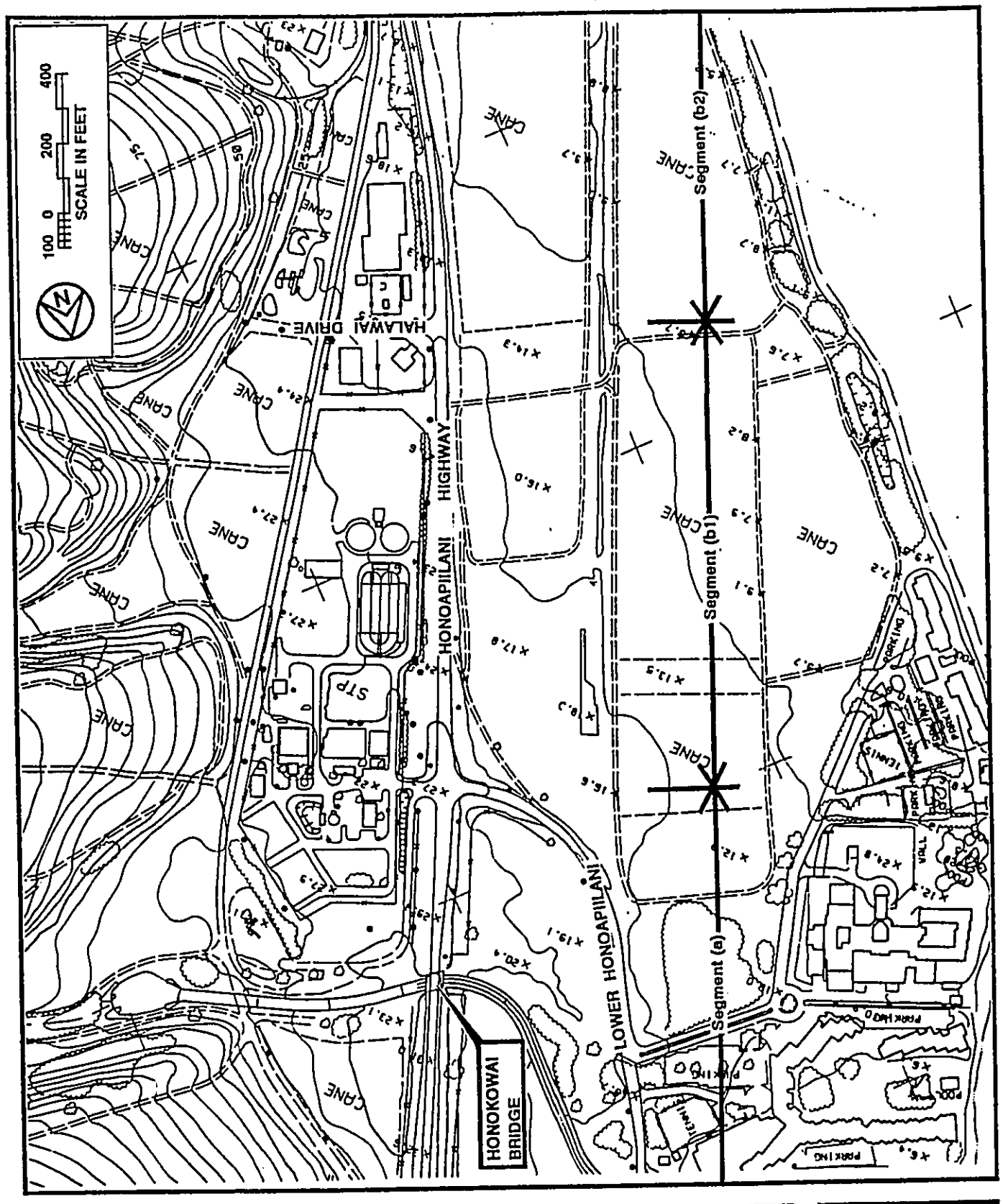
C. Potential short term construction noise impacts are possible during the project construction period. However, minimization of these types of noise impacts are possible using standard curfew periods, properly muffled equipment, administrative controls, and construction barriers as required.

CHAPTER II. GENERAL STUDY METHODOLOGY

Noise Measurements. Existing traffic and background ambient noise levels at three locations along the project corridor were measured in February 1996. The traffic noise measurements were used to calibrate the traffic noise model which was used to calculate the Base Year and future year traffic noise levels under the No Build and Build alternatives. The noise measurements were also 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 forecasted 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 (U.S. Federal Highway Administration) and State DOT (Department of Transportation, Highways Division) noise standards and criteria.

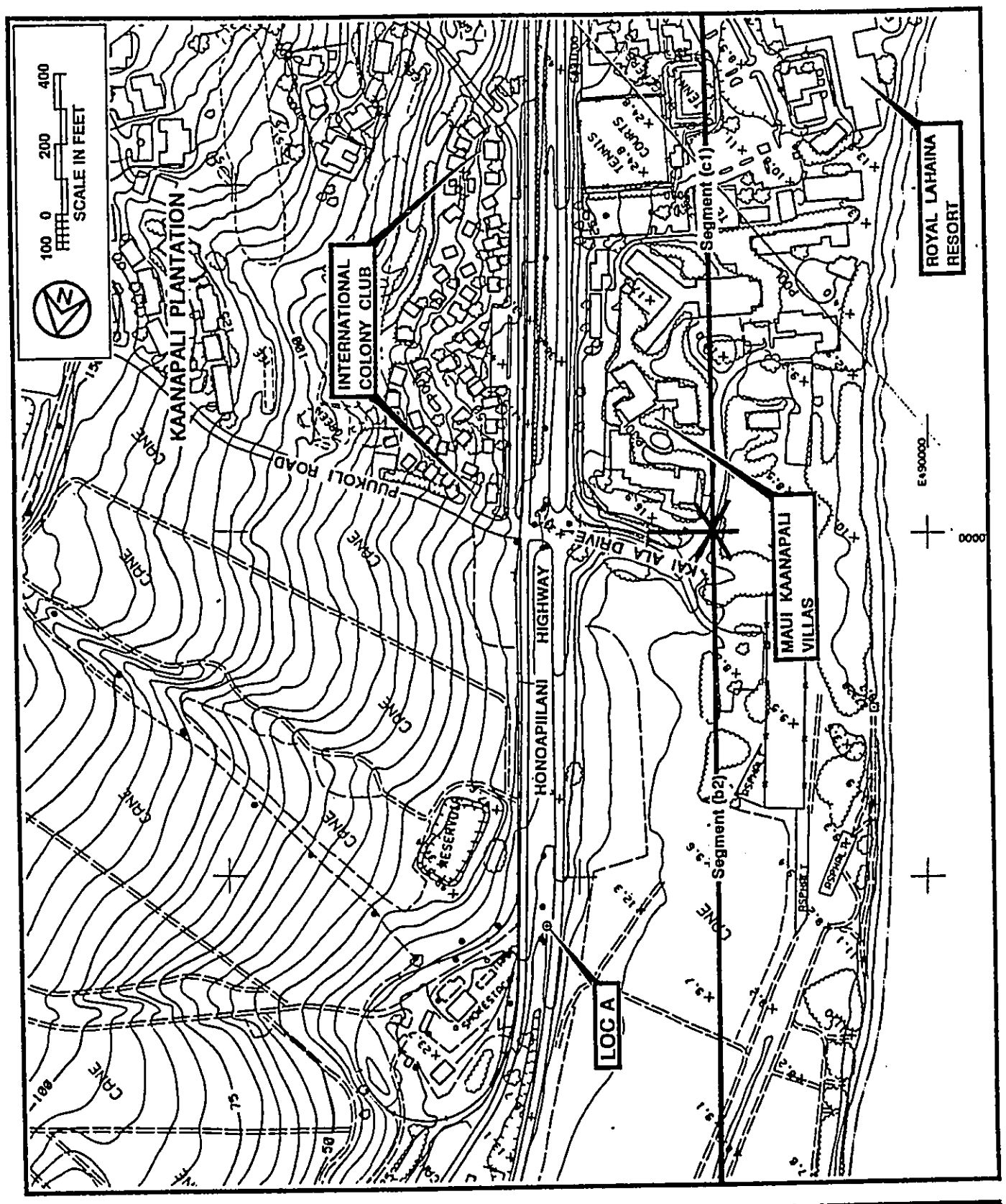
The noise measurement locations are shown in **FIGURES 1 thru 4.** The results of the traffic noise measurements are summarized in **TABLE 1.** In the table, Leq represents the average (or equivalent), A-Weighted, Sound Level. A list and description of the acoustical terminology used is contained in **APPENDIX B.**

Traffic Noise Predictions. The Federal Highway Administration (FHWA) Traffic Noise Prediction Model (**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 three traffic noise measurement locations along the project corridor (Sites A thru C), 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. As indicated in **TABLE 1,** spot counts of traffic volumes were obtained during the measurement periods and were used to generate the Equivalent Sound Level (Leq) predictions shown in the table.



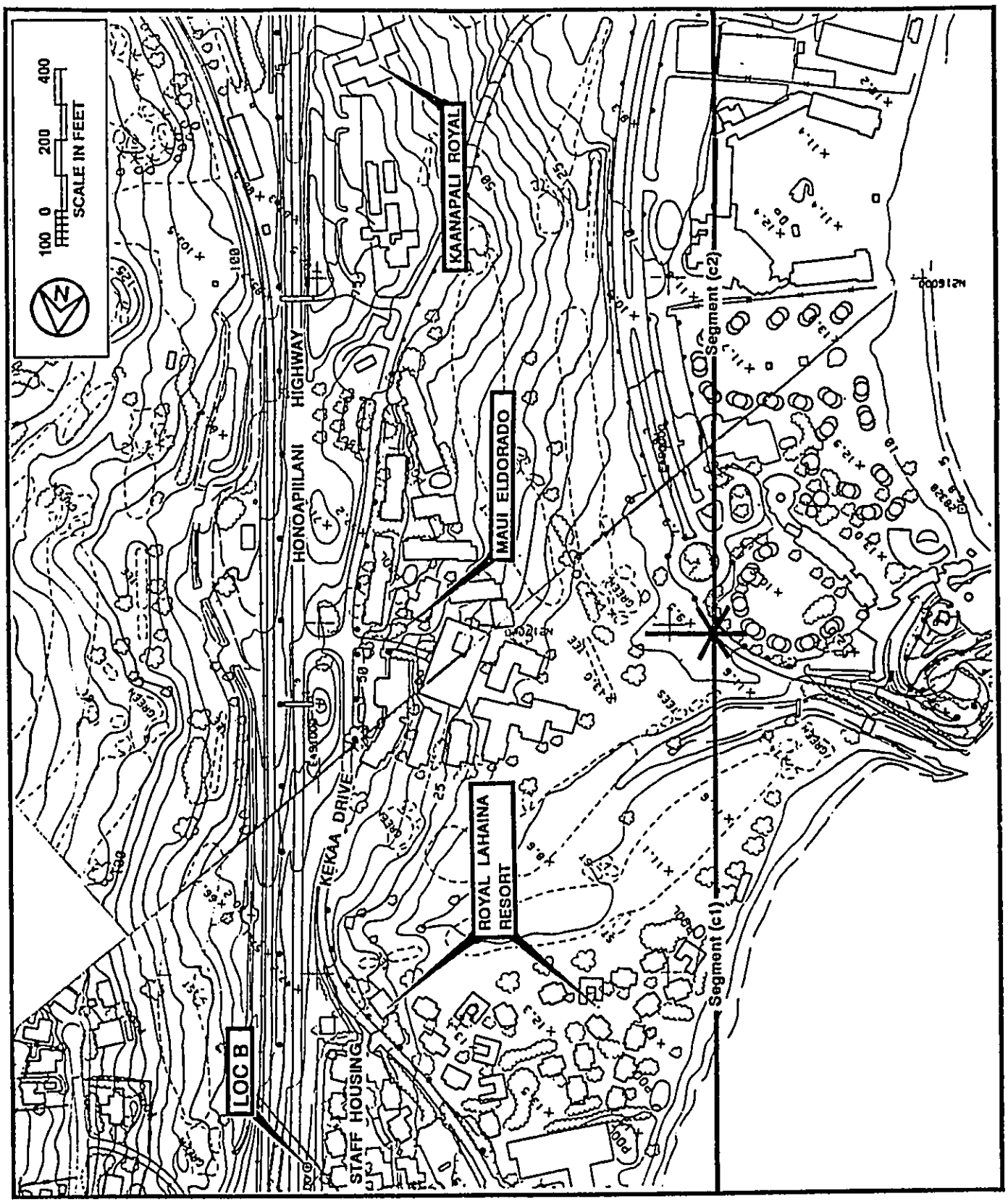
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE SENSITIVE PROPERTIES (SEGMENT A, B1 & B2)

FIGURE 1



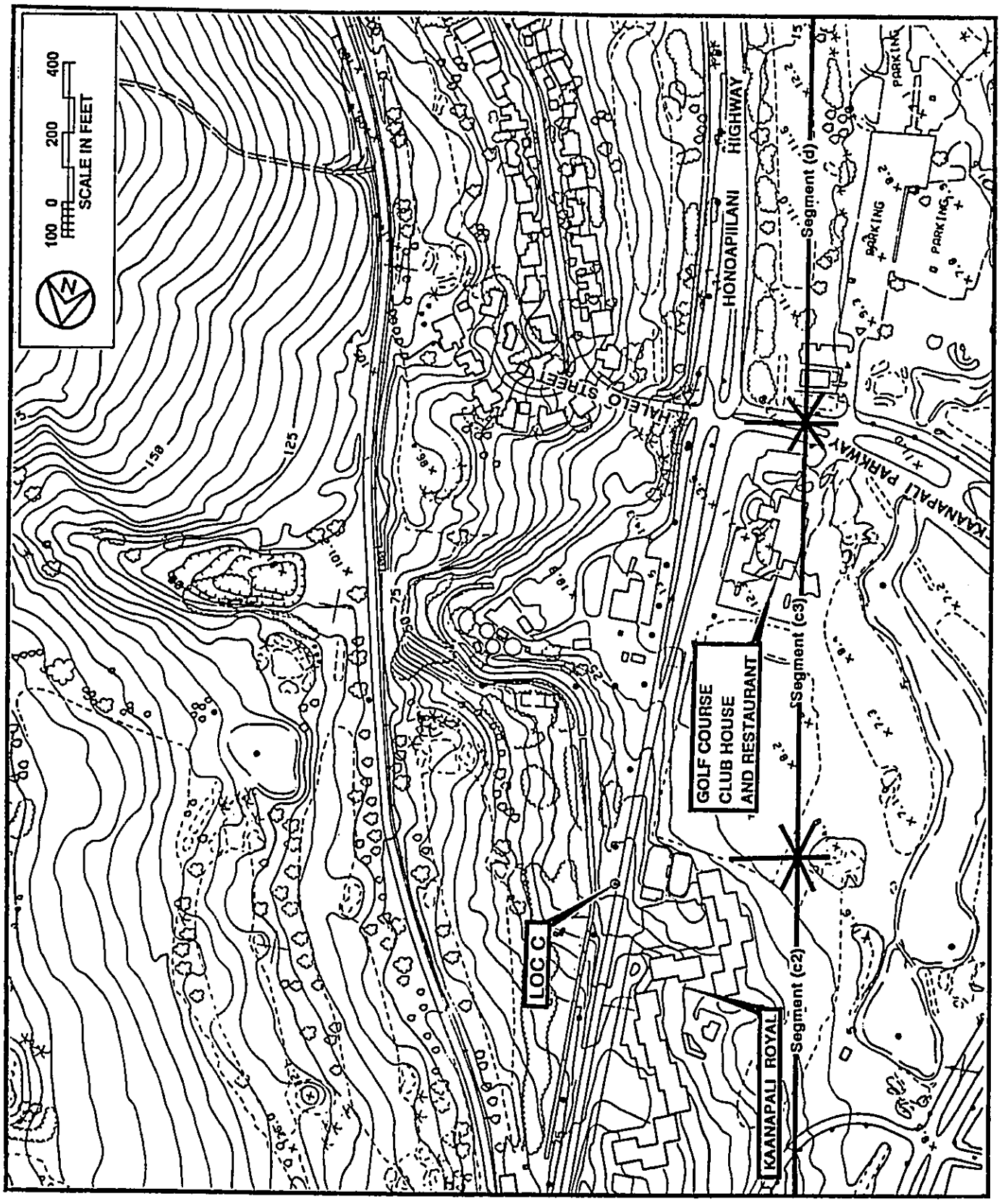
LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE SENSITIVE PROPERTIES (SEGMENT B2 & C1)

FIGURE 2



LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE SENSITIVE PROPERTIES (SEGMENT C1 & C2)

FIGURE 3



LOCATIONS OF NOISE MEASUREMENT SITES AND NOISE SENSITIVE PROPERTIES (SEGMENT C2, C3 & D)	FIGURE 4

TABLE 1

TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	--Hourly Traffic Volume-- AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
A. 50 FT from the center-line of Honoapiilani Highway (2/29/96)	1200 TO 1300	52	1,772	17	30	71.7	71.8
B. 38 FT from the center-line of Honoapiilani Highway (2/28/96)	0715 TO 0741	52	1,543	23	35	73.3	73.8
B. 38 FT from the center-line of Honoapiilani Highway (2/29/96)	0715 TO 0815	52	1,778	10	22	73.7	73.2
B. 38 FT from the center-line of Honoapiilani Highway (2/29/96)	1530 TO 1630	52	2,448	20	21	73.2	72.9
C. 38 FT from the center-line of Honoapiilani Highway (2/28/96)	1530 TO 1630	47	2,274	13	13	70.9	71.4
C. 38 FT from the center-line of Honoapiilani Highway (2/29/96)	1030 TO 1130	52	2,036	20	29	73.2	73.4

The agreement between measured and predicted traffic noise levels was considered good, and sufficiently accurate to formulate the Base Year and future year traffic noise levels.

Base Year traffic noise contours were then developed along Honoapiilani Highway using Base Year (1992) traffic volume data for the AM and PM peak hours from **Reference 2.** Traffic mix by vehicle types and average vehicle speeds for the various roadway sections and for existing and future roadway conditions were derived from observations during the noise monitoring periods and from **Reference 3.** The determination of the period of highest hourly traffic volumes along Honoapiilani Highway was made after a review of the Base Year AM and PM traffic volumes from **References 2 and 3.** The Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to calculate the Base Year and all future year traffic noise levels as required by **Reference 4.** Aerial photomaps 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 (1997) traffic noise levels were then developed for the No Build and Build (roadway improvement) Alternatives using the future traffic assignments of **Reference 2**, the topographic and existing development features described previously, and the highway alignments and profiles of the Build Alternative.

