

REPORT No. FHWA-HI-EIS-88-02-DS

**DRAFT**

MAY 2001

Final Supplemental  
Environmental Impact Statement

Honoapiilani Highway  
(FAP Route 30)  
Launiupoko to Honokowai

Lahaina District, Maui County, Hawaii

Submitted Pursuant to 42 U.S.C. 4332(2)(C) and 49 U.S.C. 303

by the

U.S. Department of Transportation  
Federal Highway Administration

and

Hawaii Department of Transportation

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Puamana to Honokowai  
Lahaina District, Maui County, Hawaii

Final Supplemental  
Environmental Impact Statement

Submitted Pursuant to 42 USC 4332(2)(c);

Chapter 343, Hawaii Revised Statutes (HRS);  
and  
Section 11-200-18, Hawaii Administrative Rules (HAR)

U.S. Department of Transportation  
Federal Highway Administration  
and  
State of Hawaii Department of Transportation  
Highways Division

\_\_\_\_\_  
Date of Approval

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Brian Minaai, Director  
Department of Transportation

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Date of Approval

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The proposed modifications which are the subject of this supplemental EIS include: (1) extending the Bypass alignment from Launiupoko to Kauaula Stream, and from Kapunakea Street in Lahaina to Honokowai; (2) modifying the Ikena Avenue roadway profile and typical section; (3) modifying the typical roadway section to provide four travel lanes; (4) adding an east-west connector road linking Honoapiilani Highway and the Bypass near Kaanapali, and an access road connecting the Bypass with Lahainaluna Road in Lahaina; and (5) deleting the widening of Honoapiilani Highway to four lanes between Kaanapali Parkway to Honokowai. The project will address the need to alleviate traffic congestion along Honoapiilani Highway between Launiupoko and Honokowai. Potential effects include impacts on land use, growth, traffic conditions, noise and air quality. These impacts will be addressed through appropriate mitigative measures. The no-action alternative is not considered a viable solution.

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## SUMMARY

### FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

<b><u>Action:</u></b>	Agency
<b><u>Proposing Agency:</u></b>	State of Hawaii, Department of Transportation
<b><u>Project Name:</u></b>	Honoapiilani Highway, Launiupoko to Honokowai, Project Nos. 30AB-01-85 and 30AB-01-87
<b><u>Project Location:</u></b>	Launiupoko to Honokowai, Lahaina District Maui, Hawaii
<b><u>Present Use:</u></b>	Existing Highway and Agricultural Lands
<b><u>State Land Use Designation:</u></b>	Agricultural
<b><u>Community Plan Land Use Designations:</u></b>	Agricultural, Open Space, Project District, and Single-Family

#### **Background**

The Final Environmental Impact Statement (FEIS) for the Lahaina Bypass (accepted by the Governor of the State of Hawaii in February, 1991) was prepared on behalf of the State of Hawaii, Department of Transportation (HDOT) and the Federal Highway Administration (FHWA). As noted in the FEIS, the HDOT proposed the development of a Bypass Highway from Puamana to Kaanapali, as well as the widening of Honoapiilani Highway from Kaanapali to Honokowai (Base Project).

Since the acceptance of the FEIS in 1991, the HDOT reevaluated the Base Project and modified the scope of the project to include the extension of the Bypass alignment from Kahoma Stream to Honokowai (5.1 miles), the construction of connector and access roads, and modifications to roadway profiles and typical sections.

In reexamining the functional benefits of extending the Bypass alignment to Honokowai, the HDOT determined that the extension of the alignment would have beneficial effects on regional transportation by accommodating the existing and long-term needs of the West Maui region. As a result, the road widening improvements to Honoapiilani

Highway, as described in the 1991 FEIS, were deleted and are being constructed as a separate, independent project.

Accordingly, the Draft Supplemental Environmental Impact Statement (DSEIS) that was prepared in December 1995 focused on the modifications to the Base Project as noted above. The notice of availability of the DSEIS was published on March 8, 1996, followed by a public hearing on April 25, 1996.

Since the filing of the DSEIS, further project modifications have been incorporated to address comments received during the DSEIS review process. Specifically, the HDOT (with the concurrence of the FHWA) has determined that extending the southern alignment of the Bypass from Puamana to Launiupoko (1.3 miles) is beneficial with regard to coastal zone management considerations (i.e., shoreline processes). In addition, the HDOT reexamined the benefits of including in the first construction phase truck-climbing lanes along certain uphill grades of the Bypass alignment. The HDOT also added the designation of the highway as a bike route, with revisions to the roadway cross-section to accommodate this use.

Therefore, the Modified Project improvements, which are described in this FSEIS, reflects the modifications to the Base Project, as well as the additional changes which have been incorporated since the preparation and circulation of the DSEIS.

**Proposed Action:**

The State of Hawaii, Department of Transportation (HDOT), proposes to modify the scope of the Final Environmental Impact State (FEIS) that was accepted for the Lahaina Bypass and Honoapiilani Highway widening project in Maui County, Hawaii. The FEIS (FHWA-HI-EIS-88-02-F) addressed the need to alleviate traffic congestion along Honoapiilani Highway between Lahaina and Honokowai, and involved the proposed development of a Bypass Highway between Puamana and Kaanapali (5.5 miles), and widening Honoapiilani Highway between Kaanapali and Honokowai (3.0 miles). The FEIS was prepared by the HDOT and the U.S. Department of Transportation (U.S. DOT) and was accepted by Governor John Waihee on February 11, 1991.

The Modified Project will involve the construction of a four (4) lane, controlled access, Bypass Highway between Launiupoko and Honokowai, a distance of approximately 9.0 miles. Additional improvements include the addition of connector and access roads, as well as modifications to roadway profiles and typical sections.

The Bypass Highway will originate at Launiupoko, south of the town of Lahaina, and proceed in a northerly direction to Ikena Avenue in Lahaina. From this point, the Bypass will proceed in a northwesterly direction until it reaches Kapunakea Street in Lahaina. The Bypass will then continue in a northerly direction as it passes to the east of the Kaanapali Resort and then proceed in a northwesterly direction until it reaches its terminus near the community of Honokowai, south of Mahinahina Gulch. The minimum right-of-way along the entire length of the modified Bypass alignment will

remain unchanged at 150 feet.

The Bypass Highway will be developed in two (2) phases, with two (2) travel lanes to be constructed during each phase. The original Bypass alignment between Kauaula Stream to Kapunakea Street (2.0 miles) will remain unchanged; however, proposed modifications within this segment will involve changes to roadway profiles and typical sections. The two (2) travel lanes and separate truck-climbing lane between Puamana and Lahainaluna Road proposed by the Base Project have been eliminated. Instead, three (3) separate truck-climbing lane segments will be provided along the Bypass alignment during the project's first phase, one (1) southbound segment and two (2) northbound segments. The southbound truck-climbing lane segment will be approximately 9,700 feet in length and will extend from the southbound approach of the Honokowai Stream bridge crossing to a location about 1,800 feet north of Wahikuli Gulch. The first of the two (2) northbound truck-climbing lane segments will be approximately 2,000 feet in length and will start from a point about 1,500 feet north of the Wainee Reservoir and stretch to a point approximately 1,200 feet south of Lahainaluna Road. The second northbound segment will be about 2,700 feet in length and begin from a point approximately 2,800 feet north of the Wahikuli water tank and reach to the northbound approach of the Hahakea Gulch bridge crossing. Upon completion of the project's second phase, the truck-climbing lanes will be eliminated and the roadway sections will revert to their typical configuration. In addition, the roadway profile along Ikena Avenue will be modified to reflect a depressed or cut condition to allow for a grade-separated crossing at Lahainaluna Road instead of the at-grade crossing which was originally proposed.

Further changes include extending the Bypass from Kahoma Stream to Honokowai (5.1 miles) and from Puamana to Launiupoko (1.3 miles). The extension of the Bypass to Honokowai and Launiupoko were considered as alternatives in the FEIS and DSEIS, respectively. The extension to Honokowai will follow an alignment about 4,000 to 5,000 feet east of Honoapiilani Highway and return to the highway just south of Mahinahina Gulch, while the extension to Launiupoko will follow an alignment about 1,500 feet east of Honoapiilani Highway before returning to the highway just north of Launiupoko Point.

Additional modifications include the addition of the Kaanapali Connector and the Lahainaluna Road-Bypass Access, as well as roadway alignment modifications through lands underlying the State Housing and Community Development Corporation of Hawaii's (HCDCH) Villages at Leiali'i housing development. The Kaanapali Connector will serve as an east-west link between Honoapiilani Highway and the Bypass and facilitate access to the Kaanapali Resort and adjoining residential areas. The Lahainaluna Road-Bypass Access will serve to facilitate access to public schools and residential areas along Lahainaluna Road, as well as the town of Lahaina.

The Kaanapali Connector will be located to the north of the Lahaina Civic Center and will be approximately 1.0 mile in length. Initial construction will provide for two (2) travel lanes within an 80-foot ultimate right-of-way. Ultimately, the Kaanapali Connector will include two (2) travel lanes in each direction.



The Lahainaluna Road-Bypass Access will extend a distance of about 0.3 mile and will consist of two (2) travel lanes within a 60-foot right-of-way.

Access from the Bypass to the town of Lahaina and the Kaanapali Resort will be provided by the Kaanapali Connector and the Lahainaluna Road-Bypass Access. The intersections formed by the Kaanapali Connector with Honoapiilani Highway and the Bypass will be signalized as traffic warrants, while the Lahainaluna Road-Bypass Access will be unsignalized at the Lahainaluna Road and Bypass intersections.

The proposed improvements are anticipated to improve highway capacity and alleviate traffic congestion between Launiupoko and Honokowai. In addition, the proposed Bypass will provide an alternate transportation route between Launiupoko and Honokowai in the event sections of the existing Honoapiilani Highway are closed due to traffic accidents, fire and smoke hazards, or high surf crossing the roadway.

**Potential Impacts and Mitigation Measures:**

The proposed construction of the Modified Project will result in unavoidable construction-related impacts. These short-term impacts will be minimized through accepted design and construction practices (e.g., water sprinkling for dust control, construction of drainage diversions and sediment basins for erosion control).

From a long-term perspective, the proposed project will result in improved traffic flow and circulation through and within the West Maui region. Impacts associated with traffic flow along the Bypass would include noise generation and air quality emissions. Inasmuch as the proposed Modified Project to Honokowai traverses undeveloped agricultural lands, appropriate mitigation measures addressing noise impacts will be implemented for proposed future developments located in the vicinity of the Bypass. Air quality along the Bypass will be affected by vehicular emissions. However, the projected levels of emissions are anticipated to be within State and Federal air quality standards.

The proposed extension of the Bypass to Honokowai and Launiupoko, and the provision of the Kaanapali Connector and Lahainaluna Road-Bypass Access, will require the removal of an additional 65 acres of agricultural lands, formerly planted with sugar cane (as compared to the alternative selected in the FEIS). The removal of these additional agricultural lands, however, is not anticipated to affect lands available for diversified agricultural use by Pioneer Mill Company, Ltd.

**Alternatives Considered:**

The FEIS for the proposed project examined several alternatives to address the long-range regional highway needs for the West Maui region. The extension of the Bypass to Honokowai, following an alignment similar to that of the Modified Project (as proposed herein) was considered as one (1) potential alternative. This extension alternative, however, was discounted in the FEIS evaluation because of the higher costs associated with extending the roadway.

However, based on more recent traffic analyses conducted in the Maui Long-Range Highway Planning Study, the Bypass extension to Honokowai was reconsidered and determined to have long-term benefit from the standpoint of affording a roadway alternative which addresses future traffic needs in the region by providing a second roadway to relieve traffic on the existing Honoapiilani Highway. It is noted that widening the existing highway beyond four (4) lanes between Kaanapali to Honokowai is constrained by right-of-way limitations. The widening of Honoapiilani Highway from two (2) to four (4) travel lanes between Kaanapali Parkway to Honokowai has been implemented by the HDOT as a separate, independent project.

The extension of the Bypass to Launiupoko was previously considered by the HDOT during the conceptual planning stages for the Modified Project. This extension was included as an alternative in the DSEIS but was discounted at the time due to cost considerations.

However, since the potential for shoreline erosion poses a threat to Honoapiilani Highway in this vicinity, the HDOT reconsidered this alternative during the DSEIS review process and is proposing to extend the Bypass to Launiupoko. The HDOT plans to mitigate the existing shoreline erosion conditions with the proposed Honoapiilani Highway Revetment Protection Project at Launiupoko.

In this light, the improvements proposed by the Modified Project represents the preferred alternative in contrast to the improvements originally proposed in the FEIS.

**Unresolved Issues:**

At this time, only the Kaanapali Connector and a portion of the Dickenson Street Connector (i.e., the Lahainaluna Road-Bypass Access) are incorporated as part of the Bypass project scope. In addition, it is anticipated that the County of Maui will construct the remainder of the Dickenson Street Connector (to Honoapiilani Highway) within a time frame similar to the Bypass construction schedule.

However, the relationship of the Bypass construction schedule and the scheduling of the other connector roads is not firm at this time. While the Bypass is scheduled to start construction in late 2004, the construction of the Wahikuli Connector (near Kaanapali) and Kapunakea Connector are linked to the scheduling of HCDCH's Villages at Leiali'i project, which may be subject to implementation factors beyond the control of the HDOT. Similarly, the design and construction responsibilities of the Puukolii Connector and Puamana Connector would proceed independently of the Bypass. In this regard, the implementation schedule of the Puukolii Connector and Puamana Connector is beyond the jurisdiction of the HDOT. These circumstances notwithstanding, the HDOT proposes to continue coordination with the HCDCH and the County of Maui to assure the timely and coordinated construction of the connector roads for the proposed Bypass.

**Compatibility with Land Use Controls and Policies:**

The proposed modifications to the Bypass project are consistent with objectives and policies and recommendations of the Hawaii State Plan, State Transportation Functional Plan, Maui Long-Range Highway Planning Study, Maui County General Plan, West Maui Community Plan, and Hawaii Coastal Zone Management Program. The proposed modified Bypass alignment will traverse lands falling within the State Agricultural District.

The construction of the Bypass may affect existing waterways (e.g., Kahoma Stream) which fall under the permitting jurisdiction of the U.S. Department of Army. Construction activities in these areas, therefore, may require a Corps of Engineers Section 404 Permit. In addition, a Stream Channel Alteration Permit may be required from the State Commission on Water Resources Management, as well as a Special Management Area (SMA) Use Permit from the County of Maui.

# *Chapter 1*

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*Introduction*

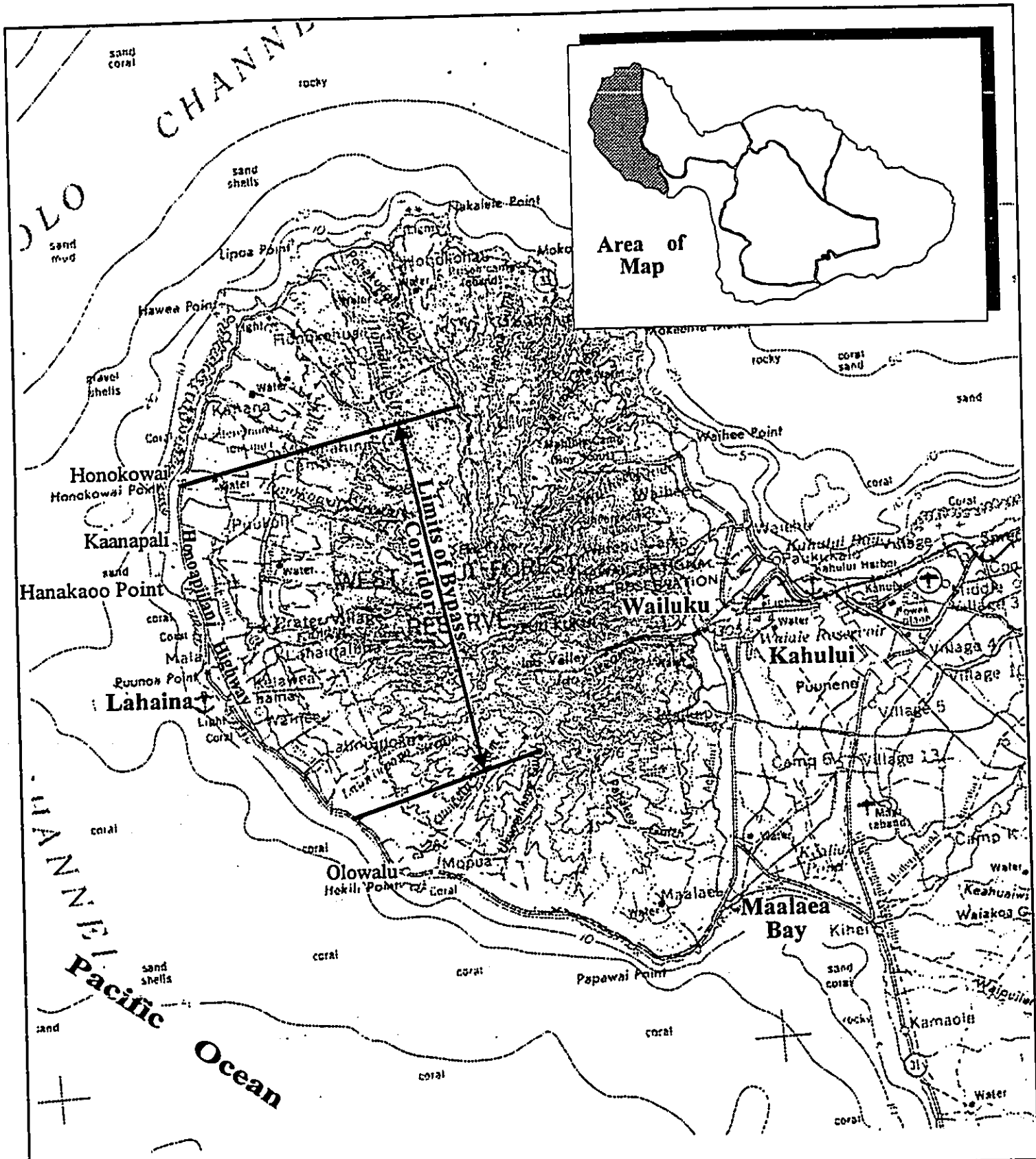
## I. INTRODUCTION

The State of Hawaii, Department of Transportation (HDOT) proposes roadway improvements in West Maui to relieve traffic congestion along Honoapiilani Highway, between Lahaina Town and Honokowai. Specifically, the HDOT has proposed to develop a new Bypass Highway between Lahaina Town and Kaanapali and to widen Honoapiilani Highway, between Kaanapali and Honokowai. See Figure 1. A Final Environmental Impact Statement (FEIS) for these proposed highway improvements was prepared by the U.S. Department of Transportation (U.S. DOT) and HDOT, and accepted by the Governor of Hawaii on February 11, 1991 (U.S. DOT, HDOT, 1991).

Subsequent to the acceptance of the FEIS, the HDOT reviewed additional technical data contained in the Maui Long-Range Highway Planning Study (1991), and determined that an extension of the Bypass limits at its northern extent (i.e., north of Kahoma Stream) represents a preferred alignment for the Bypass.

Accordingly, a Draft Supplemental Environmental Impact Statement (DSEIS) was prepared in December 1995 which included modifications to the 1991 FEIS such as the extension of the Bypass alignment to Honokowai, changes to roadway profiles and typical sections, and the addition of connector and access roads.

In addition, the HDOT has reexamined an extension alternative which was included in the DSEIS, and is now proposing to extend the Bypass from Puamana to Launiupoko, a distance of approximately 1.3 miles. By implementing this southerly extension, the potential impacts of shoreline erosion to Honoapiilani Highway within this vicinity will be removed and will enable better management of the shoreline area. The proposed Honoapiilani Highway Revetment Protection Project at Launiupoko, FAP No. ER-11(7) plans to



**Figure 1** Lahaina Bypass Modifications NOT TO SCALE  
Vicinity Map



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construct shoreline protection to alleviate the existing shoreline erosion conditions.

Most recent traffic projections developed by the Maui Long-Range Highway Planning Study indicates volumes exceeding that originally projected by the HDOT in 1987. As shown in Table 1, for example, the State's 1987 projection for the year 2007 shows an average daily traffic volume of approximately 30,000

**Table 1**

<b>COMPARISON OF AVERAGE DAILY TRAFFIC (ADT) YEAR 2007 AND 2010</b>			
<b>Location along Bypass</b>	<b>Year 2007<sup>a</sup></b>	<b>Year 2010<sup>b</sup></b>	<b>% Difference</b>
Between Puamana and Lahainaluna Rd.	15,651	14,816	-5.3%
Between Lahainaluna Road and Kaanapali	30,039	37,987	+26.5%
At Honokowai Stream	22,836	29,583	+22.81%

<sup>a</sup> Source: US DOT, HDOT, 1991.  
<sup>b</sup> Source: Austin, Tsutsumi & Associates, 1991.

vehicles per day in the vicinity of the Bypass' intersection with Kapunakea Street. Average daily traffic projected by the Long-Range Highway Plan's traffic demand forecasting model at the same location for the year 2010 shows a total volume of approximately 38,000 vehicles per day, a 26 percent increase. The higher volumes projected by the Maui Long-Range Highway Planning Study is attributed to additional development proposals considered by the Study's transportation model. Additional development projects considered included the State Housing and Community Development Corporation of Hawaii's (HCDCH) 4,000-unit Villages at Leiali'i master-planned community. (The HCDCH was formerly known as the Housing Finance and Development Corporation, or HFDC.)

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The updated peak hour volumes are projected to be higher than peak hour volumes estimated by the FEIS. Peak hour volume comparisons are graphically depicted in Figure 2, 3, 4 and 5 for the following roadway segments, respectively:

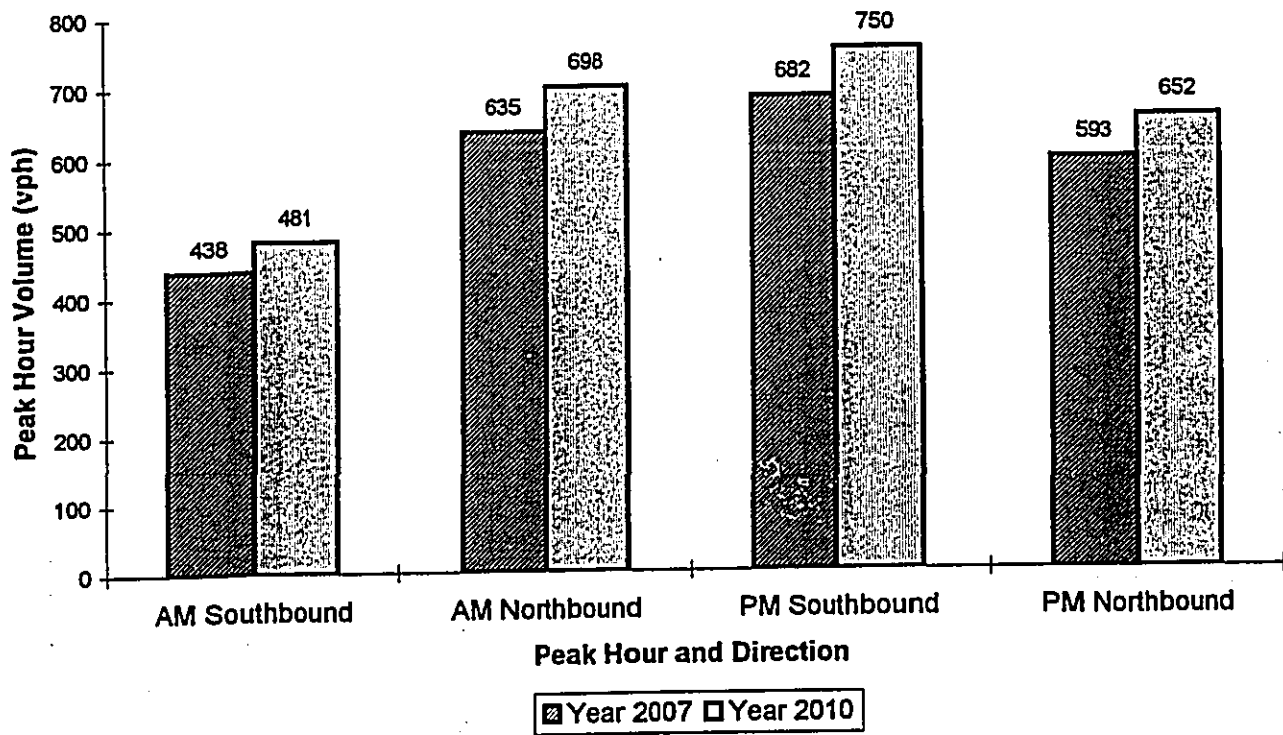
1. Bypass, between Puamana and Lahainaluna Road (Figure 2);
2. Bypass, north of Kapunakea Street (Figure 3);
3. Honoapiilani Highway, at Honokowai Stream (Figure 4); and
4. Bypass, at Honokowai Terminus (Figure 5).

Given the higher traffic projections for the year 2010, the Maui Long-Range Highway Planning Study foresees the Bypass to ultimately function as a four (4) lane roadway.

Consequently, given the right-of-way limitations through Honoapiilani Highway (between Kaanapali and Honokowai), an extension of the Bypass to Honokowai has been determined to be a preferred alternative since laneage requirements for future volumes can be planned for and met through the separate Bypass alignment. It is noted that in extending the Bypass to Honokowai, the roadway alignment through lands underlying HCDCH's Villages at Leiali'i project has been adjusted.

It should also be noted that the HDOT, in conjunction with the County of Maui, prepared the Maui Long-Range Land Transportation Plan - Final Report (Kaku Associates, February 1997). The Plan, which serves as a guide for the development of the major surface transportation facilities and programs to be implemented within the County of Maui, includes an inventory and assessment of the existing roadway system and operating conditions, as well as existing land use and socio-economic conditions on the Island of Maui. Additionally, the Plan

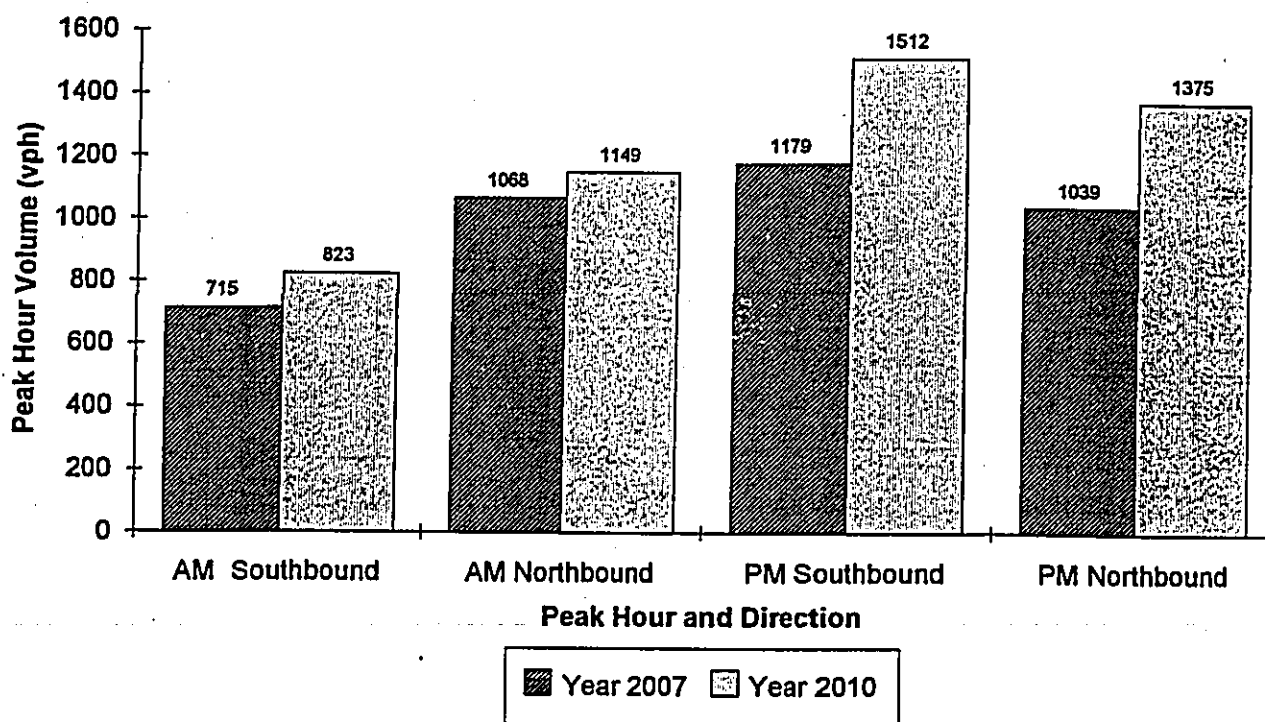




**Figure 2 Lahaina Bypass Modifications**  
 Comparison of Peak Hour Volumes Along Bypass  
 Between Puamana and Lahainaluna Road

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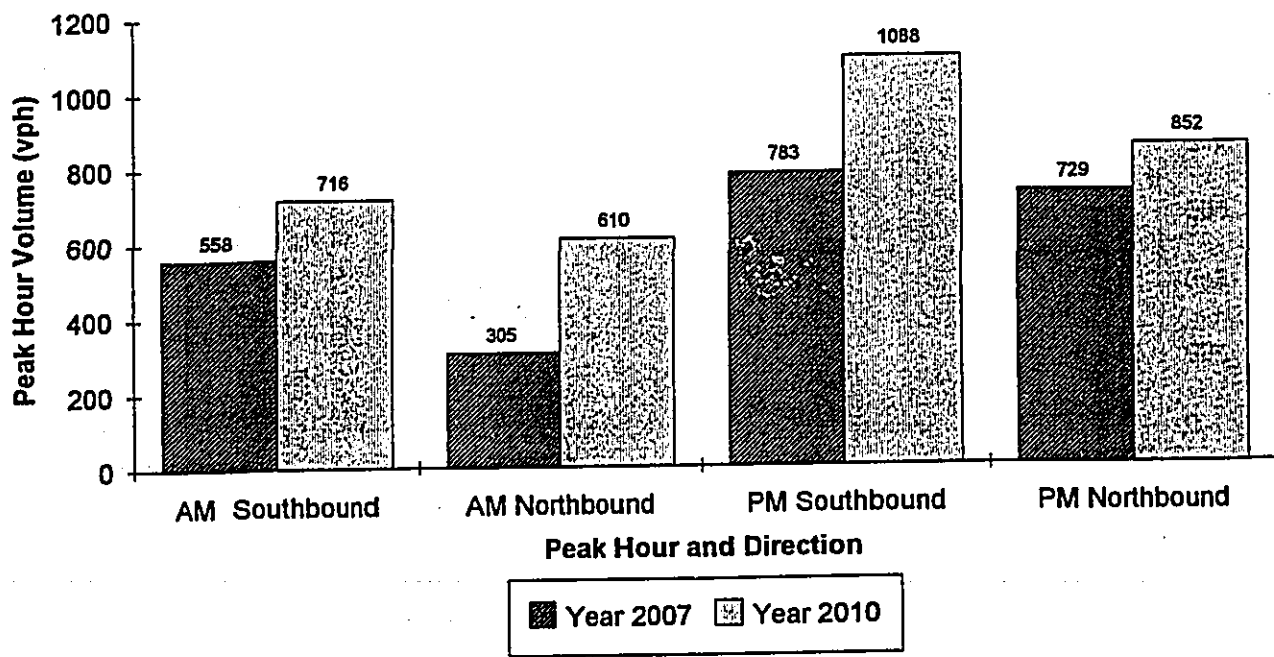




**Figure 3** Lahaina Bypass Modifications  
 Comparison of Peak Hour Volumes Along  
 Bypass North of Kapunakea Street

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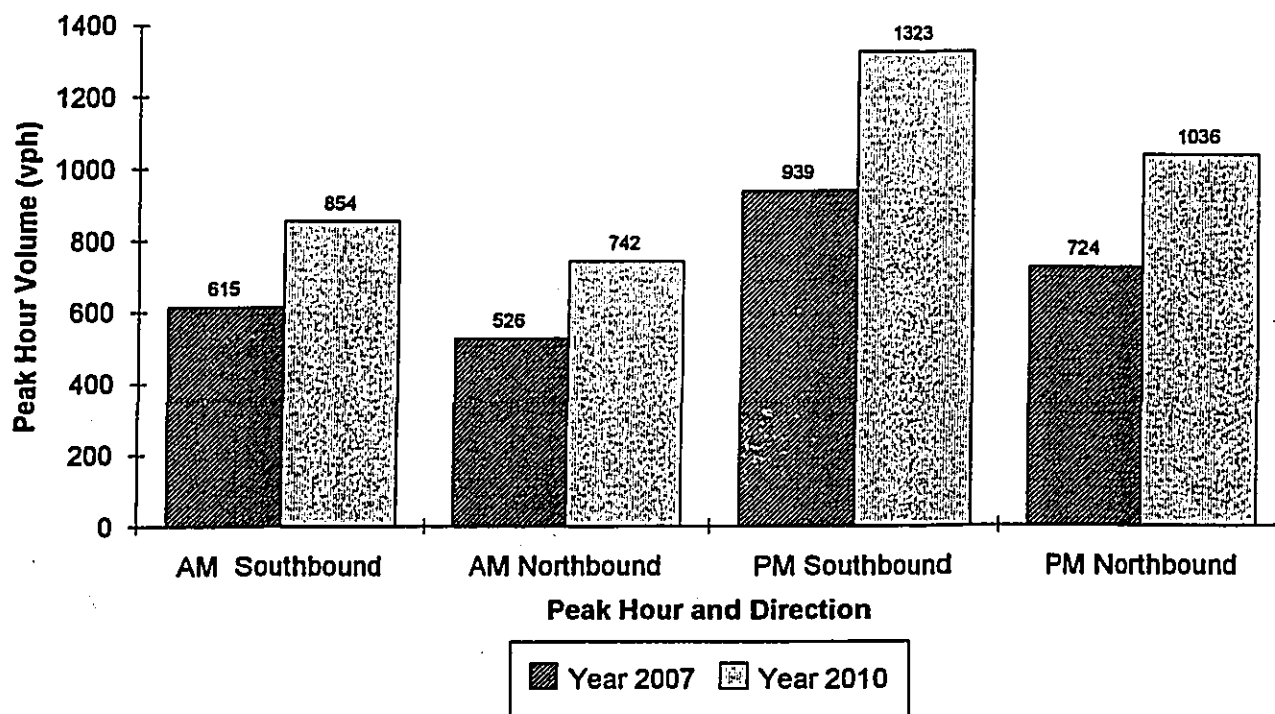
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**Figure 4** Lahaina Bypass Modifications  
 Comparison of Peak Hour Volumes Along  
 Honoapiilani Highway at Honokowai Stream

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**Figure 5 Lahaina Bypass Modifications**  
 Comparison of Peak Hour Volumes Along  
 Bypass at Honokowai Terminus

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identifies long-range (to the year 2020) strategies and actions that will lead to the development of an integrated inter-modal transportation system that will facilitate the efficient movement of people and goods. It is noted that the Plan also includes a list of State roadway projects recommended for implementation as a result of the study. As reflected by the list, the Lahaina Bypass is ranked third in terms of projects recommended for implementation.

In addition to extending the Bypass to Honokowai and Launiupoko, the HDOT proposes to modify the scope of the project as follows:

1. Incorporate a connector road (between Honoapiilani Highway and the Bypass) at Kaanapali and a Bypass access road from Lahainaluna Road;
2. Modify the ultimate roadway typical section; and
3. Modify the roadway profile along Ikena Avenue.

These proposed modifications are described in further detail in Chapter II.

The HDOT and the Federal Highway Administration (FHWA) have determined that the proposed modifications represent a change in the scope of the project and warrants the preparation of a Supplemental Environmental Impact Statement (SEIS) pursuant to Subchapter 10, Chapter 200 of Title 11, Administrative Rules of the State Department of Health.

In addition, since Federal funding will be used to construct the proposed improvements, this SEIS shall also be prepared and processed in accordance with the National Environmental Policy Act (NEPA) of 1969, Council of Environmental Quality (CEQ) Policy Regulations 40 CFR 1500-1508, and FHWA Regulations 23 CFR 771. In addition, FHWA Technical Advisory T 5540.8A shall also be used as a guideline in the preparation of the SEIS.

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In accordance with Chapter 200 of Title 11, Section 11-200-28:

The contents of the supplemental statement shall be the same as required by this chapter for the EIS and may incorporate by reference unchanged material from the same; however, in addition, it shall fully document the proposed changes from the original EIS and completely and thoroughly discuss the EIS process followed for these changes, the positive and negative aspects of these changes, and shall comply with the content requirements of section 11-200-16 as they relate to the changes.

CEQ regulations 40 CFR 1502 and FHWA Technical Advisory T 5540.8A also provide for similar requirements involving the preparation of an SEIS.

With this in mind, the purpose of this supplemental document is to address the changes in project scope and to assess the impacts associated with the proposed project modifications.

# ***Chapter II***

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## ***Project Overview***

## **II. PROJECT OVERVIEW**

### **A. PROJECT PURPOSE**

The purpose of the proposed highway improvements is to mitigate projected traffic congestion along the existing Honoapiilani Highway. Traffic projections to the year 2010 indicate that estimated traffic volumes at key Honoapiilani Highway intersections will exceed operating capacity (U.S. DOT, HDOT, 1991). Similarly, roadway capacity analysis for Honoapiilani Highway, between Lahaina and Honokowai, concludes that traffic demand will exceed operating capacity of the Highway.

### **B. DESCRIPTION OF THE PROPOSED PROJECT**

#### **1. Scope of the Base Project**

The proposed improvements addressed in the accepted FEIS reflect improvements associated with Alternative "B", which establishes a roadway alignment between Puamana and Kaanapali. See Figure 6. For purposes of this report, the proposed Alternative "B", as described in the accepted FEIS, shall be referred to as the "Base Project".

The improvements proposed by the Base Project include the construction of a Bypass Highway from Puamana to Kaanapali (5.5 miles), and the widening of Honoapiilani Highway from Kaanapali Parkway to Honokowai (3.0 miles). As noted in the FEIS, the Bypass would consist of two (2) travel lanes and a separate northbound truck-climbing lane between Puamana to Lahainaluna Road (2.5 miles), as well as four (4) travel lanes from Lahainaluna Road to Kaanapali Parkway (3.0 miles). In addition, Honoapiilani Highway would be widened from two (2) to four (4) travel lanes between Kaanapali Parkway to Honokowai.



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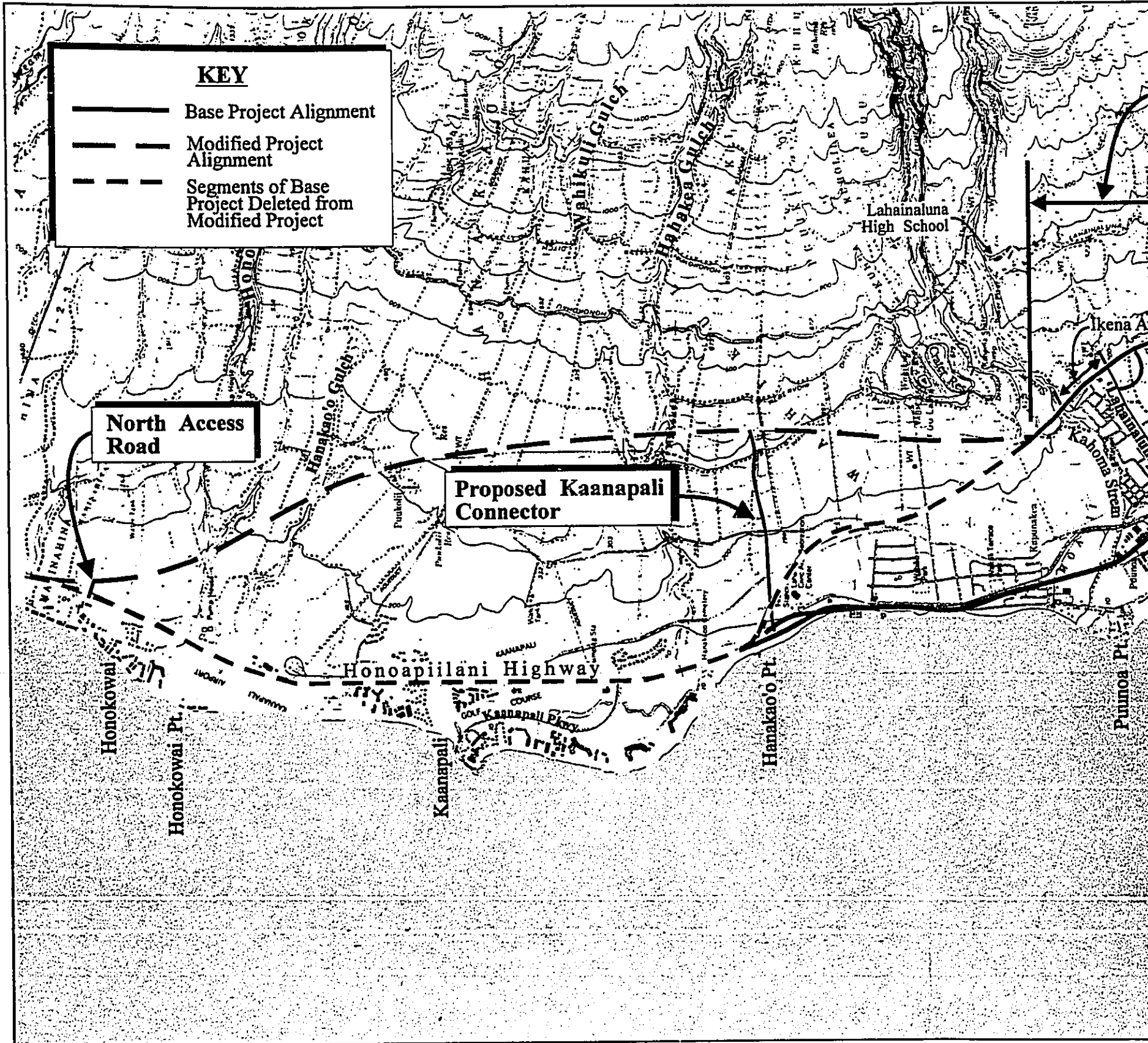
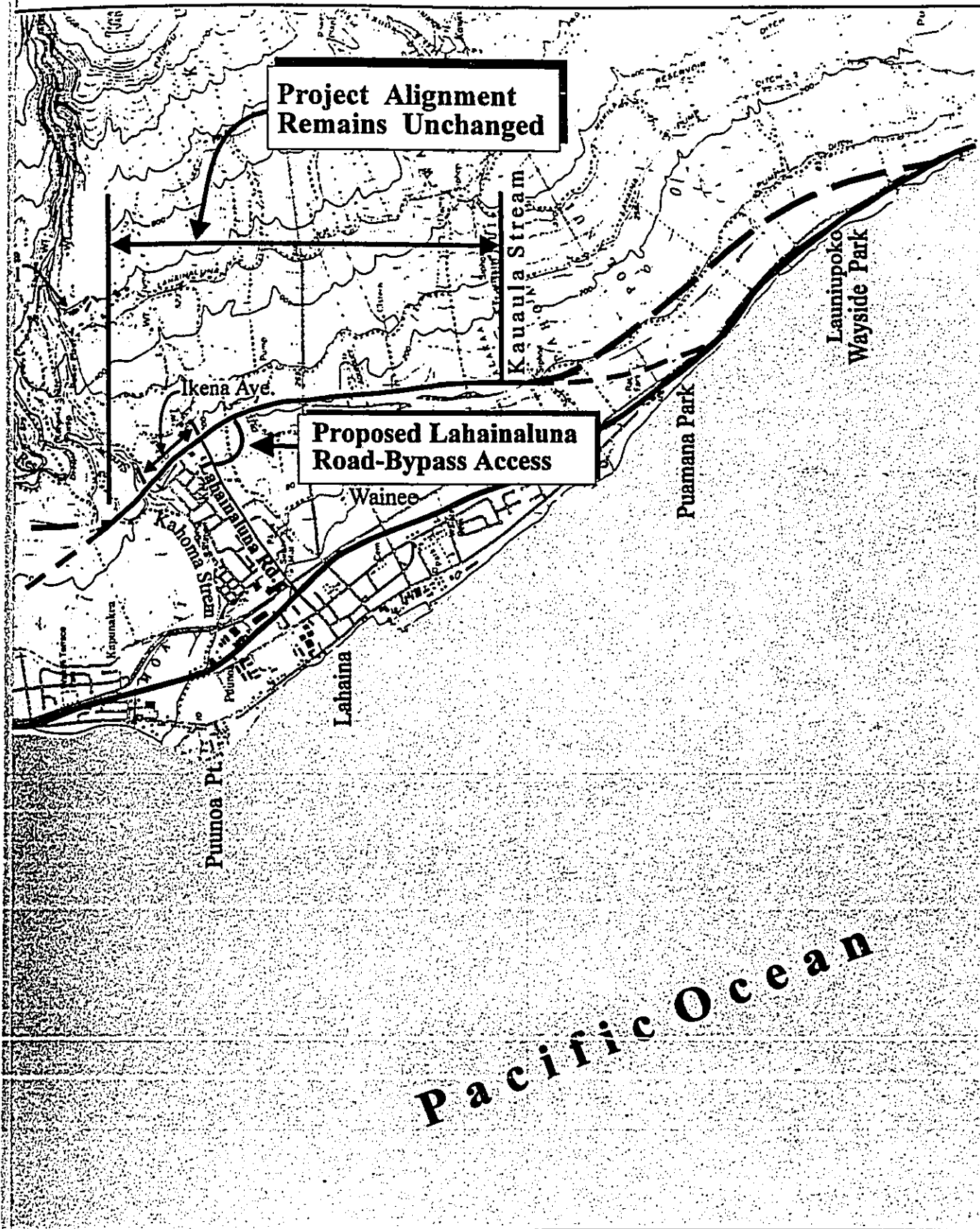


Figure 6

### Lahaina Bypass Modifications Regional Location Map



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**Project Alignment  
Remains Unchanged**

**Proposed Lahainaluna  
Road-Bypass Access**

**Pacific Ocean**

**Modifications  
on Map**



**NOT TO SCALE**

The Base Project begins near Puamana Park, continuing toward Lahaina Town, following an alignment which takes the Bypass mauka (east) of Wainee Village, and crossing Lahainaluna Road at Ikena Avenue. The Bypass alignment continues north, reconnecting to Honoapiilani Highway near Kaanapali Parkway.

The road widening improvements to Honoapiilani Highway between Kaanapali and Honokowai would relieve congestion along this segment of roadway. Right-of-way for the widening of Honoapiilani Highway would be obtained from the mauka (east) side of the existing highway. General design parameters of the Base Project are summarized in Table 2.

Table 2

BASE PROJECT-GENERAL ROADWAY CHARACTERISTICS			
Project Component	Length	Minimum Right-of-Way	Ultimate Numbers of Lanes
Bypass-Puamana to Lahainaluna Road	2.5 miles	150-foot	2 travel lanes <sup>a</sup>
Bypass-Lahainaluna Road to Kaanapali Parkway	3.0 miles	150-foot	4 travel lanes
Honoapiilani Highway Widening	3.0 miles	150-foot	4 travel lanes
<sup>a</sup> Portions of this segment also includes an additional truck-climbing lane.			

It should be noted that an exemption from metrification requirements was granted by the Federal Highway Administration (FHWA). (A metric conversion table is incorporated in this Supplemental Environmental Impact Statement (SEIS) for

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informational purposes. See Appendix A.)

**2. Proposed Modifications to Base Project**

**a. Bypass Alignment Modification**

The FEIS proposed the construction of a Bypass Highway between Puamana and Kaanapali and widening Honoapiilani Highway from two (2) to four (4) travel lanes from Kaanapali Parkway to Honokowai.

The State of Hawaii, Department of Transportation (HDOT), proposes to modify the Base Project by realigning and extending the Bypass north to Honokowai, from the vicinity of Kahoma Stream, as well as extending the southern alignment of the Bypass to a point about 1,000 feet north of Laniupoko Point. Refer to Figure 6 and Appendix B. The alignment between Kahoma and Kauaula Streams will remain unchanged. In addition, the minimum right-of-way along the entire length of the modified Bypass alignment will remain unchanged at 150 feet. General roadway characteristics for the Base Project and Modified Project are compared in Table 3.

Table 3

COMPARISON OF GENERAL ROADWAY CHARACTERISTICS BASE PROJECT VS. MODIFIED PROJECT				
Alternative	Limits	Length	Minimum Right-of-Way	Ultimate Number of Lanes
Base Project	Kahoma Stream to Puamana	2.8 miles	150 feet	2 travel lanes <sup>a</sup>
Modified Project <sup>b</sup>	Launiupoko to Kahoma Stream	3.8 miles	150 feet	4 travel lanes
Base Project	Kahoma Stream to Kaanapali Parkway	2.7 miles	150 feet	4 travel lanes
Modified Project	Kahoma Stream to Honokowai	5.1 miles	150 feet	4 travel lanes
<p><sup>a</sup> Two travel lanes with separate truck climbing lane between Puamana and Lahainaluna Road.</p> <p><sup>b</sup> Alignment between Kahoma Stream and Kauaula Stream remains unchanged.</p> <p>Note: Base Project also includes widening of Honoapiilani Highway between Kaanapali and Honokowai (3.0 miles).</p>				

The Bypass will be extended north to Honokowai, following an alignment approximately 4,000 to 5,000 feet east of the existing Honoapiilani Highway. Refer to Figure 6. The Bypass will then return to the highway at Honokowai, just south of Mahinahina Gulch.

By extending the Bypass to Honokowai, the original segment of the Bypass between Kahoma Stream to Kaanapali will be eliminated. In addition, the scope of work element involving the widening of Honoapiilani Highway between Kaanapali

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Parkway to Honokowai is no longer a part of the Bypass project. It is noted that the widening of the highway has been recently implemented as a separate, independent project.

The Bypass will also be extended south to Launiupoko, following an alignment about 1,500 feet east of Honoapiilani Highway, before returning to the highway approximately 1,000 feet north of Launiupoko Point. Under the Base Project, the Bypass would have originally rejoined Honoapiilani Highway south of Lahaina, near Puamana. However, by extending the alignment of the Bypass to Launiupoko, the original segment of the Bypass between Kauaula Stream to Puamana will not be required since it is being superseded with the Launiupoko Extension.

***b. Connector Road Additions***

The roadway system which will ultimately be developed in connection with the Bypass will also encompass connector roads which will provide an east-west linkage between the Bypass and the existing Honoapiilani Highway. The five (5) connector roads which are planned are depicted in Figure 7. The connectors would be located at:

1. Puukoolii (via a connector aligned north of and parallel to Puukoolii Road);
2. Kaanapali (via a new east-west connector in vicinity of Hanakao'o Beach Park);
3. Wahikuli (via a new east-west connector to be developed as part of the HCDCH's Villages at Leialii

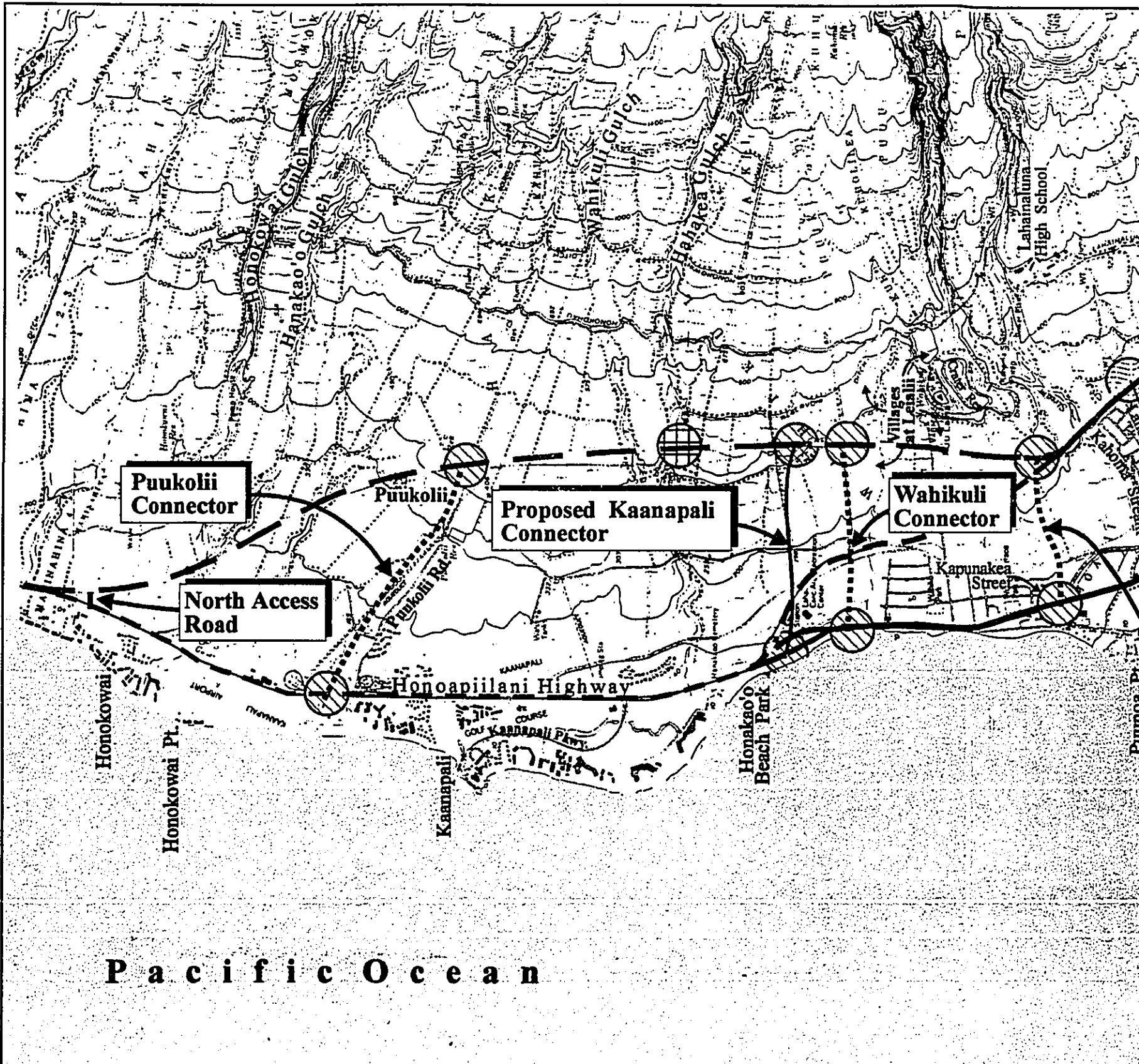


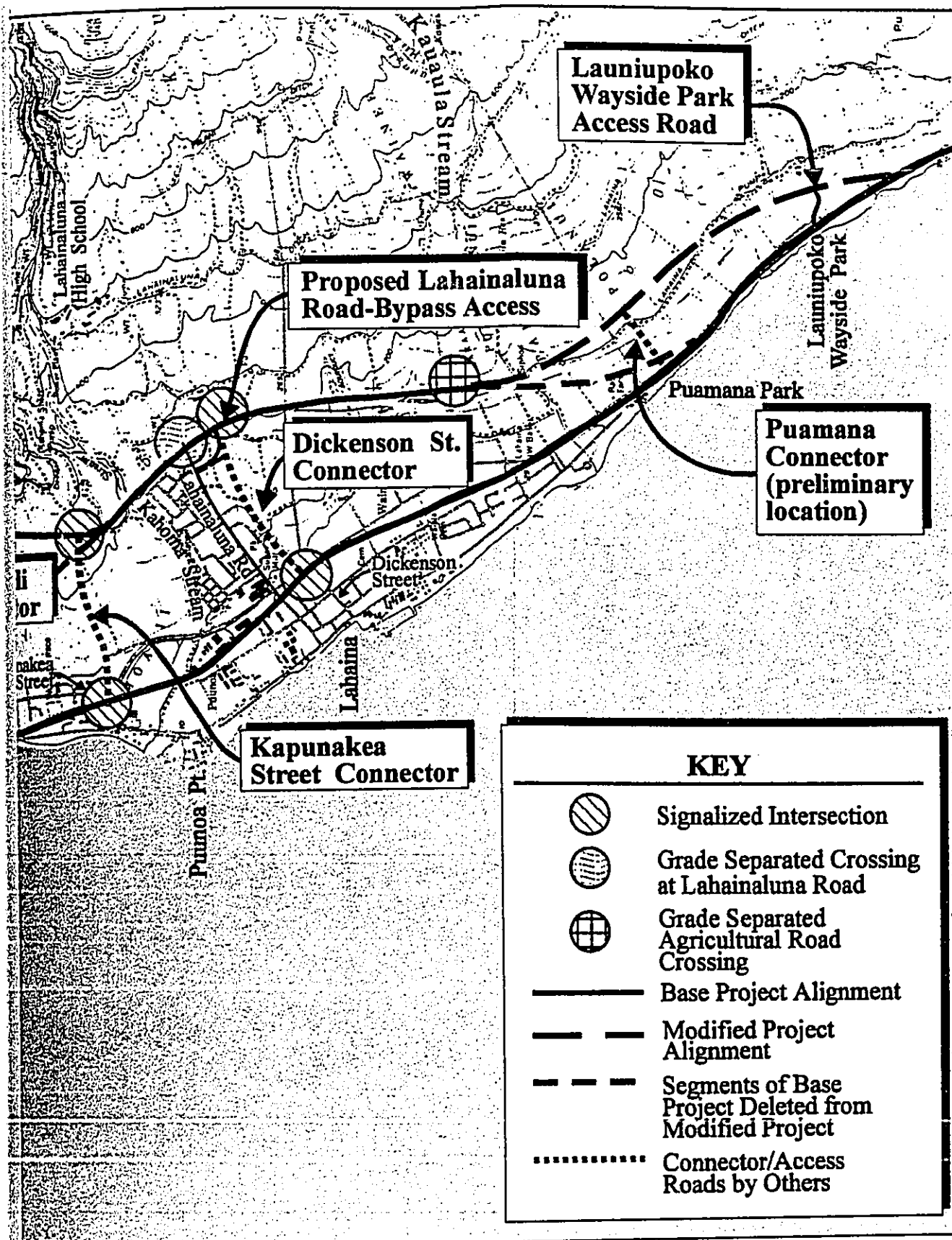
Figure 7

Lahaina Bypass Modifications  
 Access and Connector Road Locations and Agricultural



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Modifications  
and Agricultural Road Crossings

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project);

4. Kapunakea (via an extension of Kapunakea Street to be developed as part of HCDCH's Villages at Leiali'i Project);
5. Lahaina Town (via an extension of Dickenson Street and the Lahainaluna Road-Bypass Access); and
6. Puamana (via a new east-west connector north of Puamana Park).

In addition to the foregoing connectors, the existing Kai Hele Ku Street, which provides access to the Mahanalua Nui Subdivision (at Launiupoko), would be utilized to provide access to the Launiupoko Wayside Park and other nearby *shoreline recreational areas*.

The Lahaina Town Connector will ultimately consist of an east-west connector linking Honoapiilani Highway to the Bypass via an extension of Dickenson Street.

Proposed Bypass modifications will include the construction of the Lahainaluna Road-Bypass Access by the HDOT. An extension of Dickenson Street from Honoapiilani Highway to the Lahainaluna Road-Bypass Access will be developed in the future by the County of Maui. A separate Environmental Assessment (EA) will be prepared for the extension by the County of Maui at the time the Dickenson Street extension is implemented. It should be noted that the County has not yet developed a timetable for the planning and implementation of the future extension.

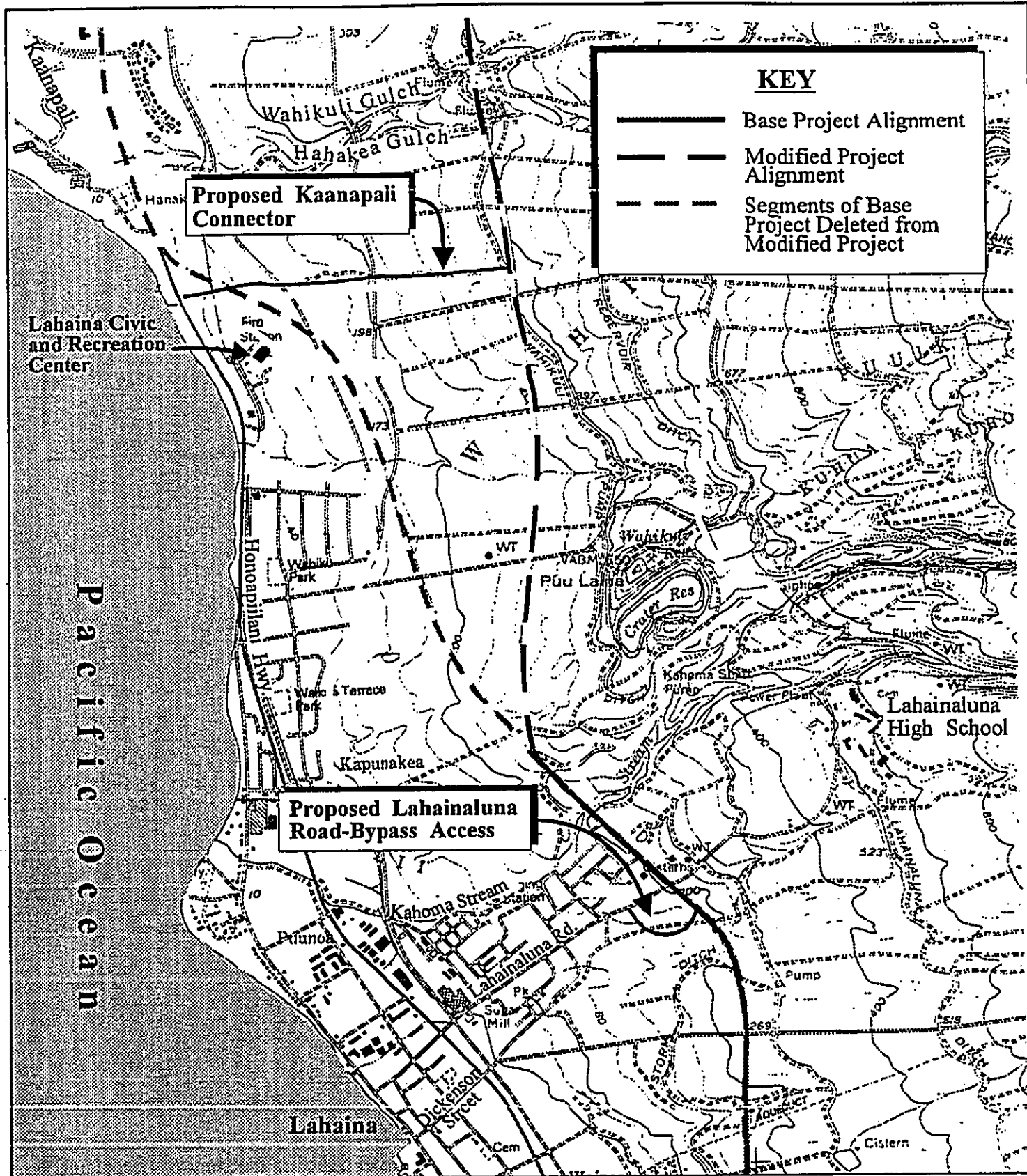
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Similarly, separate EA's will be prepared by project developers for the Puukolii, Wahikuli, and Kapunakea Connectors (as applicable) at the time each connector is implemented. The Puukolii Connector will be implemented by Amfac in connection with the development of its Puukolii Village project, while the Wahikuli and Kapunakea Connectors will be developed by the HCDCH in connection with its Villages at Leiali'i project. The Puamana Connector will be developed by others as a separate, independent project.

For purposes of this SEIS, therefore, only the Kaanapali Connector and the Lahainaluna Road-Bypass Access are considered to be a part of the Bypass project scope. See Figure 8.

The Kaanapali Connector will be approximately one (1) mile in length with a right-of-way of 80 feet. See Figure 9. Initial construction will provide for two (2) 12-ft. travel lanes with 10-ft. shoulders on either side of the road. Ultimately, however, the right-of-way will allow for the construction of two (2) travel lanes in each direction, separated by a 12-ft. median.

The Lahainaluna Road-Bypass Access consists of a connection between the Bypass and Lahainaluna Road. Refer to Figure 8. This connecting roadway (which is located approximately 1,000 feet west of the intersection of the Bypass and the future Dickenson Street Connector) will



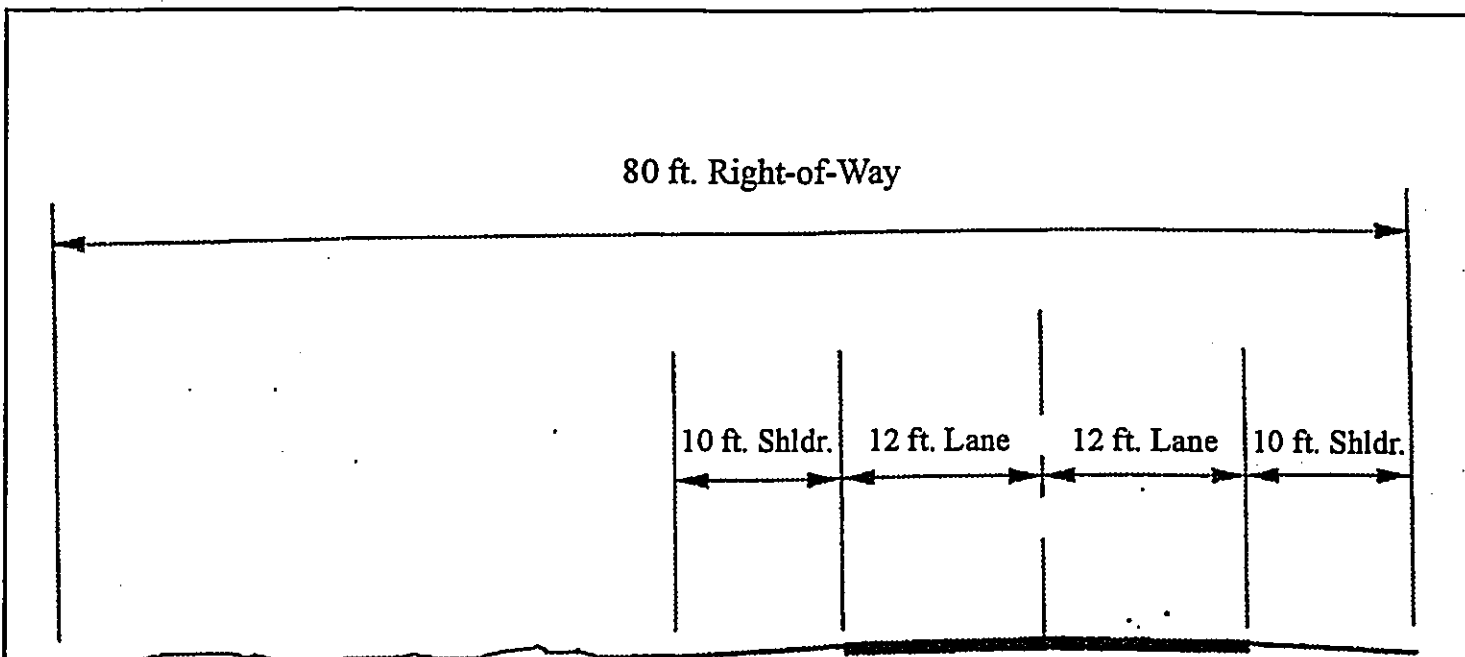
**Figure 8** Lahaina Bypass Modifications  
 Kaanapali Connector and Lahainaluna  
 Road - Bypass Access Locations

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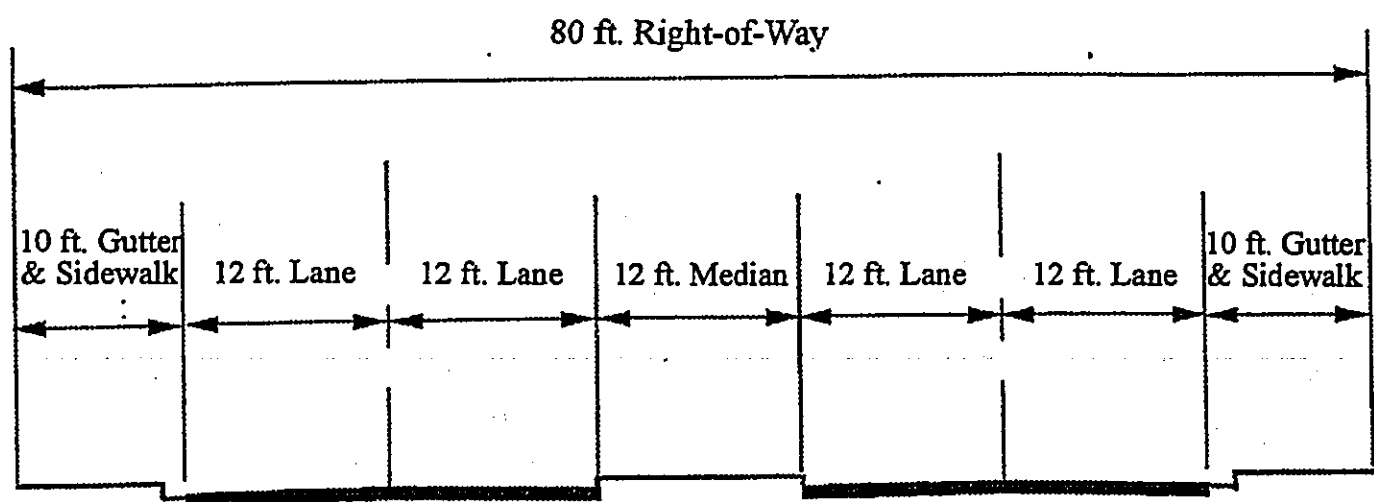


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**Kaanapali Connector Road - Initial Section**



**Kaanapali Connector Road - Ultimate Section**

Source: Austin, Tsutsumi & Associates, Inc.

**Figure 9 Lahaina Bypass Modifications**  
**Typical Section-Kaanapali Connector Road**



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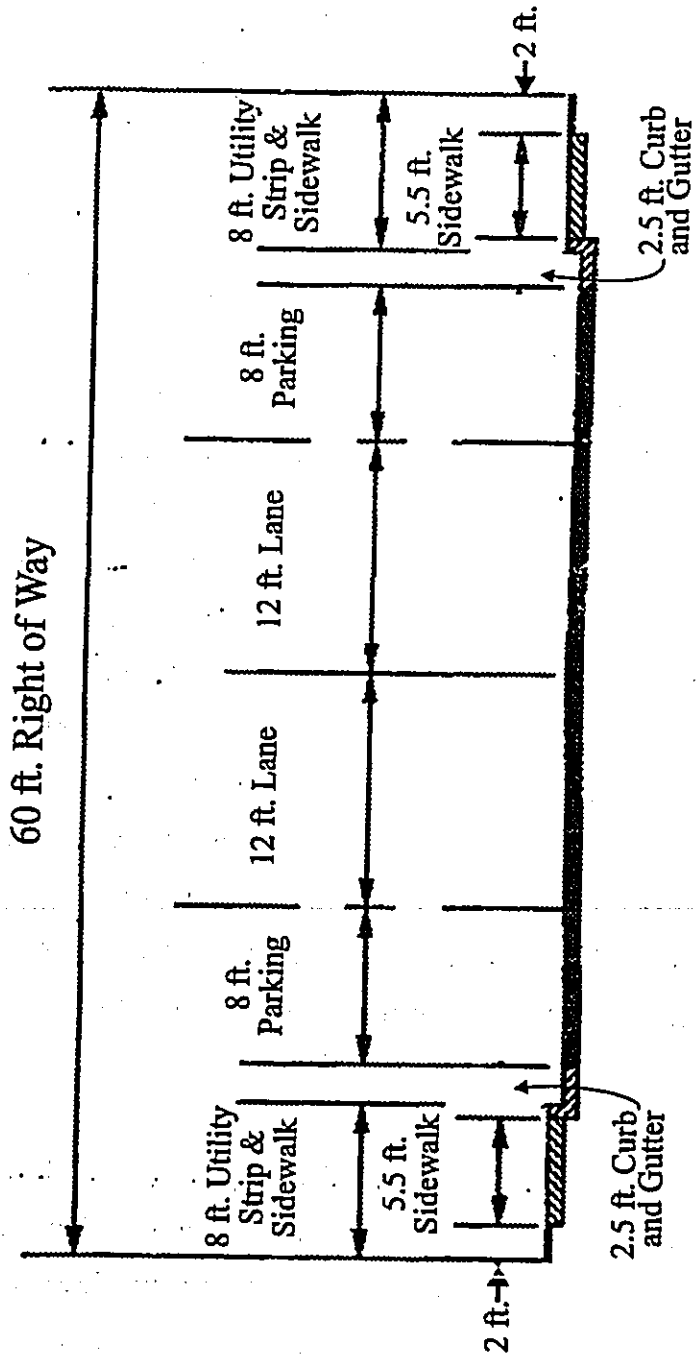
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facilitate access between the Bypass and Lahainaluna High School. Such a connection is needed because there is no direct access from Lahainaluna Road onto the Bypass. That is, Lahainaluna Road will function as an overpass, with no access onto the Bypass. This overpass concept differs from the at-grade intersection design concept proposed in the original FEIS.

The 0.3 mile Lahainaluna Road-Bypass Access, will consist of two (2) roadway segments. The first segment will consist of a 60-foot right-of-way extending south from Lahainaluna Road. See Figure 10. A west-bound left-turn storage lane on Lahainaluna Road will also be constructed to facilitate traffic movement onto the Lahainaluna Road-Bypass Access. The second segment, consisting of a 60-ft. right-of-way, will proceed east to the Bypass. This east-west segment of the Lahainaluna Road-Bypass Access will ultimately be a portion of the Dickenson Street Connector. See Figure 11. Since there is no direct access from Lahainaluna Road to the Bypass, this connecting roadway will facilitate ingress and egress to the Bypass for vehicular traffic having origins and destinations along the upper-most sections of Lahainaluna Road.

The intersections formed by the Kaanapali Connector at the Bypass and at Honoapiilani Highway will be signalized as traffic volumes warrant. In addition, the Lahainaluna Road-Bypass Access will be unsignalized at the Bypass and Lahainaluna Road intersections.



**Lahainaluna Road-Bypass Access**

Source: Austin, Tsutsumi & Associates, Inc.

**Figure 10**

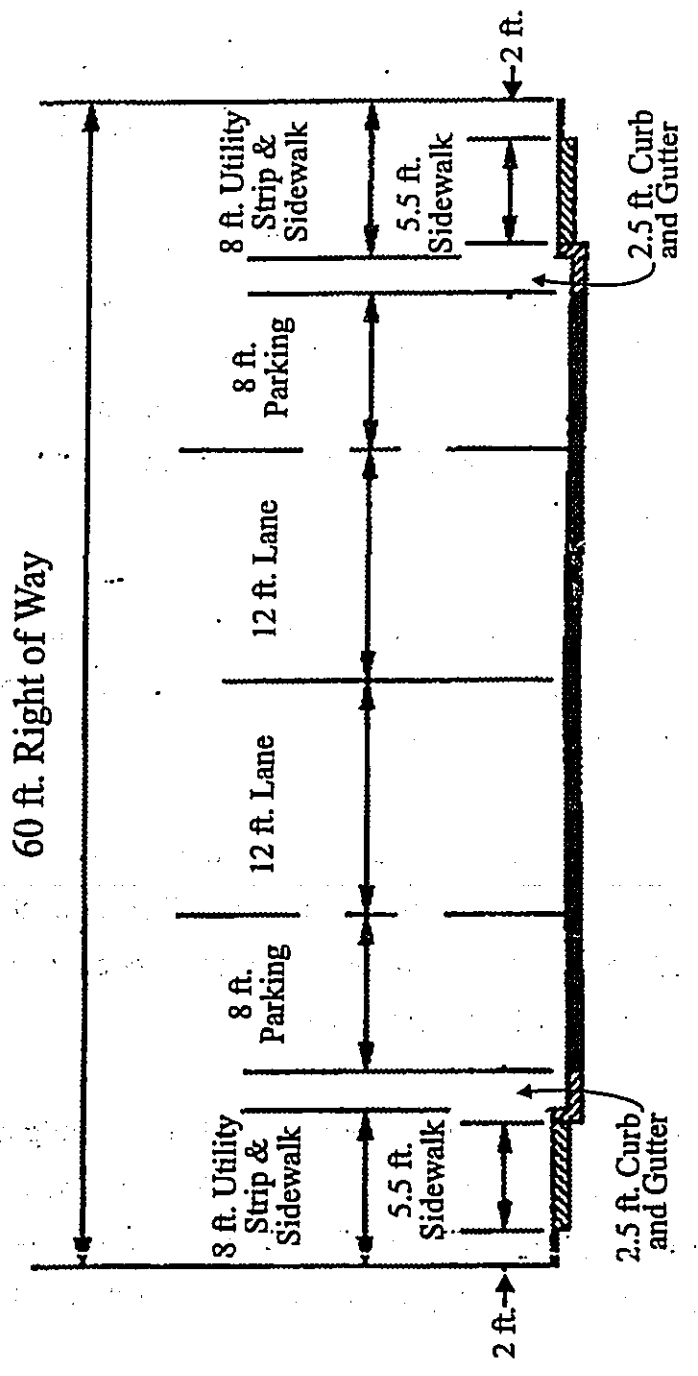


**Lahaina Bypass Modifications  
Typical Section-Lahainaluna Road-  
Bypass Access (North-South Segment)**



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**Dickenson Street Connector**

Source: Austin, Tsutsumi & Associates, Inc.

**Figure 11**

**Lahaina Bypass Modifications**  
**Ultimate Section-Lahainaluna Road-Bypass**  
**Access (portion of Dickenson Street Connector)**



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NOT TO SCALE



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The County of Maui is proposing to extend and integrate Dickenson Street as a Bypass Connector road. This future extension will result in the signalization of the intersections formed by the Dickenson Street Connector at the Bypass and Honoapiilani Highway accesses. The Bypass Access intersection at Lahainaluna Road will remain unsignalized unless warranted by increased traffic volumes. As previously noted, a separate EA will be undertaken by the County for the completion of the Dickenson Street Connector. It should also be noted that a project development timetable has yet to be established by the County.

The implementation of the Kaanapali Connector and the Lahainaluna Road-Bypass Access will be the responsibility of the State of Hawaii.

In addition to the connector roads, access points for Honoapiilani Highway would be provided near the north and south ends of the project. These access roads are also incorporated in the Base Project.

The South Access Road would have originally linked Honoapiilani Highway and the Bypass near Puamana. However, by extending the alignment of the Bypass to Launiupoko, the South Access Road will now be deleted.

The segment of Honoapiilani Highway between Puamana

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Park and the southern terminus of the Bypass would be open to local traffic only. In other words, this segment would "dead end" before Honoapiilani Highway so that there would be no through connection for traffic to directly proceed between this segment and the highway. Under the Modified Project, approximately 1.0 mile of the existing Honoapiilani Highway would be utilized by local traffic destined to shoreline areas between Puamana Park and the Bypass' southern terminus. Access from the Bypass to Launiupoko Wayside Park and the intervening segment of Honoapiilani Highway (between Puamana and the Bypass terminus) will be provided by the existing Mahanalua Nui Subdivision access road (Kai Hele Ku Street).

At the northern terminus of the Bypass, the segment of Honoapiilani Highway, between the North Access Road and the Bypass' northern terminus, will remain open to local traffic only and would "dead end" before the highway so that there would be no through connection for traffic to proceed directly between this segment and the highway. See Appendix B-1. This operational scheme would eliminate the need for a "Y" intersection where the Bypass merges with Honoapiilani Highway as an intersection at a high speed junction would create hazardous traffic conditions.

Provisions will also be made for two (2) grade-separated crossings for agricultural roads which will traverse the Bypass along an east-west axis. Refer to Figure 7. The agricultural road crossings will be designed to allow Pioneer

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Mill Company, Ltd.'s operations vehicles to cross under the Bypass without interrupting traffic flow along the new highway. One (1) agricultural road crossing will be located north of the sugar mill, with the second crossing being located south of the mill.

Additionally, a Honoapiilani Highway access point will be provided just north of Puamana Park for a future connector road (to be built by others) that will link Honoapiilani Highway to the Bypass. While a specific location needs to be finalized and its implementation timeframe is uncertain, this approximately 0.3 mile connector road is envisioned as a two-way, two-lane roadway which would be signalized at its intersections with the Bypass and Honoapiilani Highway if traffic warrants.

**c. Other Modifications**

In addition to the proposed extension of the Bypass to Honokowai and Launiupoko and the addition of the Kaanapali Connector road and the Lahainaluna Road-Bypass Access, the Modified Project incorporates proposed modifications to roadway profiles and ultimate typical sections. Roadway profile adjustments will be made along Ikena Avenue, while modifications to the ultimate typical roadway section along the Bypass alignment will also occur. The proposed modifications are described below.

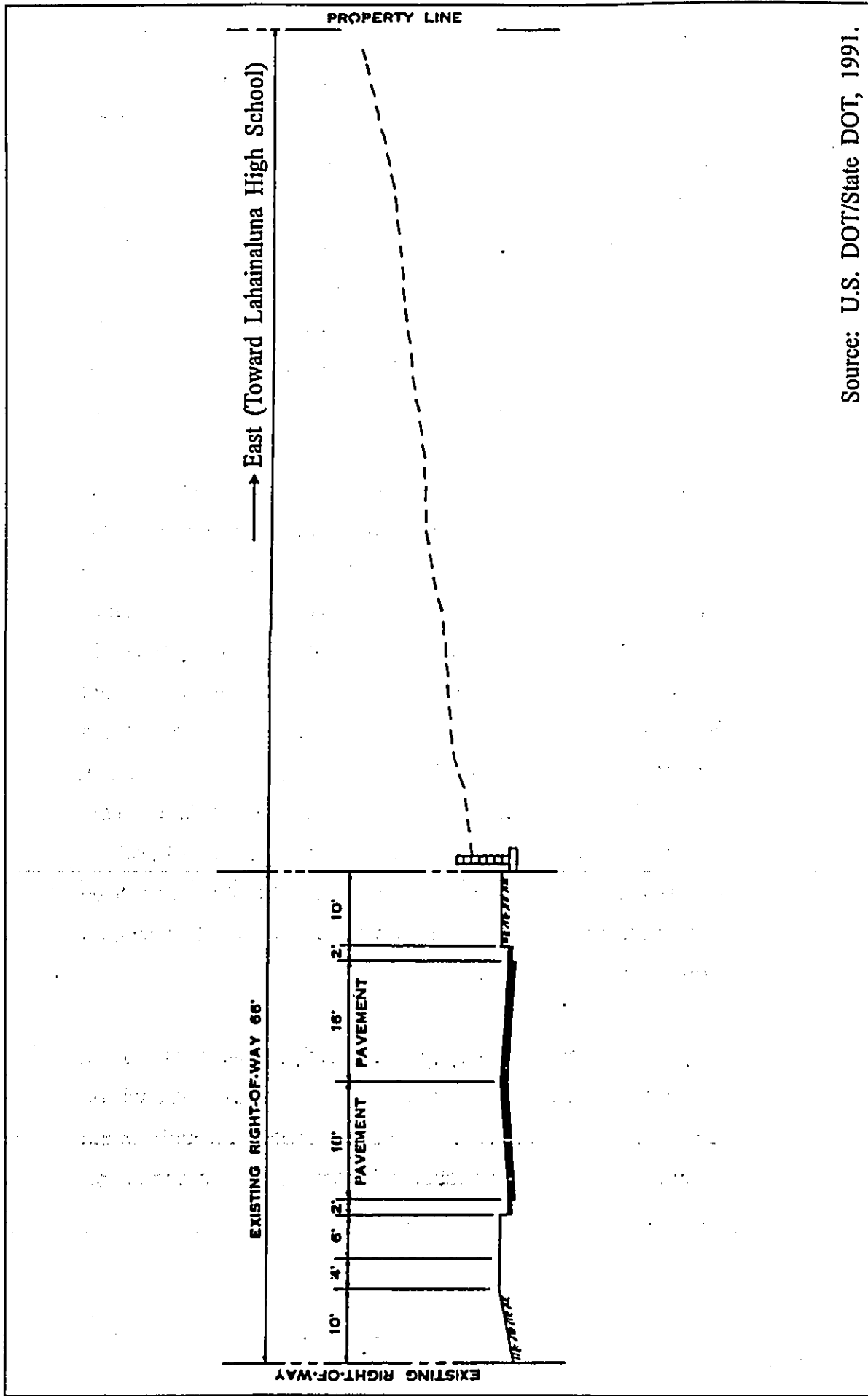
**Profile Modifications along Ikena Avenue:** Ikena Avenue is one (1) of several local roadways serving a single-family

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residential subdivision along Lahainaluna Road. The Ikena Avenue-Lahainaluna Road intersection is located approximately 0.8 mile east of Honoapiilani Highway. Ikena Avenue is a two-way, two-lane County roadway with a 66-foot right-of-way. See Figure 12. The Base Project provides for a 150-foot right-of-way (minimum) through Ikena Avenue, as shown in Figure 13. Compared with the Base Project, the typical roadway section remains unchanged in terms of its cross-section and right-of-way characteristics.

However, under the proposed Modified Project, Lahainaluna Road will function as a grade-separated overpass at Ikena Avenue. (Under the Base Project, the crossing of the Bypass with Lahainaluna Road was planned as an at-grade cross intersection. Although it was not specifically addressed in the original Final Environmental Impact Statement (FEIS), it is likely that this intersection would have required traffic signals.) The proposed grade separation at Lahainaluna Road and the Bypass will permit traffic to flow freely on both roadways and reduce the likelihood of accidents. By not requiring vehicles to stop and then accelerate at the intersection, noise and pollutant emissions would also be reduced.

In order to accommodate the proposed grade-separation at Lahainaluna Road, the Ikena Avenue (Bypass) profile will be lowered. By lowering the Bypass profile through Ikena Avenue, this roadway section will result in a depressed, or cut condition as shown in Figure 14.



Source: U.S. DOT/State DOT, 1991.

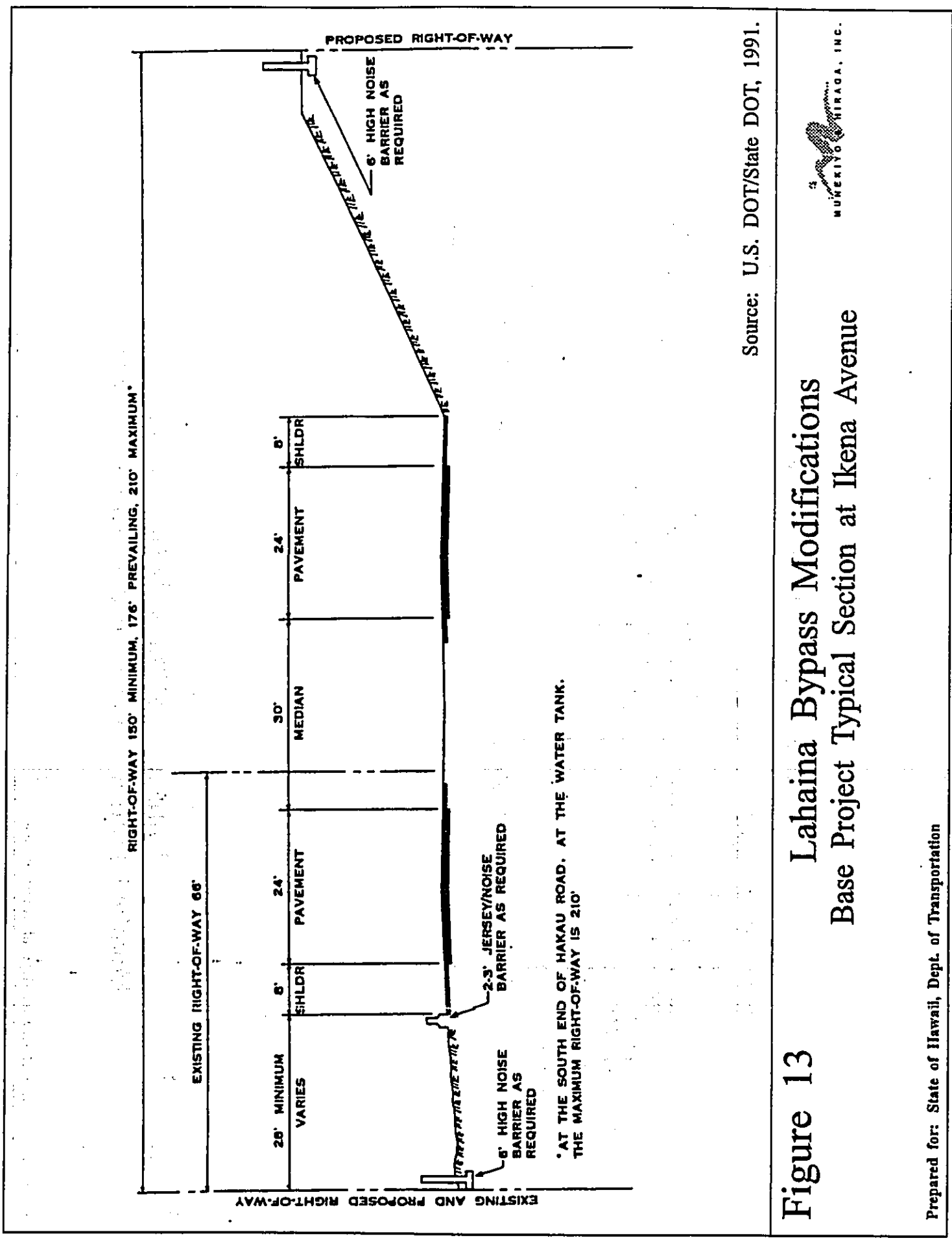
**Figure 12** Lahaina Bypass Modifications  
 Typical Section - Existing Ikena Avenue (North Facing)



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NOT TO SCALE





Source: U.S. DOT/State DOT, 1991.