The CY 1997 traffic assignments for the No Build and Build Alternatives reflected the forecasted demand traffic volumes along the existing sections of Honoapiilani Highway during the AM and PM peak hours. Future traffic conditions under the No Build Alternative may worsen since the capacity of the existing roadway system may not be able to accommodate the forecasted demand.

Impact Assessments and Mitigation. Following the calculation of the future traffic noise levels for the No Build and Build Alternatives, comparisons of the future traffic noise levels and

impacts between the alternatives were made. Comparisons of predicted future traffic noise levels with FHWA noise abatement criteria (see **TABLE 2**) were made to determine specific locations where noise abatement measures would be necessary. In addition, the State DOT'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**). At the areas along the highway which are currently in open space or vacant, the locations of the 57, 66, and 67 Leq(h) traffic noise contours, without the benefit of shielding from natural terrain or man-made sound barriers, were provided for siting future noise sensitive land uses along the Honoapiilani Highway Improvement Corridor, and for defining the adequate buffer space between the roadway sections and these land uses. The FHWA 67 Leq(h) criteria shown in **TABLE 2** and the State DOT "greater than 15 dB increase" criteria were applied to all dwellings, transient lodgings, and hotels along the existing sections of Honoapiilani Highway within the project corridor. In addition, the possibility of exceeding the 66 Leq(h) level was also examined for this study, since the State DOT is planning to replace the FHWA 67 Leq(h) criteria with their 66 Leq(h) criteria (**Reference 5**). Where noise mitigation measures were required, the use of noise barriers was tested to determine if the barriers would be effective in mitigating adverse noise impacts.

TABLE 2

FHWA NOISE ABATEMENT CRITERIA
[Hourly A–Weighted Sound Level––Decibels (dBA)]

ACTIVITY CATEGORY	LEQ (H)	DESCRIPTION OF ACTIVITY CATEGORY
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.

CHAPTER III. EXISTING ACOUSTICAL ENVIRONMENT

Along Honoapiilani Highway. For the purposes of this study, 1992 was used as the Base Year for computing changes in traffic noise levels among the No Build and Build Alternatives. Differences between existing traffic noise levels measured in February 1996 and computed Base Year (1992) traffic noise levels along Honoapiilani Highway were estimated to be between 0.5 to 0.6 dB, and were not considered to be significant. The Base Year noise environment along Honoapiilani Highway was described by computing the Hourly Equivalent Sound Levels [Leq(h)] along the existing roadway for the 1992 time period. These sound levels, expressed in decibels, represent the average level of traffic noise for a given hour of the day. Due to variations in existing traffic conditions along Honoapiilani Highway, evaluations of both the AM and PM peak hours were necessary to determine the hour with the highest traffic noise levels along individual sections of Honoapiilani Highway.

TABLES 3A and 3B present the traffic volume, speed, and mix assumptions used to calculate the Base Year noise levels along the various segments of the existing roadway. **TABLE 3C** identifies the roadway segment numbers and labels used throughout this report. Shown in **TABLES 3A and 3B** are the calculated AM and PM Peak Hour Leq(h)'s at a reference distance of 50 FT from the centerlines of the various roadway segments. The calculated distances to the various noise contour lines (57, 66, and 67 Leq) under unobstructed, line-of-sight conditions are shown in **TABLES 4A and 4B.** The actual distances to the contour lines will generally be less than indicated in **TABLES 4A and 4B** when intervening structures or walls exist between the highway and a receptor. This reduction (or shrinkage) of the traffic noise contour distances from the highway centerline are the result of noise shielding (or attenuation) effects caused by the intervening structures or walls.

By using the traffic assumptions of **TABLES 3A and 3B**, and

TABLE 3A

COMPARISONS OF BASE YEAR (CY 1992) AND FUTURE (CY 1997)
TRAFFIC NOISE LEVELS ALONG HONOAPIILANI HIGHWAY
(AM PEAK HOUR AND 50 FT FROM ROADWAY CENTERLINE)

LOCATION	SPEED (MPH)	VPH	**** HOURLY LEQ IN dB **** AUTO	MT	HT	ALL VEH
BASE YEAR (CY 1992) AM PEAK HR. TRAFFIC:						
Honoapiilani Highway, Segment (a)	52	851	66.3	57.3	63.3	68.4
Honoapiilani Highway, Segment (b1)	52	1,321	68.2	59.2	65.2	70.3
Honoapiilani Highway, Segment (b2)	52	1,490	68.7	59.7	65.7	70.8
Honoapiilani Highway, Segment (c1)	52	1,591	69.0	60.0	66.0	71.1
Honoapiilani Highway, Segment (c2)	52	1,576	69.0	60.0	66.0	71.1
Honoapiilani Highway, Segment (c3)	52	1,576	69.0	60.0	66.0	71.1
Honoapiilani Highway, Segment (d)	52	2,106	70.2	61.3	67.2	72.3
FUTURE CONDITIONS (CY 1997) AM PEAK HR. TRAFFIC:						
Honoapiilani Highway, Segment (a)	52	1,107	67.4	58.5	64.4	69.6
Honoapiilani Highway, Segment (b1)	52	1,702	69.3	60.3	66.3	71.4
Honoapiilani Highway, Segment (b2)	52	1,932	69.9	60.9	66.9	72.0
Honoapiilani Highway, Segment (c1)	52	2,047	70.1	61.1	67.1	72.2
Honoapiilani Highway, Segment (c2)	52	2,041	70.1	61.1	67.1	72.2
Honoapiilani Highway, Segment (c3)	52	2,041	70.1	61.1	67.1	72.2
Honoapiilani Highway, Segment (d)	52	2,724	71.3	62.4	68.4	73.5

Note:

The following assumed traffic mix of autos, medium trucks, and heavy vehicles were used for existing and future am peak hour conditions along Honoapiilani Highway: 97.5% autos, 1.0% medium trucks, and 1.5% heavy trucks and buses.

TABLE 3B

COMPARISONS OF BASE YEAR (CY 1992) AND FUTURE (CY 1997)
TRAFFIC NOISE LEVELS ALONG HONOAPIILANI HIGHWAY
(PM PEAK HOUR AND 50 FT FROM ROADWAY CENTERLINE)

LOCATION	SPEED (MPH)	VPH	**** HOURLY LEQ IN dB **** AUTO	MT	HT	ALL VEH
BASE YEAR (CY 1992) PM PEAK HR. TRAFFIC:						
Honoapiilani Highway, Segment (a)	52	1,140	67.6	58.6	62.8	69.2
Honoapiilani Highway, Segment (b1)	52	1,778	69.5	60.5	64.7	71.2
Honoapiilani Highway, Segment (b2)	52	2,058	70.1	61.2	65.4	71.8
Honoapiilani Highway, Segment (c1)	52	2,161	70.4	61.4	65.6	72.0
Honoapiilani Highway, Segment (c2)	52	2,056	70.1	61.1	65.4	71.8
Honoapiilani Highway, Segment (c3)	47	2,056	68.5	59.7	64.3	70.3
Honoapiilani Highway, Segment (d)	52	2,800	71.5	62.5	66.7	73.1
FUTURE CONDITIONS (CY 1997) PM PEAK HR. TRAFFIC:						
Honoapiilani Highway, Segment (a)	52	1,487	68.7	59.7	64.0	70.4
Honoapiilani Highway, Segment (b1)	52	2,301	70.6	61.6	65.9	72.3
Honoapiilani Highway, Segment (b2)	52	2,668	71.3	62.3	66.5	72.9
Honoapiilani Highway, Segment (c1)	52	2,789	71.5	62.5	66.7	73.1
Honoapiilani Highway, Segment (c2)	52	2,687	71.3	62.3	66.5	72.9
Honoapiilani Highway, Segment (c3)	47	2,687	69.6	60.8	65.4	71.4
Honoapiilani Highway, Segment (d)	52	3,613	72.6	63.6	67.8	74.2

Note:

The following assumed traffic mix of autos, medium trucks, and heavy vehicles were used for existing and future pm peak hour conditions along Honoapiilani Highway: 98.0% autos, 1.0% medium trucks, and 1.0% heavy trucks and buses.

TABLE 3C

IDENTIFICATION OF HONOAPIILANI HIGHWAY ROADWAY SEGMENTS

SEGMENTS	BOUNDING INTERSECTIONS
(a)	North of Lower Honoapiilani Rd.
(b1)	Lower Honoapiilani Rd. to Halawai Dr.
(b2)	Halawai Dr. to Kai Ala Dr./Puukoli Rd.
(c1)	Kai Ala Dr./Puukoli Rd. to Kekaa Dr.
(c2)	Kekaa Dr. to 0.25 mi. North of Kaanapali Parkway
(c3)	0.25 mi. North of Kaanapali Parkway to Kaanapali Parkway/Halelo St.
(d)	South of Kaanapali Parkway/Halelo St.

TABLE 4A

BASE YEAR AND CY 1997 DISTANCES TO 57, 66, AND 67 LEQ CONTOURS
(AM PEAK HOUR TRAFFIC)

STREET SECTION	57 Leq SETBACK (FT) BASE YEAR	57 Leq SETBACK (FT) CY 1997	66 Leq SETBACK (FT) BASE YEAR	66 Leq SETBACK (FT) CY 1997	67 Leq SETBACK (FT) BASE YEAR	67 Leq SETBACK (FT) CY 1997
Honoapiilani Highway, Segment (a)	288	343	72	86	62	74
Honoapiilani Highway, Segment (b1)	386	457	97	115	83	99
Honoapiilani Highway, Segment (b2)	419	498	105	125	90	107
Honoapiilani Highway, Segment (c1)	437	517	110	130	94	111
Honoapiilani Highway, Segment (c2)	434	516	109	130	94	111
Honoapiilani Highway, Segment (c3)	434	516	109	130	94	111
Honoapiilani Highway, Segment (d)	527	626	132	157	114	135

Notes:

(1) All setback distances are from the roadways' centerlines.
(2) See **TABLE 3A** for traffic volume, speed, and mix assumptions.
(3) Setback distances are for unobstructed line–of–sight conditions.
(4) Soft ground conditions assumed along all roadways.
(5) See **TABLE 3C** for identification of roadway segments.

TABLE 4B

BASE YEAR AND CY 1997 DISTANCES TO 57, 66, AND 67 LEQ CONTOURS
(PM PEAK HOUR TRAFFIC)

STREET SECTION	57 Leq SETBACK (FT) BASE YEAR	57 Leq SETBACK (FT) CY 1997	66 Leq SETBACK (FT) BASE YEAR	66 Leq SETBACK (FT) CY 1997	67 Leq SETBACK (FT) BASE YEAR	67 Leq SETBACK (FT) CY 1997
Honoapiilani Highway, Segment (a)	326	390	82	98	70	84
Honoapiilani Highway, Segment (b1)	439	521	110	131	95	112
Honoapiilani Highway, Segment (b2)	484	575	122	145	104	124
Honoapiilani Highway, Segment (c1)	500	593	126	149	108	128
Honoapiilani Highway, Segment (c2)	484	578	121	145	104	125
Honoapiilani Highway, Segment (c3)	384	458	96	115	83	99
Honoapiilani Highway, Segment (d)	594	704	149	177	128	152

Notes:

(1) All setback distances are from the roadways' centerlines.
(2) See **TABLE 3B** for traffic volume, speed, and mix assumptions.
(3) Setback distances are for unobstructed line–of–sight conditions.
(4) Soft ground conditions assumed along all roadways.
(5) See **TABLE 3C** for identification of roadway segments.

the relationship of the existing free-field traffic noise contours to noise sensitive properties along the existing roadway were obtained. Exceedances of the exterior FHWA noise abatement criteria of 67 Leq and the proposed State DOT 66 Leq criteria were tested along Honoapiilani Highway during the Base Year for the AM and PM peak hours. A list of noise sensitive properties along the project corridor were traffic noise levels were evaluated and the results of these evaluations are provided in **TABLE 5.**

Exterior traffic noise levels at five employee housing units of the Royal Lahaina Resort (see **TABLE 5 and FIGURE 3**) are currently greater than the FHWA 67 Leq and/or the proposed State DOT 66 Leq criteria levels during the AM or PM peak hour. These employee housing units are currently furnished with window air conditioning units, which serve as noise mitigation measures. Some guest units of Building H of the Kaanapalli Royal (see **FIGURE 4**) currently experience exterior traffic noise levels greater than the State DOT 66 Leq criteria. These guest units are also air conditioned. No additional noise sensitive structure, park, or public use facility along the project corridor experiences traffic noise levels greater than the FHWA or State DOT noise abatement criteria.

At Locations Removed from Honoapiilani Highway. At areas removed from Honoapiilani Highway, Base Year noise levels are much lower than along the highway Right-of-Way. Base Year noise levels in areas removed from Honoapiilani Highway are typically less than 57 Leq(h), and possibly as low as 50 Leq(h). Measured background ambient noise levels at the eastern end of Puukolii Road were 51 Leq(h) in CY 1992. In these less populated areas, local or distant roadway traffic, birds, dogs, or wind and foliage tend to be the dominant noise sources. Existing noise levels at these more distant areas are typically less than both the FHWA exterior noise abatement criteria of 67 Leq(h) and the proposed State DOT criteria of 66 Leq(h).

TABLE 5

SUMMARY OF BASE YEAR AND FUTURE TRAFFIC NOISE LEVELS AT NOISE SENSITIVE STRUCTURES

LOCATION	********* BASE YEAR (CY 1992) ********* SETBACK DIST. FROM C.L. (FT)	---- Leq (dBA) ---- AM PEAK HR.	PM PEAK HR.	********** FUTURE (CY 1997) ********** SETBACK DIST. FROM C.L. (FT)	---- Leq (dBA) ---- AM PEAK HR.	PM PEAK HR.
Maui Kaanapali Villas						
1. Coconut Building:	140	64	65	146	66	66
2. Banyan Building:	140	64	65	146	66	66
International Colony Club						
3. Nearest Home:	160	64	64	154	65	66
Royal Lahaina Resort						
4. Staff Housing #1 (North):	95	67 *	68 */**	101	68 */**	69 */**
5. Staff Housing #2:	85	68 */**	69 */**	91	69 */**	69 */**
6. Staff Housing #3 (Middle):	95	67 *	68 */**	101	68 */**	69 */**
7. Staff Housing #4:	100	67 *	68 */**	106	68 */**	68 */**
8. Staff Housing #5 (South):	65	69 */**	70 */**	71	70 */**	71 */**
Maui Eldorado						
9. Building K:	170	63	64	176	64	65
10. Building D:	175	63	64	181	64	65
11. Building B:	230	61	62	236	62	63
Kaanapali Royal						
12. Building Q:	115	66	66	121	67 *	67 *
13. Building K:	150	64	65	156	65	66
14. Building J:	115	66	66	121	67 *	67 *
15. Building H:	100	67 *	67 *	106	68 */**	68 */**
16. Building G:	125	65	66	131	66	67 *

Notes:

* Exceeds 66 Leq State DOT Criteria.
** Exceeds 67 Leq FHWA Criteria.

CHAPTER IV. DESCRIPTION OF FUTURE TRAFFIC NOISE LEVELS

The future traffic noise levels along Honoapiilani Highway within the project limits during CY 1997 were evaluated for the No Build and Build study alternatives. The same methodology that was used to calculate the Base Year noise levels was also used to calculate the Year 1997 noise levels for the alternatives listed above.

The future (CY 1997) traffic volume, speed, and mix assumptions used for the Build Alternative are shown in **TABLES 3A and 3B**. Also shown in the tables are the future traffic noise levels at a reference distance of 50 FT from the highway centerline and the predicted changes in traffic noise levels along the highway improvement project corridor between CY 1992 and CY 1997 for the Build Alternative. **TABLES 4A and 4B** present comparisons of the corresponding changes in the setback distances to the 57 thru 67 Leq(h) noise contours for the various highway segments under the Build Alternative. It should be noted that forecasted traffic volumes and noise levels for both the No Build and Build Alternatives are identical, and the differences in traffic noise levels between the No Build and Build Alternatives are predicted to be insignificant (near zero).

The future traffic noise levels were also calculated at noise sensitive structures along the Honoapiilani Highway project corridor using preliminary highway plans and profiles, aerial photomaps, and the project's 1"=400' scale maps. The locations of existing noise sensitive structures along Honoapiilani Highway are identified in **FIGURES 1 thru 4** and are also listed in **TABLE 5**. At these locations, exceedances of the FHWA 67 Leq and the proposed State DOT 66 Leq criteria were examined. From **TABLE 5**, the State DOT's ">15 dB increase" criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure.

The following general conclusions can be made in respect to

the number of impacted structures and lands which can be expected by CY 1997 under both the No Build and Build Alternatives. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

A. From **TABLES 6A and 6B**, future traffic noise levels along Honoapiilani Highway are expected to increase from 1.1 to 1.2 Leq between CY 1992 and CY 1997 due to ambient (or non-project generated) traffic during the AM and PM peak hours. If future traffic conditions during the PM peak hour improve at the intersection of Honoapiilani Highway and Kaanapali Parkway as a result of the proposed improvements, a moderate additional increase of 1.5 Leq is predicted to occur on the north side of the intersection (Segment C3).

B. Future noise levels at the five employee housing units of the Royal Lahaina Resort are expected to continue to exceed the State DOT 66 Leq and FHWA 67 Leq noise abatement criteria in CY 1997. An increase of 1 dB above Base Year noise levels is predicted to occur by CY 1997. The increase in future traffic noise levels from the present to CY 1997 is expected to be very small (less than 1 dB) and should not be noticeable with or without the project.

C. Future noise levels at the Kaanapali Royal are also expected to increase by 1 dB above Base Year values, and possibly by 2.5 dB during the PM peak hour. Future traffic noise levels outside Buildings G, H, J, and Q of the resort are also expected to exceed the State DOT 66 Leq and/or FHWA 67 Leq noise abatement criteria by CY 1997.

D. No additional noise sensitive structures, parks, or public use facilities are expected to experience exterior traffic noise levels which exceed the proposed State DOT 66 Leq or FHWA 67

TABLE 6A

CALCULATIONS OF FUTURE (CY 1997) INCREASES IN TRAFFIC NOISE LEVELS (AM PEAK HOUR TRAFFIC)

STREET SECTION	NOISE LEVEL INCREASE (Leq) DUE TO: AMBIENT TRAFFIC (NO–BUILD)	PROJECT TRAFFIC (BUILD)
Honoapiilani Highway, Segment (a)	1.1	0.0
Honoapiilani Highway, Segment (b1)	1.1	0.0
Honoapiilani Highway, Segment (b2)	1.1	0.0
Honoapiilani Highway, Segment (c1)	1.1	0.0
Honoapiilani Highway, Segment (c2)	1.1	0.0
Honoapiilani Highway, Segment (c3)	1.1	0.0
Honoapiilani Highway, Segment (d)	1.1	0.0

TABLE 6B

CALCULATIONS OF FUTURE (CY 1997) INCREASES IN TRAFFIC NOISE LEVELS (PM PEAK HOUR TRAFFIC)

STREET SECTION	NOISE LEVEL INCREASE (Leq) DUE TO: AMBIENT TRAFFIC (NO–BUILD)	PROJECT TRAFFIC (BUILD)
Honoapiilani Highway, Segment (a)	1.2	0.0
Honoapiilani Highway, Segment (b1)	1.1	0.0
Honoapiilani Highway, Segment (b2)	1.1	0.0
Honoapiilani Highway, Segment (c1)	1.1	0.0
Honoapiilani Highway, Segment (c2)	1.2	0.0
Honoapiilani Highway, Segment (c3)	1.2	0.0
Honoapiilani Highway, Segment (d)	1.1	0.0

Leq criteria.

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 in the order of 30 percent, and elimination of these noise sources would reduce total traffic noise levels by less than 3 dB. 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 Highway. Major alteration of the horizontal or vertical alignment of the existing highway was not considered appropriate due to the scope of this highway improvement project and due to the Right-of-Way constraints imposed by existing developments on both sides of the project corridor. In order to reduce forecasted CY 1997 traffic noise levels to noise abatement criteria levels at the noise sensitive structures identified previously, lateral displacement of the highway centerline by 33 to 84 FT will be required. Realignment and displacement of the highway centerline away from the employee housing units at the Royal Lahaina Resort will result in increased traffic noise levels at the existing residences of the International Colony Club and Kaanapali Plantation (see **FIGURES 1 and 2**).

Vertical realignment of the existing highway upward would result in adverse visual impacts, and vertical realignment of the highway via a cut may not be possible without obtaining additional Right-of-Way. Also, the construction of a future bypass highway

east (or mauka) of Honoapiilani Highway has been planned for the area. For these reasons, realignment of the existing highway was not considered to be an attractive noise mitigation measure for this highway improvement project.

C. Acquisition of Property Rights for Construction of Noise Barriers, and/or Construction of Noise Barriers Along the Right-of-Way. For the five existing employee housing units of the Royal Lahaina Resort, construction of a 600 FT long x 6 FT high sound attenuating wall located along the Right-of-Way is a possible noise mitigation measure. The 6 to 7 dB of noise attenuation achievable with a sound attenuating wall should be sufficient for mitigating CY 1997 traffic noise levels at the existing single and two-story structures if air conditioning is not continued at the employee housing units.

The ground floor guest units of the Kaanapali Royal would experience lower traffic noise levels if a 6 FT high sound attenuating wall is constructed along the highway Right-of-Way. The second and third floor units would not benefit from the construction of this 6 FT high wall. Air conditioning of the upper floor units which are located within 150 FT of the highway centerline would still be required 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 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. In these situations, the only other noise mitigation possibilities are sound insulation of the affected upper level units or acquisition of the property interests. Noise buffer zones extending between 111 to 128 FT from the highway centerline and at substantial cost would be required to meet the FHWA 67 Leq criteria, and buffer zones extending between 130 to 149 FT from the

highway centerline would be required to meet the State DOT 66 Leq criteria along the highway sections where existing noise sensitive structures are located. In general, the acquisition of property for the creation of noise buffer zones or noise mitigation has seldom been applied in Hawaii. Where existing multistory or other tall structures are within the high noise zones, the application of sound insulation treatment should be evaluated prior to consideration of property acquisition for noise mitigation.

E. Noise Insulation of Public Use or Nonprofit Institutional Structures. No public use or nonprofit institutional structures are expected to be adversely impacted by this project. For this reason, noise insulation of public use or nonprofit institutional structures should not be required.

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

Future traffic noise impacts are avoidable at noise sensitive housing and resort units if the existing use of air conditioning is continued in the future. The highway improvement project is not expected to cause a significant increase in traffic noise levels by CY 1997. If the existing air conditioning units at the employee housing units of the Royal Lahaina Resort and at the affected guest units of the Kaanapali Royal are maintained, additional noise mitigation measures should not be required.

The construction of 6 FT high sound attenuation walls may be used to mitigate future traffic noise impacts at the employee housing units if the use of air conditioning is discontinued in the future. These sound attenuation walls should be solid without see-through openings or cracks, and should be constructed using durable materials such as CMU, rock, or earth. At the Kaanapali Royal, air conditioning of the guest units should continue, and additional noise mitigation measures should not be required.

On the currently undeveloped or open lots alongside the highway, it is anticipated that potential noise impacts at new noise sensitive receptors located along the highway may be mitigated through the inclusion of sound walls, berms, or other noise mitigation measures within the individual lot development plans. In addition, the future noise sensitive land uses which may be planned alongside the highway 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 portions of the Honoapiilani Highway improvements may be completed prior to the development of the open or vacant lots adjacent to the highway, 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 Honoapiilani Highway as required. The predic-

tions of highway noise levels vs. distance from the centerline of Honoapiilani Highway segments (**TABLES 4A and 4B**) may be used to assist the developers in providing the necessary setbacks to the highway, but longer range projections of traffic noise may also be required for these new developments.

CHAPTER VII. CONSTRUCTION NOISE IMPACTS

Short-term noise impacts associated with construction activities along the existing highway may occur. These impacts can occur as a result of the short distances (less than 100 FT) between existing noise sensitive receptors and the anticipated construction corridor which crosses through residential, resort, and commercial areas. 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 50 FT distance. Typical levels of noise from construction activity (excluding pile driving activity) are shown in **FIGURE 5.** 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 portions of the highway improvement project between Puukolii Road and Kaanapaili Parkway, distances between the construction sites and residential and resort receptors are expected to be between 50 and 150 FT, and construction noise levels should generally be below 90 dB. The State Department of Health currently regulates noise from construction activities on Oahu under a permit system (**Reference 6**). Under current permit procedures (see **TABLE 7**), noisy construction activities which exceed 95 dB at the project boundary lines are restricted to hours between 9:00 AM and 5:30 PM, from Monday through Friday, and exclude certain holidays. These restrictions

CONSTRUCTION NOISE LEVELS VS. DISTANCE

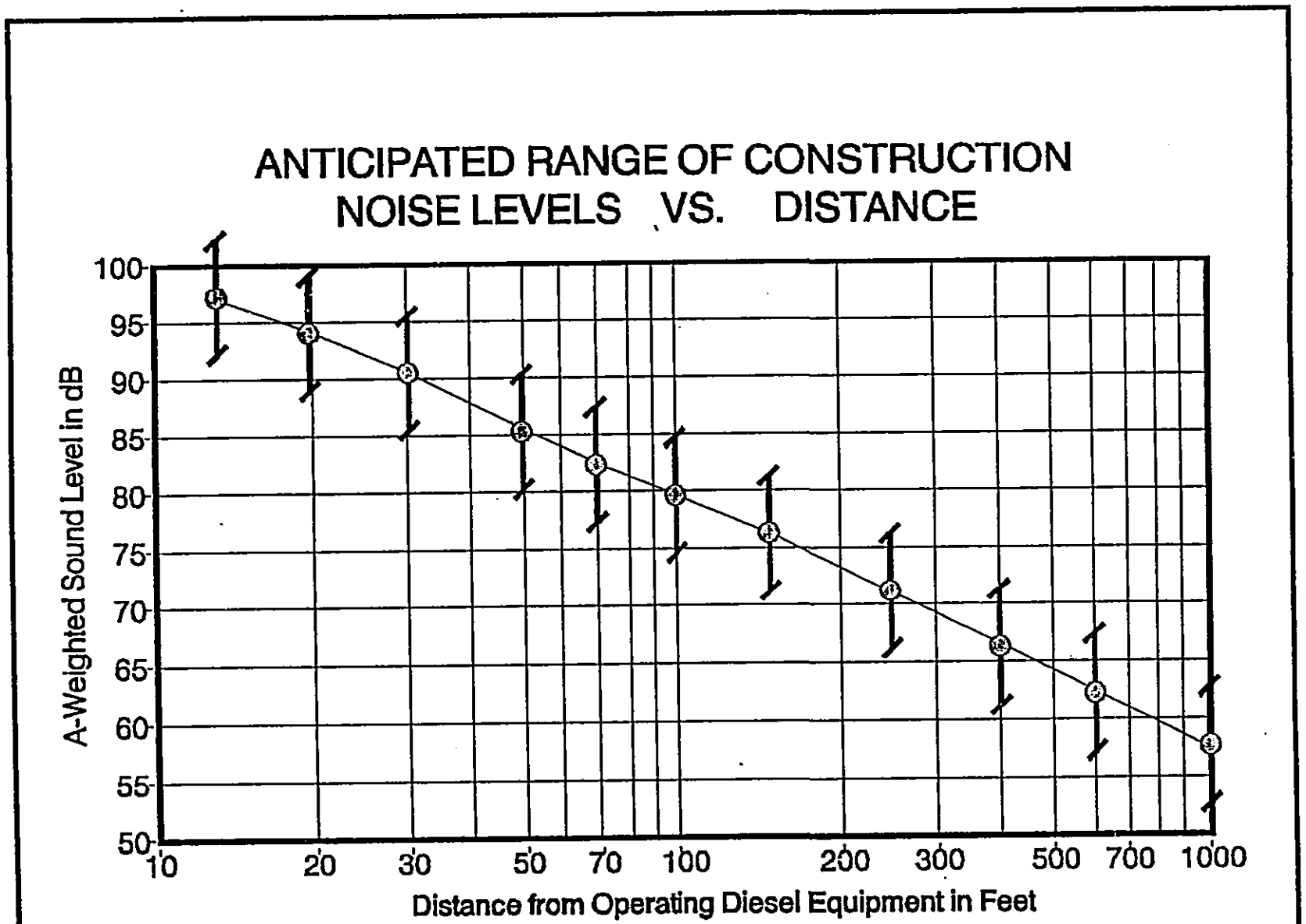
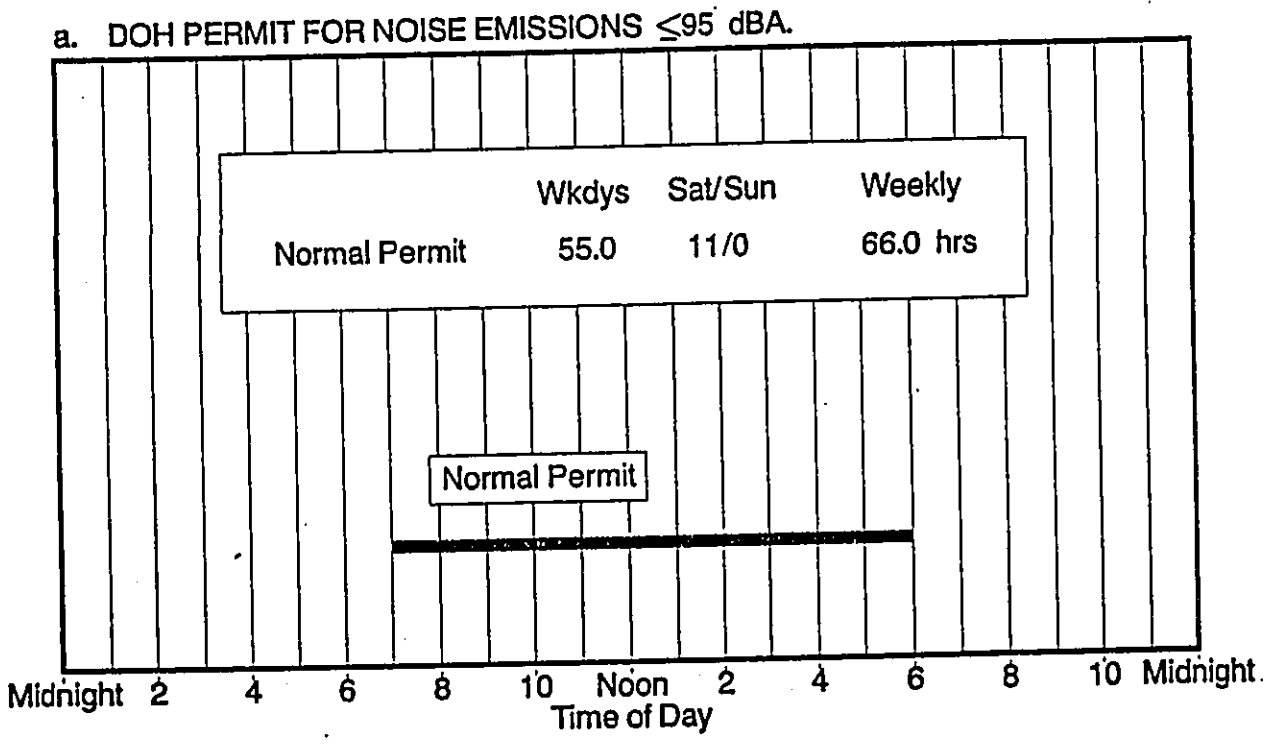


FIGURE 5

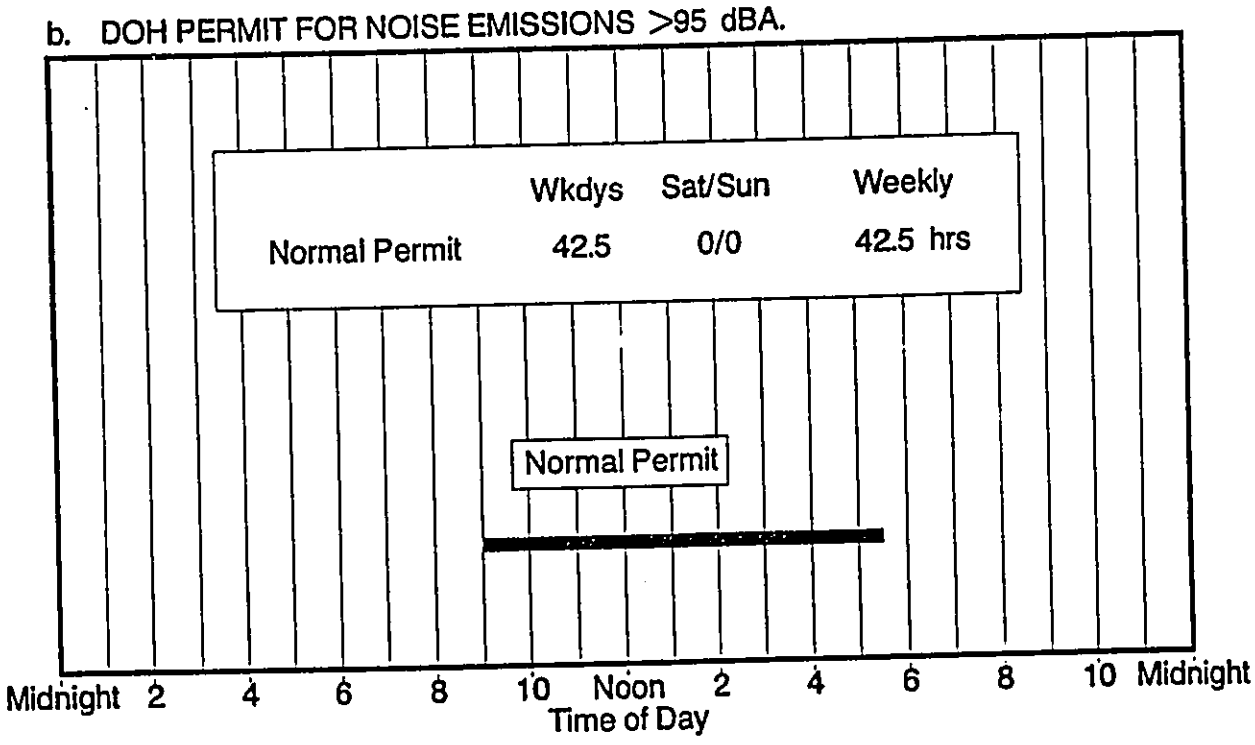
TABLE 7

AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

a. DOH PERMIT FOR NOISE EMISSIONS ≤95 dBA.



b. DOH PERMIT FOR NOISE EMISSIONS >95 dBA.



minimize construction noise impacts on noise sensitive receptors along the highway project corridor, and have generally been successfully applied. Consideration should be given to employing the curfew system of the State Department of Health regulations relating to excessive construction noise. 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 500 FT of noise sensitive properties. Heavy truck and equipment staging areas should also be located at areas which are at least 500 FT from noise sensitive properties whenever possible. Truck routes which avoid residential communities should be identified wherever possible. The use of 8 to 12 FT high construction noise barriers should also be used where close-in construction work to noise sensitive structures are unavoidable.

APPENDIX A. REFERENCES

(1) Barry, T. and J. Reagan, "FHWA Highway Traffic Noise Prediction Model;" FHWA-RD-77-108, Federal Highway Administration; Washington, D.C.; December 1978.

(2) "An Analysis of Highway Capacity for Honoapiilani Highway, Kaanapali Parkway to Honokowai;" Austin, Tsutsumi & Associates, Inc.; December 1994.

(3) Hawaii State Department of Transportation Traffic Counts and Vehicle-Type Classifications Along Honoapiilani Highway 0.3 Miles South of Kaanapali Road (5/28/92) and At Honokawai Bridge (5/6/91).

(4) Federal Highway Administration; "Procedures for Abatement of Highway Traffic Noise and Construction Noise;" 23 CFR Chapter I, Subchapter J, Part 772; April 1, 1995.

(5) February 1, 1995 Letter from Ron Tsuzuki, State DOT to AMFAC/JMB Hawaii, Inc.; HWY-PA 2.4400 and discussions with State DOT.

(6) "Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu;" Hawaii State Department of Health; November 6, 1981.

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 LCdn with the LAdn.