Figure 13

Lahaina Bypass Modifications  
Base Project Typical Section at Ikena Avenue



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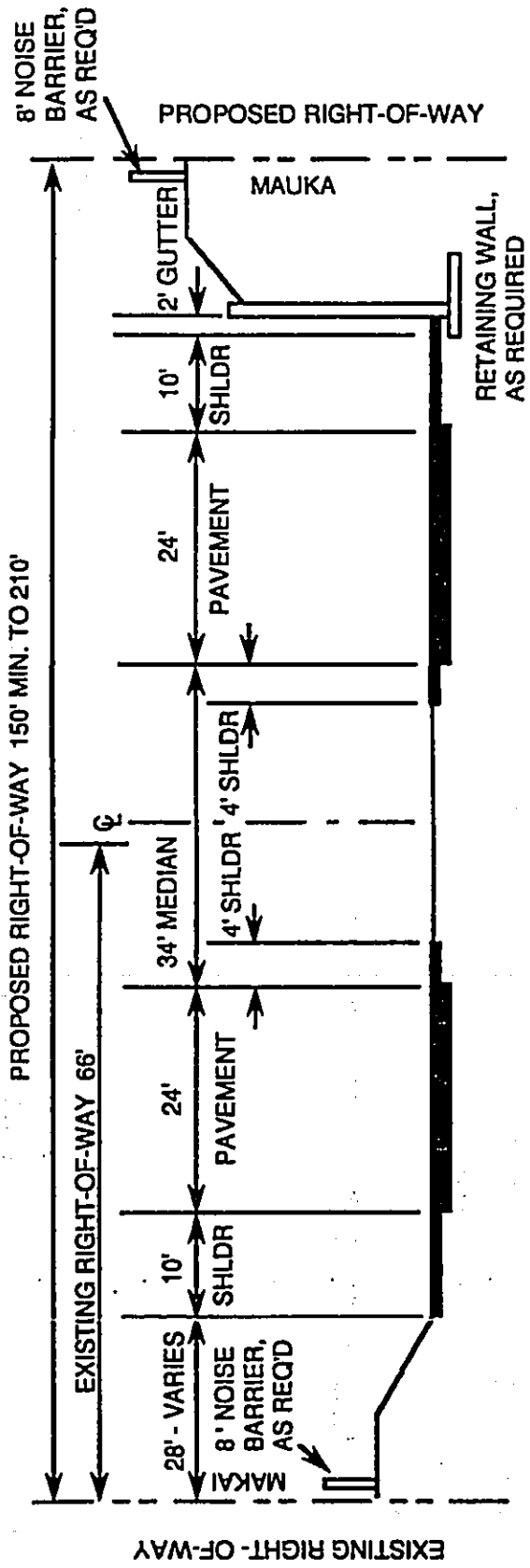


Figure 14

Lahaina Bypass Modifications  
Modified Project Typical Section Through Ikena Avenue



Prepared for: State of Hawaii, Dept. of Transportation

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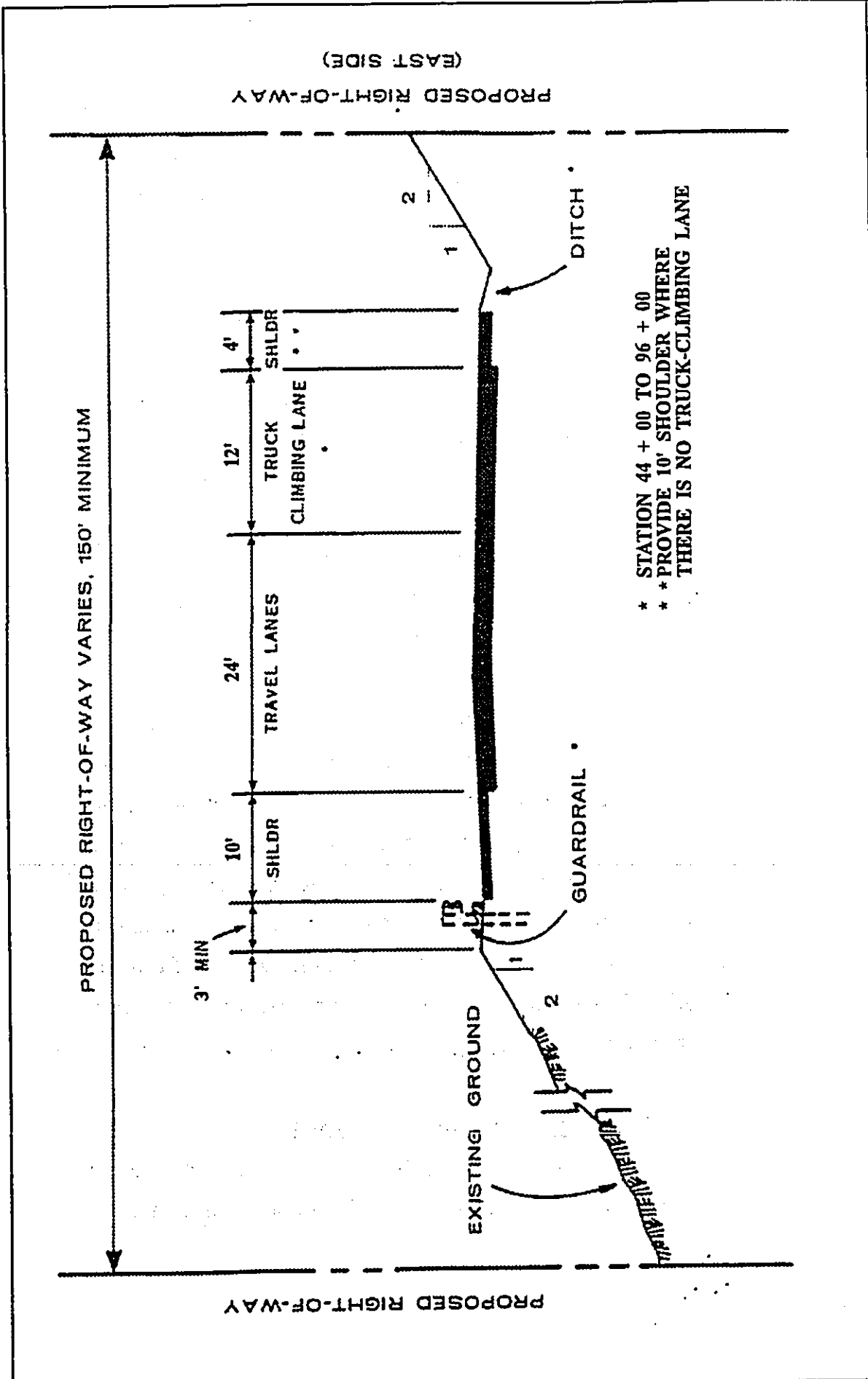
The proposed modifications in roadway profile through Ikena Avenue will not result in changes to right-of-way requirements or alignment. Accordingly, land acquisition requirements for the Modified Project have not changed from the Base Project conditions.

**Modifications to the Ultimate Typical Section:** The typical section for the Base Project reflects two (2) travel lanes between Puamana and Lahainaluna Road and four (4) travel lanes between Lahainaluna Road and Kaanapali Parkway, as well as a northbound truck-climbing lane between Puamana and Lahainaluna Road which would all be accommodated within a 150-foot right-of-way. See Figure 15. Under the Modified Project, the ultimate typical section would provide for four (4) travel lanes, without a separate truck climbing lane between Launiupoko to Honokowai. See Figure 16. This ultimate roadway configuration is considered preferred as it offers greater long-term flexibility for improving roadway capacity along this segment of the Bypass. In addition, the Base Project involved widening Honoapiilani Highway from two (2) to four (4) travel lanes between Kaanapali Parkway to Honokowai. The widening of the highway has been deleted from the Modified Project and has been implemented as a separate, independent project.

**Truck-Climbing Lanes and Bike Route**

Since the filing of the DSEIS, the HDOT has reexamined the benefits of including truck-climbing lanes along certain uphill



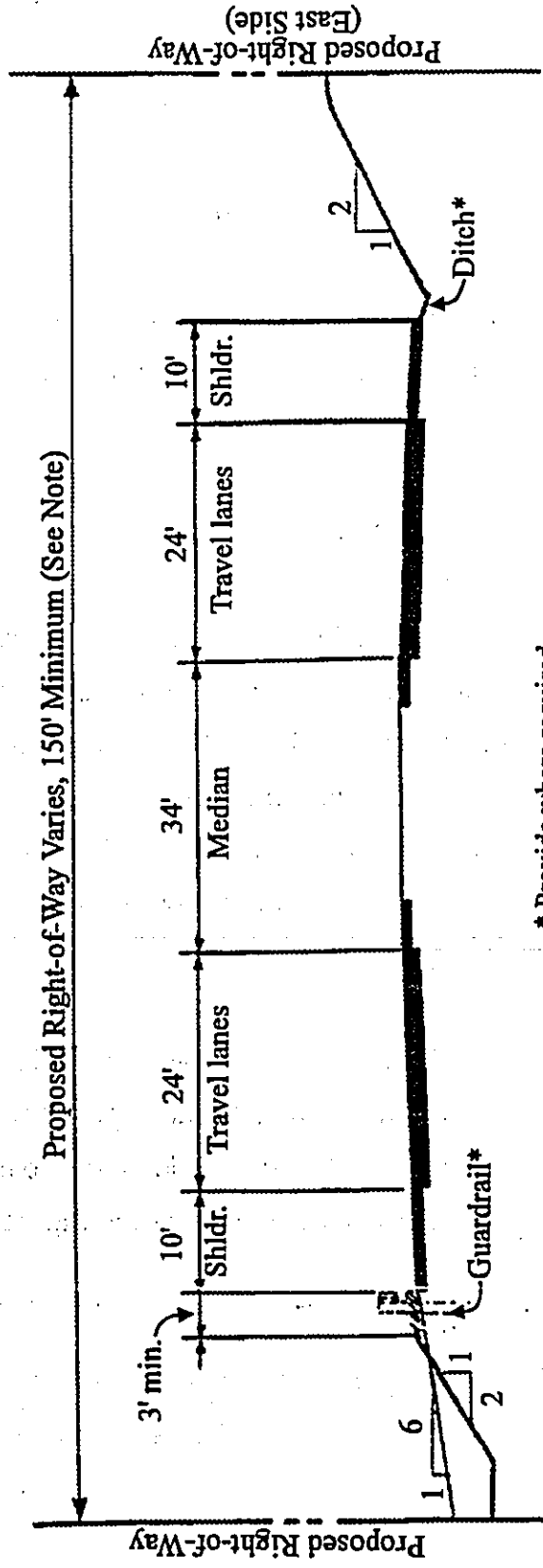


\* STATION 44 + 00 TO 96 + 00  
 \*\* PROVIDE 10' SHOULDER WHERE  
 THERE IS NO TRUCK-CLIMBING LANE

**Figure 15** Lahaina Bypass Modification  
 Base Project Typical Section -  
 Puamana to Lahainaluna Road



NOT TO SCALE



Source: Austin, Tsutsumi and Associates, Inc.

**Figure 16** Lahaina Bypass Modifications  
Modified Project Ultimate Typical Section



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NOT TO SCALE

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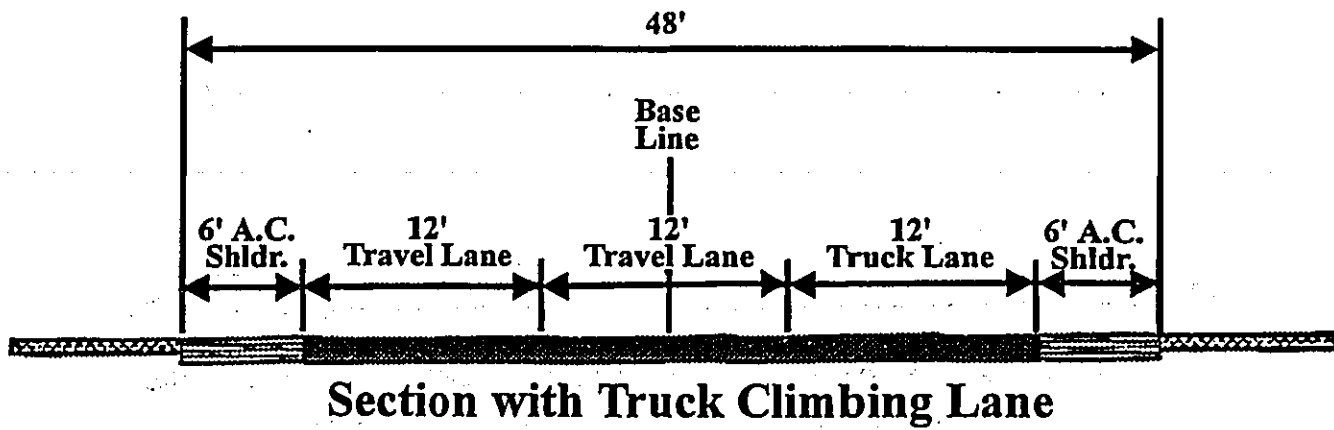
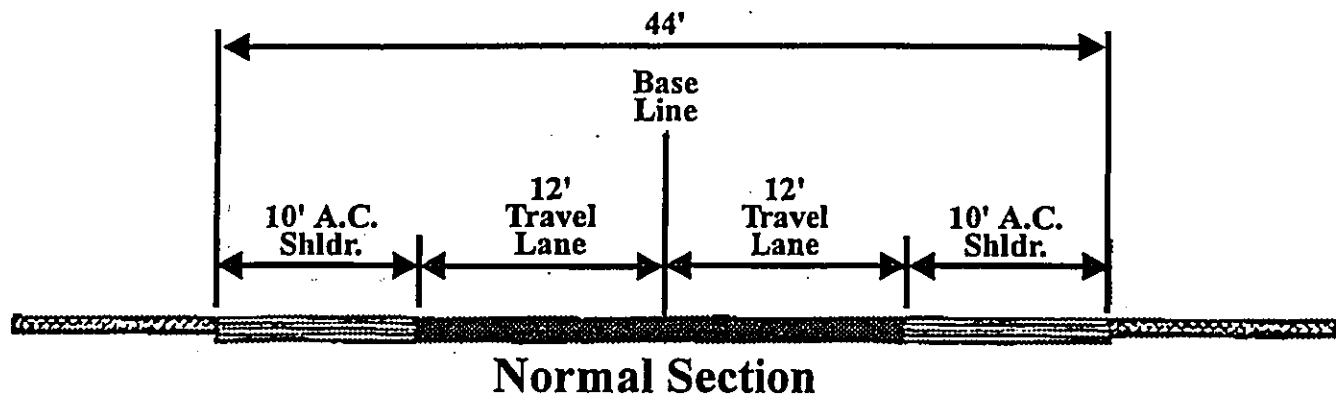
grades of the Bypass alignment. Three (3) truck-climbing lane segments will now be provided, one (1) southbound segment and two (2) northbound segments.

The southbound truck-climbing lane segment will be approximately 9,700 feet in length and will extend from the southbound approach of the Honokowai Stream bridge crossing to a location about 1,800 feet north of Wahikuli Gulch.

The first of two (2) northbound truck-climbing lane segments will be approximately 2,000 feet in length and will start from a point about 1,500 feet north of the Wainee Reservoir and stretch to a point approximately 1,200 feet south of Lahainaluna Road. The second northbound segment will be about 2,700 feet in length and begin from a point approximately 2,800 feet north of the Wahikuli water tank and reach to the northbound approach of the Hahakea Gulch bridge crossing.

Since the four-lane Bypass will be developed in two (2) phases, with two (2) lanes constructed per phase, the normal Phase I roadway and bridge sections will be modified to accommodate the truck climbing lanes (see Figure 17 and Figure 18).

The normal Phase I typical roadway cross-section will consist of two (2) 12-foot wide travel lanes with adjoining 10-foot wide shoulders. The roadway cross-section with truck-



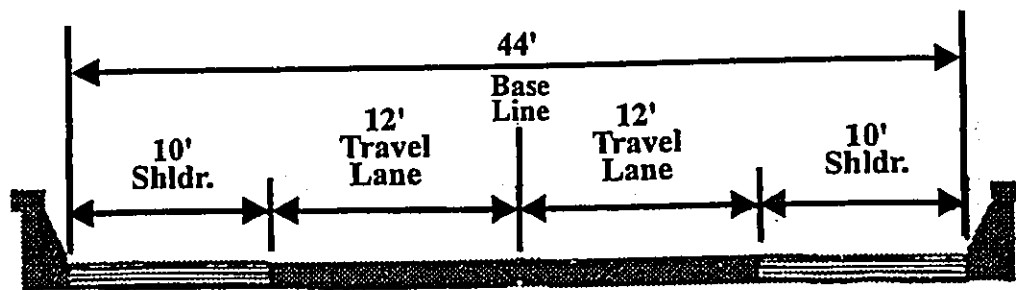
Source: Austin, Tsutsumi & Associates, Inc.

**Figure 17 Lahaina Bypass Modifications**  
 Modified Project Phase I  
 Typical Roadway Cross-Sections

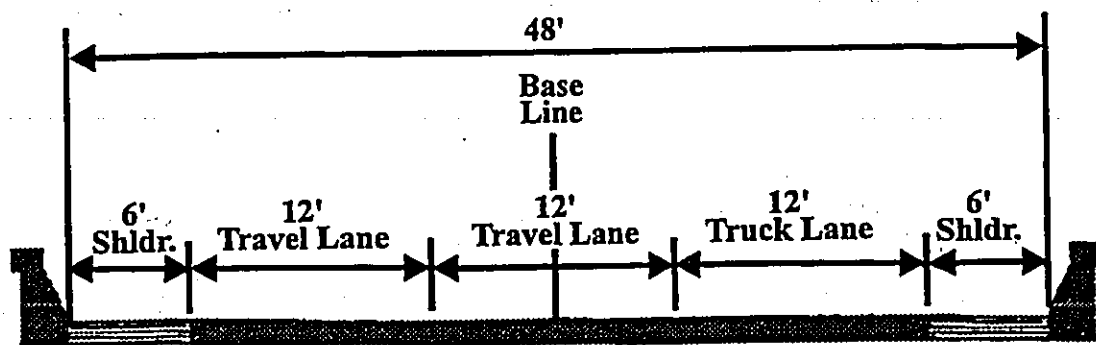


Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE



Normal Section



Section with Truck Climbing Lane

Source: Austin, Tsutsumi & Associates, Inc.

Figure 18 Lahaina Bypass Modifications  
Modified Project Phase I  
Typical Bridge Cross-Sections



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NOT TO SCALE

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climbing lanes will include two (2) 12-foot wide travel lanes and a northbound or southbound 12-foot wide truck-climbing lane. Shoulders will be 6-feet wide along the truck-climbing lane and 6-feet wide on the opposite side.

The normal Phase I typical bridge cross-section will include two (2) 12-foot wide travel lanes bordered by two (2) 10-foot wide shoulders. The bridges with truck-climbing lanes (Honokowai, Hanakao'o) will consist of two (2) 12-foot wide travel lanes and a southbound 12-foot wide truck-climbing lane. Shoulders will be 6-feet wide along the truck-climbing lane and 6-feet wide on the opposite side.

The entire Bypass alignment, from Launiupoko to Honokowai, will be designated as a bike route. Accordingly, the roadway shoulders have been dimensioned to accommodate bicyclists.

Upon completion of the project's final phase, the truck-climbing lanes will be eliminated and the roadway and bridge sections will revert to their typical configuration.

### **3. Project Phasing**

The proposed project will be constructed in two (2) phases. Phase I will include the construction of the Bypass roadway prism for the ultimate four (4) lane configuration. That is, excavation and grading for the four (4) lane typical section will be undertaken during Phase I. However, only two (2) lanes will be paved for initial use under the Phase I construction. Refer to Figure 17. The

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additional two (2) lanes will be constructed as part of Phase II of the project. Because the full roadway prism will be graded during Phase I of the project, Phase II construction will not require further excavation or mass grading work.

A similar phasing strategy will be employed for the construction of bridges. Under Phase I, bridge structures will provide only two (2) travel lanes. Refer to Figure 18. A second two-lane bridge structure would be constructed at each crossing under Phase II to provide the ultimate four-lane travel section.

The Kaanapali Connector will also be developed in two (2) construction phases. Phase I will encompass excavation and grading for the ultimate four (4) lane configuration. However, only two (2) travel lanes will be paved for initial use under this construction phase. The additional two (2) travel lanes will be constructed during Phase II.

The Lahainaluna Road-Bypass Access will consist of two (2) segments. The first segment will consist of a two-lane roadway with a 60-foot right-of-way extending south from Lahainaluna Road. The second segment, also consisting of a 60-foot right-of-way, will proceed in an easterly direction to intersect the Bypass. The construction of the Lahainaluna Road-Bypass Access will involve a single construction phase. Construction will include excavation and grading of the 60-foot, east-bound, right-of-way segment for the ultimate four (4) lane configuration. Two (2) travel lanes will be paved for initial use, with two (2) additional travel lanes to be developed in the future by the County of Maui as an extension of

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the Dickenson Street Connector. Excavation, grading and paving of the two (2) travel lanes encompassed by the 60-foot south-bound, right-of-way segment of the Lahainaluna Road-Bypass Access will be undertaken concurrently.

Construction on Phase I improvements is anticipated to begin in late 2004 and will take approximately two (2) years to construct. Phase II will begin toward the end of the planning horizon (Year 2010), as traffic volumes approach projected capacity limits of the two (2) lanes provided under Phase I.

**4. Project Costs**

The total estimated cost for the proposed project modifications, including the Kaanapali Connector and Lahainaluna Road-Bypass Access, is estimated to be \$177.89 million. All project cost estimates reflected in this summary are based on 1999 dollars.

The estimated cost for Phases I and II of the Modified Bypass alignment from Honokowai to Launiupoko is estimated to be \$103.12 million and \$64.23 million, respectively. The total estimated cost for both construction phases is \$167.35 million. A summary of the major cost components is shown in Table 4.

The total estimated costs for the Kaanapali Connector and Lahainaluna Road-Bypass Access are \$6.85 million and \$3.69 million, respectively. The estimated project cost for Phases I and II of the Kaanapali Connector are \$4.24 million and \$2.61 million, respectively. As previously noted, the Lahainaluna Road-Bypass Access will be developed in a single construction phase. Table 5



Table 4

PHASES I AND II PROJECT COST SUMMARY <sup>a</sup> MODIFIED BYPASS ALIGNMENT			
Modified Bypass Alignment Item	Phase I Estimated Cost (In million dollars)	Phase II Estimated Cost (In million dollars)	Total (In million dollars)
Design <sup>b</sup>	\$11.51	\$7.47	\$18.98
Right-of-way	\$4.17	N/A	\$4.17
Construction <sup>c</sup>	\$87.44	\$56.76	\$144.20
<b>Total Cost Estimate</b>	<b>\$103.12</b>	<b>\$64.23</b>	<b>\$167.35</b>
<sup>a</sup>	All costs in 1999 dollars		
<sup>b</sup>	Design costs based on approximately 15 percent of construction cost		
<sup>c</sup>	Includes costs for construction, construction engineering, mobilization and contingencies		

illustrates a summary of the major cost elements.

The estimated right-of-way cost for the Modified Project is approximately \$7.97 million and the average cost per acre is estimated at about \$49,000 per acre.

The State of Hawaii is seeking Federal Aid funds for the proposed project. In addition, the State will also be pursuing funding opportunities available through the private sector.

**5. Land Ownership**

The proposed Modified Project alignment, Kaanapali Connector and Lahainaluna Road-Bypass Access will encompass lands owned by the State of Hawaii, Pioneer Mill, and the Kamehameha Schools Bishop Estate.

Table 5

PHASES I AND II PROJECT COST SUMMARY <sup>a</sup> KAANAPALI CONNECTOR AND LAHAINALUNA ROAD-BYPASS ACCESS			
Item	Phase I Estimated Cost (In million dollars)	Phase II Estimated Cost (In million dollars)	Total (In million dollars)
<b>Kaanapali Connector</b>			
Design <sup>b</sup>	\$ .36	\$ .30	\$ .66
Right-of-way	\$1.12	N/A	\$1.12
Construction <sup>c</sup>	\$2.76	\$2.31	\$5.07
<b>Total Cost Estimate</b>	<b>\$4.24</b>	<b>\$2.61</b>	<b>\$6.85</b>
<b>Lahainaluna Road-Bypass Access</b>			
Design <sup>b</sup>	\$ .12	N/A	\$ .12
Right-of-way	\$2.68	N/A	\$2.68
Construction <sup>c</sup>	\$ .89	N/A	\$ .89
<b>Total Cost Estimate</b>	<b>\$3.69</b>	<b>N/A</b>	<b>\$3.69</b>
<sup>a</sup> All costs in 1999 dollars <sup>b</sup> Design costs based on approximately 15 percent of construction cost <sup>c</sup> Includes cost for construction, construction engineering, mobilization and contingencies			

# ***Chapter III***

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***Description of the  
Existing Environment***

### **III. DESCRIPTION OF THE EXISTING ENVIRONMENT**

#### **A. REGIONAL ENVIRONMENT**

##### **1. 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 inches. The average annual total is 18.5 inches (Environment Impact Study Corp., 1979).

The winds 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

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toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warm ocean.

2. **Geology**

The Lahaina District lies on the west side of a dome-shaped volcano referred to as the West Maui Mountains. The volcanic dome of the West Maui Mountains include several long, narrow valleys created by stream erosion. The sloping plains between valleys are eroded volcanic remnants which form valuable agricultural lands. Along the coastline and at the foot of the valleys are relatively level lands created by sediment deposition.

Volcanic formations in the West Maui area are classified into three (3) stratigraphic units known as the Wailuku Basalt, Honolua Volcanic, and Lahaina Volcanic (Stearns, 1942).

The bulk of the exposed lava belong to the Wailuku Basalt. Principal aquifers are located within the Wailuku Basalts because of the rock type's high permeability and numerous dikes.

Following the period of the Wailuku Basalts, lava of the Honolua Volcanic emerged to form a 50 to 500 feet thick stratigraphic layer over most of the Wailuku dome. The final phase of geologic activity occurred with the Lahaina Volcanic, which built isolated cones and formed short flows along the western shoreline.

In addition to three (3) stratigraphic units described above, the region includes sedimentary alluvial deposits that cover the low coastal plain from Ukumehame to Lahaina Town.

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3. **Hydrology**

The hydrologic region encompassing the Lahaina District includes the region from Honokohau Valley in the north to Ukumehame Valley in the south. Groundwater within this region includes coastal basal and high-level dike-impounded waters.

The basal lens in this region are not very thick due to the lack of an effective confining caprock. Maximum groundwater heights, in fact, are around five (5) feet above mean sea level. Dike impounded aquifers can be found approximately 18,000 feet inland from shore in the Lahaina region. Generally, the aquifers connect, though the connection may be very weak in some cases. Much water is stored in these compartments, and excess volumes escape either to other dike compartments or to streams.

Minor perched aquifers also exist in the region in the Honolua Volcanic. These waters seep into streams, contributing, for example, to the perennial flow of Honokohau Stream.

Surface water in the region originates in the West Maui Mountains. Because of the region's location on the leeward side of the mountains, streamflows are mostly confined to the higher elevations.

Stream diversions make up the largest source of water supply in the region. Waters diverted from the Honokohau Stream, Honolua Stream and Kanaha Stream are used for both agricultural and domestic purposes (County of Maui, Departments of Planning and Water Supply, 1990).

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The proposed modifications to the Base Project will not affect surface water sources.

4. **Land Use and Community Character**

The vast majority of lands in West Maui are either State designated "Conservation" or "Agricultural". Generally, "Conservation" lands occupy the higher elevations, while the "Agricultural" district spans the middle ground.

"Urban" designated lands, then, are left to occupy the lower elevations along the coast. The communities of Kahana-Napili-Kapalua and Kaanapali contain Community Plan designations reflective of their resort nature. Lahaina, meanwhile, is more typical of a residential community. Single family, business, light industrial, and agricultural zones prevail in Lahaina.

A key feature of the region is the town of Lahaina, which is designated a National Historic District as the one-time whaling capital of Hawaii. Today, it is the visitor industry that defines Lahaina Town and other coastal resort communities of West Maui.

Part of West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by many white-sand beaches and scenic landscape. Most all of the visitor accommodations are located in Lahaina and the resort communities of Kaanapali, Kahana, Napili, and Kapalua. The State owned and operated Kapalua-West Maui Airport at Mahinahina conveniently links the region to Oahu and other neighbor islands.

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Pineapple fields and agricultural lands formerly planted with sugar cane occupy much of the land in the area. Pioneer Mill Company, Ltd. formerly cultivated much of its 6,700 acres with sugar cane and presently utilizes some of its lands for diversified agriculture. Maui Land and Pineapple Company, Inc.'s fields sprawl along the slopes of the West Maui Mountains north of Kaanapali.

5. **Population**

Just as the visitor count has grown, the resident population of the region surrounding the project limits has increased dramatically in the last two (2) decades. Population gains were especially pronounced in the 1970s 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 21,776 (Community Resources, Inc., 1994).

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 140,060 (Community Resources, Inc., 1994).

6. **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 (1) of the State's major resort destination areas.



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Agriculture is another vital component of the West Maui economy, with cultivation operations handled by Pioneer Mill Company, Ltd. and Maui Land and Pineapple Company, Inc. Pioneer Mill formerly cultivated most of its 6,700 acres of fee simple and leased lands with sugar cane. Of this total acreage, about 3,800 acres are owned by Pioneer Mill, while approximately 1,650 acres and 1,250 acres are leased from the State of Hawaii and the Kamehameha Schools Bishop Estate, respectively. Pioneer Mill is in the process of diversifying its agricultural operations by utilizing portions of its lands for seed corn and alfalfa cultivation. In addition, a sister company, Kaanapali Estate Coffee, Inc., cultivates approximately 500 acres in coffee.

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.

The availability of jobs reflects the current status of the economy. Maui County's unemployment rate as of March 2001 was approximately 4.1 percent (R. Domingo, State Department of Labor and Industrial Relations, April 24, 2001).

**7. Housing**

As with other regions of the Island, affordable housing is considered a major issue in West Maui. Between 1986 and 1988, home prices increased an average of twenty (20) percent in Lahaina. Islandwide, the current year-to-date median price of a single-family home is approximately \$250,000 (W. Nishimura, Maui

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Board of Realtors, April 24, 2001). A recent estimate of unmet housing demand is approximately 7,000 units (SMS Research and Marketing Services, Inc., 1997).

8. **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 1970s. 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 (Munekiyo, Arakawa & Hiraga, Inc., 2000).

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 (Munekiyo, Arakawa & Hiraga, Inc., 2000).

It should also be noted that the U.S. Postal Services maintains post offices at the Lahaina Civic Center complex, as well as at the Lahaina Shopping Center.

9. **Medical Facilities**

The only major medical facility on the Island is Maui Memorial

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Medical Center, located approximately twenty (20) miles from Lahaina, midway between Wailuku and Kahului. The approximately 200-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.

**10. 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. Also situated within the region, the Lahaina, Kaanapali and Pacific Railroad provides recreational sightseeing opportunities for residents and visitors alike between the town of Lahaina and the Kaanapali Beach Resort.

Recreational areas which were identified in the general vicinity of the proposed project include five (5) public parks owned by the County of Maui. These recreational facilities include a neighborhood park in Lahaina, as well as four (4) beach parks. In

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addition to providing parking areas, as well as shower and restroom facilities, the beach parks provide residents and visitors alike with a variety of recreational activities including: diving, fishing, picnicking, snorkeling, sunbathing, surfing, and swimming.

Hanakao'o Beach Park in Kaanapali, and Honokowai Beach Park in Honokowai, contain approximately 3.7 acres and 2.7 acres of oceanfront land area, respectively. Hanakao'o Beach Park is about 0.3 mile north of the Honoapiilani Highway access for the proposed Kaanapali Connector, and Honokowai Beach Park is approximately 0.4 mile south of the northern terminus of the proposed Bypass Highway.

Wahikuli Wayside Park is an oceanfront park previously referenced in the Final EIS. This narrow, irregular-shaped park, consists of 0.26 acre, and is defined by the Honoapiilani Highway to the east, the ocean to the west, and the park entrance and exit to the north and south, respectively.

The entrance to this popular park is off of Honoapiilani Highway and approximately .025 mile south of the proposed Kaanapali Connector. The park exit is located an additional .175 mile further south.

Hanakao'o Beach Park possesses similar shape characteristics and recreational amenities as Wahikuli Wayside Park.

This County-owned park is defined by the Hanakao'o Cemetery to the north, the Honoapiilani Highway to the east, Wahikuli State

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Wayside Park to the south, and the ocean to the west. Ingress and egress to the park is provided via an access roadway situated approximately 0.3 mile north of the proposed Kaanapali Connector.

Situated at the intersection of Lahainaluna Road and Ikena Avenue in a residential section of Lahaina, Kelawea Mauka Park adjoins Ikena Avenue to the west. This neighborhood park comprises an open field of nearly 2.7 acres which is encircled by a chain-link fence of about four (4) feet in height. Parking is provided on-street along Ikena Avenue.

Launiupoko Wayside Park is situated about 0.5 mile north of the Bypass Highway's southern terminus and encompasses approximately 5.7 acres.

It should also be noted that the Bypass extension to Launiupoko is not anticipated to result in any adverse impacts to Launiupoko Wayside Park or shoreline recreational activities in the vicinity. By providing a mauka travel route, traffic volume along the existing intervening segment of Honoapiilani Highway between Puamana and Launiupoko will be reduced thereby improving public safety. In addition, the existing Mahanalua Nui Subdivision access road (Kai Hele Ku Street) will provide access from the Bypass to Launiupoko Wayside Park and the intervening segment of Honoapiilani Highway between the southern terminus of the Bypass and Puamana Park, as well as provide additional opportunities for recreational and shoreline activities.

With the exception of Kelawea Mauka Park, recreational facilities

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will not be adversely affected by the proposed Bypass improvements. Proximity impacts to Kelawea Mauka Park are examined in Chapter IV, Potential Impacts and Mitigation Measures under Section 4(f) Properties.

The proposed construction activities will not affect any right-of-way and property ownership entitlements for the properties within the vicinity of the Kaanapali Connector.

**11. 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.

**12. Water Systems**

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, which services the Kaanapali Resort, and the Kapalua Water Company, which provides water service to the Kapalua Resort.

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**13. 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 a design capacity of 6.7 MGD. Currently, usage is estimated at 6.08 MGD (County of Maui, 2001). The County, in partnership with the HCDCH, has upgraded and expanded the LWRF to a design capacity of 9.0 MGD.

**14. Solid Waste Disposal**

With the closing of the Olowalu Landfill, all solid wastes generated in the Lahaina region are transported to the Central Maui Landfill located near Puunene. A refuse transfer station located at Olowalu accepts household and green wastes, as well as used oil, for transport to the Central Maui Landfill in Puunene. The disposal of commercial and institutional refuse is not permitted at the Olowalu transfer station.

**15. Electrical and Telephone Service**

Electrical and telephone service to the West Maui region is provided by Maui Electric Company and Verizon Hawaii, respectively.

**B. LOCAL ENVIRONMENT**

The proposed modification to the Base Project alignment involves the extension of the roadway to Honokowai and Launiupoko. In addition, the Kaanapali Connector and the Lahainaluna Road-Bypass Access are incorporated as elements of the overall project. To a limited extent, the

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Modified Project alignment and the connector and access roads encompass physical environs which differ from that of the Base Project. The existing environmental conditions along the proposed new alignment and along the proposed connector roads are described in this section.

With regard to project scope, the roadway profile through Ikena Avenue will also be changed (to accommodate a grade-separated crossing at Lahainaluna Road) and the roadway's ultimate typical section will be modified (to provide four (4) travel lanes instead of two (2) travel lanes and one (1) truck climbing lane). The existing local environmental conditions for these sections of the Bypass remain unchanged from that described in the FEIS. However, to set the environmental context for the proposed profile and typical section modifications, relevant environmental descriptors for the Ikena Avenue area and the Bypass alignment south of Lahainaluna Road are also presented in this section.

1. **Land Use**

For the most part, the Bypass will fall within agricultural lands formerly used for sugar cane cultivation. With the exception of the Villages at Lei'ali'i, Puukoolii Village, and Project District No. 3 projects, the lands underlying the Bypass extension to Honokowai and Luniupoko were formerly utilized for cultivating sugar cane and are designated for agricultural use by the West Maui Community Plan. Compared with the Base Project, approximately 65 acres of additional agricultural lands will be encompassed by alignment and connector road modifications proposed under the Modified Project.

**Bypass Extension to Honokowai:** As with the Base Project, the



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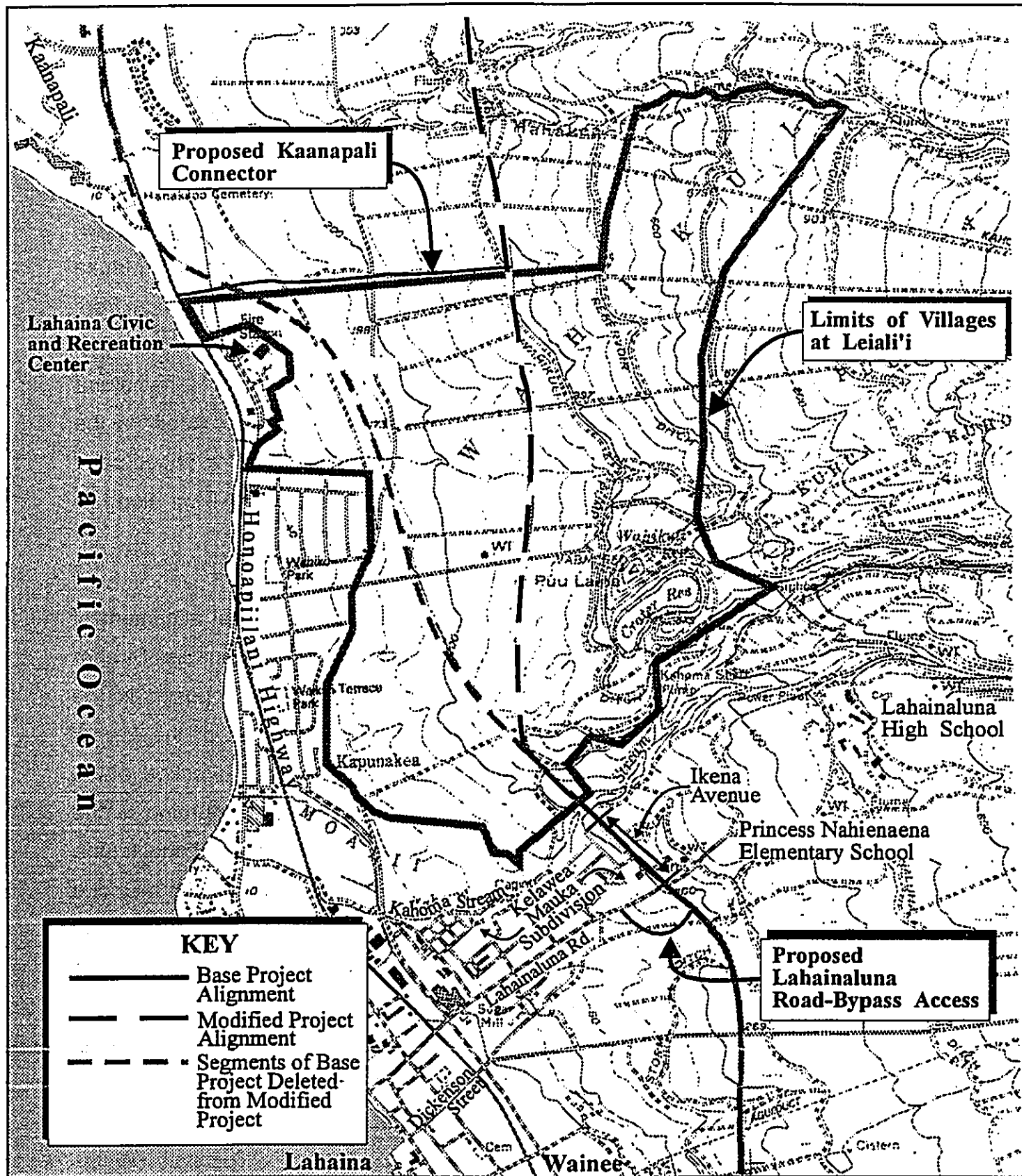
proposed Bypass extension to Honokowai will cross through the HCDCH's proposed Villages at Leiali'i project. The Villages at Leiali'i is a proposed planned community which will provide approximately 4,000 new residential units within a project area of about 1,120-acres. The relationship of the physical limits of the Villages at Leiali'i and the proposed Bypass extension to Honokowai is illustrated in Figure 19.

The alignment of the modified Base Project extension to Honokowai will traverse lands of the proposed Puukoolii Village master planned community. The Puukoolii Village project, as approved, would involve approximately 299 acres of agricultural land and would include nearly 1,700 residential units (PBR Hawaii, 1993).

**Kaanapali Connector:** The right-of-way for the Kaanapali Connector was formerly used for sugar cultivation. Refer to Figure 19. Approximately nine (9) acres of agricultural lands previously utilized for sugar cultivation will be affected by the alignment of the proposed connector road.

**Lahainaluna Road-Bypass Access:** As with the Kaanapali Connector, the proposed Bypass Access will traverse agricultural lands formerly used for sugar cultivation. Refer to Figure 19. Approximately two (2) acres of land will be removed from agricultural use as a result of the roadway's alignment.

In addition to agricultural properties, the proposed intersection of Lahainaluna Road and Lahainaluna Road-Bypass Access is in proximity to residential neighborhoods (Kelawea Mauka



**Figure 19 Lahaina Bypass Modifications**  
 Relationship of Bypass to  
 HCDCH Project Limits



MUNEKIYO HIRAGA, INC.

Prepared for: State of Hawaii, Dept. of Transportation



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Subdivision) and public schools (Princess Nahienaena Elementary School and Lahainaluna High School).

**Ikena Avenue:** Ikena Avenue is a local road serving the single-family residential neighborhood known as the Kelawea Mauka Subdivision. The majority of lots in this subdivision range from 6,000 square feet to 7,500 square feet (U.S. DOT, HDOT, 1991). The subdivision is located along the north side of Lahainaluna Road. Lands located to the south of Lahainaluna Road (in the vicinity of Ikena Avenue) were formerly utilized for sugar cane cultivation. The Kahoma Stream borders the subdivision along its northern extent.

**Bypass Extension to Launiupoko:** The horizontal alignment of the Bypass between Lahainaluna Road and Kauaula Stream remains unchanged from what was previously proposed in the FEIS. The Bypass will follow an alignment east of the former Wainee Village site and proceed in a southerly direction about 1,500 feet east of Honoapiilani Highway before returning to the highway near Launiupoko Point. The Bypass south of Lahainaluna Road falls entirely within former sugar cane fields. Launiupoko Wayside Park is located approximately 2,000 feet to the north of the Bypass Highway's southern terminus. The recently completed Mahanalua Nui Subdivision, an approximately 50-lot agricultural/residential subdivision, lies about 0.6 mile to the east of Launiupoko Wayside Park.

2. **Topography**

**Bypass Extension to Honokowai:** The proposed Bypass extension to Honokowai will have the roadway banded between

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elevations of approximately 240 feet and 440 feet, from a point just north of the Kelawea Mauka Subdivision to the Pioneer Mill's Puukolii Reservoir. The roadway would connect to Honoapiilani Highway at Honokowai, at elevation 60 feet. Roadway grades along the new alignment would range between 0.5 percent to 4 percent.

**Kaanapali Connector:** The proposed connector road traverses former sugar cane fields. The proposed right-of-way, therefore encompasses a relatively smooth and even terrain. The approximate elevations at its Honoapiilani Highway and Bypass intersections are twenty (20) feet and 400 feet, respectively.

**Lahainaluna Road-Bypass Access:** This proposed roadway also traverses lands formerly utilized for sugar cultivation. Like the Kaanapali Connector, lands underlying the Lahainaluna Road-Bypass Access right-of-way are relatively smooth and even. The elevations at its Lahainaluna Road and Bypass intersections are approximately 135 feet and 200 feet, respectively.

**Ikena Avenue:** Ikena Avenue services the Kelawea Mauka Subdivision, which sits on lands which moderately slope in an east to west direction. This road is aligned on a north to south axis at an approximate elevation of 220 feet. Since the Bypass through Ikena Avenue will run in a cross-slope direction, the Bypass roadway will require excavation to meet profile design requirements.

**Bypass Extension to Launiupoko:** The Bypass alignment south of Lahainaluna Road falls between elevations 220 feet (at

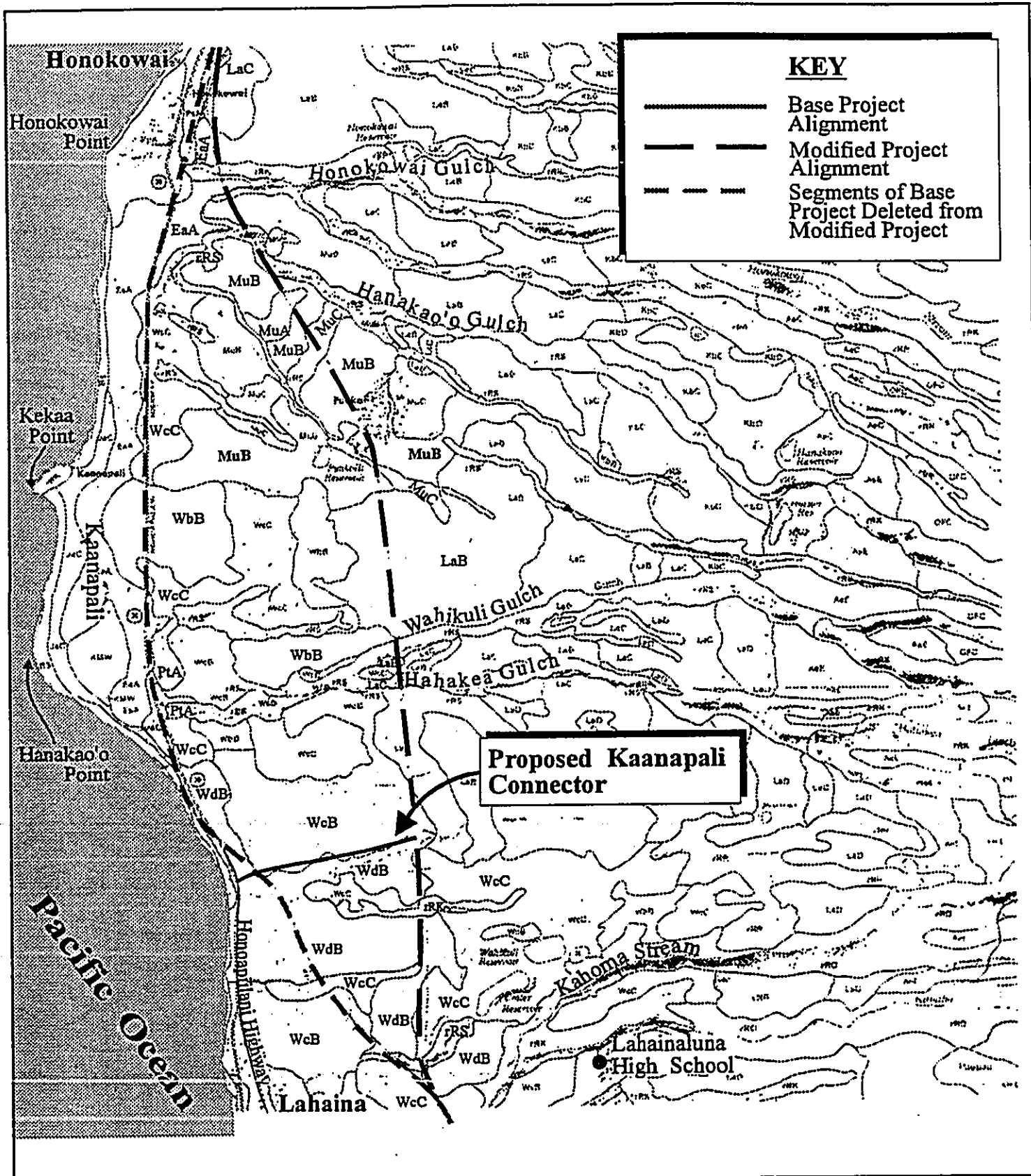
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Lahainaluna Road) to approximately five (5) feet at the southern terminus, near Launiupoko Point. Approximate roadway grades would range between 0.5 percent and 3.8 percent.

3. **Soils**

Underlying soil conditions along Ikena Avenue and along the Bypass between Lahainaluna Road and Puamana, including the soils underlying the Lahainaluna Road-Bypass Access, are described in the FEIS.

However, the proposed Bypass extension to Honokowai and Launiupoko, including the soils underlying the Kaanapali Connector, traverses lands having soil types different from the Base Project. See Figure 20 and Figure 21. Soils underlying the Modified Bypass alignment and the Kaanapali Connector belong to the Waiakoa-Keahua-Molokai Association. The Waiakoa-Keahua-Molokai Association are deep and moderately deep, nearly level to moderately steep, well-drained soils that have a moderately fine textured subsoil. In addition, the Modified Project alignment traverses soils belonging to the Pulehu-Ewa-Jaucas Association. The Pulehu-Ewa Jaucas Association are deep, nearly level to moderately sloping, well-drained and excessively drained soils that have a moderately fine-textured to coarse-textured subsoil. Soils specific to this area include those of the Molokai Series (MuA, MuB, MuC), Lahaina Series (LaB, LaC), Ewa Series (EaA), Wainee Series (WyB, WyC, WxB), Wahikuli Series (WcB, WcC, WdB), Rock Land Series (rRK), Stony Alluvial Land Series (rSM), Rough Broken and Stony Land Series (rRS).

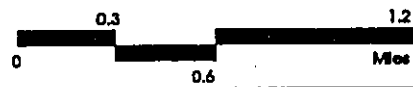


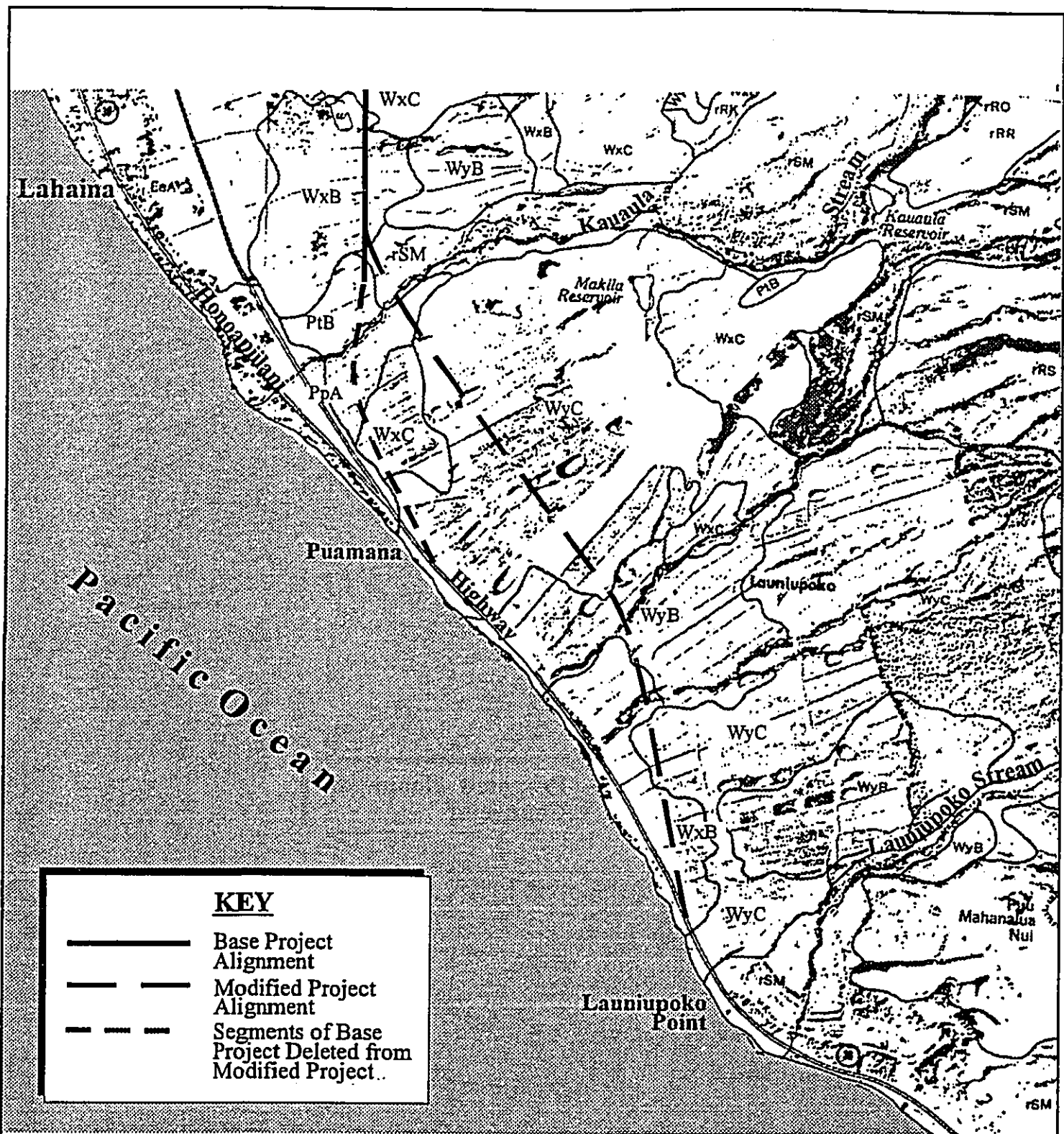
**Figure 20 Lahaina Bypass Modifications**  
 Soil Classifications Along Modified Project (Lahaina to Honokowai)



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**Figure 21 Lahaina Bypass Modifications**  
 Soil Classifications Along Modified Project (Lahaina to Launiupoko)

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General characteristics of these soils are summarized in Table 6.

Table 6

SOIL SERIES CHARACTERISTICS OF LANDS TRAVERSED BY THE MODIFIED BYPASS ALIGNMENT; KAANAPALI CONNECTOR; AND LAHAINALUNA ROAD-BYPASS ACCESS ROADS		
Soil Series	Map Symbol	Description
Molokai	MuA, MuB, MuC	Well-drained soils on uplands derived from weathered igneous rock
Lahaina	LaB, LaC	Well-drained soils on uplands derived from weathered igneous rock
Ewa	EaA	Well-drained soils on alluvial fans developed from weathered rock
Waiee Series	WyB, WyC, WxB	Well-drained soils on alluvial fans derived from igneous rock
Wahikuli	WcC, WcB, WdB, WxB, WyB, WyC	Well-drained soils on uplands derived from weathered igneous rock
Rock Land	rRk	Exposed rock with very shallow soils
Stony Alluvial Land Series	rSM	Stones, boulders, and soil deposited by streams along the bottoms of gulches and on alluvial fans
Rough Broken and Stony Land	rRs	Steep and stony gulches with soil material less than 20-inches in depth

4. **Agricultural Land Characteristics**

Land Study Bureau productivity ratings for the Bypass between Lahainaluna Road and Puamana, including the lands encompassed by the Lahainaluna Road-Bypass Access, are described in the FEIS.



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Agricultural productivity ratings along the Bypass extension to Honokowai traverses former sugar cane lands designated as "E", "C", "B", and "A". (Lands designated "A" are considered to be of highest productivity with "E"-rated lands ranked lowest.) Areas designated "E" include gulches and drainageways which have little agricultural productivity value. From a geographic standpoint, lands designated "C" are within the area generally identified as the HCDCH's Villages at Leiali'i. Lands designated "B" are located north of the "C" lands to Wahikuli. Beyond Wahikuli to Honokowai, lands, including the Kaanapali Connector, are generally designated as "A". Agricultural productivity ratings along the Bypass extension to Launiupoko include lands which are designated "E" and "B", with the "B" designated lands encompassing former sugar cane fields to the east of Honoapiilani Highway.

**5. Flood and Coastal Flood Hazards**

The modified alignment will traverse lands encompassed by four (4) Flood Insurance Rate Map (FIRM) zones and are identified by FIRM Community-Panel numbers: 150003/0163B, 150003/0161B, 150003/0153B, and 150003/151B.

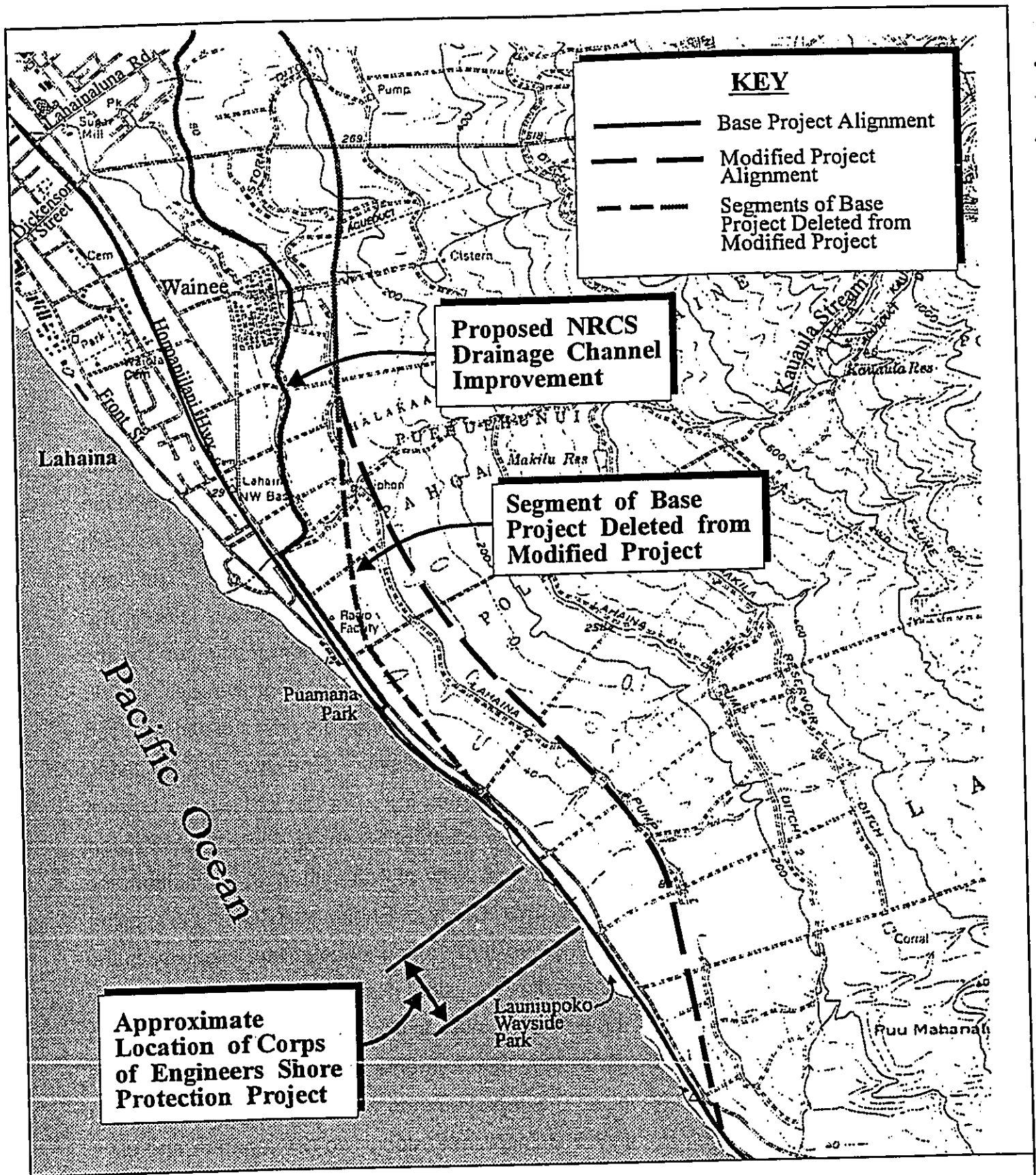
Since the segment of the Bypass alignment from the vicinity of Kauaula Stream to Puamana has now been replaced with the Launiupoko Extension, the portion of the Bypass highway's southern terminus which was previously located within Zone A4 (area of minimal flooding with a base flood elevation of eight (8) feet) will no longer be affected.

As indicated by the Flood Insurance Rate Map, Panel 150003/0163B, the area encompassed by the Launiupoko

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Extension is designated Zone C, an area of minimal flooding. No notable encroachment of the 100-year flood plain is anticipated and coordination with local floodway management agencies will be undertaken during the project's design phase to ensure that appropriate modifications can be made to the designated floodway if necessary. The remaining lands underlying the Modified Project alignment, including the alternative project alignments, are situated within Zone C, areas of minimal flooding.

It is noted that the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), proposes the installation of a floodwater diversion channel in the vicinity of the Bypass south of Lahainaluna Road (NRCS, 1992). See Figure 22. The flood channel, to be located makai (west) of the Bypass, is intended to provide flood protection and sediment runoff mitigation for the Lahaina Watershed area. The proposed improvements would include approximately 10,400 lineal feet of concrete and grassed channel works and sediment basins. The two (2) proposed channel outlets would be located in the vicinity of Kauaula Stream and in an area immediately south of Puamana Park. Construction is dependent upon the availability of Federal funds. In addition, the U.S. Department of Army, Corps of Engineers (COE) is proposing shore protection improvements along Honoapiilani Highway in the vicinity of Launiupoko Wayside Park (U.S. Army Corps of Engineers, 1991). Refer Figure to 21. The proposed limits of the COE's shore protection improvements would lie to the north of the Bypass terminus. The improvements would involve the installation of approximately 500 lineal feet (along two (2) separate shoreline reaches) of rubble revetment.



**Figure 22 Lahaina Bypass Modifications**  
 Location of Proposed NRCS and  
 COE Projects



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6. ***Flora***

Flora in the vicinity of the Base Project, including the Lahainaluna Road-Bypass Access, consists of remnant sugar cane, and roadside vegetation composed primarily of grasses and shrubs. Species of roadside vegetation include buffel grass, Bermuda grass and koa-haole. Gulch areas associated with the Base Project alignment include koa-haole, buffel and guinea grass, Java plum and kiawe and kukui trees. The botanical study for the Base Project (Char, 1988) reports that there are no species in the project vicinity which are considered rare, threatened or endangered.

The proposed Bypass extension to Honokowai will follow a route parallel to and mauka (east) of Honoapiilani Highway. This segment of the project, including the Kaanapali Connector, does not traverse vegetation zones different from that of the Base Project. A botanical survey conducted for Amfac/JMB Hawaii's South Beach Mauka project indicates similar vegetation types along the Base Project alignment and the extension alignment (Char and Linney, 1989). The South Beach Mauka project limits, which is located approximately 2,000 feet east of the Modified Project's extension alignment included plants species such as koa-haole, ilima, buffel grass, Guinea grass, kiawe, kukui and Java plum.

The Bypass extension to Launiupoko includes lands which were formerly utilized for sugar cane cultivation. A botanical study was prepared for Amfac/JMB Hawaii, Inc. for the proposed development of two (2) golf courses at Launiupoko banded between the 200 foot elevation to 880 foot elevation. The study notes that vegetation such as kiawe, China berry, kukui, Java plum, and guava were

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identified in the gulches in the vicinity (Helber Hastert & Kimura, 1991). The botanical study also notes that the endangered species "Gouania hillebrandii" has been observed at the summit of Pu'u Hipa, at about the 1,000 foot elevation. The extension alignment to Launiupoko traverses lands ranging in elevation from 220 feet (near Lahainaluna Road) to about 5 feet (near Launiupoko Point), and passes well makai (west) of the plant's location at Pu'u Hipa. In addition, the botanical study did not locate any other species of endangered or threatened plants in the vicinity.

**7. Fauna**

Studies in the vicinity of the Base Project, the Modified Project alignment and the new Kaanapali Connector and Lahainaluna Road-Bypass Access, indicate that the region affected by proposed improvements contains no known endangered or threatened animal species (Bruner, 1988; Bruner, 1989; Environmental Impact Study Corp., 1979).

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.

It should be noted that the faunal survey for the Launiupoko golf courses concluded that the lands in the vicinity provides a limited range of habitats not uncommon in West Maui (Helber Hastert & Kimura, 1991).

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8. Archaeological and Historic Resources

a. Archaeological Resources

A series of archaeological inventory surveys along the Modified Project alignment, Kaanapali Connector and Lahainaluna Road-Bypass Access was conducted by Paul H. Rosendahl, Ph.D., Inc. See Appendices C to C-2. According to the Rosendahl survey, the Bypass extension to Honokowai passes through several natural drainageways, including Honokowai Gulch, Hahakea Gulch, Kahoma Stream, and a number of unnamed swales or very shallow gulches. However, virtually all of the proposed Bypass right-of-way has been used for sugar cane or pineapple production. Most of the cultural features found in proximity to the proposed right-of-way relate to this essentially modern agricultural activity. The features include graded access and major cane-haul roads, major and minor irrigation ditches, irrigation reservoirs, small ponds and holding tanks, electrical distribution lines and poles, and residential and other modern features. Cultivation in the project area has involved deep plowing and extensive surface modifications and substantial disturbance to subsurface deposits. The extent of disturbance is substantial as evidenced by the presence of massive field clearing debris piles.

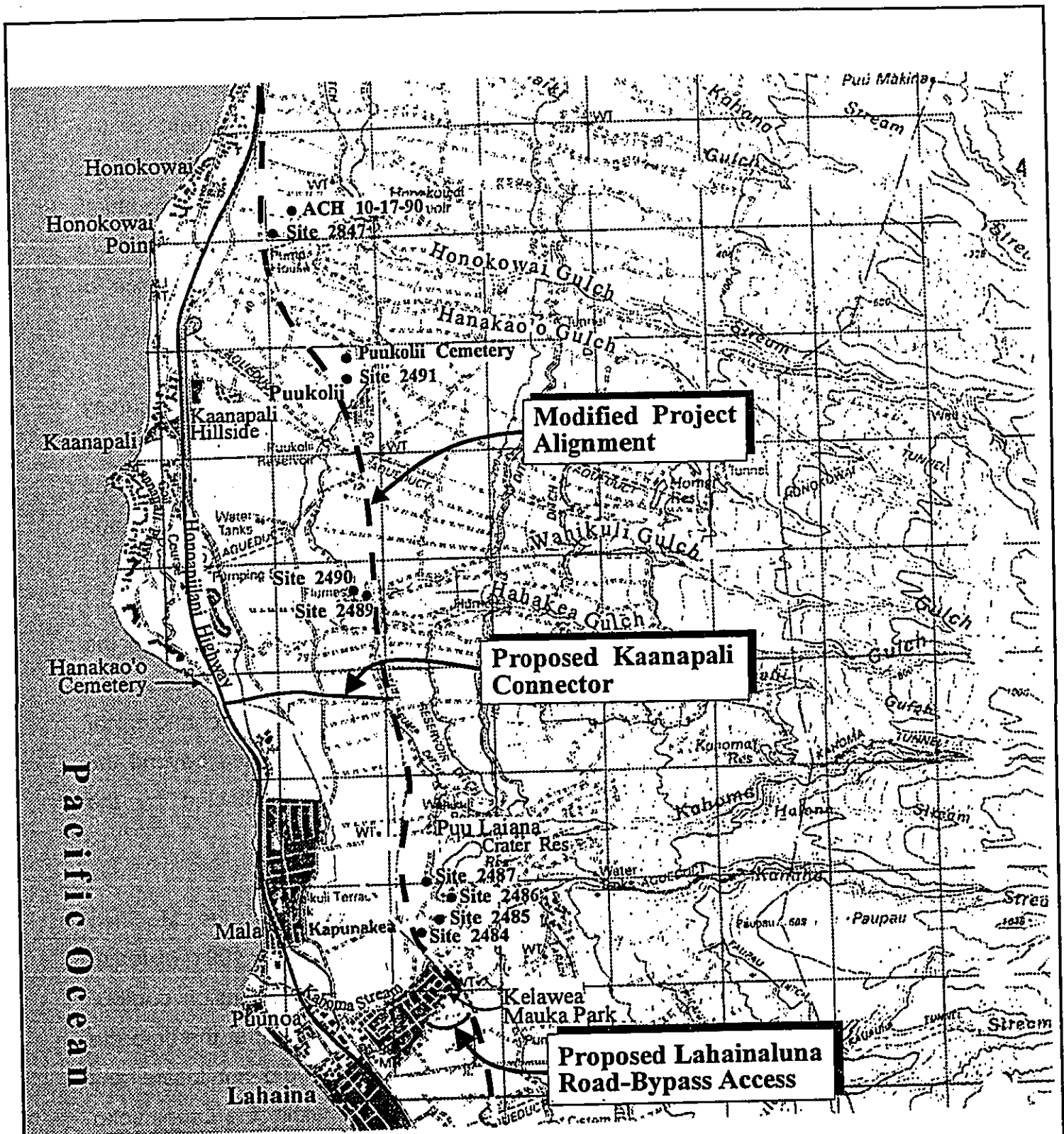
Numerous archaeological studies have been conducted in West Maui, documenting the presence of a variety of important and potentially notable prehistoric and cultural resources. With respect to the Bypass extension to Honokowai, however, only four (4) sites have been recorded

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within or immediately adjacent to the Bypass alignment. The sites are State Inventory of Historic Places (SIHP) 2489 and 2490, prehistoric agricultural complexes located at the confluence of two (2) branches of Hahakea Gulch (initially recorded in conjunction with the North Beach and South Beach Mauka survey project); Site 2484, a partial rock enclosure or L-shaped wall, located on south-facing lands above Kahoma Stream; and a newly identified complex of walls (Site 2847) located at the terminus of the ridge separating the two (2) branches of Honokowai Stream at the north end of the present project area. See Figure 23.

In addition to the four (4) sites, records identify six (6) additional sites in proximity to the alignment. The sites include recently identified cultural remains east of the proposed right-of-way, within Honokowai Gulch (Site ACH 10-17-90); Site 2491, a small agricultural terrace or short wall segment located near Puukolii Cemetery, east of the right-of-way within Honokowai Gulch; Puukolii Cemetery itself; Site 2485, a walled enclosure near Puu Laina; Site 2487, an abandoned rock-supported roadbed located west of Puu Laina; and Site 2486, a large, formal terrace, located south of Puu Laina and east of the present road alignment, associated with thirteen (13) oval mounds believed to represent human burials.

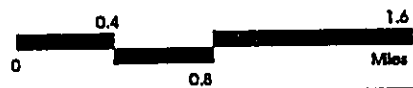
The agricultural lands currently underlying the proposed Kaanapali Connector and Lahainaluna Road-Bypass Access have historically been utilized for sugar cultivation. Existing



**Figure 23 Lahaina Bypass Modifications**  
 Archaeological Sites in Vicinity  
 of Bypass Corridor



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cultural features encompassed by the alignment of the proposed roadways typically include cane-haul roads, irrigation and utility facilities and systems. Agricultural activities involving surface and subsurface operations have left behind physical features typified by the existence of massive field clearing debris piles.

Based on the results of an on-site archaeological survey conducted in December 1993, it was concluded that there were no important surface archaeological remains along the proposed alignment of the Kaanapali Connector and Lahainaluna Road-Bypass Access.

Subsurface excavation at the western terminus of the Kaanapali Connector, 0.3 mile south of Hanakao'o Cemetery, did not reveal any evidence of archaeological significance. Hanakao'o Cemetery is located beyond the Kaanapali Connector and will not be affected by the proposed improvements.

The Archaeological Inventory Survey for the Modified Corridor Alignment prepared by PHRI in 1991 (refer to Appendix C) examined the Launiupoko Extension corridor (which was being considered by the HDOT at the time the survey was conducted). The survey did not locate any archaeological or historic resources within the Launiupoko Extension corridor.

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b. **Historic Resources**

Historic sites consisting of cemeteries located in Hanakao'o and Puukolii were also considered due to their location in the general project area. Hanakao'o Cemetery, is adjacent to Hanakao'o Beach Park and situated on 3.6 acres of land owned by the State of Hawaii. The cemetery is about 0.3 mile north of the Honoapiilani Highway access for the proposed Kaanapali Connector. The cemetery contains approximately 54 headstones of indeterminate dates, and was formerly utilized for the burial of Chinese and/or Japanese immigrants.

Puukolii Cemetery, is located on nearly 2.1 acres of land owned by Pioneer Mill. The cemetery is about 400 feet east of the proposed Bypass Highway. Based on tombstone dates, this cemetery was utilized by residents of the former Puukolii Town as recently as the mid-1940's. The cemetery contains approximately 35 burials. Due to their distance from the proposed improvements, these properties will not be affected by the proposed Bypass modifications.

There are no historic sites located within, or in proximity of, the Launiupoko Extension corridor.

9. **Air Quality**

As with the Base Project, the modified Bypass alignment, the Kaanapali Connector and the Lahainaluna Road Bypass-Access traverse lands formerly cultivated with sugar cane. As such, the area is subject to dust and equipment emissions associated with

agricultural activities, although this occurrence is intermittent and of temporary duration. The region's constant exposure to winds tends to rapidly disperse particulates associated with agricultural activities.

**10. Noise Characteristics**

The Modified Project extension alignment, Kaanapali Connector and Lahainaluna Road-Bypass Access are primarily surrounded by agricultural lands. Background noises are, therefore, primarily attributed to natural (e.g., wind) conditions. At both the southern and northern ends of the project, where the Bypass ties back to Honoapiilani Highway, traffic noise along the existing highway is the primary source of background noise. With the exception of the Bypass extension to Launiupoko, existing background ambient and traffic noise levels were measured in August, 1991 and May, 1995 to establish baseline noise conditions along the Modified Project alignment. See Appendix D. Results of the measurements taken at locations along the Modified Project alignment are shown in Table 7. Since the extension of the Bypass alignment to

**Table 7**

BACKGROUND AMBIENT AND TRAFFIC NOISE MEASUREMENT RESULTS (AUGUST 27, 1991)	
Location Along Modified Alignment	Measured Leq. (decibels)
Puukoolii, mauka of Puukoolii Reservoir	51.1
Wahikuli, mauka of Bypass	44.0
Source: Appendix B	

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Launiupoko traverses lands formerly utilized for sugar cane cultivation, baseline noise characteristics along this alignment are expected to be very similar to that of the Bypass extension to Honokowai.

Since the originally planned at-grade intersection of the Bypass with Lahainaluna Road will be replaced with a below-grade crossing under Lahainaluna Road, background ambient noise measurements were obtained at seventeen (17) locations adjacent to existing residences along Ikena Avenue and the cul-de-sacs east of the proposed Bypass. Refer to Table 5 in Appendix D.

The measured values shown in Table 7 can be compared to noise abatement criteria for Equivalent (or average) Sound Level (Leq) established by the Federal Highway Administration (FHWA). The hourly A-weighted sound levels (Leq(h)) shown in Table 8 define levels which, when approached or exceeded, require the consideration of noise abatement.

Table 8

FHWA NOISE ABATEMENT CRITERIA [HOURLY A-WEIGHTED SOUND LEVEL--DECIBELS (dBA)]		
Activity Category	Decibels (Leq (h))	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the areas are to continue to serve their intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active 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	N/A	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Appendix B

The proposed Kaanapali Connector traverses agricultural lands formerly cultivated with sugar cane. As with the Puukoolii and Wahikuli locations, the proposed Kaanapali Connector is situated in an area where existing background ambient noise levels are attributable to weather-generated (e.g., wind) conditions.

Traffic noise levels were measured at various locations along Lahainaluna Road in March, 1986 and December, 1993. See Appendix D and D-1. Existing traffic noise levels during the PM Peak Hour are approximately 65 Leq at 50 feet from the centerline of Lahainaluna Road and does not require noise abatement since

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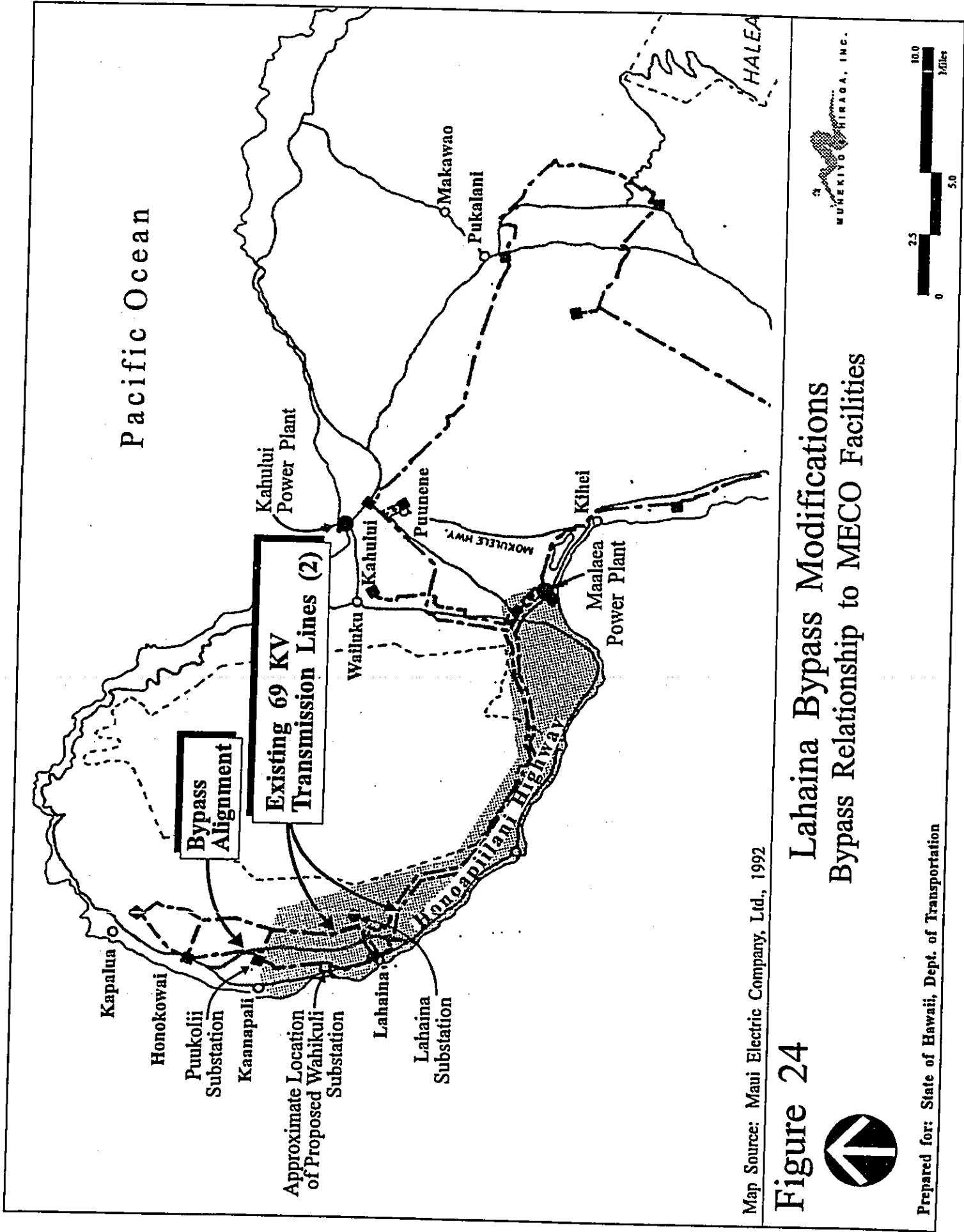
sound levels do not meet or exceed the FHWA's criteria for the consideration of noise abatement.

**11. Maui Electric Company Facilities**

The Maui Electric Company (MECO) provides electrical power to the West Maui region via two (2) existing 69-kilovolt (KV) transmission lines which originate at MECO's Maalaea Power Plant (MECO, 1992). The existing 69 KV lines are aligned parallel to and mauka (east) of the proposed Bypass alignment. See Figure 24. These transmission lines connect to substations located at Lahaina and Puukolii. In addition, MECO is proposing the addition of a third 69 KV transmission line from the Maalaea Power Plant to the West Maui area. This third line will tie into a proposed substation located at Lahaina and will help to meet the energy demands generated by the HCDCH's Villages at Leiali'i.

Although the existing and proposed transmission lines lie mauka (east) of the proposed Bypass alignment, the Lahaina, Puukolii and proposed Wahikuli substations are makai (west) of the Bypass. As such, segments of the transmission lines are aligned in an east-west axis and would cross the Bypass in order to feed into each of the substations.

In addition to the major transmission lines noted above, MECO maintains distribution lines in the vicinity of the Bypass to provide electrical service to local customers. Distribution facilities, for example, would be found in the residential sections of upper Lahainaluna Road and within former sugar fields (to provide power to plantation pump stations).



Map Source: Maui Electric Company, Ltd., 1992

**Figure 24**

**Lahaina Bypass Modifications**  
 Bypass Relationship to MECO Facilities

Prepared for: State of Hawaii, Dept. of Transportation



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**12. Wetlands and Special Aquatic Sites**

As indicated in the FEIS and defined by 33 CFR 328.3(b), Rules and Regulations of the Department of the Army, Corps of Engineers, there are no wetlands within the project area in proximity of the Base Project alignment, as well as the alternative alignments. In addition, the National Wetlands Inventory Maps, prepared by the U.S. Fish and Wildlife Service did not reveal the presence of any wetlands within proximity of the Modified Project and alternative alignments.

As previously noted, Kauaula, Kahoma, Wahikuli, and Honokowai Streams are perennial streams which flow year-round at higher elevations and intermittently at lower elevations. The Modified Project alignment will traverse the intermittent lower portions of these streams and is not anticipated to adversely effect any aquarian resources within these sections.

**13. Environmental Justice**

Executive Order 12898 requires that appropriate steps be taken to identify and avoid any disproportionately high and adverse human health or environmental effects of Federal programs, policies and activities on minority and low-income populations.

A Social Impact Assessment prepared by Earthplan in February 1997 for the development of a West Maui resort was examined to identify any potential adverse effects the Modified Project may have on any distinct group of minority or low-income populations in the region (Munekiyo & Arakawa, Inc., 1997). The report includes Census Tracts 314 and 315, which underlies the Bypass corridor,



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and contains a profile of the existing West Maui community. An overview of West Maui's demographic characteristics are summarized below.

a. **Population**

In 1990, the population of the island of Maui was 91,361, with 14,574 persons (16 percent) of the island's population residing in West Maui. Since 1970, West Maui has seen an increase in population, with population increasing from 5,500 persons in 1970, to 10,300 persons in 1980, and to 14,600 persons in 1990. These increases represent an 86 percent gain from 1970 to 1980, and a 42 percent gain from 1980 to 1990.

West Maui's annual average population growth over the last two (2) decades has kept pace with that of Maui County. Between 1970 and 1980, Maui County grew an average rate of 4.4 percent a year, and between 1980 and 1990, 3.5 percent a year. Compared to Maui County, West Maui had a higher average annual growth rate of 6.4 percent during the 1970's, but shared a 3.5 percent average annual growth rate between 1980 and 1990. Recent estimates put West Maui's 1994 population at 16,000.

b. **Demography**

The overall West Maui population in 1990 differed from the County in terms of age and ethnic distribution as reflected in Table 9. West Maui had proportionally a larger eligible labor force.

Table 9

1990 AGE AND ETHNICITY		
Population	Maui County	West Maui
		100,504
Age	Maui County	West Maui
Under 5	8 percent	7 percent
5 to 17	19 percent	15 percent
18 to 44	44 percent	51 percent
45 to 64	18 percent	17 percent
65 and older	11 percent	10 percent
Median age	33.4 years	32.8 years
Ethnicity	Maui County	West Maui
Caucasian	40 percent	45 percent
Japanese	17 percent	11 percent
Hawaiian	16 percent	11 percent
Filipino	20 percent	25 percent
Other	7 percent	25 percent
Source: U.S. Bureau of the Census, 1991 and 1992.		

As noted in the preceding table, 68 percent of West Maui's population were in the labor force ages between 18 and 64 years of age, while County-wide 62 percent of the population were in this age category. West Maui also had a slightly lower median age of 32.8 years, when compared to the County-wide median of 33.4 years.

The West Maui region had higher proportions of Caucasians and Filipinos when compared to the County-wide population.

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In Maui County, 40 percent of the total population was Caucasian, and another 20 percent of Filipino ancestry. In West Maui, Caucasians accounted for 45 percent, with Filipinos making up another 25 percent of the population.

In 1990, half of Maui County's residents had graduated from high school, and another 27 percent also received a college degree. In West Maui, there were proportionally higher levels of high school graduates, with 57 percent in this category. There were slightly less people who obtained college degrees, however, with 21 percent.

Statistics about residence five (5) years prior to census-taking indicate the level of immigration occurring in an area. In Maui County, half of the residents lived in the same house in 1985, five (5) years prior to the 1990 census. Another 27 percent lived in Maui County, but in a different house. Approximately 15 percent were from another state.

c. **Household and Family Characteristics**

In 1990, West Maui contained almost 4,900 households, accounting for 15 percent of all of Maui County's 33,200 households. The average respective household sizes of 2.99 and 2.94 persons in Maui County and West Maui were similar.

1990 census information indicates that West Maui's residents had a higher income level than the overall Maui County population. West Maui's median household income

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of \$41,255.00 was higher than Maui County's 1990 median of \$38,771.00.

In terms of the proportion of family households, 71 percent of Maui County's households were family households. In West Maui, only 61 percent of the total households comprised families. Consistent with household income information, West Maui's poverty rate of 3 percent in 1990 was one-half the County-wide rate.

**d. Housing**

West Maui's 1990 housing stock of 7,739 units had a vacancy rate of 37 percent, which was higher than the County-wide rate of 21 percent vacancy rate. West Maui's housing vacancy rate stems from units reserved for visitor use and secondary homes of absentee owners.

In terms of housing type, the County-wide housing stock comprises mostly single-family units with 67 percent of the inventory in this category; 31 percent of the units are multi-family units. In West Maui, the opposite holds true. Sixty (60) percent are multi-family units and only 39 percent are single-family homes.

County-wide, owners lived in 57 percent of the occupied homes. Owner occupancy tended to be lower in West Maui, with 47 percent of the units being owner-occupied.

Housing values in West Maui were noticeably higher than

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those of the County-wide housing supply. Whereas the median home valuation in Maui County was \$202,100.00, West Maui's median was \$240,800.00. The region's median monthly rent of \$776.00 was more than \$100.00 above the County median of \$658.00.

e. **Labor Force**

West Maui's 1990 civilian labor force of just over 11,700 persons generally followed the County's labor force characteristics. Seventy-seven (77) percent of West Maui's labor force participated in the civilian labor force, compared with 72 percent County-wide.

In 1990, the unemployment rate in West Maui was 1.3 percent, compared to 2.7 percent for Maui County. In August 1996, it was estimated that Maui County had an unemployment rate of seven percent, while the unemployment rate in West Maui was estimated at 3.2 percent.

In terms of the profile of employed persons, West Maui generally follows the County-wide trends for the labor force characteristics shown in Table 10.

Table 10

1990 Labor Force Characteristics		
Occupational Category	Maui County	West Maui
Managerial and Professional	21 percent	19 percent
Technical and Sales	15 percent	16 percent
Service	33 percent	43 percent
Farming and Fishing	6 percent	5 percent
Precision, Craft and Operators	16 percent	11 percent
Transportation	5 percent	4 percent
Handlers, Cleaners and Laborers	4 percent	2 percent

Source: U.S. Bureau of the Census, 1991 and 1992.

In terms of the profile of employed persons, more West Maui workers were employed in the service industry (43 percent) when compared to the County-wide profile (33 percent). Because of West Maui's emphasis on service jobs, all other job sectors exhibited slightly lower participation rates.

With the exception of the Bypass segment which traverses Ikena Avenue, the Modified Project crosses lands which are undeveloped and formerly utilized for sugar cane cultivation. It should be noted that the displacement and relocation of the Ikena Avenue residents along this segment of the Bypass was examined in the FEIS for the Base Project.

# ***Chapter IV***

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## ***Potential Impacts and Mitigation Measures***

## **IV. POTENTIAL IMPACTS AND MITIGATION MEASURES**

### **A. IMPACTS TO THE PHYSICAL ENVIRONMENT**

#### **1. Topography/Landform**

The proposed project will involve the clearing, grubbing and grading of lands formerly used for sugar cane cultivation. Excavation and filling will be required for the construction of the roadway prism. In general, however, finished contours will follow existing grades to minimize earthwork costs and maintain existing drainage patterns which tie into the immediate surrounding lands. Typical finish grades along sections of the Bypass are estimated to be 1.16 percent at Honokowai Stream, 4.0 percent at Hanakao'o Gulch, 2.50 percent at Wahikuli Gulch, 1.0 percent at Hahakea Gulch, 0.78 percent at Kahoma Stream, and 1.44 percent at Kauaula Stream.

While terrain within the proposed Bypass and connector roads' rights-of-way will be locally modified to meet design requirements for roadway grades and drainageway crossings, the proposed project will not disturb the smooth and uniform east to west slopes, characteristic of the foothill region of the West Maui Mountains.

Generally, site work for the proposed drainageway crossings (e.g., bridges, box culverts) will consider balancing cuts and fills so that no borrow pit will be required. During development, construction roads across the beds of the drainageways may be necessary. These roads will be constructed of clean, stable materials, such as rock and gravel, and paved if necessary. It is noted that these drainageways are intermittent at the crossing locations.



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Excavation will be required to construct the drainageway crossings. To prevent pollution, mitigating measures during construction will include, but are not limited, to the use of sedimentation basins, filter fabric barriers, retention basins, erosion control fabric, hydromulching, and barriers between the stream and work areas. In addition, construction will be undertaken during dry periods and excess materials will be removed from construction areas.

With the exception of the drainageways traversed by the Modified Project alignment, there are no readily identifiable areas which require further protection due to physical and topographical conditions. Appropriate mitigative measures and Best Management Practices (BMPs) will be utilized should any areas be identified during the project's final design phase.

2. **Drainage/Erosion Control and Coastal Water Quality Considerations**

The Modified Project alignment will traverse seven (7) natural drainageways which ultimately carry flows to the ocean. See Figure 25. The (Draft) Hawaii Stream Assessment Guide (Commission on Water Resource , December 1990) lists Kauaula Stream, Kahoma Stream, Wahikuli Stream, and Honokowai Stream as perennial streams. Perennial streams are defined as streams which flow year-round at higher elevations (i.e., the upper reach of its extent) and intermittently at lower elevations under normal conditions.