Although not included in the tables, it is also recommended that "Lpn" and "LepN" 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 (LA) was measured before and after the installation of acoustical treatment. The measured LA 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, Leq, is designated the "equivalent sound level". For Ld, Ln, and Ldn, "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 (Lpn was found to be 75 dB. Lpn = 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

TERM	SYMBOL
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, NOISE REGULATION REPORTER.

APPENDIX B (CONTINUED)

TABLE II

RECOMMENDED DESCRIPTOR LIST

TERM	A-WEIGHTING	ALTERNATIVE[1] A-WEIGHTING	OTHER[2] WEIGHTING	UNWEIGHTED
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 Leq(1). Time may be specified in non-quantitative terms (e.g., could be specified as Leq(WASH) to mean the washing cycle noise for a washing machine.

JAN 27 1997

Y. Ebisu & Associates
Acoustical and Electronic Engineers

1126 12th Avenue
Room 305
Honolulu, Hawaii 96816
(808) 735-1634

January 24, 1997

Munekiyo & Arakawa, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Attention: Mr. Glenn Tadaki

Subject: Additional Data Concerning Traffic Noise Study Prepared for the Honoapiilani Highway Widening Project

Dear Mr. Tadaki:

Pursuant to your request, additional information concerning the Traffic Noise Study (March 1996) for the subject project is provided below.

1. Reference Source

23 CFR Chapter I (revised 4/1/95), from which the Federal Highway Administration (FHWA) standards originate, was utilized as a the basis for Reference (4).

2. Base Year 1992

1992 was the only "Base Year" for which traffic data was available for this project. Use of CY 1996 vs. CY 1992 as the study Base Year should not alter the noise study's conclusions since CY 1997 traffic volume forecasts were higher than the CY 1996 traffic counts, and the required noise mitigation measures were based on the worst case CY 1997 forecasts.

3. Future Year 1997

1997 was the only "Future Year" for which traffic data was available for this project.

4. Traffic Noise Contours

The distances to the 57 Leq contours allow for interpolation of traffic noise levels below 67 Leq at locations outside the 67 or 66 Leq contour. Note that on a semilogrithmic graph, it is possible for the reader to determine what his predicted noise levels are if two Leq contour setback distances (57 Leq and 66 Leq) are provided, should he be located between them. The location of the 57 Leq contour was provided for that purpose and for full disclosure.

5. DOT Standard

The proposed 66 Leq State DOT standard was considered in the study.

6. "No Build" and "Build" Alternatives

According to the traffic volume projections, CY 1997 traffic volumes with and without the widening project were identical, and equal to the background ambient traffic. For this reason, and using the CY 1996 measured traffic noise data, equal volumes of traffic under the "No Build" and "Build" Alternatives resulted in zero increase in traffic noise levels as indicated in Report TABLES 6A and 6B, pages 22 and 23.

From the CY 2020 forecasts of October 11, 1996, the differences in future traffic volumes and noise levels should also be zero with or without the widening project by CY 2020 as long as two lanes of the Lahaina Bypass are constructed by CY 2020. This is consistent with the original traffic and noise study conclusions for CY 1997.

7. Future Noise Levels

The CY 2020 traffic forecasts of October 11, 1996 indicate that a reevaluation of the noise levels may not be required since CY 1997 traffic volumes are higher than the CY 2020 forecasts with the Lahaina Bypass Highway completed.

Because of the assumed completion of the Lahaina Bypass, the CY 2020 traffic volumes along Honoapiilani Highway north of Kaanapali Parkway are forecasted to be 13 to 17 percent less than those forecasted for CY 1997 in the original traffic study. For this reason, the noise study, by using the higher CY 1997 traffic volume forecasts, probably assumed worst case, future traffic noise levels.

Because the CY 1997 traffic volumes used appear to be the worst case forecasts available thru CY 2020, the noise levels used to depict future conditions in the noise study, as well as the noise mitigation measures required, should also represent worst case forecasts available through CY 2020.

8. Predicted Noise Levels

If predicted noise levels reach 1 dBA less than the noise abatement criteria in Refer–ence (4), HDOT will consider traffic noise impact as occurring.

Sincerely,

Yoichi Ebisu, P.E.

Appendix C

Preliminary Drainage Report Summary and Erosion and Sedimentation Hazard Assessment for Honoapiilani Highway Widening

PRELIMINARY DRAINAGE REPORT SUMMARY
AND EROSION AND SEDIMENTATION HAZARD ASSESSMENT
FOR
HONOAPIILANI HIGHWAY WIDENING
LAHAINA, MAUI, HAWAII

PREPARED FOR:

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STATE OF HAWAII

Prepared By

Austin, Tsutsumi & Associates, Inc.
Engineers • Surveyors
Honolulu • Wailuku • Hilo, Hawaii

January 1997

DRAINAGE REPORT SUMMARY

FOR THE

HONOAPIILANI HIGHWAY WIDENING PROJECT

I. INTRODUCTION

The purpose of this report is to disclose the findings of existing and proposed conditions affecting the Honoapiilani Highway Widening Project. The areas of hydrology and hydraulics will be emphasized.

Honoapiilani Highway is under the jurisdiction of the State of Hawaii, Department of Transportation, Highways Division. It was originally built in 1959 and is known as Hawaii State Route 30. Its primary purpose was to connect West Maui with the rest of the island. The Highway is the main thoroughfare for travelers in and out of West Maui.

Numerous culvert crossings varying in size, length, and barrels span Honoapiilani Highway. The culvert crossings permit storm runoff from the West Maui Mountains passage to the ocean.

II. PROPOSED PROJECT

A. Location

The proposed project is located in Kaanapali, Maui. The project extends from the Kaanapali Parkway Intersection to approximately 740 feet beyond

Honokowai Channel Bridge. It encompasses roadway Stations 80+40 to 198+10. It includes the intersections of Kaanapali Parkway/Halelo Street, Kekaa Drive, Kai Ala Drive/Puukolii Road, Halawai Drive and Lower Honoapiilani Highway. Mauka of the Highway, the land uses are residential (Kaanapali Vista, Kaanapali Plantation, Hanakaoo Golf Estates, International Colony Club, Royal Kaanapali Estates and Kaanapali Hillside Estates), agricultural (sugar cane), recreational (Royal Kaanapali Golf Course) and business/industrial (rental car agencies and Lahaina WW Reclamation Plant). Makai of the Highway, the land uses are residential condominiums (Maui Eldorado, Royal Lahaina Hotel and Maui Kaanapali Villas), recreational (Royal Kaanapali Golf Course) and agricultural (sugar cane). (See Exhibit 1 for Vicinity Map.)

B. Project

To alleviate traffic congestion, the Honoapiilani Highway Widening Project will expand the two lane highway to four lanes, provide left turn storage lanes and right turn deceleration lanes as well as median channelization at the intersections. As a result, the existing drainage system will require renovation to accommodate the widened Highway section.

To promote and maintain the existing drainage system, existing culverts will be lengthened and in some areas, new culverts will be added. New drainage structures will be added where deemed necessary based on hydrologic and hydraulic analysis. Gutters and swales will be designed to collect on-site/off-site surface runoff and convey flows to the drainage structures.

To facilitate the highway widening, existing slopes will be cut primarily in the mauka areas between Kaanapali Parkway to Puukolii Road and on the makai side of the Highway between Kaanapali Parkway and Kekaa Drive. Retaining walls will be added to the makai side of the Highway sections where cut conditions require structural support.

A fill retaining wall will be constructed on the makai side of the Highway, just south of Kai Ala Drive to support additional embankment required for the widened Highway and to retain the embankment within the right-of-way. North of Kai Ala Drive towards Kahana, existing embankments, on the makai side, will be extended with fill to support the wider Highway section.

The overhead golf cart and maintenance bridges near Kekaa Drive will be replaced by the Kualapa Loop Bridge. The bridge will be located approximately 800 feet south of the Kekaa Drive intersection and will provide vehicular thoroughfare from the Cane Haul Road mauka of the Highway to Kekaa Drive makai of the Highway. The bridge will also maintain a golf cart path joining the Cane Haul Road to Kekaa Drive to service the Royal Kaanapali Golf Course. The bridge is to be approximately 105 feet in length and 45 feet wide constructed with a concrete deck over reinforced concrete girders.

Miscellaneous items including utility poles, guardrails and highway signage will be relocated.

III. EXISTING CONDITIONS

A. Topography and Soil Conditions

The existing two lane Highway is asphalt paved with paved shoulders. The areas directly adjacent to the shoulders vary in condition. On the mauka side, the Highway is bordered typically by a cut slope in basaltic material covered with Asystasia, a creeping-type landscape cover. In some areas, the adjacent area is flat with well kept grass. On the makai side, conditions vary between gravel with dried brush and grass, Wedelia covered fill slope, and basaltic material with Asystasia in cut slopes. Beyond Puukolii Road, both sides of the Highway are typically medium vegetated with elephant grass, haole koa and scrub brush. In areas approaching Lower Honoapiilani Road and the Honokowai Bridge, the condition changes to well-kept grass slopes.

The Highway is fairly flat with varying longitudinal slopes ranging between 0.5% and 4% and typical cross slope of 1.5%. Approximately 2300 feet of the Highway just beyond Kai Ala Drive is superelevated with a longitudinal slope of 0.74% and a cross slope of 3.5%.

Mauka of the Highway, topography maps reveal upland slopes ranging between 1.0% to 10.0%. Makai of the Highway, the lowland coastal slopes range between 1.0% to 3.0%.

The soil classification of the area bordering the Highway based on State of Hawaii, Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai is Ewa Silty clay loam (EaA), Wahikuli silty clay (WbB), and stony silty clay (WcC). It is described as "well-drained, moderately fine textured soils which are nearly

level to moderately steep. Runoff is slow to very slow and erosion hazard is slight to moderate."

There is an asphalt paved cane haul road approximately 50 feet mauka of the highway right-of-way. It extends from Lahaina to Honokowai and runs parallel with the highway from Kekaa Drive to 1500 feet north of Puukolii Road.

The Lahaina Kaanapali Railroad runs along the mauka edge of the cane haul road. There are two train depots, the first near the Royal Kaanapali Golf Course above the Kekaa Drive intersection, and the other just beyond the Puukolii Road intersection. A train track turn-around area is located 1500 feet north of Puukolii Road. The train tracks will not be affected by the Highway widening.

IV. HYDROLOGY

A. Existing

Based on hydrologic analysis of the existing conditions in the project area, there are a total of 28 drainage areas; 24 on-site and 4 off-site. (See Exhibits 2 to 5, Drainage Map - Existing Conditions). The total area of existing pavement is approximately 18.22 acres. The total area of existing vegetation is approximately 28.50 acres. Drainage areas were divided in terms of individual drainage patterns with respect to pertinent drainage structures.

For culverts and traveled way at sumps, the recurrence interval is 50 years. For freeways and arterials, the recurrence interval is 25 years. The rainfall intensity for a one-hour, 50-year storm is 2.5 inches; for a 25-year storm it is 2 inches.

Upland flows from the West Maui mountains above the project are carried by large gulches. The Hanakaoo Gulch, located above the train station turn-around, transports the runoff to the lower region and disperses a portion of the flow as surface runoff onto the cane fields. As the majority of runoff approaches the Highway, it is directed along the Cane Haul Road to a triple 24" culvert located at Sta. 165+54. The Honokowai Gulch transports upland flow to the Honokowai Channel Crossing, a rectangular concrete channel structure approximately 31 feet wide and 11 feet deep. Upland flows from the area directly mauka, above the Highway (approximately 4000 feet mauka) are typically intercepted and collected by ditches and the Cane Haul Road prior to reaching the Highway. The runoff is discharged through culverts passing under the Highway onto adjacent lands on the makai side of the Highway, eventually discharging into the ocean.

B. Proposed

The addition of new drainage structures will subdivide the total drainage areas to 31; 26 on-site and 5 off-site. It reflects the addition of 3 new drainage areas; 2 on-site and 1 off-site. (See Exhibits 6 to 9, Drainage Maps - Proposed Conditions).

Road widening will change the percentage of vegetation to pavement in each drainage area which is evident in the increase of the runoff coefficient. The total area of pavement increased by 8.33 acres. The flow rate for each drainage area will differ from existing conditions although the drainage area acreage will remain essentially unchanged, with the exception of off-site flows from Area B.

Two new drainage system improvements will alleviate two of the known flooding problems. A new trench drain structure on the Cane Haul Road will intercept off-site runoff traveling north, from Area B1, and discharge it to an existing box culvert near the golf cart bridge; thereby, removing a large amount of flow from the Highway drainage and reducing a current flooding problem at the Puukolii Road intersection. The residual watershed, Area B2, will maintain its original flow path to the Puukolii Road intersection. (See Exhibit 9, Drainage Map: Off-Site Proposed Conditions). The new trench drain structure will be constructed off-site by others, not as part of this project.

A second flooding problem at Halawai Drive will be alleviated by a new pipe culvert crossing which will divide Area 12b into 3 smaller subareas intercepting a portion of the runoff.

V. HYDRAULICS

A. Existing

Over the past few decades, land use changes mauka of the Highway from agricultural to residential, has decreased surface permeability and interception resulting in altered drainage patterns. Currently, there are 11 existing culverts, a grass swale, 7 drain inlets, a natural roadside ditch and a concrete ditch within the project area. Two trapezoidal concrete ditches bordering the lower portion of the golf course, above the Cane Haul Road handle most of the upland, off-site runoff.

In general, Highway drainage flows to the edge of pavement from the centerline crown or across the entire roadway section in superelevated sections.

In cut sections, runoff is contained at the toe of the cut slope, typically in a narrow gravel or paved space, releasing at the daylight point of the cut slope. In fill sections, runoff flows over the embankment into adjoining areas. Runoff along the mauka edge of the Highway collects into roadside ditches where it is transported into one of eleven culvert crossings.

An earth berm constructed outside of the State right-of-way along the entire length of the existing Cane Haul Road intercepts upland flows from the golf course and agricultural fields, preventing runoff from flowing down onto the Highway.

However, an existing recurring problem associated with the Cane Haul Road occurs at Puukolii Road. Runoff traveling north on the Cane Haul Road typically collects in a series of grated inlets along the road edge discharging to an off-site trapezoidal channel. A catch basin at the intersection of the Cane Haul Road and Puukolii Road collects the remainder of flow. During heavy rains, the grated inlets and catch basin have clogged, releasing runoff, silt and debris onto the Honoapiilani Highway/Puukolii Road intersection.

Another problem occurs near Halawai Drive and the triple 24" culverts at Sta. 165+54 in the roadway sag. Due to the flat slopes fronting Halawai Drive, runoff flowing south along the mauka edge of the Highway moves very slowly. As a result, silt and earth have filled the adjacent grassed swale trapping water within the Halawai Drive intersection. The problem at Halawai Drive is compounded due to the flooding and back-up which occur approximately 700 feet away near the end of the grass swale at the triple-24" culverts. The culverts discharge the overflow from the Hanakaoo Gulch. The majority of flow from the gulch is intercepted along a 2-foot earth berm at the edge of the Cane

Haul Road and collects in the sag of the Cane Haul Road directly above the culverts. When the berm is breached, runoff flows down to a sump at the head of the culverts. The culverts' limited capacity is inadequate for the large flows from the gulch estimated at 2,472 cfs.

Hydraulic Design Data was not compiled for the triple 48" culverts at Sta. 190+85 located approximately 60 feet south of the Honokowai Channel. Current conditions show the culvert receives little or no flow and is possibly only operative when the Honokowai Channel reaches its capacity.

Other existing drainage improvements within the project area appear to be functioning adequately.

B. Proposed

The Widening Project will extend 8 existing culverts, add 9 new culverts, 2 catch basins, 2 storm drain manholes, 3 new drain inlets and relocate 3 existing drain inlets. One grass swale and thirteen new gutter sections will be added mauka of the Highway and five will be added makai of the Highway.

Additional pipe culverts will be added parallel to existing culverts at two locations; (1)-24" at Sta. 84+50 and (2)-24" at Sta. 161+00. Two new 24" culverts will be installed mauka of the Highway, crossing Puukolii Road. One new 24" culvert will be constructed under the Proposed Road "A".

The two existing outlet headwalls at Sta. 186+72 and 187+69 will be removed and the existing pipes connected underground. A new section of 24" pipe will connect the existing 24" culvert at Sta. 187+69 to the existing 30" culvert at Sta. 186+72. The combined flow will enter an existing underground drainage system located on Lower Honoapiilani Road.

A new 18" pipe culvert will be connected to two new catch basins in Halawai Drive. It will service Drainage Area 12b3, which previously drained to the overcapacitated triple 24" culvert. The new culvert will discharge in the open field across the Highway from Halawai Drive and will alleviate current ponding conditions at this intersection.

The 7 relocated drain inlets will maintain original drainage patterns and drainage areas and are provided primarily to accommodate the proposed roadway width.

Roadside improvements mauka of the Highway include: a 4-foot wide Type 61214 V-shaped gutter between Sta. 94+24 and Sta. 135+00; 6-foot wide V-shaped Type 61616 gutter between Sta. 135+00 and Puukolii Road; 6-foot wide V-shaped Type 61616 gutter just beyond Puukolii Road to Proposed Road "A"; 2-foot wide Type 2DG gutter between Proposed Road "A" and Halawai Drive; and a 6-foot wide Type 61616 V-shaped gutter between Sta. 181+50 and Sta. 197+50.

Roadside improvements makai of the Highway include: a 4-foot wide Type 61214 V-shaped gutter from the cut slope beyond Kaanapali Parkway to Kekaa Drive; 6-foot wide Type 61616 V-shaped gutter 900 feet past Halawai Drive to 550 feet past Honokowai Bridge. Gutter slopes will reflect existing drainage patterns and roadway slopes.

VI. CONCLUSION

The proposed drainage design for the Honoapiilani Highway Widening Project will produce no adverse effects from storm runoff to adjacent and downstream properties. Existing traffic congestion problems will be alleviated as well as drainage problems while maintaining existing drainage patterns.

Hydrologic analysis of existing and proposed conditions affecting the project area reveal insignificant increases in existing flows resulting from the Widening Project. New gutters and swales will convey flows to drainage structures without the spread of flow encroaching into the travelway and relocated drain inlets will encounter minimal bypass flow. The proposed Kualapa Loop Bridge will facilitate movement of vehicles over the Highway and will not create any adverse affects to the existing drainage patterns. The proposed drainage improvements will improve current drainage conditions and most of all, accommodate the Honoapiilani Highway Widening Project.

EROSION AND SEDIMENTATION HAZARD ASSESSMENT
FOR
HONOAPIILANI HIGHWAY WIDENING
LAHAINA, MAUI, HAWAII

PREPARED FOR:

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STATE OF HAWAII

Prepared By

Austin, Tsutsumi & Associates, Inc.
Engineers • Surveyors
Honolulu • Wailuku • Hilo, Hawaii

January 1997

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

NAME OF DEVELOPMENT:	HONOAPIILANI HIGHWAY WIDENING
DEVELOPER:	State of Hawaii, Department of Transportation, Highways Division
ENGINEER:	Austin, Tsutsumi & Associates, Inc.
LOCATION:	Kaanapali, Maui, Hawaii
AREA:	14.9 Acres
EROSION HAZARD:	Erosion hazard of the site is no more than slight due to soil condition and proposed grading work.
CONSTRUCTION SCHEDULE:	The construction work is tentatively scheduled to begin in October 1997 and is expected to take approximately one year to complete.
DATE:	January 6, 1997

The suggested construction sequence is as follows:

1. Complete all demolition, clearing and grubbing of the new road widening area.
2. Construct temporary erosion control sediment traps and siltation fences.
3. Relocate existing electrical and communications utilities.
4. Mass grade road widening area to subbase grade.
5. Improve existing drain culverts and structures.
6. Relocate miscellaneous existing utility lines and structures as proposed.
7. Construct roadway widening and finish grade roadway gutters and swales as proposed.
8. Hydromulch the graded area upon completion.
9. Plant permanent vegetation per the landscaping plans.
10. Complete roadway striping and signing, and roadway lighting.

SOILS: From the Soil Survey Report published by the U.S. Department of Agriculture, soil beneath and adjacent to Honoapiilani Highway is in the Ewa and Wahikuli Series. Identified as Ewa Silty clay loam (EaA), Wahikuli silty clay (WbB) and Wahikuli stony silty clay (WcC), the descriptions are as follows:

> **Ewa silty clay loam** consists of "dark reddish-brown silty clay loam about 28 inches thick. Runoff is very slow and erosion hazard is no more than slight. This soil is used for sugar cane, truck crops and pasture. The available water capacity is about 1.3 inches per foot in the surface layer".
>
> **Wahikuli silty clay** is characterized by "dark reddish-brown silty clay about 15 inches thick. Permeability is moderate, runoff is slow, and the erosion hazard is slight. This soil is used for sugar cane. The available water capacity is about 1.4 inches per foot in the surface layer".
>
> **Wahikuli stony silty clay** is similar to the silty clay except that "there are enough stones on the surface to hinder cultivation. Runoff is slow to medium, and the erosion hazard is slight to moderate. This soil is used mostly for sugar cane."

Based on the Soils Report completed by Ernest K. Hirata & Associates, Inc., borings taken on the mauka side revealed "highly to completely weathered basalt" at depths ranging 1.5 to 4 feet below the surface reddish brown silty clay. Borings drilled on the makai side of the existing highway revealed "reddish brown silty clay" from the surface to depths ranging from approximately 2 to 10.5 feet.

PERMANENT EROSION CONTROL MEASURES:

1. Detention swale system and earth channels.
2. Vegetation on all exposed slopes and open areas.

TEMPORARY EROSION CONTROL MEASURES:

1. Hydromulch graded areas.
2. Adequate water spraying with a water wagon or sprinkler system.
3. Construct sediment traps and siltation fences.

SEVERITY RATING CALCULATIONS:

1. Values of Equation Factors

Downstream Hazard	F = 4
Duration of Site Work	T = 1 year
Coastal Water Hazard	D = 2, Class A
Area of Graded Land	A = 14.9 Acres
Erosion Rate	E = RK (LS) (CP)

-Rainfall Factor (R)
Total R = 170

Soil Erodibility Factor (K):

K = 0.17; Soil Symbols: EaA, WbB, WcC

-Topographic Factor (LS):

Slope Gradient, S = 50%; Slope Length, L = 40'
(LS) = 12

-Cover and Management Factor (C) and Erosion Control Practice Factor (P):

Grading in Winter and Summer Months, use C = 0.7 (Area to be seeded immediately after grading)

Incremental Grading, P = 0.7
Erosion Control Measures, P = 0.8

Total P = (0.7)(0.8) = 0.56

(CP) = 0.7 (0.56) = 0.39

2. Calculations

Allowable Erosion Rate: E:

E = RK (LS) (CP)
= 170 (0.17) (12) (0.39)
E = 136

Maximum Allowable Construction Area X Erosion Rate (per Exhibit 9) = 3571/ton/year.

Allowable Erosion Rate = 3571/A = 3571/14.9 = 240 tons/acre/year.

Allowable E = 136 < 240

Severity Number, H:

H = (2FT + 3D) AE
= [2(4)(1)+3(2)] (14.9) (136)
= 28,370

Maximum Allowable Severity Rating = 50,000
Therefore: 28,370 < 50,000

CONCLUSION: Erosion within safe limits.

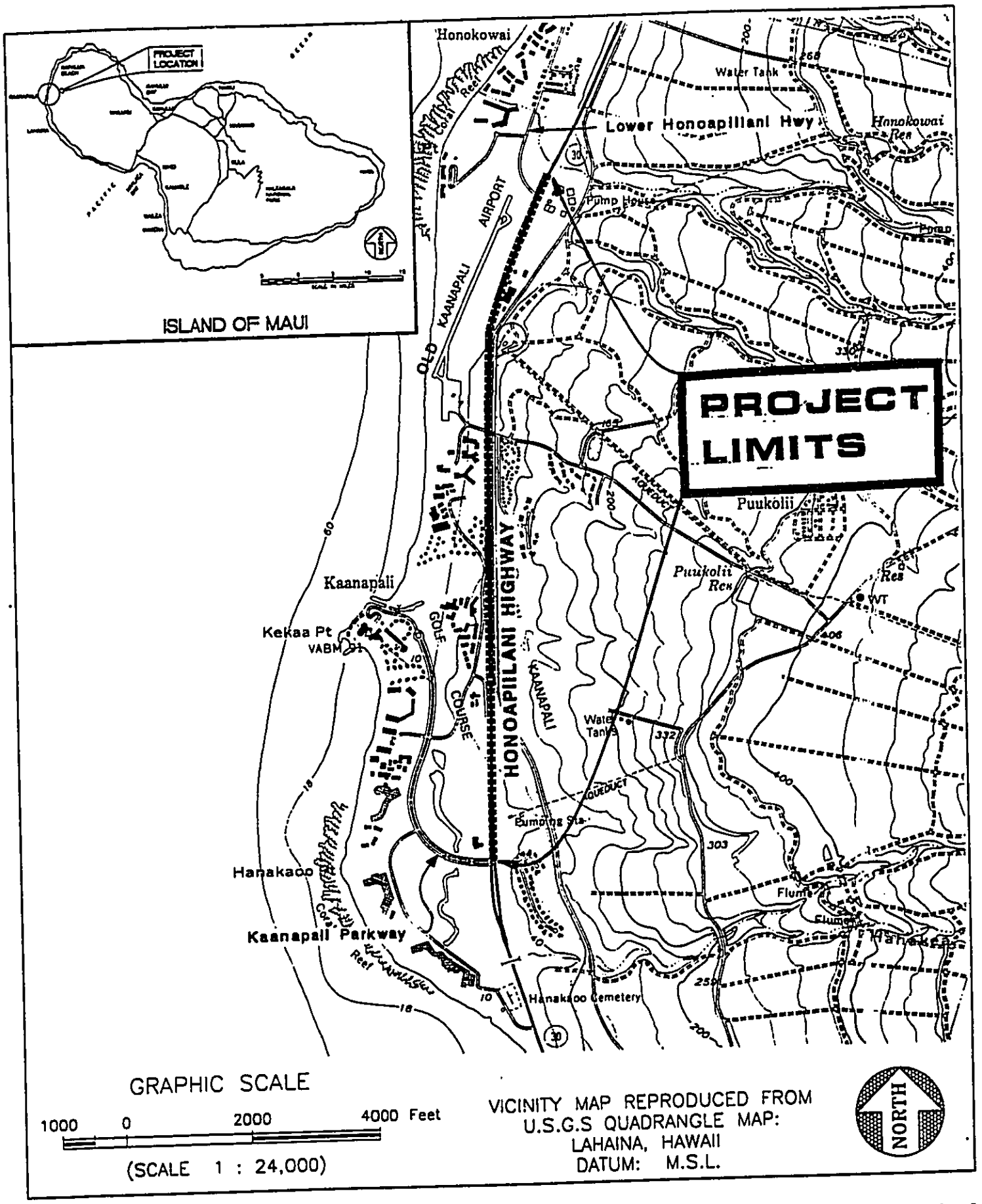
REFERENCES:

1. Erosion and Sediment Control, Guide for Hawaii, United States Department of Agriculture, Soil Conservation Service, March 1981.

2. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, United States Department of Agriculture, Soil Conservation Service in cooperation with the University of Hawaii Agricultural Experiment Station, issued August 1972, pages 29, 125, 126.

3. Soil Erosion Standards & Guidelines, Department of Public Works, City and County of Honolulu, November 1975.

4. Soils Investigation Honoapiilani Highway Widening, Kaanapali, Maui, Hawaii, Ernest K. Hirata & Associates, Inc., August 1996.



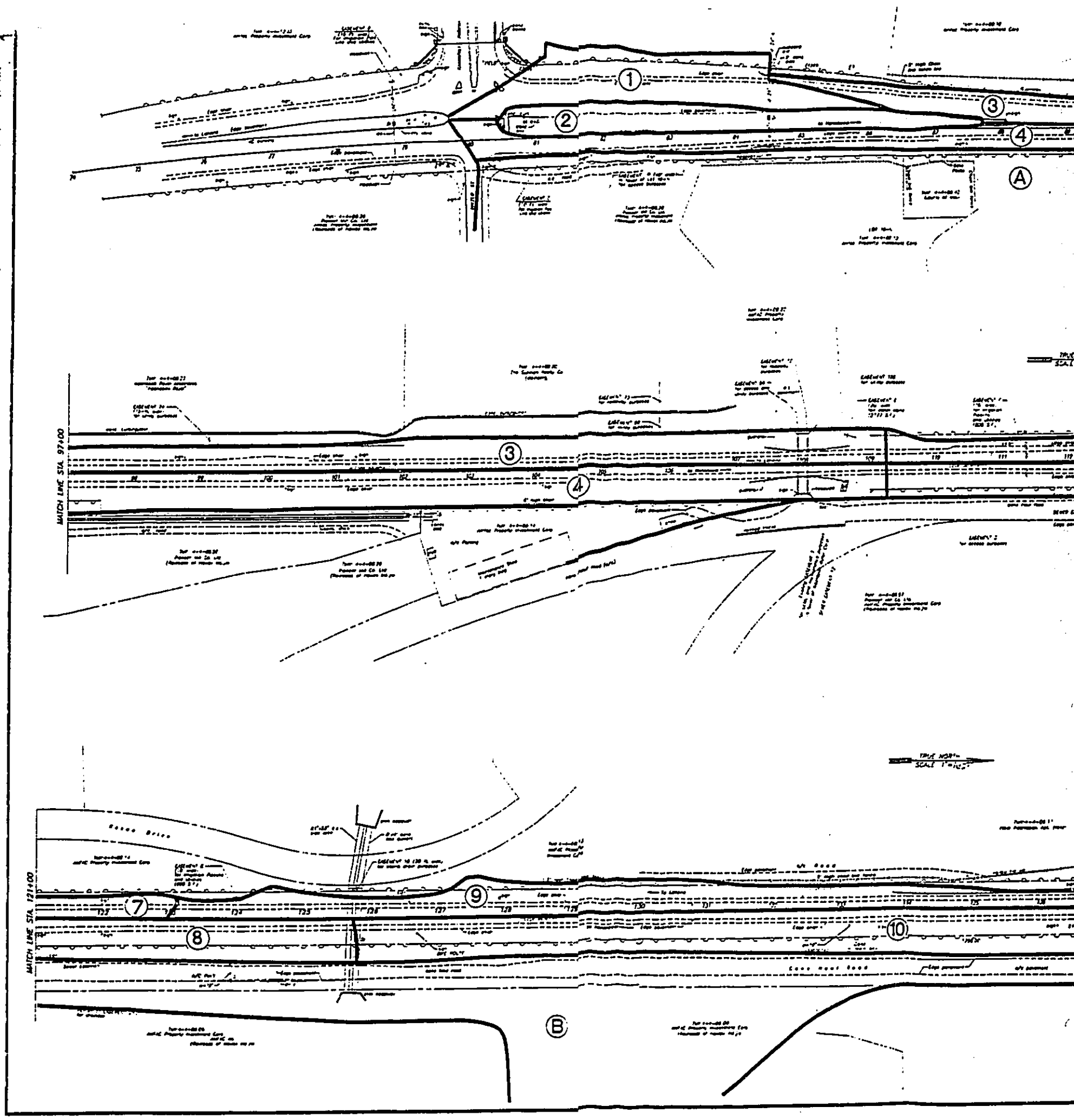
DRAINAGE REPORT
HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

EXHIBIT 1

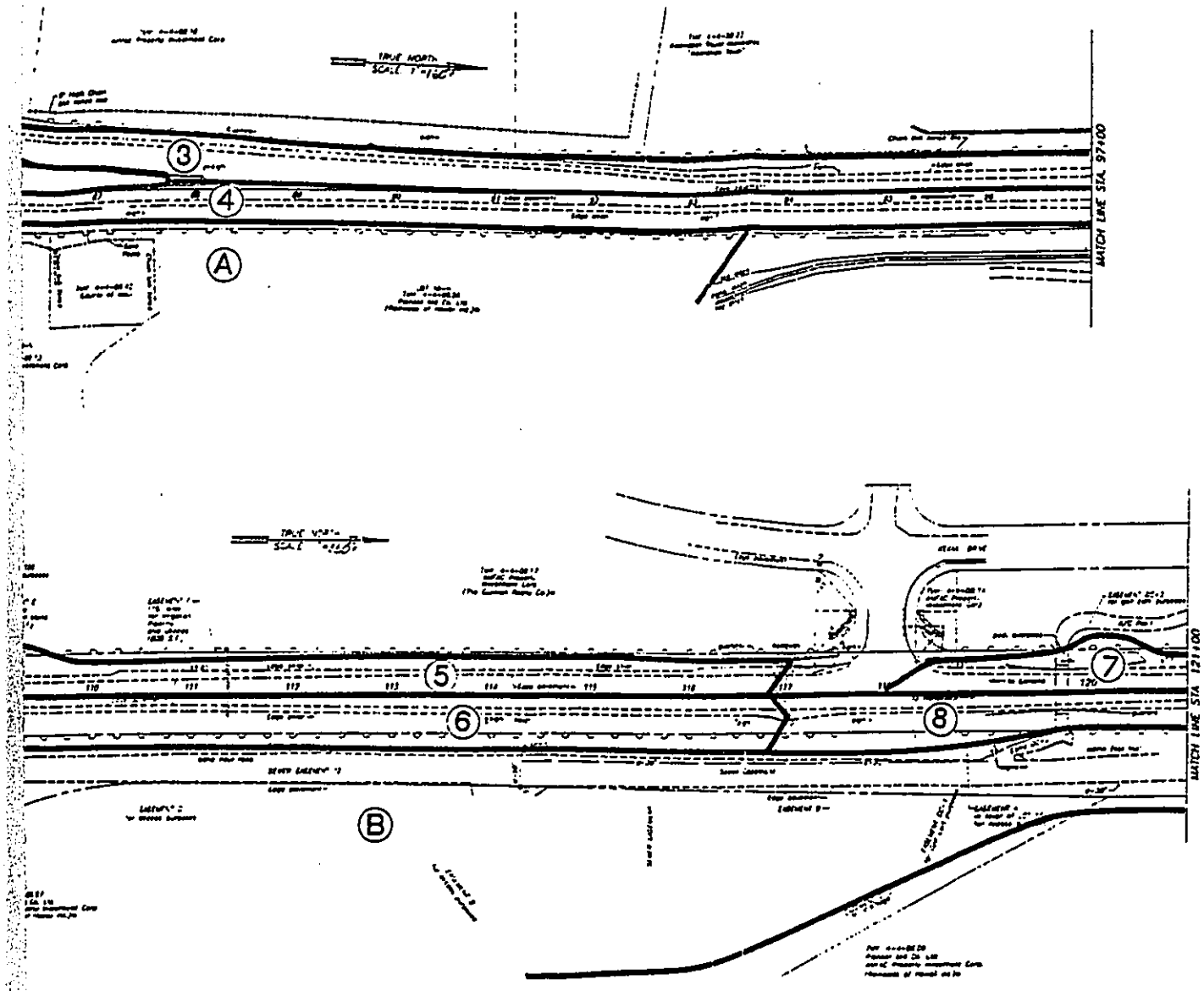
VICINITY MAP

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

PREPARED FOR: AmFac/JMB



JOB NO. M94-536.2.1



AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

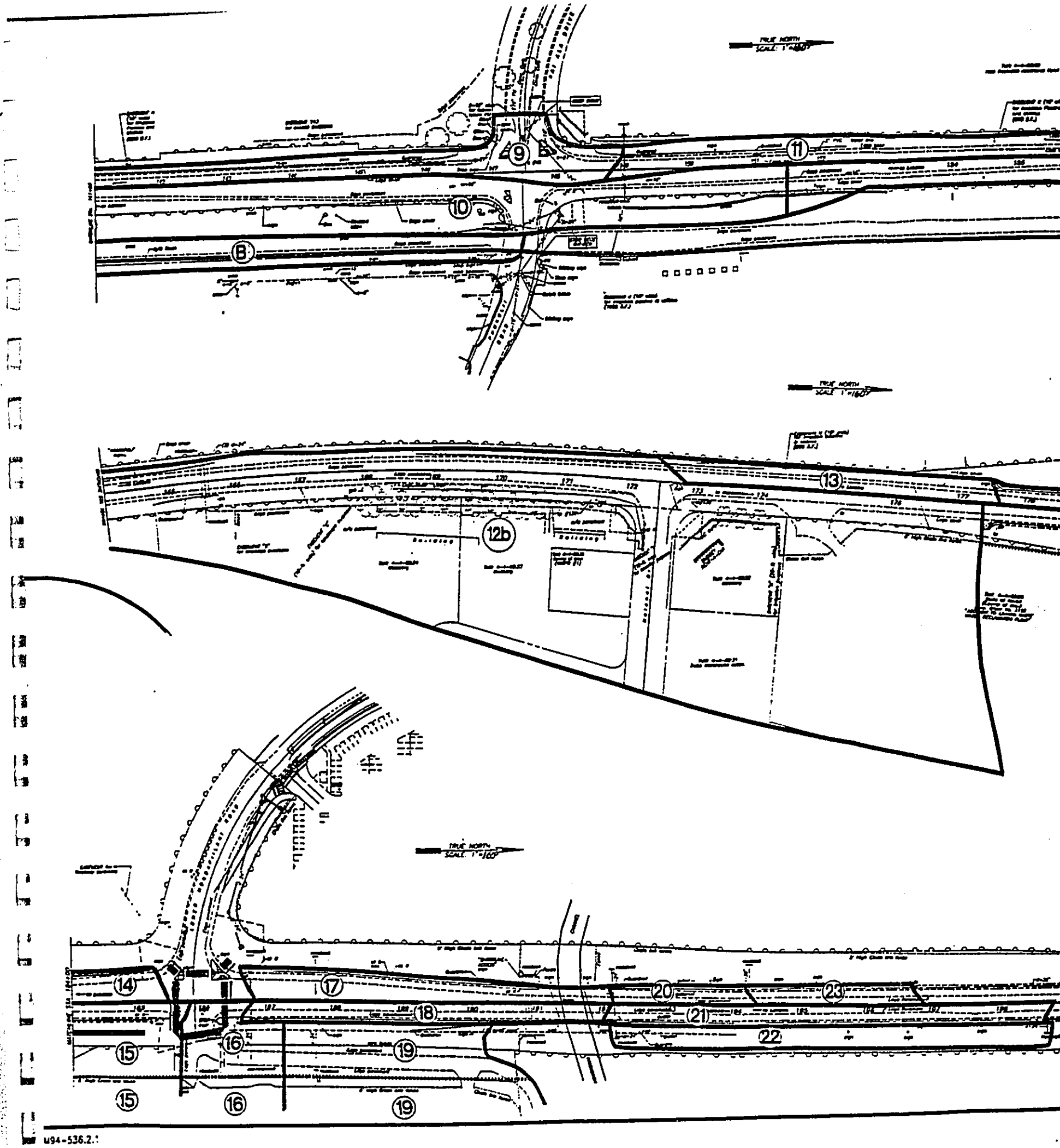
HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