The two (2) unnamed drainageways along the Bypass extension to Launiupoko, as well as the Hahakea Gulch and Hanakao'o Gulch drainageways are considered intermittent and are not listed in the

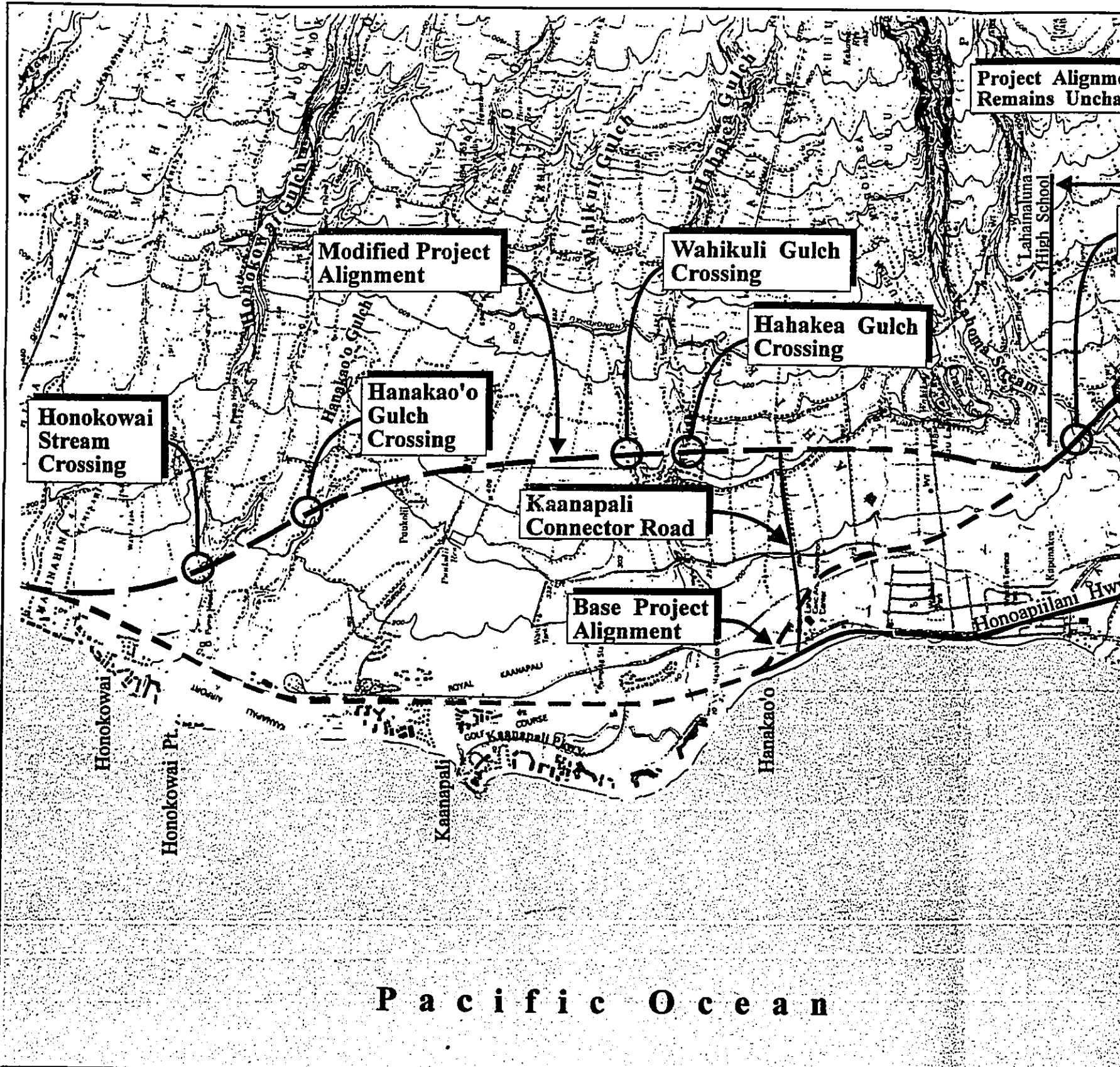
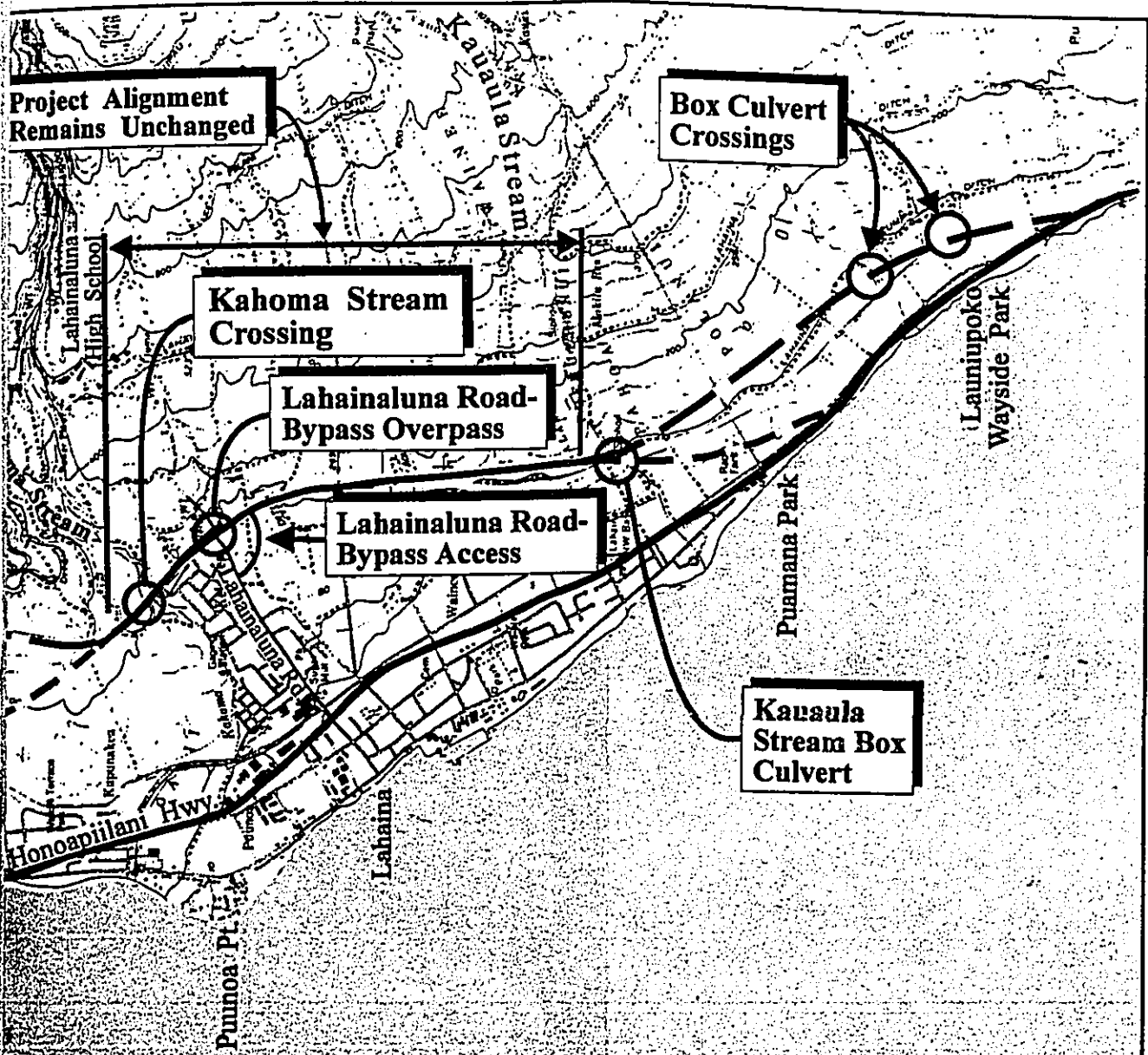


Figure 25

Lahaina Bypass Modifications  
 Location of Proposed Bridge and Culvert Structures



Prepared for: State of Hawaii, Dept. of Transportation

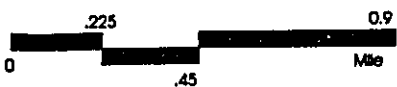


**KEY**

- Base Project Alignment
- - - Modified Project Alignment
- · · Segments of Base Project Deleted from Modified Project

Modifications  
and Culvert Structures

  
 MUNEKIYO HIRAGA, INC.



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Hawaii Stream Assessment.

It should be noted that site verification has revealed that these drainageways are intermittent at the crossing locations. A general description of each of these drainageways follows.

a. Unnamed Drainageways

Two (2) unnamed drainageways are located along the Bypass extension to Launiupoko. The northernmost drainageway is located approximately 1.0 mile to the north of the Bypass highway's southern terminus at Honoapiilani Highway at about the 80 foot elevation, while the southernmost drainageway is situated about 0.8 mile to the north of the southern terminus at an elevation of approximately 40 feet. Refer to Figure 25. Koa haole and various grasses and weeds comprise the existing vegetation in the vicinity of the crossing.

b. Kauaula Stream

The proposed Kauaula Stream crossing is located near the southern extent of the town of Lahaina, approximately 0.4 mile east of Honoapiilani Highway. Refer to Figure 25. Existing vegetation in proximity of the crossing consists of koa haole, as well as various grasses and weeds.

c. Kahoma Stream

Located at an elevation of approximately 200 feet, the proposed Kahoma Stream crossing is about 0.8 mile east of Honoapiilani Highway and is located immediately to the

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north of the Kelawea Mauka Subdivision. Refer to Figure 25. Existing vegetation in the area of the crossing includes kiawe, koa haole, and various grasses and weeds. The Kahoma Stream flood control project is located downstream of the proposed crossing. This project was implemented by the Department of the Army, Corps of Engineers to address flooding problems in Lahaina town.

**d. Hahakea Gulch**

The proposed Hahakea Gulch crossing is located about one (1) mile east of Honoapiilani Highway at Kaanapali at an elevation of approximately 360 feet. Refer to Figure 25. Java Plum, koa haole, kiawe, and various grasses and weeds, comprise the existing vegetation in the vicinity of the crossing.

**e. Wahikuli Stream**

The proposed Wahikuli Stream crossing is situated approximately 700 feet to the north of the Hahakea Gulch crossing. Refer to Figure 25. Existing vegetation in proximity of the crossing consists of koa haole, kiawe, as well as various grasses and weeds.

**f. Hanakao'o Gulch**

Situated at about the 200 foot elevation, the proposed Hanakao'o Gulch crossing is located approximately 0.8 mile east of Honoapiilani Highway. Refer to Figure 25. Koa haole, kiawe, and various grasses and weeds comprise the existing vegetation in the area of the crossing.

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**g. Honokowai Stream**

The proposed Honokowai Stream crossing is located approximately 0.4 mile east of Honoapiilani Highway near the southern outskirts of Honokowai at an elevation of about 80 feet. Refer to Figure 25. The Honokowai Stream channel (concrete-lined) and dam (earth embankment with concrete spillway) improvements constructed by the Natural Resource Conservation Service (NRCS) are situated downstream from the proposed crossing. Existing vegetation in the vicinity of the crossing includes koa haole, kiawe, as well as various grasses and weeds.

The preliminary design features of the proposed bridge and culvert structures are described below.

Conceptually, construction of the proposed structures will be designed to utilize precast components such as girders or segmental box sections as much as possible. This method of construction would not require extensive formwork during construction. The span between bridge support piers will be approximately 100 feet to 120 feet.

In addition, drilled shaft cast-in-place piles will be utilized to support the bridge footings. To the extent possible, footings in drainageways will be located beyond the typical limits of streamflows. The footings for each support pier will be approximately 31 feet in length and 44 feet in width (the width of the bridge).

The support piers and columns for the bridge will be constructed on the footings. Although formwork will be necessary for the construction of support piers and columns for the bridges, no structures are anticipated to be placed within streamflow areas.

A conceptual description of bridge features is noted in Table 11.

Table 11

<b>BRIDGE DESIGN FEATURES</b>			
<b>Location</b>	<b>Length*</b>	<b>No. of Piers Under 30 Feet**</b>	<b>No. of Piers Over 30 Feet</b>
Kahoma Stream	400 ft.	1	2
Hahakea Gulch	600 ft.	2	3
Wahikuli Stream	200 ft.	1	N/A
Hanakao'o Gulch	500 ft.	2	2
Honokowai Stream	600 ft.	N/A	5

Source: Austin, Tsutsumi & Associates, Inc.  
 \*Excluding abutment  
 \*\*\*Piers less than 30 feet consist of two (2) 4 ft. x 5 ft. columns

As previously noted, the extension of the Bypass alignment to Launiupoko will traverse two (2) unnamed intermittent drainageways. Conceptually, a pre-cast box culvert with three (3) 10 ft. x 12 ft. culverts is proposed for crossing the northernmost drainageway, while another pre-cast box culvert with four (4) 8 ft. x 10 ft. culverts is proposed for the southernmost crossing. Similarly, a pre-cast box culvert with five (5) 8 ft. x 12 ft. culverts is proposed for the Kauaula Stream crossing.

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In addition, the biological, chemical, and hydrologic characteristics of these drainageways will be included as necessary, in the technical studies which will be prepared in connection with the permitting and design phases for the proposed drainageway crossings.

Coordination with the U.S. Department of the Army, Corps of Engineers (COE) has indicated that Nationwide permits will likely be required for the construction of the proposed structures.

In addition, a 200-foot grade-separated overpass on Lahainaluna Road is also proposed where the Bypass traverses existing Ikena Avenue.

To ensure that adjoining and downstream properties are not adversely affected by runoff generated by the proposed project, drainage system improvements for the Modified Project will be designed in accordance with applicable regulatory design criteria.

To ensure conformance with these standards, construction plans and related documentation (e.g., Drainage Reports, Soil and Erosion Control Plans, Best Management Practices) will be prepared during the project's final design phase and distributed to appropriate governmental agencies for review and approval. In addition, the Best Management Practices will be utilized to ensure that the construction of the Bypass and the drainageway crossings do not adversely impact marine resources and coastal water quality.



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The HDOT will comply with all applicable governmental permit requirements (e.g., Department of the Army, Section 401 Water Quality Certification, National Pollutant Discharge Elimination System) pertaining to construction activities, stormwater runoff, and water quality.

The construction of the Bypass, Kaanapali Connector and Lahainaluna Road-Bypass Access will require clearing, excavation and filling along the roadway rights-of-way. Inasmuch as erosion from the construction area may impact downstream coastal waters, appropriate erosion control measures will be taken during the construction phase of the project. Measures will include temporary and permanent slope stabilization through grassing and landscaping. Such grassing would be implemented immediately after grading work has been completed. Other measures which would be considered during the design phase of the project would include the following:

1. Use of temporary berms and cut-off ditches to improve control of surface runoff;
2. Use of sedimentation basins, filter fabric barriers, and sedimentation dams;
3. Early construction of drainage control features which would control diversion and discharge of surface runoff; and
4. Minimizing area and time of exposure of open areas during construction.

To minimize any potential impacts related to construction activity, construction will be limited to dry periods in drainageway areas. In addition, a Drainage Report and Soil Erosion Control Plan, as well as Best Management Practices will be prepared in connection with

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the project's final design phase to ensure that construction activities do not adversely impact downstream and adjacent properties, as well as marine and coastal resources.

Potential nonpoint pollution sources associated with construction activities include pesticides (insecticides, fungicides, herbicides), fertilizers (for vegetative stabilization), petrochemicals (oils, gasoline, asphalt degreasers), and construction chemicals (concrete products, sealers, paints; wash water related to these products).

The construction site soil erosion and sediment control measures, as well as the nonpoint pollution control measures described in the Guidance for Specifying Measures for Sources of Nonpoint Pollution Control in Coastal Waters (U.S. Environmental Protection Agency, 1993) will be considered during the project's final design phase to ensure that appropriate mitigative measures are implemented during construction, as well as along the roadway, at intersections, and related facilities when construction is completed.

While the Bypass will be located mauka (east) of the proposed Natural Resources Conservation Service (NRCS) diversion channel, the roadway will not divert flows away from the channel. Runoff generated mauka (east) of the Bypass will "pass" through the roadway via culverts, and will be captured and conveyed by the NRCS channel.

Coordination with the NRCS has been undertaken to discuss the design and capability of its stormwater conveyance facility to

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handle additional runoff loads generated by the Bypass.

3. **Flora and Fauna**

For the most part, the Modified Project alignment, the Kaanapali Connector and the Lahainaluna Road-Bypass Access will fall within former sugar cane cultivation areas. Site work for the proposed roadway improvements will involve excavation and embankment within the roadway right-of-way, as well as clearing, grubbing, and grading activities. As such, the removal of existing vegetation is not considered an adverse impact to the natural environment. Upon completion of grading, all exposed areas will be grassed as required and a solid waste management plan will be prepared for the disposal of cleared vegetation.

When compared with the Base Project alignment, approximately 65 additional acres of agricultural lands would be affected by the Modified Project alignment and the Kaanapali Connector and the Lahainaluna Road-Bypass Access. The requirement for this additional acreage is not anticipated to adversely impact the area's fauna and avifauna population.

As indicated in the FEIS for the Base Project alignment, there were no rare, endangered, or threatened species of flora or fauna in the project vicinity. See Appendix E. In addition, coordination with the U.S. Fish and Wildlife Service has also revealed that there are no Federally protected species that occur within the Honokowai Extension alignment or Base Project alternative alignments (see Appendix E-1) and the Launiupoko Extension alignment (see Appendix E-2).

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As noted in Appendix E and Appendix E-1, although the Federally endangered plants *Gouania hillebrandii* and *Spermolepis hawaiiensis* are located to the east of the proposed Lahainaluna Road Bypass Access and the Hawaiian Hoary Bat, which is also listed as endangered, has been sighted in the vicinity of Puunoa Point, the U.S. Fish and Wildlife Service does not anticipate any adverse effects to these species as a result of the proposed project improvements.

In addition coordination with the U.S. Fish and Wildlife Service concerning an updated list of species within the Modified Project area did not reveal any rare, threatened, or endangered aquarian species within these sections. Refer to Appendix E-1 and Appendix E-2.

4. **Air Quality**

**Short-Term Impacts:** Short-term direct and indirect impacts on air quality from the project are generic to nearly any type of project involving construction. For a project of this nature, there are two (2) potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from demolition work and from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. See Appendix F.

Indirectly, potential short-term impacts could also be attributed to slow-moving construction equipment traveling to and from the project area, and from a temporary increase in local traffic conditions caused by commuting construction workers.

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Fugitive dust emissions may arise from earthwork operations related to site preparation.

Adequate fugitive dust control of active construction areas can usually be accomplished by the establishment of a frequent watering program. In sensitive or dust-prone areas, limiting the area that can be disturbed at any given time and/or using wind screens may also be required. Wind erosion of inactive areas can be controlled by mulching or by the use of chemical soil stabilizers.

In construction areas, dust generated by haul trucks tracking dirt onto paved streets from unpaved areas can be alleviated by tire washing and road cleaning operations. During transport, open-bodied trucks carrying wind-erodible materials are required to comply with statutes governing erosion and spillage. Establishing landscaping early in the construction schedule can also lower the potential of fugitive dust emissions.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxide emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, should be relatively low compared to vehicular emissions on nearby roadways.

**Long-Term Impacts of the Project:** Upon the completion of the

proposed Bypass, long-term impacts associated with motor vehicle exhausts could potentially occur, with carbon monoxide emissions being the primary concern.

Carbon monoxide is the most abundant air pollutant component contained in vehicle exhaust.

To assess the long-term impact of carbon monoxide emissions, an emission burden analysis was prepared. Refer to Appendix F. This analysis attempts to quantify emissions occurring within a specified route by considering corridor length, average daily traffic volumes, average travel speed, and Environmental Protection Agency (EPA) emission factors. Average daily traffic volumes and average travel speeds are shown in Table 12.

**Table 12**

<b>AVERAGE DAILY TRAFFIC VOLUME AND AVERAGE TRAVEL SPEED COMPARISON - HONOAPIILANI HIGHWAY/LAHAINA BYPASS</b>				
<b>Year</b>	<b>Honoapiilani Highway</b>		<b>Lahaina Bypass</b>	
	<b>Ave. Daily Traffic Volume</b>	<b>Ave. Travel Speed (mph)</b>	<b>Ave. Daily Traffic Volume</b>	<b>Ave. Travel Speed (mph)</b>
1993	38,000	30	--	--
2010 w/o Project	50,000	18	--	--
2010 w/Project	25,000	32	25,000	43

The average daily traffic volumes reflected, are the approximate values reported near the midpoint of the highway corridor. The

average travel speeds indicated are the means of the northbound and southbound values for the afternoon peak hour.

EPA emission factors, based on the average travel speeds shown above, were obtained from MOBILE5A, a computer-generated emission model. Aside from vehicle speed, other key inputs such as vehicle mix, and cold- and hot-start fractions, were required by the model.

Based on recent vehicle registration statistics, the present and projected vehicle mix in the project area is estimated to be 91.9 percent light-duty gasoline-powered vehicles, 5 percent light-duty gasoline-powered trucks and vans, 0.5 percent heavy-duty gasoline-powered vehicles, 0.6 percent light-duty diesel powered vehicles, 1 percent heavy-duty diesel-powered trucks and buses, and 1 percent motorcycles.

The resulting emission factors produced by the MOBILE5A model in terms of grams per vehicle miles of carbon monoxide are reflected in Table 13.

**Table 13**

<b>CARBON MONOXIDE EMISSION FACTOR (Grams Per Vehicle Mile)</b>			
	<b>1993</b>	<b>2010 w/o Project</b>	<b>2010 w/ Project</b>
Honoapiilani Highway	20.8	29.7	15.4
Lahaina Bypass	--	--	10.3

For any given vehicle speed, the attrition of older, pollution-generating vehicles leaving the State's roadways is projected to result in generally lower emission factors for the future. Emission factors are inversely proportional to vehicle speed; consequently, the estimated emission factor for Honoapiilani Highway in the year 2010 without the project is higher than the 1993 emission factor. This is due to the projected lower travel speeds for this scenario. With the project in the year 2010, improved travel speeds and emission controls combine to produce a lower emission factor for traffic on Honoapiilani Highway. As illustrated above, travel speeds on the proposed Bypass would be higher than for Honoapiilani Highway; consequently, a lower emission factor is applicable for traffic on the Bypass.

Based on the calculated emission factors and the current and projected traffic volumes both for Honoapiilani Highway and for the proposed Bypass, annual emissions of carbon monoxide were estimated for: (1) existing (1993) conditions; (2) 2010 without the project; and (3) 2010 with the project. See Table 14.

**Table 14**

<b>CARBON MONOXIDE EMISSIONS (Tons Per Year)</b>			
	<b>1993</b>	<b>2010 w/o Project</b>	<b>2010 w/ Project</b>
Honoapiilani Highway	2100	3900	1000
Lahaina Bypass	—	—	700
<b>TOTAL</b>	<b>2100</b>	<b>3900</b>	<b>1700</b>



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In the year 2010, traffic proceeding on Honoapiilani Highway without the project would experience carbon monoxide emissions twice that of 1993 levels. With the project, the total emissions from traffic traveling on both Honoapiilani Highway and the proposed Bypass would be approximately 20 percent less than current (1993) levels.

Based on the results of the emission burden analysis, the proposed Bypass is likely to have a net beneficial effect on long-term air quality in the project area by lowering total emissions along the highway. Area-wide emissions of carbon monoxide with the project in the year 2010 would likely be lower compared to 1993 emissions; and substantially lower compared to the 2010 "status-quo" scenario. In addition, the Bypass would dilute both traffic and air pollution by moving traffic along two (2) routes instead of one (1), and reduce the potential for human exposure to vehicle emissions by routing traffic through the less populated mauka (east) areas.

The Kaanapali Connector, Lahainaluna Road Bypass-Access, and the extension of the Bypass to Honokowai and Launiupoko cross lands which were formerly engaged in sugar cane cultivation. On a short-term basis, ambient air conditions would be temporarily affected by construction and construction-related activities. However, these impacts will be mitigated through the implementation of appropriate dust and emission control measures. From a long-term perspective, vehicle emissions would be reduced by providing an alternate travel route which would direct traffic through the unpopulated areas mauka (east) of the existing

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Honoapiilani Highway.

It should be noted that the State of Hawaii is in attainment of the National Ambient Air Quality Standards. Accordingly, an air quality conformity determination will not be required.

**5. Noise Impacts**

**Short-Term Impacts:** Short-term noise impacts associated with new construction activities along the Modified Project alignment, Kaanapali Connector and Lahainaluna Road-Bypass Access may occur. These impacts can occur as a result of the short distances (less than 100 feet) between existing noise sensitive receptors and the anticipated construction sites, particularly along Ikena Avenue. However, 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 decibels (dB) at 50 feet distance. Refer to Appendix D. Impacts from construction noise are not expected to adversely affect public health and welfare due to the temporary nature of the work. 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 receptors can intermittently exceed 90 dB when work is being performed at close distances in front of these structures. Along the major portion of the Modified Project alignment, distances between the construction sites and

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receptors are expected to be greater than 100 feet, and construction noise levels should generally be below 80 dB or inaudible. Construction noise impacts on noise sensitive receptors along the Modified Project alignment will be minimized by limiting work to normal daylight work hours.

**Long-Term Impacts:** The long-term noise impacts along the modified alignment sections, as well as along Ikena Avenue, were evaluated. The reevaluation of noise impacts along Ikena Avenue was conducted to address changes in future traffic forecasts (horizon year 2010) and proposed modification to the roadway profile through this segment of the Bypass.

Expected noise levels along the Bypass for the year 2010 were estimated, as presented in Table 15.

The following general conclusions can be made with respect to the potential increases in traffic noise levels resulting from the Modified Project alignment.

1. Traffic noise levels will probably exceed the FHWA criteria of 67 decibels ( $Leq(h)$ )<sup>a</sup> along some sections of the highway right-of-way through the proposed North Beach Mauka and Lahaina Master Planned Community projects.<sup>b</sup> At noise sensitive locations within the South Beach Mauka project, traffic noise levels from the Bypass Highway are not expected to exceed 57 decibels ( $Leq(h)$ ).

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<sup>a</sup>  $Leq(h)$  = Equivalent or average hourly sound level.

<sup>b</sup> The criterion of 67 decibels ( $Leq(h)$ ) applies to picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, churches, libraries and hospitals.

Table 15

YEAR 2010 TRAFFIC NOISE LEVELS ALONG MODIFIED BYPASS ALIGNMENT (PM PEAK HOUR AND 100 FEET FROM ROADWAY CENTERLINES)						
Approximate Location	Speed (MPH)	(VPH)	Hourly LEQ in Decibels			
			Auto	Medium Trucks	Heavy Trucks	All Vehicles
Bypass: Honokowai to Hanakao'o	50	2,359	63.5	57.0	61.3	66.1
Bypass: Hanako'o to Lahaina Civic Center	50	2,623	64.0	57.4	61.8	66.6
Bypass: Lahaina Civic Center to Kahoma Stream	50	2,887	64.3	60.3	62.2	67.4
Bypass: Ikena Avenue to South of Lahainaluna Road	50	1,703	62.0	58.0	59.9	65.1
Bypass: South of Lahainaluna Road to Puamana	50	1,208	60.5	55.9	59.9	64.0
Bypass: Vicinity of Puamana Terminus	47	2,396	62.5	58.0	62.2	66.1
Kaanapali Connector: Vicinity of Lahaina Civic Center	50	853	59.0	55.0	56.9	62.1
Lahainaluna Road-Bypass Access: Vicinity of Lahainaluna Road	30	670	49.5	45.8	51.9	54.5

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2. Traffic noise levels in the yards of the first row of existing residences mauka (east) of Ikena Avenue are predicted to be approximately 63 to 67 decibels (Leq(h)). At those residences makai (west) of Ikena Avenue, traffic noise levels are predicted to be slightly less, at 55 to 67 decibels (Leq(h)). This reduction is due to noise shielding effects from the highway cut along Ikena Avenue and to partial shielding of the elevated highway sections. The year 2010 traffic noise levels are higher than those originally predicted (in the FEIS) along Ikena Avenue due to the higher average speed (50 mph vs. 40 mph) assumed along the Bypass. Higher speeds are attributed to the replacement of the at-grade intersection at Lahainaluna Road with a grade-separated crossing.

3. Pursuant to Federal Highway Administration (FHWA) criteria, the consideration of noise abatement is required when noise levels approach or exceed 67 dB (Leq(h)). For purposes of implementing noise mitigation, the State of Hawaii, Department of Transportation (HDOT) has recently adopted an interim definition of "substantial increase" as that which is greater than 15 dB. Refer to Appendix D.

In this regard, noise impacts resulting from the completion of the Bypass are anticipated to affect the existing Ikena Avenue residences which will front the future Bypass right-of-way. Measurements of existing background ambient noise levels for Ikena Avenue residences fronting the Bypass right-of-way were obtained in May 1995 in order to

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determine appropriate noise mitigation measures. Refer to Table 5 in Appendix D. The existing background ambient noise levels for the residences anticipated to be impacted by future traffic noise ranges from 42 to 55 dB (Leq(h)) during the daytime. Accordingly, for future traffic noise levels to exceed the HDOT's 15 dB standard of "substantial increase", the traffic noise levels would need to be equal to or greater than 57 dB (Leq(h)) at the quietest of residences.

4. Existing and future noise level measurements at noise sensitive receptor locations along Ikena Avenue, including the use of various combinations of sound-attenuating walls, are reflected in Tables 6A through 6D and Figure 42 in Appendix D.

Future traffic noise levels were forecast in the middle of the yards between the future rights-of-way and the residences for receptor heights of five (5) feet above ground level. As indicated in the Tables 6A through 6D in Appendix D, future traffic noise levels without noise mitigation measures are not anticipated to exceed the FHWA standard of 67 db (Leq(h)), but are expected to exceed the Federal Home Administration (FHA) and Housing and Urban Development (HUD) standard of 65 Ldn at some residences fronting the makai (west) right-of-way. The increases in future traffic noise levels are also expected to exceed the HDOT's 15 dB "substantial increase" standard at some of the quieter locations along the northern section of Ikena Avenue and along the two (2) cul-de-sacs mauka (east) of Ikena Avenue.

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A combination of 6- and 8-foot sound attenuating walls along Ikena Avenue will be required to meet the HDOT's 15 dB standard. See Figure 43 in Appendix D. In addition, a 6-foot high wall section is shown along the south section of the makai (west) right-of-way to reduce traffic noise levels below the FHA/HUD standard of 65 Ldn. Depending on the height of the walls, the estimated cost of implementing these improvements by the HDOT is estimated to range from approximately \$420,000.00 to \$475,000.00. These recommended mitigation measures are similar to those developed during earlier evaluations of potential noise impacts along Ikena Avenue. It should be noted that these recommended measures differ in adjustments to wall heights and locations due to the forecasted changes in highway noise levels along the modified alignment, as well as the implementation of the HDOT's 15 dB standard.

It should be noted that the mitigation measures shown in Figure 43 in Appendix D, will result in unavoidable noise impacts since they will not reduce traffic noise levels at second floor receptor locations of the 2-story homes reflected in Figure 43 in Appendix D. For these second floor rooms, closure and air conditioning is the recommended noise mitigation measure.

5. The future noise sensitive land uses which are planned along the Modified Project alignment represent areas of potential adverse noise impacts if adequate noise mitigation measures are not incorporated into the planning of these

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projects. It is anticipated that the Modified Project will be designed and developed concurrently or prior to the development of lands adjacent to the highway. Accordingly, noise abatement measures, such as adequate setbacks, sound attenuating walls or berms, or closure and air conditioning should be incorporated in the future developments along the Modified Project. The predictions of highway noise levels versus distance from the centerline of the Bypass Highway, as presented in Appendix D, may be used to assist developers in providing the necessary setbacks to the Bypass Highway.

In general, the increase in noise levels along the Bypass (attributed to higher traffic volumes) is approximately 1.1 to 2.0 decibels (Leq(h)), and is barely discernable to the human ear.

It is also noted that the Modified Bypass alignment will result in a redistribution of future traffic and traffic noise from the existing highway to locations inland (to the east). This redistribution will minimize future traffic noise impacts along the existing Honoapiilani Highway.

6. Based on traffic study results, PM Peak Hour traffic volumes along the proposed Kaanapali Connector for the year 2010 is estimated to be 853 vehicles per hour. Assuming an average speed of 50 miles per hour and utilizing projected vehicle distribution rates, estimated peak hour noise levels at 218 feet from the roadway's centerline are not anticipated



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to have any adverse noise impacts. As a result, noise mitigation measures are not required. Refer to Appendix D-1.

7. Estimates of projected traffic volumes along the proposed Lahainaluna Road-Bypass Access during the PM Peak Hour are not expected to exceed 670 vehicles per hour in the year 2010. Using projected vehicle distribution rates and assuming an average speed of 30 miles per hour, no readily apparent adverse noise impacts are anticipated at a distance of 68 feet from the roadway's centerline. Accordingly, noise mitigation measures are not required.

Traffic and noise levels along the makai section of Lahainaluna Road are anticipated to decrease as traffic originating from and proceeding to, the mauka sections of Lahainaluna Road utilize the Lahainaluna Road-Bypass Access. Therefore, traffic noise levels and impacts connected with the Bypass Access are not anticipated.

As previously noted, the Kaanapali Connector, Lahainaluna Road-Bypass Access, and the extension of the Bypass to Honokowai and Launiupoko traverse lands which were formerly utilized for sugar cane cultivation. From a short-term perspective, ambient noise conditions would be affected by construction activities. These effects, however, are temporary and will be addressed through appropriate noise control measures. On a long-term basis, traffic noise along the existing Honoapiilani Highway would be decreased

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as the Bypass will provide an alternate travel route which would convey traffic through the unpopulated areas mauka (east) of the existing highway.

6. **Scenic and Open Space Resources**

The proposed project will displace a total of approximately 65 acres of additional agricultural lands formerly engaged in sugar cultivation. As an at-grade roadway facility, the proposed Bypass will not adversely impact the scenic and visual character of the surrounding open agricultural lands. The Modified Project alignment is located mauka (east) of existing urbanized areas and does not encroach into scenic coastal view corridors. The Kaanapali Connector and Lahainaluna Road-Bypass Access will also displace lands formerly engaged in sugar cultivation. These roadways are not anticipated to have any adverse effects on the scenic coastal views or open space characteristics of the surrounding land areas.

7. **Section 4(f) Properties**

Section 4(f) policy was enacted by the Department of Transportation Act of 1966 and applies to agencies and programs of the U.S. Department of Transportation (U.S. DOT), including the Federal-Aid Highway Program.

Under the provisions of Section 4(f), the U.S. DOT may approve a transportation program or project which requires the use of publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge, or land of any historic site of national, State, or local significance only if there is no prudent and feasible alternative to using that land, and that the program or project includes all

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possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from its use. Properties reviewed in terms of Section 4(f) criteria are reflected in Appendix B.

In addition to Section 4(f) properties identified in the FEIS, other properties warranting Section 4(f) consideration include the historic sites located during the archaeological inventory survey of the modified corridor's extension alignment. Refer to Appendix C and Figure 23.

The following summary provides an overview of Section 4(f) reviews associated with the Modified Project alignment.

a. **Kelawea Mauka Park**

As a result of the roadway profile modification at Ikena Avenue and the proposed development of the Lahainaluna Road-Bypass Access, potential proximity impacts to Kelawea Mauka Park were examined.

Coordination with the County of Maui, Department of Parks and Recreation (DPR) was undertaken to assess the effect the profile modification would have on Kelawea Mauka Park. In correspondence dated July 13, 1995, the DPR provided the HDOT with comments and recommendations concerning potential impacts to Kelawea Mauka Park relating to parking and safety requirements, pedestrian and park maintenance access, and water service. See Appendix G. In correspondence dated February 26, 1996, the HDOT

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expressed its commitment toward implementing the recommendations of the DPR to mitigate proximity impacts to Kelawea Mauka Park. See Appendix G-1. This commitment adequately addresses the DPR's concerns relating to the development of the project, as well as mitigate any concerns relating to proximity impacts to the park. In this regard, the provisions of Section 4(f) are not considered applicable.

Located approximately 900 feet west of Kelawea Mauka Park, the development of the Lahainaluna Road-Bypass Access is not anticipated to result in any proximity impacts to the park. Accordingly, the provisions of Section 4(f) are not considered applicable.

**b. Archaeological Sites**

Several pedestrian and archaeological inventory surveys were conducted in conjunction with the modified project alignment. The project area encompassed by the first archaeological inventory survey addressed the Modified Project alignment and consisted of a seven (7) mile long, 200 foot wide mauka (east) corridor originating north of Honokowai Point and extending to a terminus south of Launiupoko Wayside Park. Refer to Appendix C. A pedestrian survey was also conducted due to modifications involving the relocation of the project's former southern terminus to a point immediately south of Puamana Park. Refer to Appendix C-1. Subsequent project modifications and archaeological surveys involved the project area

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encompassed by the Kaanapali Connector and the Lahainaluna Road-Bypass Access. Refer to Appendix C-2. Upon the completion and filing of these reports, the State Historic Preservation Division (SHPD) reviewed and accepted the findings, conclusions, and recommendations established by the project's archaeological consultant. See Appendices C-3 to C-5.

The initial archaeological inventory survey identified two (2) State Inventory of Historic Places (SIHP) sites within the Bypass alignment, and two (2) SIHP sites adjacent to, but beyond the area of potential effect. Four (4) additional SIHP sites, situated beyond the area of potential effect, were also located in the general project area. Table 16 summarizes the archaeological features noted at Sites 2484, 2489, 2490 and 2847.

Of the four (4) sites identified within or adjacent to the present project corridor, all are assessed as important for information content. One (1) of the four (4) sites, Site 2490 within Hahakea Gulch, is a good example of a site type, as the site includes relatively well-preserved habitation features. Additionally, one (1) site is also provisionally assessed as culturally important (Site 2489) since at least one (1) burial may be present. There were no archaeologically notable artifacts or sites located within the alignments of the Kaanapali Connector and the Lahainaluna Road-Bypass Access.

Table 16

SUMMARY OF FEATURE TYPES PRESENT IN VICINITY OF BYPASS ALIGNMENT							
Site	Feature	Agri. Terrace	Encl.	Habitation Terrace	Boundary Wall	Path	Burial Mound
2847	A	0	1	0	0	0	0
	B	0	0	0	1	0	0
	C	0	0	0	1	0	0
2489	A	7	0	0	0	1	0
	B	5	0	0	0	0	1*
	C	3	0	1*	0	0	0
	D	3	0	0	0	0	0
	E	1	0	0	0	0	0
2490	A	0	0	1*	0	0	0
	B	0	1	0	0	0	0
	C	0	0	1	0	0	0
2484		0	1	0	0	0	0
<b>TOTALS</b>		<b>19</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>

Source: See Appendix B-1. (\*= provisional, pending results of recommended additional data collection work).

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Originally identified within the Bypass alignment, Site 2847 consists of a complex of walls and is situated at the terminus of a ridge separating two (2) branches of Honokowai Stream. Site 2847 was determined to be important for information content only and recommended for data recovery.

The corridor in the vicinity of Site 2847 was subsequently realigned and no longer impacts this site. As a result, a proposal from the project's archaeological consultant recommended a change in the form of mitigation from data recovery to preservation and avoidance. See Appendix C-6. In addition, archaeological monitoring and the erection of orange protective fencing between the site and the project corridor were also recommended as mitigative measures during construction activities.

In correspondence dated June 2, 1994, the SHPD responded by indicating that there were no objections to the proposal. See Appendix C-7. Accordingly, the implementation of the recommendations contained in the proposal would result in the project having "no adverse effect" on Site 2847.

Site 2484 was also identified within the Bypass alignment and consists of a partial rock enclosure or L-shaped wall on the southerly, sloping land above Kahoma Stream gulch. Based on National Register evaluation criteria, Site 2484 is considered notable for information content only.

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Accordingly, a proposed data treatment plan was prepared by the project's archaeological consultant and submitted to the SHPD to guide further data recovery operations for Site 2484. See Appendix C-8.

In addition, the treatment plan also specified preservation through avoidance for Sites 2485, 2487, 2489, 2490, 2491 and Puukolii Cemetery. Sites 2489 and 2490 are situated adjacent to, but beyond the area of potential effect, while sites 2485, 2487, 2491 and Puukolii Cemetery are located in the general project area, but outside the area of potential effect. Refer to Appendix C-8.

In correspondence dated June 2, 1994, the SHPD indicated that the data recovery plan was acceptable. See Appendix C-9. As such, the implementation of data recovery for Site 2484 and the preservation of Sites 2487, 2489, and 2490 would result in the project having "no adverse effect" on these historic sites.

In a letter dated April 29, 1996, the U.S. Department of the Interior recommended that continued coordination with the SHPD be continued in order to prepare a Memorandum of Agreement (MOA). The MOA would include measures to avoid or mitigate impacts to archaeological and historic resources which may be impacted by the proposed project.

In correspondence dated August 21, 1996, the SHPD indicated that a MOA will not be required since the



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implementation of the approved mitigation plans will ensure that there will be no adverse effect to archaeological and historic sites within the Modified Project corridor. See Appendix C-10.

It should also be noted that should any human burials or cultural artifacts be inadvertently encountered during earth moving activities, work will immediately cease in the area of the find and the SHPD will be promptly and appropriately notified to formulate appropriate mitigative measures.

In light of the levels of significance of the various sites and the proposed mitigation of these sites, the provisions of Section 4 (f) are not considered applicable.

8. **Agriculture**

As indicated in the FEIS, the Base Project alignment proposed utilizing approximately 99 acres of agricultural lands for the Bypass right-of-way. The proposed new Bypass alignment will require the removal of approximately 65 additional acres of agricultural lands from production (when compared with the Base Project alignment), including approximately eleven (11) acres for the Kaanapali Connector and the Lahainaluna Road-Bypass Access. This acreage represents about one (1) percent of the 6,700 acres Pioneer Mill Company, Ltd. previously utilized for cultivation.

For the Modified Project, the fiscal loss to the County of Maui in real property taxes for the removal of agricultural lands from production is estimated to be approximately \$300.00 annually. The

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assessed value of Pioneer Mill's lands that are dedicated to agricultural use is \$367 per acre. Property taxes for these lands are then computed utilizing a tax rate of \$4.75 per thousand dollars of assessed value (L. Okumura, County of Maui, Real Property Division, December 24, 1998).

As previously indicated, Pioneer Mill formerly cultivated most of its 6,700 acres with sugar cane. However, with the closure of its sugar cultivating operations at the end of 1999, Pioneer Mill is considering further agricultural diversification by examining other commercial crops and agricultural enterprises, such as table corn, pasture leasing, bio-mass fuel production, and Ag Park development and management. Kaanapali Estate Coffee continues to contribute to agriculture with its coffee production; for 1999, the coffee crop was estimated to yield about 375,000 pounds (Maui News, March 19, 1999).

The use of the additional 65 acres of agricultural lands for the Modified Project is not anticipated to affect lands available for diversified agricultural use. Further coordination between the HDOT and Pioneer Mill will be undertaken during the project's final design phase to ensure that the Modified Project will not adversely affect Pioneer Mill's agricultural operations and facilities.

**B. SOCIO-ECONOMIC IMPACTS**

Based on an assessment of the demographics and characteristics examined in Chapter III regarding environmental justice, no minority or low-income populations have been identified that would be adversely affected by the proposed project. Executive Order 12898 regarding

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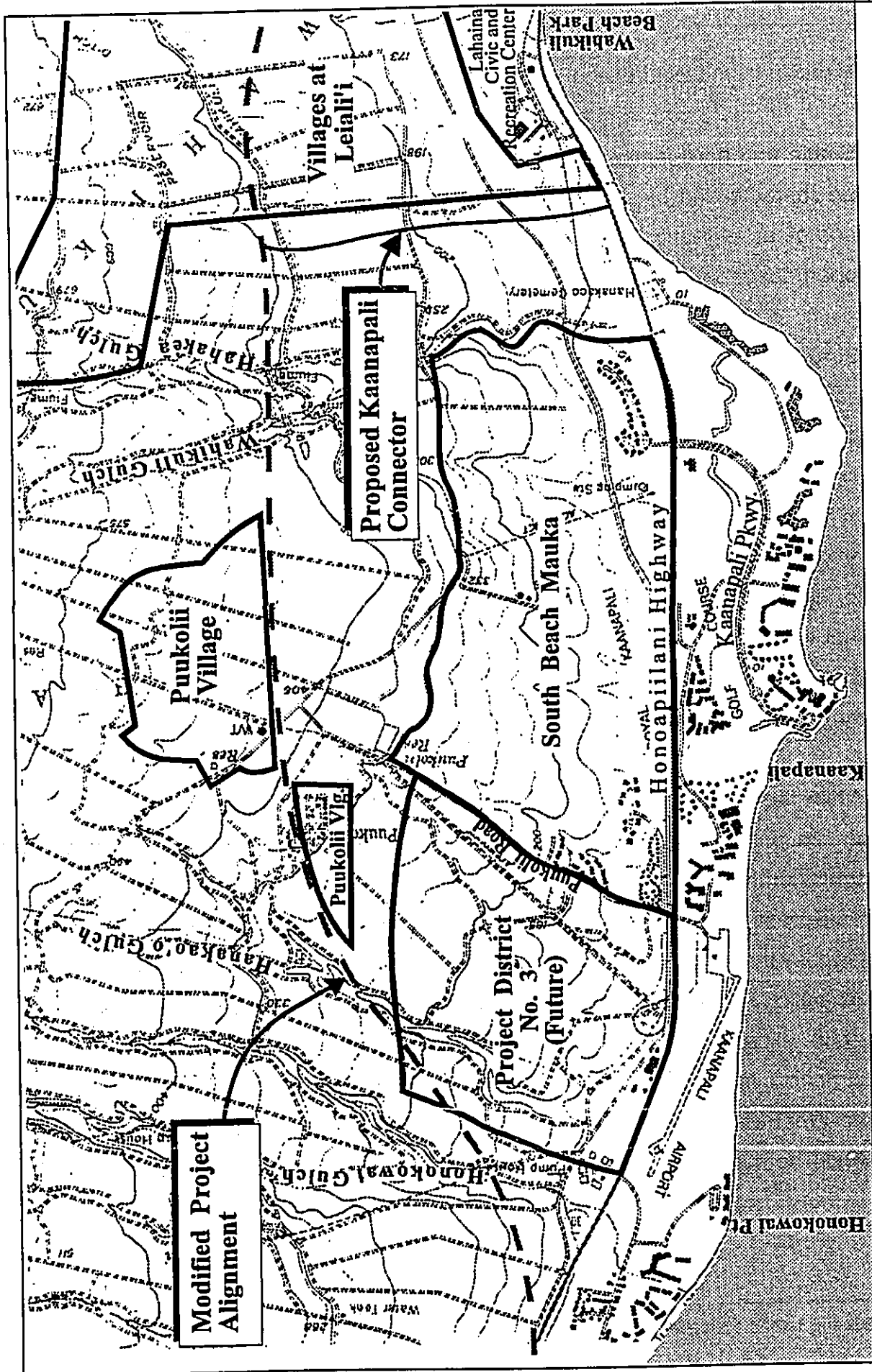
environmental justice has been satisfied. In addition, the HDOT and FHWA have complied with the provisions of Title VI of the Civil Rights Act, which provides that no person, because of race, color, religion, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

**C. LAND USE IMPACTS**

The proposed Bypass extension to Honokowai and Launiupoko will place the roadway through existing agricultural lands, mauka (east) of existing developed urban land areas. However, in terms of proposed land uses, the Bypass will traverse the Villages at Leiali'i (refer to Figure 19 in Chapter III) and Puukoolii Village (see Figure 26) serving as a critical transportation element of these master planned residential communities. The modified alignment has been coordinated with the master planning efforts of the HCDCH and Amfac/JMB Hawaii, and therefore has been established as a transportation element consistent with the overall land use plan for these projects.

In addition to the Villages at Leiali'i, the proposed Bypass will traverse a small portion of Project District No. 3, also known as North Beach Mauka. Refer to Figure 26. Project District No. 3 is located mauka (east) of Honoapiilani Highway and encompasses approximately 310 acres of land situated at the northern extent of the Kaanapali Resort.

According to the West Maui Community Plan, the project district will include a mixture of residential and visitor-oriented residential, commercial and recreational uses. A visitor-oriented commercial center will be the focal point of a village nucleus which will utilize elements of traditional



**Figure 26** Lahaina Bypass Modifications  
 Proposed Land Uses in Proximity to the Modified  
 Project Alignment and Kaanapali Connector



Prepared for: State of Hawaii, Dept. of Transportation

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Hawaiian architecture and urban design.

Single and multi-family dwellings within the 1,200 unit project district will be characterized by a variety of designs and types. Parks, gardens, golf and other recreational activities and amenities will be included to provide open space within the project district.

Since the proposed Modified Project alignment will traverse the northeast sector of the Project District, planning for the project's overall land use master plan will need to incorporate the proposed Bypass route.

In addition to Project District No. 3, the Bypass alignment will lie in proximity to Amfac/JMB Hawaii, Inc.'s South Beach Mauka project. Refer to Figure 26. The proposed Bypass will be located approximately 2,000 feet west of the South Beach Mauka project limits. The 171-acre South Beach Mauka project is expected to provide approximately 343 single-family residential units.

While the intervening areas between the Bypass and the South Beach Mauka project and Project District No. 3 are designated for continued agricultural use by the Community Plan, the spatial relationship between the Bypass and Project District No. 3 and South Beach Mauka sites would suggest that in the long-term, these areas would be suitable for urban expansion. This suggestion is based on historical trends which place urban expansion areas generally along major coastal transportation corridors. In this regard, land use policies for the region are governed by the West Maui Community Plan, and any amendment to these policies would be subject to full governmental regulatory review processes.

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The Bypass extension will bisect lands of Amfac/JMB Hawaii, Inc.'s proposed Puukolii Village master planned community. Refer to Figure 26. The Puukolii Village development, consisting of nearly 299 acres, is proposed to be developed for approximately 1,700 affordable and market priced residential units and two (2) commercial areas. Also included are sites for an elementary school, community park, emergency/trauma clinic, elderly housing area, lifecare facility, and day care and community centers. In establishing the proposed Puukolii Village master plan, the alignment of the Bypass extension was incorporated in the project's land use planning.

It should be noted that coordination between the HDOT, Amfac/JMB Hawaii, Inc. and the HCDCH, as well as other governmental agencies, was undertaken during the project planning and review phases for the development. During this process, agencies were consulted for early input, asked to review and comment on the proposed project, and established compliance requirements for the development of the projects.

It is noted that while existing plans and approved land use designations recognize the Puukolii Village and Project District No. 3 planned development areas, more recent efforts to address regional planning requirements have been considered by Kaanapali 2020, a community-based planning process. Kaanapali 2020 involved community, governmental and landowner participants to develop a preliminary land plan for more than 4,000 acres in the vicinity of Kaanapali, including the previously approved Puukolii Village area and the proposed Project District No. 3. An open space corridor coinciding with the Bypass alignment is recognized on the preliminary land plan. Inasmuch as the Kaanapali 2020 is an ongoing process, coordination between HDOT and

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the appropriate process committees will be undertaken to ensure that land planning and bypass implementation considerations are fully addressed.

The lands underlying the proposed Bypass alignment, Kaanapali Connector, and Lahainaluna Road-Bypass Access were formerly utilized for sugar cultivation. The Kaanapali Connector will traverse approximately nine (9) acres of agricultural lands, while the Lahainaluna Road-Bypass Access will encompass an additional two (2) acres.

According to the West Maui Community Plan land use map, the Bypass alignment, Kaanapali Connector, and Lahainaluna Road-Bypass Access, will traverse lands which are largely designated for Agricultural use. The displacement of these additional agricultural lands is not anticipated to adversely impact the economic viability of Pioneer Mill's diversified agricultural operations.

Displaced Ikena Avenue residents will be relocated to a recently developed residential subdivision. In April 1991, the HDOT and the HCDCH executed a Memorandum of Agreement whereby the HCDCH advanced all costs incurred in the development of a sixteen (16) lot subdivision for Ikena Avenue residents displaced by the proposed Bypass. In return, the HDOT agreed to reimburse HCDCH for all costs incurred. The Agreement was subsequently amended in December 1993 to increase the original number of lots to 24 in order to accommodate residents who may be required to relocate as a result of future HDOT projects. Located approximately 0.2 mile to the east of Ikena Avenue, the eight (8) acre subdivision was completed in late 1994 and consists of lots ranging in size from approximately 8,700 to 13,300 square feet. It should be noted that the displaced Ikena Avenue residents will be able to

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purchase these lots at discounted prices reflective of the subdivision's development costs.

The subdivision file plan was recorded with the State Bureau of Conveyances on August 10, 1997. The deeds for the subdivided lots were reviewed by the State Attorney General, and conveyance (to interested displaced Ikena Avenue residents) commenced during the summer of 1998. To date, ten (10) homes have been built on the lots within the subdivision and two (2) are currently under construction (M. Okimoto, Department of Transportation, March 5, 2001).

**D. PUBLIC SERVICES**

The proposed project modifications are not anticipated to affect service capabilities of police, fire and emergency medical operations. The Bypass is anticipated to improve the level of service for traffic operations compared to the Base Project and is also projected to improve travel time characteristics along the Bypass.

**E. IMPACTS TO TRAFFIC**

As with the Base Project, traffic disruption during construction is likely to be experienced along segments of the Bypass which interface with existing roadways. These areas include the end points of the Bypass where the proposed roadway connects to the existing Honoapiilani Highway near Launiupoko Point and at Honokowai. Additionally, traffic disruptions due to construction may be experienced at the intersection of the Kaanapali Connector and Honoapiilani Highway, and at the intersection of Lahainaluna Road and the Lahainaluna Road-Bypass Access. Construction-related traffic disruptions will be temporary in nature.



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As described in the FEIS, the traffic capacities at key intersections along Honoapiilani Highway will be exceeded by the Year 2007. The projected traffic volumes estimated in the Maui Long Range Highway Planning Study indicates even higher volumes than that projected by the FEIS. In this regard, the proposed Bypass will provide a needed reliever route for the West Maui roadway users. The distribution of traffic between Honoapiilani Highway and the Bypass via the proposed connector roads is anticipated to allow for the smooth operation of the Bypass and the Honoapiilani Highway. According to the Lahaina Traffic Circulation Plan (Austin, Tsutsumi and Assoc.):

With the Lahaina Bypass Road completed, traffic originating/destined for or from locations north or south of Lahaina will no longer be on Honoapiilani Highway. This traffic, projected to be nearly 11,000 trips, will be on the Bypass Road, which reduces the traffic volume on Honoapiilani Highway through Lahaina. However, there is projected to be approximately 60,000 trips into or out of Lahaina. In addition, there are the trips that originate and terminate within the Lahaina area.

The Lahaina Bypass Road will provide a good ride for motorists whose trips originate and/or terminate on the north side of Kaanapali. Kapunakea Street will most likely be the desired ingress route into Lahaina Town for trips originating north of Kaanapali. Egress from Lahaina Town to areas north of Kaanapali will be shared by Dickenson Street to the bypass road and by Kapunakea Street.

Trips originating and/or terminating in the Kaanapali area and points south will use Honoapiilani Highway to and from Lahaina Town. An exception to this routing would be for trips to Lahainaluna High School and Intermediate School, which would utilize the Bypass road and the Dickenson Street Connector, thus avoiding Lahainaluna Road through the congested mill area.

Trips to and from areas south of Lahaina Town will use Honoapiilani Highway and the mauka/makai (east/west)

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streets, such as Shaw Street, Prison Street, Dickenson Street and the south leg of Front Street.

Generally, the existing roadway system in Lahaina will function, but delays will be experienced, especially at the Kapunakea Street intersection with Honoapiilani Highway and at the Papalaua Street intersection with Honoapiilani Highway.

Operationally, the proposed project modifications achieve the same objective (as the Base Project) of meeting the long-term regional highway system needs for West Maui residents and visitors. However, the proposed modifications provide greater flexibility in accommodating the long-term traffic needs of the region.

**F. IMPACTS TO OTHER INFRASTRUCTURE SYSTEMS**

The proposed project modifications are not anticipated to adversely impact water and wastewater systems in the West Maui region.

As noted earlier in this report, Maui Electric Co., Ltd.'s (MECO) two (2) existing 69 KV transmission lines would need to cross the Bypass in order to tie into existing substations at Lahaina and Puukolii. In addition, a third 69 KV transmission line and new Wahikuli substation are proposed to be developed by MECO in the future. As such, the design and construction of the Bypass extension to Honokowai would need to be coordinated with MECO to assure that relocation requirements (if any) of the existing two (2) transmission lines can be identified in a timely manner. Transmission line crossings at the Bypass would need to consider minimum height requirements for lines crossing the highway, as well as setbacks for transmission line poles.

MECO's proposed third 69 KV transmission line will follow an alignment

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mauka (east) of the modified bypass alignment. Transmission lines crossing the modified project alignment would need to comply with established height and setback requirements.

Finally, construction coordination would also be required with Pioneer Mill as the Bypass alignment will intersect Pioneer Mill's transmission lines which serve their facilities (e.g., pump stations) mauka (east) of the Bypass.

**G. CUMULATIVE AND SECONDARY IMPACTS**

Cumulative impacts are defined as impacts resulting from other past, present, and reasonably foreseeable future actions regardless of what agency or individual initiates such actions. In order to assess the cumulative impacts resulting from the proposed project, the West Maui Community Plan is utilized as the basis for reasonably foreseeable future development (see Chapter VIII).

The West Maui Community Plan reflects current and anticipated conditions in West Maui and advances planning goals, objectives, policies, and implementation considerations to guide decision-making in the region through the year 2010. The implementation of the goals, objectives, and policies contained in the Community Plan are defined by specific implementing actions. These implementing actions, as well as broader policy recommendations are effectuated through various processes, including zoning, capital improvements program, and the County budgeting process.

With regard to transportation, the Community Plan recommends the planning, design, and construction of a Bypass Highway to facilitate

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ingress and egress in Kaanapali and the Lahaina Town core. Within the project area, the Community Plan reflects the currently recognized proposals for residential development of Project District No. 3 (North Beach Mauka) and the Villages at Leiali'i and Puukolii Village.

Cumulative impacts resulting from the construction of the Bypass and the development of these residential projects, as well as future urban development include increased traffic, and vehicle-generated noise and emissions in the region. These impacts, however, are anticipated to be addressed through the regulatory review process. For example, the developers of projects adjoining the Bypass will be required to submit construction plans and traffic impact analysis reports (including trip generation and traffic assignment data) to the HDOT for review and approval prior to the actual development of each project phase.

The Bypass will improve traffic circulation and reduce traffic congestion by providing an alternate travel route between Launiupoko and Honokowai. In addition, the widening of Honoapiilani Highway from two (2) to four (4) lanes between Kaanapali Parkway and Honokowai has recently been completed and is anticipated to improve traffic circulation and reduce traffic congestion. The Bypass, and Honoapiilani Highway widening improvements will provide and facilitate access to communities adjoining, or within proximity to these roadways, as well as communities located to the north.

Coordination between the HDOT, HCDCH, and Amfac/JMB Hawaii, Inc., concerning appropriate mitigation measures (e.g., landscape buffers, building setbacks, sound-attenuating walls) will be continued to ensure that noise and air quality impacts attributable to the Bypass will not result

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in any adverse effects. The Bypass will also dilute traffic noise and emissions by providing an additional travel route and reduce exposure to vehicle emissions by routing traffic through the less populated inland areas. In addition, lower vehicle emissions are also anticipated primarily as a result of through traffic and higher travel speeds along the Bypass.

The development of the east-west connector roads will provide access to most of the residential communities proposed for development within the project area (e.g., Villages at Leialii, South Beach Mauka), as well as provide alternate travel routes between the Bypass and Honoapiilani Highway. Impacts associated with the connector roads include vehicle-generated noise and emissions. However, these impacts are not considered adverse and will be mitigated by utilizing appropriate measures such as landscape buffers, building setbacks, and sound-attenuating walls.

Secondary impacts associated with the development of the Bypass include the effect of induced growth in the West Maui region, as well as additional requirements for infrastructure and public services.

Future development within the project area may occur as a result of the construction of the Bypass. The development of resort hotels on lands to the west of existing Honoapiilani Highway is anticipated. Situated between Kaanapali and Honokowai, this future resort area has received the necessary regulatory approvals for development. In addition to currently designated master-planned communities within the project area, such as the Villages at Leialii, Puukoolii Village, and Project District 3 (North Beach Mauka), additional residential development could potentially occur on lands which adjoin existing urbanized areas and are currently

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designated for agricultural use.

Existing residential areas are located primarily along Honoapiilani Highway and are not anticipated to be adversely affected by secondary impacts associated with the development of the Bypass. By providing an alternate route, the Bypass would facilitate travel and reduce the effects of vehicle noise and emissions to existing residential areas by routing traffic to the less populated inland areas.

The Bypass is considered a vital component of the region's transportation network and will enhance traffic circulation, as well as access to existing and planned residential, commercial, resort, and recreational destinations within West Maui region. In addition, the West Maui Noise and Traffic Study (May 2000) and the Strategies to Link Central and West Maui (February 2000) note that road closures along the existing Honoapiilani Highway due to traffic accidents, fire and smoke hazards, and high surf crossing the roadway, have resulted in serious delays and disruptions to traffic flow in the West Maui region. The proposed project will provide an alternate transportation route between Launiupoko and Honokowai in the event of road closures along the existing Honoapiilani Highway. From a regional transportation perspective, the proposed project is considered essential in enhancing the region's transportation objectives, as well as maintaining and reinforcing its long-term economic stability.

Although there is a potential for induced growth and cumulative impacts as a result of the improved traffic circulation provided by the Bypass, any development which is proposed within the West Maui region will be subject to regulatory review proceedings to ensure compliance with applicable land use policies. Potential impacts associated with the

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development of any project must be addressed prior to any regulatory approvals being granted.

Even without the Bypass, growth and development in the region would be governed by the West Maui Community Plan. In addition to conformance with the Community Plan, any proposed action or development must also have the appropriate County zoning and State land use designation, as well as undergo applicable regulatory review and approval procedures to ensure that the proposed action or development will have no major adverse effects on infrastructure, public services, and the natural or socio-economic environment, or result in adverse secondary impacts. Accordingly, any action or development which is anticipated to result in primary or secondary impacts to the infrastructure, public services, or the environment must be addressed and resolved prior to any regulatory approvals being issued. In this respect, the regulatory review process is anticipated to identify and address any long-term, cumulative and secondary impacts associated with any proposed action or development.

# ***Chapter V***

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***Summary of Adverse  
Environmental Effects  
Which Cannot Be Avoided  
and Unresolved Issues***



**V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED AND UNRESOLVED ISSUES**

The proposed construction of the Modified Project will result in unavoidable construction-related impacts as described in Chapter IV of this report. From a long-term perspective, the impacts of realigning and extending the Bypass and incorporating the Kaanapali Connector and Lahainaluna Road-Bypass Access would include the displacement of additional agricultural lands, and the environmental effects of traffic movement along a regional arterial system. Such effects would include noise generation and air quality impacts. However, such impacts along the new alignment would be offset by the benefits of reduced noise and air quality degradation along the existing Honoapiilani Highway.

The relationship of the Bypass construction schedule and the scheduling of the Puukolii, Wahikuli, Kapunakea, and Puamana connector roads is not firm at this time. While the Bypass is scheduled to start construction in late 2004, the construction of the Wahikuli and Kapunakea Connectors are linked to the scheduling of HCDCH's Villages at Leiali'i project, which may be subject to implementation factors beyond the control of the HDOT. Similarly, the design and construction responsibilities of the Puukolii Connector and Puamana Connector would be completed independently of the Bypass. In this regard, the implementation schedule for the Puukolii Connector and Puamana Connector is beyond the jurisdiction of the HDOT. (It is noted that the Dickenson Street Connector will be completed by the County of Maui, as a project separate from the Bypass. However, for the purposes of this document, the Dickenson Street Connector is assumed to be completed concurrently.) These circumstances notwithstanding, the HDOT proposes to continue coordination with the HCDCH and the County of Maui to assure the timely and coordinated construction of the connectors for the proposed Bypass.

# **Chapter VI**

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***Relationship Between Local  
Short-Term Uses of  
Humanity's Environment and  
the Maintenance and Enhancement  
of Long-Term Productivity***

## **VI. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF HUMANITY'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

The proposed Modified Project alignment will require the removal of approximately 65 additional acres of agricultural lands when compared to the Base Project, including eleven (11) acres for the Kaanapali Connector and the Lahainaluna Road-Bypass Access. Accordingly, the commitment of these agricultural lands to roadway infrastructure use will result in a reduction in opportunity for utilizing these lands for future agricultural uses.

The benefit derived from the loss of productive agricultural lands is defined in terms of human and other resource productivity values. For example, the proposed roadway improvements will reduce traffic congestion and travel time requirements for the West Maui region. In this regard, the provision of an efficient transportation system provides for an efficient means of transporting goods and services resulting in higher productivity for other segments of the economy. In addition, the reduction in traffic congestion would reduce energy consumption by providing for a more efficient system of vehicular movement.

As previously indicated, cumulative impacts associated with the development of the Bypass include traffic- and vehicle-generated noise and emissions in agricultural areas which currently do not experience such effects. However, these effects are not anticipated to be adverse. Refer to Chapter IV, Potential Impacts and Mitigation Measures. In addition, the proposed project will result in beneficial cumulative effects such as reducing traffic congestion by providing an alternate travel route and diluting the effect of traffic noise and emissions by routing traffic through the less populated inland areas.

# ***Chapter VII***

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## ***Irreversible and Irretrievable Commitments of Resources***

## **VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The proposed project modifications will displace additional agricultural acreages which were formerly used for sugar cane cultivation. While this loss of agricultural lands is an irreversible commitment of agricultural land resources, it will not adversely affect lands available for diversified agricultural use by Pioneer Mill.

# ***Chapter VIII***

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***Relationship to Governmental  
Plans, Policies and Controls***

## **VIII. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS**

The proposed project modifications were reviewed with respect to applicable governmental plans, policies, and controls, which are summarized below.

### **A. HAWAII STATE PLAN**

The Hawaii State Planning Act (Chapter 226, Hawaii Revised Statutes) sets forth goals, objectives, policies and priorities to guide the long-range development of the State of Hawaii. The proposed project modifications are in keeping with the following objectives and policies of the Hawaii State Plan.

#### **Objectives and Policies for Facility Systems-Transportation (§ 226-17)**

**Objective:** Plan for a statewide transportation system consistent with planned growth objectives throughout the State.

#### **Policies:**

- Encourage transportation systems that serve to accommodate present and future development needs of communities.
- Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification.
- Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment.

The proposed modifications to the Lahaina Bypass provides for greater long-term flexibility for meeting West Maui's transportation needs. Moreover, the Bypass will support the long-term economic vitality of Lahaina and the County of Maui by providing a transportation element able to accommodate the flow of goods and services and to meet the

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needs of the region's projected expansion in population base.

**B. STATE TRANSPORTATION FUNCTIONAL PLAN**

The State Transportation Functional Plan is one (1) of seven (7) State Functional Plans designed to set forth transportation-specific policies and priority actions for short-term implementation. The Transportation Functional Plan (1991 update) identifies major statewide priority concerns and advances strategies to address these concerns. Applicable objectives, policies and implementing actions found in the Plan are summarized below.

**Objective:** Expansion of capacity of transportation system.

**Policy:** Increase transportation capacity and modernize transportation infrastructure in accordance with existing master plans and laws requiring accessibility for people with disabilities.

In accordance with the foregoing objective and policy, the Plan identifies the Bypass as a funding priority.

**Policy:** Improve regional mobility in areas of the State experiencing rapid urban growth and road congestion.

**Implementing Action:** Plan, design, and construct road infrastructure for West Maui.

The foregoing objectives, policies and implementing actions are designed to address the long-term transportation needs of the West Maui region. The proposed Bypass is considered a major element in addressing the region's transportation needs.

**Objective:** Expansion of revenue bases for transportation improvements.



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**Policy:** Pursue private sector participation in the financing of transportation systems, developments and projects.

The HDOT will explore opportunities for obtaining private sector commitment to cost-sharing of the proposed improvements on a fair-share pro-rata basis.

**C. MAUI LONG-RANGE HIGHWAY PLANNING STUDY**

The Maui Long-Range Highway Planning Study was initiated by the State Department of Transportation in 1987 with the objective of developing a highway master plan for the Island of Maui. The long-range highway plan is based on a travel demand forecast model which forecasts demand, identifies highway deficiencies, and tests the outcomes of various highway improvement alternatives.

The Lahaina Traffic Circulation Plan, representing one (1) element of the Maui Long-Range Highway Plan, focuses on regional highway needs in the Lahaina region. The analysis conducted for the Lahaina Traffic Circulation Plan incorporates the Bypass as a critical component of the West Maui regional roadway network. The Maui Long-Range Highway Plan identifies the Bypass as a priority project for the Island of Maui's future highway network.

In addition, the Maui Long-Range Land Transportation Plan - Final Report (Kaku Associates, February 1997), which serves as a guide for the development of the major surface transportation facilities and programs to be implemented within the County of Maui, includes an inventory and assessment of the existing roadway system and operating conditions, as well as existing land use and socio-economic conditions on the Island of Maui. The Plan identifies long-range (to the year 2020) strategies and

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actions that will lead to the development of an integrated inter-modal transportation system that will facilitate the efficient movement of people and goods. The Plan also includes a list of State roadway projects recommended for implementation as a result of the study. As reflected by the list, the Lahaina Bypass is ranked third in terms of projects recommended for implementation.

**D. 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 -- "Urban", "Rural", "Agricultural", and "Conservation". The proposed Bypass extension to Honokowai and Launiupoko, as well as the Kaanapali Connector, and the Lahainaluna Road-Bypass Access involves lands located within the "Agricultural" district. See Figure 27.

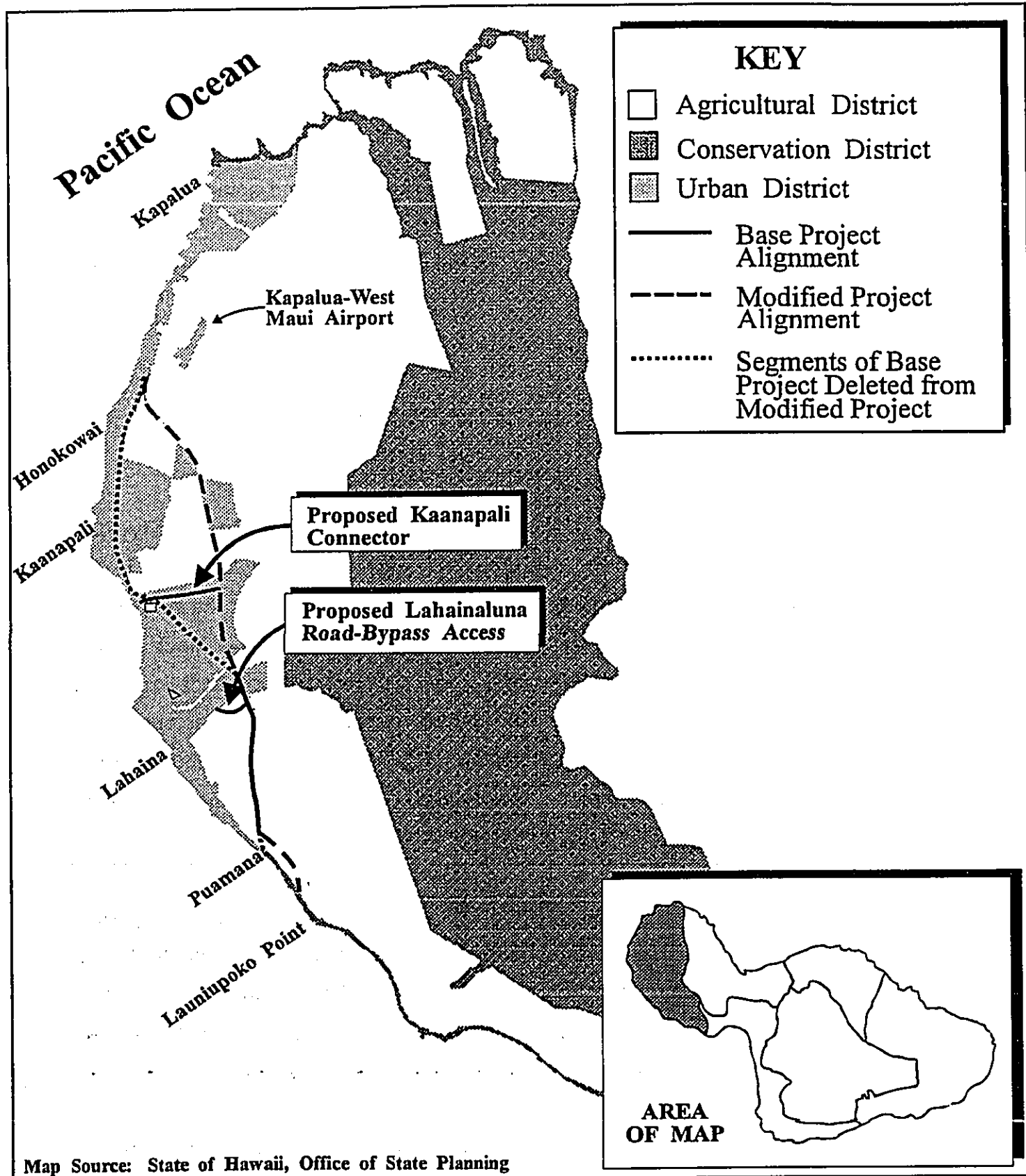
Public roadways are permissible within the "Agricultural" district.

**E. 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 expressed 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 modifications to the Bypass alignment is in keeping with the



Map Source: State of Hawaii, Office of State Planning

## Figure 27 Lahaina Bypass Modifications

State Land Use District  
Boundaries

MUNEKIYO HIRAGA, INC.



Prepared for: State of Hawaii, Dept. of Transportation

NOT TO SCALE

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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.

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

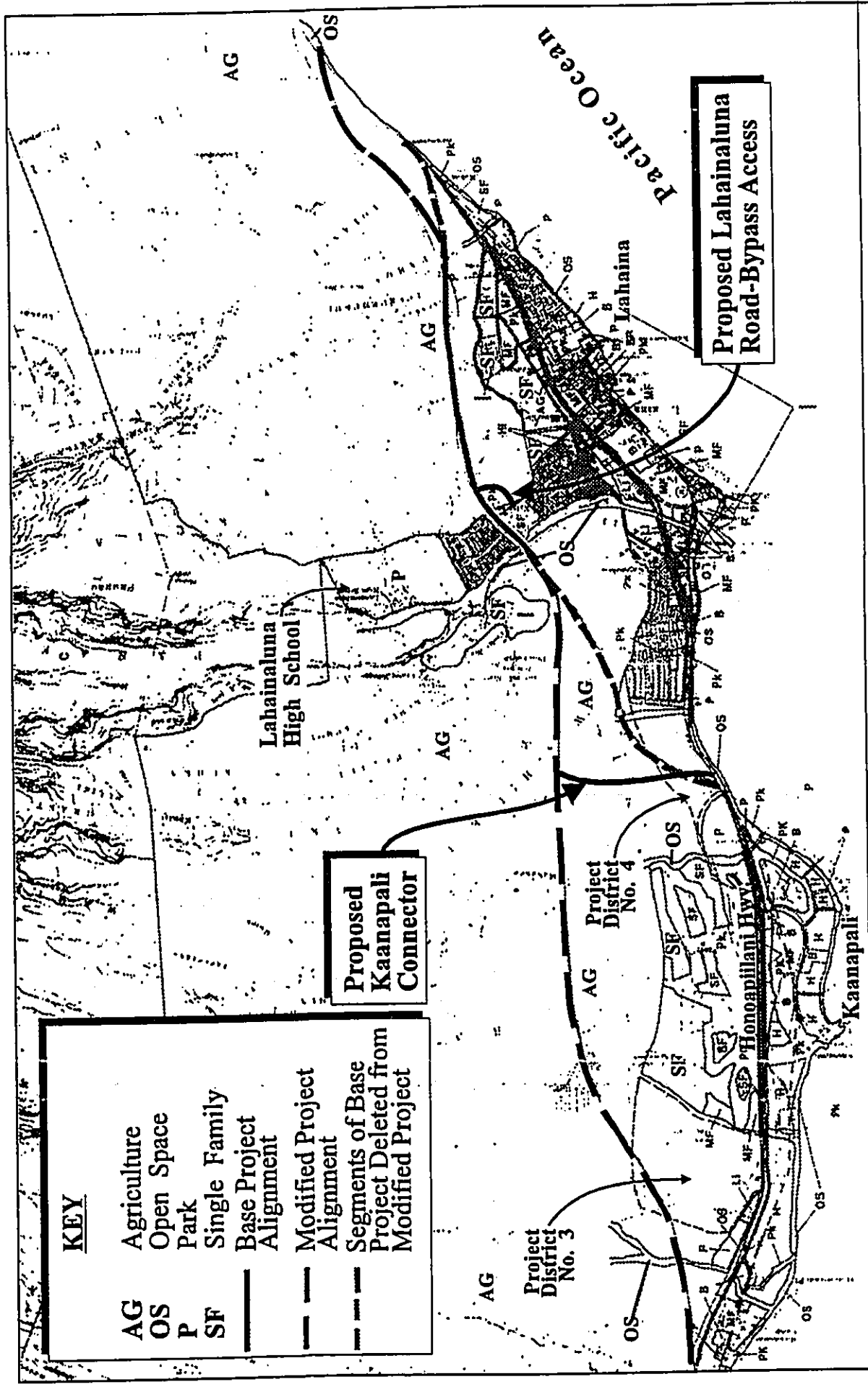
The proposed modifications will not detract from the project's objective of meeting the long-term transportation needs of the region.

**F. WEST MAUI COMMUNITY PLAN**

The proposed Bypass is located within the West Maui Community Plan region, one (1) of nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns, and characteristics of future development in the region. The West Maui Community Plan provides for the planning, design and construction of the Bypass to facilitate ingress and egress in Kaanapali and in the Lahaina Town core.

The modified Bypass alignment will traverse lands designated "Agricultural", "Open Space", "Project District", and "Single Family" by the West Maui Community Plan. See Figure 28. The Kaanapali Connector and Lahainaluna Road-Bypass Access will also traverse lands designated Agricultural.

The West Maui Community Plan was initially adopted in 1982 as the Lahaina Community Plan and was updated in 1992-93. To reinforce its regional nature, the Plan was renamed the West Maui Community Plan



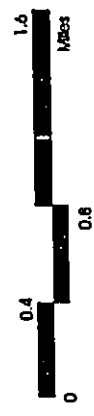
KEY	
AG	Agriculture
OS	Open Space
P	Park
SF	Single Family
—	Base Project Alignment
- - -	Modified Project Alignment
· · ·	Segments of Base Project Deleted from Modified Project

**Proposed Kaanapali Connector**

**Proposed Lahainaluna Road-Bypass Access**

**Figure 28**

**Lahaina Bypass Modifications  
Community Plan Land Use Designations**



Prepared for: State of Hawaii, Dept. of Transportation

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and became effective on February 26, 1996 after being adopted by ordinance.

**G. HAWAII COASTAL ZONE PROGRAM/COUNTY SPECIAL MANAGEMENT AREA**

The Hawaii Coastal Zone Program (HCZMP), as formalized in Chapter 205A, Hawaii Revised Statutes, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaii's coastal zone areas. The objectives of the HCZMP are as follows:

- A. Provide coastal recreational opportunities accessible to the public;
- B. Protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture;
- C. Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources;
- D. Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems;
- E. Provide public or private facilities and improvement important to the state's economy in suitable locations;
- F. Reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, and subsidence;
- G. Improve the development review process, communication, and public participation in the management of coastal resources and hazards;
- H. Stimulate public awareness, education, and participation in coastal management;
- I. Protect beaches for public use and recreation; and
- J. Implement the State's ocean resources management plan.

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As noted by the State Department of Business, Economic Development, and Tourism (DBEDT) Office of Planning, the proposed project modifications are in keeping with the foregoing objectives. See Appendix H.

The County of Maui's Special Management Area (SMA) permit procedures have been established within the framework of the HCZMP. The Modified Project alignment, the Kaanapali Connector and the Lahainaluna Road-Bypass Access are located mauka (east) of the County SMA boundaries. A SMA Use Permit may be required for work involving the southern terminus at Honoapiilani Highway.

**H. PERMITS REQUIRED**

The construction of the Bypass may impinge upon existing waterways (e.g., Kahoma Stream). The U.S. Department of the Army, Corps of Engineer's has indicated that Nationwide permits will likely be required for the proposed improvements. See Appendix I and Appendix I-1. The Department of the Army permit will also trigger the need for a Section 401 Water Quality Certification from the State Department of Health and a Coastal Zone Program Consistency Certification from the Office of Planning. In addition, construction work within stream channels may require a Stream Channel Alteration Permit from the State Water Resources Commission.

Finally, the construction of the Bypass, Kaanapali Connector and Lahainaluna Road-Bypass Access will require a National Pollutant Discharge Elimination System (NPDES) Permit.

# ***Chapter IX***

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## ***Alternatives Considered***



## **IX. ALTERNATIVES CONSIDERED**

### **A. BACKGROUND**

The FEIS for the Base Project examined several alternatives to address the long-range regional highway needs for the West Maui region. As reflected in the FEIS, several extension alternatives between Lahaina to Honokowai were considered as potential alternatives to widening Honoapiilani Highway between Kaanapali and Honokowai. One (1) extension alternative (Extension Alternative for the Base Project), included extending the Bypass to Honokowai in the vicinity of Wahikuli Road. This alternative was proposed to augment two (2) of the alternative corridors (Alternatives A and B) proposed between Puamana and Kaanapali. See Figure 29. Two (2) extension alternatives further inland were also evaluated in the FEIS (Extension Alternative C and Amfac Alternative). However, due to the higher costs associated with extending the Bypass, none of the extension alternatives were selected.

As with the extension alignment proposed by the Modified Project, the extension alternatives considered by the FEIS would traverse lands formerly engaged in sugar cultivation. Although the removal of agricultural lands from production would be involved for any of the extension alternatives, its effect is not anticipated to adversely impact lands available for Pioneer Mill's diversified agricultural operations.

The extension alignment proposed by the Modified Project will extend further inland than the extension alternative for the Base Project and is, therefore, anticipated to result in a further reduction of vehicle-generated noise and emissions to existing, developed areas along Honoapiilani Highway. However, to ensure that proposed developments such as HCDCH's Villages at Leiali'i project, as well as Amfac/JMB Hawaii's

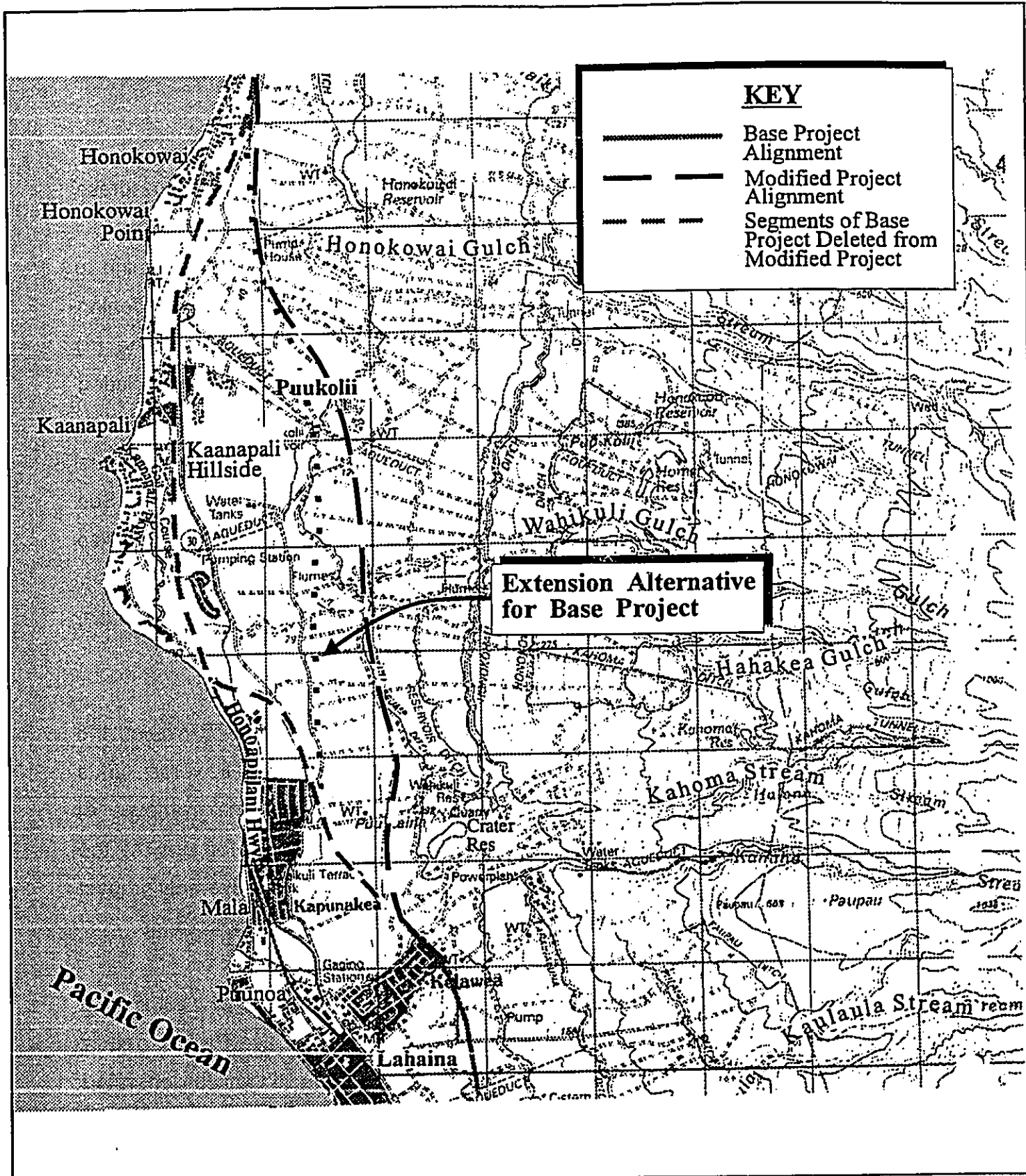


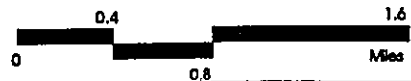
Figure 29 Lahaina Bypass Modifications

Extension Alternative for Base Project



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Puukolii Village, and Project District No. 3 (North Beach Mauka) and South Beach Mauka projects, are not adversely affected by vehicle-generated noise and emissions, coordination and early consultation between the HDOT, HCDCH, and Amfac/JMB Hawaii was undertaken during project planning to ensure that appropriate mitigation measures (e.g., landscape buffers, building setbacks, and sound-attenuating walls) will be implemented.

With regard to land use, the extension alternative proposed by the Modified Project will provide and facilitate access to proposed residential communities adjoining, as well as within proximity of the Bypass (e.g., Puukolii Village, North Beach Mauka, South Beach Mauka and the Villages at Lieialii), as well as alleviate traffic congestion along the existing segment of Honoapiilani Highway between Kaanapali and Honokowai.

As noted in the opening chapter of this report, however, the Bypass extension to Honokowai was reconsidered and determined to have long-term benefit from the standpoint of affording a roadway alternative which addresses future traffic needs in the region by providing a second roadway to relieve traffic on the existing Honoapiilani Highway. Within this developed region, widening Honoapiilani Highway beyond four (4) lanes is not considered feasible.

In this regard, it was determined that the Modified Project represents a preferred alternative over the Base Project.

**B. BYPASS EXTENSION TO LAUNIUPOKO**

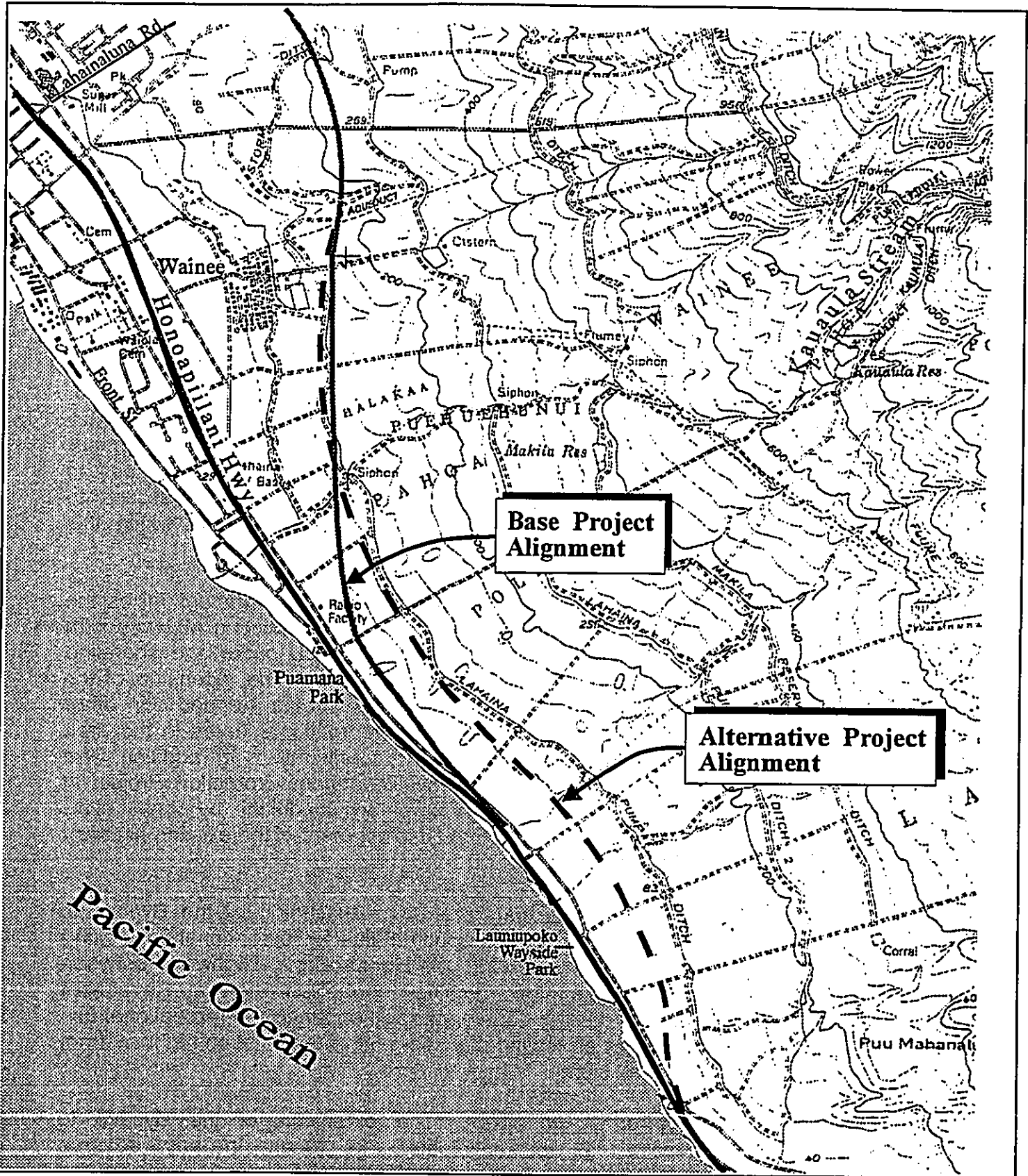
During the conceptual planning stages for the Modified Project, a southern

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extension of the Bypass, to Launiupoko, was also considered. Extending the southern terminus from Puamana to Launiupoko was, in fact, addressed in the Environmental Impact Statement Preparation Notice for the Modified Project (Michael T. Munekiyo Consulting, Inc., 1991). See Figure 30. This southern extension would have followed an alignment approximately 1,500 feet mauka (east) of Honoapiilani Highway. The Bypass would have tied back to Honoapiilani Highway approximately 1,000 feet north of Launiupoko Point. Also proposed in connection with the extension of the Bypass to the south was the planned closure of Honoapiilani Highway to through traffic at the southern terminus of the Bypass. Local traffic destined for shoreline recreational areas between Launiupoko Wayside Park and Puamana Park would have continued to utilize Honoapiilani Highway.

Impacts associated with this alternative include the removal of approximately 37.0 acres of agricultural lands from cultivation. As with the preceding extension alternatives, the removal of these lands from cultivation is not considered to adversely affect agricultural productivity. In addition, the development of the southern extension would also result in a change of ambient noise and air quality conditions as a result of traffic-related noise and emissions. These effects, however, are not considered to be adverse since traffic and traffic-related noise and vehicular emissions would be reduced by providing an alternate travel route which would direct traffic through the unpopulated areas mauka (east) of the existing Honoapiilani Highway.

Since the filing of the DSEIS, the HDOT reconsidered extending the Bypass alignment to Launiupoko after considering the following:



**Figure 30 Lahaina Bypass Modifications**

Alternative Alignment South  
of Lahainaluna Road



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1. **Public interest:** During the DSEIS public comment period and the project's April 30, 1996 public hearing, several comments were received from government agencies, community groups, and individuals requesting consideration of extending the Bypass to Launiupoko.
2. **Access and avoidance of shoreline erosion areas:** The extension of the Bypass to Launiupoko will avoid the coastline in the Puamana area. Accordingly, problems related to shoreline erosion, coastal flooding, and road closure in this area will be eliminated. In addition, the HDOT's proposed Honoapiilani Highway Revetment Protection Project at Launiupoko, FAP No. ER-11(7), plans to construct shoreline protection to alleviate shoreline erosion conditions to the existing highway. The segment of the existing Honoapiilani Highway, from Puamana to Launiupoko, will remain open for traffic to provide access to Launiupoko Wayside Park and the shoreline areas within this segment.
3. **Safety:** The present Honoapiilani Highway alignment mixes the high speed, high volumes of traffic on the existing highway with recreational users who frequent the beach parks and shoreline area between Puamana and Launiupoko. The extension of the Bypass to Launiupoko will separate traffic headed for other destinations from traffic related to recreational users in the area thereby improving traffic safety conditions. In addition, the proposed Honoapiilani Highway Revetment Protection Project at Launiupoko will enhance traffic safety conditions by constructing revetment protection to protect this segment of the existing highway from shoreline erosion.
4. **Increased recreational use:** The extension of the Bypass to Launiupoko would expand opportunities for recreational uses along the intervening segment of Honoapiilani Highway between Puamana and Launiupoko. The Honoapiilani Highway Revetment Protection Project at Launiupoko will enhance the recreational use of this area by protecting this segment of the existing highway from shoreline erosion.
5. **Environmental impacts:** The extension of the Bypass to Launiupoko is not anticipated to result in any adverse environmental impacts. Refer to Chapter IV, Potential Impacts and Mitigation Measures.