DRAINAGE MAP
EXISTING CONDITIONS
ON-SITE: DRAINAGE AREAS 1 THRU 10

DESIGNED BY | DRAWN BY EM | CHECKED BY TSA

APPROVED | SUBMITTED BY

EXHIBIT 2


TRUE NORTH
SCALE 1"=160'
9
10
11
B
TRUE NORTH
SCALE 1"=160'
12b
13
TRUE NORTH
SCALE 1"=160'
14
15
16
17
18
19
20
21
22
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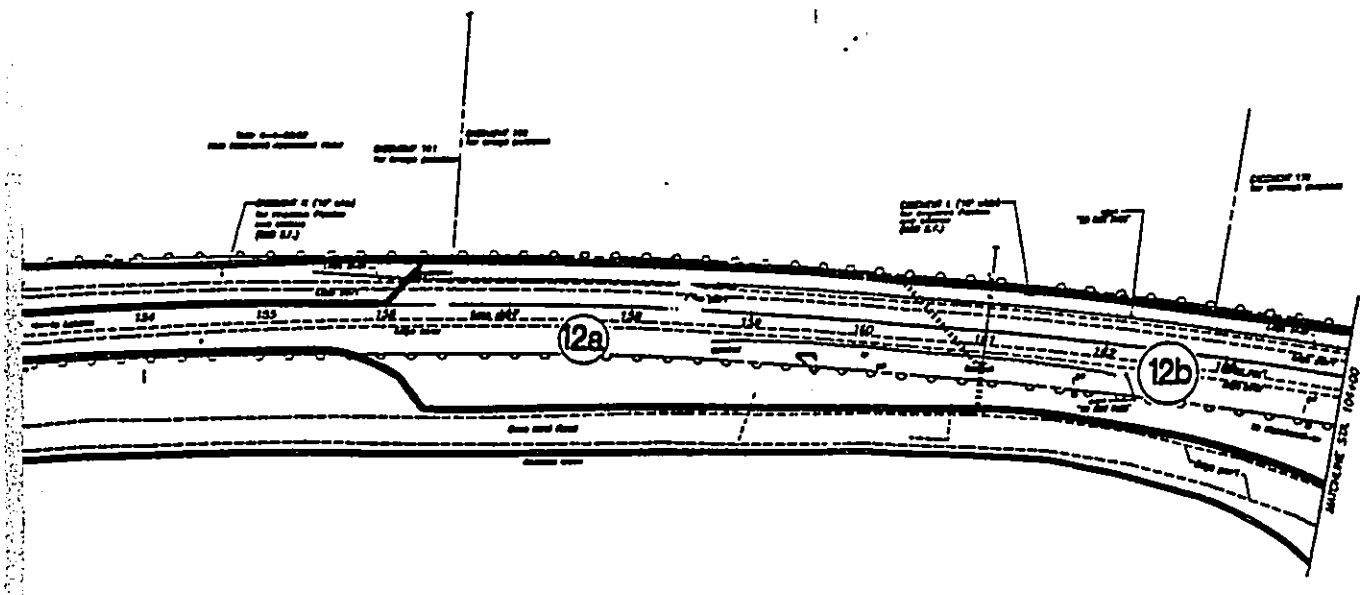
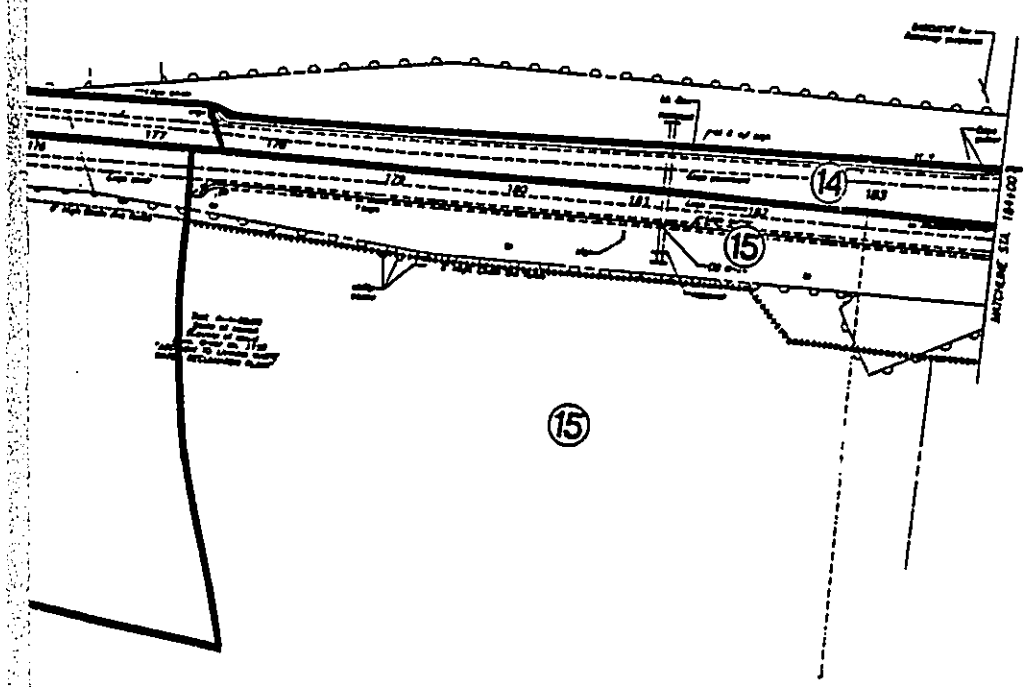
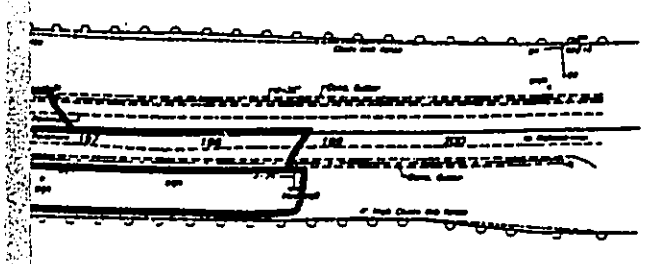
15
16
19

u94-536.2.1







AUSTIN, TSUTSUMI & ASSOCIATES, INC
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

HONOAPIILANI HIGHWAY WIDENING
KAHAPAU, MAUI, HAWAII

DRAINAGE MAP
EXISTING CONDITIONS
ON-SITE DRAINAGE AREAS 10 THRU 22

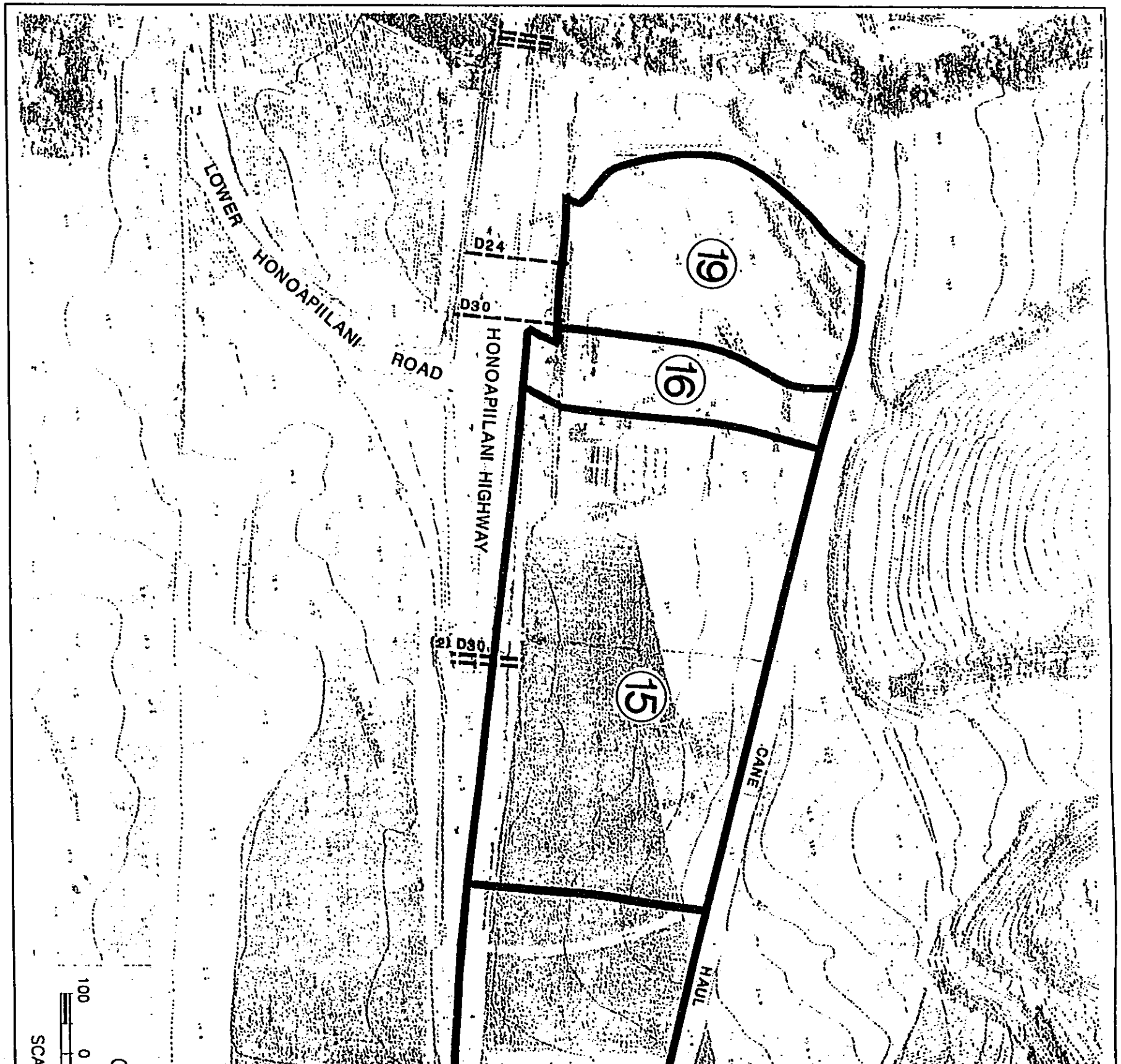
DESIGNED BY | DRAWN BY EM | CHECKED BY TSA

APPROVED | SUBMITTED BY

DATE | DATE

FILE | PROJECT | FOLDER

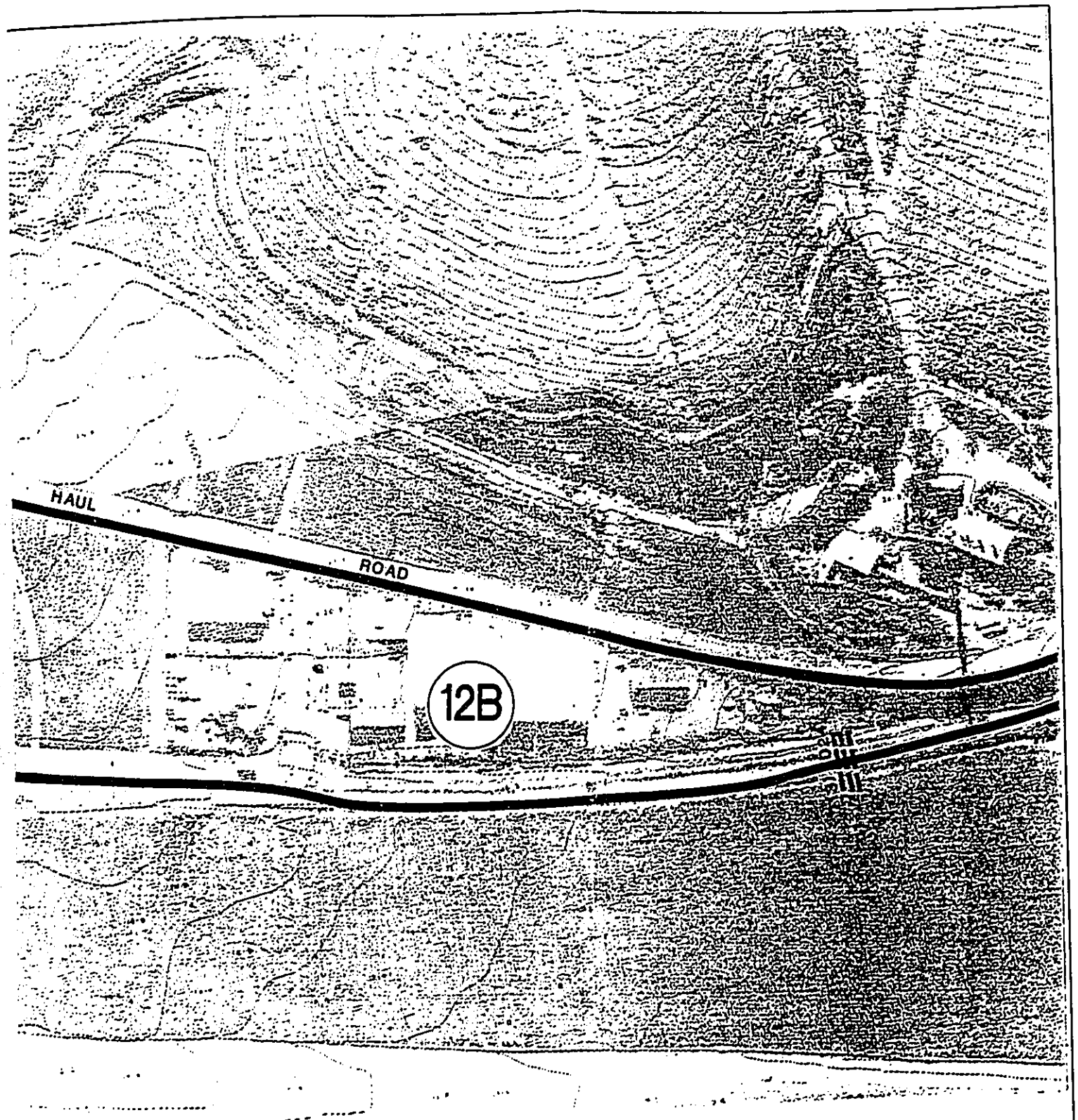
EXHIBIT 3



DRAINAGE REPORT
HONOAPIILANI HIGHWAY
KAANAPALI, MAUI

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

GRAPHIC SCALE
100 0 100 200
SCALE: 1" = 100'



GRAPHIC SCALE

100 0 200 400 Feet

SCALE: 1" = 200 FEET

VICINITY MAP REPRODUCED FROM
U.S.G.S QUADRANGLE MAP:
LAHAINA, HAWAII
DATUM: M.S.L.

NORTH

DRAINAGE REPORT
HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS.SURVEYORS ● HONOLULU, WAILUKU, HILO, HAWAII

EXHIBIT 4

DRAINAGE MAP - EXISTING CONDITIONS
ON-SITE (HALAWAI DR. TO LAHAINA W.W.R.P)

PREPARED FOR: AmFac/JMB

PREPARED FOR: AmFac/JMB

DRAINAGE MAP
HONOKOWAI
KAANAPALI

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

10

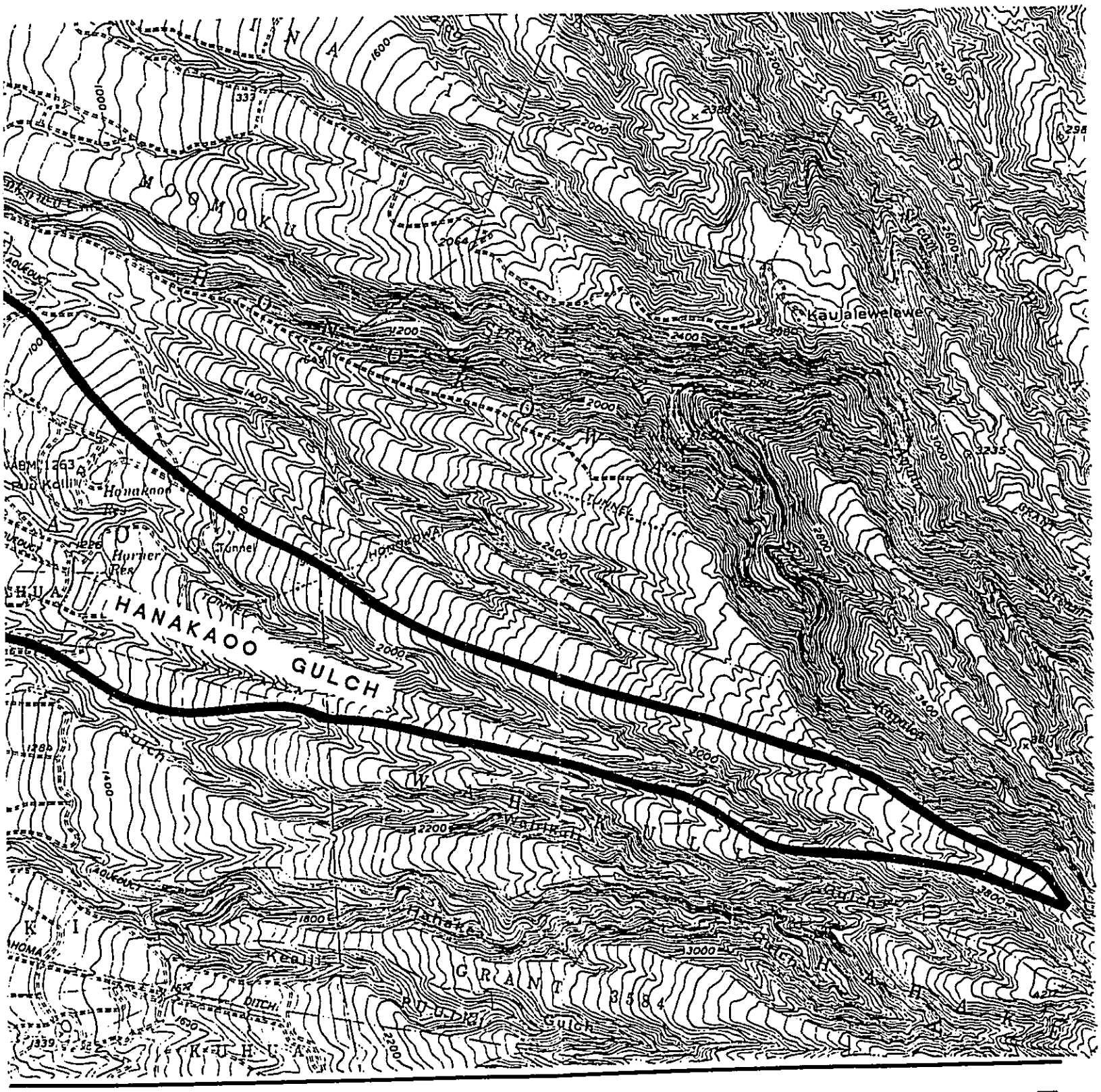
GRAPHIC SCALE

1000 0 2000 4000 Feet

SCALE: 1" = 2000 FEET

VICINITY MAP REPRODUCED FROM
U.S.G.S QUADRANGLE MAP:
LAHAINA, HAWAII
DATUM: M.S.L.

NORTH



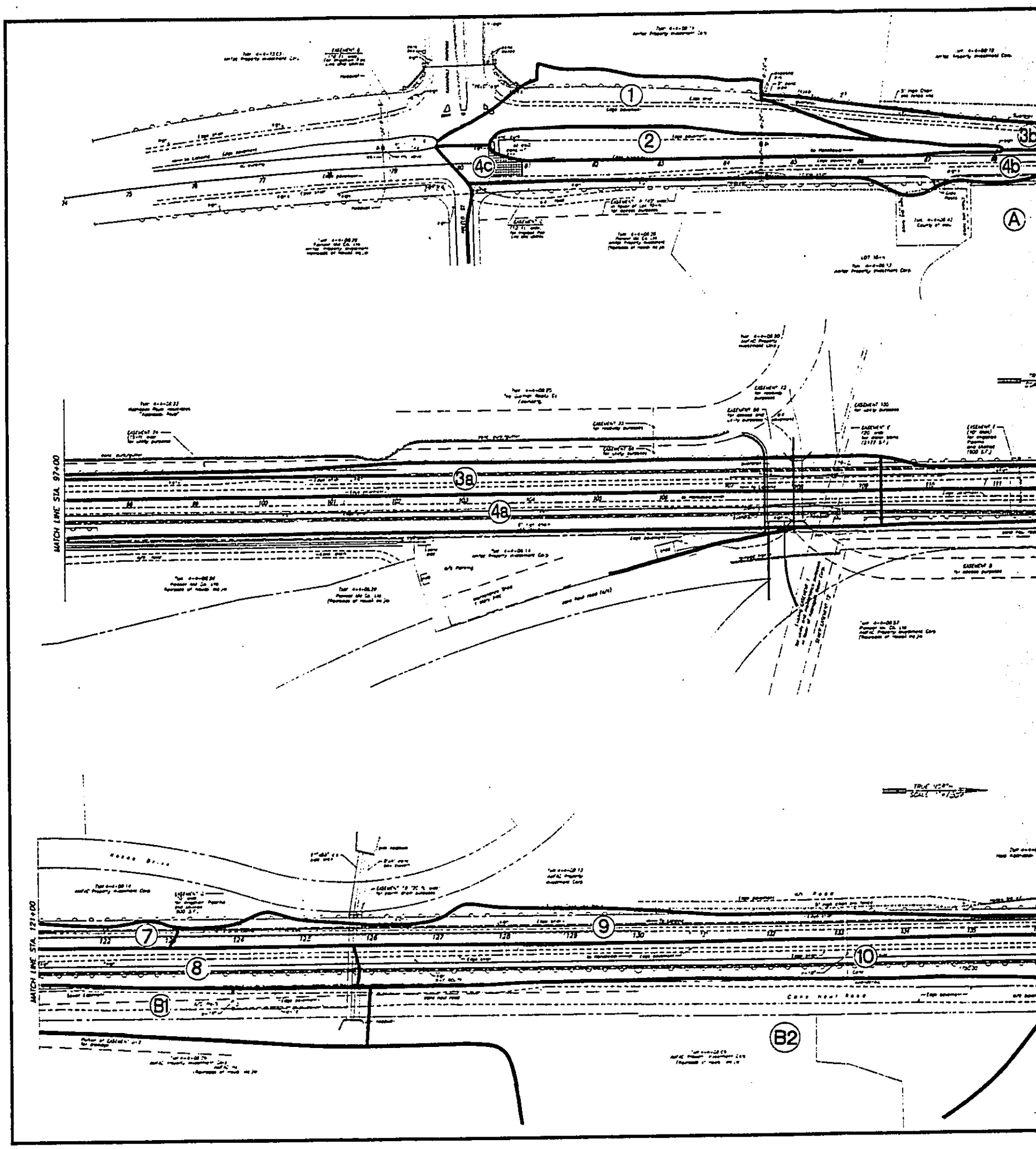
DRAINAGE REPORT
HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

EXHIBIT 5

DRAINAGE MAP - EXISTING CONDITIONS

OFF-SITE (KAANAPALI GOLF COURSE
TO HANAKAOO GULCH)



JOB NO. M94-536.2.1

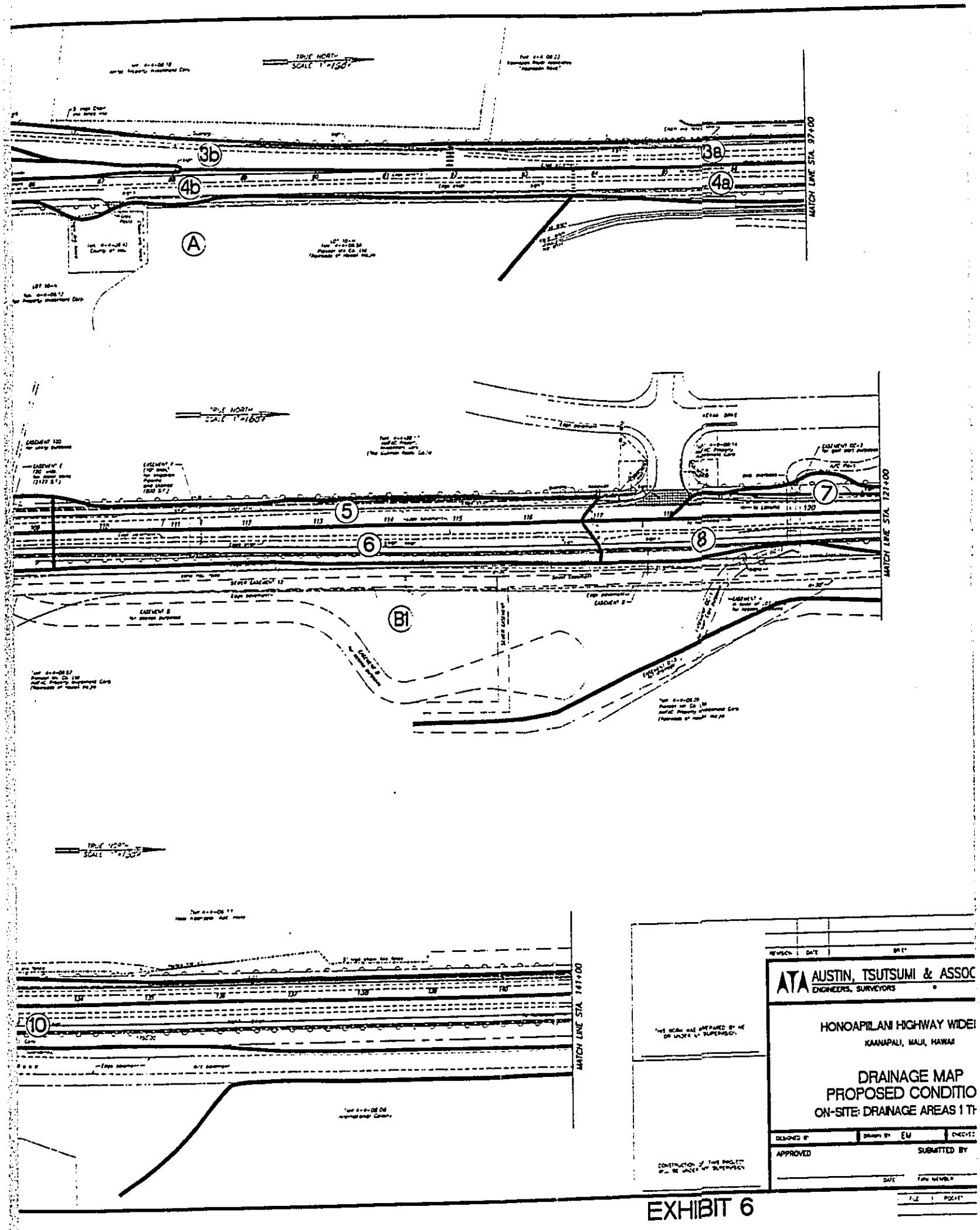
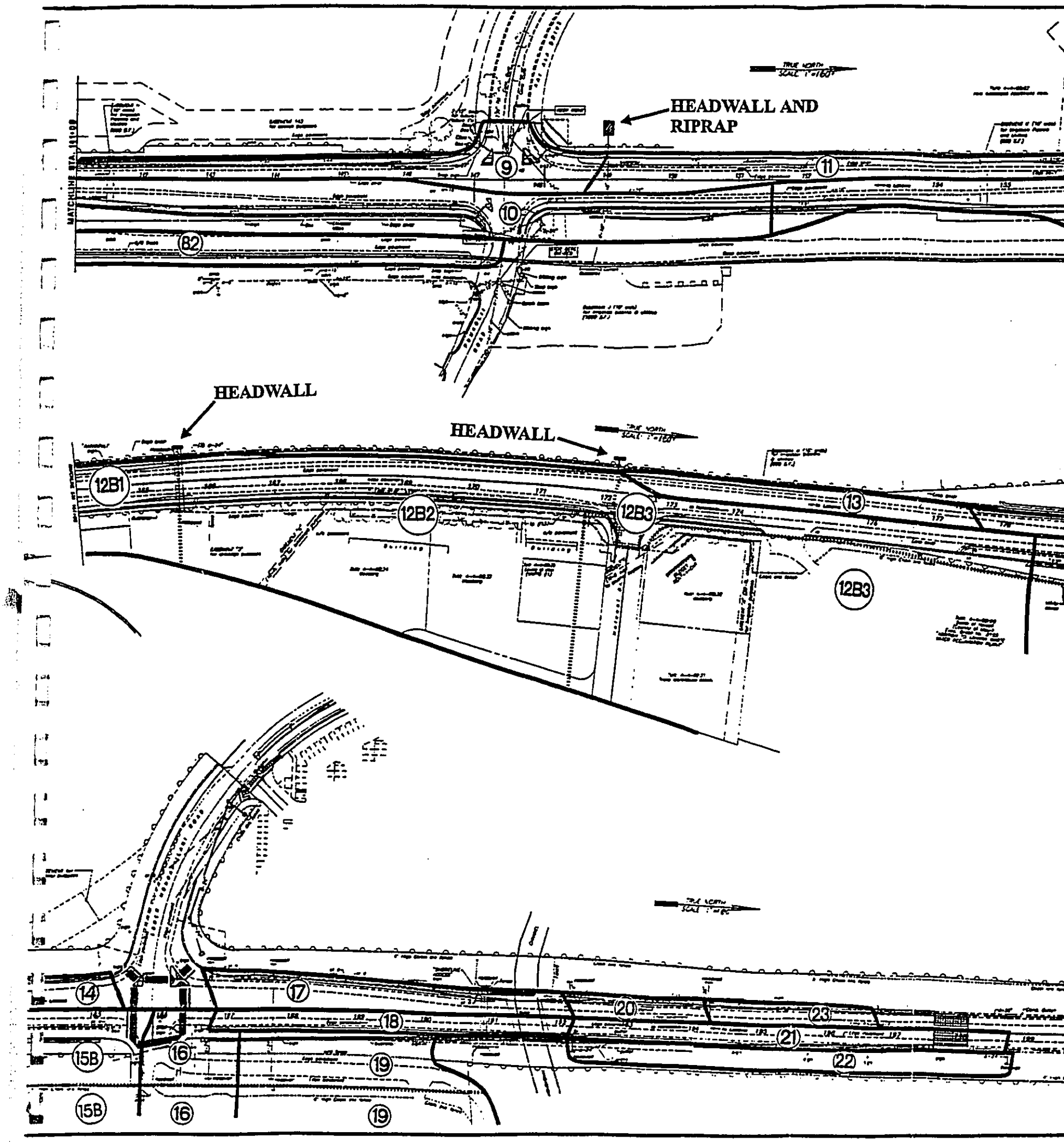
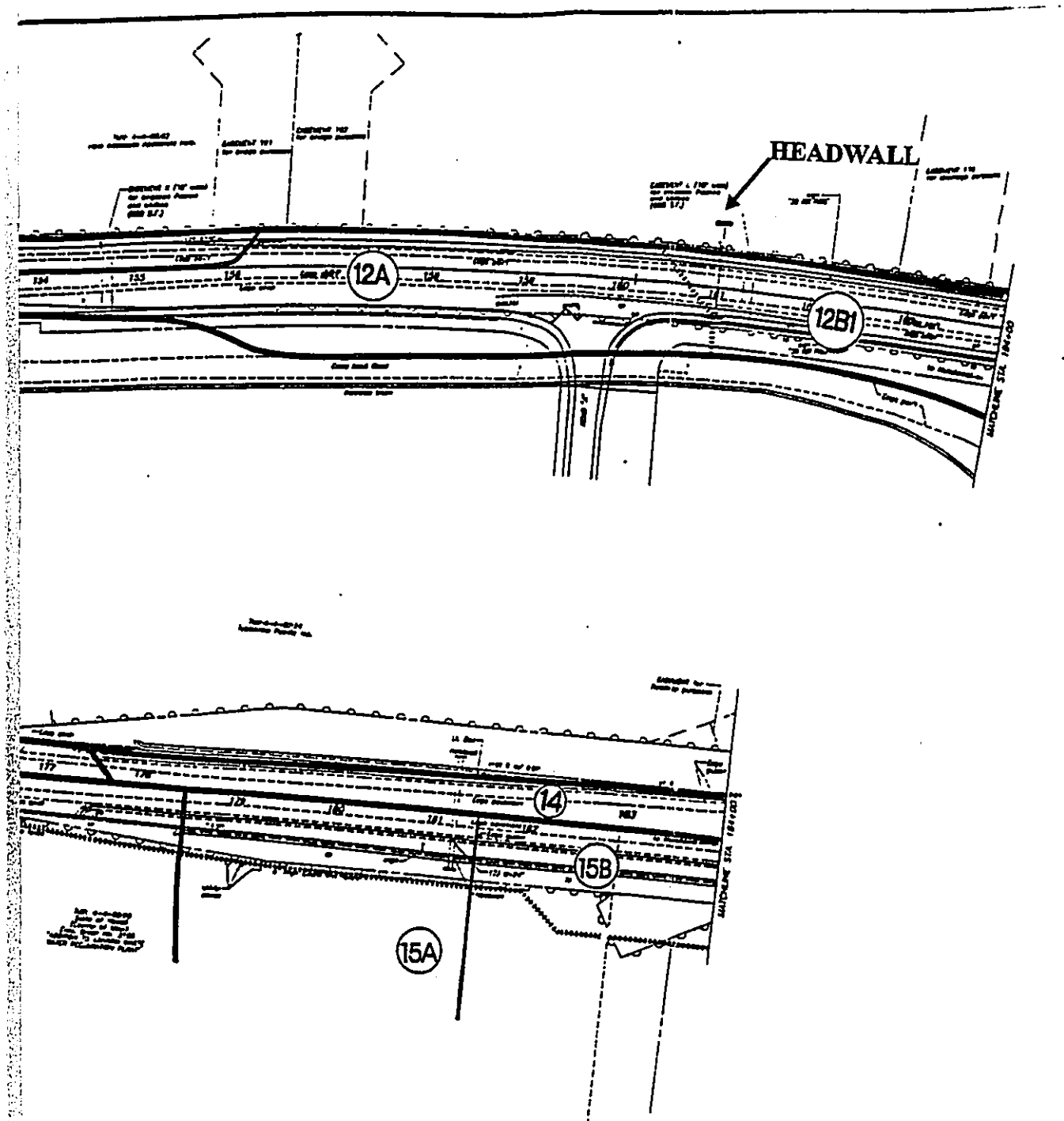
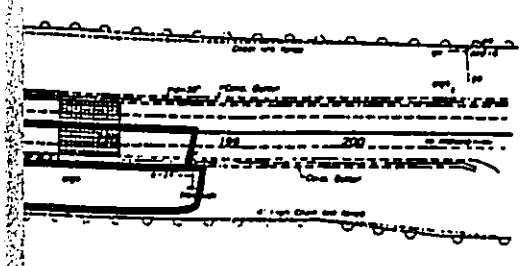