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The 1.3 mile extension of the Bypass to Laniupoko is estimated to increase the construction cost of the project by approximately \$11.3 million (not including right-of-way acquisition) and will improve traffic circulation in the West Maui region, as well as provide for the region's long-term transportation needs.

# **Chapter X**

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**Agencies and Organizations  
Consulted During the  
Preparation of the Draft SEIS**



**X. AGENCIES AND ORGANIZATIONS CONSULTED DURING  
THE PREPARATION OF THE DRAFT SEIS**

**State Agencies:**

Department of Accounting and General Services  
Department of Agriculture  
Department of Business and Economic Development and Tourism  
Department of Defense  
Department of Education  
Department of Health  
Department of Land and Natural Resources  
Housing and Community Development Corporation of Hawaii  
Office of Hawaiian Affairs  
University of Hawaii Environmental Center

**County of Maui Agencies and Offices:**

Department of Fire Control  
Department of Human Concerns  
Department of Parks and Recreation  
Department of Planning  
Department of Police  
Department of Public Works and Waste Management  
Department of Water Supply  
Office of Council Services  
Office of the Mayor, Maui County

**Federal Agencies:**

Department of Agriculture, Soil Conservation Service  
Department of the Army, Corp of Engineers  
Department of Interior, Fish and Wildlife Service, Pacific Division  
Department of Housing and Urban Development  
Department of the Interior, U.S. Geological Service

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**Other Organizations:**

Bishop Estate  
Hawaiian Telephone Co.  
Maui Chamber of Commerce  
Maui Electric Co., Ltd.  
Pioneer Mill Company, Ltd.  
West Maui Taxpayers Association

# ***Chapter XI***

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***Comments and Responses During  
the Draft SEIS Consultation Process***

**XI. COMMENTS AND RESPONSES DURING THE DRAFT SEIS CONSULTATION PROCESS**

AGENCIES AND ORGANIZATIONS CONSULTED DURING THE PREPARATION OF THE DRAFT SEIS		
Federal Agencies	Date of Ltr Rec'd From Commenting Agencies/Organizations	Date of Response Letter to Commenting Agencies/Organizations
U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service	10/9/91	4/28/92
U.S. Department of Agriculture, Soil Conservation Service	10/23/91	4/28/92
U.S. Department of the Interior, Geological Survey, Water Resources Division	10/24/91	Response Not Required
Office of External Affairs, U.S. Environmental Protection Agency, Region IX	No Written Comments	--
U.S. Department of the Interior, Office of the Secretary	No Written Comments	--
U.S. Department of the Interior, Fish and Wildlife Service	7/19/95	Response Not Required
U.S. Department of Housing and Urban Development, Honolulu Office	10/30/91	Response Not Required
Commenting Agencies/Organizations	Date of Response Letter to Commenting Agencies/Organizations	
Department of Defense, Office of the Adjutant General	10/1/91	Response Not Required
University of Hawaii, Environmental Center	No Written Comments	--
Department of Accounting and General Services	10/11/91	Response Not Required
Department of Health	10/24/91	4/28/92

Department of Budget and Finance, Housing Finance and Development Corporation	9/26/91	4/28/92
Department of Land and Natural Resources	10/23/91	4/28/92
Department of Business and Economic Development and Tourism	No Written Comments	---
State Land Use Commission	10/1/91	4/28/92
Department of Agriculture	No Written Comments	---
Office of Hawaiian Affairs	No Written Comments	---
Department of Education	10/10/91	4/28/92
<b>Maui County Agencies</b>	<b>Date of Ltr Rec'd From Commenting Agencies/ Organizations</b>	<b>Date of Response Letter to Commenting Agencies/ Organizations</b>
The Honorable Linda Crockett Lingle, Mayor, County of Maui	Chapter XI. Substantive Comments and Responses Made During the Consultation Process---	
Department of Fire Control	No Written Comments	---
Department of Parks and Recreation	7/13/95	See Appendix G-1
Office of Economic Development	10/7/91	4/28/92
Department of Planning	No Written Comments	---
Department of Police	No Written Comments	---
Department of Human Concerns	10/1/91	Response Not Required
Office of Council Services	No Written Comments	---
Council Chairman Howard Kihune	10/16/91	4/29/92

Department of Water Supply	10/10/91	Response Not Required
Other Organizations/ Individuals	Date of Ltr Rec'd From Commenting Agencies/ Organizations	Date of Response Letter to Commenting Agencies/ Organizations
Bishop Estate	No Written Comments	---
Maui Electric Co., Ltd.	10/1/91	4/28/92
Hawaiian Telephone Co.	No Written Comments	---
Maui Chamber of Commerce	10/25/91	Response Not Required
Mr. Gary Getman General Manager Railroads of Hawaii	9/25/91	Response Not Required
Amfac Property Investment Corp.	No Written Comments	---
Amfac Property Development Corp.	No Written Comments	---
West Maui Taxpayers Association	No Written Comments	---
Pioneer Mill Co., Ltd.	No Written Comments	---
Ms. Andrea Heath-Blundell	No Written Comments	---
Mr. Brian K. Blundell	No Written Comments	---
Mr. D.G. Malcolm	No Written Comments	---
Ms. Mary Lou Kunkel	No Written Comments	---
Ms. Jan Bailey	No Written Comments	---
Mr. Ed Miyabara	No Written Comments	---

Mr. Reuben N. Aotaki	No Written Comments	--
Mr. Richard Darling	No Written Comments	--

26

UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Pacific Area Office - Southwest Region  
2570 Dole St. Honolulu, HI 96822-2396  
PH: (808)955-8831 FAX: (808)949-7400



October 9, 1991 F/SH02:JJN

Mr. Edward Y. Hirata  
Director of Transportation  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, HI 96813

RECEIVED  
OCT 13 9 25 AM '91  
HIGHWAY DIVISION  
PLANNING DIVISION

Dear Mr. Hirata:

The National Marine Fisheries Service (NMFS) has received your letter of September 19, 1991 with the accompanying Environmental Assessment and Supplemental EIS Preparation Notice for the revised alignment, Lahaiva Bypass project, Maui, Hawaii. We offer the following comments for your consideration.

It is our understanding that the proposed alignment from Launiupoko Point to Honokowai has been revised to run further inland away from the shoreline. NMFS concurs with the proposed realignment, as it will reduce the potential for runoff and construction related impacts from adversely affecting the marine environment.

NMFS is concerned with the potential for sediment entering the marine environment during work on the modified corridor alignment when crossing Kauaia and Honokowai Streams. The Supplemental EIS should address the potential impacts and detail methods to mitigate their effects on the streams and nearshore waters.

We appreciate the opportunity to comment on the revised project. Should you have any questions please contact me at the above number or address.

Sincerely yours,

*John J. Naughton*  
John J. Naughton  
Pacific Islands  
Environmental Coordinator

cc: F/SHR, Terminal Island, CA  
FWS, Honolulu  
EPA, Region 9 (E-4)  
Corps of Engineers, Honolulu  
Hawaii State Division of Aquatic Resources  
Hawaii CZM Program

RECEIVED  
OCT 14 11 15 AM '91  
DEPT OF TRANSPORTATION  
HONOLULU, HAWAII



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
805 KUNOAOA STREET  
HONOLULU, HAWAII 96813

RECEIVED  
OCT 13 10 30 AM '91  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HONOLULU, HAWAII 96813

Mr. John J. Naughton  
Pacific Islands Environmental  
Coordinator  
U.S. Department of Commerce  
National Oceanic and Atmospheric  
Administration  
2570 Dole Street  
Honolulu, Hawaii 96822-2396

Dear Mr. Naughton:

Modification to Honopillani Highway Bypass Corridor  
Thank you for your letter of October 9, 1991, regarding the proposed modifications to the Honopillani Highway Bypass Corridor.

The Draft Supplemental Environmental Impact Statement (DSEIS) will address the potential impacts of the proposed project on streams and nearshore waters.

Please also be advised that we have decided to not alter the alignment of the Bypass south of Lahaialuna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review and comment.

Sincerely,

*Rex D. Johnson*  
Rex D. Johnson  
Director of Transportation



UNITED STATES  
DEPARTMENT OF  
AGRICULTURE

SOIL  
CONSERVATION  
SERVICE

P. O. BOX 50006  
HONOLULU, HAWAII  
96850

*July 27, 1991*

ADVISORY  
COMMISSION



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
400 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-2027

NEED JOHN  
DIRECTOR  
EMILY BROWN  
JAMES T. OAK  
AL FANG  
JEANNE K. SCH  
CALVIN M. TSAI  
WANDA R. WATTS

HMV-PA  
2-1727

October 23, 1991

Mr. Edward Y. Hirata, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hirata:

Subject: Environmental Assessment (EA) and Supplemental Environmental  
Impact Statement Preparation Notice (EISPN) - Honoapiilani  
Highway, Puamana to Honokouai Project Nos. JOAB-01-85  
and JOAB-01-87

We have reviewed the EA and Supplemental EISPN for the Modification to  
Honoapiilani Highway Bypass Corridor Project, Island of Maui, and would  
like to offer the following comments:

1) We are very interested in the proposed modifications due to the  
presence of the Soil Conservation Service (SCS) assisted Lahaina  
Watershed Project in the same area. An SCS Watershed Plan is currently  
being developed for the Lahaina area and is close to completion. This  
flood protection plan proposes construction of a floodwater diversion  
below the modified corridor between Puamana Park and Lahainaluna Road.  
We believe the drainage provisions for the proposed bypass highway  
modifications will probably affect the quantity of runoff and location  
of the planned diversion of our watershed plan. Therefore, we would  
like to request that communications between your department and the Soil  
Conservation Service be developed to address the overlapping concerns of  
these two projects. This will help to insure that both the public and  
the environment will enjoy the net beneficial effect from the combined  
projects.

2) We believe that the Draft EIS should also address the potential water  
quality issues of the project.

Thank you for the opportunity to comment on this proposed project. We  
would appreciate reviewing the draft EIS when it is completed.

Sincerely,

*Warren M. Lee*  
WARREN M. LEE  
State Conservationist

Mr. Warren M. Lee  
State Conservationist  
U.S. Department of Agriculture  
P.O. Box 50004  
Honolulu, Hawaii 96850

Dear Mr. Lee:

Modification to Honoapiilani Highway Bypass Corridor

Thank you for your letter of October 23, 1991, regarding the  
proposed modifications to the Honoapiilani Highway Bypass  
Corridor.

We will be working with you and your staff in the planning and  
the design of the proposed Bypass to assure that the  
development of the Bypass and SCS Watershed Plan are fully  
coordinated.

In this connection the Draft Supplemental Environmental Impact  
Statement (DSEIS) will address water quality issues associated  
with the Bypass project.

Please also be advised that we have decided to not alter the  
alignment of the Bypass south of Lahainaluna Road. Accordingly,  
the Bypass will terminate at Puamana (instead of Launiupoko), as  
proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review  
and comment.

Sincerely,

*Rex D. Johnson*  
Rex D. Johnson  
Director of Transportation





STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 2371  
HONOLULU, HAWAII 96810

October 24, 1991

To: The Honorable Edward Y. Hirata, Director  
State Department of Transportation

From: John C. Levin, M.D., *John C. Levin, M.D.*  
Director of Health

Subject: Honouliuli Highway, Puamana to Honokouai  
Project Nos. 30AB-01-85 and 30AB-01-87

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

The clearing and grubbing activities in the deep agricultural soils may result in significant soils erosion and transport of sediment into nearshore waters if mitigating measures are not instituted. These measures should be addressed in the Environmental Impact Statement.

JOHN C. LEVIN, M.D.  
DIRECTOR OF HEALTH

IN REPLY, PLEASE REFER TO:  
91-348

JOHN C. LEVIN, M.D.  
DIRECTOR OF HEALTH



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
155 FERNBUSH STREET  
HONOLULU, HAWAII 96813

NOV 28 1991

TO: The Honorable John C. Levin  
Director of Health

FROM: Rex D. Johnson, *Rex D. Johnson*  
Director of Transportation

SUBJECT: MODIFICATION TO HONOAPIILANI HIGHWAY BYPASS CORRIDOR

Thank you for your memorandum of October 24, 1991, regarding the proposed modifications to the Honouliuli Highway Bypass Corridor.

The Draft Supplemental Environmental Impact Statement (SEIS) will address soil erosion mitigative measures which will be implemented during the construction phase of the Bypass project.

Please also be advised that we have decided not to alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) SEIS.

A copy of the Draft Supplemental Environmental Impact Statement will be submitted to your office for review and comment.

NOV 28 1991  
JOHN C. LEVIN, M.D.  
DIRECTOR OF HEALTH

NOV 28 1991  
REX D. JOHNSON  
DIRECTOR OF TRANSPORTATION

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OCT 30 9 36 AM '91  
DEPT OF TRANSPORTATION  
HIGHWAYS DIVISION



DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT HONOLULU  
27 SHAFTER HAWAII 96813-5400

METRIC  
ATTENTION

October 23, 1991

Call 1-800-342-7373

Planning Division

Mr. Edward Y. Hirata  
Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hirata:

Thank you for the opportunity to review and comment on the Environmental Assessment and Supplemental Environmental Impact Statement Preparation Notice for Modification to Honoapiilani Highway Bypass Corridor, Maui. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

- a. Stream crossings may require DA permits. Please coordinate with Operations Division when plans are completed.
- b. The flood hazard information provided in our previous letter dated July 6, 1987, is still applicable.
- c. As noted in our letter dated February 2, 1989, the proposed crossing at the joint Federal and County of Maui Kahoma Stream Flood Control Project must be coordinated with Planning Division. The Planning Division point of contact for review of your highway project plans is Ms. Kelen Stuppelbeen (telephone 438-7008).

Sincerely,

*Ray H. Johnson*  
Kisuk Cheung  
Director of Engineering

RECEIVED  
Oct 26 4 29 PM '91  
DEPT OF TRANSPORTATION  
ENGINEERING DIVISION



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
100 PALACIO STREET  
HONOLULU, HAWAII 96813-2800

Mr. Kisuk Cheung  
Director of Engineering  
Department of the Army  
U.S. Army Engineer District, Honolulu  
Fort Shafter, Hawaii 96858-5440

Dear Mr. Cheung:

Modification to Honoapiilani Highway Bypass Corridor

Thank you for your letter of October 23, 1991, regarding the proposed modifications to the Honoapiilani Highway Bypass Corridor.

The Draft Supplemental Environmental Impact Statement (DSEIS) will address flood hazard conditions which affect the proposed Bypass alignment. With regard to the construction of the Bypass across the Kahoma Stream Flood Control Project, our staff will coordinate the proposed work with the Department of the Army's Planning Division.

Please also be advised that we have decided to not alter the alignment of the Bypass south of Lahainauna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launupoko), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review and comment.

Sincerely,

*Alex D. Johnson*  
Alex D. Johnson  
Director of Transportation

FIELD OFFICE  
DIRECTOR  
STATE OF HAWAII  
100 PALACIO STREET  
HONOLULU, HI 96813  
IN REPLY REFER  
BMY-PA  
2.1728



STATE OF HAWAII  
 DEPARTMENT OF BUDGET AND FINANCE  
 HOUSING FINANCE AND DEVELOPMENT CORPORATION  
 100 WATERLOO PLAZA, SUITE 201  
 HONOLULU, HAWAII 96813  
 FAX: 587-5000

91:DEV/4341

September 26, 1991

TO: The Honorable Edward Y. Hirata, Director  
 Department of Transportation

FROM: Joseph K. Conant, Executive Director  
 Housing Finance and Development Corporation

SUBJECT: HONOAPIILANI HIGHWAY, FUAHANA TO HONOKAWAI PROJECT  
 NOS. JOAB-01-85 AND JOAB-01-87

Thank you for giving us the opportunity to review the Environmental Assessment and Supplemental Environmental Impact Statement Preparation Notice for the Modification to Honoapiilani Highway Bypass Corridor.

The modified alignment for the Lahaina Bypass project is consistent with the Lahaina Master Planned Community project's proposal. The Housing Finance and Development Corporation (HFDC) will cooperate in scheduling the different construction phases of the housing development to interface with the Bypass highway development schedule. Enclosed is a copy of our current master plan layout.

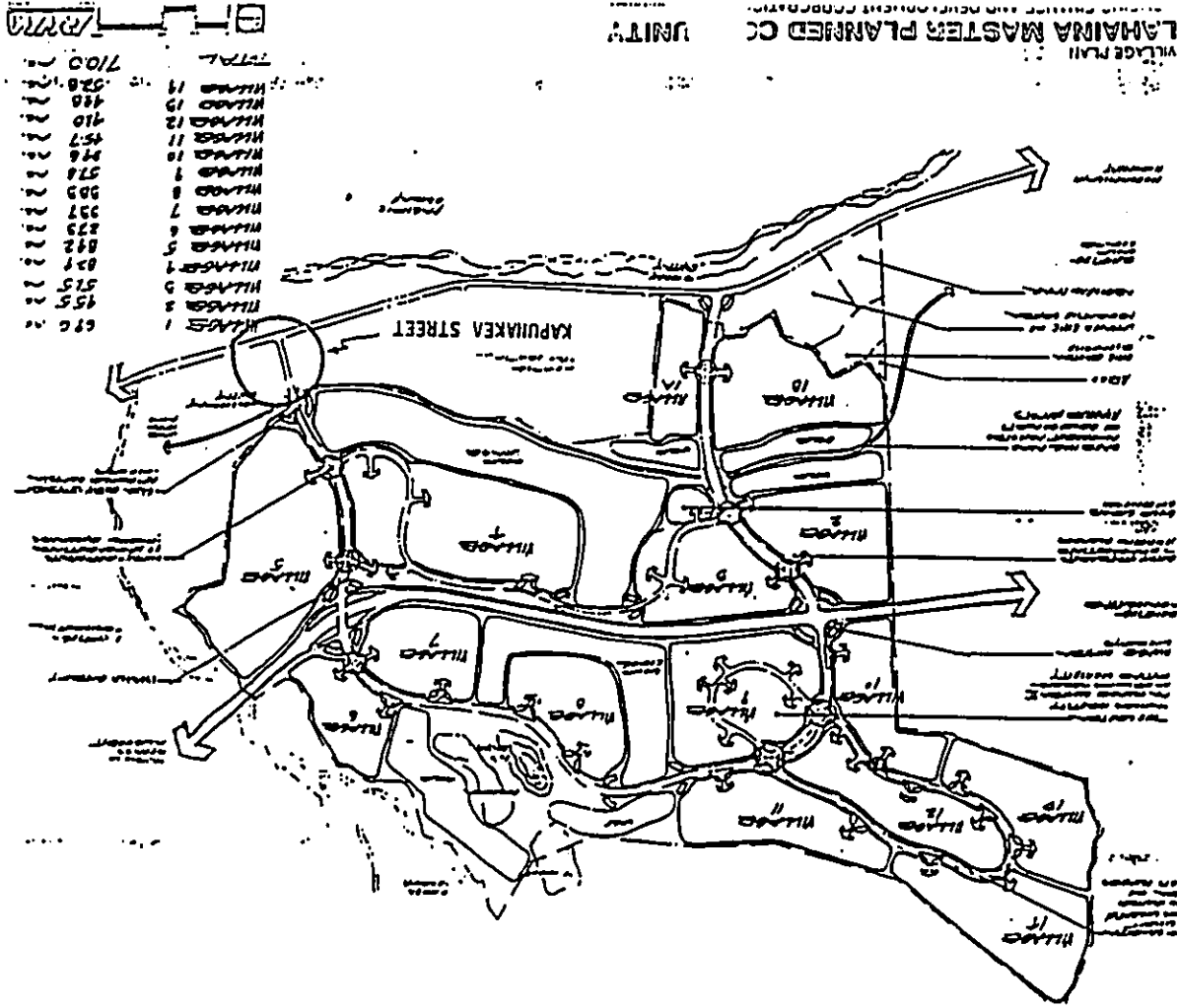
Should you have any questions, please feel free to contact Neal Wu, Project Coordinator at 587-0538 or Cirvalina Longboy, Assistant Project Coordinator at 587-0537.

CL:d1

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 1991

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DEPT. OF TRANSPORTATION  
 HONOLULU, HAWAII



LAHAINA MASTER PLANNED COMMUNITY UNIT

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
400 FULBRIGHT STREET  
HONOLULU, HAWAII 96813  
... 26

REX D. JOHNSON  
DIRECTOR  
DEPUTY DIRECTOR  
JOYCE T. OSBINE  
AL FORD  
JAMES K. SCHULTZ  
CALVIN A. TSOUBA  
DEPUTY DIRECTOR TO

HVY-PA  
2-1724

TO: Joseph K. Conant, Executive Director  
Housing Finance and Development Corporation

FROM: *Jed* Rex D. Johnson  
Director of Transportation *R. Johnson*

SUBJECT: MODIFICATION TO HONOAPIILANI HIGHWAY BYPASS CORRIDOR

Thank you for your memorandum of September 26, 1991, regarding the proposed modifications to the Honoapiilani Highway Bypass Corridor.

We will continue to work with you and your staff to assure that the development of the Lahaina Master Planned Community and the proposed Bypass are fully coordinated. In this regard, based on current traffic projections, the Bypass--Kapunakea Street intersection, is now foreseen as a signalized at-grade crossing instead of an interchange (as depicted in the master plan for the Lahaina Master Planned Community).

Please also be advised that we have decided not to alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) EIS.

A copy of the Draft Supplemental Environmental Impact Statement will be submitted to your office for review and comment.

STATE OF HAWAII  
 DEPARTMENT OF LAND AND NATURAL RESOURCES  
 P. O. BOX 471  
 HONOLULU, HAWAII 96809

RECEIVED  
 OCT 23 1991

WILLIAM W. PATY, CHAIRPERSON  
 BOARD OF LAND AND NATURAL RESOURCES

OFFICE OF THE  
 CHAIRPERSON  
 WILLIAM W. PATY  
 DAN T. KOCHI  
 ADMINISTRATIVE ASSISTANT  
 OFFICE OF THE  
 CHAIRPERSON  
 WILLIAM W. PATY  
 DAN T. KOCHI  
 ADMINISTRATIVE ASSISTANT

STATE OF HAWAII  
 DEPARTMENT OF LAND AND NATURAL RESOURCES  
 P. O. BOX 471  
 HONOLULU, HAWAII 96809

Memo to E. Hirata  
 File No.: 92-197  
 -2-

There are other significant historic sites that were identified by previous archaeological surveys in the area. We believe that the following specific areas along the proposed alignment in the northern terminus may have an adverse effect on these sites: 1) northern end of the terminus just north of Kahoma Stream, 2) Hahakea Gulch, 3) a small unnamed gulch north of Puukohli, and 4) Honokowai Gulch. The area where the corridor crosses Honokowai Gulch has not been covered by a previous survey, but there is one known historic site at the north side of the gulch.

Therefore, we recommend that an archaeological inventory survey be conducted on undisturbed areas: 1) to identify previously unidentified significant historic sites, and 2) locate previously identified significant historic sites in relation to the proposed corridor. The report on the results of the survey should be included in the Draft EIS. The Draft EIS should also address the effects of the proposed project on the significant historic sites and propose measures to mitigate the effects. It would be best if the survey report is submitted first to our office for review and comments before incorporating it in the Draft EIS. Any problems or disagreements on the study, as well as amount of effect and mitigation plan could be resolved ahead of time.

WATER RESOURCES MANAGEMENT CONCERNS:

Because the proposed new highway will traverse perennial and intermittent streams, Department of Transportation is reminded of the likely need to file applications for Stream Channel Alteration Permits with the State Commission of Water Resource Management.

OFFICE OF CONSERVATION AND ENVIRONMENTAL AFFAIRS CONCERNS:

The makai side of the Honoapiilani Highway south of Waihanukole is in the Conservation District. We would like to be advised of any project activity affecting this area.

Thank you for your cooperation in this matter. Please feel free to call me or Sam Lemmo at our Office of Conservation and Environmental Affairs, at 548-7837, should you have any questions.

cc: OEOC

MEMORANDUM

TO: The Honorable Edward Y. Hirata, Director  
 Department of Transportation

FROM: William W. Paty, Chairperson  
 Dept. of Land and Natural Resources

SUBJECT: Environmental Assessment and Supplemental Environmental Impact Statement Preparation Notice for Modifications to Honoapiilani Highway Bypass Corridor  
 Location: Lahaina, Maui

Thank you for the opportunity to comment on this matter. We have reviewed the submitted EA and supplemental EIS preparation notice and have the following comments.

HISTORIC PRESERVATION DIVISION CONCERNS:

The State Department of Transportation proposes modifications to the Honoapiilani Highway Bypass Bypass Project by re-aligning and extending both the southern terminus and northern terminus.

We believe that the modifications to the southern terminus will have "no effect" on significant historic sites. The new alignment and extension will be located within existing sugarcane fields. The land in this area has been extensively modified as evidenced by several high mounds of boulders between the fields.

The modified corridor alignment will also largely go through sugarcane fields. Only the gulches are still undisturbed, with the exception of Kahoma Stream which has been recently developed for a flood control project. The flood control project destroyed a previously identified site along Kahoma Stream, site 1775 consisting of an agricultural complex.



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
160 PUNAHOU ONE, STREET  
HONOLULU, HAWAII 96818

--- 28 ---

ROD D. JOHNSON  
DIRECTOR  
DEPT. OF TRANSPORTATION  
160 PUNAHOU ONE, STREET  
HONOLULU, HAWAII 96818

HWY-PA  
2-1730

TO: The Honorable William W. Paty, Chairperson  
Department of Land and Natural Resources

FROM: Rex D. Johnson  
Director of Transportation *R. Johnson*

SUBJECT: MODIFICATION TO HONOPIILANI HIGHWAY BYPASS CORRIDOR

Thank you for your memorandum of October 23, 1991, regarding the proposed modifications to the Honoapiilani Highway Bypass Corridor.

An archaeological survey has been conducted for the undisturbed areas of the modified corridor alignment and will be incorporated in the Draft Supplemental Environmental Impact Statement (DSEIS). The archaeological inventory report will be submitted to the Historic Preservation Division for review and comment.

We will coordinate with the State Commission on Water Resources Management and the Office of Conservation and Environmental Affairs to assure that applicable rules and regulations of the Department of Land and Natural Resources are appropriately addressed.

Please also be advised that we have decided not to alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) EIS.

A copy of the Draft Supplemental Environmental Impact Statement will be submitted to your office for review and comment.

10/1/91



STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
Room 184, 2nd Floor Building  
1115 University Avenue  
Honolulu, Hawaii 96813  
Telephone: 548-3111

ESTHER UEDA  
EXECUTIVE OFFICER

JOHN WARD  
CHIEF



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

NEIL D. JOHNSON  
DIRECTOR  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813  
PHONE: 548-3111

HWY-PA  
2.1720

October 1, 1991

Mr. Edward Y. Hirata, Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hirata:

Subject: Environmental Assessment and Supplemental EIS  
Preparation Notice for the Modification to  
Honopiihiani Highway Bypass Corridor

The Department of Business, Economic Development and  
Tourism has forwarded your letter dated September 19, 1991 to  
our office for response.

Based on our review of the subject Environmental Assessment  
and Supplemental EIS Preparation Notice, we find that the  
location of the proposed modified corridor alignment is within  
the State Land Use Agricultural and Urban Districts. We  
suggest that the EIS include a map of the realignment proposal  
in relation to the State Land Use Districts.

We have no other comments at this time. If you have any  
questions, please call me or Bert Saravattari of my staff at  
548-3074.

Sincerely,  
*Esther Ueda*  
ESTHER UEDA  
Executive Officer

EU:to  
CC: DBEDT

RECEIVED  
OCT 4 10 03 AM '91  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION  
HAWAII DEPARTMENT OF TRANSPORTATION  
OCT 4 2 51 PM '91  
ESTHER UEDA  
EXECUTIVE OFFICER  
548-3074

TO: Esther Ueda, Executive Officer  
Department of Business, Economic Development & Tourism

FROM: *Rex D. Johnson*  
Director of Transportation *R. Johnson*

SUBJECT: MODIFICATION TO HONOPIIHLANI HIGHWAY BYPASS CORRIDOR

Thank you for your letter of October 1, 1991, regarding the  
proposed modifications to the Honopiihiani Highway Bypass  
Corridor.

The Draft Supplemental Environmental Impact Statement (DSEIS)  
will document the relationship of the Bypass Corridor to  
existing State Land Use District boundaries.

Please also be advised that we have decided to not alter the  
alignment of the Bypass south of Lahainaluna Road.  
Accordingly, the Bypass will terminate at Puamana (instead of  
Lanilupo), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review  
and comment.



1



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2100  
HONOLULU, HAWAII 96810

OF THE SUPERINTENDENT

October 10, 1991

CHARLES T. TOGUCHI  
SUPERINTENDENT

JOHN MURPHY  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
885 PUNAHONA STREET  
HONOLULU, HAWAII 96813-4027  
FTR 28 1532

KELO JOHNS  
DIRECTOR  
DEPARTMENT OF TRANSPORTATION  
885 PUNAHONA STREET  
HONOLULU, HAWAII 96813-4027  
WIRE/FAX

HWTY-PA  
2-1721

MEMO TO: Honorable Edward Y. Hirata, Director  
Department of Transportation

FROM: Charles T. Toguchi, Superintendent  
Department of Education *Charles T. Toguchi*

SUBJECT: Honoapiilani Highway, Puamana to Honokoupa  
Project Nos. 10AB-01-85 and 10AB-01-87

We have reviewed the subject revised alignment for the Lahaina bypass project and are concerned that it may impact two potential school sites located in the Lahaina Master Planned Community. We will be working with the Housing and Finance Development Corporation to assure that school sites are not adjacent to the highway realignment.

Thank you for the opportunity to comment. Should there be any questions, please call the Facilities Branch at 737-4743.

CTT:AH:j1

cc: A. Suga  
L. Lindsey  
J. Conant, HFDC

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DEPT OF TRANSPORTATION  
HIGHWAYS DIVISION

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OCT 23 11 39 AM '91  
HAWAIIAN TRANSPORTATION  
PLANNING  
AND  
CONSTRUCTION  
DIVISION

TO: The Honorable Charles Toguchi, Superintendent  
Department of Education

FROM: *John Rex D. Johnson*  
Director of Transportation *J. Johnson*

SUBJECT: MODIFICATION TO HONOAPIILANI HIGHWAY BYPASS CORRIDOR

Thank you for your memorandum of October 10, 1991, regarding the proposed modifications to the Honoapiilani Highway Bypass Corridor.

We will coordinate the planning and design of the modified corridor with the Housing Finance and Development Corporation (HFDC) to assure that land use impacts to school sites and surrounding residential areas proposed for the HFDC's Lahaina Master Planned Community are fully addressed.

Please also be advised that we have decided to not alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launipoko), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review and comment.



DA CROCKETTLINGLE  
MAYOR  
TELEPHONE 243-1855



OFFICE OF THE MAYOR  
COUNTY OF MAUI  
MAILING, MAUI, HAWAII 96753

November 4, 1991

Mr. Edward Y. Hirata, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hirata:

Thank you for this opportunity to review the Environmental Assessment on the revised alignment for the Lahaina Bypass. I have asked my staff, as well as the County Directors of Public Works, Planning and Parks and Recreation to review this document.

Generally, Maui County has a positive response to the concept addressed in the Environmental Assessment, which involves extending the original bypass right-of-way both to the south and north. The County also believes that a full-scale Environmental Impact Statement Supplement will be required in order to fully study the proposed extension and its potential impacts.

The County is at this time supportive of this extension because it will result in an expansion of the recreational area provided by Launiupoko Park. It should be pointed out that the state Legislature, during its last session, enacted legislation giving Maui County responsibility for Launiupoko Park, as well as three other state parks.

The County would like to see more discussion in any subsequent environmental review of this project on what sort of "recreational" activities the State is envisioning in the area now occupied by the highway. Two very different scenarios come to mind: (1) an expansion of the benign beach recreational activities that now take place at Launiupoko Park, or (2) the development of a more intensive small boat harbor in the space between the park and Puamana Park, as one private party once proposed.

The revised alignment would also appear to provide Lahaina Civic Center much needed expansion space.

Mr. Edward Y. Hirata, Director  
November 4, 1991  
Page 2

And by moving thru-traffic all the way to Mahinahina, the new alignment also seems to better perform the task we would expect from a "bypass".

The Environmental Assessment failed to point out how the southern extension of the bypass and its right-of-way re-alignment would relate to two federally supported projects in the same area. One of these is the U.S. Soil Conservation Service's Lahaina Watershed Project and the other is the U.S. Corps of Engineers' proposed Launiupoko Highway Protection Project.

The Lahaina Watershed Project hopes to share the same general alignment the highway would take in the Lahainaluna to Puamana area. The Launiupoko Highway Protection Project will spend \$938,000 to protect a portion of road the State appears to be preparing to abandon.

The County also believes the subsequent Environmental Impact Statement should address how the State proposes to connect the upper and lower highways: via at-grade intersections using traffic control signals or via grade separated interchanges?

On a more technical level, the Maui County Public Works Department would like to see the following issues addressed:

1. On the revised Environmental Impact Statement, the ultimate design for connector road intersections with the bypass highway must be determined so that specific right-of-way requirements will be known for sections with the County's rights-of-way. If projected volumes warrant an interchange design, substantial rights-of-way beyond the 150-foot minimum need to be planned for and reserved.
2. Since the County will be responsible for constructing the connector roads, the Environmental Impact Statement should identify connector road requirements and priorities so our budget requests can be programmed accordingly.
3. Once the bypass highway is in place, existing traffic patterns within the local collector roadway systems will be affected. The Environmental Impact Statement should include a detailed traffic impact study that assesses impacts at major intersections, within the 20-year master plan time frame.

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PLANNING BRANCH

Mr. Edward Y. Hirata, Director  
November 4, 1991  
Page 3

4. The north terminus of the bypass needs to be designed so that trip origins and designations will flow logically into population centers (Honokowai, Mahinahina, and the Kapalua-West Maui Airport). Along the existing Honoapilani Highway between Honokowai and Mahinahina, there are only two intersections (Lower Honoapilani Road and Akahale Street), 1.3 miles apart. Does the state Department of Transportation believe an intermediate connector route is required to Lower Honoapilani Road from the terminus?

Thank you for this opportunity to address this important project. I hope that our comments prove to be useful in the effort to build this roadway.

Sincerely,

*Linda Crockett Lingle*

LINDA CROCKETT LINGLE  
Mayor, County of Maui

DL:jso  
a:\bypass

*Ed, I was sorry to hear that you  
ill be leaving the state. You will be  
missed by all of us in the Maui  
county government. Good luck to you  
- your new position Aloha, Linda*

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Nov 13 9 00 AM '91  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

JOHN WELLS  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
805 PUNAHONA STREET  
HONOLULU, HAWAII 96813-0007  
Tel: 808-541-8000

POST BOX  
NO. 100  
HONOLULU  
HAWAII 96813  
CALIFORNIA  
91607-1000

HMY-PA  
2-1731

The Honorable Linda Crockett Lingle  
Mayor  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

Dear Mayor Lingle:

Modification to Honoapilani Highway Bypass Corridor  
Thank you for your letter of November 14, 1991, regarding the proposed modifications to the Honoapilani Highway Bypass Corridor.

After further evaluation of the proposed Bypass alignment south of Lahainaluna Road, we have decided to retain the original alignment to Puamana. This decision is based on the need to establish a cost-effective route for the Bypass. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) EIS. The proposed Bypass alignment modification north of Lahainaluna Road (to Honokowai) remains as proposed in the EIS Preparation Notice.

In response to other comments raised in your letter, the Draft EIS will address the proposed SCS watershed project and the technical characteristics of the proposed connector roads will be discussed.

We also note that the need for an intermediate connector road between Lower Honoapilani Road and Akahale Street is not anticipated. The Bypass connection with Honoapilani Highway, as well as the Puukouli Road connector, are expected to accommodate traffic collection and distribution demands for the population centers north of Kaanapali.

A copy of the Draft Supplemental Environmental Impact Statement will be submitted to your office for review and comment.

Sincerely,

*Rex D. Johnson*

Rex D. Johnson  
Director of Transportation

*If this creates problem  
please let me know  
Rex*

LINDA CROCKETT LINGLE  
Manager



COUNTY OF MAUI

DEPARTMENT OF ECONOMIC DEVELOPMENT

WAILUKU, MAUI, HAWAII 96793

TELEPHONE 233-7710

FRED MATSUMOTO  
Coordinator

Mr. Edward Y. Hirata, Director  
October 7, 1991  
Page 2

We have no other comments or questions at this time; however, we thank you for the opportunity to review and express our comments.

October 7, 1991

Mr. Edward Y. Hirata, Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Hirata:

Honoapiilani Highway, Puuana to Honokowai, Project Nos. 30AB-01-85 and 30AB-01-87

We have reviewed the Environmental Assessment and Supplemental Environmental Impact Statement Preparation Notice on the modification to Honoapiilani Highway bypass corridor and find that in general, it has adequately identified and address the major issues which can be anticipated to result from the proposed project.

However, we would like to offer the following comments:

1. The number of traffic lights to be installed.
2. How many bridges need to be built?
3. Will the four travel lanes merging into the two travel lanes cause congestions?
4. What is the cost consideration break-down?
5. What kinds of Construction Impacts?

- (a) Construction wastes
- (b) Traffic
- (c) Social Impacts
- (d) Electricity
- (e) Telephone

Very truly yours,

*Fred Matsumoto*  
FRED MATSUMOTO  
Economic Development Coordinator

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OCT 13 9 51 AM '91  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

RECEIVED  
STATE DEPARTMENT  
OCT 11 9 24 AM '91  
HIGHWAY PLANNING SECTION

JOHN WALKER  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
805 PUNAHOU STREET  
HONOLULU, HAWAII 96813-2007

SEP 29 1991

REX D. JOHNSON  
DIRECTOR  
DEPUTY DIRECTORS  
JUSTICE T. CHUNG  
AL FANG  
JAMES E. SCHALTZ  
CALVIN H. TRUDA  
WIRELESS REFER TO:  
HWY-PA  
2-1722

Mr. Fred Matsumoto  
Economic Development Coordinator  
Department of Economic Development  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Matsumoto:

Modification to Honoapiilani Highway Bypass Corridor

Thank you for your letter of October 7, 1991, regarding the proposed modifications to the Honoapiilani Highway Bypass Corridor.

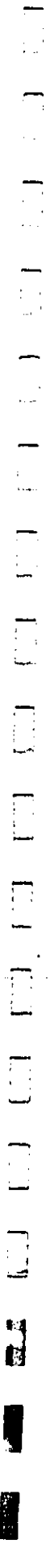
The Draft Supplemental Environmental Impact Statement (DSEIS) will address the technical characteristics of the proposed Bypass, including the number of bridges, signalization requirements, and cost estimates. In addition, the impacts of construction on the surrounding environment will be addressed in the DSEIS.

Please also be advised that we have decided to not alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launilupo), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review and comment.

Sincerely,

*Rex D. Johnson*  
Rex D. Johnson  
Director of Transportation



Council Chair  
Howard S. Kihune  
Council Vice-Chair  
Patrick S. Kihune  
Council Members  
Vince G. Buppert, Jr.  
Gene Reynolds  
Alan L. Lee  
Neil Moore  
Henry T. Harris  
Linda S. Harris  
Linda S. Harris



COUNTY COUNCIL  
COUNTY OF MAUI  
200 S. HIGH STREET  
WAILUKU, MAUI, HAWAII 96793  
October 16, 1991

Green Kishune-Orsini  
Director of Council Services

Mr. Edward Y. Hirata  
October 16, 1991  
Page 2

Mr. Edward Y. Hirata, Director  
State Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96713-5097

Dear Mr. Hirata:

SUBJECT: MODIFICATION TO HONOAPIILANI HIGHWAY BYPASS CORRIDOR  
(PAF 91-276)

I am in receipt of your letter dated September 19, 1991, requesting comments on the proposed modifications to the Honoapiilani Highway Bypass Corridor. Our comments are as follows.

The Department of Transportation should be aware that as a part of the Council's consideration of the Kapalua District in 1989, the developer, Kapalua Land Company, submitted a unilateral agreement containing a condition (see attached unilateral agreement, Exhibit A, Section 1.b) that the construction of the Project District's 500 Village Hotel units could not proceed until Phase II of the Honoapiilani Bypass Corridor was completed, i.e., the road from Kaanapali to Honokowai was widened.

However, if the State does not proceed with Phase II of the Honoapiilani Bypass Corridor, the question arises as to whether Kapalua Land Company will be legally relieved of their condition. I will be seeking a Corporation Counsel opinion on this matter, and will keep you informed.

Also, since the Bypass Corridor's modified alignment will pass through much raw land, increasing the potential for development, may I request that the Department of Transportation work with the Lahaina Citizens Advisory Committee to reflect the proposed Bypass Corridor in the Lahaina Community Plan, and address the modified alignment's development potential in the upcoming Environmental Impact Statement.

Furthermore, may I request that the Department of Transportation work with the County Administration and myself to construct an overpass servicing Lahainaluna School at a point where a new road, possibly Dickenson Street, would access the school.

Thank you for the opportunity to comment.

Sincerely,

HOWARD S. KIHUNE  
Council Chair

Attachments

PR:edot:PKCS:wb

RECEIVED  
OCT 22 10 35 AM '91

RECEIVED  
OCT 23 11 34 AM '91  
HIGHWAY DEPARTMENT

DATE MAILED  
10/16/91



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
805 PUNAHOU STREET  
HONOLULU, HAWAII 96813-0007  
TEL 29 1572

REX D. JOHNSON  
DIRECTOR  
DEPUTY DIRECTORS  
JOYCE T. CHANG  
AL PALO  
JAMES K. SCHULTZ  
CALVIN M. TRUDA  
WHILEY REFER TO

HNY-PA  
2-1725

The Honorable Howard S. Kihune  
Chair  
County Council  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

Dear Chair Kihune:

Modification to Honoapiʻilani Highway Bypass Corridor

Thank you for your letter of October 16, 1991, regarding the proposed modifications to the Honoapiʻilani Highway Bypass Corridor.

In response to your comments, we will coordinate our work with the County Planning Department during the upcoming Community Plan Update process to assure that the proposed Bypass is reflected in the updated Lahaina Community Plan. In addition, the Draft Supplemental Environmental Impact Statement (DSEIS) will address the relationship between the alignment and proposed developments, as reflected in current development proposals and the existing Lahaina Community Plan.

We also note that the proposed project will underpass Lahainaluna Road. This arrangement will maintain access on Lahainaluna Road to school facilities located mauka of the Bypass.

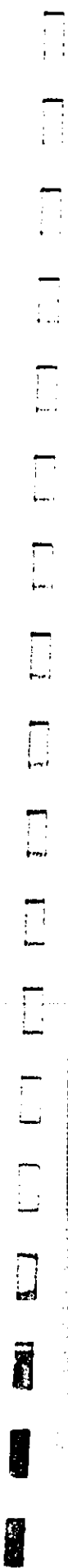
Please also be advised that we have decided to not alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review and comment.

Sincerely,

  
Rex D. Johnson

Director of Transportation



Maul Electric Company, Ltd. • 210 West Kamehameha Ave. • PO Box 386 • Kahului, Maui, HI • 96732 0398



October 1, 1991

Mr. Edward Y. Hirata  
Director of Transportation  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, HI 99681J-5097

Dear Mr. Hirata:

Subject: Lahaina Bypass Corridor Modification

We have reviewed the Environmental Assessment and Supplemental EIS Preparation Notice for the revised alignment and offer the following comments:

1. Our existing and proposed new lines cross over the new highway alignment in several locations. Please refer to the attached map, which shows the various locations marked in red. These lines may need to be relocated or the pole heights raised to maintain the proper clearances.
2. Power requirements for the highway is minimal and does not pose any problems for Maui Electric Company.

Thank you for this opportunity to comment on this project. If we can be of any further assistance, please call me at 871-2364.

Sincerely,

*Edward L. Reinhardt*

Edward L. Reinhardt  
Manager, Engineering

ELR:rt

Enclosure

RECEIVED  
Oct 4 10 03 AM '91  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

HIGHWAYS DIVISION  
PLANNING BRANCH

Oct 4 2 51 PM '91

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION



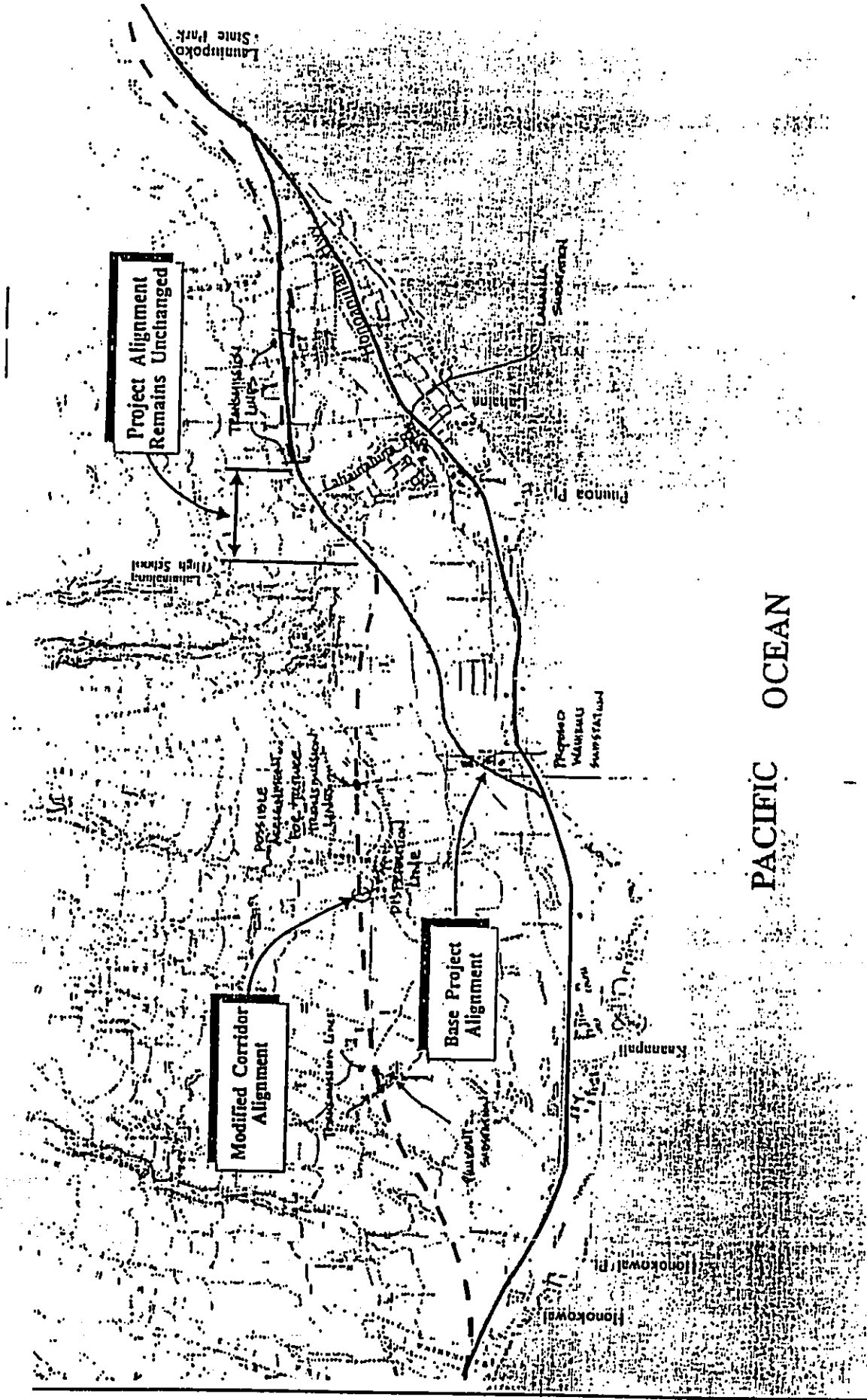
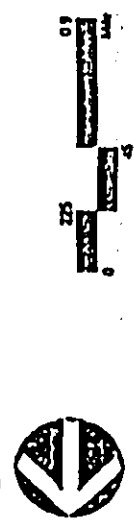


Figure 2 Lahaina Bypass Corridor Modification  
Regional Location Map



Prepared for: State of Hawaii, Dept. of Transportation  
Michael T. Muehlen Consultant



JOHN W. WARD  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
200 FERNBERG STREET  
HONOLULU, HAWAII 96813

RE: R. JOHNSON  
DIRECTOR  
BRADY BROTHERS  
JOYCE T. CHANG  
ALFANO  
JAMES K. SCHULTZ  
CALVINIA TSLA  
BY REPLY REFER TO

HNY-PA  
2-1723

Mr. Edward L. Reinhardt  
Manager, Engineering  
Maui Electric Company, Ltd.  
210 West Kamehamehā Avenue  
Kahului, Hawaii 96732

Dear Mr. Reinhardt:

Modification to Honouliuli Highway Bypass Corridor

Thank you for your letter of October 1, 1991, regarding the proposed modifications to the Honouliuli Highway Bypass Corridor.

The Draft Supplemental Environmental Impact Statement (DSEIS) will address the relationship between Maui Electric Company facilities and the proposed Bypass.

Please also be advised that we have decided to not alter the alignment of the Bypass south of Lahainaluna Road. Accordingly, the Bypass will terminate at Puamana (instead of Launiupoko), as proposed in the original (1991) EIS.

A copy of the DSEIS will be submitted to your office for review and comment.

Sincerely,

Rex D. Johnson  
Director of Transportation



JAN 27 4 41 PM '95

DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
REGION NINE

Hawaii Division  
Post 50206  
Honolulu, Hawaii 96813  
(808) 541-2700 - FAX (808) 541-2704

January 26, 1995

41 HAWAIIAN ISLANDS

ALABAMA  
CALIFORNIA  
FLORIDA  
GEORGIA  
HAWAII  
ILLINOIS  
INDIANA  
IOWA  
KANSAS  
KENTUCKY  
LOUISIANA  
MARYLAND  
MASSACHUSETTS  
MICHIGAN  
MINNESOTA  
MISSISSIPPI  
MISSOURI  
MONTANA  
NEBRASKA  
NEVADA  
NEW HAMPSHIRE  
NEW JERSEY  
NEW YORK  
NORTH CAROLINA  
NORTH DAKOTA  
OHIO  
OKLAHOMA  
OREGON  
PENNSYLVANIA  
RHODE ISLAND  
SOUTH CAROLINA  
Tennessee  
Texas  
Utah  
Vermont  
Virginia  
Washington  
West Virginia  
Wisconsin  
Wyoming

HEC-HI

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

Dear Mr. Hayashida:

Subject: Draft Supplemental EIS  
PAP 30, Honoapiilani Highway  
Maui County, Hawaii

In response to your HWY-PA 2.1662 letter dated June 27, 1994, your request for metric exemption for the subject Supplemental EIS is approved. The approval is given with the understanding that a conversion factor addendum will be added to the Draft Supplemental EIS and that the PS&E will be completed in SI units.

Please contact Mr. Pat Phung of my staff at (808) 541-2700 if you have any questions.

Sincerely yours,

Michael A. Cook  
Division Administrator

By:  
Abraham Wong  
Assistant Division Administrator

BENJAMIN CAJETANO  
GOVERNOR



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

FEB 10 1995

HAWAIIAN  
DIRECTOR  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

REPLY REFER TO  
3 4455

Mr. Michael A. Cook  
Division Administrator  
U. S. Department of Transportation  
Federal Highway Administration  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Cook:

Subject: Honoapiilani Highway, Puamana to Honokowai,  
Project No. 30AB-01-85, Lahaina Bypass

Thank you for your positive response to our request for a metric exemption for the Honoapiilani Highway's Supplemental EIS. As proposed in your January 26, 1995 letter we agree that for the Honoapiilani Highway, Puamana to Honokowai, project No. 30AB-01-85, a conversion factor addendum will be added to the Draft Supplemental EIS and that the PS&E will be completed in SI units.

Very truly yours,

KAZU HAYASHIDA  
Director of Transportation

cc: Hunekiyo & Arakawa (enc)

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

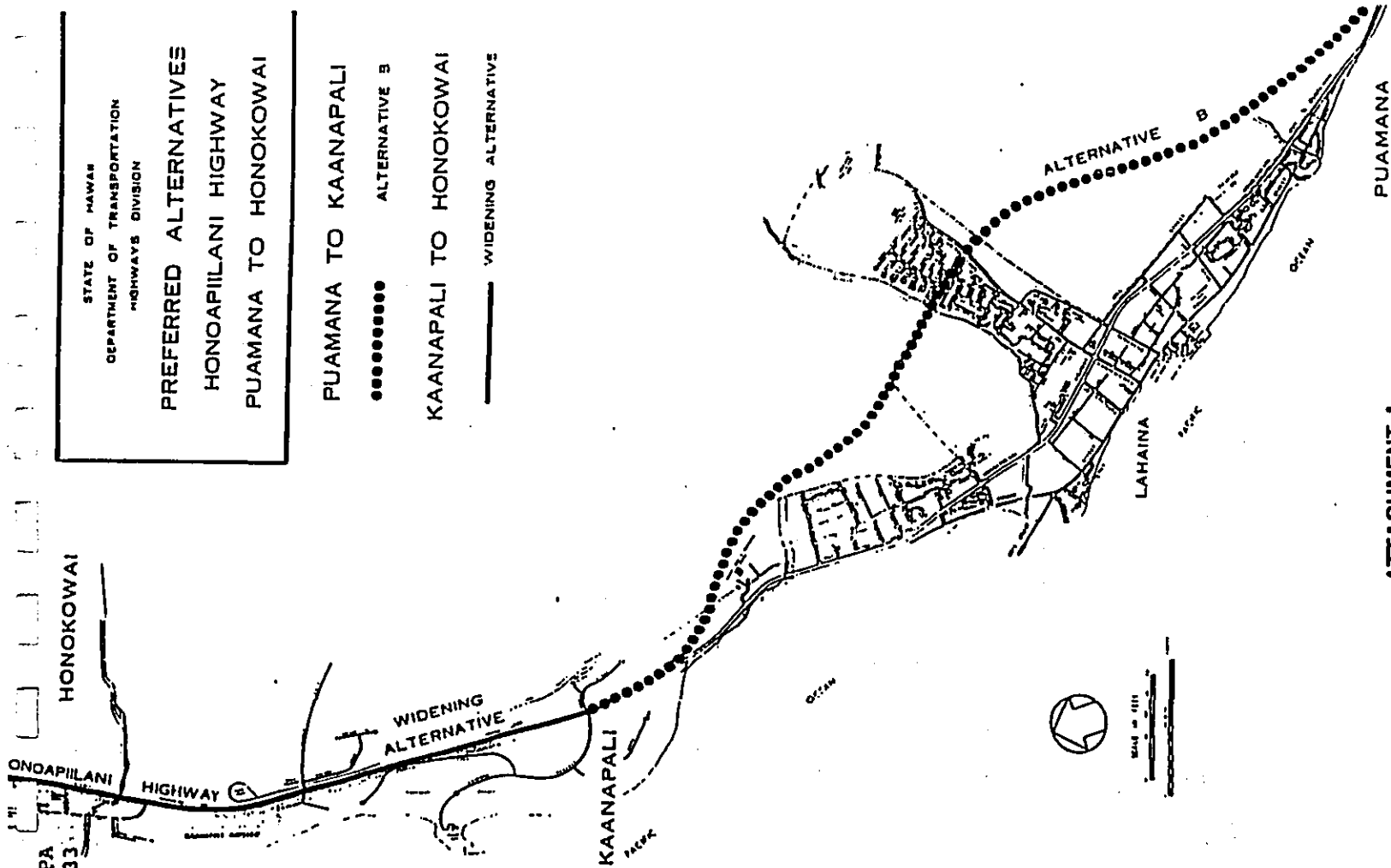
PREFERRED ALTERNATIVES  
HONOAPIILANI HIGHWAY  
PUAMANA TO HONOKOWAI

PUAMANA TO KAA NAPALI

●●●●●●●● ALTERNATIVE B

KAANAPALI TO HONOKOWAI

— WIDENING ALTERNATIVE



HVY-PA  
2.4533

FEB 20 1993

Mr. Brooks Harper  
U. S. Fish and Wildlife Service  
P.O. BOX 50167  
Honolulu, Hawaii 96850

Dear Mr. Harper:

Subject: Honoapiilani Highway (FAP Route 30)  
Puamana to Honokowai

A Final Environmental Impact Statement (FEIS) for the subject's originally proposed improvements was prepared by the U.S. Department of Transportation and the Hawaii Department of Transportation (HDOT), and accepted by Governor John Waihee on February 11, 1991. The preferred alternatives (See attachment A), along with other alignment alternatives (See attachment B), were reviewed by agencies and organizations during the project's early consultation and Draft EIS review processes.

During the preparation of the document, the U.S. Fish and Wildlife Service (FWS) responded to a request by the HDOT concerning a list of endangered or threatened animal or plant species in the vicinity of the project area (See attachment C).

The HDOT is proposing to modify the scope of the original improvements to include the extension and realignment of the Bypass, and the development of connector roads (see attachment D.) As a result, a Supplemental EIS (SEIS) is being prepared to reflect these changes. Due to the project modifications, we are requesting an updated list of endangered or threatened animals or plants which may be found in the vicinity of the project area.

Please feel free to call me if you have any questions or require additional information.

Very truly yours,  
*Kazu Hayashida*  
KAZU HAYASHIDA  
Director of Transportation

KH/SC:ck

Enc.

c: HVY-PA



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

300 ALA MOANA BOULEVARD  
P. O. BOX 50157  
HONOLULU, HAWAII 96850

AUG 16 1988

Mr. T. Harano  
Chief, Highways Division  
Hawaii Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Re: Honoapiilani Highway, Puamana to Honokowai  
Project Nos. 30AB-01-85 and 30AB-01-87

Dear Mr. Harano:

This responds to your August 3, 1988 request for list of endangered or threatened species of plants or animals which may be found in the vicinity of, or may be affected by, the referenced projects on Maui.

Although the endangered plant *Gouania hillebrandii* is known to exist east of the Alternative C section of highway that passes mauka of Lahaina, the proposed path will pass well makai of the plants habitat; the project will have no impact on the species. No other species of endangered or threatened plants or animals would be expected to be found in the vicinity of the project.

Thank you for allowing us to comment on the project.

Sincerely yours,

*William R. Kramer*

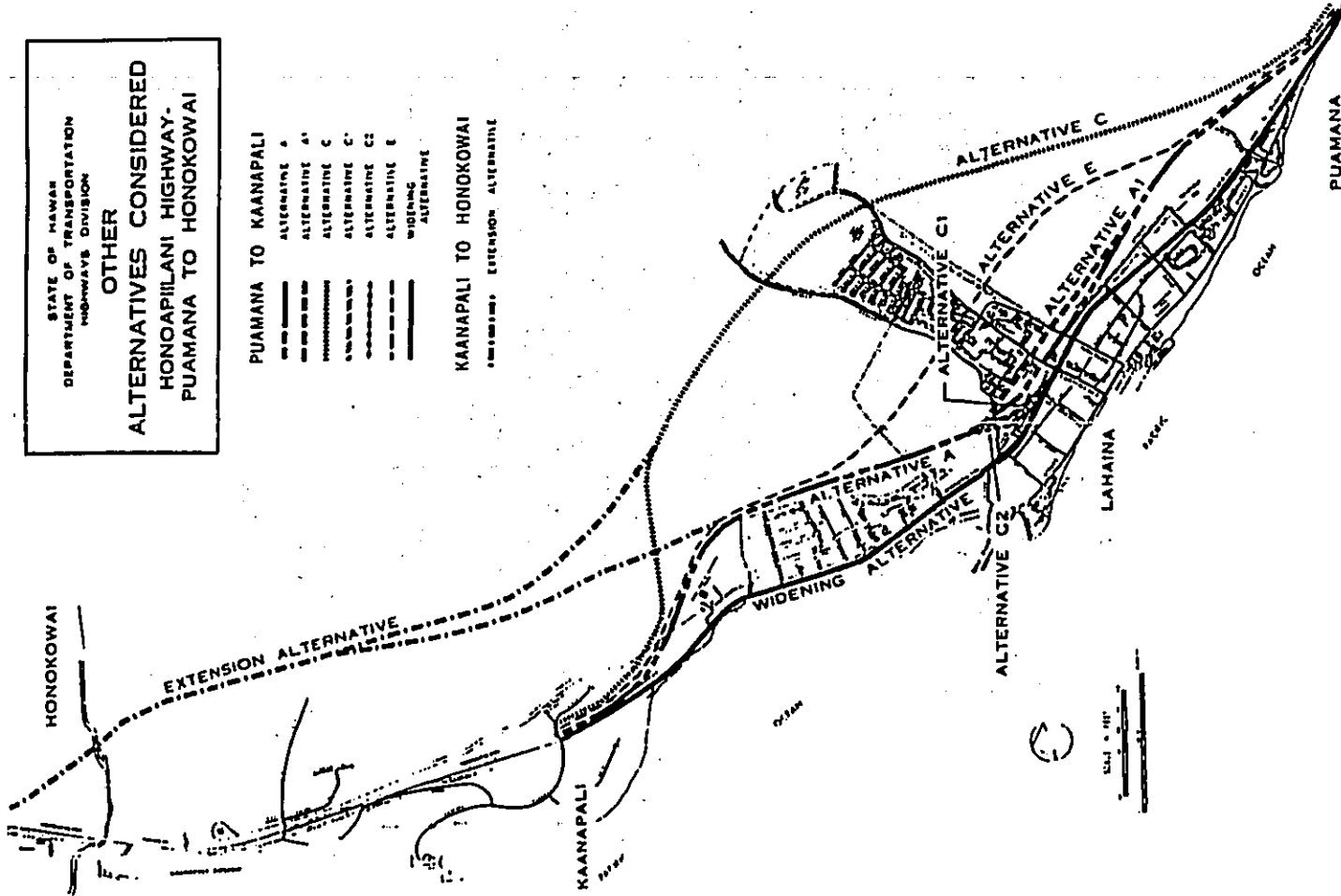
William Kramer  
Acting Field Supervisor,  
Environmental Services  
Pacific Islands Office

cc: Chief, SE-FWE, FWS, Region 1, Portland, OR (Attn: Swanson)

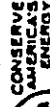
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
OTHER  
ALTERNATIVES CONSIDERED  
HONOAPIILANI HIGHWAY-  
PUAMANA TO HONOKOWAI

- PUAMANA TO KAANAPALI
- ALTERNATIVE A
- ALTERNATIVE A1
- ALTERNATIVE C
- ALTERNATIVE C1
- ALTERNATIVE C2
- ALTERNATIVE E
- WIDENING ALTERNATIVE

- KAANAPALI TO HONOKOWAI
- EXTENSION ALTERNATIVE



ATTACHMENT B





# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
PACIFIC ISLANDS ECOREGION  
300 ALA MOANA BOULEVARD  
ROOM 6307, P.O. BOX 50167  
HONOLULU, HAWAII 96850  
Telephone: (808) 541-2749  
Fax: (808) 541-2756

IN REPLY REFER TO

In Reply Refer To: DLB

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

QUL 19 1995

Dear Mr. Hayashida:

The U.S. Fish and Wildlife Service (Service) has received a letter dated July 11, 1995, from Mr. Glenn Tadeki of Munakiyo & Arakawa, Inc. requesting information on the presence of federally listed, proposed, and candidate endangered and threatened species within the area of the Honopilihi Highway (Route 30) from Puamana to Honokowai on the island of Maui. It is our understanding that Mr. Tadeki is requesting this information on your behalf to be included in the Supplemental Environmental Impact Statement (EIS) currently being prepared for proposed improvements to the highway.

The Service has reviewed the maps provided with the request and pertinent information in our files, including maps prepared by the Hawaii Heritage Program of the Nature Conservancy. To the best of our knowledge, there are no federally protected species that occur within any of the alternative project sites. The federally endangered plants *Gouania hillebrandii* and *Spermatopsis hawaiiensis* are located east of the proposed Lahainaluna Road-Bypass Access that passes mauka of Lahaina. In addition, the Hawaiian hoary bat or 'ops'ape'a (*Lasiurus cinereus semotus*), which is also listed as a federally endangered species, has been sighted along the shoreline off Puunoa Point. However, we do not anticipate any adverse effects to these species to result from the proposed highway improvements.

The Service appreciates your concern for endangered species and looks forward to reviewing the Supplemental EIS. If you have any questions, please contact our Branch Chief for Interagency Cooperation, Ms. Margo Stahl, or Fish and Wildlife Biologist Diane Bowen at 808/541-2749.

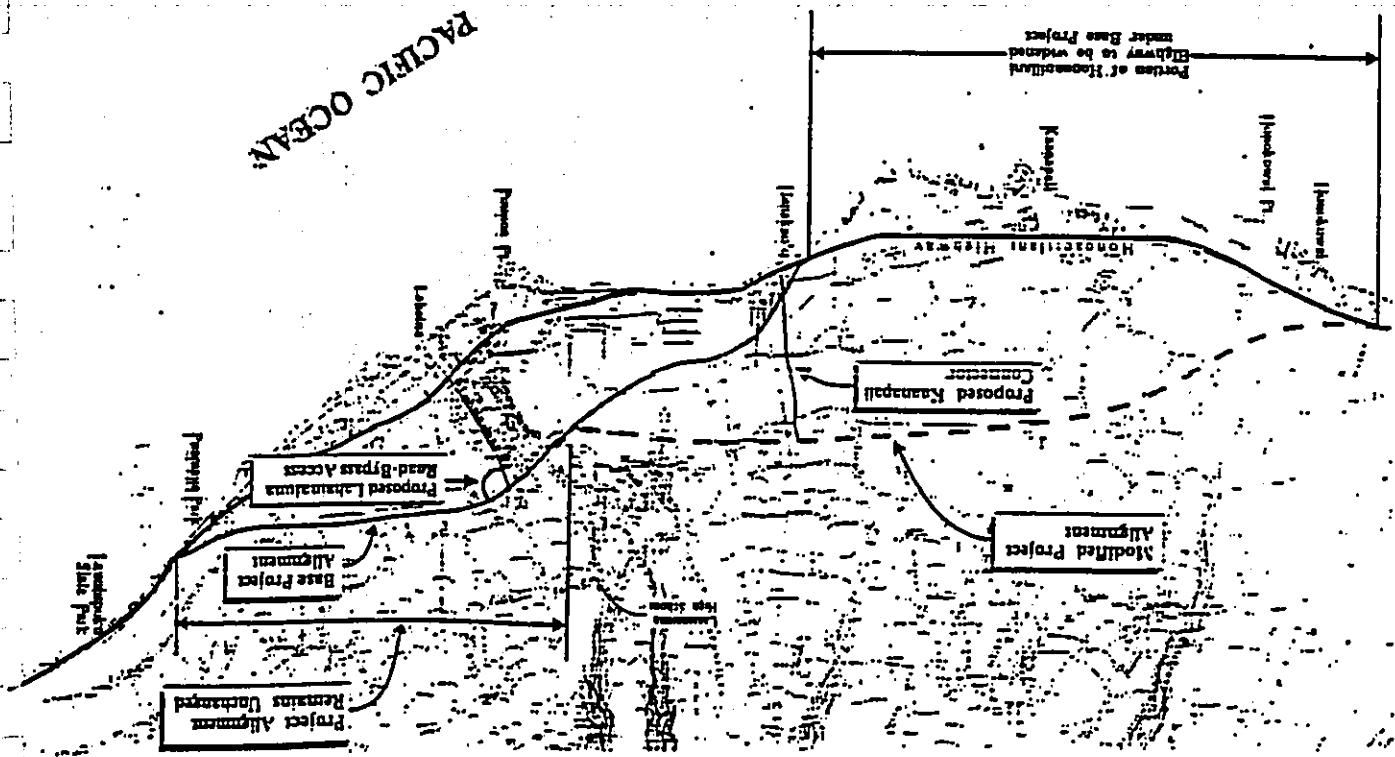
Sincerely,

*Brook Harper*

Brooks Harper  
Field Supervisor  
Ecological Services

Map by T. J. Anderson, Consulting, Inc.  
Prepared for: State of Hawaii, Dept. of Transportation

Lahaina Bypass Modifications  
Regional Location Map



ATTACHMENT D



DEPARTMENT OF  
PARKS AND RECREATION  
COUNTY OF MAUI

1590C KAHRIMANU AVENUE  
WAILUKU, HAWAII 96791

LINDA CROCKETT LINGL  
Mayor

CHARMAINE TAVARES  
Director

LEE DOOSO  
Deputy Director

PLANNING & DEVELOPMENT  
(808) 243-7373

July 13, 1995

Kazu Hayashida, Director  
Department of Transportation  
569 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Attention: Mr. Kenneth Au

SUBJECT: LAHAINALUNA BYPASS-SEIS

Dear Mr. Hayashida:

It is our understanding that the State Department of Transportation is proposing to modify the scope of the original project to include the extension and realignment of the Bypass, as well as the development of connector roads and a grade-separated overpass at Ikena Avenue (Bypass) and Lahainaluna Road. In order to accommodate the proposed grade-separated condition at Lahainaluna Road, it is our understanding that the Ikena Avenue (Bypass) profile will be lowered resulting in a depressed, or cut condition.

As such, the proposed project would affect the use of Kelaweia Mauka Park (TMK (2)4-5-34:47) in terms of parking and safety requirements, pedestrian and park maintenance access, and water service. Toward mitigating impacts upon the park, we respectfully request your consideration of the following measures which we feel should be addressed.

1. Parking Requirements  
With regard to parking, the proposed Bypass alignment would eliminate existing on-street parking along Ikena Avenue. Parking along Lahainaluna Road is not available nor recommended due to higher traffic volume and speeds. The provision of an off-street parking lot on the undeveloped makai portion of the park parcel would replace the loss of existing on-street parking along Ikena Avenue. The parking lot should be designed to accommodate up to twelve (12) vehicles. Also, pedestrian access from the proposed parking lot to the park should be developed.

2. Perimeter Fencing  
In terms of safety, a high fence along the park's roadway frontages would be desirable to keep objects (e.g., baseballs, soccer balls, frisbees) from flying onto the adjoining roadways and posing a safety hazard.

Kazu Hayashida, Director  
Department of Transportation  
Page 2  
July 13, 1995

3. Water Service

The park site is currently served by a 1-1/2 inch water meter and draws its waters from an 8-inch mainline in Lahainaluna Road. Should the proposed Lahainaluna Road overpass affect the park's water services, the relocation of the waterline would be required.

4. Pedestrian Access

As a result of the proposed Bypass alignment, existing Kaakolu Street would be closed and would no longer provide access onto Ikena Avenue. Due to this proposed closure, a pedestrian access easement along the mauka boundary of an abandoned, adjoining reservoir lot (TMK (2)4-5-31: 1) owned by the State of Hawaii, and currently utilized by the County Board of Water Supply, would facilitate park access for residents located makai of Ikena Avenue in proximity of the park.

5. Maintenance Access

Currently, access for park maintenance purposes is provided via Ikena Avenue. The proposed Bypass alignment would eliminate this access and would require us to develop another maintenance access. In addition to the steep grade transition from the park's playing field to street level, an access along Lahainaluna Road is not considered practicable due to higher traffic volume and speeds as previously indicated. Therefore, we are requesting that a maintenance access be provided from the previously recommended off-street parking lot up to the playing field. The provision of the parking lot and maintenance access would complement and facilitate park maintenance operations.

A commitment to implement the foregoing recommendations would adequately address the Department of Parks and Recreation's concerns relating to the development of the project as well as mitigate our concerns relating to any adverse impacts to the park. Your favorable consideration of our recommendations will be appreciated.

Sincerely,

DEPARTMENT OF PARKS AND RECREATION

*Charmaine Tavares*

Charmaine Tavares  
Director

CT:PTM:mlf

cc: Mr. Glen Tadaki, Munekiyo & Arakawa

# **Chapter XII**

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***List of Agencies, Organizations  
and Individuals Provided  
with the Draft SEIS***



## **XII. LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS PROVIDED WITH THE DRAFT SEIS**

### **Federal Agencies and Officials**

Kenneth Kaneshiro, State Conservationist  
U.S. Department of Agriculture  
Natural Resources Conservation Service  
P.O. Box 50004  
Honolulu, Hawaii 96850-0001

U.S. Department of Agriculture  
Office of the Secretary  
Administration Building, Rm 240W  
14th Street & Independence Ave., S.W.  
Washington, D.C. 20250

U.S. Coast Guard  
Commander  
Fourteenth Coast Guard District  
Prince Kalaniana'ole Federal Building  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850-4982

U.S. Department of Commerce  
Regional Director  
National Oceanic and Atmospheric  
Administration  
National Marine Fisheries Service  
Southwest Region  
300 South Ferry St.  
Terminal Island, California 90731

Paul Mizue, Acting Chief  
Planning and Operations Division  
U.S. Department of the Army  
Pacific Ocean Division, Corps of Engineers  
Fort Shafter, Hawaii 96858-5440

U.S. Department of Energy  
Division of NEPA Affairs  
Forrestal Building, Rm 3E-080  
Attn. Carol Borgstrom  
1000 Independence Ave., S.W.  
Washington, D.C. 20585

Environmental Protection Agency  
Office of Federal Activities (A-104)  
401 M Street, S.W.  
Washington, D.C. 20460

Deanne M. Wieman, Director  
Office of Federal Activities  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, California 94105-3901

U.S. Dept. of Housing and  
Urban Development  
Manager  
500 Ala Moana Blvd., #500  
Honolulu, Hawaii 96813-4918

U.S. Dept. of Housing and  
Urban Development  
Regional Environmental Standards Officer  
California State Office  
P.O. Box 36003  
San Francisco, California 94102-3448

Robert Smith, Ecological Region Manager  
U.S. Dept. of the Interior  
Fish and Wildlife Service  
Pacific Islands Office  
P.O. Box 50167  
Honolulu, Hawaii 96850

Willie Taylor, Director  
Office of Environmental Policy and Compliance  
U.S. Dept. of the Interior  
Office of the Secretary  
Washington, D.C. 20240

U.S. Department of the Interior  
District Chief  
Geological Survey  
Water Resource Division  
677 Ala Moana Boulevard, Suite 415  
Honolulu, Hawaii 96813

U.S. Department of Interior  
Office of Environmental Project Review  
18th and C Street, N.W., Room 4239  
Washington, D.C. 20240

---

Director  
U.S. Department of Transportation  
Federal Highway Administration  
400 7th Street, S.W.  
Washington, D.C. 20590

Regional Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
201 Mission Street, #2100  
San Francisco, California 94105

Abraham Wong, Division Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
Box 50206  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

The Honorable Daniel K. Inouye  
U.S. Senator  
300 Ala Moana, Rm 7325  
Honolulu, Hawaii 96813

The Honorable Daniel K. Akaka  
U.S. Senator  
Prince Kuhio Federal Building, Rm 3104  
Honolulu, Hawaii 96850

The Honorable Patsy T. Mink  
U.S. Congress  
Prince Kuhio Federal Building, Rm 5104  
Honolulu, Hawaii 96850

#### State Agencies and Officials

Sam Callejo, State Comptroller  
Dept. of Accounting and General Services  
Kalanimoku Building  
1151 Punchbowl Street, #426  
Honolulu, Hawaii 96813

James Nakatani, Chairperson  
Board of Agriculture  
Department of Agriculture  
1428 So. King Street  
Honolulu, Hawaii 96814-2512

Earl Anzai, Director  
Department of Budget and Finance  
250 South Hotel  
Honolulu, Hawaii 96813

Department of Business, Economic  
Development and Tourism Library  
220 South King Street  
Honolulu, Hawaii 96813

Dr. Seiji Naya, Director  
Department of Business, Economic  
Development and Tourism  
220 South King Street  
Honolulu, Hawaii 96813

Department of Business, Economic  
Development and Tourism Library  
220 South King Street  
Honolulu, Hawaii 96813

Esther Ueda, Executive Officer  
Department of Business, Economic  
Development & Tourism  
Land Use Commission  
Room 104, Old Federal Building  
335 Merchant Street  
Honolulu, Hawaii 96813

Adjutant General and  
Director of Civil Defense  
Major General Edward Richardson  
Department of Defense  
3949 Diamond Head Road  
Honolulu, Hawaii 96816-4495

Dr. Herman Aizawa, Superintendent  
Department of Education  
P.O. Box 2360  
Honolulu, Hawaii 96804

Gary Gill, Director  
Office of Environmental Quality Control  
220 S. King St., 4th Floor  
Honolulu, Hawaii 96813

Linda Colburn, Administrator  
Office of Hawaiian Affairs  
1600 Kapiolani Blvd., #1500  
Honolulu, Hawaii 96814

Clayton Hee, Chairman  
Board of Trustees  
Office of Hawaiian Affairs  
711 Kapiolani Blvd., Suite 500  
Honolulu, Hawaii 96813

Kali Watson, Chairman  
Hawaiian Homes Commission  
Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, Hawaii 96805

Dr. Lawrence Milke, Director  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801

Kai Markell, Coordinator  
Maui Island Burial Council  
c/o State Historic Preservation Division  
33 So. King St., 6th Floor  
Honolulu, Hawaii 96813

Department of Housing and  
Community Development  
650 S. King Street  
Honolulu, Hawaii 96813

Roy Oshiro, Executive Director  
Department of Budget and Finance  
Housing Finance and Development Corporation  
677 Queen Street, #300  
Honolulu, Hawaii 96813

Michael Wilson, Chairperson  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Michael Buck, Administrator  
Department of Land and  
Natural Resources  
Division of Forestry and Wildlife  
1151 Punchbowl Street, Rm 325  
Honolulu, Hawaii 96813

Don Hibbard, Administrator  
Department of Land and Natural Resources  
State Historic Preservation Division  
Kakuhihewa Building, #555  
601 Kamokila Boulevard  
Kapolei, Hawaii 96707

Gregory Pai, Director  
Office of State Planning  
P.O. Box 3540  
Honolulu, Hawaii 96811-3540

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

**Maui County Agencies and Officials**

Linda Crockett-Lingle, Mayor  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

Robbie Guard, Economic  
Development Coordinator  
County of Maui  
Office of The Mayor  
200 South High Street  
Wailuku, Hawaii 96793

---

Honorable Alice Lee, Chairperson  
County of Maui  
County Council  
200 S. High Street  
Wailuku, Hawaii 96793

Honorable Tom Morrow, Councilman  
County of Maui  
County Council  
200 South High Street  
Wailuku, Hawaii 96793

Ken Fukuoka, Director  
County of Maui  
Office of Council Services  
200 South High Street  
Wailuku, Hawaii 96793

Ronald Davis, Chief  
County of Maui  
Department of Fire Control  
200 South High Street  
Wailuku, Hawaii 96793

Stephanie Aveiro, Director  
County of Maui  
Department of Housing and  
Human Concerns  
200 South High Street  
Wailuku, Hawaii 96793

Henry Oliva, Director  
County of Maui  
Department of Parks and Recreation  
1580-C Kaahumanu Avenue  
Wailuku, Hawaii 96793

David Blane, Director  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793

Howard Tagomori, Chief  
County of Maui  
Department of Police  
55 Mahalani Street  
Wailuku, Hawaii 96793

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

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

#### Reference Libraries

Hawaii State Library  
478 S. King Street  
Honolulu, Hawaii 96813

Legislative Reference Bureau  
State Capitol, Rm 004  
Honolulu, Hawaii 96813

University of Hawaii at Manoa  
Hamilton Library  
2550 The Mall  
Honolulu, Hawaii 96822

Maui Community College Library  
310 Kaahumanu Ave.  
Wailuku, Hawaii 96793

Hawaii State Archives  
Iolani Palace Grounds  
Honolulu, Hawaii 96813

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**Regional Libraries**

Hilo Public Library  
300 Waiānūenuē Avenue  
Hilo, Hawaii 96720

Kahului Regional Library  
90 School Street  
Kahului, Hawaii 96732

Kaimuki Regional Library  
1041 Koko Head Avenue  
Honolulu, Hawaii 96816

Kaneohe Regional Library  
45-829 Kamehameha Highway  
Kaneohe, Hawaii 96744

Kauai Regional Library  
4344 Hardy Street  
Lihue, Hawaii 96766

Pearl City Regional Library  
1138 Waimano Home Road  
Pearl City, Hawaii 96782

**Maui Libraries**

Lahaina Public Library  
680 Wharf Street  
Lahaina, Hawaii 96761

Makawao Public Library  
1159 Makawao Ave.  
Makawao, Hawaii 96768

**News Media**

Honolulu Advertiser  
City Desk  
P.O. Box 3110  
Honolulu, Hawaii 96802

Maui News  
100 Mahalani  
Wailuku, Hawaii 96793

Honolulu Star Bulletin  
City Desk  
P.O. Box 3080  
Honolulu, Hawaii 96802

**University of Hawaii**

John Harrison, Ph.D.  
Environmental Coordinator  
University of Hawaii at Manoa  
Environmental Center  
2550 Campus Road, Crawford Rm 317  
Honolulu, Hawaii 96822

University of Hawaii at Manoa  
Water Resources Research Center  
2540 Dole Street  
Honolulu, Hawaii 96822

---

**Non-Governmental Agencies, Organizations, and Individuals**

Director of Environmental Health  
American Lung Association  
245 North Kukui Street  
Honolulu, Hawaii 96817

David Gleason, Vice President  
Amfac Property Investment  
Corp.  
2530 Kekaa Drive  
Lahaina, Hawaii 96761

John Higham, Director of Development  
Amfac Property Development  
Corp.  
P.O. Box 3230  
Honolulu, Hawaii 96801

Bishop Estate  
567 South King Street  
Honolulu, Hawaii 96813

Hawaiian Telephone Company  
P.O. Box 370  
Wailuku, Hawaii 96732

Kelly Arbor  
Lahaina News  
910-A Honoapiilani Highway  
Lahaina, Hawaii 96761

Lynne Woods, President  
Maui Chamber of Commerce  
P.O. Box 1677  
Kahului, Hawaii 96732

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

Terryl Vencyl, Executive Director  
Maui Hotel Association  
1325 L. Main Street  
Wailuku, Hawaii 96793

Peter Brodie, Assistant Manager  
and Controller  
Pioneer Mill Company, Limited  
P.O. Box 727  
Lahaina, Hawaii 96761

Marty Garelick, Corporate Director  
Railroads of Hawaii dba Lahaina,  
Kaanapali & Pacific Railroad  
P.O. Box 816  
Lahaina, Hawaii 96767-0816

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

Reuben N. Aotaki  
1462 Fleming Road  
Lahaina, Hawaii 96761

Jan Bailey  
P.O. Box 1191  
Lahaina, Hawaii 96767

Brian K. Blundell  
Andrea Heath-Blundell  
810 Ikena Avenue  
Lahaina, Hawaii 96761

Buck Buchanan  
416 Alio Street  
Lahaina, Hawaii 96761

Dave Chenoweth  
340 Front Street  
Lahaina, Hawaii 96761

Richard Darling  
106 Halelo Street  
Lahaina, Hawaii 96761

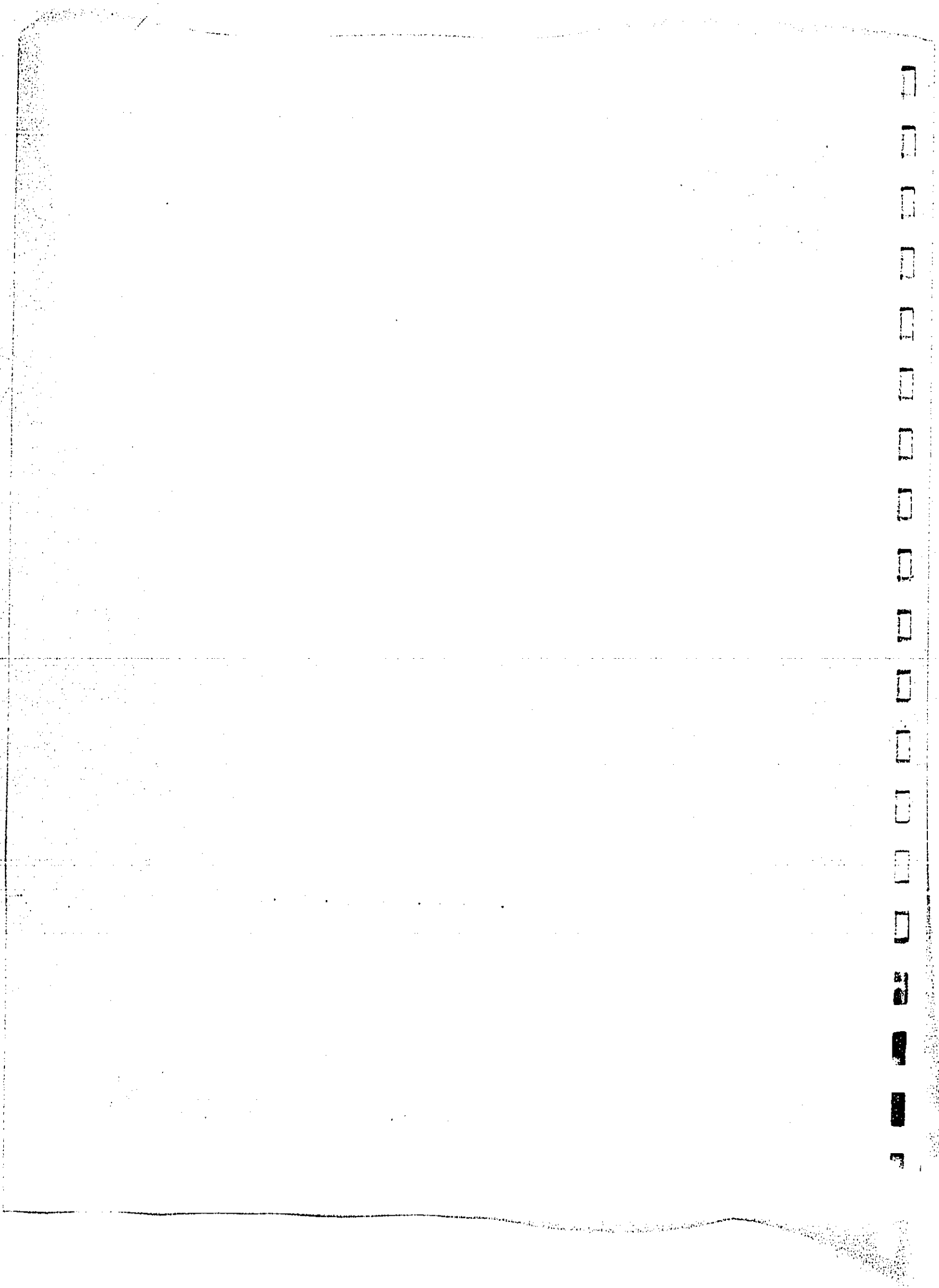
Mary Lou Kunkel  
P.O. Box 544  
Lahaina, HI 96767

D.G. Malcolm  
39 Hale Malia Place  
Lahaina, Hawaii 96761

---

Ed Miyabara  
730 Kumukahi Street  
Lahaina, Hawaii 96761

Connie Stevenson  
55-1 Puapake Place  
Lahaina, Hawaii 96761





# **Chapter XIII**

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**Comments and Responses  
Provided During the Review  
of the Draft SEIS**

**XIII. COMMENTS AND RESPONSES PROVIDED DURING THE REVIEW OF THE DRAFT SEIS**

Federal Agencies	Status and Dates of Letters Received From Agencies, Organizations and Individuals	Status of Responses to Agencies, Organizations and Individuals
U.S. Department of Agriculture NRCS	3/25/96	RP
U.S. Department of Agriculture Office of the Secretary	NCR	NRR
U.S. Coast Guard	NCR	NRR
U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service	NCR	NRR
U.S. Army Corps of Engineers	3/8/96	RP
U.S. Department of Energy	NCR	NRR
U.S. Environmental Protection Agency Office of Federal Activities	4/12/96	RP
Office of External Affairs U.S. Environmental Protection Agency	NCR	NRR
U.S. Dept. of Housing and Urban Development	NCR	NRR
U.S. Dept. of Housing and Urban Development Regional Environmental Standards Officer	NCR	NRR
U.S. Dept. of the Interior Fish and Wildlife Service	NCR	NRR

NCR - No Comment Received  
 NRR - No Response Required  
 RP - Response Provided

U.S. Dept. of the Interior Office of the Secretary	4/29/96	RP
United States Department of the Interior Geological Survey Water Resources Division	3/4/96	NRR
U.S. Department of Interior Office of Environmental Project Review	NCR	NRR
U.S. Department of Transportation Federal Highway Administration Director	NCR	NRR
U.S. Department of Transportation Federal Highway Administration Regional Administrator	NCR	NRR
U.S. Department of Transportation Federal Highway Administration Division Administrator	NCR	NRR
The Honorable Daniel K. Inouye U.S. Senator	NCR	NRR
The Honorable Daniel K. Akaka U.S. Senator	NCR	NRR
Patsy Mink, House of U.S. Representatives	3/6/96	NRR

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided

State Agencies	Status and Dates of Letters Received From Agencies, Organizations and Individuals	Status of Responses to Agencies, Organizations and Individuals
Department of Accounting and General Services	4/19/96	NRR
Department of Agriculture	NCR	NRR
Department of Budget and Finance	NCR	NRR
Department of Budget and Finance Housing Finance and Development Corporation	3/12/96	RP
Department of Business, Economic Development and Tourism Energy Division	3/1/96	NRR
Department of Business, Economic Development and Tourism	NCR	NRR
Department of Business, Economic Development and Tourism Library	NCR	NRR
Department of Business, Economic Development & Tourism Land Use Commission	3/11/96	RP
Adjutant General and Director of Civil Defense Department of Defense	NCR	NRR
Department of Education	3/12/96	RP
Office of Environmental Quality Control	5/14/96	RP
Office of Hawaiian Affairs	3/20/96	NRR
Board of Trustees Office of Hawaiian Affairs	NCR	NRR
Hawaiian Homes Commission Department of Hawaiian Home Lands	4/1/96	RP

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided

Department of Health	4/30/96	RP
Maui/Lanai Island Burial Council	NCR	NRR
Department of Housing and Community Development	NCR	NRR
Department of Land and Natural Resources, Commission on Water Resources Management	5/15/96	RP
Department of Land and Natural Resources Division of Forestry and Wildlife	3/5/96	NRR
Department of Land and Natural Resources, Land Division - Engineering Branch and State Historic Preservation Division	6/6/96	RP
Office of State Planning	NCR	NRR
Department of Transportation	3/22/96	NRR
The Honorable Roz Baker State Senator	NCR	NRR
The Honorable Michael White State Representative	NCR	NRR

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided

<b>Maul County Agencies</b>	<b>Status and Dates of Letters Received From Agencies, Organizations and Individuals</b>	<b>Status of Responses to Agencies, Organizations and Individuals</b>
Linda Crockett Lingle, Mayor	NCR	NRR
Office of the Mayor Economic Development Coordinator	3/15/96	NRR
Honorable Alice Lee, Chairperson County Council	NCR	NRR
Office of Council Services	NCR	NRR
Department of Fire Control	NCR	NRR
Department of Housing and Human Concerns	3/8/96	RP
Department of Parks and Recreation	3/27/96	RP
Planning Department	3/22/96	RP
Department of Police	3/18/96	NRR
Department of Public Works and Waste Management	4/23/96	RP
Department of Water Supply	NCR	NRR
Honorable Tom Morrow, Councilmember, County Council	6/21/96	RP

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided

Reference Libraries	Status and Dates of Letters Received From Agencies, Organizations and Individuals	Status of Responses to Agencies, Organizations and Individuals
Hawaii State Library	NCR	NRR
Legislative Reference Bureau	NCR	NRR
University of Hawaii at Manoa	NCR	NRR
Maui Community College Library	NCR	NRR
Hawaii State Archives	NCR	NRR
Regional Libraries	Status and Dates of Letters Received From Agencies, Organizations and Individuals	Status of Responses to Agencies, Organizations and Individuals
Hilo Public Library	NCR	NRR
Kahului Regional Library	NCR	NRR
Kaimuki Regional Library	NCR	NRR
Kaneohe Regional Library	NCR	NRR
Kauai Regional Library	NCR	NRR
Pearl City Regional Library	NCR	NRR
Maui Libraries	Status and Dates of Letters Received From Agencies, Organizations and Individuals	Status of Responses to Agencies, Organizations and Individuals
Lahaina Public Library	NCR	NRR
Makawao Public Library	NCR	NRR

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided

<b>News Media</b>	<b>Status and Dates of Letters Received From Agencies, Organizations and Individuals</b>	<b>Status of Responses to Agencies, Organizations and Individuals</b>
Honolulu Advertiser City Desk	NCR	NRR
Honolulu Star Bulletin City Desk	NCR	NRR
Lahaina News	3/12/96 (Verbal)	NRR
Maui News	NCR	NRR
<b>University Of Hawaii</b>	<b>Status and Dates of Letters Received From Agencies, Organizations and Individuals</b>	<b>Status of Responses to Agencies, Organizations and Individuals</b>
University of Hawaii at Manoa Environmental Center Environmental Coordinator	NCR	NRR
University of Hawaii at Manoa Water Resources Research Center	3/4/96	NRR
<b>Other Organizations/Individuals</b>	<b>Status and Dates of Letters Received From Agencies, Organizations and Individuals</b>	<b>Status of Responses to Agencies, Organizations and Individuals</b>
Director of Environmental Health American Lung Association	NCR	NRR
David Gleason, Vice President Amfac Property Investment Corp.	NCR	NRR
John Higham, Director of Development Amfac Property Development Corp.	NCR	NRR
Bishop Estate	NCR	NRR

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided



Estate of James Campbell c/o Whalers Village	4/30/96	NRR
Hawaiian Telephone Company	NCR	NRR
Maui Chamber of Commerce	NCR	NRR
Maui Electric Company, Inc.	3/22/96	RP
Maui Hotel Association	4/29/96	RP
Pioneer Mill Company, Limited	NCR	NRR
Railroads of Hawaii dba Lahaina, Kaanapali & Pacific Railroad	3/30/96	RP
West Maui Taxpayers Association	4/30/96	RP
Reuben N. Aotaki	NCR	NRR
Janet Bailey	4/5/96	RP
Brian K. Blundell Andrea Heath-Blundell	NCR	NRR
Buck Buchanan	5/14/96	RP
Dave Chenoweth	4/30/96	RP
Richard Darling	NCR	NRR
Paul Dean	4/23/96	NRR
Mary Lou Kunkel	NCR	NRR
D.G. Malcolm	NCR	NRR
Ed Miyabara	4/22/96	NRR
Connie Stevenson	3/3/96	RP

NCR - No Comment Received  
NRR - No Response Required  
RP - Response Provided

***Substantive Comments and  
Responses Provided***



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

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

MAR 25 1986

March 25, 1986

Mr. Abraham Wong  
Division Administrator  
US Department of Transportation  
Federal Highway Administration  
Region Nine  
P.O. Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: HEC-II; Draft Supplemental Environmental Impact Statement - Hooopiliani Highway (FAP 30); Puamana to Hooopiliani; Lahaina, Maui, Hawaii

We have reviewed the above-mentioned document and offer the following comments:

1. There is a need to coordinate with the NRCS on the Lahaina Watershed Flood Control Project. The Highway's entry at Puamana is approximately where the second outlet for flood control will outlet. A bridge or box culvert is expected under Hooopiliani Highway. A need for coordination is needed since several of the gullies above Lahaina have no outlets except for the diversion which is expected to be constructed in the watershed project.

We thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO  
State Conservationist

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION  
Apr 1 11 21 AM '86  
HIGHWAY DIVISION  
PLANNING BRANCH

The Natural Resources Conservation Service, formerly the Soil Conservation Service, works hand-in-hand with the American people to

Response to U.S. Department of Agriculture, Natural Resources Conservation Service

1. Prior to the extension of the Modified Project's alignment to Laintrooko, coordination between the State Department of Transportation (DOT) and the Natural Resources Conservation Service (NRCS) had been undertaken to coordinate planning for the location of the former south access road connection at Puamana with the location of the second flood control outlet for the Lahaina Watershed Flood Control Project. Recently, DOT and NRCS representatives met to discuss other opportunities for project coordination. Although it was agreed that uncertainties regarding funding and scheduling render an integrated planning and design approach for both projects difficult, the NRCS and DOT will continue to share information regarding their respective projects.

DEPARTMENT OF THE ARMY  
PACIFIC OCEAN DISTRICT, CORPS OF ENGINEERS  
FT. SHAFTER, HAWAII 96844-440



March 8, 1996

REPLY TO  
ATTENTION OF


Planning and Operations Division

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

Dear Mr. Wong:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Impact Statement for the Proposed Honoapiilani Highway Project (FAP Route 30), Lahaina, Maui. We do not have any additional comments to offer beyond those provided in our previous letters dated October 23, 1991 and September 21, 1995.

Sincerely,

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

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION  
HICOMMUNICATIONS  
PLANNING BRANCH  
MAR 28 12 43 PM '96

DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, HONOLULU  
FT. SHAFTER, HAWAII 96844-440



September 21, 1995

REPLY TO  
ATTENTION OF

Operations Division

Mr. Hugh Ono  
Administrator, Highways Division  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Ono:


This is in response to your letter of September 14, 1995, regarding the proposed Honoapiilani Highway project (file number PO 95-058).

As Captain Walt Michel of my staff discussed with Mr. Glenn Tadaki, Munekiyo and Arakawa, Inc., on July 24, 1995 and August 18, 1995, the plans submitted to date are preliminary. Per the above discussions, it was our understanding that you would be providing a Department of the Army application and final plans for the footings and box culvert. As also discussed, the preliminary plans it appears as if your proposed project could be covered by a nationwide permit for road crossings. I have attached the special conditions of the nationwide for your use. In order to qualify for the nationwide, the footings must be limited to less than 1/3 acre in waters of the U.S.

It is also important that you coordinate this project with the Corps' Planning Division, since the project is near and may affect the Corps' Kahoma Stream flood control project.

If you have any questions, please call Ms. Terrell Kelley at (808) 438-9258, extension 13.

Sincerely,

  
James L. Barsson, P.E.  
Chief, Operations Division

ATTACHMENT  
HIGHWAYS DIVISION  
STATE DEPARTMENT  
OF TRANSPORTATION

OCT 2 1 08 PM '95

RECEIVED  
SEP 28 10 06 AM '95  
HICOMMUNICATIONS  
DIVISION

RECEIVED  
SEP 27 1 31 PM '95  
SEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION



DEPARTMENT OF THE ARMY  
U.S. Army (Contract) Honolulu  
11 1st Street, Honolulu, Hawaii 96813

October 23, 1991

Planning Division

Mr. Edward Y. Hirata  
Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hirata:

Thank you for the opportunity to review and comment on the Environmental Assessment and Supplemental Environmental Impact Statement Preparation Notice for Modification to Honolulu Highway Bypass Corridor, Haul. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

- a. Stream crossings may require DA permits. Please coordinate with Operations Division when plans are completed.
- b. The flood hazard information provided in our previous letter dated July 6, 1987, is still applicable.
- c. As noted in our letter dated February 2, 1989, the proposed crossing at the Joint Federal and County of Maui Kanama Stream flood Control Project must be coordinated with Planning Division. The Planning Division point of contact for review of your highway project plans is Ms. Helen Stuppelbeen (telephone 438-7008).

Sincerely,

*Ray H. Chung*  
Ray H. Chung  
Director of Engineering

RECEIVED  
OCT 24 2 29 PM '91  
DEPT. OF TRANSPORTATION  
HIGHWAY DIVISION

Response to U.S. Department of the Army, Pacific Ocean Division, Corps of Engineers

1. A Department of the Army permit application, as well as final plans for the bridge footings and box culvert will be provided in connection with the project's design phase. Coordination with the Corps Planning Division for the proposed crossing at the Kahoma Stream Flood Control Project will also be undertaken during the final design phase.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
RECEIVED  
OFFICE OF TRANSPORTATION  
WASHINGTON, DC

75 Hawthorne Street  
San Francisco, CA 94105-3001  
APR 17 11 23 AM '86  
HIGHWAY VISION  
PLANNING BRANCH

April 12, 1996

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

RECEIVED  
APR 15 1 45 PM '86  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

Dear Mr. Wong:

The U. S. Environmental Protection Agency (EPA) has reviewed the Supplemental Draft Environmental Impact Statement (DEIS) for the Honopiliilani Highway from Puamana to Honokowai, Maui County, Hawaii. We provide our comments pursuant to the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act and the Council on Environmental Quality's (CEQ) Regulations for Implementing NEPA.

A Final Environmental Impact Statement (EIS) for the project was completed in March of 1991. That EIS identified a preferred alternative of a 8.5 mile, 2 lane bypass-highway with a truck passing lane at certain segments, from Puamana to Kahalunala road, then rejoining the Honopiliilani highway which would be widened at Kaanapali, terminating in Honokowai. This Supplemental DEIS discusses a new 4-lane bypass extension that would extend the original bypass alignment past Kaanapali and connect to the Honopiliilani highway at Honokowai. The SDEIS discusses only this new bypass alternative along with some interchange modifications.

We have rated the DEIS as EC-2, Environmental Concerns - Insufficient Information (See enclosed "Summary of Rating Definitions and Follow-up Action"). We are concerned that the document is not clear about whether the base alignment will remain after Kahona stream or if there will be a modification to that base alignment. Also, there is no discussion of the previous extension alternatives, and the document does not indicate if this modified project alignment is one of the alternatives that was examined in the original DEIS from 1989. We also have some concerns regarding the project's compliance with the National Pollution discharge Elimination System and Coastal Zone Management Act requirements.

Even though the villages of Leialii and Pukoli are already planned and approved, the completion of this bypass may induce significant growth outside and around the project area. According to the SDEIS, the last decade has seen a population increase of approximately 50% in Maui and many of the county

plans anticipate substantial population growth in the future. The Maui county plan currently designates the areas around the proposed alignment as agricultural but the DEIS identifies planned communities for the areas around the Bypass. We recommend that the Final EIS elaborate in greater detail the potential for induced growth, and the associated cumulative impacts, in the surrounding areas due to the improved circulation brought about by the Honopiliilani bypass.

Please continue to refer to our January 1989 comments on the DEIS as they are still relevant to the project. We appreciate the opportunity to review and provide comments on this Draft EIS. Please send two copies of the Final EIS to this office at the same time it is officially filed with our Washington, DC office. If you have any questions, please feel free to contact me at (415) 744-1584, or have your staff contact David J. Carlson of my staff at (415) 744-1577.

Sincerely,

David Farrell, Chief  
Office of Federal Activities

Attachment: 5 pages

cc: Jeffrey Brooks, FHWA - Region IX  
Kazu Hayashida, State Department of Transportation

MI# 001068:honopy.dei

**SUMMARY OF RATING, DEFINITIONS AND FOLLOW-UP ACTION**

**Zero or minimal impact of the Action**

**LD - Lack of Objections**

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC - Environmental Concerns**

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

**EO - Environmental Objections**

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EI - Environmentally Unsatisfactory**

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected in the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

**Adopted text of the Impact Statement**

**Category 1 - Adequate**

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2 - Insufficient Information**

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

**Category 3 - Inadequate**

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally reviewed and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual (640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

**NEPA COMMENTS**

**Alternatives Analysis\Design Criteria**

The SDEIS does not contain a clear discussion of the complete scope of the extension alternative. The most confusing aspect of the document is that the SDEIS does not clearly indicate the disposition of the base alignment after it meets the extension alignment. The SDEIS does not state if the base alignment will remain in its suggested form, from Kahona stream to where it meets the Honospiliani Highway, or if it is removed in light of the extension, or if there will be a surface street in its place. The FEIS should clarify this issue.

1.

The SDEIS is also unclear as to whether this modified bypass alignment is one of the extension alignments that was discussed in the DEIS. It appears that this modified alignment is different than the two extension alternatives that were looked at in the 1989 DEIS. If this is the case, then the SDEIS should have contained at least a summary of the previously examined extension alternatives from the 1989 DEIS and compared those to the modified extension alternative and the base alignment. The alternatives analysis is the heart of the environmental impact statement. We strongly recommend that the FEIS contain a clear alternatives analysis that addresses the other extension alternatives that had been analyzed in the 1989 DEIS along with this preferred modified extension alternative.

2.

3.

We have a serious concern regarding the project design. On page 33, the SDEIS mentions that in phase I, the bridge structures will provide only two travel lanes, and that a second two lane bridge structure will be constructed at each crossing under phase II. We feel that this is an unnecessary impact to the aquatic resources. The SDEIS does not provide the rationale for proceeding with this phased approach. FWA and HDOT should try to minimize the impacts to aquatic resources as much as possible, by only performing bridge construction once. We strongly recommend that HDOT and FWA examine the option of constructing one bridge with the four lane capacity, and restricting the bridge width to two lanes during phase I of the project using barriers or markers. This option should be fully discussed in the FEIS.

4.

**Cumulative Impacts**

We appreciate the discussion of the growth inducement and foreseeable development projects in the area, however we are concerned that the cumulative impacts of these projects and the indirect effects of the proposed action are not fully analyzed in the DEIS as required by 40 CFR 1502.16(b), and 40 CFR 1507. We

5.

recommend that HDOT and FHWA address all of the cumulative and indirect impacts from spatially and temporally related projects, including potential impacts that may be out of the direct control of HDOT and FHWA. The analysis of the cumulative impacts would include impacts from such projects as the different housing developments, the NRCS drainage canal, and additional induced development in the northern and eastern portion of the project area. Projects that are either currently underway or are planned to be implemented in the near future may have additional impacts on air quality, water quality, wetlands, and erosion.

#### Traffic Impacts

6. The SDEIS contains a discussion of the impacts to traffic in the area of the project as it relates to through traffic from Lahaina, Kaanapali and Honokohau. However, there is no mention of the impacts to the traffic on the highway that would result from the completion of the villages of Kealahi and Pukohi, nor is there a discussion of the impacts to the traffic circulation within these developments, if there is limited access to the highway. The FEIS should contain an expanded traffic analysis that includes accounting for the increase in vehicle trips to and from the planned communities along the alignment as well as access considerations such as any associated delays that may occur either on the roadway at connector street access points or on the surface streets in the villages.

#### AIR QUALITY

7. The SDEIS states on page 76, that during construction, trucks carrying wind erodible materials are required to comply with statutes governing erosion and spillage, but does not discuss these statutes further. The FEIS should indicate what these requirements are and discuss the measures that will be used to comply with them.

#### WATER QUALITY

##### Non-point Source Pollution

8. The SDEIS states that HDOT will obtain a NPDES permit. We assume this is due to the expected erosion and runoff impacts from the construction activities, such as cut and fill operations. However, the amount of material to be moved around is not indicated nor is the extent of the anticipated erosion impacts discussed in the SDEIS. We recommend that the FEIS provide information as to the amount of material that will be moved as part of the construction and cut and fill operations. The FEIS should discuss the project's compliance with the General NPDES permit for construction activities, including a discussion of the Best Management Practices (BMP) Plan that will be used to

mitigate the impacts. FHWA and HDOT should complete and file a Notice of Intent (NOI) to file an NPDES permit, and must develop and implement the Best Management Practices plan containing BMPs prior to commencing any construction. In the Record of Decision (ROD), we recommend that FHWA and HDOT commit to implementing these BMPs, and discuss the monitoring measures that will be used to ensure that the BMPs are effective. (Please refer to our January 1989 water quality comments page 2, #5).

9. While the SDEIS does have a brief discussion of possible mitigation techniques for reducing erosion impacts from construction activities, there is no discussion as to whether or not these actions are sufficient to mitigate the impacts. The FEIS should address areas of expected significant impacts and the need for any additional measures for areas that may require further protection due to hydrology, geology, or steepness of the slope.

10. The SDEIS does not contain a discussion of the possible nonpoint source impacts generated by the roadway. As previously indicated, we are concerned with the potential impacts from erosion and runoff, including runoff generated from the bypass once it is constructed. In January, 1993, EPA and the National Oceanic and Atmospheric Administration jointly announced the availability of the Guidance for Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (Guidance) pursuant to Section 6217(g) of the Coastal Zone Reauthorization Amendments of 1990. Section 6217(g)(5) defines management measures as, "economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives." We recommend FHWA and HDOT consider this Guidance for the Honospillani Highway project. These guidelines should be referenced in the discussion of mitigation of the construction impacts, as well as the discussion of implementing the guidelines along the roadway, at intersections, and associated facilities when construction is completed.

The SDEIS does not discuss any net increase in nonpoint source pollution associated with the modified project alternative. The SDEIS should discuss the criteria for determining if there will be a significant impact on the streams and the Natural Resources Conservation Service (NRCS) flood water diversion channel from erosion and runoff from the roadway. (Please refer to our January 1989 water quality comments Page 2, #2). If it is determined that there will be significant runoff impacts to water resources the FEIS should discuss what measures



11. will be employed to reduce those impacts (see previously mentioned Guidance). Also, we recommend that FHWA and Caltrans discuss the relationship between the bypass and the KRCS flood water diversion channel in terms of its capacity as a stormwater conveyance facility and its ability to handle additional pollutant loads.

12. We believe that there are numerous opportunities to implement management practices to prevent and minimize the impacts of nonpoint source pollutants on water quality from surface water runoff. We recommend that HDOT and FHWA expand the water quality section to include appropriate management practices, and develop an erosion and sedimentation control plan for inclusion in the FEIS. Finally, the Record of Decision for the project should include commitments to implementing and monitoring the practices.

13. We are also concerned with the potential cumulative effects on the surface waters and the ocean from urban runoff, including that which would be generated by the roadway and all associated projects, such as the intersections of the connector streets and the housing developments. The SDEIS does not discuss the cumulative impacts on the natural aquatic biological systems along portions of the corridor. The FEIS should provide a detailed discussion specifying what those impacts may be and indicate what provisions will be taken to minimize those impacts.

#### Coastal Zone Management

14. The SDEIS discusses the Hawaii Coastal Zone Management Program but the document did not indicate if HDOT and FHWA had in fact consulted with the Office of State Planning regarding the development of the Honopili'ani Highway.

15. The Coastal Zone Management Act (CZMA), requires that Federal Agencies be consistent with the policies of state coastal zone management programs when conducting activities which affect a coastal zone. The Federal Agency must review the state Coastal Zone Management Plan (CZMP) to determine whether the activity would be consistent with the Plan and then notify the State of its determination. Federal agencies must prepare a written consistency determination which includes: a detailed description of the action, its associative facilities, and coastal zone effects; a brief statement on how the activity would be consistent with the state CZMP, and data to support the consistency determination.

16. The SDEIS states that the project modifications are in keeping with the objectives of the CZMP, however the rationale for this conclusion is not provided. We encourage FHWA and HDOT to contact the Office of State Planning to discuss the plans for

17. the highway. The FEIS should contain a more detailed discussion concerning the applicability of the CZMA and the State CZMP to the proposed development activities in keeping with the comments above.

#### ENVIRONMENTAL JUSTICE

In keeping with Executive Order 12898, Federal actions to address Environmental Justice in Minority Populations and Low-income Populations (EO 12898), the FEIS should describe the measures taken by the State DOT and FHWA to fully analyze the environmental effects of the proposed Federal action on minority communities and low income populations. The intent and President's February 11, 1994, Memorandum for the Heads of all Departments and Agencies, attached. We recommend that HDOT and FHWA work closely with the residents in proximity to the highway regarding the immediate impacts of the highway and with the Native Hawaiian organizations regarding the areas where the freeway is on archaeologically significant lands. FHWA and HDOT should also ensure that the residents in the immediate neighborhoods have access to all public information relating to the planning and construction of the Freeway.

#### POLLUTION PREVENTION

Pursuant to Public Law 91-508, Pollution Prevention Act of 1990 (PPA), "it is the policy of the United States that pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible, and disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner." The FEIS should describe how FHWA and HDOT will implement programs and practices to insure that the project will comply with the PPA.

Response to U.S. Environmental Protection Agency, Region IX

1. Reference to the deletion of the Base Project alignment from Kahoma Stream to its junction with Honopuili Highway near Keanehail is noted in the subject's Final Supplemental Environmental Impact Statement (FSEIS).
2. The modified extension alternative to Honokowai described in the Draft Supplemental Environmental Impact Statement (DSEIS) follows an alignment similar to the extension alternatives which were examined in the 1990 Final Environmental Impact Statement (FEIS) for the Base Project. An analysis of the extension alternatives for the Base Project and Modified Project were described in the FEIS and DSEIS, respectively. The DSEIS focuses on elements of the Modified Project which were previously not included in the FEIS and includes a discussion of the previous extension alternatives.
3. Adverse impacts to aquatic resources within the gulches and streams in the project corridor are not anticipated. These drainageways are non-perennial at the crossing locations and construction activities will be limited to periods of no or limited rainfall. To minimize any potential impacts related to construction activities, the placement of bridge footings within these drainageways will be examined in detail during the design of the bridge structures. In addition, Best Management Practices (BMPs) will be utilized to ensure that construction activities do not adversely affect marine resources in coastal waters.
4. The construction of four-lane bridge structures during the initial phase of the project to a large extent is dependent on funding. The construction of the additional two-lanes during the first construction phase would involve an allocation of more than \$17 million. The expenditure of funds for the additional lanes would not initially contribute to traffic operations since the additional two (2) lanes would not be utilized until traffic warrants are met in future years. The availability of Federal and local funding, as well as an examination of construction costs and phasing, will be examined in detail during the formulation of plans for the design of the bridge structures.
5. Cumulative impacts relating to projects that are planned for future development were examined in the DSEIS. The FSEIS also examines the potential for induced growth and the associated cumulative impacts along the project corridor due to the improved traffic circulation provided by the Bypass.
6. Utilizing County socio-economic projections, which includes the future development of projects such as Puukohli Village and the Villages at Lela'i, the Maul Long-Range Transportation Plan (Final Report, February 1997) identifies the Bypass as a major transportation element which is needed to address the long-

range (to the year 2020) transportation needs of the West Maui region. In addition, the Maul Long-Range Highway Planning Study (1991), also considered projects proposed for future development within the West Maui region (e.g., Puukohli Village, Villages at Lela'i) as the basis for deriving traffic volumes for the Bypass.

Traffic studies prepared for these projects were examined by the State Department of Transportation (DOT) during their review of these master planned communities. Potential impacts to traffic resulting from the completion of these projects, as well as recommended mitigation measures were identified in these studies.

In order to identify any new potential impacts to traffic on the Bypass, construction plans and traffic impact analysis reports, which include trip generation and traffic assignment data, will be submitted by the project developers for review and approval by the DOT prior to the actual development of each project phase. Applicable traffic mitigation measures would then be implemented as necessary.

7. Contractor(s) will be required to comply with the provisions of Chapter 10.68 of the Maui County Code pertaining to heavy vehicles and vehicle loads. Pursuant to Chapter 10.68, vehicles are not permitted on any highway with any load consisting of wind erodible material unless the load is entirely secured with a tarpaulin or other suitable covering, thus preventing any part of the load from being blown or carried by the wind.

8. Data regarding the amount of material that will be moved in connection with the construction of the project, as well as cut and fill operations will be provided to the applicable regulatory agencies in connection with the review and approval of construction plans for the project.

9. Areas which may require further protection due to physical and topographical conditions (e.g., steepness of slopes, hydrology) will be examined in detail during the preparation of construction plans for the project and appropriate mitigative measures will be implemented accordingly.

10. The Guidance for Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters will be considered in the preparation of BMPs to ensure that nonpoint source pollution control concerns are addressed and that adequate mitigation measures are implemented.

11. Further coordination with the Natural Resources Conservation Service (NRCS) will be undertaken prior to the project's final design phase to discuss the capability of its stormwater conveyance facility to handle additional runoff loads generated by the project.
12. The proposed project will conform with applicable compliance requirements regarding water quality impacts, construction activities, and nonpoint source pollution (including NPDES requirements). To ensure that construction and development activities do not adversely impact the surrounding environment, drainage and soil erosion control reports, as well as BMPs and monitoring plans relating to construction activities will be distributed to applicable governmental agencies in connection with the review and approval of the construction plans for the project.
13. The FSEIS includes additional information regarding gulches and streams along the project corridor which will be traversed by the proposed bridge structures. Potential cumulative impacts to these drainageways resulting from implementation of the project and appropriate mitigative measures are also discussed in the FSEIS.
14. A Hawaii Coastal Zone Management Program (HCZMP) Consistency Determination was included in the FEIS for the Base Project. A current HCZMP Consistency Assessment for the modified project was filed with the State Office of Planning. The Office of Planning's latest Consistency Determination has been incorporated in the FSEIS.
15. Coordination between the DOT, FHWA, and the Office of Planning was undertaken regarding the project's consistency with the Hawaii Coastal Zone Management Program (HCZMP). As noted above, a Consistency Determination which reflects the Modified Project's consistency with the objectives and policies of the HCZMP is included in the FSEIS.
- The Department of the Army (DA), Corps of Engineers has preliminarily indicated that a Nationwide Permit will likely be required for the project's quick and stream crossings. The DA permit will also trigger the need for a Section 401 Water Quality Certification and a CZM Consistency Determination which will be obtained from the State Department of Health (DOH) and the Office of Planning, respectively.
16. Coordination between the Federal Highways Administration (FHWA), DOT, and the Office of Planning will be undertaken to further discuss the plans for the project.

17. The FSEIS includes information addressing the provisions of Executive Order 12898 pertaining to Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

18. Specific measures to prevent or reduce pollution will be examined and implemented in accordance with applicable regulatory requirements and will be included in BMPs for the project.



United States Department of the Interior

OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20240

Ms. Charmaine Tavares  
Director, Department of Parks  
and Recreation  
County of Maui  
1580-C Kahumahu Avenue  
Hailuku, Hawaii 96793

ER-96/139

APR 29 1996

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

Dear Mr. Wong:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental/Section 4(f) Evaluation for the Honopiilani Highway (FAP Route 30) Puuana to Honokowai, Maui County, Hawaii.

We concur that there is no feasible and prudent alternative to the proposed highway project, if project objectives are to be met. However, we do not believe that all possible planning has been done to minimize harm to Section 4(f) resources.

We recommend that in order to mitigate project impacts on Kelaeva Mauka Park, the five recommendations presented in the July 11, 1995 letter from the Department of Parks and Recreation, County of Maui, be implemented at highway expense. Evidence to that effect should be included in the Final Section 4(f) Evaluation. We also recommend continued cooperation and coordination with the State Historic Preservation Officer in order to prepare a Memorandum of Agreement (MOA). The MOA should include measures to avoid or mitigate impacts to archaeological and historic resources which may be impacted by the proposed project, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. A signed copy of the MOA should be included in the Final Section 4(f) Evaluation.

The Department of the Interior has no objection to Section 4(f) approval of this project by the Department of Transportation, providing that the mitigation measures discussed above are adequately documented in the Final Section 4(f) Evaluation.

We appreciate the opportunity to provide these comments.

Sincerely,

*William R. Taylor*  
William R. Taylor  
Director, Office of Environmental  
Policy and Compliance

cc: Mr. Karu Hayashida, Director  
State of Hawaii  
Department of Transportation  
865 Punchbowl Street  
Honolulu, Hawaii 96813

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Response to U.S. Department of the Interior, Office of the Secretary

1. Coordination with the County Department of Parks and Recreation (DPR) was undertaken to ensure that the proposed project modifications would have no adverse impacts on Kelawasa Mauka Park. Documentation regarding the State Department of Transportation's commitment to implement the recommendations included in the DPR letter of July 13, 1995 is included in the Final Supplemental Environmental Impact Statement (FSEIS). On this basis, the Federal Highways Administration has indicated that the provisions of Section 4(f) are not applicable.
2. An Archaeological Treatment Plan for No Adverse Effect was prepared for the modified project and accepted by the State Historic Preservation Division (SHPD). The plan includes measures to avoid and mitigate impacts to archaeological and historic resources which may be impacted by the proposed project modifications. In addition, coordination with the SHPD has revealed that a Memorandum of Agreement will not be required for the modified project. Documentation relating to the SHPD's determination is included in the FSEIS.



STATE OF HAWAII  
DEPARTMENT OF BUDGET AND FINANCE  
HOUSING FINANCE AND DEVELOPMENT CORPORATION

177 OLUEHA STREET, SUITE 200  
HONOLULU, HAWAII 96813  
FAX (808) 547-0000

March 12, 1996

Mr. Abraham Wong  
March 12, 1996  
Page 2

abatement and security fencing will be incorporated along the residential portions of the villages of Leialii'i.

4. Page 34. Item 4. Project Costs  
The report should include a breakdown of the Right-of-Way cost, including the cost of land per acre.

5. Page 35. Item 5. Land Ownership  
The report should include the acquisition of private-owned residences along Ikena Avenue.

6. Page 41. Item 7. Housing  
The paragraph should also include the 1,700-unit Puukolii Village project by Amfac-JMB Hawaii which is expected to help ease the housing shortage.

7. Page 45. Item 10. Recreational Facilities  
Lahaina Kaanapali and Pacific Railroad should be added as a recreational facility.

8. Page 47  
A paragraph should be added about the postal service at the Lahaina Civic Center and at the Lahaina Cannery Shopping Center.

9. Page 47. Item 13. Wastewater Systems  
It is our understanding that the upgrading and expansion of the LWRP is completed with the exception of the four new injection wells and that the County of Maui is planning to install a reuse system in the near future. Since HFDC is already committed to reuse the treated effluent in its golf course at Leialii'i, similar application could be studied by the State for the irrigation of landscaping in new highway projects.

10. Figure 18. Relationship of Bypass to HFDC Project Limits  
The location of the proposed Kaanapali Connector will coincide with the future drainage improvements across Honoapiilani Highway. It is suggested that the connector and the drainage projects be coordinated between the respective agencies to avoid conflicts in design.

COLLEEN A. CAVITANO  
Director

STATE DEPARTMENT OF BUDGET AND FINANCE  
HOUSING FINANCE AND DEVELOPMENT CORPORATION  
PLANNING BRANCH  
March 21 11 09 AM '96

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

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement (EIS)  
Honoapiilani Highway (FAP Route 30)  
Puamana to Honokowai, Lahaina, Maui, Hawaii

Thank you for the opportunity to review the subject draft supplemental EIS. Our comments are as follows:

- Page 12. Last Paragraph and Page 13 First Paragraph  
The minimum right-of-way along the entire length of the modified Bypass alignment will remain unchanged at 150 feet. The right-of-way through the villages of Leialii'i project had been set at 150-feet for subdivision purposes. Please inform the Housing Finance and Development Corporation (HFDC) whether the 150-foot minimum right-of-way must be increased.
- Page 17. Second Paragraph  
The report states that separate EA's will be prepared for the Puukolii, Mahikuli, and Kapunakea Connectors at the time each connector is implemented. Please clarify if the State Department of Transportation will be preparing and filing the EA's for each of the connectors.
- Figure 17. Modified Project Typical Section  
The typical section does not address how the adjoining properties on the east and west sides of the right-of-way will be graded to handle run-off and changes in grade. Please also address how the project's noise

4/11

Mr. Abraham Wong  
March 12, 1996  
Page 3

11. Page 51, Second Paragraph - Ikena Avenue

The fourth sentence in this paragraph should be revised: Lands located to the south (north) of Lahainaluna Road (in the vicinity of Ikena Avenue (Street) is currently in sugar cultivation.

12. Page 56, Last Paragraph

The last sentence should be revised: Construction is dependent (may begin in 1995 depending on) upon the availability of Federal funds.

13. Page 81 Paragraph 1

Traffic noise levels will probably exceed the FHWA criteria of 67 decibels along sections of the highway right-of-way throughout the North Beach Mauka and Lahaina Master Planned Community projects. Please elaborate on what noise attenuation measures will be employed to reduce the traffic noise levels.

14. Page 101, E. Impacts to Other Infrastructure

Please indicate where the sources of water for the project's landscape irrigation are and whether the sources are readily available.

The last sentence in the last paragraph should be revised:

In addition, a third 69 KV transmission line and new Wahikuli substation are proposed to be [constructed prior to 1995] developed by Maui Electric Co., Ltd. in the future.

Should you have further questions, please call Neal Wu, Project Manager, at 587-0538.

Sincerely,



ROY S. OSHIRO  
Executive Director

Response to State of Hawaii, Department of Budget and Finance, Housing Finance and Development Corporation

1. The 150-foot minimum right-of-way for the segment of the Bypass which traverses the Villages at Lefaili will not be increased.

2. The County Department of Public Works and Waste Management (DPWWM) will be responsible for the preparation of the Environmental Assessment (EA) for the Dickenson Street Connector. Since it does not involve the use of State or County lands or funds, or activate any other EA triggers, no EA will be required for the Puukoli Connector. The responsibility for the preparation of the EA's for the Wahikuli and Kapunakea Street Connectors rests with the Housing Finance and Development Corporation (HFDC).

3. The construction plans which will be prepared during the project's final design phase will reflect how properties adjoining the right-of-way will be graded to accommodate stormwater runoff and grade transitions.

The lands underlying the Villages at Lefaili are currently undeveloped. Prior to the development of the residential areas adjoining the Bypass, noise abatement measures will be coordinated with the HFDC during the project's final design phase and implemented as necessary. In addition, the State Department of Transportation will implement the installation of security fencing along the residential portions of the Villages of Lefaili as warranted.

4. A breakdown of the right-of-way cost for the modified Bypass alignment is reflected in Table 4 of the Draft Supplemental Environmental Impact Statement (DSEIS), while a breakdown for the Kaanapali Connector and Bypass Access Road is shown in Table 5. An estimate of the average cost per acre is included in the FSEIS.

5. The acquisition of privately owned residences along Ikena Avenue was addressed in the Final Environmental Impact Statement (FEIS) for the base project. An update of the relocation project is included in the FSEIS.

6. Reference to the 1,700 unit Puukoli Village development is included in the FSEIS in the section concerning Housing. A description of this project is currently included in the DSEIS under the section relating to Land Use Impacts.

7. The Lahaina-Kaanapali & Pacific Railroad is referenced as a visitor-oriented recreational activity in the FSEIS.

8. The FSEIS includes references to the postal services provided at the Lahaina


- Civic Center and the Lahaina Cannery Mill.  
The use of treated effluent for landscaping will be examined during the project's final design phase.
9. The location of the Keanapali Connector, as well as the future drainage system improvements across Honoapiʻiani Highway to the north of the Lahaina Civic Center, will be coordinated with the appropriate agencies to avoid conflicts in design.
10. The fourth sentence in the second paragraph on page 51 of the DSEIS relating to Ikana Avenue has been revised.
11. The last sentence in the last paragraph on page 58 of the DSEIS relating to the project's implementation and funding has been revised.
12. As noted in the DSEIS, it is anticipated that the Bypass will be designed and developed prior to or concurrently with the North Beach Mauka and Villages at Le'iaili lands adjoining its alignment. As such, noise abatement measures such as adequate setbacks, landscaped buffers, and sound attenuating walls or berms may be used in the development of these projects.
13. During the project's final design phase, the use of treated effluent for landscape irrigation will be examined, as well as water-efficient, soil-preparation, planting, irrigation, and maintenance techniques. In addition, the last sentence in the last paragraph on page 103 of the DSEIS regarding Maui Electric's improvements has been revised.



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ESTHER UEDA  
 EXECUTIVE OFFICER



STATE OF HAWAII  
 DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
 LAND USE COMMISSION  
 P.O. Box 2259  
 Honolulu, HI 96804

Telephone: 597-1122  
 March 11, 1996

Mr. Abraham Wong  
 Division Administrator  
 Federal Highway Administration  
 300 Ala Moana Boulevard, Room 3202  
 Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement (SEIS), Honopiliilani Highway (PAP Route 30), Euaana to Honokoua, Lahaina, Hawaii

We have reviewed the SEIS for the subject project transmitted by your letter dated February 20, 1996, and have the following comments:

1. Based on Figure 6 of the SEIS, it appears that the modified project alignment and the proposed Kaanapali connector cross through the State Land Use Urban District in addition to the State Land Use Agricultural District. The proposed Lahaina Road-Bypass access appears to be located entirely within the State Land Use Agricultural District.  
 We have enclosed for your information a copy of the State Land Use District Boundaries Map M-2 (Lahaina), which depicts the current State Land Use District boundaries in the area. It appears that the State Land Use District boundaries depicted in Figure 25 are outdated.  
 It appears that the modified project alignment crosses into that portion of the Pukoli Mauka parcel of the Pukoli Village development which proposed residential, commercial, and medical facility uses. For your information, the development was reclassified by the Land Use Commission from the Agricultural District to the Urban District by Decision and Order dated May 5, 1993, under IUC Docket No. A92-686/Amfac Property Investment Corp. and the Housing Finance & Development Corporation.

Mr. Abraham Wong  
 March 11, 1996  
 Page 2


We note that the previous alignment ran between the Pukoli Mauka parcel and the Pukoli triangle parcel of the development.

3. We note that the summary on page 1 of the SEIS incorrectly identifies the Agricultural District designation as "Agriculture."

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

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

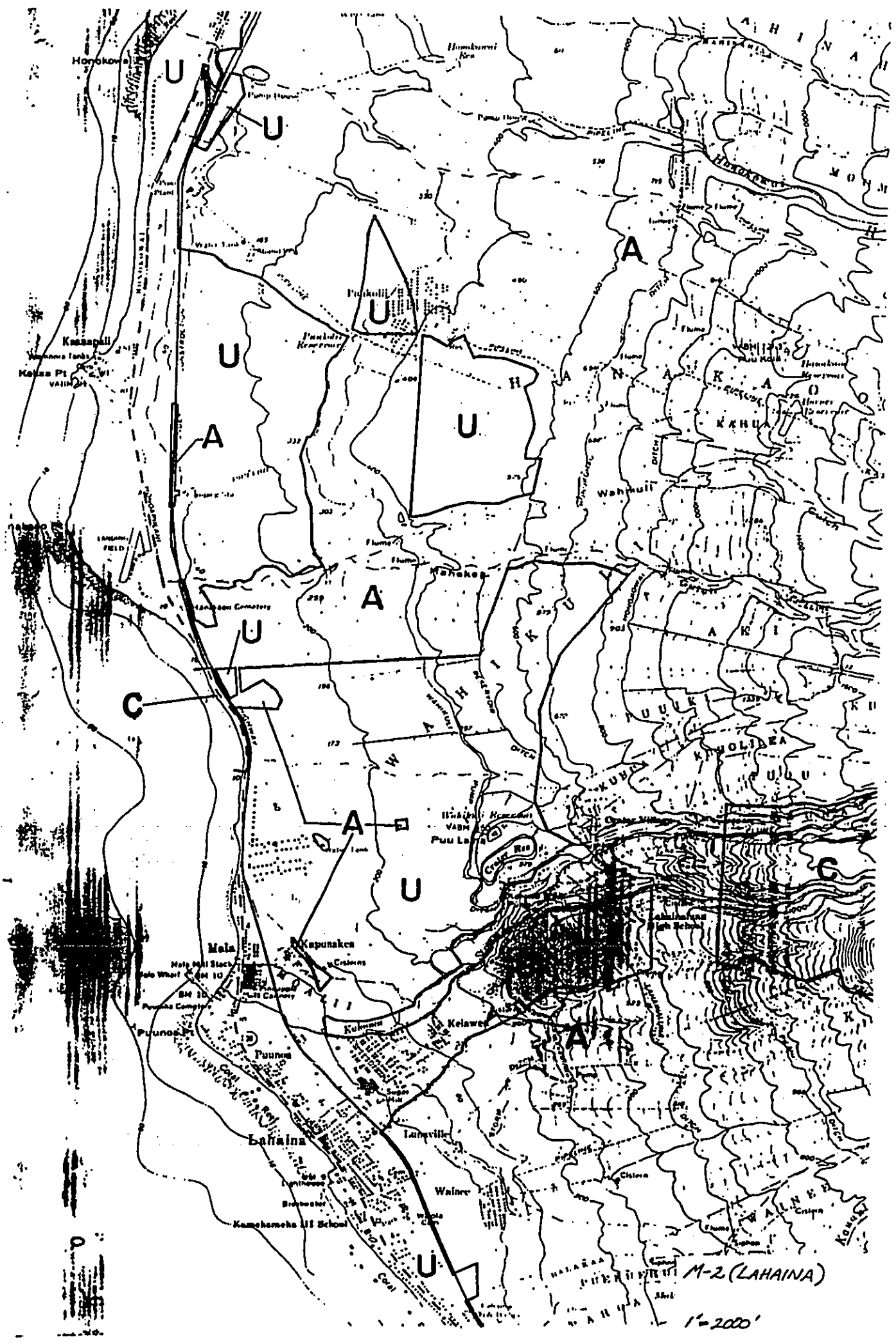
Sincerely,

  
 ESTHER UEDA  
 Executive Officer

EU:th

encl.

cc: DEEDT (Dir. Ref. #96-224-I)



M-2 (LAHAINA)

1" = 2000'

Response to State of Hawaii, Department of Business, Economic Development & Tourism, Land Use Commission

1. The Final Supplemental Environmental Impact Statement (FSEIS) has incorporated the Land Use Commission's comments regarding the current State Land Use District boundaries.
2. The FSEIS has been revised to reflect the Modified Project alignment between the Puukouli Mauka parcel and the Puukouli Triangle parcel.
3. The summary on page 1 of the FSEIS has been revised to reflect the Agricultural District designation.

Benjamin J. Cayetano  
Governor



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2308  
HONOLULU, HAWAII 96858

OFFICE OF THE SUPERINTENDENT

March 12, 1996

Response to State of Hawaii, Department of Education

1. It is understood that the State Department of Education will continue to coordinate efforts with the Housing Finance and Development Corporation to ensure that the school sites planned for the Villages at Leialii are not adjacent to, or adversely affected by the modified project alignment.

Mr. Abraham Wong  
Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Abraham Wong:

Subject: Draft Supplemental Environmental Impact Statement  
Honopiihoni Highway (FAP Route 30)  
Paamona to Honokowai, Lahaina, Maui, Hawaii

We have reviewed the subject revised alignment for the Lahaina bypass project and are concerned that it may impact two potential school sites located in the Lahaina Master Planned Community. We will continue to work with the Housing and Finance Development Corporation to assure that the school sites are not adjacent to or adversely affected by the highway realignment.

Thank you for the opportunity to comment. Should there be any questions, please contact the Facilities Branch at 733-4862.

Sincerely,

*Herbert W. Aizawa*  
Herbert W. Aizawa, Ph.D.  
Superintendent

HMA:by

cc: A. Suga, OBS  
R. Murakami, MDO  
G. Matsuoka, DAGS

Mr. Aizawa	
Mr. Berman	
Mr. Brown	
Mr. Calkins	
Mr. Chan	
Mr. Chung	
Mr. Clark	
Mr. DeLoach	
Mr. Egan	
Mr. Gandy	
Mr. Rosen	
Mr. Sullivan	
Mr. Tavel	
Mr. Trotter	
Tele. Room	
Miss Holmes	
Miss Gandy	

HIGHWAY DIVISION  
PLANNING BRANCH

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STATE DEPARTMENT  
OF TRANSPORTATION

EDUARDO J. CAYETANO  
DIRECTOR



STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

230 SOUTH KING STREET  
FOURTH FLOOR  
HONOLULU, HAWAII 96813  
TELEPHONE: (808) 552-4100  
FACSIMILE: (808) 552-4100

May 14, 1996

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

Dear Mr. Hayashida:

Subject: Draft Supplemental Environmental Impact Statement for the  
Honopiihoni Highway, Puamana to Honokowai, Maui

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

1. The proposed highway will cross Kaulaula Stream, Kahona Stream, Hanakea Gulch, Mahikuli Gulch, Hanakao Gulch, and Honokowai Stream.
  - a) Please include detailed information about the present biological, chemical and hydrologic characteristics of the above water bodies.
  - b) Please describe construction work that may take place in or adjacent to the above water bodies, including the placement of structures such as pilings, bridges or culverts.
  - c) Please describe any construction operations which may cause water quality degradation, such as gravel washing or borrow pits adjacent to the above water bodies.
  - d) Please provide detailed information on the impacts of the project on the above water bodies. Specific mitigation measures to reduce these impacts must also be described.
2. The proposed highway will cut across existing agricultural lands. This new roadway will speed up or promote urban development in the vicinity of the project area. Please analyze the extent of urban development with or without this project. Please also determine the significance of these impacts in relationship to the county general plan.

Mr. Hayashida  
May 14, 1996  
Page 2

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

Sincerely,

Gary Gill  
Director

c: Federal Highway Administration  
Munekiyo and Arakawa

GARY GILL  
DIRECTOR



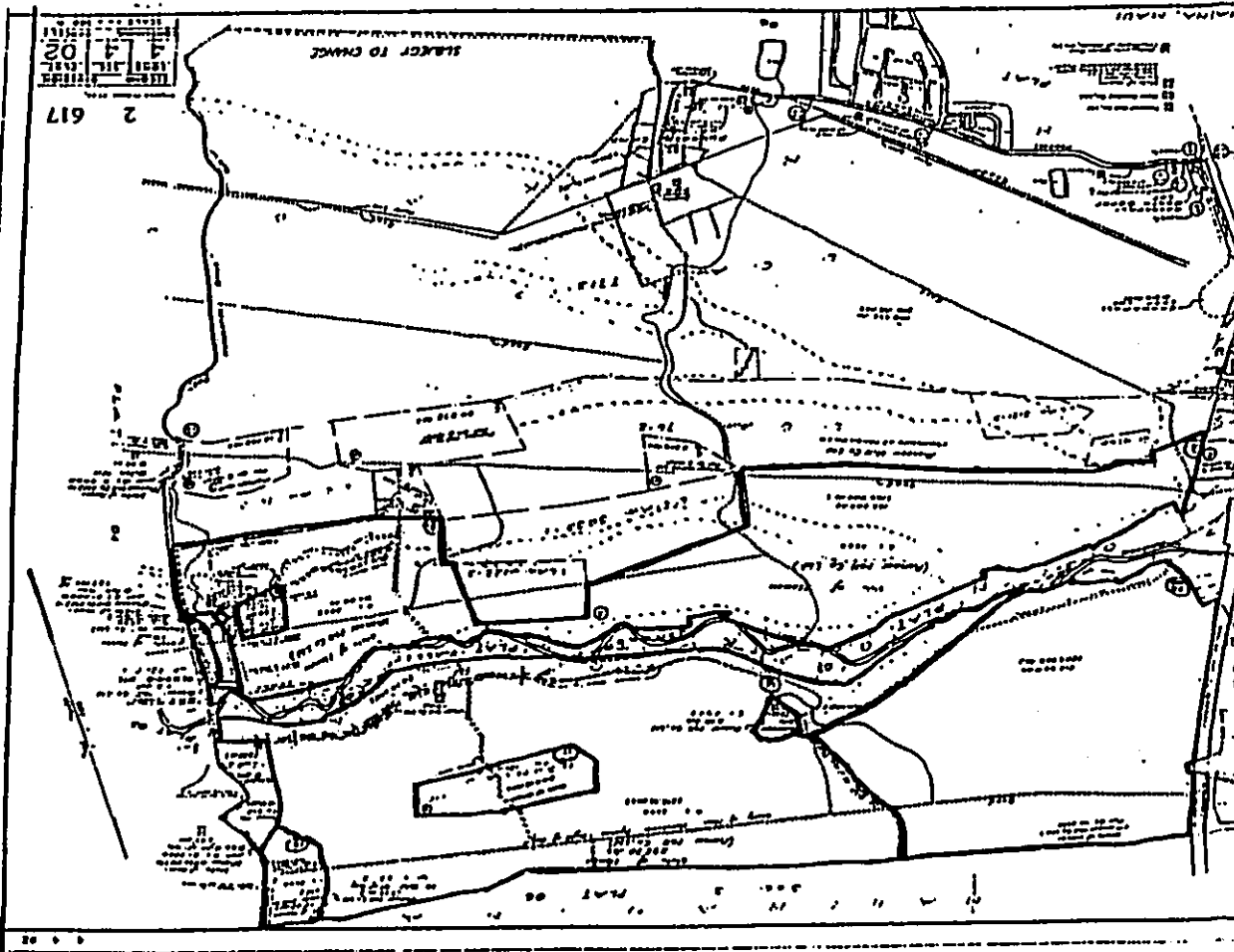
**Response to State of Hawaii, Office of Environmental Quality Control**

1. With regard to the gulch and stream crossings, the Final Supplemental Environmental Impact Statement (FSEIS) includes additional details relative to the individual crossings. Preliminary structural sections for the bridges will be reviewed to identify potential impacts to the drainageways. The exact design details will be developed in the design phase of this project.
2. The FSEIS addresses in further detail the relationship of the proposed Bypass to the Maui County General Plan and the recently adopted West Maui Community Plan. The impact of the project with regard to future urban development has also been addressed in the evaluation.

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Map-1

STATE LAND PARCELS TRANSFERRED FROM DLNR TO DPHL, Honokowai, Kaanapali, Maui  
Tax Map Key 4-4-02:3, 8, 9, 11, 15, 17, 18, 20



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS

P.O. BOX 1179  
HONOLULU, HAWAII 96850

MALI WATSON  
CHAIRMAN  
HAWAIIAN HOMES COMMISSION  
JOHIE M. K. K. YAMAGUCHI  
DEPUTY TO THE CHAIRMAN

April 1, 1996

Mr. Abraham Wong, Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement  
Honopiihoni Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii

The Department of Hawaiian Home Lands supports the proposed bypass highway modifications which will ease traffic congestion and improve safety for West Maui commuters.

The adjusted project will also provide greater accessibility to lands at Honokowai which have been transferred to this department for future use as Hawaiian home lands. These lands are depicted on attached Map-1 and Map-2. Use of our lands for the highway will require approval by the Hawaiian Homes Commission of a license for an easement or acquisition by way of a value-for-value land exchange.

Thank you for the opportunity to review and comment on the adjusted plans. If you have any questions, please call Benjamin Wong of our Land Management Division at 586-3892.

Warmest aloha,

*Mali Watson*  
Mali Watson, Chairman  
Hawaiian Homes Commission

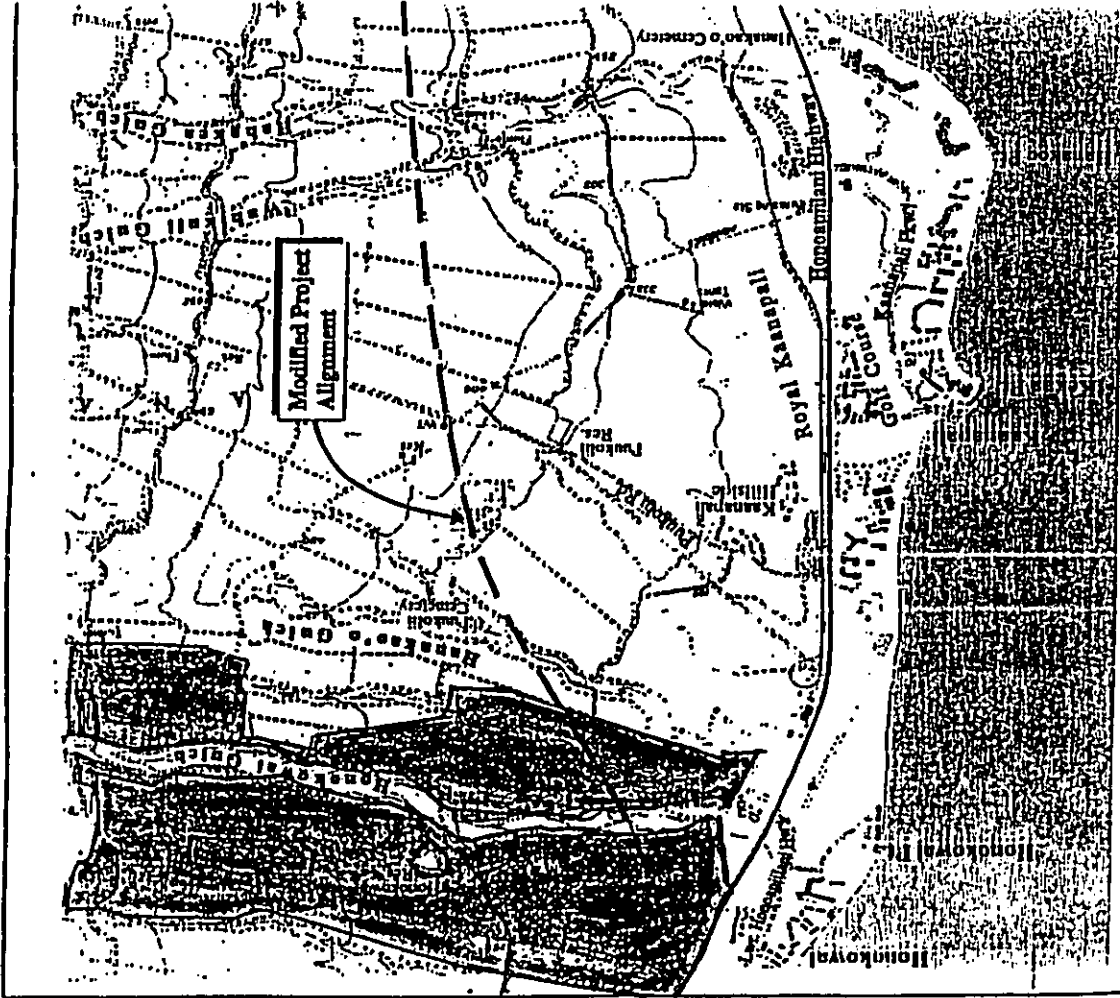
Attachment:  
Maps (2)  
/3906128

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION  
APR 9 11 33 AM '96  
HONOLULU PLANNING DIVISION



Map-2

DHIL LAND PARCELS AT HONOKOAI (shaded) RELATIVE TO PROPOSED BYPASS HIGHWAY



Appendix B



Lahaina

Response to State of Hawaii, Department of Hawaiian Home Lands

1. It is understood that the use of Hawaiian home lands for the Modified Project will require the approval of the Hawaiian Homes Commission. Accordingly, coordination with the Department of Hawaiian Home Lands will be undertaken for a license for an easement or acquisition by way of a value-for-value land exchange.

DEPARTMENT OF TRANSPORTATION  
HAWAIIAN DIVISION  
PLANNING BRANCH

MAY 9 11 17 AM '86

HIGHWAY DIVISION  
PLANNING BRANCH



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 1370  
HONOLULU, HAWAII 96801

LAWRENCE B. BROWN  
DIRECTOR OF HEALTH

IN REPLY, PLEASE REFER TO

April 30, 1986

--91-348(A)/epo

Mr. Abraham Wong  
Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement  
Honopiihoni Highway (FAP Route 30)  
Puuwana to Honokowai  
Lahaina, Maui, Hawaii

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

1. Water Pollution

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

1. Storm water discharges relating to construction activities for projects equal to or greater than five acres;
2. Storm water discharges from industrial activities;
3. Construction dewatering activities;
4. Cooling water discharges less than one million gallons;
5. Ground water remediation activities; and
6. Hydrotesting water.

Any person wishing to be covered by the NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 90 days prior to commencement of any discharge to waters of the State.

Mr. Abraham Wong  
April 30, 1986  
Page 2

Any questions regarding this matter should be directed to Mr. Denis Lau of the Clean Water Branch at 586-4309.

Air Pollution

Due to the nature and location of the project, there is a significant potential for fugitive dust emissions during the removal, grading, excavation, and construction activities for the proposed project. There may also be instances when these activities are in close proximity to existing residential establishments, thereby compounding the potential for dust problems.

Implementation of adequate dust control measures during all phases of construction is warranted. Construction activities must comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules, section 11-60.1-33 on Fugitive Dust.

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

- a. planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing material transfer points and onsite vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- b. providing an adequate water source at site prior to startup of construction activities;
- c. landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d. control of dust from shoulders, project entrances, and access roads; and
- e. providing adequate dust control measures during weekends, after hours, and prior to daily startup of construction activities.

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

3. Pollution Runoff Control

The Honopiihoni Highway project is located in the West Maui Watershed. West Maui is one of the State's designated Water

Mr. Abraham Wong  
April 30, 1996  
Page 3

Quality Limited Segments, meaning its water quality is impaired from nonpoint source pollution. We recommend that nonpoint source pollution control concerns be addressed and that there is no gain in polluted runoff from the project into West Maui coastal waters. The State has developed Hawaii's Coastal Nonpoint Pollution Control Program Draft Management Plan. This Draft Management Plan addresses proper planning, design, and use of Best Management Practices to substantially reduce polluted runoff (nonpoint source pollution) generated by highway construction activities. Please refer to the Draft Management Plan (pages III-142 to III-148) for management measures to be used on roads, highways and bridges. The Draft Management Plan can be obtained from the Department of Health, Polluted Runoff Control Program or from the Office of State Planning, Coastal Zone Management Program.

The following are suggested management measures to consider:

1. Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss.
2. Limit land disturbance such as clearing, grading and cut and fill to reduce erosion and sediment loss.
3. Limit disturbance of natural drainage features and vegetation.
4. Conduct grubbing and grading activities during the low rainfall months (April-October).
5. Use vegetation, mulch, or geotextile netting to reduce erosion from newly constructed roadcuts.

If you have any questions on this matter, please call Randy Rush of the Environmental Planning Office at 586-7550.

Sincerely,



LAWRENCE HIKE  
Director of Health

c: EPO  
CWB  
CAB

Response to State of Hawaii, Department of Health

1. The State Department of Transportation (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.
2. Adequate dust control measures will also be implemented during all phases of construction. Construction activities will comply with the provisions of Chapter 11-50.1, Hawaii Administrative Rules, section 11-60.1-33 relating to Fugitive Dust. The DOT will also work with the contractor to ensure that appropriate mitigation measures are implemented to control dust from road areas, as well as during the various phases of construction.
3. Hawaii's Coastal Nonpoint Pollution Control Program Draft Management Plan, which addresses proper planning, design, and use of Best Management Practices (BMP) to substantially reduce polluted runoff generated by highway construction activities, will be utilized to ensure that nonpoint source pollution control concerns are addressed and that adequate mitigation measures are implemented.

Public Release Under Executive Order 12958

DEPARTMENT OF LAND AND NATURAL RESOURCES  
PLANNING BRANCH



MAY 23 11 23 AM '96

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
PLANNING BRANCH  
P.O. BOX 521  
HONOLULU, HAWAII 96809

MAY 15 1996

MICHAEL WILSON  
Chairman  
BOARD OF LAND AND NATURAL RESOURCES

GILBERT'S COLLEGE/CAJAN  
BERRY

AGRICULTURE DEVELOPMENT  
HONOLULU  
ADVISORY BOARD  
FOR THE LAND AND NATURAL RESOURCES  
COMMISSION AND  
CONSULTATION AND  
COORDINATION WITH  
CONSTITUENTS AND  
COMMUNITY GROUPS

PLANNING AND DESIGN  
POLICY AND ANALYSIS  
PLANNING AND DESIGN  
LAND MANAGEMENT  
STUDY TEAM  
LAND AND NATURAL RESOURCES  
DEVELOPMENT  
LAND AND NATURAL RESOURCES

File No. PM-96-006

Ref.: LM-PEM

Mr. Abraham Wong  
Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

SUBJECT: Review of Draft Supplemental Environmental Impact Statement for Honopiilani Highway (FAP Route 30) Euamano to Honokowai, Lahaina, Maui

The following is additional comments to the Draft Supplemental Environmental Impact Statement for the subject project:

1. Commission on Water Resource Management

Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

The extent and nature of the project indicate that construction may take place in several stream channels for flood control and/or road work. Examples from the document include - installation of a floodwater diversion channel in the vicinity of the Bypass south of Lahainaluna Road (NRCS, 1991)... pg 56" and "two proposed channel outlets would be located in the vicinity of Kauaula Stream...pg 56" Stream Channel Alteration Permits must be approved by the Commission prior to any construction work.

Mr. Abraham Wong  
Page 2

Thank you for the opportunity to provide additional comments for the Draft Supplemental Environmental Impact Statement for the subject project. Should you have any questions, please contact Patti Miyashiro at 587-0430 of our Land Division in Honolulu.

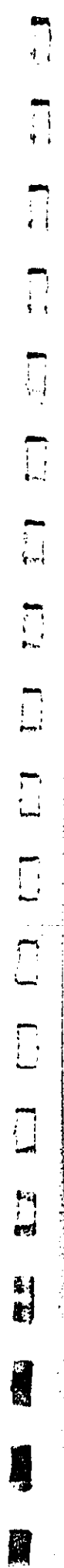
Aloha,

MICHAEL D. WILSON

cc: Maui Land Board Member

Response to State of Hawaii, Department of Land and Natural Resources

1. The flood control improvements noted in the Department of Land and Natural Resources' letter (May 15, 1986) are proposed to be implemented by the Natural Resources Conservation Service in connection with their Lahaina Watershed Flood Control Project. The State Department of Transportation will comply with the requirements for a Stream Alteration Permit for construction activities occurring in stream channels pursuant to Section 13-169-50, Hawaii Revised Statutes.



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

DEPUTY  
SUIVAT COLOMA-AQARAI

AGRICULTURAL DEVELOPMENT PROGRAM  
AGUATIC RESOURCES  
CONSERVATION AND RECREATION AFFAIRS  
CONSERVATION AND RESTORATION  
RENOVED DIVERSITY CERTIFICATES  
SOCIETY AND WILDLIFE  
NATURAL PRESERVATION  
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

Post-it brand fax transmittal memo 7871	Page 2 of 2
From: Sara Collins	
To: Mikiyuki Akahane	
Phone: 587-0187	
Fax: 544-6799	

May 21, 1996

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

Dear Mr. Wong:

**SUBJECT:** National Historic Preservation Act, Section 106 Compliance - Review of a Draft Supplemental Environmental Impact Statement for the Honouliuli Highway (FAP Route 30), Puuana to Honokowai, Lahaina District, Maui TRK: Zone 4

Thank you for the opportunity to comment on the draft supplemental environmental impact statement (EIS) for the proposed modifications to Honouliuli Highway from Puuana to Honokowai. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the subject area. Our comments are late, and we apologize.

The proposed corridor for the Honouliuli Highway (FAP Route 30), Puuana to Honokowai, has undergone archaeological inventory survey, as documented in the following reports, accepted by our office: *Archaeological Inventory Survey Honouliuli Highway Realignment Project Lahaina Bypass Section - Modified Corridor Alignment, Lands of Honokowai, Hanakoo, Waikuli, Panaea, Kula, Halalaa, Puhuhua, Polani, Pehoa, and Lanulupoko, Lahaina District, Island of Maui, 1991*; *Additional Field Survey, Lahaina Bypass Section, Modified Corridor Alignment, Honouliuli Highway Realignment Project, Lands of Honokowai, Hanakoo, Waikuli, Panaea, Kula, Halalaa, Puhuhua, Polani, and Lanulupoko, Lahaina District, Island of Maui, 1992*; *Jeans, Archaeological Inventory Survey Lahaina Bypass Highway New Connector-Roads Project Area, Lands of Hanakoo and Puuana, Lahaina District, Island of Maui, 1994*; *Jeans*.

The 1991 inventory survey located a total of four sites within or immediately adjacent to the proposed corridor: SHIP Nos. 50-50-03-2487 (an enclosure), -2489 (Agricultural, habitation and possible burial features), Site -2490 (habitation and agricultural features), and -2484 (wall segment). All four sites were deemed significant for their information content. In addition, Site -2489 was determined to have cultural significance in connection with the possible burial features, and Site -2490 was also deemed significant

Hrt Pcs

LN -6 1995

JR -7 1995

Ref.:LM:PEM

Mr. Abraham Wong  
Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

File No. PM-96-006

**SUBJECT:** Review of Draft Supplemental Environmental Impact Statement for Honouliuli Highway (FAP Route 30) Puuana to Honokowai, Lahaina, Maui

The following is additional comments to the Draft Supplemental Environmental Impact Statement for the subject project:

Land Division - Engineering Branch

We have no objections to the proposed scope modifications to the FEIS.

We confirm that, except for a small portion of the modified alignment, the project site is located in Zone C (areas of minimum flooding). The small portion, which is located about 2.3 miles south of Lahaina Road, is located in Zone A4 (an area of 100-year flooding with base elevation of 8 feet).

Division of Historic Preservation

It has been brought to our attention that the wrong letter from the Division of Historic Preservation was forwarded to your office. Please find attached a copy of the May 21, 1996 letter providing comments for the subject project.

Thank you for the opportunity to provide additional comments. Should you have any questions, please contact Puni Miyahiro at 587-0430 of our Land Division in Honolulu.

Aloha,  
M. Orest & Coloma-Aqarai

MICHAEL D. WILSON

Attachment


Mr. Abraham Wong  
Page 2

1. No response required.
2. The implementation of the measures referenced in the project's approved mitigation plans will be coordinated with State Historic Preservation Division (SHPD). With the implementation of the mitigation plans, the SHPD has indicated that the proposed project will have "no adverse effect" on historic sites.

The proposed mitigation for the significant historic sites documented in the 1991 report included preservation-in-place for three sites (2487, 2489, 2490) and data recovery work at Site 2484. Our offices agreed that if these mitigation plans were implemented, then the proposed construction of improvements to the Honouliuli Highway (FAP Route 30) Puanana to Honokowai will have "no adverse effect" on significant historic sites.

We concur with the information presented in the draft supplemental environmental impact statement and believe that if the mitigation plans previously accepted by our office are implemented, then the Honouliuli Highway (FAP Route 30) Puanana to Honokowai project will have "no adverse effect" on significant historic sites.

Should you have any questions, please feel free to call Sara Collins at 587-0013.

Aloha  
  
 DON HIEBARD, Administrator  
 State Historic Preservation Division

KD:jen





DEPARTMENT OF  
**HOUSING AND HUMAN CONCERNS**  
 COUNTY OF MAUI

STEPHANIE AVEIRO  
 Director  
 KERRY OLIVA  
 Deputy Director

200 SOUTH HIGH STREET, WAILUKU, HAWAII 96791  
 HIGHWAY DIVISION  
 PLANNING BRANCH  
 MAR 22 1996

Mr. Abraham Wong  
 Page 2  
 March 8, 1996

Please call Edwin Okubo of our Housing Division at 243-7351 if you have any questions.

Very truly yours,

\* STEPHANIE AVEIRO  
 Director of Housing and  
 Human Concerns

ETO:hs

xc: Housing Administrator

Mr. Abraham Wong  
 Division Administrator  
 Federal Highway Administration  
 300 Ala Moana Boulevard, Room 3202  
 Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact  
 Statement (SEIS)  
 Honopiliilani Highway (FAP Route 30)  
 Puamana to Honokowai  
 Lahaina, Maui, Hawaii

In response to your February 20, 1996 letter, we wish to inform you that we have reviewed the draft SEIS for the subject project and would like to offer the following comments:

1. The draft SEIS states that the Kaanapali Connector and a portion of the Dickenson Street Connector are incorporated as part of the Bypass project scope. Although that is the case, we would like to recommend that consideration be given to moving the proposed Kaanapali Connector further north where the access road to Hanakoo Beach Park is located. This will provide a much needed signalized intersection at that location, and will provide a much safer ingress and egress to Hanakoo Beach Park.
2. Our primary concern is the impact that the modified alignment will have on HPC's Villages at Leialii project. Since the draft SEIS states on page 96 that the modified alignment has been coordinated with the master planning efforts of HPC and has been established as a transportation element consistent with the overall land use plan for the project, we do not have any other comments to offer.

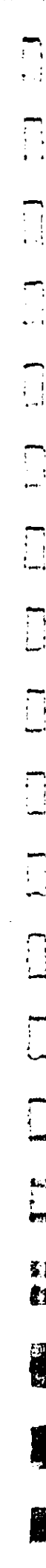


Response to County of Maui, Department of Housing and Human Concerns

1. The relocation of the proposed Keanapali Connector has been examined and discounted since it would impact the existing Royal Keanapali Golf Course facility within the Keanapali Beach Resort. Utilized by residents and visitors alike, the Royal Keanapali Golf Course is situated to the north of the proposed Keanapali Connector. The golf course's second and third fairways would be physically affected by relocating the Keanapali Connector further north to correspond with the entrance to the Hanalei'o Beach Park access road. The relocated connector road would necessitate the relocation of these fairways and would involve complex and costly land acquisition and golf course redesign requirements.

2. No response required.

DATE: 12/15/2015 10:00:00 AM





DEPARTMENT OF  
PARKS AND RECREATION  
COUNTY OF MAUI  
150-C KAALIMANUI AVENUE  
WAILUKU, HAWAII 96793

MAYOR  
HENRY OLIVA  
Director  
ALLEN SUSHIRO  
Deputy Director  
PLANNING & DEVELOPMENT  
(808) 243-7931

March 27, 1996

Mr. Abraham Wong, Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

SUBJECT: Honoapiilani Highway (FAP Route 30), Draft Supplemental  
Environmental Impact Statement.

Dear Mr. Wong:

Thank you for the opportunity to comment on this matter. The Lahaina  
Bypass modifications still include street right of way improvements  
at Ikena Avenue which fronts Kelaweia Park. Therefore, measures  
concerning off-street parking, higher perimeter fencing, water  
service availability, pedestrian and maintenance access mentioned  
in our previous comment letter dated July 13, 1995 would still  
apply.

Sincerely,

DEPARTMENT OF PARKS AND RECREATION

*Henry Oliva*  
Henry Oliva  
Director

HO:PTM:GU

cc: Patrick T. Matsui, Chief-Planning & Development  
Gerald Unabia, Parks Project Manager  
Glen Tadaki, Munekiyo & Arakawa  
Files

0-191110100007-9000-010

Response to County of Maui, Department of Parks and Recreation

1. Pursuant to its letter of February 27, 1996, the State Department of Transportation will implement the mitigation measures referenced in the Department of Park and Recreation's letter of July 13, 1995 to ensure that the proposed project modifications will have no adverse effect on Kelaweia Mauka Park. See Appendix G-1 (June 13, 1995 letter) and Appendix G (February 27, 1996 letter) in the Final Supplemental Environmental Impact Statement.

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COUNTY OF MAUI  
PLANNING DEPARTMENT  
250 S. MOON STREET  
HONOLULU, HAWAII 96850

DIRECTOR'S OFFICE  
DEPT. OF TRANSPORTATION  
TRANSPORTATION DIVISION  
DAVID W. BLANE  
OWEN CHALSH NEJAGA  
Deputy Director

MAR 23 9 55 AM '96

DEPT. OF TRANSPORTATION  
STATE HIGHWAY TRANS.  
PLANNING OFFICE  
MAR 23 12 12 PM '96

March 22, 1996

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

RE: Draft Supplemental Environmental Impact Statement (EIS), Honouliuli Highway  
(EAP Route 30) Puanani to Honouliuli, Lahaina District, Maui County, Hawaii

Thank you for the opportunity to review the above-mentioned Draft Supplemental EIS for the proposed Lahaina Bypass Highway modifications. Our comments are as follows:

1. The alignment is generally consistent with the conceptual alignment shown on the West Maui Community Plan (WMCP) land use map.
2. The WMCP calls for the Kapunakea Connector to be realigned away from the existing residential areas in Kapunakea. The plan shows the connector road running closer to Kahona Stream through currently undeveloped light industrial properties owned or being developed by West Maui Ventures and Hawaii Omori Company. The new road would connect with the existing signalized intersection near the Lahaina Camera Mall.

3. Since the acceptance of the Final EIS (FEIS), the State has petitioned the County to construct a revetment to protect certain sections of Honouliuli Highway from shoreline erosion in the vicinity of Laniupoko Park.

It is inevitable that shoreline erosion will continue to pose a threat to the existing pavement and alignment of the highway in this area; therefore, the "Bypass Extension to Laniupoko" should be revisited. Alternatives should also be considered to merely limit highway relocation to the erosion problem areas. Because of the County and State's position to discourage shoreline armoring, we find it essential to include long-term project planning addressing this issue in the Final Supplemental EIS.

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OF TRANSPORTATION  
MAR 23 12 38 PM '96  
PLANNING DIVISION  
TRANSPORTATION DIVISION

Mr. Abraham Wong, Division Administrator  
March 22, 1996  
Page 2

The Maui Planning Department would be very supportive of such alternatives as it would protect and preserve the natural shoreline environment and provide for a potential expansion of Laniupoko Park for increased utilization of coastal resources.

4. Detailed sections of the grade-separated crossings should be provided.
5. In order to promote free-flowing traffic along the bypass, other grade-separated crossings and road-bypass accesses should be considered, specifically, the intersections of Pukolili Village and Villages of Leialii.
6. Although the bypass extension would serve the future urbanization of the Lahaina District proper, regional highway access improvements to and from the district should also be considered.

Thank you for the opportunity to comment on this important project. Should you have any questions, please contact Staff Planner, Mr. Daren Suzuki, at 243-7735.

Very truly yours,

*David W. Blane*

DAVID W. BLANE  
Director of Planning

DWB:DS:osy

- cc:
- Gary Gill, Director, Office of Environmental Quality Control
  - Kazuo Hayashida, Director, State Department of Transportation
  - Gleem Tadaki, Munekiyo & Arakawa, Inc.
  - Charles Willson, ECM, Inc.
  - Clayton Yoshida, AICP, Acting Planning Program Manager, Land Use Management
  - Bill Medeiros, Staff Planner
  - Daren Suzuki, Staff Planner
  - Project File

By: [Signature]

Response to County of Maui, Planning Department

1. No response required.
2. Because the Kapunakea Connector is a master planned element of the State Housing Finance and Development Corporation's (HFDC) Villages at Le'i'ali'i, coordination between the County of Maui and the HFDC will be required for the relocation of the connector road (from Kapunakea Street to an area mauka of the Lahaina Cannery Mall).
3. The State Department of Transportation has reexamined the extension of the Bypass to Launiupoko. For reasons of safety, coastal erosion and flooding, the southern terminus of the Bypass has been extended from Puamana to Launiupoko Point, a distance of approximately one (1) mile (the Federal Highway Administration has concurred with this change). The Final Supplemental Environmental Impact Statement includes additional information concerning this alignment modification.
4. Construction plans reflecting detailed sections of the grade-separated crossings (e.g., Lahainatuna Road, cane-haul roads) will be prepared for review during the project's design phase.
5. The Bypass is designed as a rural highway with partially controlled access (i.e., access at designated intersections; no driveway access allowed) and is not intended to function as a freeway which is a high speed, high volume, fully controlled access highway (i.e., access provided through on and off ramps at interchanges or grade-separated crossings).
6. Regional highway improvements recommended by the Maui Long-Range Land Transportation Plan - Final Report (Kaku Associates, Inc., February 1997), include widening Honoapiʻianai Highway from two (2) to four (4) lanes from Ka'anapali Parkway to Honokowai Stream, as well as from Maalaea to the southern terminus of the Bypass. The widening of the highway from Ka'anapali to Honokowai is currently being implemented by the State Department of Transportation. As noted by the Plan, the widening of the highway from Maalaea to the Bypass is projected between 2008 to 2020.

LINDA CROCKETT UNGLE  
Mayor

CHARLES JENCKS  
Director

DAVID C. GOODE  
Deputy Director

AARON SHIMMOTO, P.E.  
Chief Staff Engineer



COUNTY OF MAUI

DEPARTMENT OF PUBLIC WORKS  
AND WASTE MANAGEMENT

200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

April 23, 1996

Mr. Abraham Wong  
U.S. Department of Transportation  
Federal Highway Administration  
Hawaii Division  
Box 50208  
Honolulu, Hawaii 96850

Dear Mr. Wong:

SUBJECT: Draft Supplemental Environmental Impact Statement (DEIS)  
HONOAPILANI HIGHWAY (FAP ROUTE 30), PUAMANA TO  
HONOKOWAI

We reviewed the subject draft supplemental environmental impact statement  
and have the following comments:

- Page 15, b.4: Instead of extending the existing Kapunakea Street, the alternate access through Omori's project should be considered. (See attached excerpt from Lahaina Master Planned Project T1AR 9/91) This will minimize the impact on the existing residential neighborhood and keep the major traffic flow within the industrial/business/commercial neighborhood.
- Page 20: The EIS should include some anticipated LOS computations expected for the Lahainaluna Road - Bypass Access connection to justify the unsignalized proposal. The County does not want to be burdened with signalizing our approach right after the bypass is completed.

HONOLULU DIVISION  
PLANNING BRANCH

95, HI 96 71 9 14H

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION

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

EASSIE MELLER, P.E.  
Wastewater Reclamation Division

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

BRIAN HASHIRO, P.E.  
Highways Division

Solid Waste Division

Mr. Abraham Wong  
April 23, 1996  
Page 2

- Page 23 & 108: The EIS assumes that the County will be responsible for the Dickenson Street connector to be done concurrently with the bypass. We cannot commit to this program nor to any roadway program that requires County funding coincident with construction for the bypass.

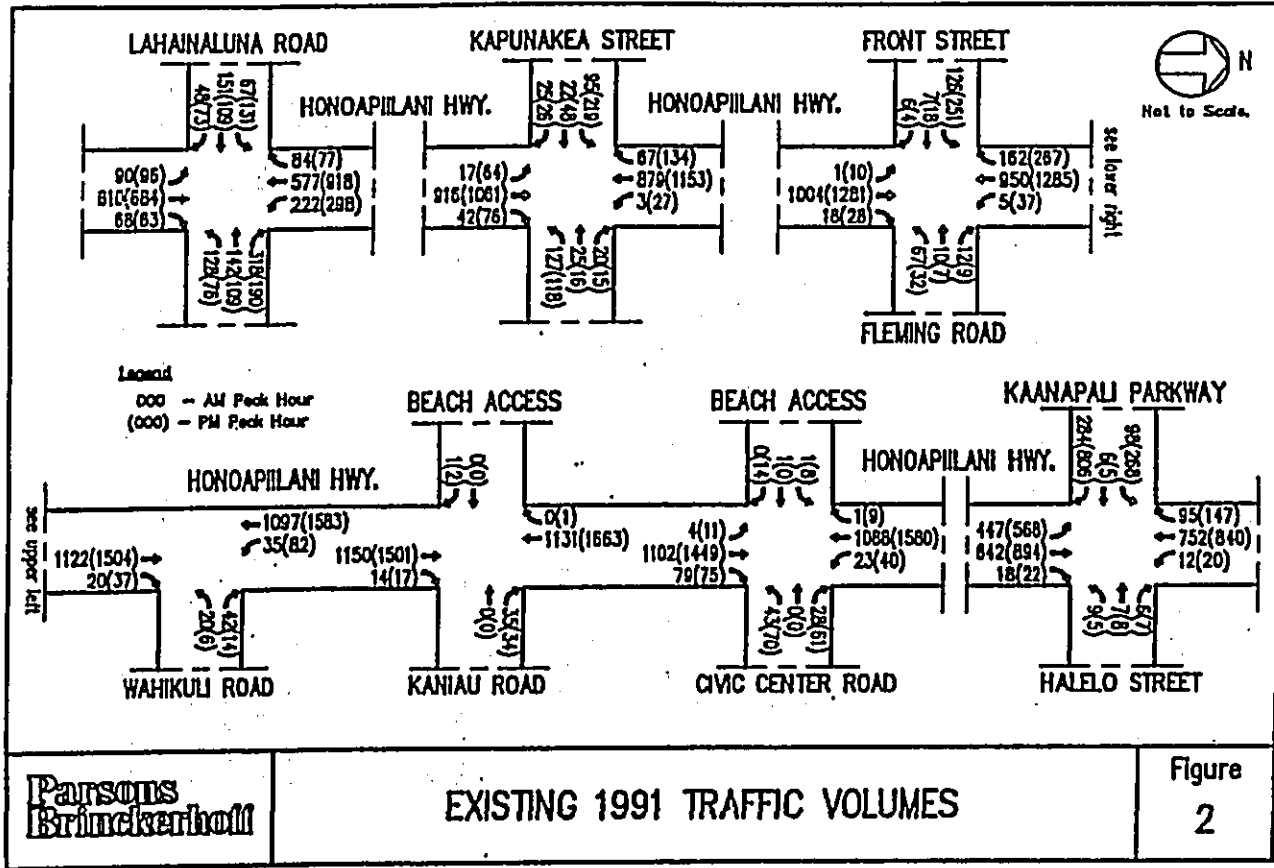
If you have any questions, please contact the Engineering Division at (808) 243-7745.

Very truly yours,

CHARLES JENCKS  
Director of Public Works  
and Waste Management

AS:cy/mt  
Attachment  
cc: Engineering Division  
Land Use and Codes Administration  
Wastewater Reclamation Division  
Solid Waste Division

ethis@comptel.net



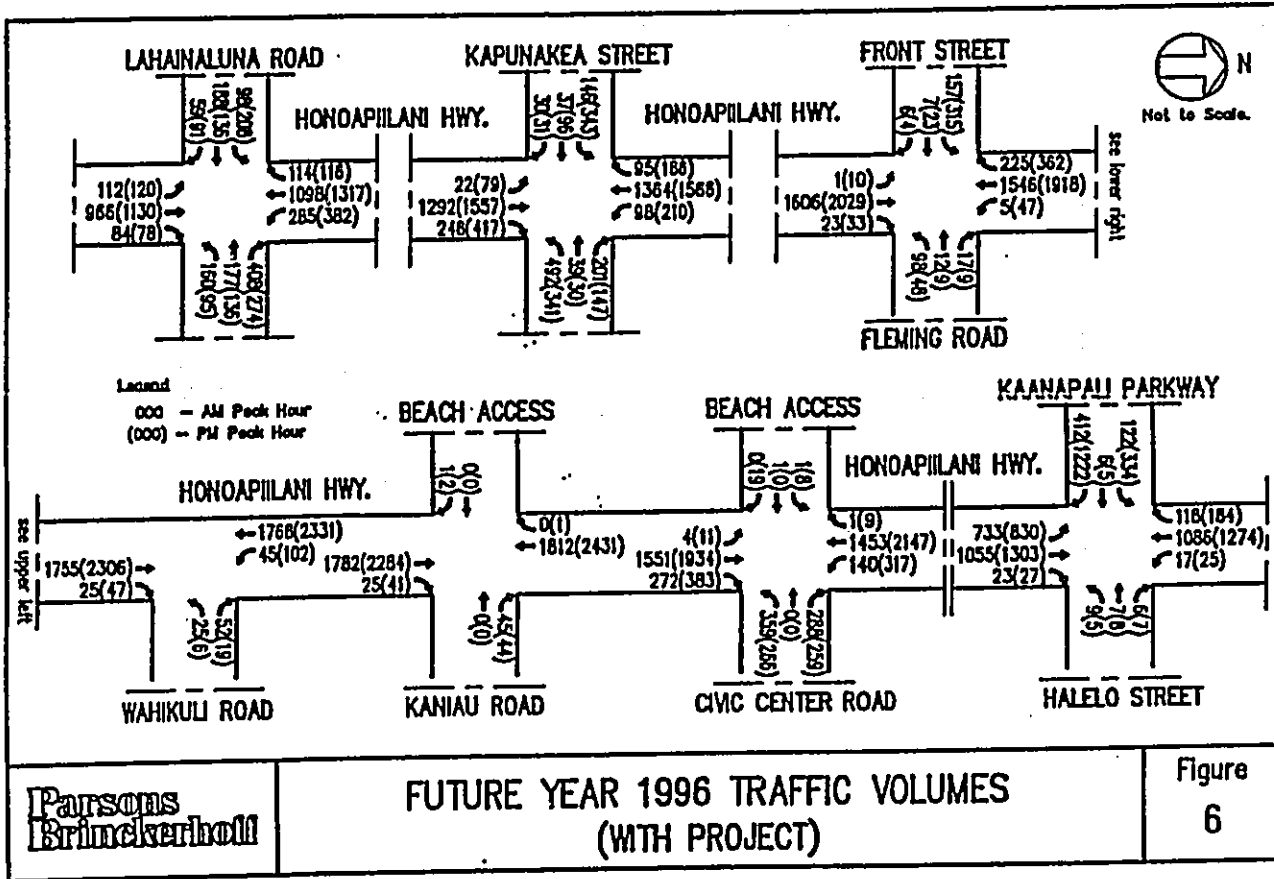
**LAHAINA MASTER PLANNED PROJECT**

**PRE-FINAL  
 TRAFFIC IMPACT REPORT**

SEPTEMBER 1991

Prepared for:  
 Housing Finance Development Corporation

Prepared by:  
 Parsons Brinckerhoff Quade & Douglas, Inc.



The existing signalized intersections along Honoapiilani Highway at Kaanapali Parkway/Halelo Street, Civic Center Road, Front Street/Fleming Road, Kapunakea Street, and the modified Lahainaluna Road intersections can accommodate traffic generated by Village 1A and will continue to operate at an acceptable LOS C or better through the future year 1993 without project conditions.

By the future year 1994, the Honoapiilani Highway/Kaanapali Parkway/Halelo Street intersection will be experiencing over capacity LOS F conditions during the PM peak hour without or with the project. Traffic generated by additional phases of the project will accelerate the need for an additional southbound through lane to the future year 1993. Widening the southbound approach to provide two through lanes, as previously mentioned, would improve operations at this intersection to LOS B during the AM peak hour and LOS C during the PM peak hour.

By the future year 1994, Honoapiilani Highway/Civic Center Road and Honoapiilani Highway/Kapunakea Street will be experiencing at or near capacity conditions with traffic generated by additional phases of the project. Widening and restriping intersection approaches can, however, provide sufficient additional capacity to improve operations to LOS C or better during both the AM and PM peak hours.

At the Honoapiilani Highway/Civic Center Road intersection, these improvements include widening and restriping the westbound approach of Civic Center Road to provide a dedicated left-turn lane, a shared left-turn and through lane, and a dedicated right-turn lane and widening the northbound approach of Honoapiilani Highway to provide a dedicated right-turn lane. At the Honoapiilani Highway/Kapunakea Street intersection, these improvements include widening and restriping both the westbound and eastbound approaches to provide dedicated left-turn lanes and shared right-turn and through lanes.

The Honoapiilani Highway/Kapunakea Street intersection requires additional improvements to accommodate project generated traffic in the future year 1996 with project conditions. These improvements include widening and restriping the westbound approach to provide dual left-turn lanes, a through lane, and a right-turn lane and the eastbound approach to provide dual left-turn lanes and a shared through and right-turn lane. These improvements would improve operations at this intersection to LOS C during the AM peak hour and LOS D during the PM peak hour.

Recommended intersection improvements needed to serve the future traffic demand through the year 1996 are summarized in Table 4 and shown in Figure 6.

As previously mentioned, an alternative access from the project site to Honoapiʻiani Highway through the proposed Omori Project located to the south of the existing Honoapiʻiani Highway/Kapunakea Street intersection should be considered. This alternative alignment would adequately accommodate forecast traffic demands and eliminate the need for a connection from the project site to Kapunakea Street. Improvements at the Honoapiʻiani Highway/Kapunakea Street intersection would, therefore, not be needed if this alternative access were provided.

The unsignalized Honoapiʻiani Highway/Kaniua Road intersection is currently experiencing LOS A conditions during both the AM and PM peak hours. With the addition of project generated traffic, this intersection would operate at LOS B conditions during the AM peak hour and LOS C conditions during the PM peak hour.

Waihiʻi Road could be widened and restriped to provide a dedicated left-turn lane and a dedicated right-turn lane onto Honoapiʻiani Highway. This roadway improvement would minimize delay and improve intersection operations. The adjoining signalized Honoapiʻiani Highway/Front Street/Fleming Road intersection is located only 500 feet away and has sufficient reserve capacity to accommodate any diverted left-turn traffic. Roadway improvements are, therefore, not recommended at the Honoapiʻiani Highway/Waihiʻi Road intersection.

Roadway capacity analysis conducted in the future year 1996 with project conditions revealed that Honoapiʻiani Highway, south of Civic Center Road would operate at LOS C during the AM peak hour and at near capacity conditions during the PM peak hour. The Lahaina Master Planned Project proposes to develop 523 single family residential units in Village 5. Approximately 475 dwelling units can be built in Village 5 before Honoapiʻiani Highway, south of Civic Center Road experiences LOS E conditions.

#### Response to County of Maui, Department of Public Works and Waste Management

1. The Kapunakea Connector is a master planned element of the State Housing Finance and Development Corporation's (HFDC) Villages at Leleʻali'i Project. Accordingly, coordination between the County of Maui and the HFDC will be required for the relocation of the connector road from Kapunakea Street to an area mauka of the Lahaina Cannery Mall.
2. Level of service computations (LOS) for the Lahaina Road - Bypass Access Road will be provided to the Department of Public Works and Waste Management in connection with the project's design phase.
3. It is noted that the construction of the Dickenson Street Connector by the County of Maui may not occur within the same development time frame as the Bypass.



Council Chair  
Alan L. Lee  
Council Vice-Chair  
Patrick S. Kamae  
Council Members  
James "Ozzy" Aoki  
Alan Adelman  
Sai P. Manrovaran  
Richard M. Morrow  
Thomas P. Morrow  
Dennis Y. Nakamura  
Wayne K. Noland



COUNTY COUNCIL  
COUNTY OF MAUI  
200 S. HIGH STREET  
WAILUKU, MAUI, HAWAII 96753

June 21, 1996

Ken R. Fukuoka  
Director of Council Services

Mr. Hugh Y. Ono, Highways Administrator  
June 21, 1996  
Page 2

To implement the transportation objectives and goals, the plan discourages "at-grade intersections along the planned Lahaina Bypass Road...". The plan also encourages the widening "of the existing highway to four lanes from the pali to Lahaina town and from Kaanapali Parkway to Office Road."

1. According to an opinion expressed by a Lahaina resident in a recently published letter to the editor, a copy which is attached for your review, the proposed design for the Lahaina Bypass Road contains on-grade crossings and traffic signals that could encourage urbanization of the adjoining areas. This would be inconsistent with the plan's clearly stated objective and policy to discourage urbanization.

2. I would appreciate it if your Department would review the design of the Lahaina Bypass Road and consider changing design features that would encourage urbanization of adjoining lands. Also, I feel that the widening of the existing highway to alleviate current traffic congestion should be given a high priority because the basic infrastructure is already in place and construction can be efficiently accomplished in a cost-effective manner.