TRUE NORTH
SCALE 1"=150'
3b
3a
4b
4a
A
MATCH LINE STA. 97+00
TRUE NORTH
SCALE 1"=60'
5
6
7
8
B1
MATCH LINE STA. 121+00
TRUE NORTH
SCALE 1"=60'
10
MATCH LINE STA. 141+00
AUSTIN, TSUTSUMI & ASSOC
ENGINEERS, SURVEYORS
HONOAPIILANI HIGHWAY WIDEI
KAANAPALI, MAUI, HAWAI
DRAINAGE MAP
PROPOSED CONDITIO
ON-SITE: DRAINAGE AREAS 1 TH
APPROVED
SUBMITTED BY

EXHIBIT 6


HEADWALL AND
RIPRAP
HEADWALL
HEADWALL
9
10
11
B2
12B1
12B2
12B3
13
12B3
14
15B
16
17
18
19
20
21
22
23
15B
16
19





THE WORK SHOWN HEREON WAS PREPARED BY ME OR UNDER MY SUPERVISION

DATE

CONSTRUCTION OF THIS PROJECT SHALL BE UNDER MY SUPERVISION

DATE

REVISION	DATE	BY	MADE BY	APPROVED

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

DRAINAGE MAP
PROPOSED CONDITIONS
ON-SITE DRAINAGE AREAS 10 THRU 22

DESIGNED BY	DRAWN BY EM	CHECKED BY TSA

APPROVED

SUBMITTED BY

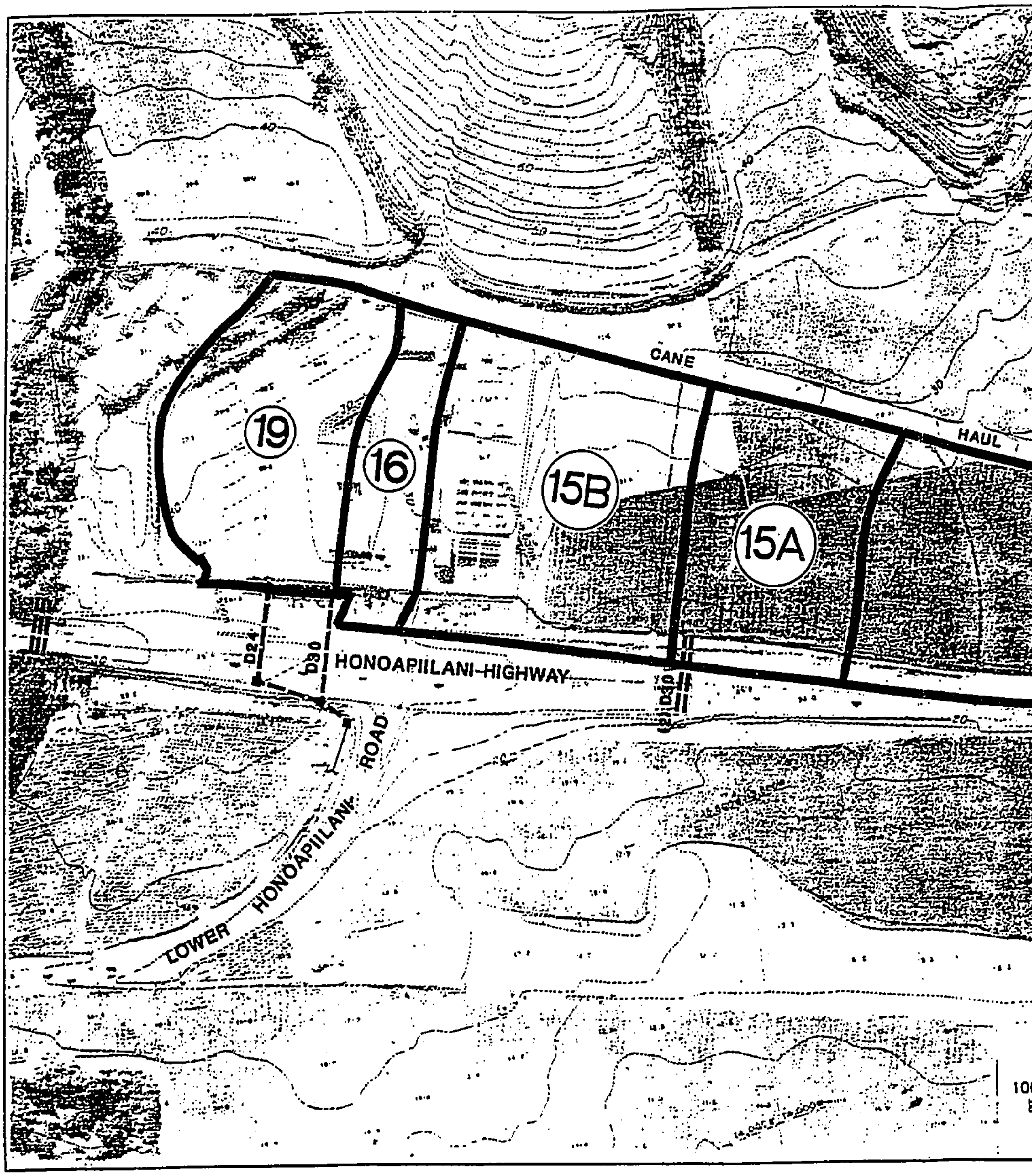
DATE

FIRM NAME

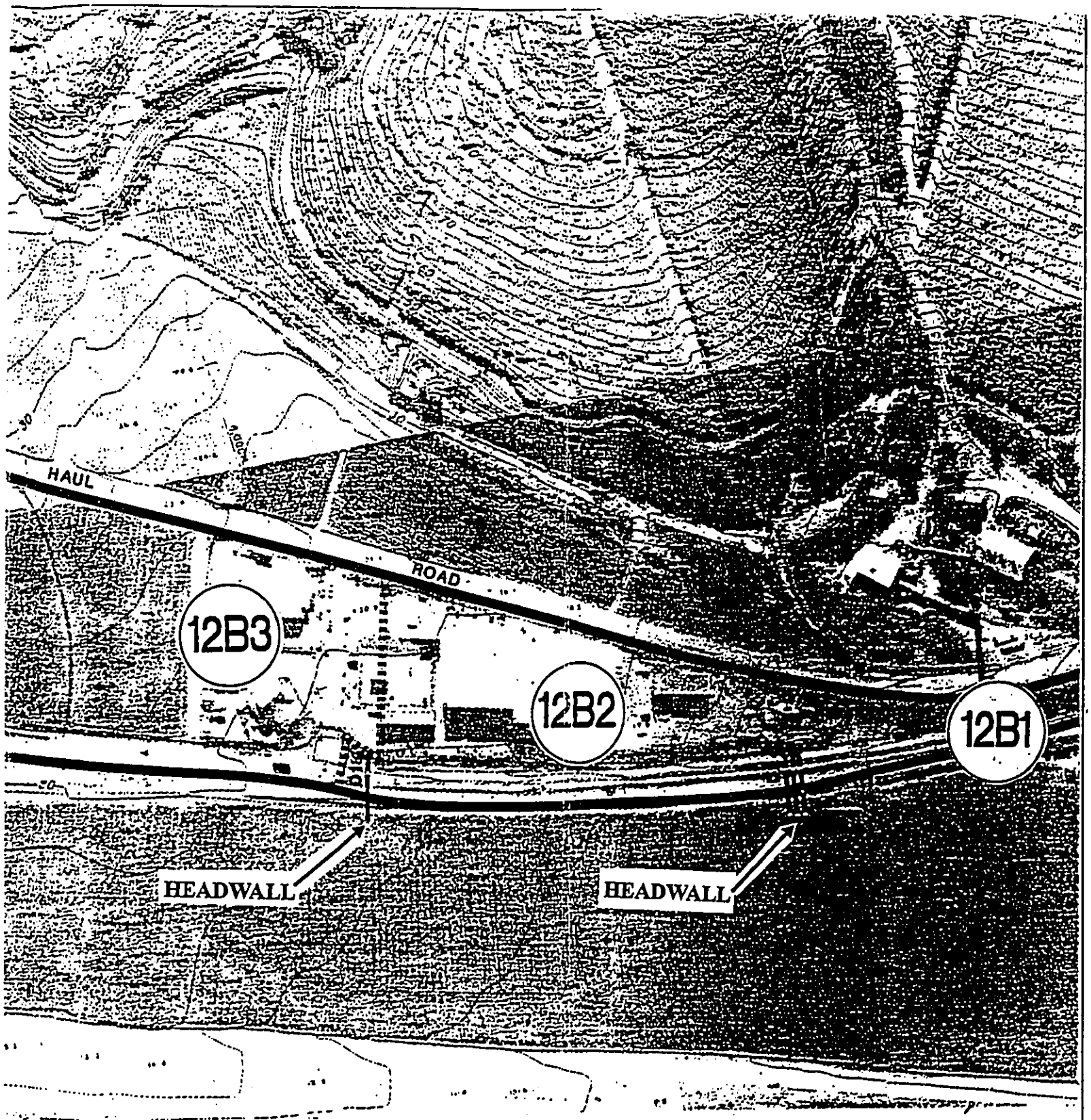
DATE

FILE	PROJECT	FILE NO.

EXHIBIT 7



DRAI
HONO
KAAI
ATA



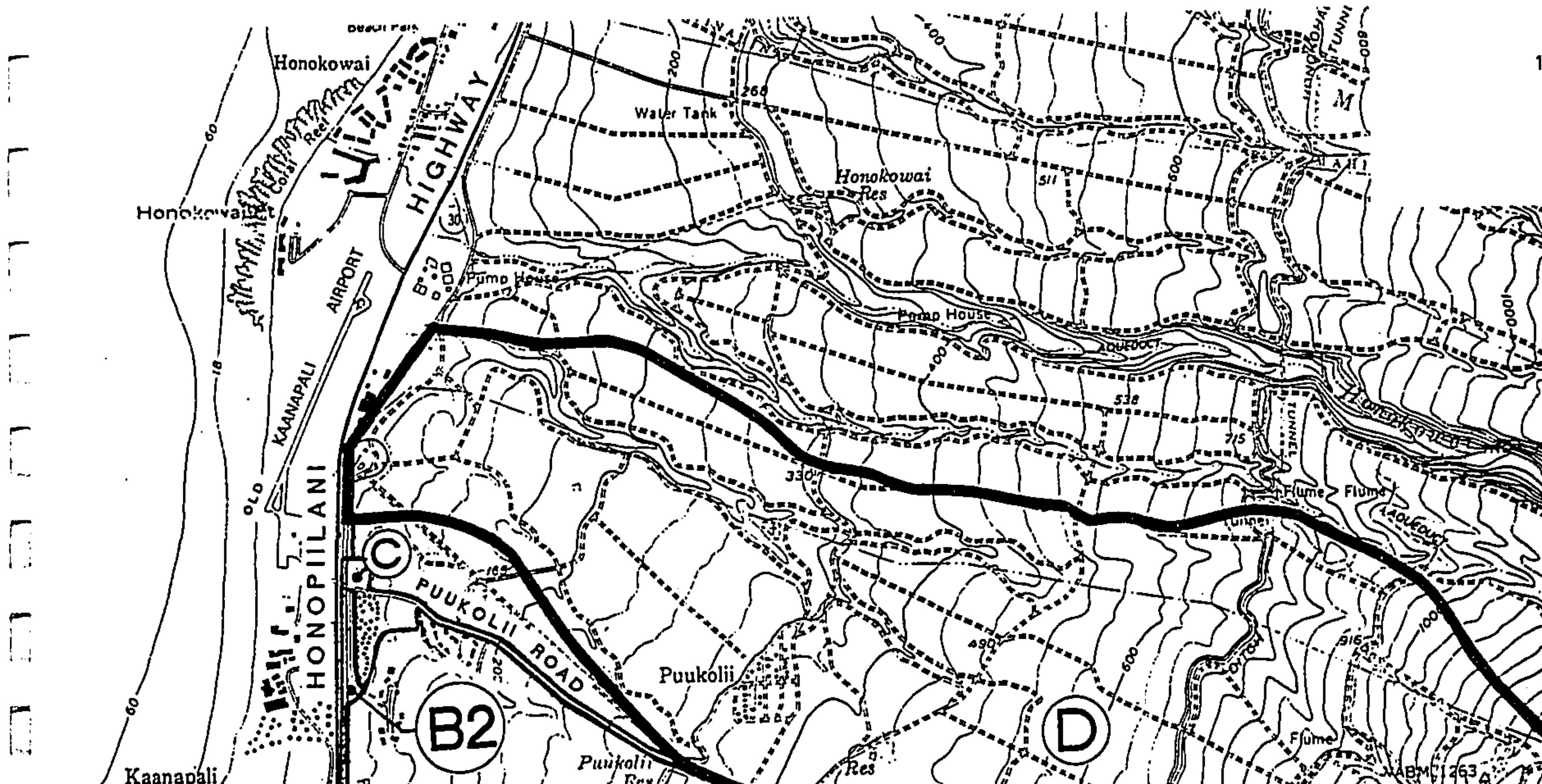
DRAINAGE REPORT
HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS ● HONOLULU, WAILUKU, HILO, HAWAII

EXHIBIT 8

DRAINAGE MAP - PROPOSED CONDITIONS
ON-SITE (HALAWAI DR. TO LAHAINA W.W.R.P.)

PREPARED FOR: AmFac/JMB



DRAI
HONC
KAAN

ATA

PREPARED FOR: AmFac/JMB

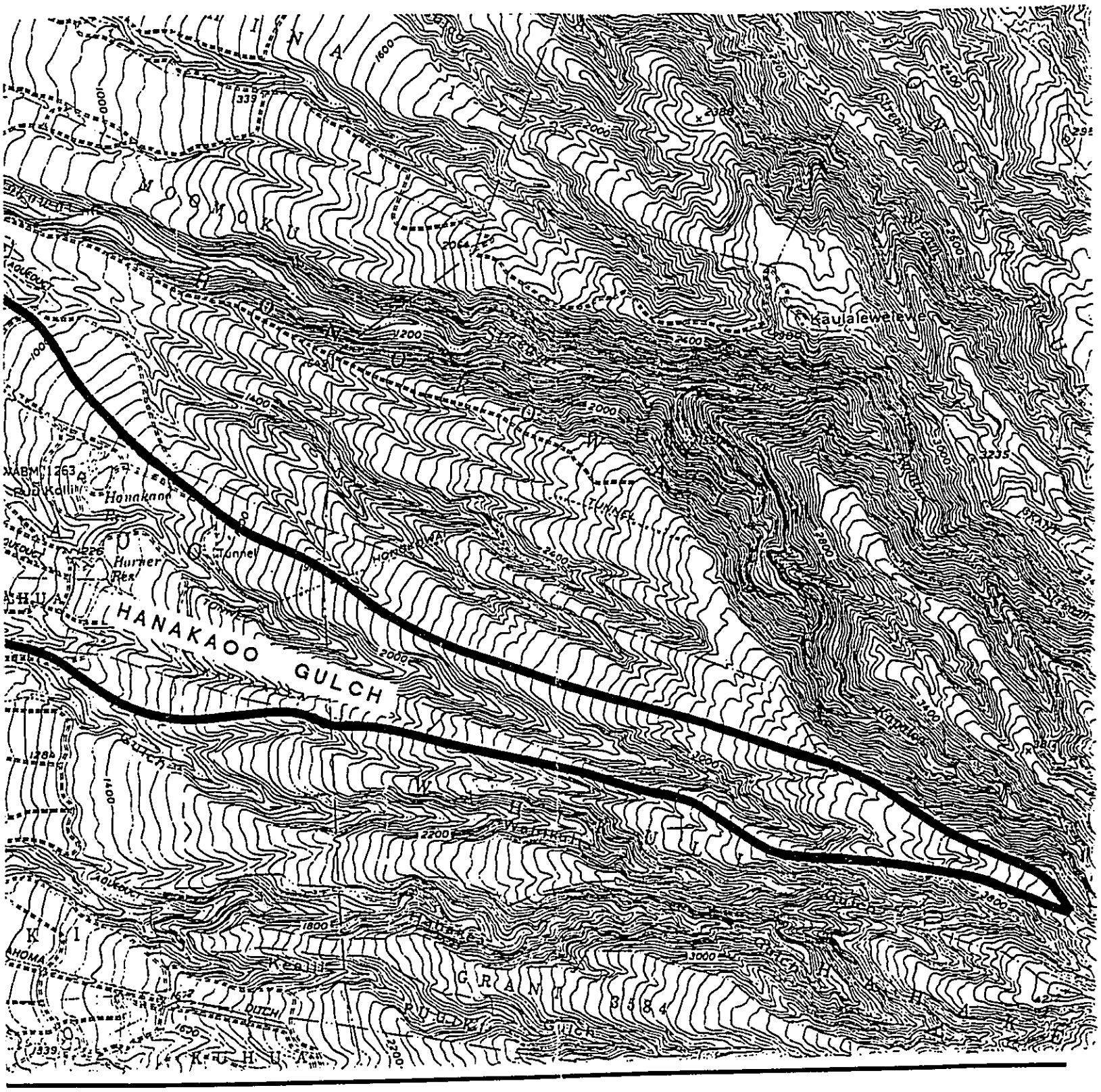
GRAPHIC SCALE

1000 0 2000 4000 Feet

SCALE: 1" = 2000 FEET

VICINITY MAP REPRODUCED FROM
U.S.G.S QUADRANGLE MAP:
LAHAINA, HAWAII
DATUM: M.S.L.

NORTH



DRAINAGE REPORT
HONOAPIILANI HIGHWAY WIDENING
KAANAPALI, MAUI, HAWAII

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HILO, HAWAII

EXHIBIT 9

DRAINAGE MAP - PROPOSED CONDITIONS
OFF-SITE (KAANAPALI GOLF COURSE
TO HANAKAOO GULCH)