3. If you would like to discuss this matter further, please feel free to contact me at my office at (808) 243-7673.

Sincerely,  
  
THOMAS P. MORROW  
Council Member

pa74t:96-145a1  
Attachment  
cc: Dave Chenoweth

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION  
JUN 27 7 58 AM '96  
HIGWAYS DIVISION  
PLANNING BRANCH

Mr. Hugh Y. Ono, Highways Administrator  
State Department of Transportation  
Highways Division  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Ono:

SUBJECT: THE LAHAINA BYPASS ROAD (PAF 96-145)

I am writing to express my interest in the Department of Transportation's proposed design for the Lahaina Bypass Road and to urge that the Department review the design to ensure that it conforms with the objectives and goals of the West Maui Community Plan (1996).

The West Maui Community Plan is a document that should be taken as seriously by State departments as it is by County officials, because it contains the community's vision for future development of the area. The community plan represents an overall framework that has been thoughtfully developed over the years and maps out a well-designed plan for the area's future.

Concerning infrastructure for the area, one of the 12 listed transportation objectives and policies included in the plan is to:

"Support construction of the planned Lahaina Bypass Road in such a way as to promote safe, efficient travel across the region without encouraging further urbanization or impeding agricultural operations."

[emphasis added]

Response to County of Maui, Councilmember Thomas P. Morrow

1. Unlike a freeway which is a high speed, high-volume and fully-controlled access facility (i.e., access provided through on- and off-ramps at interchanges or through grade-separated intersections), the Lahaina Bypass is designed as a rural highway with partially controlled access (i.e., access at designated intersections, no driveway accesses allowed). In addition, while a number of intersections have preliminarily been designated to be signalized, the actual number of signals that would be initially installed would require a traffic warrant study based on an analysis of projected traffic volumes.

The Bypass (with its connector roads) has been designed to provide and facilitate the safe and convenient movement of traffic between Lahaina and Honokowai, as well as the existing intervening areas of urban development. The design of the Bypass and its proposed intersection and signal improvements are not anticipated to contribute to the urbanization of the adjoining areas. These improvements are intended to provide safe and convenient access to existing residential and commercial areas within the Bypass corridor, as well as reduce existing traffic congestion and improve highway capacity.

2. The Bypass will also facilitate access to projects which have already received the necessary land use approvals for development, such as the Villages at Leialii, Puukoa Village, and South Beach Mauka. Although other areas along the Bypass or connector road alignments may be considered suitable for urban expansion, projects proposed for future development within these areas must have or must obtain 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 Bypass will require approvals by decision-making bodies, such as the State Land Use Commission, Maui County Council, and the Maui Planning Commission. The decision-making processes established for these bodies will provide the mechanism for implementing the growth policies of the West Maui Community Plan.

3. From a long-term perspective, traffic engineering projections indicate that the Bypass will be necessary to provide for traffic efficiency in the West Maui region. In addition to the construction of the Bypass, which is listed as the first objective in the Transportation section of the Community Plan, the widening of Honoapiilani Highway between Keanapali Parkway and Honokowai and between the rail and Lahaina Town are listed as implementing actions which supplement the development of the regional transportation objectives.

The State Department of Transportation is in the process of implementing the Honoapiilani Highway widening project between Keanapali Parkway and

**Road plan flawed**

Several weeks ago, our State Department of Transportation held a hearing in West Maui on a supplemental environmental impact statement for a Lahaina bypass roadway. I believe the impact statement, the road design, and the DOT to be seriously flawed.

Members of the public asked the DOT to first finish widening the Honoapiilani Highway before working on a bypass. This is laid out in our West Maui Community Plan. A consultant introduced by the DOT responded by implying that this was not practical, because the cost was much too high. He estimated "six or seven times" the \$123 million bypass cost. That is about \$800 million. Apparently neither the DOT nor the consultants know the cost of widening the existing highway to four lanes from Lahaina to Mulae. Their own study sets the amount at \$158 million.

The "bypass" proposed was filed as a tribal bypass rather than the one bypass clearly stated in our community plan. Our plan rejected the on-grade crossing, deposits and structures to development being proposed. When directly questioned, the consultant revealed that they were paid by Aunohi/MB, not by the county.

I know the DOT had a secret agreement with Aunohi/MB regarding the roadway, which was recently released to us by our attorney general. That document includes agreements involving recognition of Aunohi/MB land to the tribal district. Apparently all of North Beach consists (project District No. 3) was included. I did not believe that this kind of arrogant good-of-the-people could be carried so far as to be contrary to our general plan and community plan ordinances.

Dave Chenoweth  
Lahaina

Honokowai). In addition, the widening of Honopuili Highway, from a point four miles west of Maalea Harbor to the Bypass, is recommended for development within the 2008-2020 timeframe by the Maui Long Range Land Transportation Plan Update.

MAUI COUNTY DEPARTMENT OF TRANSPORTATION



March 22, 1996

Mr. Abraham Wong  
Division Administrator  
Federal Highway Administration  
300 Ala Moana Boulevard, Room 3202  
Honolulu, HI 96850

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement  
Honopuili Highway (FAP Route 30), Puumana to Honokowai  
Lahaina, Maui, Hawaii

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 and proposed new lines cross over the new highway alignment in several locations. These lines may need to be relocated or the pole heights raised to maintain the proper clearances.
2. Chapter III, page 67 - The third 69KV transmission line will tie into a new Lahainaluna substation and not the Waihi substation. The Lahainaluna substation is mauka (east) of the proposed bypass alignment (see enclosed map 2, preferred alignment). This map is from the Final Environmental Impact Statement of the Maialaea - Lahaina Third 69KV Transmission Line Project dated March 1994.
3. 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

DT:rl

Enclosure

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OF TRANSPORTATION  
HIGHWAYS DIVISION  
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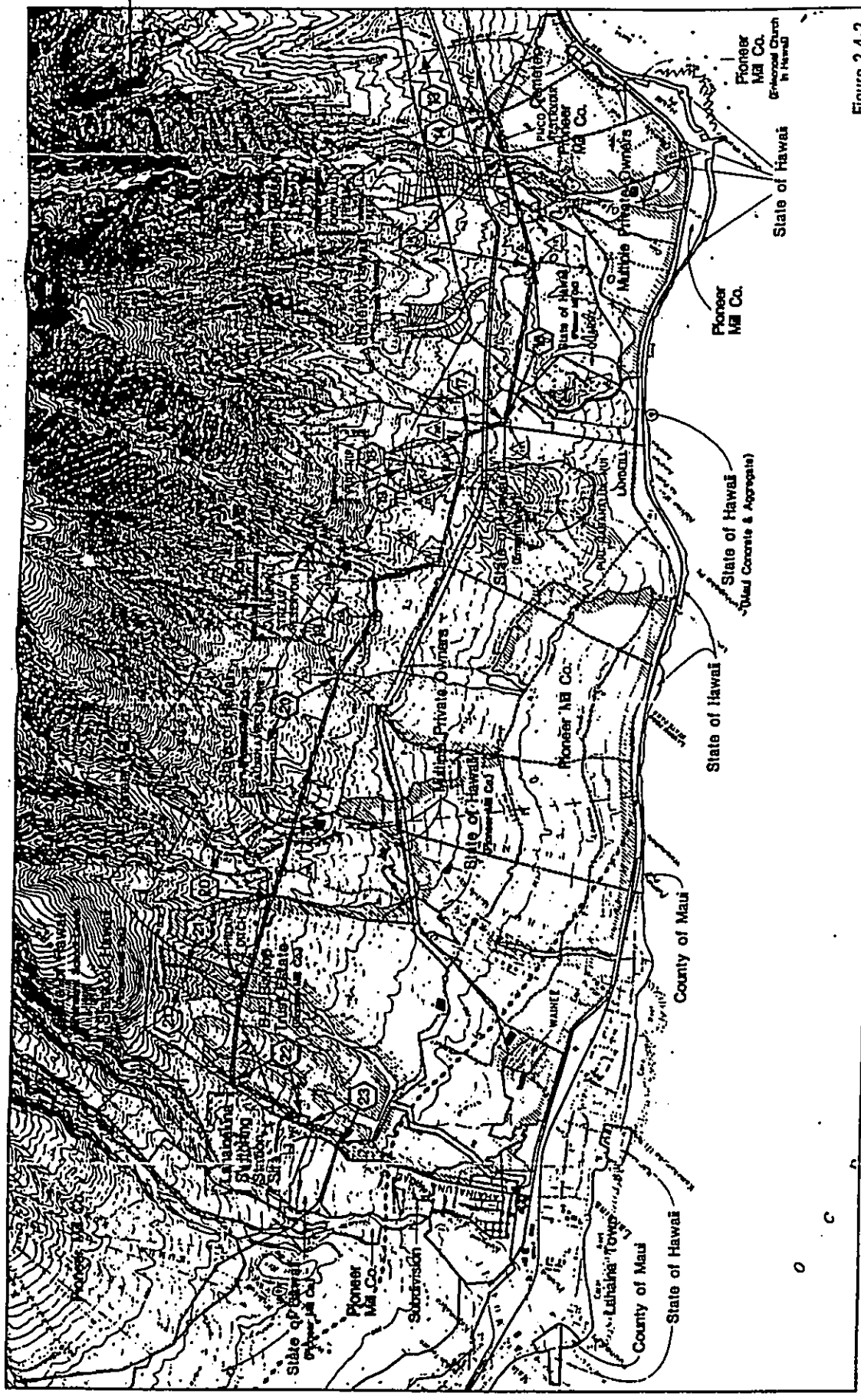
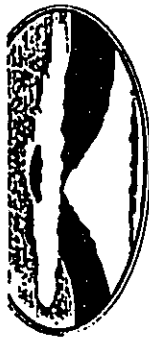


Figure 2.4-2

<b>Preferred Alignment</b> Maalaea-Lahaina Third 69kV Transmission Line Project 		 MAP 2
<b>Preferred Alignment</b> State Location & ID Number Power Plant Substation (Existing) Substation (Proposed) Double Circuit 69kV Transmission Line Single Circuit 69kV Transmission Line	<b>Landowner (Lessee)</b> Access Roads Access Roads & Jeep Trails Gulch Gulch Crossing Reservoir Pineapple Cane	
<b>Lahaina Pal Trail</b> Alignment Segment Identifier Proposed Lahaina Bypass Road Keene Avenue Relocation Project	<b>NOTES:</b> 1) Helicopter & ground staking conducted 1/28/03, 2/3/03 & 6/22/03. 2) GPS readings available for state locations.	

Response to County of Maui, Maui Electric Company, Ltd.

1. Project designs will be coordinated with Maui Electric to address the relocation and placement of applicable existing and proposed power lines, as well as any necessary adjustments to pole heights.
2. Reference to Maui Electric's third 69KV transmission line tie in to its new Lahaina substation is noted in the Final Supplemental Environmental Impact Statement.
3. The State Department of Transportation will meet with Maui Electric to verify electrical requirements in connection with the project's final design phase.



**MAUI HOTEL ASSOCIATION**

1325 Lower Main, Suite 103, Wailuku, Maui, Hawaii 96793 • Fax (808) 244-3094 • Phone (808) 244-8625

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION  
MAY 6 12 47 PM '96  
HIGHWAY  
PLANNING DIVISION

April 29, 1996

Mr. Abraham Wong, Division Administrator  
U.S. Department of Transportation  
Federal Highways Administration  
Box 50206 300 Ala Moana Blvd  
Honolulu, HI 96850

RE: Lahaina Bypass: Honoapiilani Highway  
Pushana to Honokawai

Aloha Mr. Wong:

The Maui Hotel Association represents 30 properties and 125 businesses on the Island of Maui. We employ approximately 10,000 residents. **WE SUPPORT THE LAHAINA BYPASS** and feel it is long overdue.

I was glad to see the announcement of the EIS for the Honoapiilani Highway bypass. Our west side properties, businesses and residents have long awaited movement on this project. There is no need to convince anyone that it is needed, we all drive through there each day to work.

1. First and foremost is to widen Honoapiilani between Kaanapali and Honokawai. I'm certain that much of the testimony you'll receive will be about completing that widening **AS SOON AS POSSIBLE!** The traffic jams during rush hour or during rain are unacceptable and it is our hope that you will press ahead with the widening immediately.

2. Another concern is that three of the connector roads that are the responsibility of the "County" are not yet in the county plans according to the EIS. It is our hope that the Federal and State Highways divisions will work with the County to get those connector roads into county plans. I realize that county roads

Lahaina Bypass  
page two

are not the kule'ana of the "STATE" but we need more than two connector roads or we will be forcing people to go out of their way to reach a connector road. While the bypass will certainly relieve the visitor traffic, residents should benefit from this project as well and be able to move from Point A to Point B with the least amount of inconvenience.

With the expansion of the Kahului Airport and the pre and post business expected from the convention center, we expect to see our visitor numbers rise and infrastructure will be even more crucial.

Thank you for the opportunity to comment. Please move this project along as expediently as possible. We've waited a long time!

Sincerely,

*Ferryl Veach*  
Ferryl Veach

Executive Director

cc: Governor, State of Hawaii  
Mr. Kazu Hayashida, State of Hawaii  
Department of Transportation

Response to Maui Hotel Association

1. The State Department of Transportation (DOT) is currently proceeding with the widening of Honouliuli Highway from Kaanapali Parkway to Honokowai Stream; construction of the project is anticipated to last approximately 18 months.
2. The Dickenson Street Connector is the only future connector road planned for development by the County of Maui. The Puukohi Connector will be developed by Amfac, while the Waihiuli and Kacunakea Connectors will be the responsibility of the Housing Finance and Development Corporation (HFDC).  
The Dickenson Street Connector is included in the Maui Long-Range Highway Planning Study - Lahaina Traffic Circulation Plan (Austin, Teisumil & Associates, May 1991). This plan, which was prepared for the DOT and County of Maui in cooperation with the Federal Highways Administration, was developed for the purpose of planning long-range transportation improvement programs for the County of Maui.





**LAHAINA KAAPALI & PACIFIC RAILROAD**  
A Subsidiary of KYLE RAILWAYS, INC.



THE "SUGAR CANE" Train

1144

March 30, 1996

Federal Highway Administration  
Mr. Abraham Wong, Division Administrator  
300 Ala Moana Blvd., Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: In response to HEC-HI:

Draft Supplemental Environmental Impact Statement  
Honopiihiani Highway (PAP Route 30)  
Puuamana to Honokowhi  
Lahaina, Maui, Hawaii

I have received your letter of February 20, 1996 in connection with the above subject. The scope of the so called By-Pass Project has changed with this submission and we now have the possibility of railroad-highway crossings to consider.

Under the new proposal, it would appear that there will be a crossing of the Lahaina Kaanapali & Pacific Railroad by the By-Pass as it connects to Honopiihiani Highway in the vicinity of Kaanapali.

1. Under the possible Modification Plan, there are four Connectors listed, namely, Kapunakea, Waihikuli, Kaanapali and Puukoli. In these four cases it would appear that the crossing of the railroad will be relatively close to Honopiihiani Highway causing a possible safety hazard due to the back up of vehicular traffic waiting for a signal at the highway.

We are bringing the above mentioned highway-rail crossings to your attention for further investigation and a determination of how grade separations might be provided at these locations. The new plan minimizes the number of possible railroad-highway intersections and would appear to be the more favorable of the plans. While grade separations require considerable capital expense, the benefits of safety to the traveling public and the minimal yearly maintenance tend to offset the original capital expense.

2. We would like to review the operation of the railroad as an assist to anyone programming work at these locations. We operate two trains making a total of ten round trips each day between



**LAHAINA KAAPALI & PACIFIC RAILROAD**  
A Subsidiary of KYLE RAILWAYS, INC.



THE "SUGAR CANE" Train

Puukoli and Lahaina. Our first train departs Puukoli platform at 8:55am and the last train returning to Puukoli Shops at 6 pm. Any construction activities that would interfere with the operation of the railroad would have to occur between the hours of 6pm and 8am.

Erosion control is mentioned in the report and I presume it will be addressed as any construction occurs in the vicinity of the railroad.

We would be happy to attend any planning meetings that might be held in-order-to assist in expediting the handling of this file.

If you have any questions, please feel free to call me.

Sincerely,

Martin Garelick  
Corporate Director

cc: LTC  
PG

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STATE DEPARTMENT  
OF TRANSPORTATION  
APR 9 11 13 AM '96  
HIGHWAY DIVISION  
PLANNING BRANCH

**Response to Leihaina Kaaanapali & Pacific Railroad**

1. In order to manage traffic and caution motorists at the railroad crossing near the Kaaanapali Connector's intersection with Honoapiʻiani Highway, the State Department of Transportation will undertake the implementation of appropriate signage, striping, and warning light improvements as necessary. It should be noted that Amfac will be responsible for the development of the Puukoli Connector, while the development of the Waihiuli and Kapunakea Street Connectors rests with the Housing Finance and Development Corporation. The implementation of similar traffic management improvements will need to be coordinated between these entities and the Leihaina Kaaanapali & Pacific Railroad.
2. To ensure minimal construction and long-term operational conflicts with the Leihaina Kaaanapali and Pacific Railroad, the preparation of the project's final plans and specifications will be coordinated with the Leihaina Kaaanapali and Pacific Railroad.



**WEST MAUI TAXPAYERS ASSOCIATION**

April 30, 1998

Mr Abraham Wong, Division Administrator  
Federal Highway Administration  
US Department of Transportation  
Box 50206  
300 Ala Moana Blvd  
Honolulu, HI 96850

Mr Kazu Hayashida, Director  
State of Hawaii  
Department of Transportation  
865 Punchbowl St  
Honolulu, HI 96813

Dear Mr Wong and Mr Hayashida:

The West Maui Taxpayers Association (WMTA) is an organization of nearly 3,000 residents and property owners of the West Maui area. We thank you for the opportunity to offer comments on the draft Supplemental Environmental Impact Statement (SEIS) for the Lahaina Bypass—a project for which this community has been ardently waiting since it was first proposed over a decade ago.

There are some significant changes in the SEIS from the 1991 FEIS. Most notable for us is the northern extension of the bypass road to Honokowai, which we feel is an important modification due to the already often untenable traffic situation north of Kaunapali and the potential for significant additional development in the area in the years to come. Even with the widening of the existing highway from two to four lanes, which we anticipate prior to the construction of the bypass, the fact remains that there is only one access in and out of the northern part of West Maui. The extension of the bypass to Honokowai will go a long way toward mitigating that fact, especially in emergencies.

On the other hand, the SEIS chose not to pursue the option of a southern bypass extension to Laniupoko Park, and we feel strongly that this decision should be reconsidered. Puamana Park, where the bypass is proposed to begin, is a far smaller and far less utilized park area than Laniupoko. If the bypass were to begin that short distance further south at Laniupoko, it would effectively remove nearly all but local traffic from the existing road, which is already too close to the ocean and will significantly reduce the amount of runoff from the road and make areas into the nearshore wetlands so important to our economy and lifestyle. We urge you to review the potential benefits of this idea and incorporate it into the SEIS.

WMTA is also concerned that of the six connector roads proposed, only two—the Lahaina access road and the Kaunapali connector—are included in the project scope. We question whose responsibility those additional connectors will eventually be—landowners, the County, the State, or a combination of all. It is important to us that

P.O. Box 10338 • Lahaina, Maui, Hawaii 96761 • Telephone: (808) 661-3042 • FAX: (808) 667-2077

A Wong/K Hayashida  
page two

We do not foot the bill for a state project twice—as state taxpayers and as County taxpayers. Some clarification on this issue would be helpful.

We have two specific comments with regard to the connectors. First, we question the location of the Kapunakea connector, which will transect a residential area. The southern Cannery access road, in contrast, is already signalized and has the beginning of two lanes. It is also where the already significant commercial and industrial traffic might be better served. We would ask that this part of the plans be reviewed as well.

Finally, we would just note our support for the portion of the SEIS which calls for a road to be built parallel to Pukoa Road to serve as the connector for that area. The SEIS seems to favor the idea that Pukoa Road should not serve as the Pukoa connector, and we agree.

In general, we are pleased with the plans for the bypass, and look forward to their implementation. Thank you for your consideration.

Sincerely,

  
Gina Aranki  
Executive Director

**Response to West Maui Taxpayers Association**

1. The State Department of Transportation has reexamined the extension of the Bypass to Leunipoko. For reasons of safety, coastal erosion and flooding, the southern terminus of the Bypass has been extended from Puamane to Leunipoko Point, a distance of approximately one (1) mile (the Federal Highway Administration has concurred with this change). The Final Supplemental Environmental Impact Statement includes additional information concerning this alignment modification.
2. The Puukoli Connector will be implemented by Amfac in connection with the development of Puukoli Village, while the Waihiui and Kapunakea Connectors will be constructed by the State Housing Finance and Development Corporation (HFDC) in conjunction with the development of the Villages of Leleli. The implementation of the Dickenson Street Connector rests with the County of Maui.
3. Since the Kapunakea Connector is a master planned element of the Villages at Leleli, coordination between the County of Maui and the HFDC will be required for the relocation of the connector road (from Kapunakea Street to an area mauka of the Lahaina Cannery Mall).

Janet Bailey  
P.O. Box 1191,  
Lahaina, HI. 96767  
April 5, 1996

Federal Highway Administration  
Mr. Abraham Wong, Division Administrator  
300 Ala Moana Blvd., Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplement Environmental Impact Statement  
Honopuili Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii

This is concerning the Lahaina By Pass, and the huge supplement, compiled, and sent to me at great expense. Thank you for including me in the By-Pass study. Time has past since I first wrote my ideas, and opinions of what should be done and why. More than ever, my opinion stands that the By-Pass should be farther south between Olowalu and Launipoko Park, or even farther south.

My reasons are the same, but with the erosion of the beaches, and the constant shoring-up of the highway with cement and boulders, we must admit we are losing soil near the highway, and it is not coming back. Obviously there will be periods of time, at high tide and high surf, that the present highway will be unusable.

If moneys have not been put aside to consider this, and correct the path of the highway in relationship to the erosion, and make this a priority, then we are playing Ostrich, with heads hidden in the sand. It is unbelievable and unacceptable to me that all these studies have been made and really don't address the issues at all.

We will soon loose the sugar industry, and have perfectly good cans roads that could be used for the By-Pass, and cheaper. Or traffic could go one way on the cane road, and opposite the direction on the present highway. This would eliminate the head-on accidents, that are happening more often at this section of the highway...

How often have the residences on Ikana been considered recently? How about the schools, and the splitting of a neighborhood? It's time to work for the people of the community, consider the erosion, realize the plan is now obsolete and won't work, and the By Pass must start farther south.

HONOLULU  
DIVISION  
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CC W. Nashiki  
The Lahaina News  
M. L. Kunkel

Maui and Aloha,  
*Janet Bailey*  
Janet Bailey

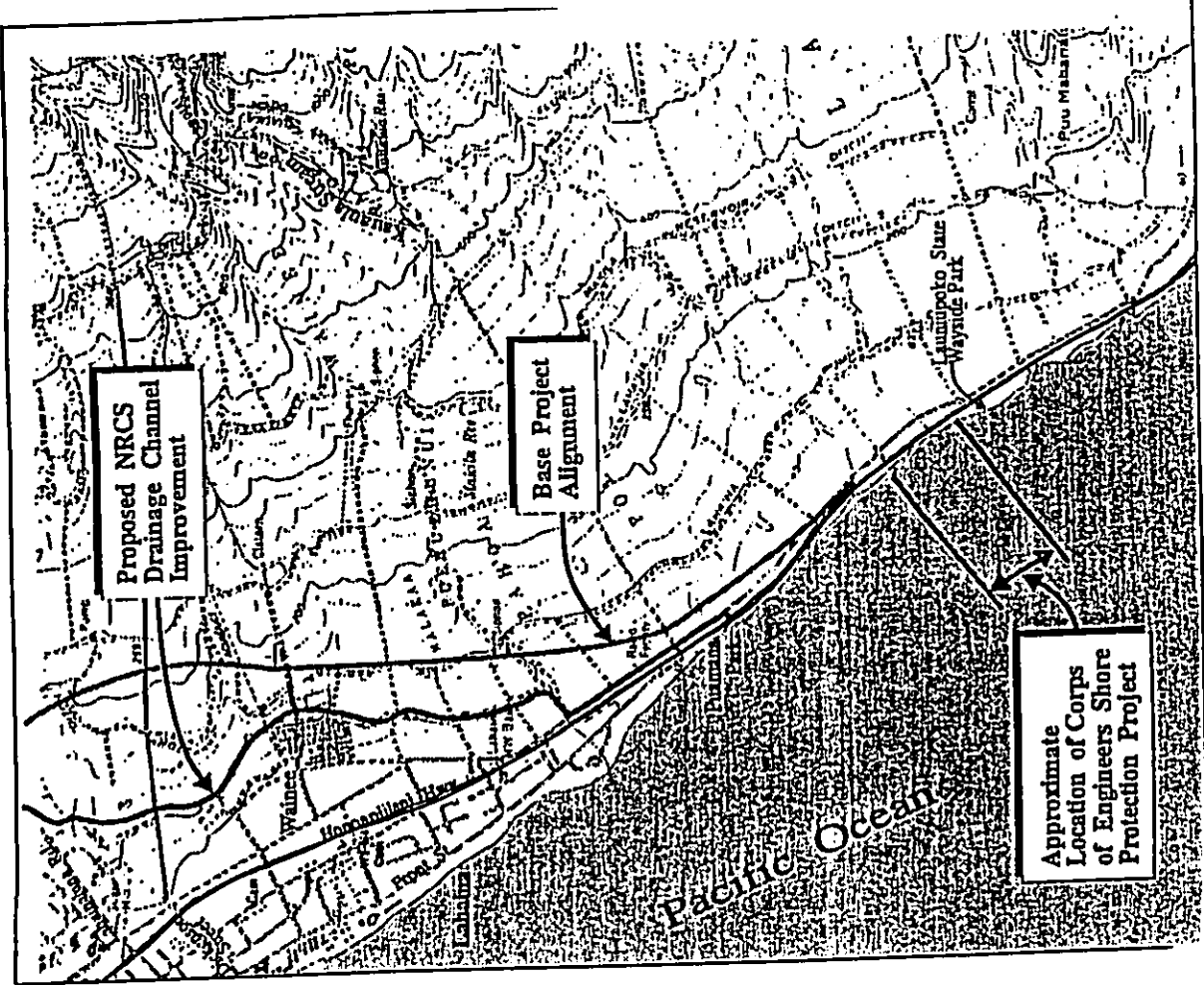


Figure 20 Lahaina Bypass Modifications  
Location of Proposed NRCs and  
COE Projects

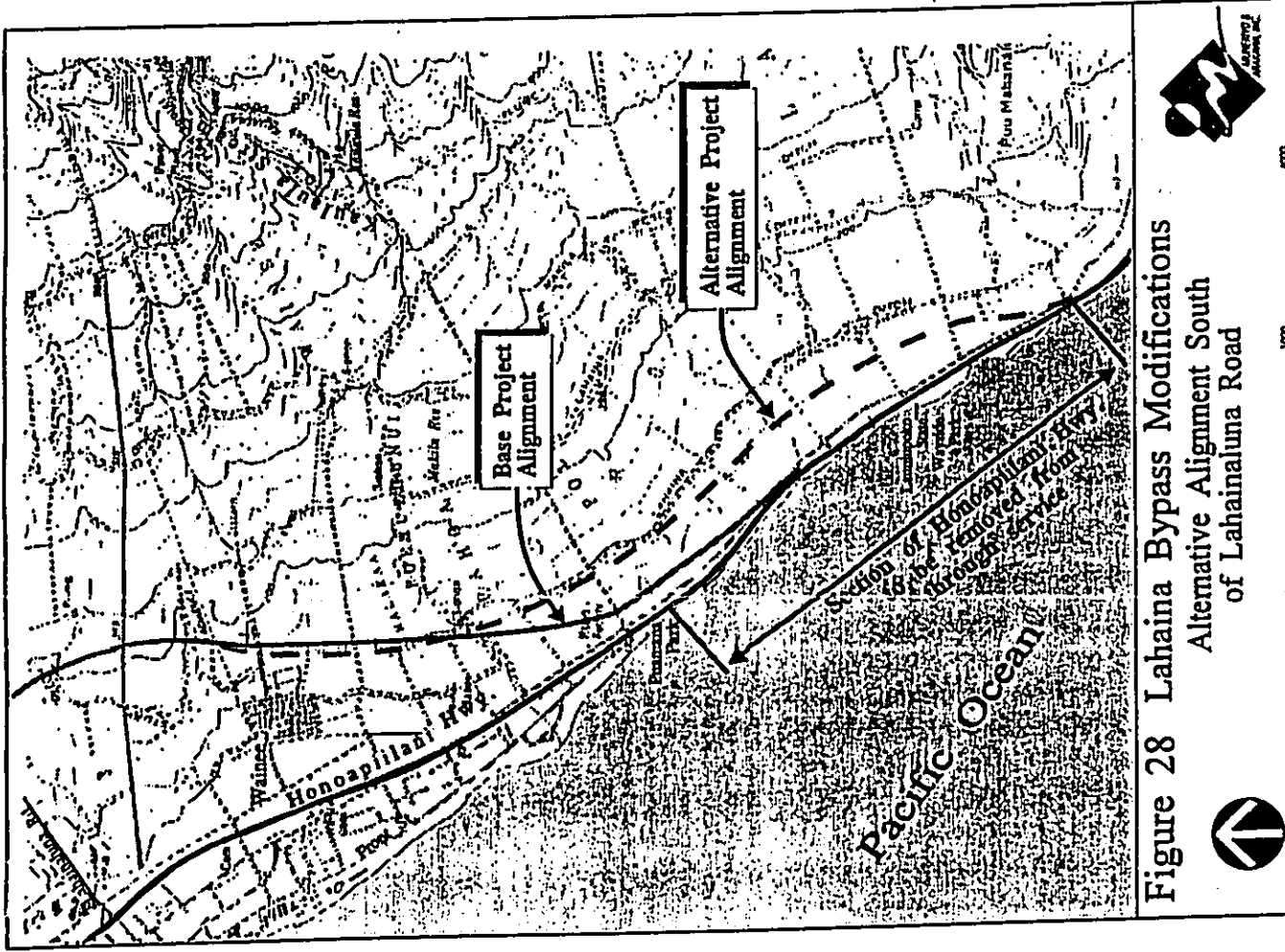


1000 4000



**Response to Ms. Janet Bailey**

1. The State Department of Transportation has reexamined the extension of the Bypass to Launipoko. For reasons of safety, coastal erosion and flooding, the southern terminus of the Bypass has been extended from Puamana to Launipoko Point, a distance of approximately one (1) mile (the Federal Highway Administration has concurred with this change). The Final Supplemental Environmental Impact Statement includes additional information concerning this alignment modification.



**Figure 28 Lahaina Bypass Modifications**  
Alternative Alignment South  
of Lahainaluna Road

Buck Duchaman  
416 Alio Street  
Lahaina, Maui, HI 96761

May 14, 1996

FAX NO: 1-808-341-2704

Mr. Abraham Wong, Division Administrator  
U. S. Department of Transportation  
Federal Highway Administration  
Box 50206, 300 Ala Moana Boulevard  
Honolulu, HI 96830

Re: Draft Supplemental Environmental Impact Statement, Honouliuli Highway (FAP Route 30)  
Puunana to Honokowai, Lahaina District, Maui County, Hawaii

Dear Mr. Wong:

This contains my comments concerning this subject and its presentation to the public on April 30, 1996 in Lahaina.

The Summary of the Draft Supplemental Environmental Impact Statement (DSEIS) states at page iv that:

"The proposed modifications to the Bypass project are consistent with objectives and policies and recommendations of the ... Maui County General Plan, Lahaina Community Plan ..."

That statement is not correct. Indeed, the modifications to the Bypass shown in the DSEIS are inconsistent with the objectives, policies and recommendations of the Maui County General Plan and the Lahaina Community Plan (now designated West Maui Community Plan).

The Maui General Plan, page 19, states that it serves as a basis for an implementation program to effectuate desired changes and improvements in the social, economic, and environmental atmosphere of Maui County. It further states that the updating of the Community Plans is a required action to incorporate the concepts of the General Plan and to provide a timing mechanism for its implementation. The Maui General Plan's first stated transportation objective, on page 9, is

"To support an advanced and environmentally sensitive transportation system which will enable people and goods to move safely, effectively, and economically."

The West Maui Community Plan adopted February 27, 1996 is an update of the Lahaina Community Plan (1983) and thus implements the Maui General Plan. The West Maui Community Plan contains the following:

• Intended effects: "Slow the rate of growth" and "Encourage infill in order to protect agriculture and mauka open spaces" - page 14.

-1-

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OF TRANSPORTATION  
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HIGHWAY DIVISION  
PLANNING BRANCH

- Economic activity: "Maintain the land acreage required to sustain present and future agricultural operations and open space" and "Prevent urbanization of agricultural lands to the greatest extent possible" - page 24.
  - Transportation: "Support construction of the planned Lahaina Bypass Road in such a way as to promote safe, efficient travel across the region without encouraging further urbanization" and "Discourage at-grade intersections along the planned Lahaina Bypass Road in order to maintain safe and efficient traffic flow without traffic signals" - page 36 and 38.
  - Transportation: "Widen the existing highway to four lanes from the pali to Lahaina town and from Kaanapali Parkway to Office Road" - page 38.
  - Implementation: "To facilitate the West Maui Community Plan, the implementing actions shall be considered by County and State agencies in their planning, programming and budgeting" - page 54.
  - State Department of Transportation: The Lahaina Bypass is not listed as one of the five projects to be implemented, but one of the listed projects is the widening of the existing highway from the pali to Lahaina town and from Kaanapali Parkway to Office Road. - Page 60.
1. To be consistent with the Maui General Plan, a Lahaina Bypass must be "environmentally sensitive", must be able to move people and goods "safely, effectively and economically" and must meet the concepts and timing mechanisms of the West Maui Community Plan. The DSEIS does not so provide.
  2. To be consistent with the Maui General Plan and the West Maui Community Plan, the existing Honouliuli Highway must be widened to four lanes as described before the design or planning of the Bypass is completed. Only with that widening in place is it feasible to reasonably estimate the existence and extent of any need for a Lahaina Bypass. The DSEIS does not so provide.
  3. To be consistent with the Maui General Plan and the West Maui Community Plan, a Lahaina Bypass must "Slow the rate of growth" and "protect agriculture and mauka open spaces." The DSEIS does not so provide.
  4. To be consistent with the Maui General Plan and the West Maui Community Plan, a Lahaina Bypass must "Maintain the land acreage required to sustain present and future agricultural operations and open space", and it must "Prevent urbanization of agricultural lands to the greatest extent possible." The DSEIS does not so provide.

-2-

Response to Mr. Buck Buchanan

1. As noted, one of the General Plan's objective is "to support an advanced and environmentally sensitive transportation system which will enable people and goods to move safely, effectively, economically." Engineering studies for the proposed Bypass modifications have examined operational and environmental constraints and opportunities to establish an alignment and connector system which functionally will be a state of the art facility designed to meet the needs of the travelling public in a safe and efficient manner.

Another major objective of the Maui County General Plan is "to develop a program for anticipating and enlarging the local street and highway systems in a timely response to planned growth", while a significant policy of the Plan is to "ensure that transportation facilities are anticipated and programmed for construction in order to support planned growth". The proposed project addresses the foregoing by providing a roadway system which will address the short- and long-term transportation needs of the West Maui region.

Accordingly, the State Department of Transportation (DOT) believes that the proposed Bypass project, as discussed in the Draft Supplemental Environmental Impact Statement (DSEIS) is in consonance with the Maui County General Plan.

2. The DOT is in the process of implementing the Honopuliuli Highway widening project. The design and construction of the Honopuliuli Highway will be completed prior to the construction of the initial phase of the Bypass project. However, DOT's traffic engineering projections indicate that the Bypass will be needed to ensure the long-term traffic circulation efficiency in the Lahaina region.

It is noted that the West Maui Community Plan policy concerning the implementation responsibilities which shall be considered by the DOT states, "Implement other related actions specified in the Transportation section of the Community Plan related to roadway, pedestrian, bikeway improvements for Lahaina town and the region". The construction of the Lahaina Bypass is listed as the first objective in the Transportation section of the Plan, while the widening of Honopuliuli Highway between Kaanapali Parkway and Honokowai is listed as an implementing action which supplements the development of the regional transportation objectives.

3. The proposed project is consistent with the first objective of the West Maui Community Plan regarding transportation which states, "Support construction of the planned Lahaina Bypass Road in such a way as to promote safe, efficient travel across the region without encouraging further urbanization or impeding agricultural operations." In addition, one of the intended effects of the Plan is to

5. To be consistent with the Maui General Plan and the West Maui Community Plan, a Lahaina Bypass must "promote safe, efficient travel across the region without encouraging further urbanization," and it must "discourage at grade intersections ... in order to maintain safe and efficient traffic flow without traffic signals." The DSEIS does not do this.

Examples of the failings of the DSEIS are:

- Seven (7) at-grade intersections, plus two mergers with the existing highway. Five of these seven intersections are proposed to have traffic signals, and two are not. (Figure 8)
- Urbanization is encouraged with four "connectors" (Figure 8) and by the discussion under Land Use Impacts commencing on page 96.

6. It was established at the April 30, 1996 hearing that the DSEIS preparers there present were employed and paid by AMFAC/JMB. AMFAC/JMB is the owner of a substantial portion of the lands projected to be crossed by the proposed Bypass. A long secret (but now available) June 1993 Agreement between AMFAC/JMB and the Hawaii Department of Transportation concerns the proposed Bypass and spells out "commitments" of the parties. In view of these material facts and the obvious conflict of interest, it is little wonder that no objective, forthright, legal and beneficial environmental impact statement resulted.

A proper environmental impact statement is necessary. It's time to start over.

Sincerely,  
  
Buck Buchanan



"stabilize the economy." During construction, the proposed project will provide economic benefits to the community during the short term, as well as promote long-term benefits by providing for economic and efficient travel in the West Maui region.

The Modified Project will involve the additional acquisition of approximately 65 acres of additional sugar cane land. This acreage represents less than one percent of Pioneer Mill's actively cultivated 6,700 acres and is not expected to affect the economic viability of Pioneer Mill's operations. Two (2) grade-separated crossings are proposed to be constructed which will allow Pioneer Mill's vehicles to safely pass beneath the Bypass without interrupting traffic flows. Also, coordination with Pioneer Mill will be undertaken to ensure that construction activities do not adversely affect Pioneer Mill's crops or drainage and irrigation system improvements. In addition, the proposed project is not anticipated to have an adverse effect upon the open space and visual character of the surrounding region.

4. It should be noted that projects along the Bypass alignment, such as the Villages at Lei'ali'i, Puukohi Village, and portions of South Beach Mauka, have received the necessary land use approvals for development. It should also be noted that although other areas along the Bypass or connector road alignments may be considered suitable for urban expansion, projects proposed for future development within these areas must have or must obtain 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 Bypass will require approvals by decision-making bodies which would include the State Land Use Commission, Maui Planning Commission and the Maui County Council. The decision-making processes established for these bodies will provide the mechanism for implementing the growth policies of the West Maui Community Plan.

5. Unlike a freeway which is a high speed, high volume, fully controlled access highway (access provided through on and off ramps at interchanges or through grade-separated intersections), the Lahaina Bypass is designed as a rural highway with partially controlled access (access at designated intersections; no driveway accesses allowed). While the Bypass does not have the high degree of design characteristics as a freeway, it will reduce traffic congestion along the existing Honoapiʻiani Highway, as well as provide for the safer and more convenient movement of traffic between Lahaina and Honokowai. While a number of intersections have preliminarily been designated to be signalized, the actual number of signals that would be initially installed would require further study and analysis based on protected traffic volumes. To facilitate the safe movement of traffic at unsignalized intersections, separate deceleration/storage lanes, as well as acceleration/merge lanes will be provided to facilitate inbound and outbound traffic movements at these stop-controlled intersections. In addition,

the installation of conduit crossings at all intersections will be considered to facilitate the installation of future traffic signals.

6. Since the construction of the project will involve the use of Federal and State funds, the DSEIS has been prepared on behalf of the Federal Highway Administration (FHWA) and the DOT in accordance with applicable Federal and State environmental impact statement rules. The DSEIS has been distributed to local, regional, and national branches of Federal agencies for review and comment, as well as State and County agencies. The purpose of the agency review process is to assess potential environmental impacts and ensure that appropriate mitigation measures have been established, as well as determine that applicable regulatory requirements have been identified and adequately addressed.

Under the terms of the Agreement cited in Mr. Buchanan's letter, the DOT is responsible for the construction and management of the project, while Amfac's participation involves the planning and design of the project. It should also be noted that the DOT, in cooperation with the FHWA, is completely responsible for managing the entire environmental review process, including the work of the project's environmental consultant.

dept. of Trans., re: the proposed draft SEIS  
on a Kahama Bypass. 7:00 PM, LAHAINA, 4/30/9

I ask that you appropriately widen &  
re-align where necessary the Honoapūla  
Highway to 4-LANE. (north of, thru, &  
south of Kahama town to thru the pali  
to the Kihei turnoff) before spending  
our money on a bypass. When this  
is done, we may find that a bypass  
is not needed.

I must point out that the proposal  
shown in the draft SEIS (12-21-95) clearly  
is not consistent with the Maui County  
General Plan & our Kahama Community  
Plan. These Ordinances state:

1. the Honoapūlani Highway to be widened  
to four lanes from the Pali to Kahama  
Town and from Kānāpali Parkway to  
Office Road.
2. Construct the planned Kahama Bypass road  
in such a way as to promote safe & efficient  
travel across the region without  
encouraging further urbanization or  
impeding agricultural operations.
3. Discourage at-grade intersections  
along the planned Kahama Bypass Road,  
in order to maintain safe & efficient  
traffic flow without traffic signals.  
When & where appropriate, provide for  
the safe under passage of agricultural  
equipment & vehicles, such as via stream  
crossings

Chenoweth

Page - - -

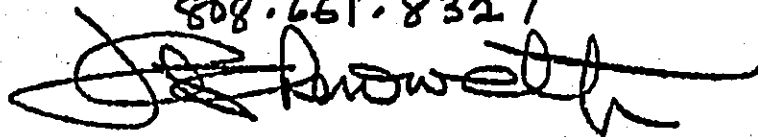
Crossings.

I have attached 4 pages of sketches illustrating a Bypass proposal that would meet the requirements of our plan, if and when a bypass should ever be needed.

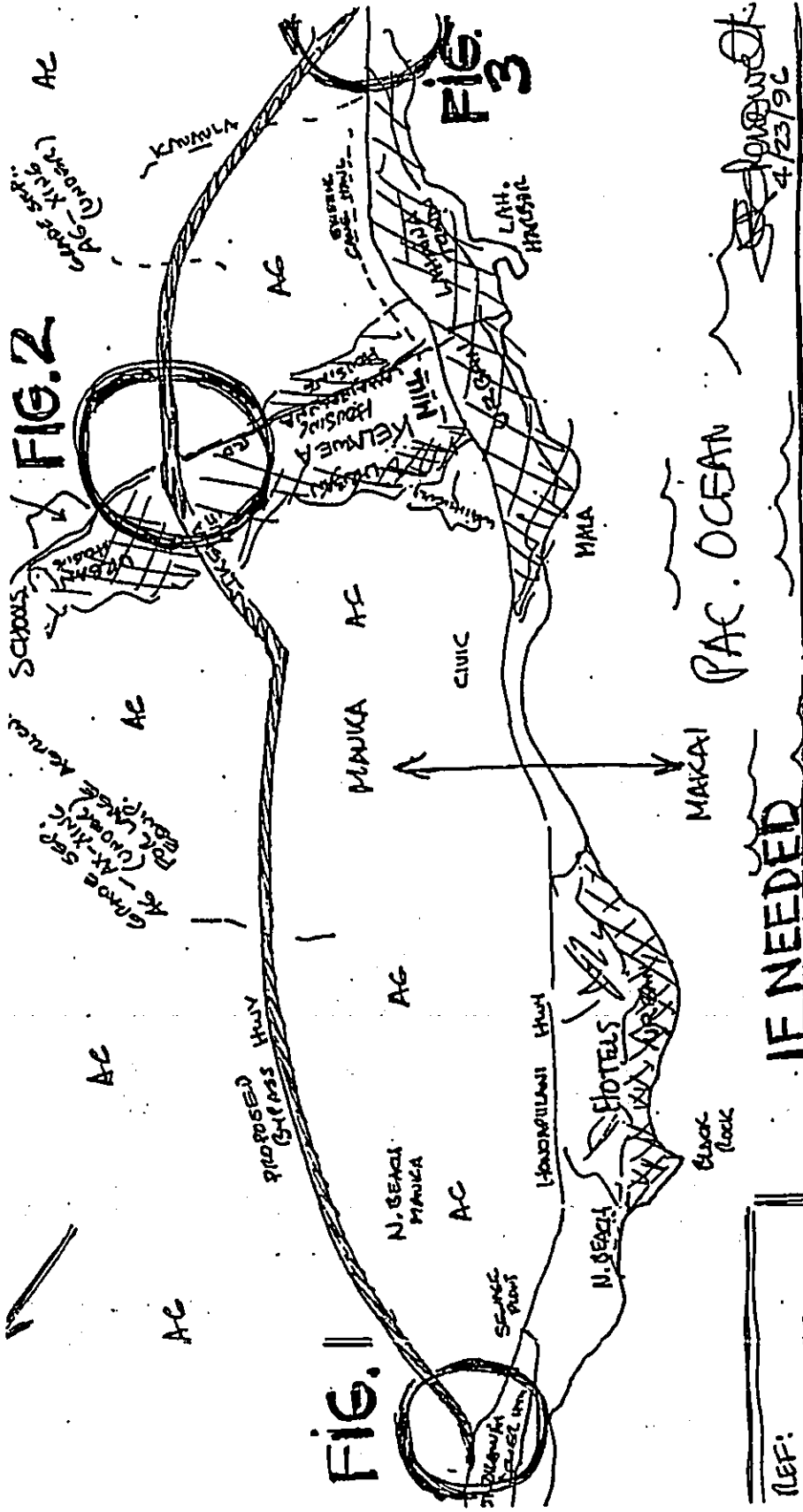
I again emphasize - please use our funds to first widen our existing highway before designing a bypass

Thank you,

DAVE CHENOWETH  
340 FRONT ST.  
LAHAINA, HI., 96761  
808.661.8327



ATTACHED: 4 PAGES OF SKETCHES

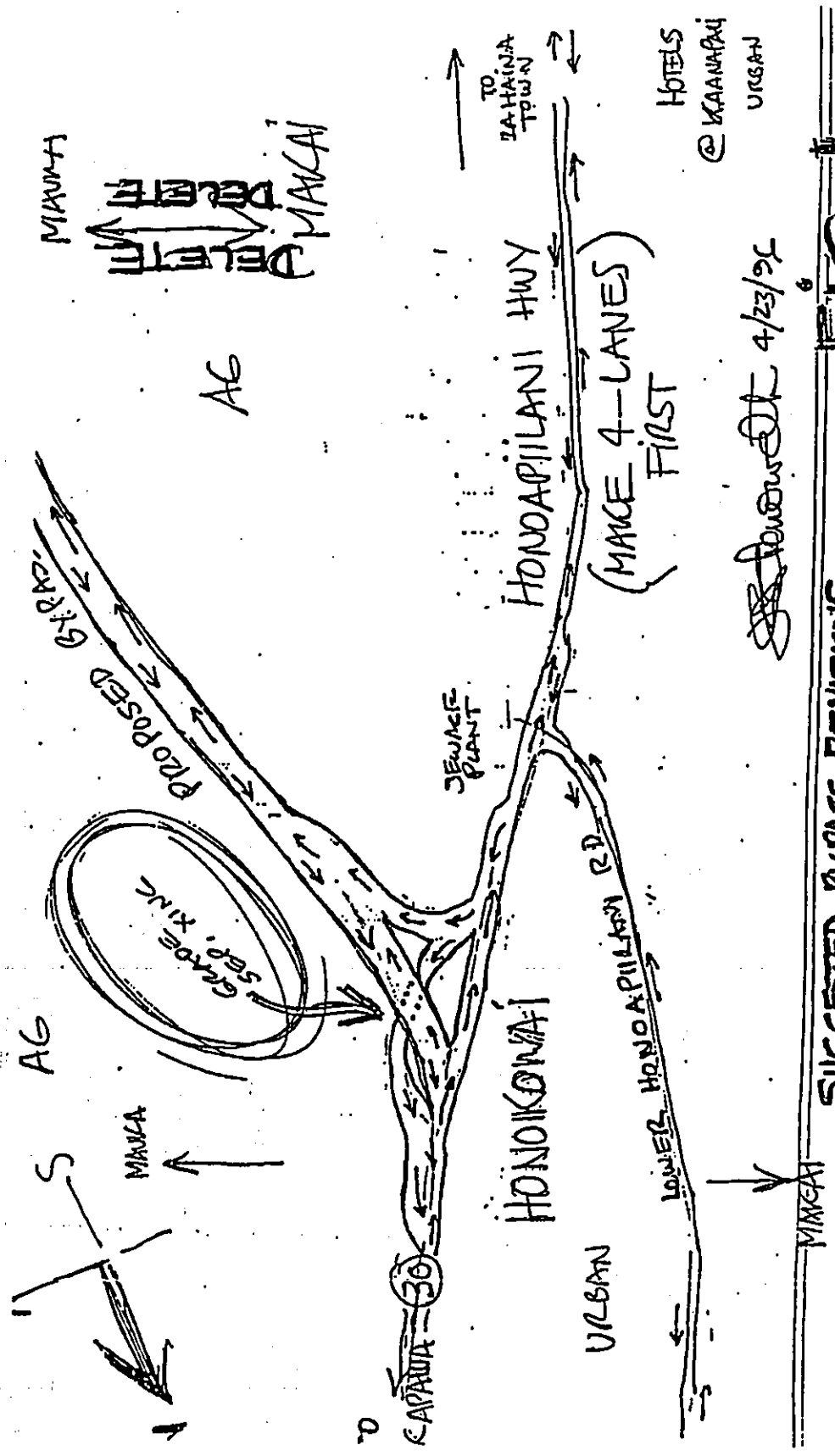


REF: DRAFT SETS FOR ROUTE 30 DEC. 21, 1988 U.S. DEPT. OF TRANS. HI. DEPT. OF TRANS.

IF NEEDED

**SUGGESTED BYPASS FOR IMPROVED SAFETY, TRANSIT EFFICIENCY, REDUCED ACQUISITION COSTS AND MUCH GREATER CONFORMANCE TO OUR WITHAUI COMMUNITY PLAN THAN ONE CONNECTOR. ALL GRADE SEPARATED**

HONOLULU  
4/23/90

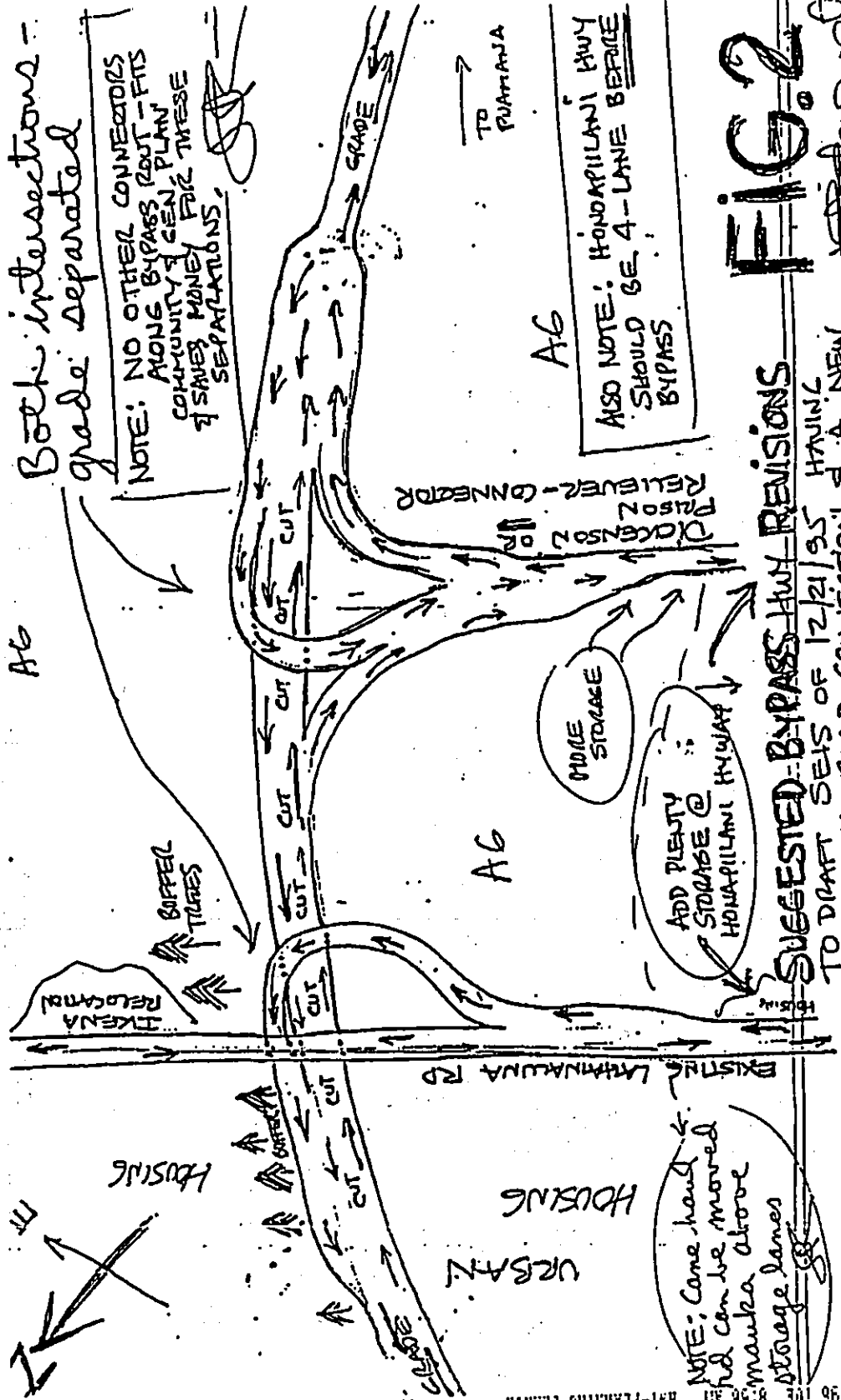


**FIG. 1**

**SUGGESTED BYPASS REVISIONS**

TO DRAFT SEIS OF 12/21/95  
 HAVING GRADE SEPARATED CONNECTION  
 TO HONOAPILANI HWY @ HONOKOWAH '4 NO MAKAHA CONNECTOR

~~4/23/95~~ 4/23/95



Both intersections -  
grade separated

NOTE: NO OTHER CONNECTORS  
ALONG BYPASS ROUTE - FITS  
COMMUNITY & GEN. PLAN  
& SAVES MONEY FOR THESE  
SEPARATIONS.

ALSO NOTE: HONAPIILANI HWY  
SHOULD BE 4-LANE BEFORE  
BYPASS

FIG. 2

4/23/96

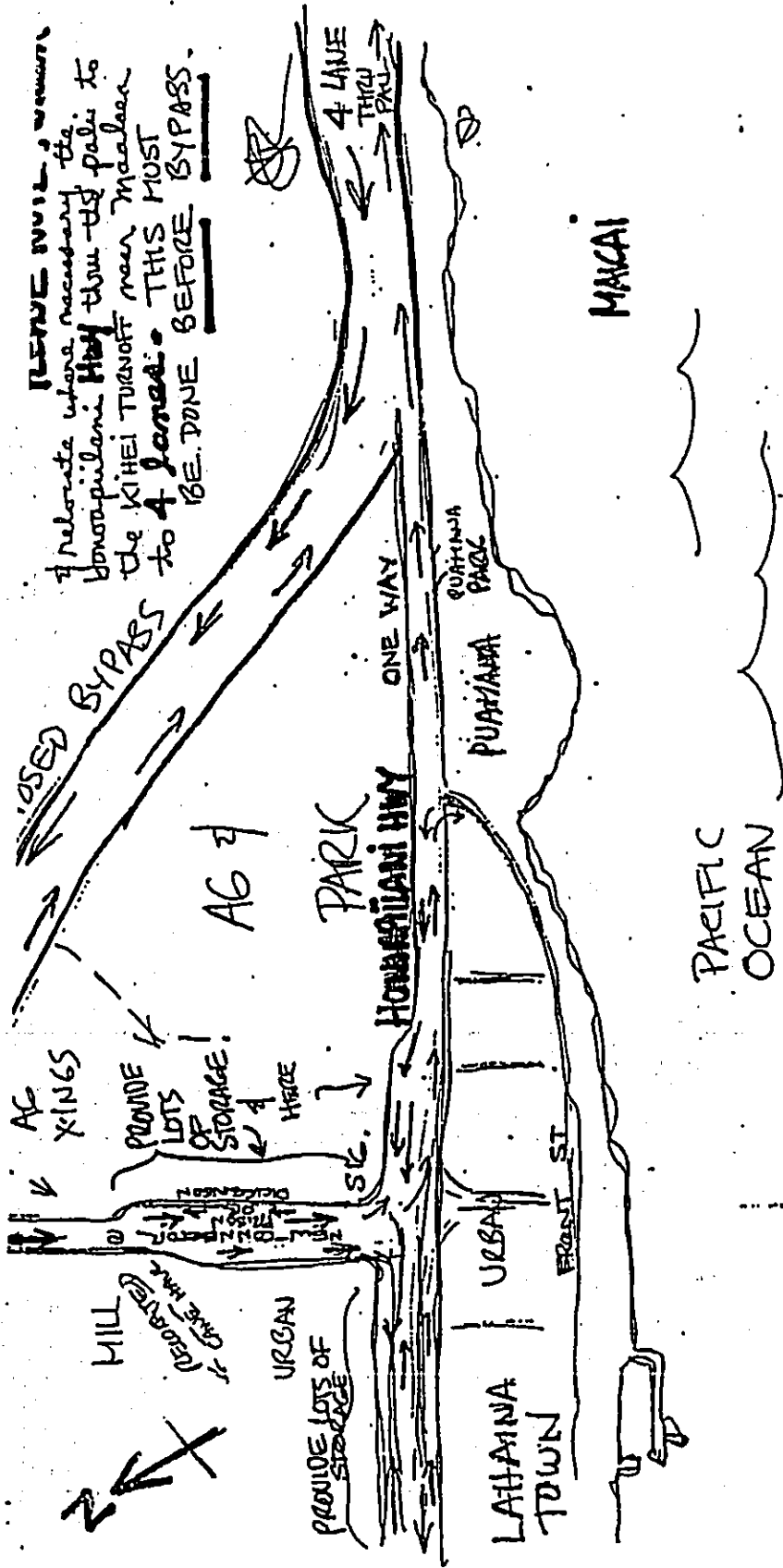
**SUGGESTED BYPASS HWY REVISIONS**

TO DRAFT SEIS OF 12/21/95 HAVING  
EXISTING LATHIAUNA ROAD CONNECTION & A NEW  
THE EXISTING DICKENSON OR PRISON ST. RELIEVER CONNECTOR  
EITHER NAME PARATTEN

NOTE: Come hand  
hd can be moved  
mauka above  
storage lanes

ADD PLENTY  
STORAGE @  
HONAPIILANI HWY

MIME  
STORAGE



**FIG. 3**

**SUGGESTED BYPASS HWY REVISIONS**  
 TO DRAFT SETS OF 12/21/96 HAVING ALL  
 GRADE ONE WAY (SOUTH) CONNECTION ONLY AT PUAIAWA  
 END OF HWY BYPASS

*[Signature]*  
 4/23/96



Response to Mr. Dave Chenoveth

The preparation of the project's final plans and specifications will be coordinated with Pioneer Mill Company, Ltd., to ensure that impacts to agricultural operations are minimized.

1. On a long-term basis, traffic engineering projections indicate that the Bypass will be necessary to provide for traffic efficiency in the West Maui region. In addition to the construction of the Bypass, which is listed as the first objective in the Transportation section of the West Maui Community Plan, the widening of Honoapiʻiani Highway between Kaanapali Parkway and Honokowai and the rail to Lahaina Town are listed as implementing actions which supplement the development of the regional transportation objectives.

The State Department of Transportation is currently in the process of implementing the widening of Honoapiʻiani Highway between Kaanapali and Honokowai. The design and construction of this project will be completed prior to the initial phase of the Bypass. In addition, the widening of Honoapiʻiani Highway from a point four miles west of Maalaea Harbor to the Bypass, is recommended for development within the 2006 - 2020 time frame by Maui Long Range Land Transportation Plan Update.

2. The Bypass will facilitate access to projects which have already received the necessary land use approvals for development such as the Villages at Leleʻi, Puukeli Village, and South Beach Mauka. Although other areas along the Bypass or connector road alignments may be considered suitable for urban expansion, projects proposed for future development within these areas must have or must obtain 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 Bypass will require approvals by decision-making bodies such as the State Land Use Commission, Maui County Council, and the Maui Planning Commission. The decision-making processes established for these bodies will provide the mechanism for implementing the growth policies of the West Maui Community Plan.

3. Unlike a freeway which is a high speed, high volume, fully controlled access highway (i.e., access provided through on and off ramps at interchanges or through grade-separated intersections), the Lahaina Bypass is designed as a rural highway with partially controlled access (i.e., access at designated intersections, no driveway accesses allowed). In addition, while a number of intersections have preliminarily been designated to be signalized, the actual number of signals that would be initially installed would require further study and analysis based on projected traffic volumes.

The Bypass (in connection with the connector roads) has been designed to provide and facilitate the safe and convenient movement of traffic between Lahaina and Honokowai, as well as the existing intervening areas.



Connie Stevenson  
55-1 Puapake Place  
Lahaina HI 96761

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HIGHWAYS DIVISION

May 3, 1996

Mr. Hugh Ono, Administrator  
Department of Transportation  
Highways Division  
869 Punchbowl Street  
Honolulu HI 96813

Dear Mr. Wong:

As a business woman and resident of Lahaina I feel that it would be negligent of me not to comment on the Lahaina Bypass Modified Project.

I have seen the lack of forethought already when the upper highway in Kihai was opened without flashing lights or signs and the young child was killed the morning of the opening day.

The left turn from the Bypass into Lahaina near Puaana is definitely an accident waiting to happen. Consider turning left without any traffic lights across two lanes of on coming traffic at high speed, would you put yourself or your family in such a situation?

The question of why there would be a four lane connecting to Kaanapali and only a two lane connecting to Lahaina proper at Kahaionaluna certainly needs to be answered for the merchants of Lahaina. Were I in a retail business I could call that unequitable and unfair in favor of Anzac and the entire Kaanapali area.

My concerns are as stated above and I would appreciate an answer.

Very truly yours,

  
Connie Stevenson

Response to Ms. Connie Stevenson

1. The connecting roads at the northern and southern junctions of Honoapiilani highway and the Bypass will be designed to allow traffic to safely access both roadways. Separate deceleration/storage lanes, as well as acceleration/merge lanes, will be provided to facilitate inbound and outbound traffic movements at these stop-controlled intersections. The media will be utilized to inform the community of the new traffic improvements and operations. In addition, Ms. Stevenson's comments regarding warning lights and signage will be considered in the development of the proposed project.
2. The proposed Bypass Access Road will provide access to the town of Lahaina until such time as the Dickenson Street Extension is developed by the County of Maui (the Extension is not a component of the proposed project). The future Extension would incorporate the east-west segment of the Access Road to link Honoapiilani Highway with the Bypass and could accommodate four-lanes within a 60-foot right-of-way as traffic warrants. The timetable for the planning and development of the Extension by the County is uncertain at this time.

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**Comments Not Requiring  
Responses**



United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
677 Ala Moana Boulevard, Suite 415  
Honolulu, Hawaii 96813

March 4, 1996

Mr. Abraham Wong  
Division Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
Hawaii Division  
P.O. Box 30206  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplementary Environmental Impact Statement  
Honopilihi Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii

The staff of the U.S. Geological Survey, Water Resources Division, Hawaii District, has reviewed the Draft Supplementary Environmental Impact Statement, and we have no comments to offer at this time.

Thank you for allowing us to review the report. We are returning it for your future use.

Sincerely,

*William Meyer*  
William Meyer  
District Chief

Enc.

COMMITTEE ON BUDGET AND POLICY  
COMMITTEE ON EDUCATION AND ECONOMIC OPPORTUNITY  
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT

Congress of the United States  
House of Representatives

Washington, DC 20515-1102

March 6, 1996

PATSY T. MINK  
SECOND DISTRICT, HAWAII

ADMINISTRATIVE OFFICE  
2125 Buchanan Road, Office Building  
Washington, DC 20515-1102  
(202) 225-4000  
FAX: (202) 225-4007

DISTRICT OFFICE  
1344 Puuwaia Road, Office Building  
P.O. Box 81114  
Honolulu, HI 96808-0114  
(808) 541-1100  
FAX: (808) 534-4223

Abraham Wong  
Hawaii Division Administrator  
Department of Transportation Fed. Hwy.  
300 Ala Moana Blvd. Rm. 3202  
Honolulu, Hawaii 96850

Dear Abraham:

Thank you for sending me a copy of: "Draft Supplemental Environmental Impact Statement, Honopilihi Highway (FAP Route 30), Puamana to Honokowai, Lahaina, District, Maui County, Hawaii."

Although I do not have any specific comments concerning this proposed project, my staff will use this report as a reference document. Your courtesy is gratefully acknowledged.

Very truly yours,

*Patsy T. Mink*

PATSY T. MINK  
Member of Congress

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EDUARDO J. CASTILLO  
Governor  
SERUFE AYVA  
Deputy Governor  
KUCI EOCED  
Deputy Governor



DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT, AND TOURISM

Energy, Resources, and Technology Division, 333 Merchant Street, Room 110, Honolulu, Hawaii 96813  
P: (808) 581-3307 Fax: (808) 586-3338

SAM CALLEJO  
Comptroller

MARY PATRICIA WATKINS  
SMART COMPTROLLER

(P) 1270.6  
LETTER NO.



STATE OF HAWAII

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P. O. BOX 118, HONOLULU, HAWAII 96818

EDUARDO J. CASTILLO  
Governor

APR 19 1996

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3:05 PM

HAWAII DIVISION

Mr. Abraham Wong, Division Administrator  
Federal Highway Administration  
U.S. Department of Transportation  
300 Ala Moana Boulevard, Room 202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Honoapiilani Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for the opportunity to review the subject document. We have no comments to offer.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

*Gordon Matsuo*  
GORDON MATSUOKA  
State Public Works Engineer

RY:Jy

March 1, 1996

104Wong

Federal Highway Administration  
Mr. Abraham Wong, Division Administrator  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

SUBJECT: Draft Supplemental Environmental Impact Statement  
Honoapiilani Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii

We wish to inform you that we have no comments regarding the subject EIRPN.  
Thank you for the opportunity to submit any comments or recommendations.

Sincerely,

*Maurice H. Kaya*  
Maurice H. Kaya  
Energy, Resources, and Technology  
Program Administrator

MHK:aw

Federal Highway Administration

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STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPOLAHU AVENUE, SUITE 500  
HONOLULU, HAWAII 96813-5149  
PHONE (808) 594-1848  
FAX (808) 594-1855

March 20, 1996  
Federal Highway Administration  
Mr. Abraham Wong, Division Administrator  
300 Ala Moana Blvd., Room 3202  
Honolulu, HI 96850

Dear Mr. Wong:

Thank you for the opportunity to review the Draft Supplemental Environmental Impact Statement (SEIS) for Honopiilani Highway (FAP Route 30) Puamana to Honokowai, Lahaina District, County of Maui. The SEIS addresses potential impacts stemming from the proposed construction of modifications to Honopiilani Highway from Puamana to Honokowai.

After a careful review of the SEIS and supporting documentation, the Office of Hawaiian Affairs has no objections to the proposed road modifications. Based on the information contained in the SEIS, the road modifications apparently bear no significant long-term adverse impacts on adjacent farmlands nor upon existing flora or fauna habitats. Furthermore, no known archaeological remains exist and no further archaeological work is required unless cultural remains are found during the development. The preparers indicate that if such a situation arises, archaeological consultation will be sought immediately. Please contact me, or Linda K. Delaney, the Land and Natural Resources Division Officer (594-1938), or Luis A. Manrique (594-1935), should you have any questions on this matter.

Sincerely yours,  
  
Linda M. Colburn  
Administrator

LM:lm

1162  
GILLIAMS & CAVELAND  
ATTORNEYS AT LAW



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

March 5, 1996

Federal Highway Administration  
Mr. Abraham Wong, Division Administrator  
300 Ala Moana Blvd., Rm 3202  
Honolulu, HI 96850

Dear Mr. Wong:

SUBJECT: In re: HEC-III  
Draft Supplemental Environmental Impact Statement  
Honopiilani Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii

We have reviewed the subject matter. The draft supplemental environmental impact statement addresses our concerns regarding flora and fauna. The proposed project will not interfere with our programs or projects within the area. Therefore, we have no objections to the proposed request.

Thank you for the opportunity to comment.

Very truly yours,  
  
Michael G. Buck  
Administrator

cc: Maui Branch

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STATE DEPARTMENT  
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1058  
MICHAEL G. WILSON  
Commissioner  
BUREAU OF LAND AND NATURAL RESOURCES  
COUNTY  
GILBERT E. COLEMAN-SAGAN  
AGRICULTURE DEVELOPMENT  
WATER RESOURCES  
SOILS AND OCEAN REGULATION  
CONSERVATION AND  
RECREATION AFFAIRS  
LAND MANAGEMENT  
CONSERVATION  
FORESTRY AND WILDLIFE  
LAND MANAGEMENT  
WATER AND LAND DEVELOPMENT  
WATER RESOURCE MANAGEMENT



LINDA CROCKETT LINGLE  
 54-40  
 ROBBIE ANN A. KANE GUARD  
 Economic Development Coordinator  
 TELEPHONE: (808) 243-7710  
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OFFICE OF ECONOMIC DEVELOPMENT  
 COUNTY OF MAUI  
 200 SOUTH HIGH STREET, 8TH FLOOR  
 WAILUKU, MAUI, HAWAII USA 96793

Hwy-P  
 2/27/96  
 -PA KSC  
 WPD

DIR 339  
 STP 8.7274

DIRECTOR'S OFFICE  
 DEPT. OF TRANSPORTATION  
 MAR 25 2 26 PM '96

March 22, 1996

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

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement  
 Honopiilani Highway (FAP Route 30)  
 Puamana to Honokowai  
 Lahaina, Maui, Hawaii

Thank you for your transmittal of February 20, 1996.

The subject project is being developed by our Highways Division. We are in full support of this project.

Very truly yours,

*Kazu Hayashida*  
 KAZU HAYASHIDA  
 Director of Transportation

EKT/JT:km

c: HWY-P, STR(ET)

RECEIVED  
 STATE DEPARTMENT  
 OF TRANSPORTATION  
 MAR 27 11 20 AM '96  
 HIGHWAYS DIVISION  
 PLANNING BRANCH

March 15, 1996

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

Dear Mr. Wong,

Subject: Draft Supplemental Environmental Impact Statement  
 (EIS) Honopiilani Highway (FAP Route 30)  
 Puamana to Honokowai  
 Lahaina, Maui Hawaii

Thank you for sharing the Draft Supplemental EIS and the opportunity to provide comments.

Our office has no comments.

Very truly yours,

*Robbie Ann Kane Guard*  
 ROBBIE ANN KANE GUARD  
 Economic Development Coordinator

THE COUNTY OF MAUI MISSION STATEMENT:  
 To enhance the quality of life in Maui County by providing outstanding public services in partnership with the community.



**POLICE DEPARTMENT**

COUNTY OF MAUI

55 HAWAII STREET  
WAILUKU, HAWAII 96793  
AREA CODE (808) 244-6400  
FAX NO. (808) 244-6411

LINDA CROCKETT LINGLE  
MAYOR

OUR REFERENCE  
YOUR REFERENCE



HOWARD H. TAGOMORI  
CHIEF OF POLICE

LANNY THADA  
DEPUTY CHIEF OF POLICE

March 18, 1996

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

Dear Mr. Wong:

SUBJECT: Draft Supplemental Environmental Impact Statement  
Honopiihoni Highway (FAP Route 30)  
Puamana to Honokowai  
Lahaina, Maui, Hawaii

The Draft Supplemental Environmental Impact Statement (SEIS) for the proposed construction of modifications to Honopiihoni Highway from Puamana to Honokowai has been reviewed. We do not have any comments on the proposed project.

Very truly yours,

*Howard H. Tagomori*  
Assistant Chief Charles Hall  
for: HOWARD H. TAGOMORI  
Chief of Police

HONOLULU  
PLANNING  
BRANCH

96. HJ 84 71 02 MW

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STATE DEPARTMENT  
OF TRANSPORTATION

NOTIFICATION OF TELEPHONE CONTACT

DATE: Mar 12, 1996

TO: DIR  
THRU: HWY  
FROM: HWY-P

PERSON CALLING: CELLY AEBER  
LAHAINA NEWS

TIME & DATE: 9:00 AM 3/11/96

NATURE OF INQUIRY: WANTED CLARIFICATION OF  
CRIMINALS OF LAHAINA  
ROAD DIVERSIONS (CONSTRUCTION  
HONOLULU ETC) FOR LAHAINA  
BYPASS ROAD.

RESPONSE: PREPARED INFORMATIONAL AND  
COPY OF SEIS.

NAME OF RESPONDER: KENNETH AU  
Time & Date of Response: 3/11/96 9:15 AM

cc: DEP-2, PPB, HWY-5

03 1996



### University of Hawaii at Manoa

Water Resources Research Center  
Holmes Hall 303 • 1540 Dole Street  
Honolulu, Hawaii 96822

4 March 1996

Federal Highway Administration  
Mr. Abraham Wong, Division Administrator  
300 Ala Moana Blvd., Rm. 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

**Subject:** Draft Supplemental Environmental Impact Statement  
Honoapiʻiani Highway (FAP Route 30)  
Puamana to Honoapiʻiani, Lahaina, Maui, Hawaii

We have reviewed the subject EIS and have no comment to offer at this time.

Thank you for the opportunity to comment.

Sincerely,

*Roger S. Fujioke*  
Roger S. Fujioke, Ph.D.  
Director, WRRRC

RSF:jmn

Enclosure



April 30, 1996

State of Hawaii  
Department of Transportation  
Highways Division

Dear Sirs:

I am writing to lend my support to the Bypass and Kaanapali Connector project currently under consideration by the State.

The project designed to run from Puamana to Honoapiʻiani will help to relieve the traffic congestion and improve the traffic circulation in and around Lahaina and Kaanapali. The new bypass will provide an alternate and efficient route for both residents and visitors alike. The project when complete, will also help to provide a more convenient and safer access to both the homeowners, commercial facilities and schools located within the planned area.

The bypass project has been under development for many years, it is now time that we proceed with the work as proposed in the Lahaina Bypass Modified Project.

Thank you for your time and support of this very important project.

Very truly yours,  
THE ESTATE OF JAMES CAMPBELL

*Donald N. Reaser*  
Donald N. Reaser  
Asset Manager, Maui

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STATE DEPARTMENT  
OF TRANSPORTATION  
MAR 11 11 29 AM '96  
HIGHWAYS DIVISION  
PLANNING BRANCH

data:MAUI\1052100K\10118



re: Lahaina Bypass

Dear Mr. Wong,

As a long time resident of Lahaina, and a long time waiting for this project to materialize, may I express my full support as it has thus far been planned. And may I add, the sooner the better.

We (my family) live in the Wahikuli area of Lahaina and understand the road will be passing directly behind our home. And we realize that it could be noisy at times, but we are quite willing to endure this probable discomfort knowing that this road will benefit so many, including ourselves, that are discomforted by the current traffic woes.

We appreciate your effort to expedite this exciting project.

Sincerely,



Paul Dean

RECEIVED

APR 23 1996

HAWAII DIVISION

April 22, 1996

Mr. Abraham Wong  
Division Administrator  
Federal Highway Administration  
U.S. Department of Transportation  
300 Ala Moana Boulevard, Room 3202  
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft Supplemental Environmental Impact Statement  
Honouliuli Highway (FAP Route 30)  
Puamana to Honokawai  
Lahaina, Maui, Hawaii


Thank you for the opportunity to review and comment on the proposed modifications to the above subject, Highway Project.

The proposed modifications to the roadway profile at the intersection of Ikena Avenue and Lahainaluna Road; and the Lahainaluna Road Bypass Access in Lahaina addresses the concerns of the residents affected at this location in a positive manner. These concerns include noise impact, pollutant emissions, and traffic flow on both roadways.

These modifications are consistent with objectives and policies and recommendations of the Hawaii State Plan, State Transportation Functional Plan, Maui Long-Range Highway Planning Study, Maui County General Plan, and Lahaina Community Plan.

I have no other comments or questions at this time.

Sincerely,



ED MIYABARA  
P.O. Box 97  
Lahaina, Hawaii 96767

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STATE DEPARTMENT  
OF TRANSPORTATION  
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HIGHWAYS DIVISION  
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HIGHWAYS DIVISION  
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# **Chapter XIV**

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***Draft SEIS Public  
Hearing Summary***

## **XIV. DRAFT SEIS PUBLIC HEARING SUMMARY**

A summary of substantive comments received during the public hearing on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Modified Project follows.

Pursuant to Federal environmental impact statement rules regarding public involvement, a public hearing for the subject project was held on April 30, 1996 at the Lahaina Intermediate School Cafeteria in Lahaina, Maui, Hawaii. The Notice of Public Hearing was published in the March 28 and April 23, 1996 editions of the Honolulu Advertiser. The public hearing was called to order at 7:10 p.m. and was adjourned at 8:40 p.m. Twenty-five (25) members of the general public were in attendance, with nine (9) individuals providing public testimony. The following overview summarizes the substantive comments made during the hearing's public testimony phase.

### **SUMMARY OF PUBLIC HEARING TESTIMONY**

#### **West Maui Community Plan**

Dave Chenoweth and Buck Buchanan indicated that the following objectives and recommendations of the Maui County General Plan and the Community Plan should be implemented as follows:

1. Honoapiilani Highway should be widened to four (4) lanes from the pali to Lahaina town and from Kaanapali Parkway to Office Road (a.k.a., Lower Honoapiilani Road);
2. The Bypass should be constructed in such a way as to promote safe and efficient travel across the region without encouraging further urbanization or impeding agricultural operations; and
3. At-grade intersections along the Bypass should be discouraged in order to maintain safe and efficient traffic flow without traffic signals. When and where appropriate, crossings for the safe under passage of agricultural equipment and vehicles, such as via stream crossings, should be provided.

---

### **Kapunakea Connector**

Gina Aranki of the West Maui Taxpayers Association and Bud Ledbetter noted that the Kapunakea Connector would traverse an existing residential area and could be relocated 0.2 mile to the south where a signalized intersection and a street plug for a future light industrial subdivision access road already exist (the subdivision is located mauka of the Lahaina Cannery Mall).

### **Honoapiilani Highway**

Dave Chenoweth indicated that Honoapiilani Highway should be appropriately widened and realigned to four (4) lanes (north of, through, and south of Lahaina town, as well as through the pali and on to North Kihei Road) prior to developing the Bypass. He also indicated that the Bypass may not be needed after these improvements have been completed. Randy Draper noted that Federal funds for the Bypass could be used to improve Honoapiilani Highway between Puamana and Maalaea.

### **Bypass Extension to Launiupoko**

Gina Aranki indicated that the extension of the Bypass alignment to Launiupoko should be reconsidered.

## **SUMMARY OF QUESTIONS AND ANSWERS**

A question and answer period followed the public hearing's testimony phase. A summary of notable comments and responses relating to the proposed project follows:

### **Development of Connector Roads and Funding**

In response to a question from Gina Aranki concerning who would be responsible for the development and funding of the connector roads, it was indicated that the Kaanapali Connector would be implemented in connection with the proposed project. The Puukoolii Connector would be developed by Amfac, while both the Wahikuli and Kapunakea Connectors would be implemented by the Housing Finance Development Corporation (HCDCH) in connection with the Villages at Lei'ali'i project. The Dickenson Street Connector would be developed by the County of Maui. With the exception of the Puukoolii and Dickenson Street Connectors, which would be funded by Amfac and the County of Maui, respectively, the remaining

---

connector roads would be funded by the State of Hawaii.

**Signalized Intersections**

With regard to questions from Kelly Arbor and Buck Buchanan concerning the planned signalized intersections and from Randy Draper regarding signalizing the entrance to Launiupoko Wayside Park, it was noted that traffic signals would be installed as warranted pursuant to traffic engineering standards. It was also noted that acceleration/merge lanes and deceleration/storage lanes would be provided at unsignalized intersections.

**Ceded Lands**

In response to a question from Brian Perry concerning the extent the ceded lands issue involving the Villages at Lei'ali'i may complicate the development of the project, it was indicated that the issue is a legal matter and could not be determined at this time. However, it was noted that a similar situation involving a State highway project on the Big Island was allowed to be developed through ceded lands.

**DOT/Amfac Agreement**

In response to a question from Buck Buchanan concerning an agreement between the Amfac and the State Department of Transportation (DOT), it was noted that Amfac was responsible for funding the preparation of the DSEIS. Under the terms of the agreement, Amfac is responsible for the planning and design of the project, while the State is responsible for the management and construction of the project; the DOT, in cooperation with the FHWA, is completely responsible for managing the entire environmental review process, including the work of the project's environmental consultant.

The comments provided during the public hearing on the DSEIS for the Modified Project were examined in the preparation of the Final Supplemental Environmental Impact Statement (FSEIS) and have been addressed in the FSEIS. Letters from Dave Chenoweth, Buck Buchanan, and Gina Aranki were also received during the public comment period for the Draft SEIS. Responses to their substantive comments are included in Chapter XIII, Comments and Responses Provided During the Review of the Draft SEIS.

# **Chapter XV**

---

***List of Final SEIS Preparers***

## **XV. LIST OF FINAL SEIS PREPARERS**

The following individuals and firms participated in the preparation of the Draft SEIS:

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- Appendix C-9:** Historic Preservation Response - Archaeological Treatment Plan for No Adverse Effect, June 1994
- Appendix C-10:** State Historic Preservation Division Memorandum, August 1996
- Appendix D:** Traffic Noise Study Update for the Proposed Lahaina Bypass Highway, June 1995
- Appendix D-1:** Traffic Noise Study Update for the Kaanapali Connector and the Lahainaluna Road - Bypass Access, December 1993
- Appendix E:** U.S. Fish and Wildlife Service Letter, August 1988
- Appendix E-1:** U.S. Fish and Wildlife Service Letter, July 1995
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- Appendix F:** Air Quality Study, January 1994
- Appendix G:** Department of Parks and Recreation Letter, July 1995
- Appendix G-1:** Department of Transportation Letter, February 1996
- Appendix H:** Office of Planning Letter, February 1999.
- Appendix I:** U.S. Department of the Army Letter, September 1995.
- Appendix I-1:** U.S. Department of the Army Letter, May 12, 1999.

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# ***Appendix A***

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***Metric Conversion Factors (Includes  
FHWA Letter, January 26, 1995)***

COMMON METRIC CONVERSION FACTORS			
Class	Multiply:	By:	To Get:
Area*	ft <sup>2</sup>	0.0929	m <sup>2</sup>
	yd <sup>2</sup>	0.8361	m <sup>2</sup>
	mi <sup>2</sup>	2.590	km <sup>2</sup>
Length*	ft	0.3048	m
	in	25.4	mm
	mi	1.6093	km
	yd	0.9144	m
Volume	ft <sup>3</sup>	0.0283	m <sup>3</sup>
	gal	3.785	L **
	fl oz	29.574	mL **
	yd <sup>3</sup>	0.7646	m <sup>3</sup>
	acre ft	1233.49	m <sup>3</sup>
Mass	oz	28.35	g
	lb	0.4536	kg
	kip (1,000 lb)	0.4536	tonne (1,000 kg)
	short ton (2,000 lb)	907.2	kg
	short ton	0.9072	tonne (1,000 kg)
Density	lb/yd <sup>3</sup>	0.5933	kg/m <sup>3</sup>
	lb/ft <sup>3</sup>	16.0185	kg/m <sup>3</sup>
Pressure	psi	6894.8	Pa
	ksi	6.8948	Mpa (N/mm <sup>2</sup> )
	lb/ft <sup>2</sup>	47.88	Pa
Velocity	ft/s	0.3048	m/s
	mph	0.4470	m/s
	mph	1.6093	km/h
Light	footcandle (or) lumen/ft <sup>2</sup>	10.764	lux (lx) (or) lumen/m <sup>2</sup>
Temperature	°F	$t_c = (t_f - 32)/1.8$	°C

\* For land surveying, see "Land Surveying Conversion Factors" table on page 10, below.

\*\* Use Capital "L" for liter to eliminate confusion with the numeral "1".

Source: Caltrans, Office of Project Planning and Design

lbmetric.tbl.oc23



JAN 27 4 41 PM '95

DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
REGION NINE

Hawaii Division  
Box 50206  
Honolulu, Hawaii 96850  
(808) 541-2700 - FAX (808) 541-2704

ARIZONA  
CALIFORNIA  
NEVADA  
HAWAII  
GUAM  
AMERICAN SAMOA  
N. MARIANA IS.

January 26, 1995

IN REPLY REFER TO

HEC-HI

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

Dear Mr. Hayashida:

Subject: Draft Supplemental EIS  
FAP 30, Honoapiilani Highway  
Maui County, Hawaii

In response to your HWY-PA 2.1662 letter dated June 27, 1994, your request for metric exemption for the subject Supplemental EIS is approved. The approval is given with the understanding that a conversion factor addendum will be added to the Draft Supplemental EIS and that the PS&E will be completed in SI units.

Please contact Mr. Pat Phung of my staff at (808) 541-2700 if you have any questions.

Sincerely yours,

Michael A. Cook  
Division Administrator

By:  
Abraham Wong  
Assistant Division Administrator



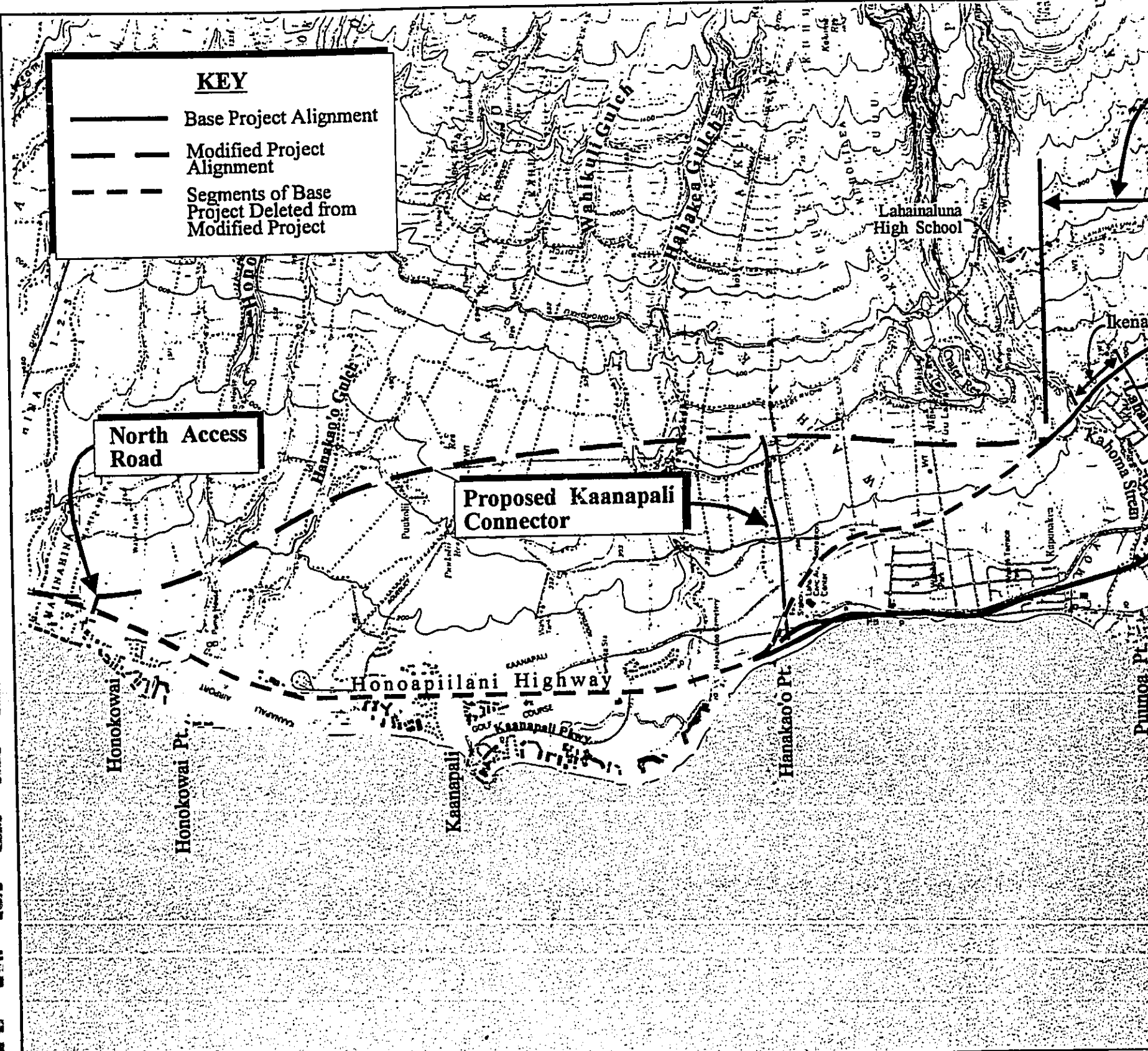
# **Appendix B**

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**Site Map**

**KEY**

- Base Project Alignment
- - - Modified Project Alignment
- - - Segments of Base Project Deleted from Modified Project

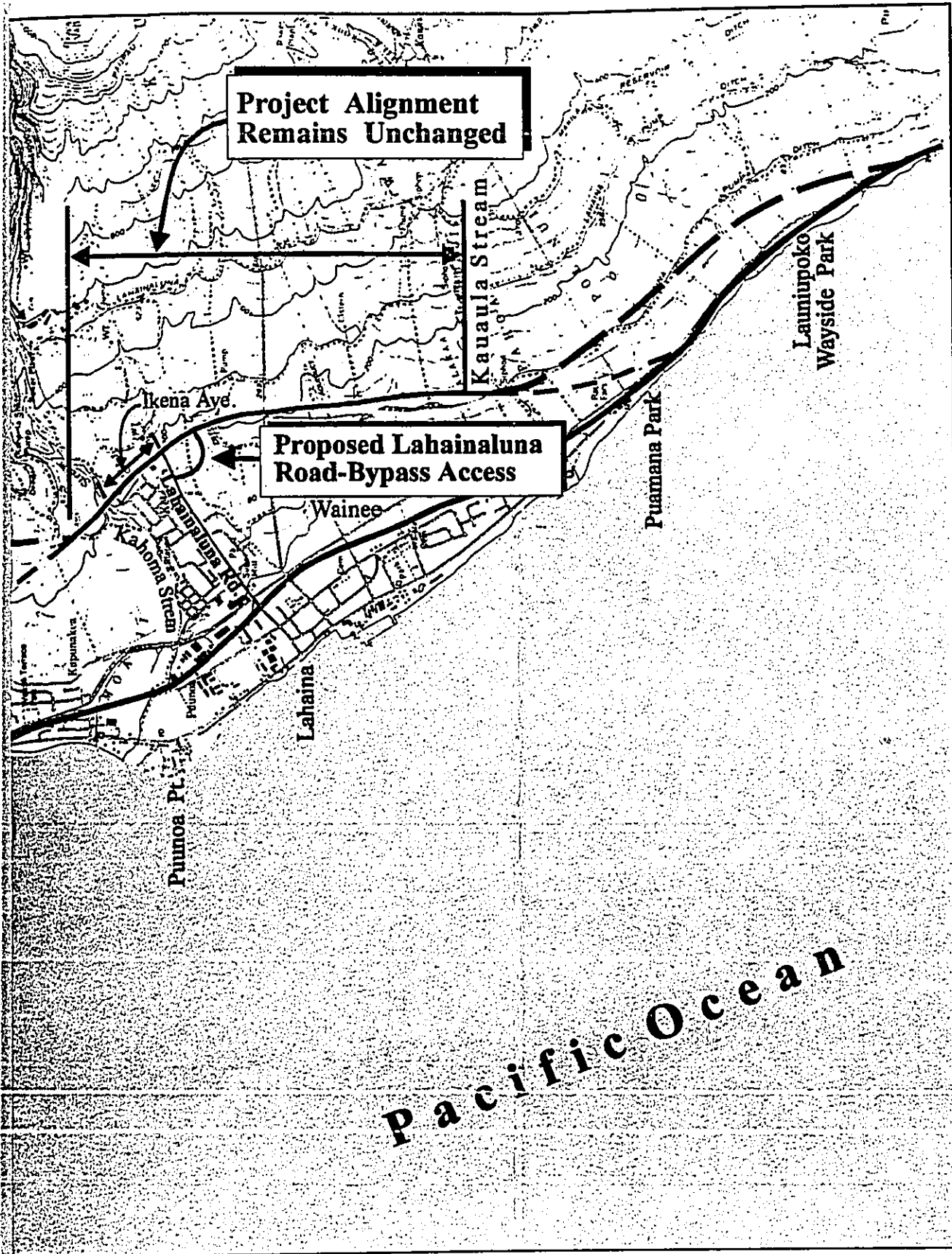


**Appendix B**

**Lahaina Bypass Modifications  
Regional Location Map**



Prepared for: State of Hawaii, Dept. of Transportation



**Project Alignment  
Remains Unchanged**

**Proposed Lahainaluna  
Road-Bypass Access**

**Pacific Ocean**

**ifications  
Map**



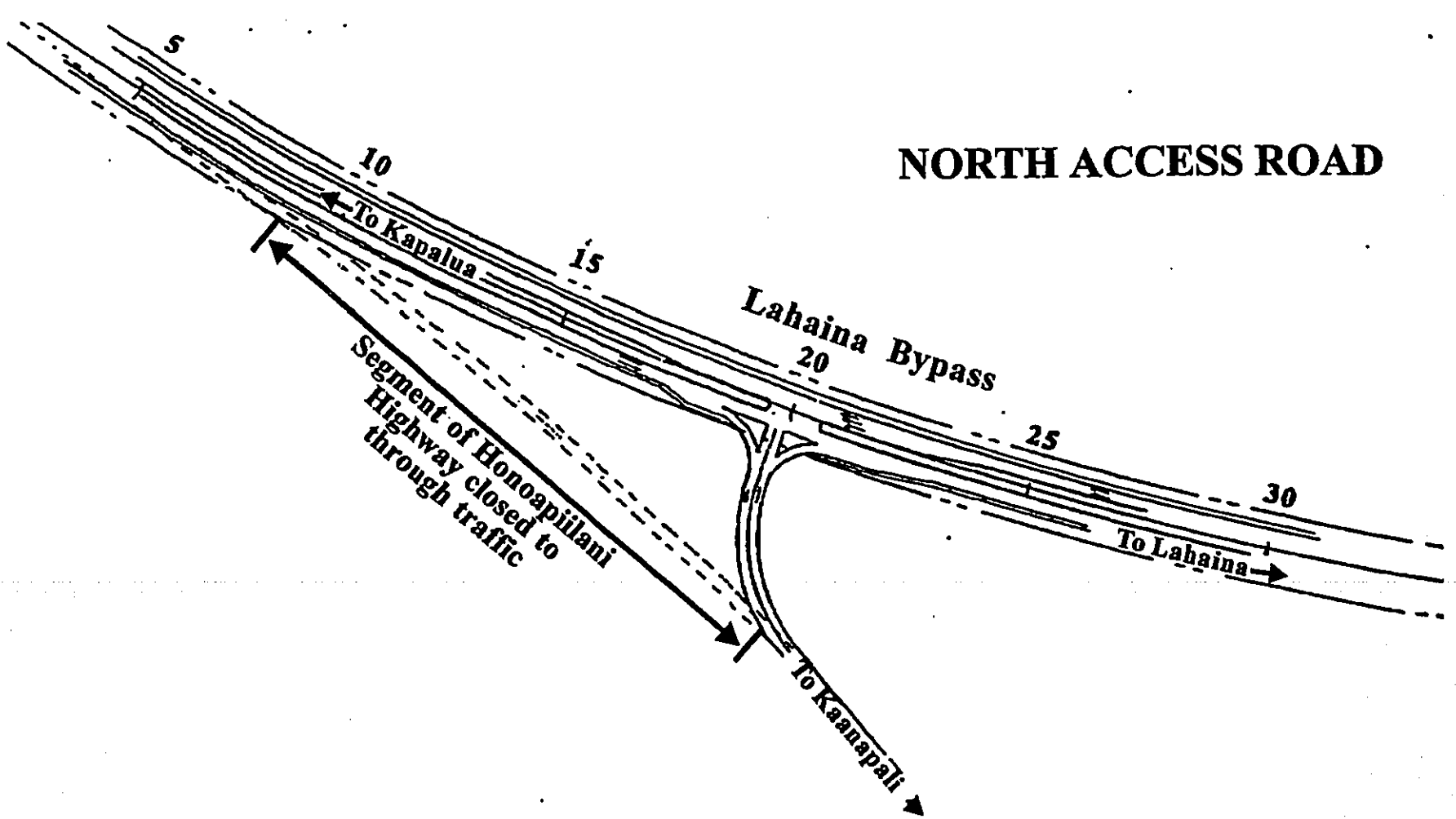
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# ***Appendix B-1***

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***Preliminary Plan of North  
Access Road Connection***



**NORTH ACCESS ROAD**

Source: Austin, Tuttle & Associates, Inc.

**Appendix B-1**

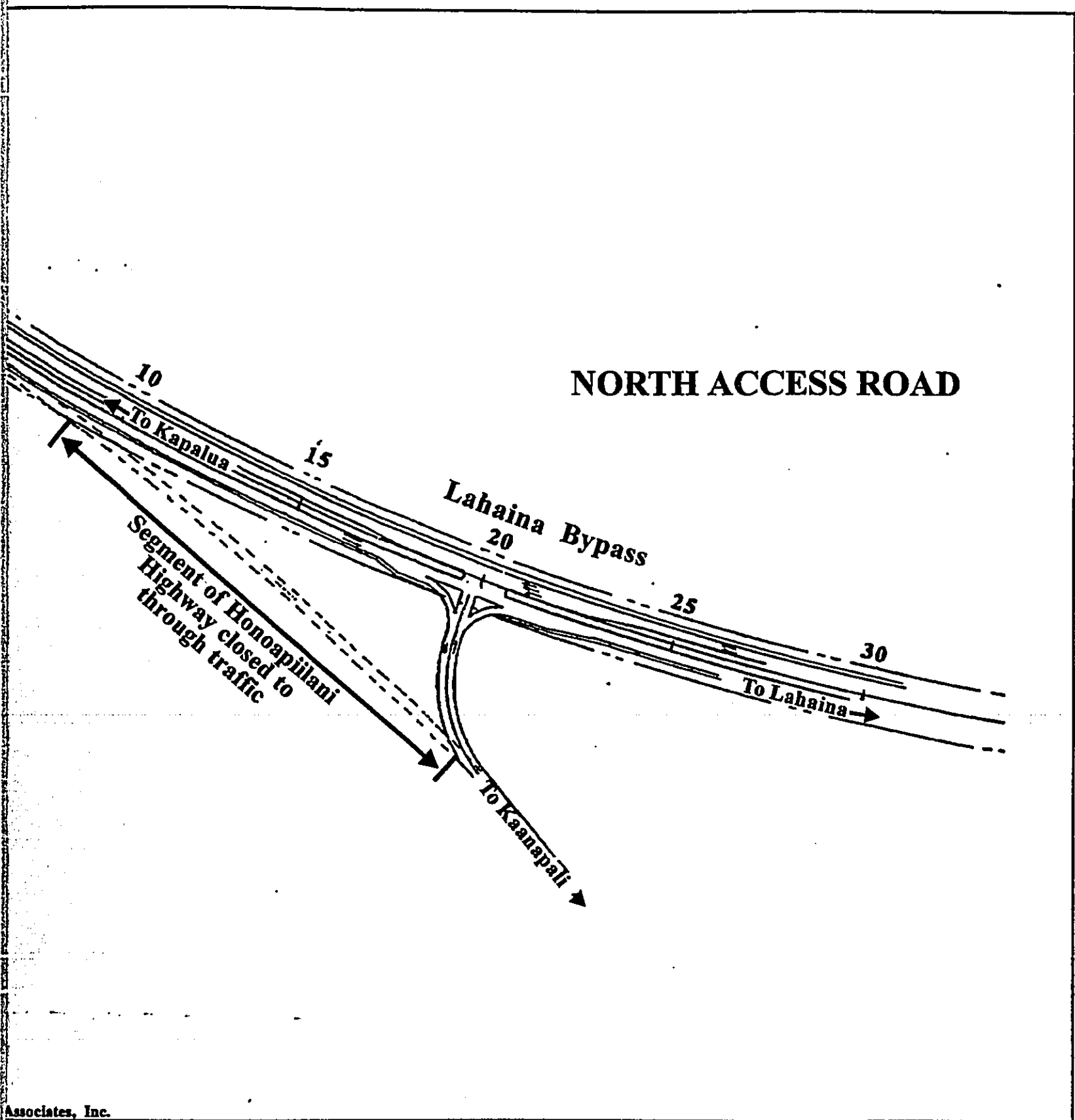
**Lahaina Bypass Modifications**  
**Preliminary Plan of North Access Road Connection**

NOT TO SCALE



Prepared for: State of Hawaii, Department of Transportation





Associates, Inc.

1

Lahaina Bypass Modifications  
 Preliminary Plan of North Access Road Connection

NOT TO SCALE

Ill, Department of Transportation

MUNEKIYO & HIRAGA, INC.

# ***Appendix C***

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***Archaeological Inventory  
Survey - Modified Corridor  
Alignment, August 1991***

**Archaeological Inventory Survey  
Honoapiilani Highway Realignment Project  
Lahaina Bypass Section -  
Modified Corridor Alignment**

**Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia,  
Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko  
Lahaina District, Island of Maui**

**PHRI**

**Paul H. Rosendahl, Ph.D., Inc.**

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P.O. Box 23305 • G.M.F., Guam 96911 • (671) 472-3117 • FAX (671) 472-3131



**Archaeological Inventory Survey  
Honoapiilani Highway Realignment Project  
Lahaina Bypass Section -  
Modified Corridor Alignment**

**Lands of Honokowai, Hanakaoo, Wahikuli, Panaewa, Kuia,  
Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko  
Lahaina District, Island of Maui**

by

**Peter M. Jensen, Ph.D.  
Associate Senior Archaeologist**

Prepared for

**Michael T. Munekiyo  
c/o Michael T. Munekiyo Consulting  
2035 Main Street  
Wailuku, Hawaii 96793**

August 1991

**PHRI**

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## SUMMARY

At the request of Mr. Michael T. Munekiyo of Michael T. Munekiyo Consulting, for their client, the Department of Transportation (DOT) of the State of Hawaii, Paul H. Rosendahl, Ph.D., Inc. (PHRI) recently conducted an archaeological inventory survey of the c. 7.0 mile long proposed Lahaina Bypass Section, Modified Corridor Alignment, of the Honoapiilani Highway Realignment Project, situated in the Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia, Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko, Lahaina District, Island of Maui. The basic objective of the survey was to provide information sufficient for the preparation of a Supplemental Environmental Impact Statement (EIS) to be submitted to the State Land Use Commission. Chiniago, Inc. of Honolulu, Hawaii conducted the archaeological inventory survey for the initial EIS for the project area (Barrera 1986).

The present survey was conducted June 18-26, and July 2-9, 1991, under the overall supervision of Associate Senior Archaeologist Dr. Peter M. Jensen and Supervisory Archaeologist Jenifer O'Claray, B.A. During the survey, four archaeological sites consisting of 28 component features were identified within or adjacent to the study corridor. Of the four sites, three had been identified and recorded in conjunction with previous inventory survey projects in the area (SIHP Sites 2484, 2489, and 2490). The remaining site was newly identified (Site 2847). Ranging in physical condition from poor to excellent, the identified sites include single as well as multiple components, and display a range of feature types, including possible habitation terraces, walled enclosures,

agricultural terraces, a possible burial, possible boundary walls, and a possible burial mound. Tentatively identified functional types include habitation, transportation, possible water storage, agriculture, and ceremonial/religious activities in conjunction with burial practices.

In addition to the above four sites, six additional sites were located close to but outside of the Area of Potential Effect (APE). Five of the sites were previously recorded by PHRI in conjunction with either the HFDC or North/South Beach Mauka Projects (Jensen 1989); the remaining site appears to have been identified in conjunction with a 1990 survey of the first proposed alignment for the present road realignment project (the site was tagged in the field as "ACH, 10-17-90") (ibid.).

Of the four sites within or adjacent to the APE, all are assessed as significant for information content. Further work is recommended for all of the sites in order to fully preserve the information potential which is represented. One of the sites (Site 2489) may also contain one or more burials, indicating potential cultural value. None of the sites are evaluated as good examples of site types, that is, pending the specific findings of proposed levels of vegetation clearing, final site mapping, and data collection and recovery work. It is possible that certain findings could warrant preservation "as is," or preservation with some level of interpretive development, but this final determination cannot be made without more accurate functional interpretation, dating results, and evaluation of nearby areas for any similar preserved examples.

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## INTRODUCTION

### BACKGROUND

At the request of Mr. Michael T. Munekiyo of Michael T. Munekiyo Consulting, for their client, AMFAC/JMB Hawaii, Inc. Maui Properties, Paul H. Rosendahl, Ph.D., Inc. (PHRI) recently conducted an archaeological inventory survey of the c. 7.0 mile-long proposed Lahaina Bypass Section, Modified Corridor Alignment, of the Honoapiilani Highway Realignment Project, situated in the Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia, Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko, Lahaina District, Island of Maui. The basic objective of the survey was to provide information sufficient for the preparation of a Supplemental Environmental Impact Statement (EIS) to be submitted to the State Land Use Commission. Chiniago, Inc. of Honolulu, Hawaii conducted the archaeological inventory survey for the initial EIS for the project area (Barrera 1986).

The survey was conducted June 18-26, and July 2-9, 1991, under the overall supervision of Associate Senior Archaeologist Dr. Peter M. Jensen and Supervisory Archaeologist Jenifer O'Claray, B.A. Additional assistance was provided by Field Archaeologist Diane Guerrero, B.A. It took about 70 labor-hours to complete the survey field work.

The present report comprises the final report for the current project. The report includes a scope of work, a description of the project area, a review of previous archaeological investigations within the immediate project vicinity, and a discussion of the field methods and procedures utilized. The report concludes with summary site descriptions, significance evaluations, and recommended treatments for all cultural resources identified within or immediately adjacent to the proposed highway construction corridor.

### SCOPE OF WORK

The basic purpose of the inventory survey was to identify—to discover and locate on available maps—all sites and features of potential archaeological significance present within the specified project area. An inventory survey constitutes an initial level of archaeological investigation. It is extensive rather than intensive in scope, and is conducted basically to determine the presence or absence of archaeological resources. This level of survey indicates both the general nature and variety of archaeological remains present, and the general distribution and density of such remains. It permits a general significance assessment of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for any

subsequent mitigation work as might be necessary or appropriate. Such mitigation work could include further data collection involving detailed recording of sites and features, and limited excavations; and possibly subsequent data recovery research excavations, construction monitoring, interpretive planning and development, and/or preservation of sites and features with significant scientific research potential, interpretive qualities, and/or cultural values.

In consideration of the above, the basic objectives of the present survey were fourfold: (a) to identify (find and locate) all sites and site complexes present within the project area; (b) to evaluate the potential general significance of all identified archaeological remains; (c) to determine the possible impacts of proposed development upon the identified remains; and (d) to define the general scope of any subsequent further data collection and/or other mitigation work that might be necessary or appropriate.

Based on a review of readily available background literature, basic familiarity with the general project area, PHRI's extensive familiarity with the current requirements of review authorities, and discussions with Mr. Michael T. Munekiyo, the following specific tasks were determined to constitute an adequate scope of work for the survey:

1. Review archaeological and historical literature relevant to the project area, and conduct limited historical documentary research, with an emphasis on readily available literature and documentary sources, and conduct interviews with appropriate and available local informant sources;
2. Conduct a 100% coverage, variable intensity ground surface survey of the undeveloped portions of the project area;
3. Conduct limited subsurface testing of selected sites and features identified within the project area (a) to determine the presence or absence of potentially significant buried cultural features or deposits, and (b) to obtain samples of portable remains (artifacts and/or midden) and materials suitable for dating; and
4. Analyze field and historical research data, and prepare appropriate reports.

The inventory survey was carried out in accordance with the standards for inventory-level survey recommended by the Hawaii State Department of Land and Natural Resources - State

Historic Preservation Division (DLNR-SHPD). These standards are currently used by Maui County Planning Department as guidelines for the review and evaluation of archaeological inventory survey reports submitted in conjunction with various development permit applications. The standards are also utilized by the State Land Use Commission in evaluating boundary amendment and land use change petitions.

The significance of all archaeological remains identified within the project area were to be assessed in terms of (a) the National Register criteria contained in the Code of Federal Regulations (36 CFR Part 60), and (b) the criteria for evaluation of traditional cultural values prepared by the national Advisory Council on Historic Preservation. DLNR-SHPD uses these criteria to evaluate eligibility for both the Hawaii State and the U.S. National Register of Historic Places.

### PROJECT AREA DESCRIPTION

The project area consists of a linear corridor, about seven miles long and 200 ft wide, extending from the existing highway, at a point just north of Honokowai Point, southward through the Lands of Honokowai, Hanakaoo, Wahikuli, Panaewa, Kuia, Halakaa, Puehuehunui, Pahoa, Polanui, and Launiupoko, and terminating at Waiianukole, which is located a short distance north of Launiupoko State Park (Figure 1).

The corridor passes through several natural drainages—Honokowai Gulch in the north, Hahakea Gulch and Kahoma Stream in the central part of the project area, and a number of unnamed swales or very shallow gulches in the southern portion of the corridor. Virtually all of the corridor has been used for historic and contemporary sugar cane or pineapple production. Most of the cultural features currently within the corridor relate to this essentially modern agricultural activity. The features include graded access and major cane haul roads, major and minor irrigation ditches, irrigation reservoirs, small ponds and holding tanks, electrical distribution lines and poles, and residential and other modern features. That the cultivation in the project area has involved deep plowing and extensive surface modifications and substantial disturbance to subsurface deposits is attested to by the presence of massive field clearing debris piles, particularly within the central and southern portions of the project area.

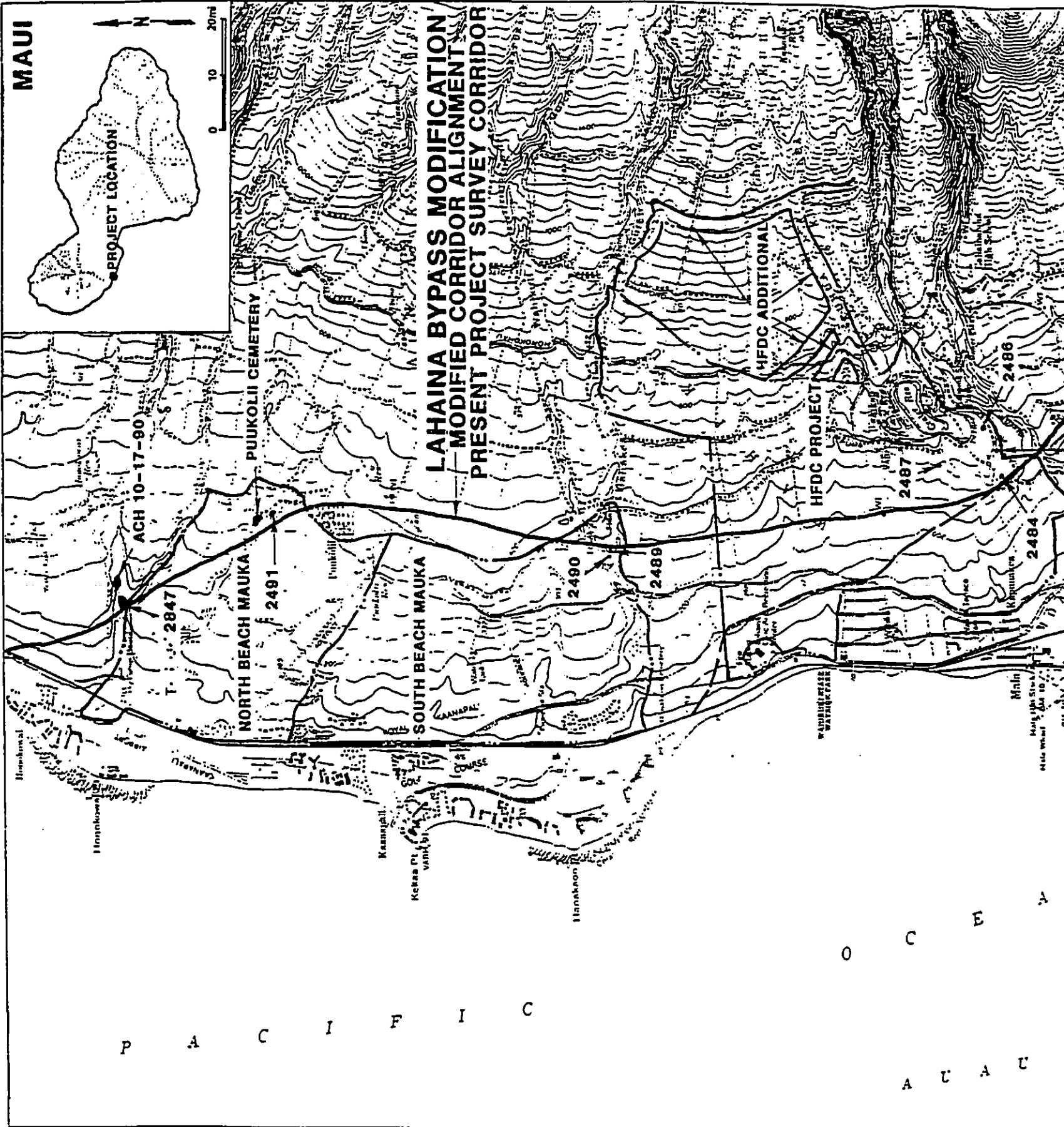
According to Foote et al. (1972: Sheet 93), the project area includes two major classifications of soil—Pulehu silt loam and Ewa silty clay loam (Foote et al. 1972:29, 116). Annual rainfall in the project area is estimated to be about 15-20 inches (Armstrong 1973:56). The available water supply, combined with the deep rich soils, was more than adequate to support

dense stands of native vegetation in early historic and prehistoric times. However, the extensive agricultural activities within the area have resulted in removal of virtually all of this cover and its replacement with sugarcane (*Saccharum officinarum* L.). Small pockets of relatively undisturbed terrain containing stands of native and introduced species comprise less than about 5% of the project area and are restricted to the steep-sided, non-arable gulches associated with Kahoma, Hahakea, and Honokowai streams. Additional minimally disturbed lands are present between Puu Laina and Kahoma Stream within the central portion of the project area.

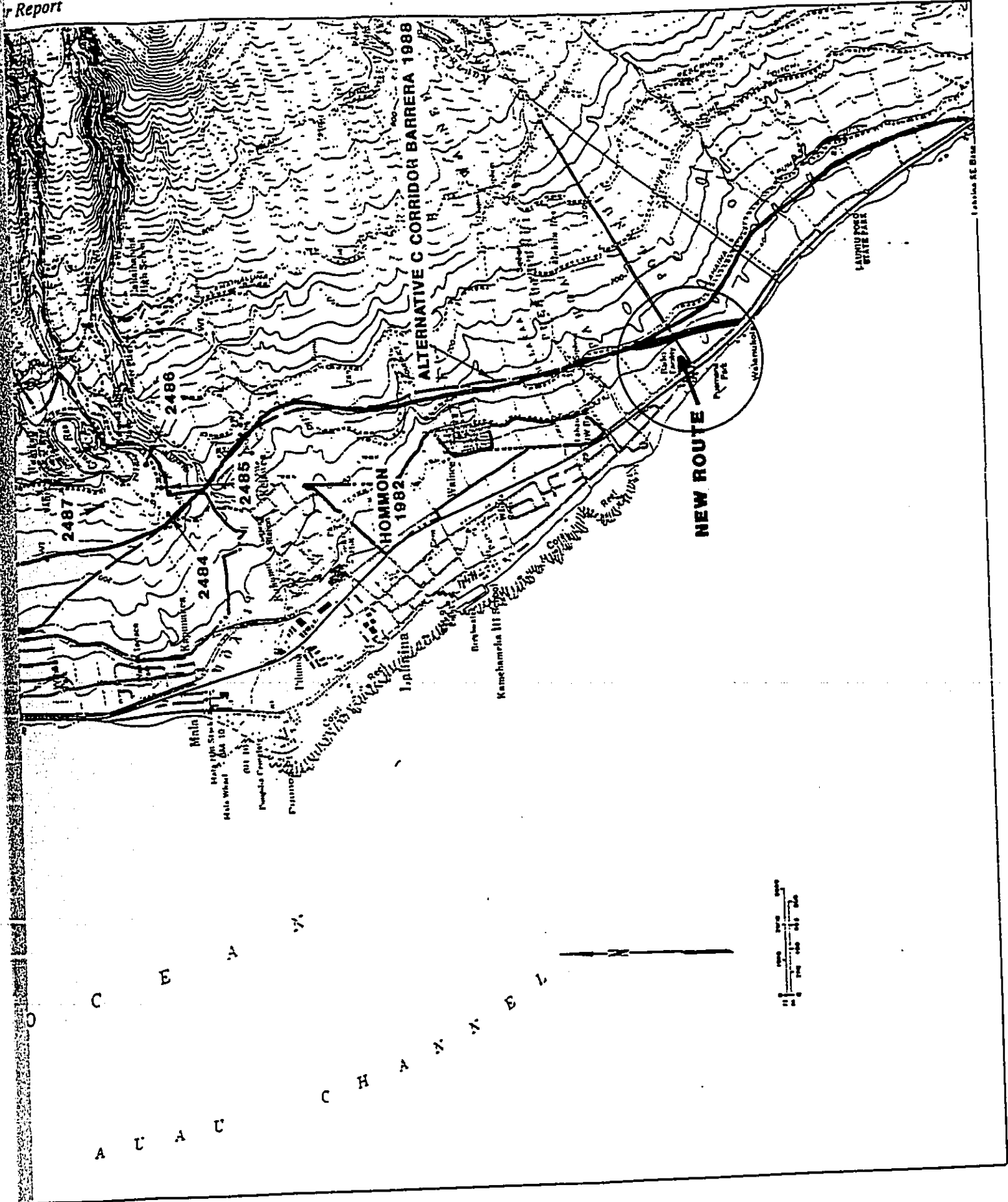
### PREVIOUS ARCHAEOLOGICAL WORK

Although formal archaeological survey work was initiated relatively early on Maui (e.g., Emory 1921; Walker n.d. [1930]), the island's prehistoric resources still remain less intensively studied than the resources for either Hawaii or Oahu. Emory's early work on Maui involved an inventory of archaeological sites located in Haleakala Crater, and is not directly relevant to the present project area. Winslow Walker's Bishop Museum-commissioned study involved a partial assessment and inventory of larger sites and *heiau* around the island. Along the shore within the southern portion of the present project area, Walker references information from Thrum concerning several *heiau* remnants (Walker's Sites 7, 8, 9, and 10). However, all of these features had been completely, or nearly completely destroyed by the time that Walker conducted his survey field work (n.d.). Walker also identified a *heiau* site (Walker's Site 11) immediately west of the central portion of the present project area and north of Mala Wharf, which he described as a "large heiau for human sacrifice..." Again, however, by 1930 only a "...few fragments of walls remain[ed]." Walker identified no additional sites either along the coast or inland several miles north of Lahaina. Walker does not even mention the existence of the Alaloa ("Long Road") through the project area. Although major segments of this 16th century alignment remain intact elsewhere around the island, according to Handy and Handy (1972:490-491) "...it was formerly clearly visible across the West Maui golf links, but was obliterated in the Lahaina area and beyond by the cultivation of cane and pineapple."

Maui archaeology was largely ignored during the 1950s, at a time when research being undertaken elsewhere was establishing important local and regional artifact chronologies and frameworks for categorizing major Hawaiian site-types. Some productive research was undertaken in east Maui during the 1960s (Soehren 1963, Pearson 1970), and Chapman's intensive settlement pattern survey and excavation work in Kahikinui contained island-wide implications for prehistoric patterns of settlement and land use (Chapman and Kirch 1979).



Report



In west Maui, a small brick building called the "birthplace" of King Kamehameha I, located near the center of the Lahaina National Landmark, was evaluated, stabilized, and prepared for public display during the mid-1960s (Frederickson and Frederickson 1965). For the most part, however, relatively little research was undertaken within west Maui during this period.

During the succeeding decade and through the 1980s, west Maui finally began to receive increased attention, as the pace of urbanization and resort development demanded more intensive contracted survey and excavation projects, a number of which have been undertaken within the immediate project vicinity. Proposed flood control improvements for Kahoma Stream, which dissects the proposed road alignment from east to west, was conducted on the south side of the stream and west of the proposed road alignment during the 1970s (Connolly 1974, Hommon 1973, Ahlo and Morgenstein 1980). Development of the nearby Mala Wharf Boat Launch Ramp likewise was accompanied by several archaeological studies, including those by Sinoto (1975), Davis (1974), and Hammatt (1978). The latter projects identified numerous human burials, principally historic, in the sand berm inland of the Mala Wharf. Also identified, south of Kahoma Stream, was a historic earth oven, or *imu*, and a ditch which Hammatt (1978) believed may have connected the well-documented Alamihi Fishpond to Kahoma Stream to the north (cf. Joerger and Kaschko 1979).

Additional subsurface reconnaissance surveys were undertaken within the immediate vicinity of Alamihi Fishpond and Mala Wharf by PHRI. One of these projects (PHRI Project No. 374) was undertaken in January of 1988 and involved excavation of 19 backhoe trenches, recording of stratigraphic information, and evaluating subsurface soil components for the presence of cultural materials and features. The program yielded a total of 33 glass bottles, 24 of which were dated to the period just prior to and immediately following the turn of the century (Haun 1988:16). In addition, volcanic glass and radiocarbon age determinations evidenced prehistoric use and occupation of the area between AD 1260 and 1640 (Haun 1988:17). Due to extensive disturbance in the backhoe trench profiles cultural features or artifact concentrations did not warrant preservation; monitoring was recommended as appropriate in view of the potential for encountering additional *in situ* cultural materials during construction. A second similar but smaller-scale project was conducted by PHRI (PHRI Project No. 397) in March of 1988, involving a small commercial lot immediately south of the Mala Wharf Road and within the general vicinity of the south side of Alamihi Fishpond. Based on the negative findings of both the background documentary research and the subsurface reconnaissance testing (eight backhoe trenches were excavated), provisional archaeological clearance for the proposed future development of the lot was recommended (Jensen 1988).

A thorough review of present project area maps and site locational information for the several previously identified resources at and around the mouth of Kahoma Stream, as discussed above, indicates that none of these previously recorded sites or features is located within or close to the present road corridor project area.

Further inland, however, additional cultural resources have recently been relocated along Kahoma Stream, a short distance east of the present road corridor project area. Originally recorded in April of 1974, SIHP Site 1203, known as the Kahoma Complex and consisting of 38 petroglyphs and a rockshelter, was relocated by Barrera in conjunction with his literature search and field survey of Alternative C of the proposed Honoapiilani Highway realignment between Lahaina and Honokawai (Barrera 1989:9). In reexamining this previously recorded site, Barrera also discovered additional agricultural features, including at least three terraces and a possible irrigation ditch on the alluvial floodplain on the south side of Kahoma Stream. On the basis of his conclusion that the site likely retains potentially significant information value, Barrera recommended that project effects be further evaluated in the event that the road is to be constructed through or close to these features. Following submission of Barrera's report, the State Historic Preservation Officer concluded that basic identification and evaluation of the resource had not been adequately completed, and additional recording and evaluative work was undertaken in 1989 (Jensen 1989). Jensen concurred with Barrera's original evaluation, recommending data recovery if the site was to be impacted.

As part of the same 1989 re-inspection of the Alternative C Road Corridor first surveyed by Barrera, PHRI completed an archaeological inventory survey of the 1,200-acre HFDC project area (Jensen 1989) (PHRI Project No. 653). The present project proposal calls for realigning the road north-south through the approximate center of the HFDC project area, as indicated in Figure 1. During the 1,200-acre HFDC inventory survey, 12 sites containing 44 component features were identified. Of these 12 sites, one had been previously identified and partially recorded (SIHP Site 1203) (as discussed above), with the remaining 11 sites representing newly identified resources. Ranging in physical condition from poor to excellent, the identified sites included both single as well as multiple components, and displayed a range of feature types, including overhangs/caves, platforms, walled enclosures, petroglyphs, graves, agricultural terraces, and a single historic agricultural access road alignment. Tentatively identified functional types include habitation, agriculture (both prehistoric as well as historic), ceremonial/religious activities, probable burial, recreation, and some sites of indeterminate function.

Six of the 12 sites within the HFDC project area were assessed as significant solely for information content. The



remaining six were assessed as significant for information content, and provisionally as good examples of site types. These latter six sites include one complex in Hahakea Gulch which contains relatively well-preserved habitation features (Site 2480), two site complexes identified within the two branches of Kahoma Stream (Site 2483, located within the south branch of the stream [also known as Kanaha Stream], and previously recorded Site 1203, located within the north branch), and two well constructed walled enclosures in the vicinity of Puu Laina (Sites 2485 and 2488). For these five sites, further work in the form of vegetation clearing and further data collection (i.e., detailed recording, surface collections, and limited excavations), was to be followed by a decision as to whether preservation "as is," or preservation with some level of interpretive development was appropriate. This determination, in turn, was to be based on functional interpretations, dating results, and evaluation of nearby areas for similar preserved examples. The last site (Site 2486) was assessed as significant for information content, and also as potentially culturally significant (if the site was found to contain human remains).

Since four of the HFDC project area sites are located within (Site 2484) or close to (Sites 2485, 2486, and 2487) the present road corridor, all have been plotted on Figure 1. As will be discussed below, one of the objectives of the present project was to relocate these sites in the field, specifically in relation to the eastern and western margins of the highway corridor's APE.

Immediately west of the southern segment of the road corridor alignment, at Wainee Village near Lahaina, Hommon surveyed several hundred acres in the early 1980's. No intact cultural resources were encountered during the project (Hommon 1982).

Immediately east of the southernmost segment of the road corridor alignment, PHRI recently completed archaeological inventory survey work in conjunction with the proposed Launiupoko Golf Course (Graves 1991). During the aerial and pedestrian survey of the 440-acre Launiupoko project area, 47 sites containing 70+ component features were identified. The features include terraces, clearing piles, agricultural plots, rock piles, canals, retaining walls, flumes, a flaked boulder, alignments, rock shelters, C-shapes, walls, uprights, L-shapes, petroglyph panels, coral items, fences, cairns, and roads. Functional types represented included agriculture, animal husbandry, habitation, temporary habitation, and markers. Forty-five of the 47 sites identified were considered significant solely for information content, and for seven of the 45 further data collection was recommended. The remaining two sites were assessed as significant for information content, as excellent examples of site types, and for cultural value. Further data collection followed by preservation with interpretive development was recommended for both of the sites.

At the north end of the present alignment, just south of Honokowai Stream and just north of the large HFDC project area examined by PHRI in 1989, additional large blocks of land have been subjected to inventory survey. During his initial survey of the North Beach Mauka and South Beach Mauka project areas (involving c. 240 acres), Hommon identified only three sites, including a single agricultural complex and two short wall segments. A subsequent re-survey of portions of these same lands failed to identify more significant or a higher density of resources than previously identified along the gulches in this area (Jensen 1989) (PHRI Project No. 482). Both of these project areas have been delineated in Figure 1, since a portion of the proposed road alignment proceeds through both the northeast and southeast corners of the two project areas. As with the HFDC project area, sites which were recorded in conjunction with the North and South Beach Mauka survey projects and which are located close to the proposed new road alignment have also been identified in Figure 1. In this case, the sites are SIHP 2491, a small agricultural complex located south of Puukolii Cemetery, and Puukolii Cemetery itself. Both of the sites are located outside of the APE for the new road corridor. To the south, the road corridor will span Hahakea Gulch at a point just west of historic flume remains which are identified on existing maps. This crossing places the corridor within or very close to two sites which were newly identified and recorded in conjunction with the South Beach Mauka project area survey. The sites are SIHP 2489 and 2490, both of which occupy the terminus of a narrow "finger" ridge which separates two branches of Hahakea Gulch stream. Both sites contain a combination of habitation and agriculture-related features and are potentially significant for information value; one of the sites is also potentially significant for cultural value, if human remains are discovered to be present in one or more features identified during the initial inventory-level recording work.

Hommon's findings in the North and South Beach Project area, and the subsequent re-evaluation of the parcels (Jensen 1989), clearly highlighted the extensive surface disturbance to which much of west Maui has been subjected to by both resort development as well as historic and contemporary agricultural activities. Despite the disturbance, however, monitoring of construction work along the beachfront at the site of the Kaanapali Alii Condominiums did confirm the presence of prehistoric burials (Dobyns and Allen-Wheeler 1982), a discovery which later resulted in recommendations of monitoring for other such coastal development areas. In addition to this work, the Archaeological Research Center of Hawaii (ARCH) undertook intensive survey of several hundred acres in conjunction with the proposed realignment of the Honoapiilani Highway corridor through Kaanapali, between Honokowai and Alaaloa Ahupua'a (Griffin and Lovelace 1977). During this

survey only four sites were encountered—two walls, a trail, and a small midden deposit. The latter feature was further evaluated and eventually yielded radiocarbon dates confirming occupation for several centuries prior to western contact.

Besides the work by Dobyns and Allen-Wheeler, and Griffin and Lovelace (cited above), additional studies have been undertaken north of Lahaina and north and west of the present project area.

During the early 1970s, Kirch documented intermittent marine exploitation at several small sites at Hawea Point for the period post-dating c. AD 1500 (Kirch 1973b). Immediately west of the north end of the present road alignment, PHRI conducted a surface reconnaissance survey of the Sheraton Maui Master Plan Site in the Lands of Honokawai and Hanakoo, Lahaina District. The archaeological team discovered virtually all of the project area to be fully developed with hotels, parking lots, drive ways, and landscaping. The only unaltered portions of the project area were the barren coastal flats and the exposed faces of the old cinder cone at the point. No surface cultural material was encountered during the examination of these areas, and conditional archaeological clearance was recommended for additional development of the Sheraton property at this location (Rosendahl, M.L.K. 1986).

In 1986, Barrera (1986) conducted an additional archaeological reconnaissance survey of the North Beach project area in conjunction with newly proposed developments at Kaanapali. No surface structures were identified during the survey, which concluded with a recommendation for subsurface reconnaissance of the sand dune area (Barrera 1986:3-4) in view of the previous findings by Dobyns and Allen-Wheeler (1982). The recommended dune reconnaissance (subsurface coring) was undertaken the succeeding year by PHRI (PHRI Project No. 321) (Rosendahl 1987), but failed to identify any subsurface prehistoric cultural deposits or human skeletal remains. Fragments of glass and metal were present in approximately 20% of the cores, most of the fragments were recovered from upper strata and were recent. The generally negative findings were interpreted as evidence that there had been little to no prehistoric use of the area, or that such evidence was simply no longer present.

The subsurface coring of the dune did result in the identification of a single surface feature consisting of an L-shaped wall without associated cultural deposits. Based on these findings, archaeological clearance was recommended for the proposed Kaanapali Resort expansions on the condition that initial ground disturbing activities along the shoreline be accompanied by archaeological monitoring.

Still further north, a proposal by the U.S. Department of Agriculture, Soil Conservation Service to establish a desilting basin at Kahana was accompanied by a program of subsurface archaeological reconnaissance (PHRI Project No. 128) (Walker and Rosendahl 1985). The program was undertaken in order to evaluate possible subsurface accumulations of cultural material at several previously recorded prehistoric sites (Kaschko 1974). Detailed recording and test excavations had already been undertaken at several of these sites by the Bishop Museum (Komori 1983), whose findings suggested the possibility that additional significant cultural material may remain buried within the vicinity, and that this material reflected historic cattle ranching in the area. The PHRI evaluation suggested, on the other hand, that the project area sites represent an inland portion of the agricultural component of the traditional Hawaiian land use system, with historic period re-use of the area following initial displacement of Native Hawaiians (which accompanied the introduction of commercial sugar cane and pineapple cultivation) (Walker and Rosendahl 1985:22).

Finally, significant cultural deposits have been located at the proposed Kapalua Hotel Development Site in the Land of Honokahua, Lahaina District. Situated at Honokahua Bay, evidence of prehistoric burials within the project area was first noted and recorded by Kirch in 1973 during a reconnaissance survey for Kapalua Resort (Kirch 1973a). The burial site was subsequently listed with five other prehistoric sites within the Honokahua Archaeological District (SIHP Site 1342). In early 1986, vegetation grubbing associated with initial clearing for access roads required for engineering studies exposed five areas of disturbed skeletal material. Subsurface survey conducted in the spring of 1986 documented intensive use of the area as a cemetery, as well as previously unrecorded cultural features (including buried midden) within the project area (PHRI Project No. 246) (Donham 1986). Following additional surface and subsurface evaluations, mitigation data recovery field work was initiated in March of 1987 and continued more or less uninterrupted through late December of 1988. Interim reports (Donham 1989) document a complex, multi-component burial site with initial use as early as AD 600 (Donham 1989). The final report on the excavation results is pending.

#### IMPLICATIONS OF PREVIOUS FINDINGS FOR THE PRESENT PROJECT

Collectively, the various studies discussed above document the presence within West Maui of a variety of significant and potentially significant prehistoric and historic cultural resources. With respect to the present project area, however, only four sites have been recorded within or immediately adjacent to the

realigned road corridor alignment. The sites are SIHP 2489 and 2490, prehistoric agricultural complexes located at the confluence of two branches of Hahakea Gulch (initially recorded in conjunction with the North Beach and South Beach Mauka survey project); SIHP 2484, a partial rock enclosure or L-shaped wall, located on south-facing lands above Kahona Stream; and a newly identified complex of walls (Site 2847) located at the terminus of the ridge separating the two branches of Honokowai Stream at the north end of the present project area.

In addition to the four sites, records identify six additional sites close to but outside of the flagged alignment. The sites include recently identified cultural remains east of the corridor, within Honokowai Gulch (Site ACH 10-17-90); SIHP Site 2491, a small agricultural terrace or short wall segment located near Puukolii Cemetery, east of the corridor within Honokowai Gulch; Puukolii Cemetery itself; SIHP Site 2485, a walled enclosure near Puu Laina; SIHP Site 2487, an abandoned rock-supported roadbed located west of Puu Laina; and SIHP Site 2486, a large, formal terrace, located south of Puu Laina and east of the present road corridor alignment, associated with 13 oval mounds believed to represent human burials.

Clearly, the results of previous archaeological work have documented that much of the land located around Lahaina has been extensively disturbed by historic and contemporary cane and pineapple cultivation. As a consequence, archaeological surveys of even relatively large parcels have occasionally failed to identify any resources at all, although some sites are still present. Based on the previous results, after reviewing aerial photographs, and in consideration of the fact that perhaps 95% of the present project corridor has been subjected to intensive agricultural development, it was thought that, beyond the sites already documented along the corridor, there would be relatively few intact cultural properties encountered within the present project area.

#### HISTORICAL DOCUMENTARY RESEARCH BY LEHUA KALIMA

The project area passes through many *ahupua'a* in the District of Lahaina—Honokowai, Hanakao, Wahikuli, Lahaina, Kuia, Halakaa, Puehuhumui, Paho, Polanui, and Launiupoko. As many of the *ahupua'a* make up the town of Lahaina—once the capital of the islands and an area frequented by missionaries, whalers, and Hawaiian kings and queens—there is a much information relevant to the project area.

Various Hawaiian epithets concerning Lahaina are listed in Mary Kawena Pukui's *Ololo No'eau* (1983). It is obvious that Lahaina was an important area in Hawaiian history as it is mentioned in many sayings. The ancient name for Lahaina was Lele, and this name is included in a few of the sayings:

*Huleilua i na nalu o Launiupoko.*

The waves of Launiupoko toss this way and that.

Said of one who is unsure of himself. From Maui (1136).

*Halau Lahaina, malu i ka 'ulu.*

Lahaina is like a large house shaded by breadfruit trees (430).

*I ka holo no i ke alahao a pi'i i ka lani.*

While going along the railroad one suddenly goes up to the sky.

A drinker soon finds himself "up in the clouds." An expression used by the sweet-potato beer drinkers of Lahaina, Maui (1180).

*I ka ho'olewa aku nei o Kuhelemai.*

Attended the funeral of Kuhelemai.

A play on *ho'olewa* (to lift) and *ku hele mai* (stand up and come), meaning that we stood up and lifted the beer down our throats. An expression used by the sweet potato beer drinkers of Lahaina, Maui (1181).

*Ka la'i o Hauola.*

The calm of Hauola.

Peace and comfort. There is a stone in the sea at Lahaina, Maui, called Pohaku-o-Hauola, where pregnant women went to sit to ensure an easy birth. The umbilical cords of babies were hidden in crevices in the stone (1425).

*Ka ua Pa'upili o Lele.*

The Pili-soaking rain of Lele.

The plains of Lahaina, Maui were covered with *pili* grass in ancient days. When the rain poured the grass was well soaked (1594).

*Keikei Lahaina i ka ua Pa'upili.*

Majestic Lahaina in the Pa'upili rain (1730).

*Lahaina, i ka malu 'ulu o Lele.*

Lahaina, in the shade of the breadfruit trees of Lele.

The old name for Lahaina was Lele (1936).

*Hua'i ka 'ulu o Lele i ka makani Kona.*

The breadfruit of Lele is exposed by the Kona wind.

Hidden matters are exposed in time of anger. When the Kona wind blows, the leaves of the trees are blown off to expose the fruit (1117).

*Ka Ma'a'a wehe lau niu o Lele.*  
The Ma'a'a wind that lifts the coco leaves of Lele (1451).

*Kuhela kahela i ka la'i o Lele.*  
Stretched out full-length in the calm of Lele.

Said of a sleeper stretched out in a careless manner (1865).

*Place Names of Hawaii* (Pukui et al. 1974) translates some of the *ahupua'a* names within the project area. Honokowai is translated as "bay drawing water" (49); Hanakao'o means "digging stick bay" (40); Halaka'a is probably literally translated as "rolling pandanus" (36); Launiupoko means "short coconut leaf" (130); Ku'ia is said to mean "obstructed" (120); Pahoa literally means "dagger" (174); Puehuhunui translates as large spray scattered (192); Pola Nui literally is a large *pola* or flap, as of a *malo* (188); and Wahikuli means "noisy place" (218).

Depending on the diacritical marks, the name Lahaina has several meanings, as explained by Clark (1989) in the following passage:

Lahaina...meaning "cruel (or merciless) sun." A chief who lived *mauka* in Kaua'ula is said one day to have cursed at the hot sun: "*He keu hoi keia o ka la haina*" - "What an unmerciful sun." The people of the area remembered his words and as the story was retold, the place became known as Lahaina. Prior to this incident, Lahaina was known as Lele and was renowned for its large, shady breadfruit trees. *Kamalu'ulu o Lele*, "the shady breadfruit trees of Lele," is still a well-known poetic epithet that refers specifically to the Lahaina area.... Other interpretations of the name Lahaina have been offered by various individuals. One is that the name is Lahaina, "day (of) sacrifice," because of sacrifices and other related events held in the area. Another interpretation is based on the pronunciation *Laha'ina*, "day (of) explanation," because it was supposedly the custom of the chiefs to tell the people the schedule of work at daily gatherings (57).

Inez Ashdown (personal notes) claims that Lahaina was originally *Laha'aina*, literally meaning "land [of] prophesy," deriving from the ancient *ali'i* prophets who made their predictions there.

Another old name for Lahaina, attributed to a number of sources, is *Lele* (literally, "jump"). According to Ashdown,

"The surf of U-o at Lele was even more important to *ali'i*...than others such as *Ka-lehua-wehe* at Waikiki" (personal notes). Taylor remarks that Lele was the original name of Lahaina, explaining that a "lele" was usually the "flying piece of a kuleana, that which is near the shore", and as Lahaina is along the shore it wasn't difficult to see how the name would be fitting to this area (Taylor 1928:36). Yet another source translates *lele* as "flight", so called because of the short stay of chiefs in the area (Pukui et al. 1974:131).

Along with place names, wind and rain names were often given to an area in Hawaiian tradition. Lahaina is no exception, having its own unique wind and rain names. The *Pa'upili* is the rain name of Lahaina, as noted earlier in the Hawaiian sayings on Lahaina. John Papa Ii, a Hawaiian Historian and member of Kamehameha II's court notes the wind name of Lahaina, known as the *Maaa* breeze, and the ancient name of Lele for the area:

When the king's ships arrived at Lahaina, the people of the island of Maui met with the king. They expressed their affection for him with innumerable gifts. It is said that so many things were heaped before him that the gifts and the food stood in huge mounds. The breadfruit grove of Lele, from one end to the other of Lahaina, was filled with men, women and children, come to see their good king (Ii 1959:106).

After Papa's one-masted ship had remained at anchor for about five days, it too departed. A whole night was spent in mid-ocean, and by the next night the vessel had reached Punakou, Molokai. Day found it at Kahalapalaoa, where it caught the *Maaa* breeze and went right along to Lahaina, where "na hono o Piilani" (lands of Piilani) were seen. They went ashore there at Lahaina on a canoe that came out to the ship. The boys saw black *kala* seaweed from Mokuhinia, and this recalled the familiar seaweeds of his birthplace.

It was wonderful to see the breadfruit and coconut groves of Lele, thriving from one end to the other. Boys were surfing on the north side of Pelekane, with banana trunks for surf boards, and Ii watched with delight. Adults were surfing outside of Uo (ibid:109).

The surf associated with Lahaina was called 'Uo (ibid.).

Ii again mentions the *Maaa* breeze, when comparing it to the Kona Eka wind:

If they sailed at night they went along with the dew-laden breeze; and when it was day the Eka breeze bore them along, as did the *Maaa* breeze of Lahaina (ibid:121).

Furthermore, there was no gale such as blew in Lahaina and some other places to push the houses over...(ibid:122).

Kaua'ula is another wind name associated with the Lahaina area. This wind is noted as "a strong mountain wind, often destructive, at Lahaina, Maui" (Pukui and Elbert 1986). This may be the wind *Ii* describes above as a gale.

The following legend involving sharks is associated with the Lahaina area:

This is the main reason why the people of Maui worshipped sharks—in order to be saved from being eaten by a shark when they went fishing. At...Lahaina...a fisherman was in danger of being devoured by a shark when he went out fishing with a dip net ('upena 'aki'iki'i), or fishing for octopus with a lure (*lawai'a lu'uhe'e*), or setting traps for hinalea fish (*ho'olu'ulu'u hinalea*), or diving with a scoop net...or whichever kind of fishing a man would be doing alone. It would be better to stay ashore, but the fisherman craves fish to eat, and somight be devoured by a shark. Hence the people of that island worshiped sharks. Most of the people of that land do not eat shark even to this day; those who do are malihini—the *kama'aina* are afraid to eat shark (Kamakau 1964:78).

Another legend concerns an area named Pu'u Keka'a, which is located along the Ka'anapali Coast; this area is known to residents as Black Rock. According to legend, the lands surrounding Pu'u Keka'a was once the home of the chief Kaka'alaneo when he ruled West Maui (Clark 1989:60). Kaka'alaneo's son, Ka'ulula'au, was born there and was known to be a very mischievous young man. He often vandalized the many breadfruit trees of Lele, which resulted in his banishment to Lanai, an island then only inhabited by spirits. Using his mental and physical agility, he finally outwitted the spirits there and made Lanai safe for human habitation (ibid.).

Pu'u Keka'a, according to legend, is known to be a *leina a ka 'uhane*, or a "soul's leap" (ibid.). As Clark explains:

When a person lay on his deathbed, his soul would leave his body and wander about. If all earthly obligations had been fulfilled, the soul found its way to Pu'u Keka'a. There it was taken by minor gods and at that moment physical death came to the individual's body. Every island had at least one if not several locations designated as a *leina a ka 'uhane* (ibid.).

One of the first foreign visitors to write of his experiences at Lahaina was the Reverend William Ellis, who visited Hawaii in 1823. The following passage tells of his arrival in Lahaina:

#### Description of Lahaina

At day-break, on the 4th, we found ourselves within about four miles of Lahaina, which is the principal district in Maui, on account of its being the general residence of the chiefs, and the common resort of ships that touch at the island for refreshments. A dead calm prevailed, but by means of two large sweeps or oars, each worked by four men, we reached the roads, and anchored at 6 a.m.

The appearance of Lahaina from the anchorage is singularly romantic and beautiful. A fine sandy beach stretches along the margin of the sea, lined for a considerable distance with houses, and adorned with shady clumps of kou trees, or waving groves of coconuts. The former is a species of cordia; the *cordia sebastina* in Cook's voyages.

The level land of the whole district, for about three miles, is one continued garden, laid out in beds of taro, potatoes, yams, sugar-cane, or cloth plants. The lowly cottage of the farmer is seen peeping through the leaves of the luxuriant plantain and banana tree, and in every direction white columns of smoke ascend, curling up among the wide-spreading branches of the bread-fruit tree.

The sloping hills immediately behind, and the lofty mountains in the interior, clothed with verdure to their very summits, intersected by deep and dark ravines, frequently enlivened by glittering waterfalls, or divided by winding valleys, terminate the delightful prospect (Ellis 1963:42)

Another favorable account concerning the environs of Lahaina is given by Archibald Menzies, a surgeon with Captain Vancouver in 1793, as he trekked through forests about three miles inland of the Lahaina shore:

Here our conductors importuned us to dine, and a pig being killed and got ready, together with yams and sweet potatoes, we partook of a hearty meal, after which we continued our journey, and soon entered the verge of the woods where we observed the rugged banks of a large rivulet that came out of the chasm

cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer. We could not indeed but admire the laudable ingenuity of these people in cultivating their soil with so much economy. The indefatigable labor in making these little fields in so rugged a situation, the care and industry with which they were transplanted, watered and kept in order, surpassed anything of the kind we had ever seen before. It showed in a conspicuous manner the ingenuity of the inhabitants in modifying their husbandry to different situations of soil and exposure, and it was with no small degree of pleasure we here beheld their labor rewarded with productive crops.

March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with the two Niihau women, to see the village of Lahaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regular manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greater part of the plantation.

These little fields were transplanted in a variety of forms, some in rows, in squares, in clumps and others at random; some according to their nature were kept covered with water, while others were with equal care kept dry by gathering earth around them in little hills. In short, the whole plantation was cultivated with such studious care and artful industry as to occupy our minds and attention with a constant gaze of admiration during a long walk through it, in which we were accompanied by a numerous group of natives that continued very orderly and peaceful the whole time. (Menzius 1920:105-112).

Handy and Handy (1972) present an account by a man named Arago who visited Lahaina in 1823:

The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage; little pathways sufficiently raised, and kept in excellent condition, serve as communications between the different estates. These are frequently divided by trenches, through which a

fresh and limpid stream flows tranquilly, giving life to the plantations, the sole riches of the country. Hollow squares of the depth of two, three, and sometimes four feet, nourish various sorts of vegetables and plants; amongst which we distinguish the Caribee-cabbage, named here *taro*; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees, intercept the rays of the sun, and allow you to walk at mid-day. Every cabin has its enclosure, and every enclosure is well taken care of; it seems to suffice for the wants of the family. Here the father turns the ground with his long staff of red or sandal wood; there, the son clears the soil of weeds, and prepares; farther off the mother is seated at the door of her hut, and weaves the stuff with which she clothes herself; whilst her youthful daughter, unencumbered with drapery, is seated by her side, and tempts you by her unsophisticated caresses.

The space cultivated by the natives of Lahaina is about three leagues in length, and one in its greatest breadth. Beyond this all is dry and barren; everything recalls the image of desolation (Arago IN Handy and Handy 1972:493).

Arago speculated as to why the neighboring country presented "the image of desolation," concluding that it was just laziness on the native's part that was to blame, not realizing that the cultivation on this side of Maui was strictly dependent on limited irrigation water (Handy and Handy 1972:494).

In the following excerpts from the Hawaiian Historical Society Journal for the year 1929, Albert Taylor notes the impressions of Lahaina by the Rev. Mr. Stewart who came to Lahaina in 1823, and mentions the population of the area at this time.

Lahaina is situated on the north-west end of Maui, and lies between two points projecting slightly into the ocean; one on the north and the other on the south, about two miles distant from each other. These, in their respective directions terminate the view of the beach.

The width of the district from the sea towards the mountain is from one-half to three quarters of a mile. The whole extent included within these boundaries is perfectly level and thickly covered with trees and various vegetation...The breadfruit trees stand as thickly as those of an irregularly planted orchard, and beneath them are kalo patches and fishponds, 20 or 30 yards square, filled with stagnant water, and interspersed with kapa trees, groves of banana, rows of the sugar cane, and bunches of the potato and

melon.....It scarcely ever rains, not oftener, we are told, than half a dozen times during the year, and the land is watered entirely by conducting the streams, which rush from the mountains, by artificial courses, on every plantation. Each farmer has a right, established by custom, to the water every fifth day.

The number of inhabitants is about 2,500. Their houses are generally not more than eight or ten feet long, six or eight broad, and from four to six high, having one small hole for a door, which cannot be entered but by creeping, and is the only opening for the admission of light and air. They make little use of these dwellings except to protect their food and clothing, and to sleep in during wet and cool weather and most generally eat, sleep and live in the open air under the shade of a kou, or breadfruit tree.

The land begins to rise rather abruptly about three-fourths of a mile from the sea, and towers into lofty mountains, three rude elevations of which, immediately east of Lahaina, are judged to be 4,500 or 5,000 feet above the level of the ocean. From the first swell of rising ground, almost to the summits of these mountains, there is nothing to be seen but the most drear sterility and sunburnt vegetation, intersected by gloomy ravines and frightful precipices....

The south point of La-Haina, however, presents one subject of glorious meditation; the ruins of an Hei-au, or idolotrous temple. While wandering over this now confused heap of stones, I involuntarily shuddered at the thought that they had often been bathed in the blood of a human sacrifice; a fearful truth... Yes, we confidently believe that the stifled shrieks of a devoted human victim will never again break on the midnight silence of these groves....(Taylor 1928:43).

In the following passage Handy and Handy comment on the agricultural practices in this area of Maui, noting the abundant streams which aided in the cultivation of this rather hot, dry terrain.

West Maui had two main centers of population concentrated in areas where the abundant streams from the deeply eroded central dome brought water to large *lo'i* systems. Of these two we take that on the southern coast as our Type Area, because there are better descriptions from early times.

Lahaina District was a favorable place for the high chiefs of Maui and their entourage for a number of reasons: The abundance of food from both land and

sea; its equitable climate and its attractiveness as a place of residence; it had probably the largest concentration of population, with its adjoining areas of habitation; easy communication with the other heavily populated area of eastern and northeastern West Maui, "The Four Streams," and with the people living on the western, southwestern and southern slope of Haleakala; and its propinquity to Lanai and Molokai.

Southeastward along the coast from the *ali'i* settlement were a number of areas where dispersed populations grew taro, sweet potato, breadfruit and coconut on slopes below and in the sides of valleys which had streams with constant flow. All this area, like that around and above Lahaina, is now sugar-cane land. Ukumehame had extensive terraces below its canyon, some of which were still planted with taro in 1934; these terrace systems used to extend well down below the canyon. 'Olowalu, the largest and deepest valley on southwest Maui, had even more extensive *lo'i* lands both in the valley and below. Just at the mouth of the valley we found in 1934 a little settlement of five *kauhale* (family homes) surrounded by their flourishing *lo'i*. There are said to be abandoned *lo'i* far up in the valley. In and below and the next valley, Launui-piko (sic), there were no evidences of *lo'i*, and the people of 'Olowalu said there had never been any. But we think there must have been a few, although the land is, in general, dry and rough. Next beyond this, going along the coast toward Lahaina, is Kaua'ula Gulch above Waine'e, and here in 1934 there were a few *lo'i* in which Hawaiians were still growing taro.

Lahaina's main taro lands, on the lower slopes running up to the west side of Pu'u Kukui, were watered by two large streams, Kanaha and Kahoma, which run far back into deep valleys whose sides were too precipitous for terracing (ibid:492).

According to legend, Keka'a, the area north of Lahaina, where Black Rock is located, was once intensively cultivated (ibid:494). This would imply that cultivation was continuous along this northwest coastal region of Maui:

Kekaa was the capital of Maui when Kakaalaneo was reigning over West Maui....Many houses were constructed and people cultivated a great deal of potatoes, bananas, sugar cane, and things of a like nature. I have been told that the country from Kekaa to Hahakea and Wahikuli - that country now covered by cactus, in a northwesterly direction from Lahaina - was all cultivated. This chief (Kakaalaneo) also

planted bread fruit and *kukui* trees down at Lahaina. Some of these trees southwest of the Lahaina fort, were called the bread fruit trees of Kauheana. (Formanader IN Handy and Handy 1972:494).

Taylor (1928) notes Kamehameha's establishment of Lahaina as a political capital:

After the Maui Conquest, he [Kamehameha I] established a capital at Lahaina, having a residence there. It became a favorite rendezvous for many of his royal family, and especially for Kamehameha III. Within a few years after historic 1820 Honolulu became the most important port for warships, whalers, traders, etc. Official business of the monarchy increased and it was there that the American consular representative, Jones, and the English consul, Richard Charlton, established their official residences. The illustrious dead were placed in the royal tomb in Honolulu, which was then in the grounds adjoining those of Kekauloahi, and now only a mound directly in front of the Archives of Hawaii building. Lahaina continued to be the favorite residence of the king, and that meant of the queens of Kamehameha I and II, the great chiefs and chiefesses and men of note in the kingdom. La-Haina flourished as the *royal* capital, while Honolulu was the business capital (Taylor 1928:38).

In 1846 the seat of government was moved from Lahaina to Honolulu. Census information from this period in Lahaina's history was published in *The Friend*, June 1, 1846:

In January, 1846, the census of Lahaina, Maui, was taken, by which it appears there are, of native children under 14 years of age, 1062; 589 of these boys, 473 girls. Of native adults, there are 1198 men, 1185 women, in all 2383 adults. The total native population is 3345....Of foreigners there are 88 men, 6 women, or 94 adults; 7 boys, 11 girls, or 18 children - total foreign population 112, not including seamen of the hospital and others on the hands of the consuls...

Of the natives, 1422, including men, women and children, have no land or cultivation of their own, in the language of the country, are *kuewas*.

There is in Lahaina one native meeting house....There are also five or six district houses for religious worship. There are 10 common native schools, with about 600 scholars...The people of Lahaina have within a few

years made commendable progress in civilization. Whale ships have furnished them with increased facilities for wealth, and there has been an increasing disposition, on their part, to use these means to procure for themselves better houses, to purchase bedsteads, tables chairs, table and kitchen furniture, time keepers, decent clothing, &c., and in many cases, better education for their children...

In all Lahaina, there are 882 grass houses, 155 adobe houses, and 59 of stone or wood - in all 1096 houses, which would give an average of about three individuals to each house throughout the place...(The Friend IN Taylor 1928:56-57).

In the 1920-1930s Winslow Walker conducted an archaeological survey of Maui. The following are his notes on various *heiau* in or near the *ahupua'a* covered in this report:

#### Polanui Region

##### Site 6

Name: Wailehua

Location: In ahupuaa of Makila at the shore. Site now used for residence of Mr. Burns, manager of Pioneer Mill Co.

Description: Heiau measured 130 x 80 ft. according to Thrum (1909)

Remarks: Thrum says it was built by Kauhi-ai-mokukama, the son of Kekaulike, in or about 1738. Its class is not known but drums were heard on the night of Kane. Now destroyed.

#### Wainee Region

##### Site 7

Name: Halekumukalani

Location: In cane lands of Puehuhunui in the ahupuaa of Halekaa mauka to railroad of Pioneer Mill Co..

Description: A small sacrificial heiau, now totally destroyed.

#### Kuia Region

##### Site 8

Name: Apahua

Location: Cane Fields above Wainee.

Remarks: Totally destroyed. Thrum (1909) credits its building to Hua-nui, about 50 years later than Hua-a-Pohaku-kaina.

#### Paunau Region

##### Site 9

Name: Waie

Location: Kapaulu district south of Lahainaluna Road in cane. Totally destroyed.



## Lahaina District: Kelaweia Region

## Site 10

Name: Luakona

Location: Mauka end of Kelaweia Camp just north of Lahainaluna Road in native district of Kapaulu.

Description: Remnant of heiau walls and platform now used as foundation for native shacks. No orientation or plan of original structure could be obtained.

Remarks: Thrum's list for 1909 says heiau was built by Hua-a-Pohaku-kaina. Informant Ulei mentioned underground passages which were blocked with a huge stone with the picture of a cow carved on it. This was the guardian of the heiau in some way. No trace of this stone or passage could be found.

## Mala Region

## Site 11

Name: Halulukoakoa

Location: S.E. corner of coconut grove at Mala, just north of Kapunakea Camp. It lies in the ahupuaa of Wahikuli according to Thrum.

Description: A large heiau for human sacrifice of which but few fragments of walls remain. There is some coral to be found in their construction, but most of the stone has been removed for rock ballast on the railroad. The site has been further cleared and levelled to make a playground, and what remains has been used for a dump of debris of every kind, and the whole is heavily overgrown with kiawe bushes.

Remarks: Informant J.Kahahana is said to know of some legends connected with this heiau (Walker 1931:109-114).

In 1848, during the reign of Kamehameha III, the traditional Hawaiian land ownership system was replaced with a more Western-style system. This radical restructuring was called The Great Mahele (division). The Great Mahele separated and defined the undivided land interests of the King and the high-ranking chiefs, and the *konohiki*, who were originally those in charge of tracts of land on behalf of the king or a chief (Chinen 1958:vii and Chinen 1961:13). More than 240 of the highest-ranking chiefs and *konohiki* in the kingdom joined Kamehameha III in this division. The first mahele was signed on Jan. 27, 1848 by Kamehameha III and Princess Victoria Kamamalu, and by her guardians Mataio Kekuanaoa and Ione II. The last mahele was signed by the King and E. Enoke on March 7, 1848 (Chinen 1958:16).

The mahele did not convey title to any land. The chiefs and *konohiki* were required to present their claims to The Land Commission to receive awards for lands quitclaimed to them by Kamehameha III. They were also required to pay commutations to the government in order to receive royal patents on their awards. Until an award was issued, title remained with the

government. The lands awarded to the chiefs and *konohiki* became known as Konohiki Lands. Because there were few surveyors in Hawaii at the time of the Mahele, the lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This expedited the work of the Land Commission and speeded the transfers (Chinen 1961:13).

During this process all land was placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. These were all "subject to the rights of native tenants," (Laws of Hawaii, 1848:22). Native tenants were the common Hawaiian people who lived on the land and worked it for their subsistence. Questions concerning the nature of these rights began to arise as the King, the government, and *konohiki* began selling parcels of land. On December 21, 1849 the Privy Council attempted to clarify the situation by adopting four resolutions intended to protect the rights of native tenants referred to in the 1848 law (Chinen 1958:29).

These resolutions authorized the Land Commission to award fee simple title to all native tenants who occupied and improved any portion of Crown, Government, or Konohiki lands. These awards were to be free of commutation except for house lots located in the districts of Honolulu, Lahaina, and Hilo (*ibid.*).

Before receiving their awards from the Land Commission, the native tenants were required to prove that they cultivated the land for a living. They were not permitted to acquire wastelands or lands which they cultivated "with the seeming intention of enlarging their lots." Once a claim was confirmed, a survey was required before the Land Commission was authorized to issue any award. These lands became known as "Kuleana Lands" (*ibid.*:30). Until its dissolution on March 31, 1855, the Land Commission issued thousands of awards to the native tenants for their *kuleana*; even so, less than 30,000 acres of land were awarded to the native tenants as Kuleana Lands.

A look at tax maps for the project area indicates that several Land Commission Awards (LCAs) may fall directly on the bypass alignment. During this project not all LCAs were researched. Further research into the LCAs is recommended. The *ahupua'a* in general were apportioned as shown below:

Honokowai	Set aside as Crown Lands	
Hanakao'o	Lot Kamehameha	L.C.A. 7715
Lahaina	M. Kekauonohi	L.C.A. 11216
Kuia	Ruth Keelikolani	L.C.A. 7716
Halaka'a	Iosua Kao	L.C.A. 8520
Pahoa	N. Namaun	L.C.A. 10474
Polanui	W.C. Lunalilo	L.C.A. 8559-B
Launiupoko	Thomas Phillips	L.C.A. 82

Puehuhunui and Wahikuli do not appear in the lands of *Ali'i* and Chiefs or government or crown lands. Wahikuli Ahupua'a has two claimants listed for it: LCA 477-F to P. Keliipio, an area of 1 acre 2 roods 3 rods; and LCA 7724 to Poholapu, an area of 12 acres. Puehuhunui has twenty claimants listed for land with the area of the plots ranging from 0.52 acres to 9.99 acres.

Three historical maps showing the project area were located during this project. One is a 1913 map by Walter E. Wall of Wahikuli (Reg. Map 2569). This shows the various cane and pasture lands in the *ahupua'a* and the location of some LCAs and grants. Another map is a remnant of a government map of Honokowai and Hanakao'o done in 1922 by Walter E. Wall (Reg. Map 2534). This map locates the LCAs and grants in the project area. Another map, an old Pioneer Mill field map, shows Launiupoko in 1928. This map depicts agricultural fields, and roads and water-control devices in Launiupoko.

John Clark, in his book on the beaches of Maui relates bits of information regarding some of the *ahupua'a* within the project area. The following excerpt on Lahaina brings us up to date with economic activities in the area:

The village of Lahaina served historically as a royal residence and as a seat of government for many Maui chiefs and kings. The famous Kahekili maintained his home and his royal court there until his death in 1794. In the early 1800s Kamehameha I, the first king to rule all the Hawaiian Islands, established Lahaina as his home and his capital. Lahaina became a popular resort for Hawaiian royalty and many of their homes lined the beach. The ocean fronting these residences was the favored place for swimming and surfing on either a surfboard or a canoe. The surf was called 'Uo and the canoe landing, the site of the present boat harbor, was called Keawaiki, "the little harbor." In 1820 Kamehameha II officially designated Lahaina as the capital of the Hawaiian Kingdom. The town continued in its capacity as the official seat of government until 1845. In that year Honolulu was made the capital of the islands.

Beginning about 1820 the newly discovered whaling grounds off the northwest coast of America, south of Alaska in the Okhotsk, Bering, and Anadyr seas, and in the Arctic Ocean north of the Bering Straits brought numerous whalers to the Hawaiian Islands, to be outfitted, repaired, and provisioned. The hell-raising exploits of the seamen in Lahaina are legendary. Rowdy crews from the whalers, continually in search

of women and alcohol, provided a booming business for stores, saloons, and innkeepers. The peak period for whalers in Hawaii was from 1843 to 1860....

The first Christian missionaries arrived in Lahaina on May 31, 1823, and were welcomed by Keopuolani, the highest-born wife of Kamehameha I. The impact of the missionaries on Lahaina is also legendary. Among their many contributions, the missionaries established Lahainaluna, the first school west of the Rockies, and three years later, in 1834, they printed *Ka Lama Hawaii*, the first Hawaiian newspaper. The Catholic church also established itself in Lahaina, after a long period of conflict with the previously settled Protestants. Maria Lanakila ("Mary [Our Lady of] Victory") Church was erected in 1858.

By the 1870's the entire whaling enterprise had ceased in Hawaii. The decline of the industry was attributed to a number of causes, the most important one probably being competition from the petroleum industry, which had started in 1859 in Pennsylvania. Kerosene, produced from petroleum, began replacing whale oil as a lantern fuel, and petroleum oil began replacing whale oil as a lubricant....

By the late 1800's most of Lahaina's populace, including the missionaries, had left for other areas of Hawaii. Lahaina reverted back to a quiet country village, but not completely. James Campbell, an Irish sailor, had arrived in Lahaina in 1852 and had established himself as a carpenter, building ships and homes. In 1861 he started a small sugar cane plantation and took on Henry Turton as a partner. In 1865 Campbell and Turton bought Pioneer Mill, a plantation that had been started by Benjamin Pittman in 1862. From these early beginnings, Pioneer Mill eventually emerged as the largest sugar plantation in West Maui, creating jobs for many people. In 1895, when the company was incorporated, Pioneer Mill began a period of rapid expansion and growth. During this same decade Henry P. Baldwin established Honolua Ranch. Interested in using his extensive West Maui lands for pineapple, Baldwin brought David T. Fleming to Honolua as the ranch manager. Fleming had been with the original Maui pineapple pioneers at Ha'iku and, within a few years, established pineapple as a commercial crop in West Maui. Baldwin Packers, the fruit-packing branch of the new industry, opened a cannery in Lahaina in December 1919, which provided employment for many local residents.

Sugar cane and pineapple sustained Lahaina until the sugar industry began mechanizing its field labor. The cannery finally closed down in the early 1960's, forcing many residents to leave the town and the surrounding villages for other parts of Hawaii. Lahaina remained a friendly but very quiet plantation town. During this same period, however, American Factors, the owner of Pioneer Mill Co., had begun developing an eight-hundred-acre site as a resort complex called Ka'anapali. By early 1963, two hotels, the Royal Lahaina and the Sheraton Maui, were in operation. This development marked the beginning of a new period of expansion and commercial growth for Lahaina, which peaked in the 1970's. Today numerous bars, restaurants, shops and other businesses cater to the thousands of tourists who daily throng through the town. Lahaina is no longer a sleepy residential community. It is a full-fledged tourist resort second only to Waikiki (Clark 1989:57-59).

Lahaina was the setting of some of the earliest sugar enterprises in Hawaii. In 1849, Judge A. W. Parsons operated a sugar mill there. This mill, along with 1,000 acres of land, was sold to O. H. Gulick at auction. Henry Dickenson, a Lahaina store owner, began a plantation in 1859, and the success of his Lahaina Sugar Co. encouraged the establishment the following year of a second plantation, Pioneer Mill Co. It was founded by three partners: James Campbell, Henry Turton, and James Dunbar, on lands deeded to them by Benjamin Pittman. In 1863, Lahaina Sugar Co. went bankrupt and sold out to Pioneer Mill Co. (Conde 1973:252). Another plantation, formed by Lot Kamehameha and others in 1870, was also bought out by Pioneer Mill Co. a few years later. The firm of Walker & Allen appears to have been the plantation agency in the early years, but in 1877 H. Hackfeld replaced them as agents (Conde 1973:252). An 1883 evaluation of plantations represented by H. Hackfeld lists Pioneer Mill Co. assets at \$500,000 (Simpich 1974).

A section of Pioneer Mill's railroad ran by the project area. The main line extended north from the mill, which is several blocks from the center of Lahaina Village, to a point north of the town of Puukolii in Hanakao, five miles distant from, and, at the north end, about 350 feet above the sea (Conde 1975:169). The *Pacific Commercial Advertiser* reported on the construction of the railway on Oct. 23, 1882:

Turton's railroad to Kaanapali is making rapid progress. The grading is finished for over two miles out from the mill, and the track is laid on same for nearly the whole distance. Mr. Johnstone, the civil and every other kind of engineer, has management of the whole thing, and is making things hum along the route—he expects to be hauling cane [to] Kaanapali by January next...

Formerly the cane was brought to Lahaina at the rate of twenty cart loads a day—the carts would come into Lahaina in the morning and return in the afternoon to load up for the next day's trip. It took from six to eight bullocks to a cart, a driver for each team, and a luna to go back and forth with them. Now however, 120 loads will be hauled by steam in a day and it will require but the engineer, and say two trainmen on the cars—the wear and tear and loss of cattle and mules on the Kaanapali route was more than running expenses and wear and tear on the railroad will be.

The *Hawaiian Gazette* (November 29, 1882 issue) notes:

Mr. Turton's railroad to Honokowai has made good progress; the grading is now substantially completed and three miles of track are laid. About one mile has been heavy grading along a rocky tract, where a large amount of dynamite has been used. The whole length of the permanent track is four and one half miles; width of track 31 inches, steel rails. There will be some 5000 feet more movable track in addition. One and one quarter miles of railway will be laid from the mill to the south end of Lahaina. The whole cost of the railway and other plant will not exceed \$30,000. This will dispense with about \$20,000 invested in carts and teams, heretofore employed in conveying cane to the mill.

Pioneer Mill Co. reorganized in 1900. The prospectus for the change is interesting, as it designates the land areas comprising the plantation property:

*Lahaina* - 1,000 acres of land on the flat and outside of small kuleanas, the land is fee simple.

*Launiupoko* - 2,900 acres of fee simple land, lying between Lahaina and Olowalu.

*Wahikuli* - A tract of Government land of 5,000 acres, under lease for eighteen years, lies between Lahaina and Kaanapali.

*Kaanapali* - Some 3,600 acres at various levels, fee simple land, beyond Wahikuli. (The area also comprises streams at Kahumu, Lahainaluna, Kawaulu and Launiupoko.)

The extent of sugar cultivation by the Mill is noted in the *Hawaii Sugar Manual*:

The cane fields of the estate have a sea frontage of ten miles, and while cultivated to 1 1/2 miles average depth in some sections raising of cane is followed so far back as two and one half miles as the farthest reach up the slopes of the West Maui mountains.

The bulk of the crop is raised on lands that range from 10 feet to 700 feet elevation above sea level; the highest being cultivated at 1500 feet (IN Conde 1973:254).

The renaissance of the railway began when A. W. McKelvey received capital from Taylor A. "Tap" Pryor to construct the "Lahaina, Kaanapali & Pacific Railroad" in 1968. The new railway began several blocks from the center of Lahaina, north of Pioneer Mill, on the old railroad grade, alongside cane haul dirt roads. New tracks were laid, and a trestle was built at the cost of \$15,000 near the golf course to offer a panoramic view of Kaanapali. In 1973 the operation was sold to Willis B. Kyle who hired R.D. Ranger to run the line (Conde 1975:169).

### SURVEY METHODS, RECORDING, AND EVALUATIVE PROCEDURES

**Pre-Field Map Work** - Prior to conducting the pedestrian field survey, the road corridor alignment was plotted onto the Lahaina topographic quad sheet; also plotted were the boundaries of recent inventory survey project areas involving lands and archaeological sites located within or close to the project corridor (see Figure 1). Copies of field documents (site maps, and site and feature forms) for the previously recorded sites were made for use in the field to help in relocating and accurately identifying the sites.

**Field Inspection** - On June 19 and 20, the author, assisted by Supervisory Archaeologist J. O'Claray, conducted a preliminary field inspection of the entire project corridor route. The purpose of this inspection was to identify and plot onto existing maps the location of all mechanically altered lands (lands currently under cultivation), and lands which appeared to have been only moderately to minimally disturbed by past agricultural and other activities. For the most part, minimally modified lands were discovered to be restricted to the non-arable gulches associated with Honokawai, Hahakea, and Kahoma streams, and certain lands located at the base of Puu Laina (on the west side of the Puu and north of Kahoma Stream). In addition to determining that the corridor alignment across these three gulches would have to be inspected on foot, an examination of the mapped corridor route south of Kahoma Stream, in the vicinity of Wainee Camp, indicated the presence of three narrow, poorly defined gulch remnants. It was determined that the area where the corridors crossed the three gulches should also be inspected on foot.

**Pedestrian Coverage** - The pedestrian survey was initiated at the northern end of the project corridor, where the proposed

new road will cross Honokowai Stream. Here, and at other gulch crossings (at Hahakea Gulch and Kahoma Stream near Puu Laina, and at the three other small gulches south of Kahoma Stream), field engineers flagged both sides of the 200 ft-wide corridor so as to ensure accurate correspondence between the mapped survey areas and the lands actually inspected during the pedestrian survey. At the gulch crossings, pedestrian inspection involved a two-person survey crew walking systematic transects, either parallel to the long axis of the corridor and generally following elevation contours, or up and down the stream gulch, perpendicular to contours. Transect spacing was maintained at c. 20 m intervals. Both disturbed and relatively undisturbed areas of the project area were covered using similar survey tactics. The relatively undisturbed lands were located on the west side of Puu Laina, mostly in the vicinity of recorded historic SIHP Site 2484.

**Recording** - Detailed recording at newly identified sites included site and feature dimensions, delineation of surface and subsurface midden deposits, where present, and preparation of scaled maps and drawings of individual features. Sites were to be described on standard PHRI site and feature record forms, and distinctive features were to be mapped to scale and photographed using 35 mm black-and-white film. For previously recorded sites, field work was to involve comparing existing site maps and record forms with field observations, and updating and correcting existing documentation, as necessary.

Once identified and recorded the locations of all newly identified archaeological sites were determined, and the locations of previously identified sites were confirmed, using a combination of aerial photographs and metric tape and compass, and the locations were plotted/verified on a master project area map. Each newly recorded site and/or the primary feature within each newly recorded site complex was marked with pink-and-blue flagging tape, as well as an aluminum tag bearing the site number, date, the letters "PHRI," and the PHRI project number (91-1064). For previously recorded sites, site boundaries were confirmed, as per existing documentation.

**Evaluation of Subsurface Components** - During the current project, subsurface testing by way of controlled excavations was to be undertaken, if deemed necessary, to adequately evaluate site significance. In the case of the previously recorded sites, potential significance had already been determined and evaluated in consultation with DLNR, so that no additional testing was necessary. At the one newly identified complex of walls, no suitable deposits were observed and thus no subsurface testing was undertaken.

## FINDINGS

Four sites containing 28 component features were identified within or adjacent to the present project corridor. Of the four sites, three had been previously identified and recorded (SIHP Sites 2484, 2489, and 2490), and one site was newly identified (Site 2847). Ranging in physical condition from poor to excellent, the identified sites include both single as well as multiple components, and display a range of feature types, including possible habitation terraces, walled enclosures, agricultural terraces, a possible burial, possible boundary walls, and a possible burial mound. Tentatively identified functional types include habitation, agriculture, ceremonial/religious activities in conjunction with burial practices, transportation, and possible water storage.

### SITE DESCRIPTIONS - SITES WITHIN CORRIDOR

#### Site 2847 - Enclosure (Possible Reservoir and Possible Boundary Walls)

This site is located at the terminus of the narrow "finger" ridge which proceeds roughly east-west and which separates two branches of Honokowai Stream at the point of intersection with the proposed new road alignment. The site consists of three contiguous rock wall features (Figure 2).

Feature A is a rubble wall which scribes an incomplete circle. The wall was constructed near the end point along the ridge, just above the south branch of Honokowai Stream on relatively flat terrain. A semicircular rubble wall, ranging in height from 1.0 to nearly 2.5 meters, encloses an area which extends approximately 67 meters east-west by 57 meters north-south. The southeast portion of the enclosing circle is incomplete, and is defined by widely scattered boulders rather than a well-defined solid wall. It is possible that the interior of the wall was lined and that it was constructed as a reservoir. It is also possible, however, that it functioned as a corral for domestic animals during historic to recent times. Oral testimony supplied by a local informant suggests that numerous small sugarcane workers' houses were located within this gulch area during the 1930s and 1940s, and the walled enclosure may have defined the perimeter of a corral for domestic animals. In any case, no artifacts or midden deposits were observed anywhere within or around the margins of the feature, so that no direct dating evidence was secured during the present project. On the other hand, the area is extensively overgrown with vegetation, and such material may be present in the area.

Feature B consists of a nine meter-long segment of wall, more formal in appearance and construction techniques than the rubble which comprises Feature A. Feature B abuts the east side of Feature A, and proceeds roughly 9 meters at 80 degrees Az from the edge of the Feature A enclosure. The wall may continue beyond the project area boundary (easterly) although this was not determined during the present project. It is unknown whether this feature was constructed and utilized concurrently with Feature A, or represents a boundary wall or some other feature, perhaps pre-dating construction of Feature A. No portable cultural material and no midden deposits were observed within or adjacent to the wall, although such material may be concealed by dense vegetation and collapsed sections of the wall within the project area.

Feature C is generally similar to Feature B and abuts Feature A on the feature's west side. Feature B and C may in fact represent disarticulated segments of the same wall which was dismantled within Feature A for use in constructing Feature A itself. Feature C proceeds approximately 10 meters west of the western edge of Feature A and, as with Feature B, may also continue beyond the project area boundary. As well, it is unknown whether this feature was constructed and utilized concurrently with Feature A, or represents a boundary wall or some other feature which predates Feature A. No portable cultural material and no midden deposits were encountered to assist in dating; however, such material/deposits may be concealed by dense vegetation and collapsed segments of wall.

#### SIHP Site 2489 - Agricultural Terraces, Footpath, Possible Habitation Features, Possible Burial

Site 2489 consists of features located along two adjacent ridges which separate converging segments of Hahakea Gulch Stream. A portion of this ridge line is centrally located with regard to the proposed road realignment corridor—presumably, the gulch span is to be supported in the center by a column set on the top of this ridge. Cultural features were observed distributed along c. 150 m of the ridge line (east-west), and consist primarily of agricultural terraces, although evidence of temporary habitation and possible use of one feature for burial purposes was observed within the site area. Figure 3 (Site Map for 2489) illustrates the distribution of the defined feature areas within the overall area of the site.

Feature A is located in the area of the primary ridgeline separating the two major branches of Hahakea Gulch Stream.

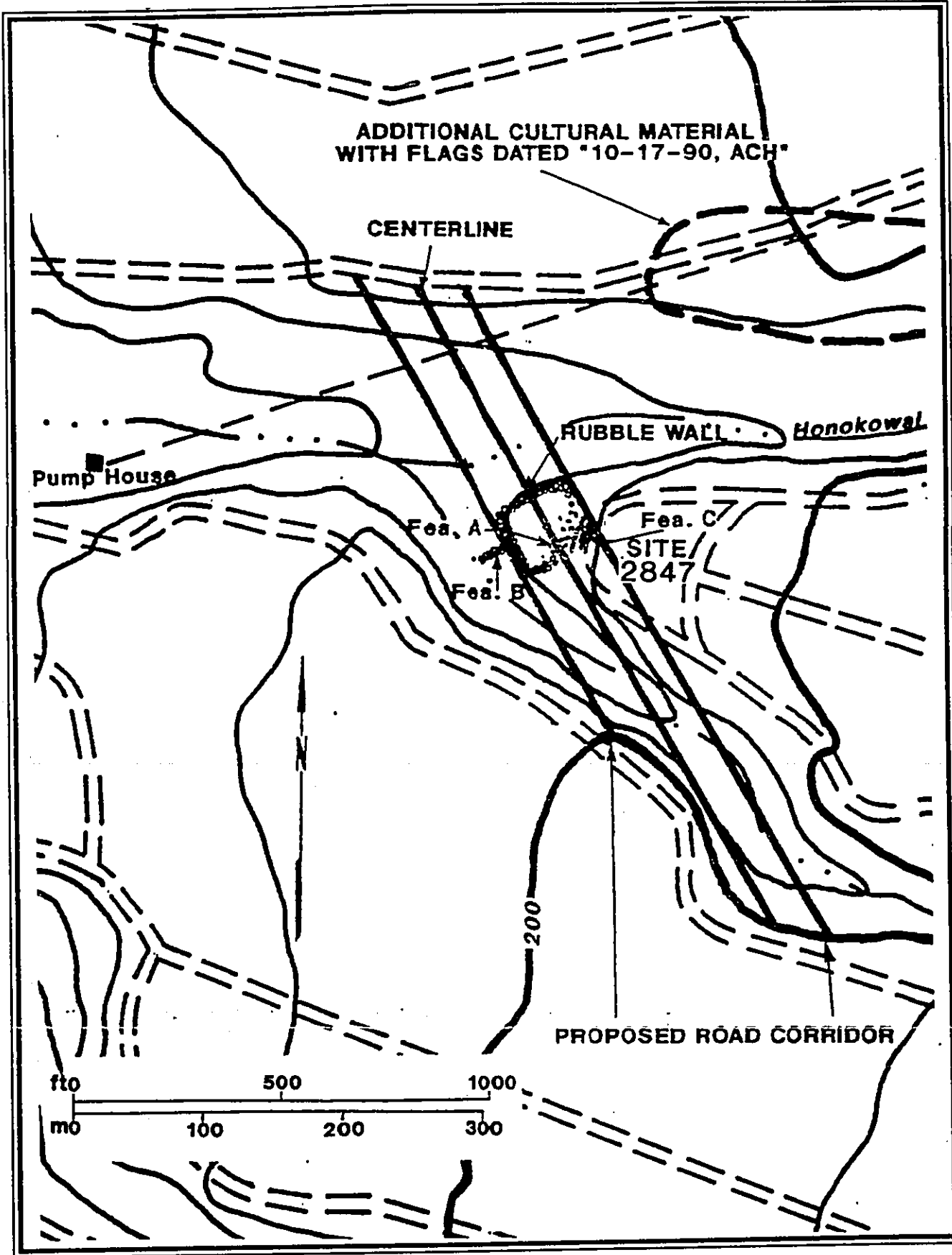


Figure 2. Site 2847

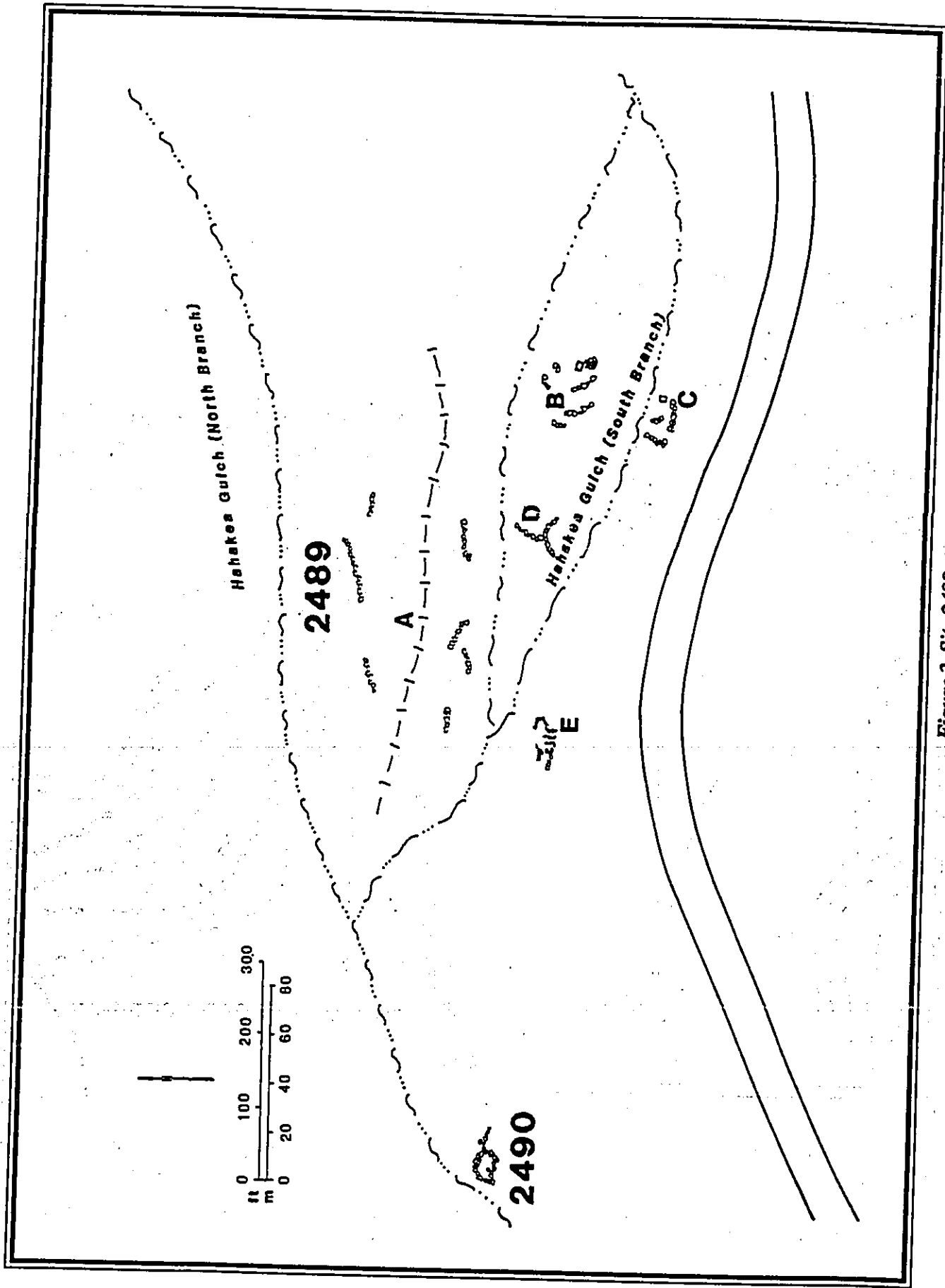


Figure 3. Site 2489



Along this "finger" ridge, three segments of agricultural terrace were observed on the north side, and four on the south side. All segments appear to roughly parallel elevation contour lines, or to intersect contour lines at no more than about a 5-10 degree slope. Along the top of the ridge line is a narrow, poorly defined foot path, two short segments (i.e., 3-5 meter-lengths) of which have been built up along the sides by placing occasional small boulders in an upright position, producing an alignment which tends to resemble a "kerbstone" trail. Dimensional information and details of construction for the seven identified agricultural terrace areas are provided in Table 1.

Feature B is located c. 30-40 meters south of Feature A, on the south side of a shallow depression which separates these two areas. Feature B is located on a slight rise or knoll, the margins of which have been partially terraced. Five separately identifiable terrace alignments were observed, roughly paralleling the circular contours which define the knoll itself. Near the southern portion of the top of the flat knoll is a small natural rock outcrop, which has been modified by stacking small boulders and cobbles so as to create a rock mound, or cairn, which measures approximately 2.5 meters in diameter by 1 meter maximum height. This feature may represent a boundary marker of some type, although it could also conceal a human burial. Immediately north of this feature, a dark soil deposit was observed from which a bulk sample for possible dating analysis was recovered from a 50 cm-diameter shovel pit. Upon evaluation in the laboratory, however, it was found that there was not enough charcoal to warrant further processing.

Feature C is located approximately 25 meters south of Feature B, on the south side of the south branch of Hahakea Gulch stream. As with Feature B, Feature C consists of a poorly defined, low, natural rise or knoll, the margins of which have been partially altered by construction of low terracing. Again, as with Feature B, the top of the Feature C knoll exhibits a non-terrace-like feature, in this case a small (1.5 by 2.0 meters), roughly rectangular low rock alignment which may represent a temporary habitation enclosure.

Feature D is located approximately 40 m west (downslope/downstream) of Feature B and approximately 25 meters south of the south branch of Hahakea Gulch Stream. This feature consists of at least three converging agricultural terrace alignments. The point at which the three alignments converge appears to be marked by a cairn, although this attribute may simply have resulted from overlapping construction of the three walls. No evidence of habitation was observed in direct association with these walls, although such evidence may remain concealed by the very dense vegetation in the area.

Feature E is located approximately 20 m east (upstream) and 20 m south of the confluence of the two primary Hahakea

Gulch Streams, as shown in Figure 3. This feature consists of one 14 meter-long terrace wall, with six additional c. 1 meter-long walls constructed so as to abut the primary wall at c. 90 degree angles. Four of the shorter walls are located on the downslope (north) side of the primary wall, and two are located on the upslope (south) side of the wall. As well, a small leveled area has been created at the easternmost end of the primary wall of Feature E; this leveled area measures 1.5 m north-south by 1.1 m east-west and averages 0.28 m above the surrounding ground surface (Figure 4). No evidence of habitation use (i.e., midden accumulation or portable artifacts) was observed in this area. It is possible, but has not yet been demonstrated, that this leveled area represents nothing more than a collapsed portion of the primary terrace wall itself.

Basic dimensional data and construction details for the primary terrace wall at Feature E, as well as the other agricultural terrace remnants observed at the other feature areas, are provided in Table 1.

#### SIHP Site 2490 - Walled Terraces, Walled Enclosure, Agricultural Terra Remnants

This site, identified and recorded during the survey of the South Beach Mauka project area, is located within Hahakea Gulch, approximately 125-150 meters downstream (west) of the confluence of the two stream courses within Hahakea Gulch at this location. The site consists of two wall-connected terraces and one possible walled enclosure, with one or both of the two terraced areas representing possible prehistoric habitation areas. This small complex (Figure 5), located approximately 10 meters south of the south side of Hahakea Gulch, extends a total of 26.0 meters north-south by c. 35 m east-west (parallel with the stream). Within this area, three separate feature areas were identified during the initial site recording.

Feature A consists of a possible habitation terrace created by filling in the area between several intersecting walls with small cobbles and rock rubble. The resultant elevated terrace averages 35 cm above the surrounding ground surface and is roughly rectangular in plan view, measuring approximately 7.0 m north-south by 12.0 m east-west. Feature C is a similarly constructed but smaller elevated terrace located adjacent to the southwest side of Feature A and measuring approximately 4.0 m north-south by 5.0 m east-west. Partial clearing of surface vegetation revealed potential cultural deposits within the rubble fill and accumulated soil, although no portable artifacts and no obvious charcoal chunks or flecks were observed following hand scraping of the surface of both features.

Feature B consists of a poorly defined walled enclosure formed by several intersecting low agricultural terrace walls. The walls were created by stacking boulders and cobbles 1-2



Table 1.  
CONSTRUCTION DETAILS FOR SITE 2489 COMPONENT FEATURES

Feature Number	Maximum Length	Average Width	Average Height	# of Courses for Average Height Width	
<b>FEATURE A TERRACES</b>					
A-1	1.20	1.60	0.40	1-3	1-2
A-2	7.50	1.00	1.00	1-3	1-2
A-3	41.00	1.25	1.00	2-5	1-3
A-4	12.80	0.90	0.60	1-2	1-2
A-5	6.90	1.00	1.00	2-3	2-3
A-6	2.00	0.80	0.30	1-2	1-3
A-7	4.00	1.00	0.80	1-3	1-2
<b>FEATURE B TERRACES</b>					
B-1	4.70	1.50	0.40	1-3	2-3
B-2	2.90	0.90	0.50	1-2	1-2
B-3	1.60	0.80	0.30	1-2	1-2
B-4	7.80	0.80	0.30	1-2	1-2
B-5	3.20	0.80	0.60	1-2	1-2
<b>FEATURE C TERRACES</b>					
C-1	2.35	0.80	0.30	1-2	1-2
C-2	7.90	0.70	0.40	1-2	1-2
C-3	11.00	0.80	0.50	1-2	1-2
<b>FEATURE D TERRACES</b>					
D-1	4.00	0.68	0.64	1-3	1-2
D-2	6.00	1.00	0.50	1-3	1-3
D-3	9.00	0.80	0.60	1-2	1-2
<b>FEATURE E TERRACE</b>					
E	14.00	1.50	0.75	2-3	1-2

NOTE: All measurements are in meters.

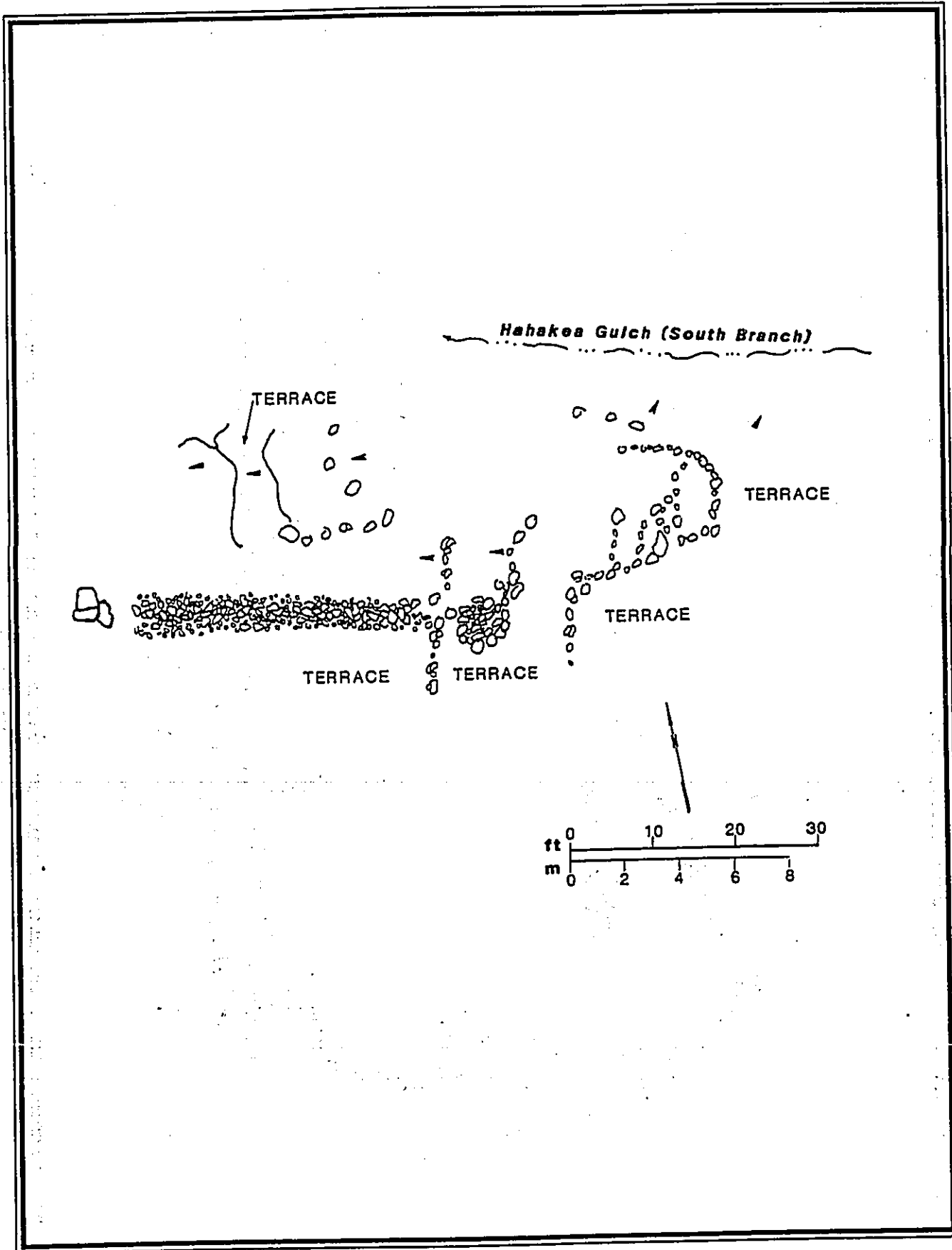


Figure 4. Site 2489, Feature E

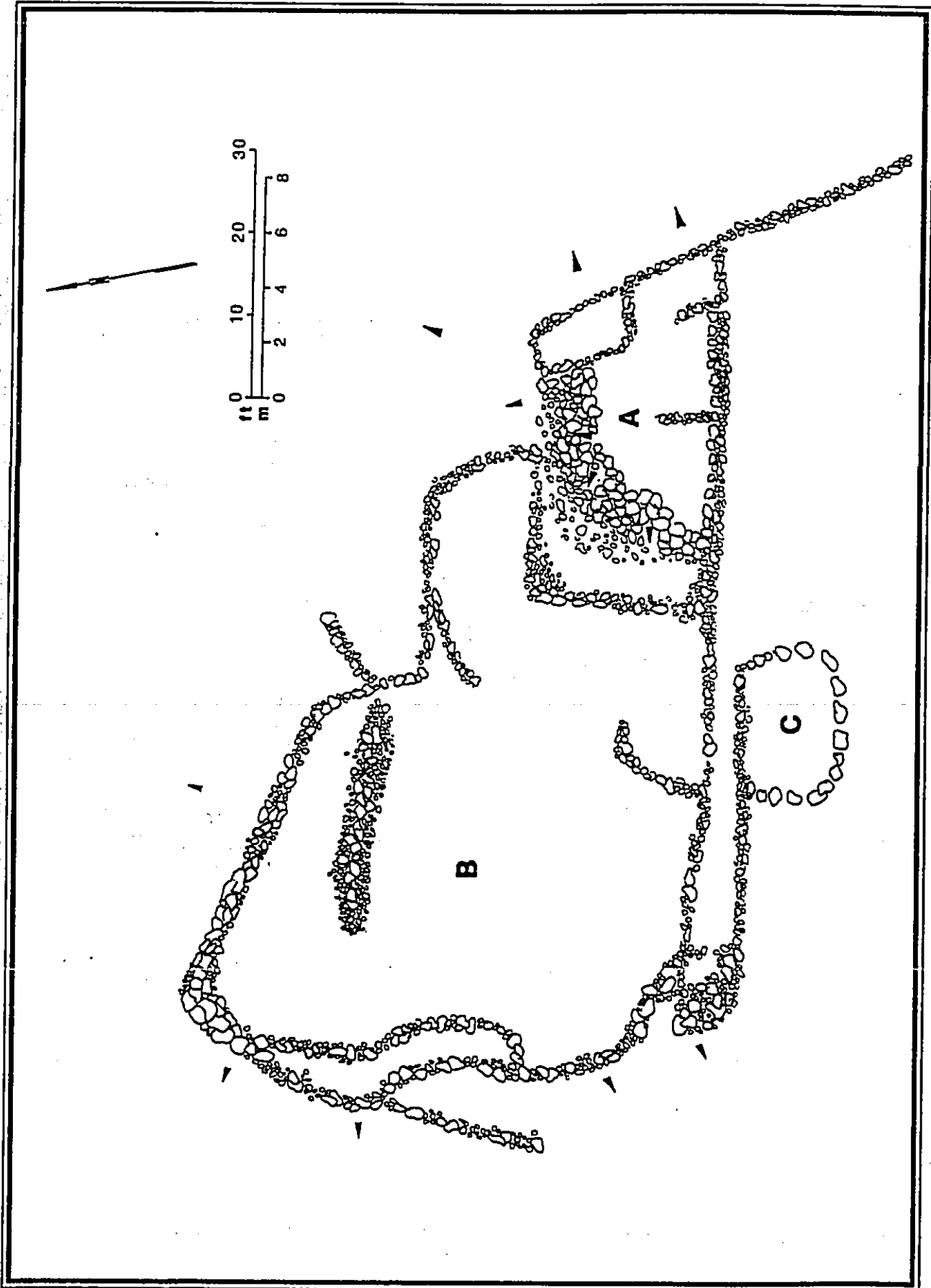


Figure 5. Site 2490

courses high and wide, yielding average dimensions of 40 cm in both height and width. The enclosed space abuts the west side of Feature A and the north side of Feature C, is irregular in shape, and extends a maximum distance of 16.0 north-south by 20.0 m east-west. A thorough inspection of the enclosed space failed to reveal any surface indications of accumulated cultural material, such as portable artifacts or midden remains, although such material may be present within a subsurface component.

#### Site 2484 - Walled Enclosure, or L-Shaped Wall

Site 2484 is a partial rock enclosure, or an L-shaped wall, located on the south-facing, gently sloping land above Kahoma Stream gulch, near the western end of an agricultural airstrip southwest of "Crater Reservoir" and Puu Laina. Extending 23.4 m north-south, the primary segment of wall was constructed by stacking basalt boulders from 4-5 courses to achieve a maximum wall height of 0.75 m and a wall width which ranges from 0.80 to 1.10 m. The southern end of this segment of wall has largely collapsed, but a second intact wall segment proceeds westerly from this point for an additional 11.5 m. It could not be determined whether the remainder of an enclosure exists within this area, with the walls having collapsed or been bulldozed, or whether the L-shape of the existing feature represents the entire original configuration.

### SITE DESCRIPTIONS - SITES OUTSIDE CORRIDOR

Six previously recorded sites are located close to but outside of the proposed realigned road corridor. Since all but one of these sites are considered significant or potentially significant, several for multiple criteria, final project design will have to ensure avoidance of the sites, or be preceded by an approved plan of data collection and possible data recovery work. In order to assist in the planning process, the approximate locations of all of the sites are noted in Figure 1, and the sites are briefly described below.

#### Site ACH 10-17-90

During the present project's field survey work along the bottom of Honokowai Gulch, cultural materials were noted at a point c. 90 meters east of the east side of the flagged corridor alignment. These cultural materials appeared to consist of formal habitation terraces and numerous walls and other agriculture-related features. Flagging tape was observed at one of the features, along with a metal tag inscribed "ACH 10-17-90." It is believed that this represents cultural material observed in conjunction with initial survey of the earlier Bypass Road corridor alignment, as reported in the existing EIS for this project. This site will not be affected by the construction

project, as presently proposed, and no further work was undertaken at this site during the present project. The approximate location of the site is noted in Figure 1.

#### SIHP Site 2491 - Agricultural Terraces

This site is located approximately 20 m west of Puukolii Cemetery, on both sides of the south branch of the unnamed gulch which originates near the abandoned townsite of Puukolii. The site consists of two agricultural terraces (or terrace remnants). One of these, Feature A, is on the northeast side of the gulch, and consists of a 10.5 m-long terrace constructed of basalt slabs and cobbles stacked 2-3 courses wide and high to achieve an average width of 0.90 m and a maximum height of 1.0 m. Feature B consists of a similarly constructed terrace of roughly equivalent dimensions, although measuring only 3.7 meters in length. Feature B is located on the opposite side of the gulch from Feature A, c. 15 m upslope from the bottom of the gulch. Feature B was placed so as to partially block the flow of water and soil descending a small, ephemeral tributary of the primary Puukolii Gulch. No additional cultural features or habitation areas were observed anywhere within the vicinity of these two terraces. The absence of associated portable artifacts or datable cultural material prevents an accurate determination as to whether prehistoric, or historic use/occupation, is represented. Neither feature, however, is believed to retain additional significant information values.

#### Puukolii Cemetery - Historic-Contemporary

Puukolii Cemetery is shown on the USGS topographic map and on other maps of the area. The cemetery contains 35+ burials. Based on headstone dates, this area was utilized by the residents of Puukolii town as recently as the mid-1940s. The cemetery was not formally recorded during the previous North and South Beach Mauka survey project, as the cemetery's protection appeared to fall under jurisdiction other than that designed to identify and protect historic properties. Nevertheless, the approximate limits of the cemetery area have been identified on large-scale project area maps, and on the USGS topographic map used as the base map for Figure 1 in the present report.

#### Site 2485 - Walled Enclosure

Site 2485, located on the south-facing, gently sloping land above Kahoma Stream gulch and southwest of the western end of the existing agricultural airstrip southwest of "Crater Reservoir" and Puu Laina, is a rock enclosure which has been tentatively identified as a probable prehistoric habitation area (the enclosure closely resembles known prehistoric remains). The well constructed rock walls enclose a rectangular space which extends approximately 20 m north-south by 24 m east-west. The wall, constructed on relatively flat ground, is a fairly

consistent 1.5 m high around the entire periphery of the feature, except in areas where segments have collapsed. The thickness of the wall ranges from 0.90 to 1.80 m, with the thickest sections at the feature's corners. The perimeter wall has been penetrated by a constructed opening at only one location—near the center of the feature's north wall.

Although no portable artifacts or midden were observed during the original HFDC inventory survey field work, such material may remain concealed by dense grass and other surface vegetation at the site, or may be present below the surface of the site.

#### Site 2487 - Historic Agricultural Access Road

Site 2487 is a road bed c. 270 meters long present on gently sloping land immediately west of Puu Laina. The surface of the road is flat, averages 3.5 m in width, and has a foundation of gravel; the downhill side of the bed is buttressed with concreted stones (4-5 courses high). A "toe" ditch, or drainage channel, partially rock-lined has been excavated adjacent to the uphill side of the road, and three drains (concrete culverts) were placed at strategic locations along the 270 m remnant section. The road was presumably constructed in conjunction with early agricultural activities, probably between about 1910-1920; it may have been abandoned when heavier equipment, requiring stronger roadbeds and culverts, was introduced by the Pioneer Mill operation for sugarcane and pineapple hauling and field preparations. No early historic dumps or other potentially significant artifact concentrations were observed along the alignment, although numerous more recent and contemporary dumping piles were observed. In fact, the road now appears to serve no other purpose than to provide access to these dumping areas. In addition to household trash, numerous 1950s-1960s automobiles and automobile parts have been abandoned along segments of this road.

Significant or potentially significant artifact concentrations are absent at the site, and the site is not considered to retain potentially significant information value. The present site locational information and site record documents are considered adequate mitigation of any potential project effects which may accompany proposed developments within this general area.

#### Site 2486 - Large Formal Cairn/Marker (1), Mounds (Probable Graves/Grave Markers)(13)

This site is located on the ridge above and on the north side of Kahoma Stream and c. 200 m south-southwest of Puu Laina. The site occupies gently sloping land and consists of at least 14 features distributed over an oval-shaped area measuring approximately 35 by 40 m. The most prominent of the features (Feature A) is located on the southwestern edge of the feature group, and consists of a well-constructed circular cairn constructed of large field cobbles with rubble fill. The cairn measures 3 m in diameter at the base. Boulders were stacked from six to seven courses in order to achieve a maximum height of 1.7 m above the current ground surface. The outside edge (perimeter) of the feature has been formally faced, while a depression has been created within the top-central portion of the cairn by removing rubble fill to a maximum depth of 0.8 m. Overall, the feature is well-preserved and does not appear to have been disturbed or otherwise modified since originally constructed.

Scattered in a semi-arc to the north of Feature A are 13 additional rock features, at least 12 of which appear clearly to identify graves. One of these 13 features (Feature E) is a well-constructed platform with faced sides, elevated above the ground by c. 0.75 m, and containing two separate compartments (combined measurement of the two compartments is 2.5 m by 3.1 m). A lower and smaller terrace (measuring 2.1 m by 2.8 m) has been constructed adjacent to the southwest side of the primary platform. Feature E may be two contiguous but separate features which individually are quite similar to the other 12 isolated examples which appear to represent graves/grave markers, although the function/implications of the smaller terrace at Feature E is unknown and has not been duplicated at any of the other examples.

The remaining 12 features range from low, flat-topped to ridged rectangular platforms, to mounded, trapezoidal to oval features of generally similar overall dimensions. In at least two instances, these features were located adjacent to preexisting examples, and boulders and cobbles were removed (i.e., "robbed") from the latter during construction of the more recent examples. Comparative dimensional information for the 14 features at this site is provided in Table 2, below.

Table 2.  
COMPARATIVE DIMENSIONS OF SITE 2486 FEATURES

Feature Desig.	Length (m)	Width (m)	Height* (m)	Comments
A	—	3.00	1.70	Large circular cairn/ marker/shrine
B	6.50	1.00	0.50	Probably 1-2 graves
C	3.00	1.90	0.75	Probable grave
D	5.00	5.00	0.60	Probable grave
E	3.50	3.10	0.75	Probably 1-2 graves; possible ceremonial feature
F	2.00	1.40	0.60	Probable grave
G	3.60	1.80	0.75	Probable grave
H	6.00	2.70	0.40	Probably 1-2 graves
I	2.60	1.60	0.40	Probable grave
J	2.50	1.70	0.50	Probable grave
K	3.90	2.50	0.35	Probable grave
L	4.30	2.00	0.35	Probable grave
M	5.10	2.70	0.40	Prob. grave, though possible linear feature only
N	2.30	2.10	0.20	Probable grave

\*Maximum above current ground surface.

## CONCLUSION

### DISCUSSION

Despite the extensive disturbances to which the entire project corridor has been subjected—by past agricultural and other activities—a number of sites still exist intact in the area. The ranges of feature and functional types represented by the sites are relatively narrow. Table 3 summarizes the present project's findings in terms of feature types present.

Agricultural terraces are by the most prominent features present in the project area, comprising 19 (c. 68%) of the total of 28 components recorded. However, this feature type was unequivocally identified at only one site (the Hahakea Gulch site), although it may also be represented at 2847 in Honokowai Gulch. In both cases, preservation of these features is clearly related to their location on the steep margins, or near the bottom, of the two major gulches which are crossed by the proposed new road alignment. It seems safe to suggest that numerous additional examples may at one time have existed higher on the margins of both of these gulches and probably elsewhere within the general project area, but were destroyed in conjunction with modern agricultural activities.

Both enclosures and possible small habitation terraces are represented by three individual features, although enclosures are present at three of the four sites, while possible habitation areas are present at only two sites. The feature function "possible burial" is represented by a single feature at one site only, a site which also contains the only obvious footpath documented for the project area.

Cultural deposits appear likely to be restricted to the habitation terraces observed at the two Hahakea Gulch sites (2489 and 2490), although such material may also be present at the 2484 and 2847 enclosures. At all of these sites, extremely dense vegetation prohibited evaluation of a sufficient surface area of the site to make an adequate determination.

Conspicuously absent from the present project area are major platforms or *heiau*, and well-developed prehistoric trails. Proposed additional research (vegetation clearing in particular) at the Hahakea and Honokowai Gulch sites may reveal examples of the latter; it is likely that the early historic agricultural clearing destroyed all of the large platform or *heiau* sites which may once have existed. Such features are believed most likely to have been present along the western margins of the present project area, at the confluence of gulch streams with the Pacific Ocean.

### EVALUATIONS

Significance categories used in the evaluation process for the present project area sites follow definitions derived from the National Register criteria for evaluation, as outlined in the Code of Federal Regulations (36 CFR Part 60). The Hawaii State Historic Preservation Division employs these criteria for evaluating cultural resources. Sites determined here to be potentially significant for information content (Category A, Table 3) are assessed under Criterion D, which defines significant resources as those which "have yielded, or may be likely to yield, information important in prehistory or history" (36 CFR Sec. 60.4). Sites determined to be potentially significant as excellent examples of site types (Category B, Table 3) are assessed under Criterion C, which defines significant resources as those which "embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction" (36 CFR Sec. 60.4).

Sites determined to be (potentially) culturally significant (Category C) are assessed under guidelines prepared by the Advisory Council on Historic Preservation (ACHP), entitled "Guidelines for Consideration of Traditional Cultural Values in Historic Preservation Review" (Draft Report, August 1985) (ACHP 1985). Cultural value is defined in the guidelines as "...the contribution made by an historic property to an ongoing society or cultural system. A traditional cultural value is a cultural value that has historical depth" (1985:1). The guidelines specify that, "A property need not have been in consistent use since antiquity by a cultural system in order to have traditional cultural value" (1985:7). Both religious and nonreligious cultural values are specified, and examples include burial sites, loci of traditional economic activities, and loci that are symbolic of a group's identity or history (1985:11).

To further facilitate client management decisions regarding the subsequent treatment of resources, the general significance of all archaeological remains identified during the present survey were evaluated in terms of potential scientific research, interpretive, and/or cultural values (PHRI Cultural Resource Management [CRM] value modes, which are derived from the above federal criteria). Scientific research value refers to the potential of archaeological resources for producing information useful in the understanding of culture history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. Interpretive value refers to the potential of

Table 3.  
SUMMARY OF FEATURE TYPES PRESENT

Site	Feature	Agri. Terrace	Encl.	Habitation Terrace	Boundary Wall	Path	Burial Mound
2847	A	0	1	0	0	0	0
	B	0	0	0	1	0	0
	C	0	0	0	1	0	0
2489	A	7	0	0	0	1	0
	B	5	0	0	0	0	1*
	C	3	0	1*	0	0	0
	D	3	0	0	0	0	0
	E	1	0	0	0	0	0
2490	A	0	0	1*	0	0	0
	B	0	1	0	0	0	0
	C	0	0	1	0	0	0
2484		0	1	0	0	0	0
<b>Totals:</b>		<b>19</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>

(\* = provisional, pending results of recommended additional data collection work)



archaeological resources for public education and recreation. Cultural value, within the framework for significance evaluation used here, refers to the potential of archaeological resources for the preservation and promotion of cultural and ethnic identity and values.

### Information Content

In evaluating information content (Category A) (scientific research value), all of the sites located within the project area were examined in light of potential research issues identified during background research. These issues revolve around general questions of chronology, settlement, and exploitative patterns, site and assemblage variability, material culture and technology, diet and economy, and socio-religious patterns.

**Chronology** - Determining the period of use for sites within the project area is contingent upon recovery and assay of datable materials, such as volcanic glass and charcoal. The habitation features and enclosures are believed to represent the features most likely to contain such material and deposits, and include Sites 2484, 2489, 2490, and, possibly 2847 in Honokowai Gulch.

**Settlement and Exploitative Patterns, Site and Assemblage Variability, Material Culture and Technology, and Diet and Economy** - Further evaluation of these research domains requires intact deposits of artifacts and associated midden. Again, sites which are considered to contain specialized samples suitable for dating are also believed to contain variable quantities of midden, portable artifacts and/or buried/concealed features, and include Sites 2484, 2489, 2490, and, possibly 2847. Any such information for the present project area is particularly significant in view of the damage to cultural resources which has accompanied extensive agricultural development of the area. In addition, such materials take on added significance in view of several new analytical approaches currently available for analyzing dating and other special cultural deposits. Collectively, these considerations justify additional data collection at and further refinement of the evaluations of these sites.

**Socio-Religious Patterns** - A number of research questions have been addressed utilizing information from the numerous burials and burial remains which have been recovered from Anaehoomalu, Waikoloa, and Kalahuiipuaa on Hawaii Island, and Kapalua in West Maui. The data which may be available at Site 2489B could provide useful additional information in support of ongoing research involving the Kapalua remains. In the present case, the remains would be recovered, evaluated and properly reinterred, only in the event that project impacts to the site could not be avoided and only after preparation of a State and County-approved Burial Treatment Plan.

### Interpretive Value

At this stage of analysis (inventory-level), archaeological sites with potentially high value as excellent examples of a site type (Category B) (interpretive value), are identified by considering those attributes which, if occurring together at one site, would provide a representative example of particular kinds of behavior, activities, or conditions. As well, sites exhibiting unique, or one-of-a-kind qualities, would also qualify for such consideration.

In the present case, one site is believed to exhibit qualities which might render the site worthy of consideration for interpretive development. The site is 2490 within Hahakea Gulch, which represents the only complex within this area which contains relatively well-preserved habitation features in association with agricultural terracing. On the other hand, disturbance to the east end of the site has been substantial, and proposed levels of vegetation clearing may result in the conclusion that only an unrepresentative portion of the original site complex remains in this area. Such a finding could alter the interpretive value of this resource.

### Cultural Value

Sites with cultural significance (Category C) (cultural value) would include those with traditional uses and those that have significant meaning in the context of a traditional way of life. In the present project area, one site may contain human remains as well as a footpath (Site 2489), and is considered potentially culturally significant on this basis. The other feature types in the project area include small habitation areas and associated agricultural terracing. There is no evidence that the activities associated with these feature types were undertaken by designated specialists or high ranking individuals. There is no reason to suspect, therefore, that these sites were especially culturally significant to the prehistoric occupants of the area (as per the definition of "cultural value" provided above).

## RECOMMENDATIONS

Based on the findings of significance and potential significance and cultural value as outlined above and summarized in Table 3, the following recommendations have been developed and are here offered. Of the four sites identified within or immediately adjacent to the present project area, all are assessed as significant for information content. One of the four sites—Site 2490 within Hahakea Gulch—is also provisionally assessed as significant as a good example of a site type, as the site includes relatively well-preserved habitation features. Lastly, one site is also provisionally assessed as culturally significant (Site 2489) in consideration of the fact that at least one burial may be present.

**Table 4.**  
**SUMMARY OF GENERAL SIGNIFICANCE ASSESSMENTS**  
**AND RECOMMENDED GENERAL TREATMENTS**

Site Number	Significance Category				Recommended Treatment			
	A	X	B	C	FDC	NFW	PID	PAI
2847	+	-	-	-	+	-	-	-
2484	+	-	-	-	+	-	-	-
<b>Subtotal:</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
2489	+	-	-	*	+	-	-	*
<b>Subtotal:</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
2490	+	-	+	-	+	-	*	-
<b>Subtotal:</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>Total:</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>1</b>

*General Significance Categories:*

*A=Important for information content, further data collection necessary (PHRI=research value);*  
*X=Important for information content, no further data collection necessary (PHRI=research value, DLNR-SHPD=not significant);*  
*B=Excellent example of site type at local, region, island, State, or National level (PHRI=interpretive value); and*  
*C=Culturally significant (PHRI=cultural value).*

*Recommended General Treatments:*

*FDC=Further data collection necessary (further survey and testing, and possibly subsequent data recovery/mitigation excavations);*  
*NFW=No further work of any kind necessary, sufficient data collected, no preservation potential;*  
*PID=Preservation with some level of interpretive development recommended (including appropriate related data recovery work); and*  
*PAI=Preservation "as is," with minimal further work (and possible inclusion into landscaping), or appropriate data recovery/disinterments.*

*\*Provisional assessment; definite assessment pending further data collection (i.e., testing features for presence/absence of skeletal remains in relation to preservation "as is", and for integrity of constructed cultural features in relation to possible preservation with interpretive development).*

Further work in the form of vegetation clearing, further detailed archaeological recording, and refinement of the provisional evaluations of site limits, feature function, and presence/absence of subsurface components is recommended for all four sites. For Site 2490, this work should be sufficient to allow a final decision as to whether preservation "as is," or preservation with some level of interpretive development, is appropriate. This determination would be based on functional interpretations, dating results, and evaluation of nearby areas for similar preserved examples. For Site 2489, this level of additional work should be sufficient to determine whether or not Feature B contains human remains. If the presence of

human remains is confirmed, the developer will seek a determination from the Maui/Lana'i Islands Burial Council whether to preserve or relocate the burials.

It should be noted that the above evaluations and recommendations are based on the findings of a surface inventory survey only. Thus, there is always the possibility, however remote, that potentially significant unidentified cultural remains might be encountered in the course of future development activities involving the modification of the ground surface. In such a situation, archaeological consultation should be sought immediately.

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# ***Appendix C-1***

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***Additional Field Survey,  
February 1992***

**PHRI****Paul H. Rosendahl, Ph.D., Inc.***Archaeological • Historical • Cultural Resource Management Studies & Services*305 Mohoull Street • Hilo, Hawaii 96720 • (808) 969-1763 • FAX (808) 961-6998  
P.O. Box 23305 • G. M. F., Guam 96921 • (671) 472-3117 • FAX (671) 472-3131

Report 1064-020592

February 4, 1992

Mr. Michael T. Munekiyo  
Michael T. Munekiyo Consulting, Inc.  
2035 Main Street  
Wailuku, Hawaii 96793

*Subject: Additional Field Survey, Lahaina Bypass Section, Modified Corridor Alignment  
Honoapiilani Highway Realignment Project  
Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia,  
Halakaa, Puehuhunui, Pahoe, Polanui, and Launiupoko,  
Lahaina District, Island of Maui*

Dear Mr. Munekiyo:

As you know, PHRI completed an archaeological inventory survey for the above project and submitted to you a final project report in August of 1991 (Jensen 1991) (PHRI Project 91-1064). The survey involved examining a proposed highway realignment corridor about seven miles long. The basic objective of the survey was to provide information sufficient for the preparation of a Supplemental Environmental Impact Statement (EIS) to be submitted to the State Land Use Commission. Prior to the inventory survey, Chiniago, Inc. had conducted a reconnaissance survey of a portion of the corridor for an Environmental Impact Statement (EIS) (Barrera 1986).

During the PHRI inventory survey four archaeological sites comprised of 28+ component features were identified within or immediately adjacent to the study corridor (*Figure 1, attached*). Of the four sites, three had been initially identified during the previous inventory survey (SIHP Sites 2484, 2489, and 2490; the newly identified site was 2847). Six other sites were identified adjacent to the project area. Five of the six sites had been previously recorded by PHRI in conjunction with either the HFDC or North/South Beach Mauka projects (Jensen 1989a,b). The remaining site appears to have been identified during a 1990 survey of the first proposed alignment for the present road realignment project (the site was tagged in the field as "ACH, 10-17-90"; see Jensen 1991:p.24).

Recently, the State decided to slightly modify the southern end of the project corridor (*Figure 1*). The modification involves shortening the overall route by linking the proposed new road with the existing highway at a point a short distance south of Puamana Park, rather than farther south in the vicinity of Launiupoko Point. This route linking the two roads was examined by Chiniago during the early reconnaissance survey, but since PHRI did not examine the route during the inventory survey, you requested that it be examined and that the sugarcane fields in the area be spot-checked. In the case of negative findings, a brief letter report was to be prepared. In the event that one or more cultural resources were encountered, the original inventory survey report was to be modified.

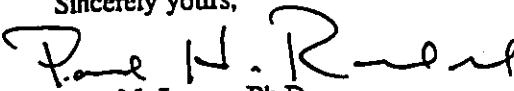
A pedestrian survey was conducted along the new route, which is about 3,000 ft-long by 200+ ft wide. The survey was conducted by myself and Field Archaeologist Jennifer O'Claray on January 28, 1992. We were assisted by Mr. Lambert Yamashita, who identified the new route in the field. The centerline of the route was flagged with tape recently placed by engineers.

All of the new route, except for a small portion, consists of extensively modified sugarcane fields. The small portion is located where the new route departs from the original inventory survey corridor—it consists of a shallow, narrow, boulder-strewn, gulch-like area. During the Barrera (1986) reconnaissance survey no cultural resources were found in this area.

During the current survey no significant cultural resources of any kind were observed anywhere along the entire new route, including the gulch-like area, or adjacent to the route, in the sugarcane fields. Due to these negative findings, no further archaeological work is recommended for the project area.

If you have any questions, please don't hesitate to contact me.

Sincerely yours,

*for*   
Peter M. Jensen, Ph.D.  
Associate Senior Archaeologist

PMJ/mh

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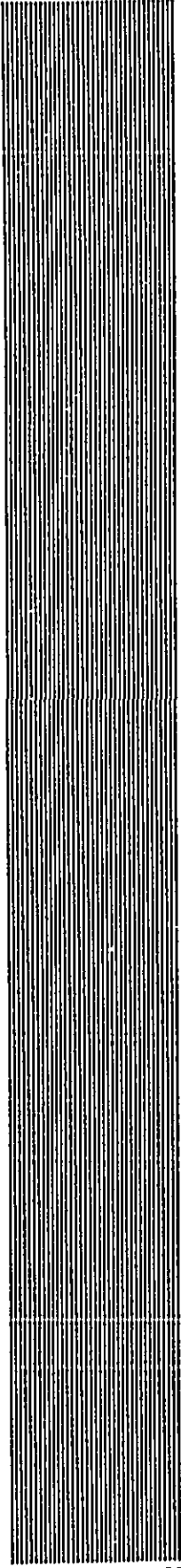
# ***Appendix C-2***

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***Archaeological Inventory Survey -  
Connector Roads, January 1994***

**DRAFT**

Report 1440-122593



**Archaeological Inventory Survey  
Lahaina Bypass Highway New  
Connector Roads Project Area**

Lands of Hanakao and Paunau  
Lahaina District, Island of Maui

**PHRI**

**Paul H. Rosendahl, Ph.D., Inc.**

*Archaeological • Historical • Cultural Resource Management Studies & Services*

**DRAFT**

Report 1440-122593

**Archaeological Inventory Survey  
Lahaina Bypass Highway New  
Connector Roads Project Area**

Lands of Hanakao and Paunau  
Lahaina District, Island of Maui

*BY*

*Peter M. Jensen, Ph.D. • Associate Senior Archaeologist*

*PREPARED FOR*

*Aufac/JMB Hawaii, Inc.  
c/o Michael T. Munekiyo Consulting, Inc.  
1823 Wells Street, Suite 3  
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*JANUARY 1994*

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**PHRI** Paul H. Rosendahl, Ph.D., Inc.  
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## SUMMARY

At the request of Mr. Michael T. Munekiyo of Michael T. Munekiyo Consulting, Inc., on behalf of their client Amfac/JMB Hawaii, Inc., Paul H. Rosendahl, Ph.D., Inc. (PHRI) recently conducted an archaeological inventory survey of the proposed Lahaina Bypass Highway New Connector Roads project area, situated in the Lands of Hanakaoo and Paunau, Lahaina District, Island of Maui. The project area comprises two 300 ft-wide corridors—the proposed Kaanapali Connector Road and the proposed Dickenson Street Connector Road. The proposed Kaanapali Connector Road consists of a corridor c. 5,500 feet long, while the proposed Dickenson Street Connector Road is a corridor c. 3,000 feet long.

The basic objective of the survey was to provide information sufficient to satisfy the historic preservation regulatory review requirements of the Maui County Planning Department (MCPD) and the Department of Land and Natural Resources - State Historic Preservation Division (DLNR-SHPD).

The present survey field work was conducted December 6-8, 1993, under the overall supervision of Associate Senior Archaeologist Dr. Peter M. Jensen, and under the direct field supervision of Crew Chief Michael Fager, B.A. The survey included a pedestrian field survey and backhoe trenching. The trenching was undertaken within the lower portion of the Kaanapali Connector Road corridor and was deemed appropriate in view of the proximity of the west end of the corridor to a known cemetery (Hanakaoo Cemetery) located adjacent to the west side of Honoapiilani Highway.

No significant cultural materials were identified during the field work. These negative findings have been attributed primarily to the extensive disturbance to which all of the project area has been subjected. In view of the negative findings, it is concluded that the proposed connector road construction project will not affect significant or potentially significant archaeological or historic properties, and no further treatment or consideration of cultural resources is recommended.

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## INTRODUCTION

### BACKGROUND

At the request of Mr. Michael T. Munekiyo of Michael T. Munekiyo Consulting, Inc., on behalf of their client Amfac/JMB Hawaii, Inc., Paul H. Rosendahl, Ph.D., Inc. (PHRI) recently conducted an archaeological inventory survey of the proposed Lahaina Bypass Highway New Connector Roads project area, situated in the Lands of Hanakao and Paunau, Lahaina District, Island of Maui. The project area comprises two 300 ft-wide corridors—the proposed Kaanapali Connector Road and the proposed Dickenson Street Connector Road. The proposed Kaanapali Connector Road is a corridor c. 5,500 feet long, while the proposed Dickenson Street Connector Road is a corridor c. 3,000 feet long.

The basic objective of the survey was to provide information sufficient to satisfy all current historic preservation requirements of the Maui County Planning Department (MCPD) and the Department of Land and Natural Resources - State Historic Preservation Division (DLNR-SHPD).

The present survey work was conducted December 6-8, 1993, under the overall supervision of Associate Senior Archaeologist Dr. Peter M. Jensen, and under the direct field supervision of Crew Chief Michael Fager, B.A. The field work consisted of a pedestrian field survey and backhoe trenching. The backhoe trenching was undertaken within the lower portion of the Kaanapali Connector Road corridor. The trenching in this area was deemed appropriate in view of the proximity of the west end of the corridor to a known cemetery — Hanakao Cemetery, which is located adjacent to the west side of Honoapiilani Highway, a short distance north of the connector road's intersection with the highway. Approximately 48 labor-hours were expended conducting the inventory survey field work.

The present report represents the final report for this project. The Introduction includes a scope of work, a description of the project area, a review of previous archaeological and historical documentary investigations within the Lahaina and Kaanapali areas, and a discussion of the field methods and procedures utilized. The report continues with a discussion of findings, and then concludes with final project recommendations.

### SCOPE OF WORK

The basic purpose of the inventory survey was to identify — to discover and locate on available maps — any sites and features of potential archaeological significance which might be present within or immediately adjacent to the project area. An inventory survey is an initial level of archaeological investigation. It is extensive rather than intensive in scope, and is conducted basically to determine the presence or absence of archaeological resources. A survey of this type indicates both the general nature and variety of archaeological remains present, and the general distribution and density of such remains. It permits a general significance assessment of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for any subsequent mitigation work that might be necessary or

appropriate. Such mitigation work could include further data collection involving detailed recording of sites and features, and limited excavations. Such work could also involve subsequent data recovery research excavations, construction monitoring, interpretive planning and development, and/or preservation of sites and features with significant scientific research potential, interpretive qualities, and/or cultural values.

In consideration of the above, the basic objectives of the present survey were fourfold: (a) to identify (find and locate) all sites and site complexes present within the project area; (b) to evaluate the potential general significance of all identified archaeological remains; (c) to determine the possible impacts of proposed development upon the identified remains; and (d) to define the general scope of any subsequent further data collection and/or other mitigation work that might be necessary or appropriate.

Based on a review of readily available background literature, basic familiarity with the general project area, PHRI's extensive familiarity with the current requirements of review authorities, and based on discussions with Mr. Michael T. Munekiyo, the following specific tasks were determined to constitute an adequate scope of work for the survey:

1. Review archaeological and historical literature relevant to the project area, and conduct limited historical documentary research, with an emphasis on readily available literature and documentary sources. As well, conduct interviews with any appropriate and available local informant sources;
2. Conduct a 100% coverage, variable-intensity ground surface survey of the entire project area, in order to find and record (a) any previously identified sites and features, and (b) any previously unidentified sites and features;
3. Conduct limited subsurface testing by means of mechanical backhoe trenching near the western terminus of the Kaanapali Connector Road, in order to determine whether or not the Hanakaoo Cemetery extends southward into the project area corridor. As well, supplement this work with hand excavations, if appropriate, in order to (a) determine the presence or absence of potentially significant buried cultural features or deposits, and (b) obtain samples of portable remains (artifacts and/or midden) and materials suitable for dating; and
4. Analyze field and historical research data, and prepare appropriate reports.

The inventory survey was carried out in accordance with the standards for inventory-level survey recommended by DLNR-SHPD. Both DLNR-SHPD and the Maui County Planning Department utilize these guidelines for the review and evaluation of archaeological inventory survey reports submitted in conjunction with various development permit applications. The guidelines are also used by the State Land Use Commission and other agencies in evaluating boundary amendment and/or land-use change petitions.

In compliance with these standards and guidelines, the significance of all archaeological remains identified within the project area was to be assessed in terms of (a) the National

Register criteria contained in the Code of Federal Regulations (36 CFR Part 60), and (b) the criteria for evaluation of traditional cultural values prepared by the national Advisory Council on Historic Preservation. DLNR-SHPD and MCPD use these criteria to evaluate eligibility for both the Hawaii State Inventory of Historic Places (SIHP) and the U.S. National Register of Historic Places.

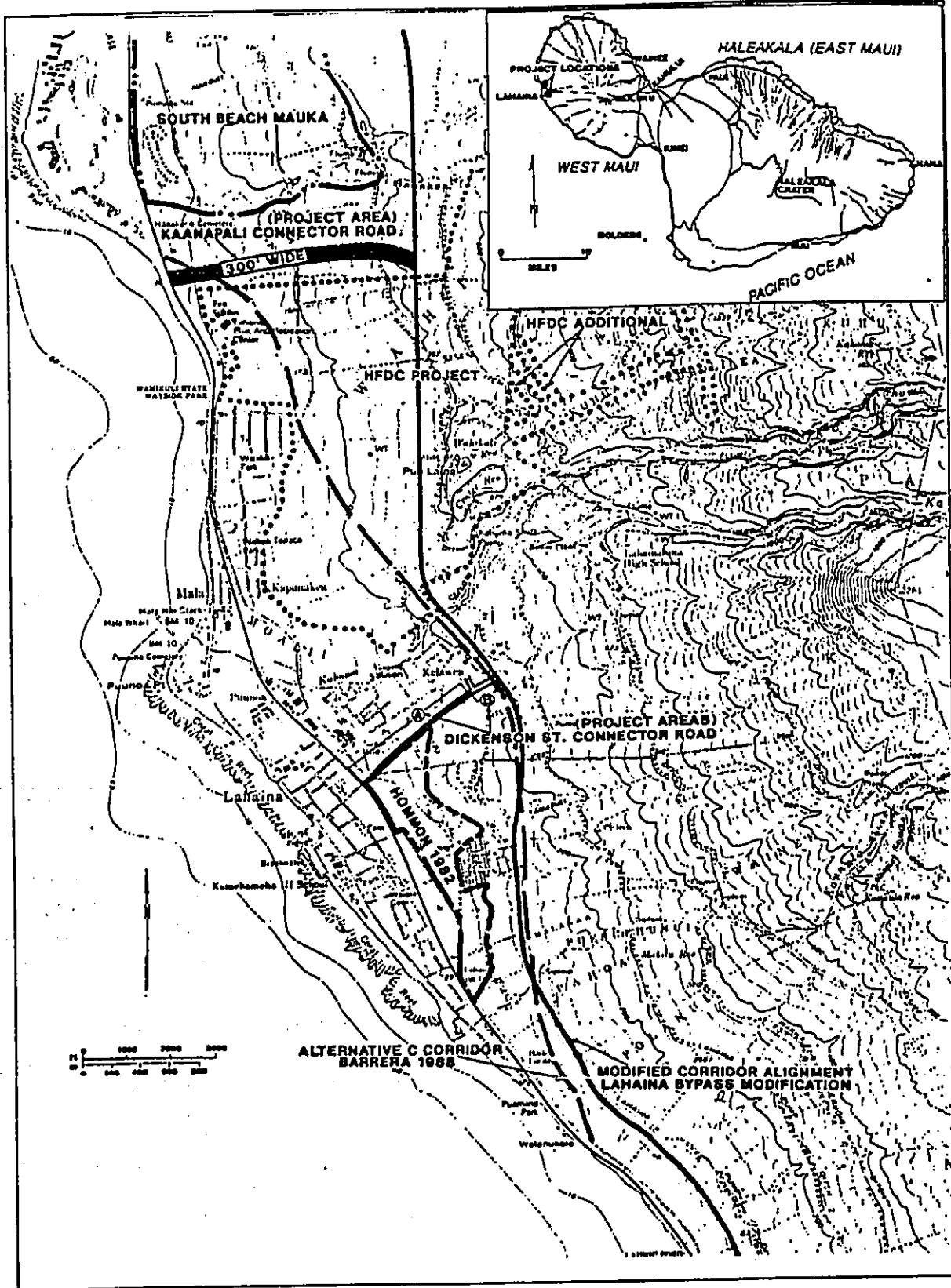
## PROJECT AREA DESCRIPTION

The project area consists of two corridors, each 300 feet wide. The northern corridor—Kaanapali Connector Road—is in the Land of Hanakao'o and will interconnect Lahaina Bypass Road with Honoapiilani Highway at a point a short distance south of Hahakea Gulch. The second corridor—Dickenson Street Connector—is within the Land of Paunau and will interconnect Lahaina Bypass Road with Honoapiilani Highway at a point a short distance south of Kahoma Stream at Lahaina. The Kaanapali Connector Road is within TMK 4-4-6:1, while the Dickenson Street Connector is within TMK 4-6-18:3. According to County of Maui real property records, TMK 4-4-6:1 consists of 866.981 acres, and is owned by Pioneer Mill Co., Ltd. This parcel is presently leased to Railroads of Hawaii, Inc. TMK 4-6-18:3 consists of 1,183.500 acres and is owned by the B.P. Bishop Trust Estate, and is currently leased to Pioneer Mill Co., Ltd. There are no Land Commission awards in either parcel. The Kaanapali Connector is c. 5,500 feet long, while the Dickenson Street Connector is c. 3,000 feet long. Both corridors are shown in *Figure 1*, which also identifies the boundaries of additional parcels recently subjected to archaeological inventory survey work. These additional parcels and survey projects are discussed in the archaeological background section of the present report.

While both of the connector roads are located near named gulches, neither incorporates gulch lands. In other words, both parcels are located completely within lands which historically have been, and which continue to be, intensively cultivated and used for sugar cane or pineapple production. As a consequence, most of the cultural features which currently exist within these two areas relate to modern agricultural activity. Such features include graded access and major cane haul roads, major and minor irrigation ditches, irrigation reservoirs, small ponds and holding tanks, electrical distribution lines and power poles, and small storage buildings and other modern features. In addition, a section of the historic Pioneer Mill Railroad, in current use as a tourist attraction, parallels Honoapiilani Highway north of Lahaina town and proceeds across the extreme west end of the Kaanapali Connector Road corridor.

According to Foote et al. (1972:Sheet 93), the soil throughout most of the area near Lahaina consists of Molokai silty clay loam, 0-15% slopes. The beds and banks of nearby gulches contain rough, broken, and stony land. Occasional areas of Ewa silty clay loam are also present in the vicinity, although original soil distributions have been masked and blended over the years as a consequence of extensive cultivation.

Annual rainfall in the project area averages about 15-20 inches (Armstrong 1983:56). The available water supply, combined with the deep rich soils, was more than adequate to support dense stands of native vegetation in early historic and prehistoric times. However, the extensive agriculture in the area has removed virtually all of this cover, which has been largely replaced with sugar cane (*Saccharum officinarum* L.). Small pockets of relatively undisturbed terrain containing stands of native and introduced species comprise less than about 5% of lands within the general project vicinity and are restricted to the steep-sided, non-arable gulches associated with Hahakea Stream to the south of the Kaanapali Connector Road corridor, and to the upper reaches of Kahoma Stream, which is located north of the Dickenson Stream Connector Road corridor. That agricultural cultivation in the project area has involved deep plowing and extensive surface and subsurface modifications is confirmed by the presence of massive field-



clearing debris piles throughout the general project vicinity, particularly to the south in the vicinity of Puu Laina.

## **PREVIOUS ARCHAEOLOGICAL AND HISTORICAL DOCUMENTARY RESEARCH**

### **General Overview and Settlement Model**

In keeping with recent directives from DLNR-SHPD, and in compliance with existing DLNR-SHPD Draft Rules for preparation of inventory survey reports, the present archaeological background and historic documentary section focuses on prehistoric and proto-historic patterns of settlement and land use within the project area *ahupuaa*, with emphasis on the extent to which previous findings substantiate existing models of settlement and land use.

One point which should be emphasized, concerning the available background information, is the fact that a high percentage of sites in the Lahaina District generally, and Hanakaoo and adjacent *ahupua'a* in particular, have been lost to early historic and continuing agricultural activities. One consequence of this is that, to date, no studies have been attempted in which an *ahupua'a*-wide settlement model has been developed on the basis of a zonal study involving sites from coastal through upland zones. While some indirect information is available in the ethnographic and historic literature, to date it has not been possible to adequately test or evaluate this information on the basis of archaeological data. Due to the large-scale destruction of sites in this area, it may *never* be possible to achieve a level of understanding for Hanakaoo comparable to that which has been achieved at other less severely affected areas on Maui and elsewhere within the Hawaiian archipelago.

These problems aside, early historic references describe the Lahaina District as a rich agricultural oasis irrigated by aqueducts descending from well-watered valleys. This oasis extended "...about three leagues in length [roughly nine miles along the coast] and one [three miles] in its greatest breadth. Beyond this all is dry and barren" (Handy and Handy 1972:493). Cultivated crops included coconut, breadfruit, paper mulberry, banana, taro, sweet potato, sugar cane, and a variety of melons and gourds. According to one informant who had lived to see the reign of four Kamehamehas, these crops supported a dense population, which was reflected by the fact that a hut existed under every breadfruit tree (*ibid.*).

By the time of initial contact with European populations, Maui had become an important center of political and social development and had served as the residence of several powerful chiefs (Kirch 1985:134). One of the most notable of these was Kahekeli, the arch-enemy of Kamehameha. The Lahaina District in general was considered by high chiefs to be a favorable place, due to the abundance of natural resources, its proximity to the islands of Lanai and Molokai, and the equable climate (Handy and Handy 1972:492). In 1789, Kamehameha I invaded Maui and conquered the island at the Battle of Kepaniwai o Iao, at Wailuku. By 1795 Kamehameha I was firmly established on Maui, and by 1802 he had built a brick palace from which to administer the collection of taxes (Ashdown n.d.). Lahaina was the capital of the Hawaiian Kingdom from that time until 1850, when the capital was moved to Honolulu.

At contact, and just before, the chiefs, through their overseers, appear to have acquired extensive control over land and individuals living in the area. Although the construction of

literally hundreds of agricultural terraces and miles of irrigation channels would have been quite labor-intensive and would have required centralized control, Earl (1980) has argued that this may not always have been the case, and that these systems could have been constructed and maintained by small social groups. Data recently acquired from Launiupoko concerning the distribution of habitation-feature types within the upland zone south of Lahaina (Graves 1991) is inconclusive on this issue.

In any case, ethnohistoric and historic sources largely agree that east of Lahaina virtually all of the land between sea level and c. 700 ft elevation comprised a nearly continuous band of agricultural and related habitation features. Initial development of this field system is likely to have begun early in the Expansion Period, or between about AD 1200-1400 (Kirch 1985). The first features to be constructed may have served dryland farming, which may have been on a seasonal basis, with most of the activity occurring during the rainy winter months. Increasingly, however, water diversion and water distribution projects were undertaken. These changes eventually culminated in the ethnographically documented pattern in which intensive, irrigation-based farming associated with nearly year-round habitation (at least in certain areas) replaced the less intensive dryland system.

Zonal distribution of habitation and agricultural sites has not yet been documented for the Lahaina District. Eventually, this may be documented archaeologically, and this distribution may be generally similar to the pattern which has been documented in other leeward areas of the archipelago. That is, during the early Expansion Period (Kirch 1985), sites may have been differentially distributed in three broad zones paralleling the coast, with the highest density of habitation sites occurring along the coast and in the well-watered uplands, and with an intermediate zone relatively devoid of sites. Within the Lahaina District generally and Hanakao and Paunau in particular, however, the middle zone may not only have been compressed in terms of its width, but may have also merged more quickly with the upper zone. The reason for this is that the productive zone between the coastline and the West Maui Mountains at Lahaina is relatively narrow. Consequently, water redistribution systems might be expected to have rapidly and effectively erased distinctions between these areas, which were initially created by differences in natural water availability.

Concomitantly with these postulated changes in land use, one would expect additional changes in patterns of site composition and feature distribution. These changes would have accompanied evolution in Hawaiian social structure and organization which evolved from a lineage-based system to a highly stratified system of ranked classes linked by land units and residence; e.g., the *ahupua'a* pattern. This general model describing mid- to late-prehistoric through protohistoric changes in land use, social structure and political organization has already been documented at Palauea (Kirch 1971, cited in Kirch 1985:141) and Kahikinui in leeward East Maui (Chapman and Kirch 1979, cited in Kirch 1985:138), and elsewhere in the archipelago (cf. Cordy 1981).

Occupation and use of the project vicinity *before* the Expansion Period (Kirch 1985) is poorly documented. While the first Polynesian occupation of Maui may have been characterized by small, permanent, nucleated communities situated in favorable areas such as windward valleys, some minimal level of early prehistoric use of other environments obviously occurred. The interdependent elements suspected in the transformation of early Hawaiian culture into the complex system observed at the time of European contact include population increase, increasing efficiency in the technology and social organization of production, and the increasing consumption by competing elements of Hawaiian society and culture. Early in the

Expansion Period (Kirch 1985), one of the archipelago-wide responses to the changing socio-cultural-environmental equation included a deliberate expansion of population and exploitative activities into regions that previously had been only minimally utilized, primarily the upland and leeward coastal environments, as at Lahaina.

### **Specific Archaeological Findings Supporting Settlement Model**

Archaeological survey work began relatively early on Maui. Some of this early work has contributed directly to the general settlement and land-use model outlined above. Winslow Walker's Bishop Museum study (Walker, nd.) involved a partial assessment and inventory of larger sites and *heiau* around the island. Along the shoreline, a short distance south of Lahaina, Walker references information from Thrum concerning several *heiau* remnants (Walker's Sites 7, 8, 9, and 10). However, all of these features had been completely, or nearly completely destroyed by the time that Walker conducted his own survey field work. Walker also identified a *heiau* (Site 11) at Lahaina, north of Mala Wharf, which he described as "...a large *heiau* for human sacrifice...However, by 1930 only a ...few fragments of walls remain[ed]." Walker identified no additional sites, either along the coast or inland several miles north of Lahaina. Walker does not even mention the existence of the Alaloa (Long Road) through the present project area. Although major segments of this 16th century alignment remain intact elsewhere, according to Handy and Handy (1972:490-491), "...it was formerly clearly visible across the West Maui golf links, but was obliterated in the Lahaina area and beyond by the cultivation of cane and pineapple."

Some productive research was undertaken in east Maui during the 1960s (Soehren 1963, Pearson 1970), and Chapman's intensive survey and excavation work in Kahikinui, referenced above, contained island-wide implications for prehistoric patterns of settlement and land use (Chapman and Kirch 1979).

During the succeeding decade, and through the 1980s, West Maui began to receive more attention, as the pace of urbanization and resort development led to greater numbers of intensive, contracted survey and excavation projects. Proposed flood-control improvements for Kahoma Stream, located a short distance north of the Dickenson Connector Road corridor, was conducted on the south side of the stream during the 1970s (Connolly 1974, Hommon 1973, Ahlo and Morgenstein 1980). Development of the nearby Mala Wharf Boat Launch Ramp, at Lahaina, likewise, was accompanied by several archaeological studies, including those by Sinoto (1975), Davis (1974), and Hammatt (1978). The latter projects identified numerous human burials, principally historic, in the sand berm inland of Mala Wharf. Also identified, south of Kahoma Stream, was a historic earth oven, or *imu*, and a ditch which Hammatt (1978) believed may have connected the well-documented Alamihi Fishpond to Kahoma Stream to the north (cf. Joerger and Kaschko 1979).

Additional subsurface reconnaissance surveys were undertaken within the immediate vicinity of Alamihi Fishpond and Mala Wharf by PHRI. One of these projects (Haun 1988:16) was undertaken in January of 1988 and involved excavation of 19 backhoe trenches, recording of stratigraphic information, and evaluating subsurface soil components for the presence of cultural materials and features. The program yielded a total of 33 glass bottles, 24 of which were dated to the period just prior to and immediately following the turn of the century (Haun 1988:16). In addition, volcanic glass and radiocarbon age determinations indicated prehistoric use and occupation of the area between AD 1260 and 1640 (Haun 1988:17).

Further inland at Lahaina, additional cultural resources have recently been relocated along Kahoma Stream, east of the present project corridor, along Dickenson Road. Originally recorded in April of 1974, SIHP Site 1203, known as the Kahoma Complex and consisting of 38 petroglyphs and a rockshelter, was relocated by Barrera in conjunction with his documentary research and field survey of Alternative C of the proposed Honoapiilani Highway realignment between Lahaina and Honokawai (Barrera 1989:9). In reexamining this previously recorded site, Barrera also discovered additional agricultural features, including at least three terraces and a possible irrigation ditch on the alluvial floodplain on the south side of Kahoma Stream. On the basis of his conclusion that the site probably retains significant information value, Barrera recommended that project effects be further evaluated in the event that the road is to be constructed through or close to these features. Following submission of Barrera's report, the State Historic Preservation Officer concluded that basic identification and evaluation of the resource had not been adequately completed, and additional recording and evaluative work was undertaken in 1989 (Jensen 1989a). Jensen concurred with Barrera's original evaluation, recommending data recovery if the site was to be affected.

As part of the same 1989 re-inspection of the Alternative C Road Corridor first surveyed by Barrera, PHRI completed an archaeological inventory survey of the 1,200-acre HFDC project area (Jensen 1989a). During this survey, 12 sites containing 44 component features were identified. Of these 12 sites, one (the Kahoma Complex, discussed above) had been previously identified and partially recorded (SIHP Site 1203), and the remaining 11 sites were newly identified. Feature types present included overhangs/caves, platforms, walled enclosures, petroglyphs, graves, agricultural terraces, and a single historic agricultural access road alignment. Tentatively identified functional types included habitation, agriculture (both prehistoric as well as historic), ceremonial/religious, probable burial, recreation, and some sites of indeterminate function. Although limited to undisturbed gulch lands, these findings support the information from historic sources — namely, that the lands above Lahaina and Kaanapali were extensively utilized during prehistoric and early historic periods.

South and inland of Lahaina, at Wahee Village townsite, Hommon (1982) surveyed several hundred acres in the early 1980s. No intact cultural resources were encountered during the project. More recently, southeast of Wahee Village, PHRI completed archaeological inventory survey work in conjunction with the proposed Launiupoko Golf Course (Graves 1991). During the aerial and pedestrian survey of the 440-acre Launiupoko project area, 47 sites containing 70+ component features were identified. The features included terraces, clearing piles, agricultural plots, rock piles, canals, retaining walls, flumes, a flaked boulder, alignments, rock shelters, C-shapes, walls, uprights, L-shapes, petroglyph panels, coral items, fences, cairns, and roads. Functional types represented included agriculture, animal husbandry, habitation, temporary habitation, and markers. The findings at Launiupoko also confirm that the ethnographically and historically documented pattern of land use and settlement, described above, existed within this area south of Lahaina, and that in areas less heavily affected by agriculture, numerous archaeological sites, containing a wide range of formal and functional feature types, are likely to be present. In general, the Launiupoko inventory survey data document that agricultural features are the most common functional type in this area and that they occur in very high density.

Just north of the present project's Kaanapali Connector Road corridor, a large block of land (the North and South Beach Mauka project areas) was subjected to inventory survey with strikingly different results than those obtained at Launiupoko. During his initial survey of the North Beach Mauka and South Beach Mauka project areas (involving c. 240 acres), Hommon (1982) identified only three sites, including a single agricultural complex and two short wall-



segments. A subsequent re-survey of portions of these same lands failed to identify more significant or a higher density of resources than previously identified along the gulches in this area (Jensen 1989a). Hommon's findings in the North and South Beach Project area, and the subsequent re-evaluation of slightly re-defined parcels (Jensen 1989a), clearly highlighted the extensive surface disturbance to which much of West Maui has been subjected by both resort development as well as historic and contemporary agriculture.

Despite the disturbance to sites in leeward West Maui generally, monitoring of construction work along the beachfront at the site of the Kaanapali Alii Condominiums did confirm the presence of prehistoric burials (Dobyns and Allen-Wheeler 1982), a discovery which later resulted in recommendations of monitoring for other such coastal development areas. In addition to this work, the Archaeological Research Center of Hawaii undertook intensive survey of several hundred acres in conjunction with the proposed realignment of the Honoapiilani Highway corridor through Kaanapali, between Honokawai and Alaeloa Ahupuaa (Griffin and Lovelace 1977). During this survey only four sites were encountered—two walls, a trail, and a small midden deposit. The latter feature was further evaluated and eventually yielded radiocarbon dates confirming occupation for several centuries prior to western contact.

Finally, in 1991-1992, PHRI conducted inventory survey work along the proposed route of the Honoapiilani Highway Realignment Bypass corridor (Jensen 1992). The 7.0 mile-long corridor originated at a point just north of Honokowai Point, and proceeded southward through the Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia, Halakaa, Puehuhunui, Paho, Polanui, and Launiupoki, terminating in Waiauukole, a short distance north of Launiupoko State Park. The corridor passed through several natural drainages, including Honokowai Gulch, Hahakea Gulch, and Kahoma Stream, but most of the corridor route was through lands extensively developed and intensively impacted by agriculture. During the corridor survey, four archaeological sites containing 28 component features were identified. Of the four sites, three had been identified and recorded in conjunction with previous inventory survey projects in the area. The remaining site was newly identified. The four sites were considered significant for information content and provisionally for cultural value; additional work was recommended for all four sites if they were to be impacted by proposed road construction work.

### **Historical Documentary Research Findings that Support Settlement Model**

As noted in the "General Overview and Settlement Model" subsection above, a considerable number of ethnohistoric and historic sources describe traditional Hawaiian and early historic uses and activities in the Lahaina area. A comprehensive review of this information, including Hawaiian myths and legends, place names, Land Commission Awards, map references, and other information, is contained in a recently completed overview (cf. Smith IN Jensen 1989b). For present purposes, information relevant to the general model of settlement and land use outlined above consists of the following select historical references.

There is no question that Lahaina was an important area in Hawaiian history. Many of the early accounts document the dense population in the area, as well as the extent to which all of the region around Lahaina had been developed for agriculture. One of the earliest accounts of Lahaina is given by Archibald Menzies, a surgeon with Captain Vancouver in 1793, who trekked through forests about three miles inland of the Lahaina shore:

Here our conductors importuned us to dine, and a pig being killed and got ready, together with yams and sweet potatoes, we partook of a hearty meal,

after which we continued our journey, and soon entered the verge of the woods where we observed the rugged banks of a large rivulet that came out of the chasm cultivated and watered with great neatness and industry. Even the shelving cliffs of rock were planted with esculent roots, banked in and watered by aqueducts from the rivulet with as much art as if their level had been taken by the most ingenious engineer. We could not indeed but admire the laudable ingenuity of these people in cultivating their soil with so much economy. The indefatigable labor in making these little fields in so rugged a situation, the care and industry with which they were transplanted, watered and kept in order, surpassed anything of the kind we had ever seen before. It showed in a conspicuous manner the ingenuity of the inhabitants in modifying their husbandry to different situations of soil and exposure, and it was with no small degree of pleasure we here beheld their labor rewarded with productive crops.

March 17. On the forenoon of the 17th, I accompanied Captain Vancouver and a party of officers, with the two Niihau women, to see the village of Lahaina, which we found scattered along shore on a low tract of land that was neatly divided into little fields and laid out in the highest state of cultivation and improvement by being planted in the most regular manner with the different esculent roots and useful vegetables of the country, and watered at pleasure by aqueducts that ran here and there along the banks intersecting the fields, and in this manner branching through the greater part of the plantation.

These little fields were transplanted in a variety of forms, some in rows, in squares, in clumps and others at random; some according to their nature were kept covered with water, while others were with equal care kept dry by gathering earth around them in little hills. In short, the whole plantation was cultivated with such studious care and artful industry as to occupy our minds and attention with a constant gaze of admiration during a long walk through it, in which we were accompanied by a numerous group of natives that continued very orderly and peaceful the whole time (Menzius 1920:105-112).

Thirty years later, in 1823, Reverend William Ellis visited Lahaina and wrote:

At day-break, on the 4th, we found ourselves within about four miles of Lahaina, which is the principal district in Maui, on account of its being the general residence of the chiefs, and the common resort of ships that touch at the island for refreshments. A dead calm prevailed, but by means of two large sweeps or oars, each worked by four men, we reached the roads, and anchored at 6 a.m.

The level land of the whole district, for about three miles, is one continued garden, laid out in beds of taro, potatoes, yams, sugar-cane, or cloth plants. The lowly cottage of the farmer is seen peeping through the leaves of the luxuriant plantain and banana tree, and in every direction white columns of smoke ascend, curling up among the wide-spreading branches of the bread-fruit tree.

The sloping hills immediately behind, and the lofty mountains in the interior, clothed with verdure to their very summits, intersected by deep and dark

ravines, frequently enlivened by glittering waterfalls, or divided by winding valleys, terminate the delightful prospect (Ellis 1963:42).

Handy and Handy (1972) present an account by Arago, who visited Lahaina in 1823:

The environs of Lahaina are like a garden. It would be difficult to find a soil more fertile, or a people who can turn it to greater advantage; little pathways sufficiently raised, and kept in excellent condition, serve as communications between the different estates. These are frequently divided by trenches, through which a fresh and limpid stream flows tranquilly, giving life to the plantations, the sole riches of the country. Hollow squares of the depth of two, three, and sometimes four feet, nourish various sorts of vegetables and plants; amongst which we distinguish the Caribee-cabbage, named here taro; double rows of banana, bread-fruit, cocoa-nut, palma-christi, and the paper-mulberry trees, intercept the rays of the sun, and allow you to walk at mid-day. Every cabin has its enclosure, and every enclosure is well taken care of; it seems to suffice for the wants of the family. Here the father turns the ground with his long staff of red or sandal wood; there, the son clears the soil of weeds, and prepares; farther off the mother is seated at the door of her hut, and weaves the stuff with which she clothes herself; whilst her youthful daughter, unencumbered with drapery, is seated by her side, and tempts you by her unsophisticated caresses.

By the late 1800's, most of Lahaina's populace, including the missionaries who had arrived around 1823, and the whalers whose presence peaked between about 1840 and 1860, had left for other areas of Hawaii. During this period, Lahaina became the focus of early sugar cane production and processing enterprises. In 1849, Judge A. W. Parsons operated a sugar mill at Lahaina. This mill, along with 1,000 acres of land, was sold to O. H. Gulick at auction. Henry Dickenson, a Lahaina store owner, began a plantation in 1859, and the success of his Lahaina Sugar Company encouraged the establishment the following year of a second plantation, Pioneer Mill Company. It was founded by three partners: James Campbell, Henry Turton, and James Dunbar, on lands deeded to them by Benjamin Pittman. In 1863, Lahaina Sugar Company went bankrupt and sold out to Pioneer Mill Company (Conde 1973:252). Another plantation, formed in 1870 by Lot Kamehameha and others, was also bought out by Pioneer Mill Company a few years later. The firm of Walker & Allen appears to have been the plantation agency in the early years, but in 1877 H. Hackfeld replaced them as agents (Conde 1973:252). An 1883 evaluation of plantations represented by H. Hackfeld lists Pioneer Mill Company assets at \$500,000 (Simpich 1974).

From its modest beginnings in 1862, Pioneer Mill eventually emerged as the largest sugar plantation in West Maui, creating jobs for many people. In 1882 the Mill started construction of a narrow gauge railroad to haul cane to the processing plant. Several track lines were constructed, including one that originated at the operations site, above Lahaina, and proceeded northward to Kaanapali and through the western end of the present project's Kaanapali Connector Road corridor.

In 1895, when the company was finally incorporated, Pioneer Mill began a period of rapid expansion and growth. During this same decade Henry P. Baldwin established Honolua Ranch. Interested in using his extensive West Maui lands for pineapple, Baldwin brought David T. Fleming to Honolua as the ranch manager. Fleming had been with the original Maui pineapple pioneers at Haiku and, within a few years, established pineapple as a commercial crop in West

Maui. Baldwin Packers, the fruit-packing branch of the new industry, opened a cannery in Lahaina in December 1919, which provided employment for many local residents.

Extensive field clearing and road construction was undertaken in conjunction with these sugar cane and pineapple plantation operations, beginning with the initial small operations around the middle of the 19th century, and continuing, with increasing mechanization and efficiency, through the first two or three decades of the 20th century. The clearing may have been responsible for the destruction of perhaps 75-80% or more of all cultural features that once existed in the Lahaina area.

Sugar cane and pineapple sustained Lahaina economically until the sugar industry began mechanizing its field labor. The pineapple cannery at Lahaina finally closed down in the early 1960s, forcing many residents to leave the town and the surrounding villages for other parts of Hawaii. During this same period, however, American Factors, the owner of Pioneer Mill Company, had begun developing an 800-acre site as a resort complex called Kaanapali. By early 1963, two hotels, the Royal Lahaina and the Sheraton Maui, were in operation. This development marked the beginning of a new period of expansion and commercial growth for Lahaina, which peaked during the 1970s.

### ***Implications of Previous Findings, in Regard to the Project Area***

The model of prehistoric settlement and land use generated from previous archaeological and historic documentary research suggests that a high density of significant archaeological sites, of substantial variety, once existed within leeward West Maui in general, and the project area in particular. Based on available ethnohistoric sources, it seems reasonable to suggest that virtually *all* of the land east of Lahaina, between sea level and c. 600 to 700 ft elevation, contained a nearly continuous band of agricultural and related habitation features at the time of Western contact. Initial development of this field system is likely to have begun early in the Expansion Period (Kirch 1985) (i.e., AD 1200-1400) in support of seasonal dryland farming. Increasingly, however, water diversion and water distribution projects were undertaken in certain areas, eventually culminating in the ethnographically documented pattern of intensive, irrigation-based farming associated with nearly year-round habitation.

A zonal distribution of habitation and agricultural sites may have emerged during initial development of the system, and might be detectable archaeologically given sufficient levels of site preservation. The zonal concept suggests that archaeological sites may at one time have been differentially distributed in three broad zones paralleling the coast and conditioned by differences in available moisture. A high density of habitation sites would most likely have first appeared along the coast, then in the well-watered uplands, and finally within an intermediate zone, in direct response to the development of water redistribution systems. The construction of such systems would eventually have erased distinctions among these areas as irrigation eventually made it possible to intensively cultivate nearly all of the land between the coastline and the base of the West Maui mountains.

Concomitant with these postulated changes in land use, the model predicts changes in patterns of site composition and feature distribution in and around the project area. These changes, in turn, would have been accompanied by the emergence of a highly stratified class system in which social distinctions and allegiances were no longer based primarily on ties of

consanguinity, but rather by ties to particular land units and places of shared residence, e.g., the *ahupua'a* pattern. Expected corresponding changes in site composition would have included an increase in the number of permanently occupied features, and an increase in the range and density of feature types present in site clusters within upland zones.

Pre-Expansion Period occupation and use of the project vicinity remains poorly documented at present, although initial use of coastal environments by small populations, followed shortly by sporadic, special-purpose occupation within upper elevation zones, is most likely to have characterized the period between about AD 800-1200. In this context, small, temporarily occupied feature clusters (i.e., sites) would be expected to be composed primarily of simple surface habitation features, caves, and rockshelters.

For the present project area, there is virtually *no* direct corroboration for this model based on specific archaeological sites located within or immediately adjacent to the project area. Only a few small agricultural features have been previously recorded in the vicinity of the project area, along the margins of Kahoma Stream near the Dickenson Connector Road corridor and within and adjacent to Hahakea Gulch near the Kaanapali Connector Road corridor. One of the primary goals of the present undertaking was to attempt to add to the existing inventory of sites, and to attempt to locate datable deposits at any identified features. Such information is considered crucial for further evaluating the accuracy of the above model of regional culture history. However, given the absence of gulches, combined with the level of disturbance in the vicinities of both study corridors, there was only a low probability that intact sites and/or buried cultural deposits would actually be located during the present work.

## **SURVEY METHODS, RECORDING, AND EVALUATIVE PROCEDURES**

### **Pre-Field Map Work**

Prior to undertaking pedestrian survey, the project area and nearby lands previously subjected to inventory survey were plotted onto a quad map. Since the background work for the project had indicated that no sites had been discovered within or adjacent to the project area, it was not necessary to take into the field site records or site maps for previously identified sites.

### **Pedestrian Survey and Backhoe Trenching**

The pedestrian survey was conducted December 6-8, 1993 under the supervision of Crew Chief Michael Fager, B.A. This work involved walking transects across both project corridors at irregular intervals, with transects spaced at c. 100 meter intervals.

The backhoe trenching comprised excavating five trenches within the Kaanapali Connector Road corridor, within the lower limits of planted sugar cane, at a point c. 8-15 meters east of Honoapiilani Highway. A professional operator excavated the trenches in c. 20 cm increments under the direct supervision of the field archaeologists.

### **Recording and Hand Excavation of Cultural Deposits**

No prehistoric or historic-era sites or cultural deposits were encountered during the present project. Consequently, no further discussion of archaeological site recording methods, hand excavation techniques, or laboratory procedures is necessary.

## FINDINGS

### Pedestrian Survey Results

No significant cultural properties were encountered during the pedestrian survey of the two Connector Road corridors. These negative findings are attributed entirely to the extensive impacts to which these areas have been subjected. Both corridors are located within lands presently or previously devoted to sugar cane and pineapple production, and both have been extensively tilled and bulldozed over the past 60+ years. As well, construction of contemporary roads has also affected these areas, particularly the upper (eastern) portion of the Dickenson Street Connector corridor, and the lower (western) portion of the Kaanapali Connector route.

Following completion of the pedestrian survey, PHRI was informed that the lower portion of the Dickenson Street corridor had been eliminated from further consideration by the Department of Transportation (memorandum dated 12/14/1993, from Michael T. Munikeyo Consulting, Inc., to Dr. Peter M. Jensen). This lower segment of the Dickenson corridor is identified in Figure 1 as Segment A. The findings regarding this area, however, are included in this report because the information may prove useful later for some other development project.

### Backhoe Trenching Results

Five, 0.8 meter-wide backhoe trenches were excavated within the Kaanapali Connector Road corridor, at the extreme western end of the corridor, between about 8 meters and 15 meters east of Honoapiilani Highway. *Figure 2* identifies the locations of the five trenches in relation to Honoapiilani Highway, existing sugar cane fields, and a datum located adjacent to the east edge of the highway (a nail marking the centerline of the proposed Connector Road corridor).

Excavation of the five trenches proceeded in c. 20 cm increments to depths ranging from 1.7 to 2.0 meters below ground surface. No native Hawaiian cultural materials were observed in any of the five trenches, including the backdirt piles. Specifically, no evidence was encountered which would suggest that the Honokaa Cemetery extends southward into this area.

Profiles of all five of the excavated trenches were drawn. The profile from the southwest face of Backhoe Trench 4 typifies the sequence of natural soil layers encountered within the five trenches, and is reproduced in *Figure 3*. Essentially, the sequence of layers consists of an initial layer (Layer I) of silty clay loam extending to c. 50-70 cm below the surface, followed by a similar layer (Layer II) containing less loam, which typically extends to about 1.0-1.10 meters below the surface. These initial two layers overlie a mottled reddish clay, rocky silty clay which extends to about 1.6 meters below the surface (Layer III), which in turn caps another mottled, gley component containing a higher percentage of decomposing pahoehoe rock which continues to at least 2.0 meters below the surface (Layer IV). No evidence of secondary deposition of soil components was observed, as no intrusive contemporary artifacts were recovered and the layering of soil components, as revealed within the trench profiles, is essentially horizontal.

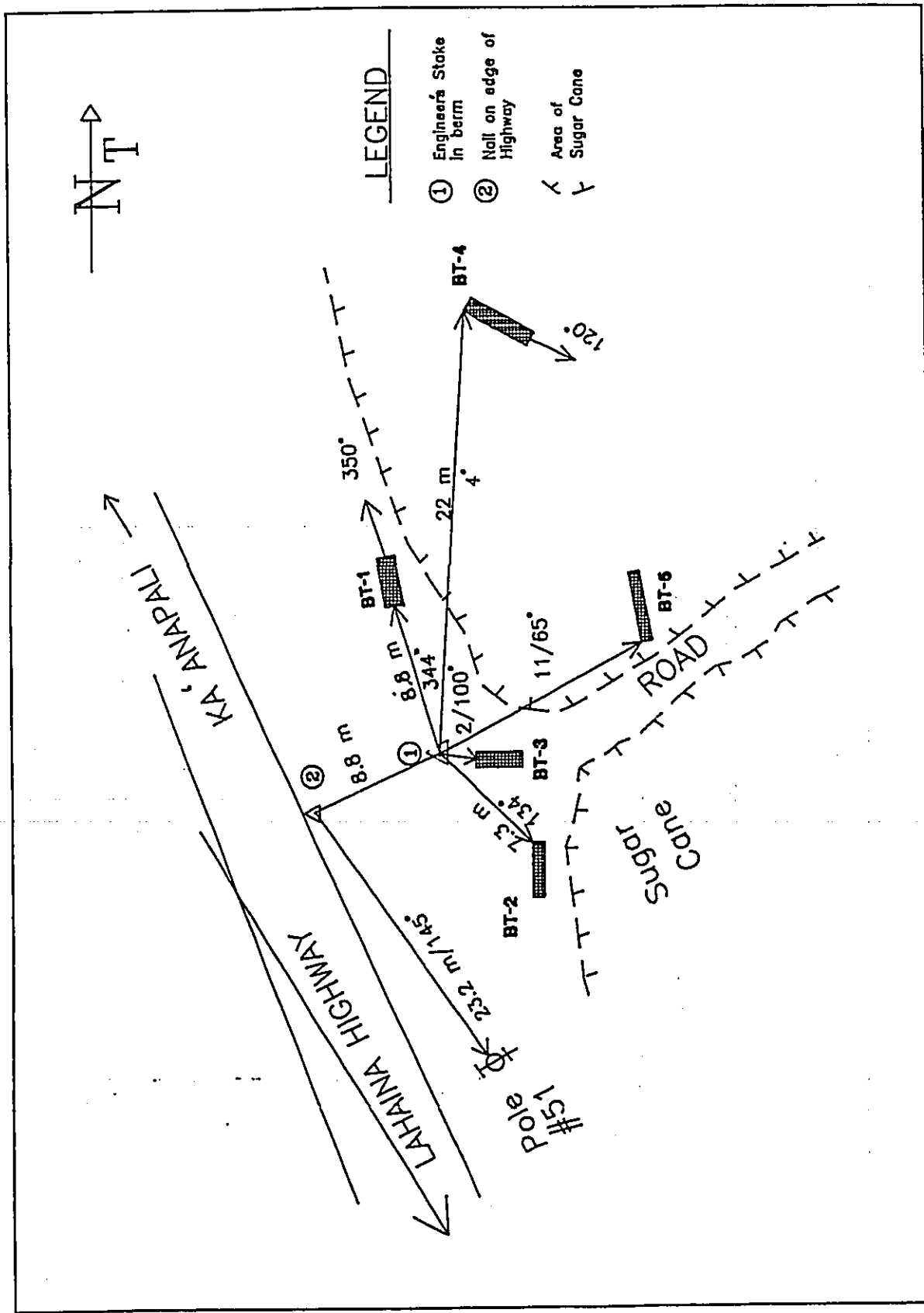


Figure 2. Backhoe Trench Locations

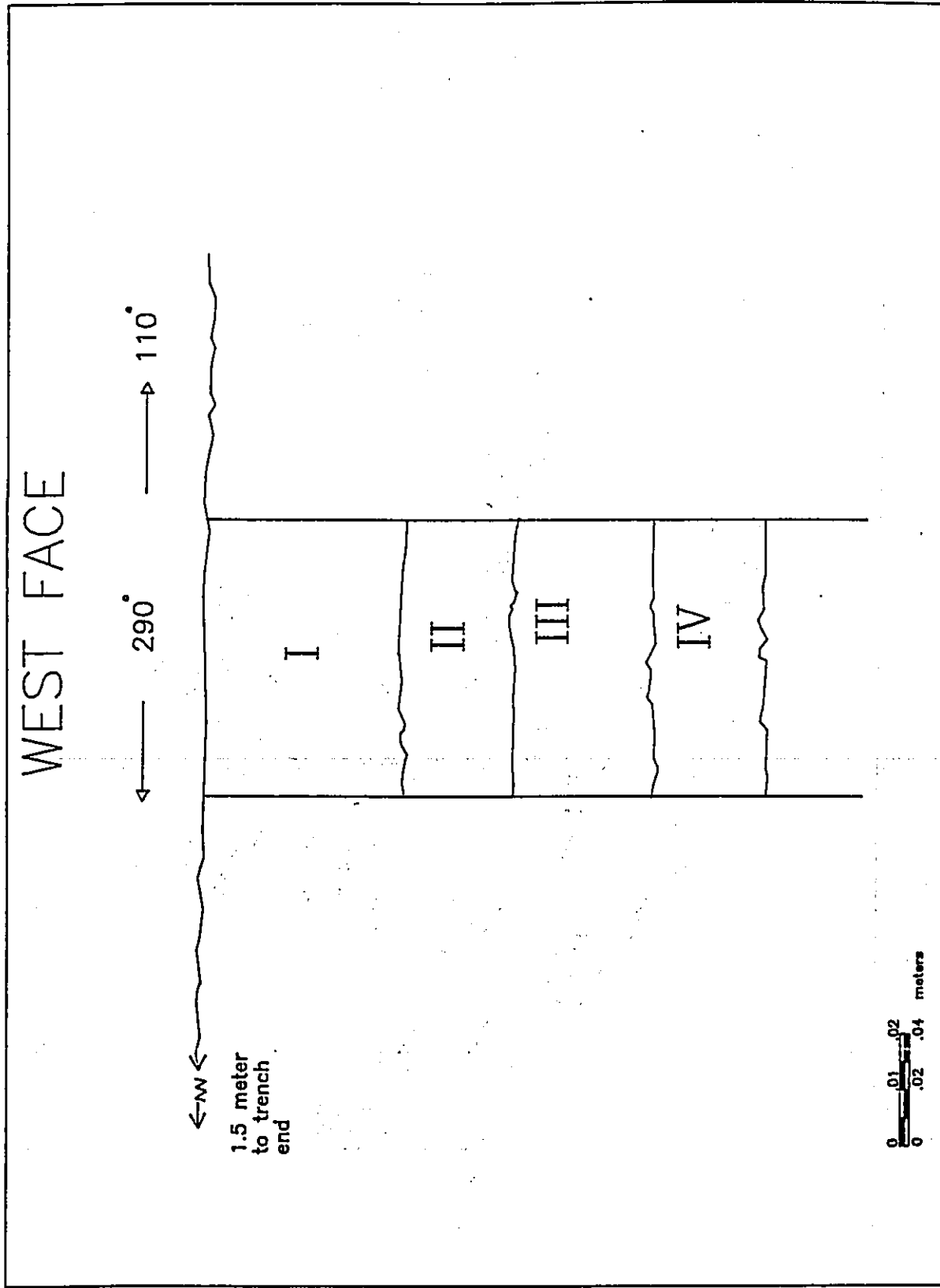


Figure 3. Profile of BT-1



## CONCLUSION

The present project failed to identify any evidence of prehistoric or historic occupation within the proposed Connector Road corridors. This is probably due to the extensive modifications that have taken place in the area. Previous archaeological and historical research clearly suggests that Lahaina has been extensively impacted by agriculture and other development, and that the modifications destroyed numerous archaeological and other cultural features.

In view of the negative findings in the project area, no further archaeological work is recommended, with the following general provision: the above findings and project recommendations are based on the findings of a surface inventory survey and limited subsurface evaluation along one of the proposed new road corridors. There is always the possibility, however remote, that potentially significant unidentified cultural remains might be encountered in the course of future development activities. In such a situation, archaeological consultation should be sought immediately.

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# ***Appendix C-3***

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***Historic Preservation Review -  
Modified Corridor Alignment,  
December 1992***

JOHN WADSWORTH  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

December 22, 1992

WILLIAM W. PATY, CHAIRPERSON  
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LOG NO.: 7126  
DOC NO.: 9212AG52

Ms. Chris ~~Naito~~  
Paul H. Rosendahl, Inc.  
305 Mohouli Street  
Hilo, Hawaii 96720

Dear Ms. ~~Naito~~:

SUBJECT: Historic Preservation Review of an  
Archaeological Report  
Lahaina, Maui

This is in response to your inquiry as to the status of the report entitled Archaeological Inventory Survey, Honoapiilani Highway Realignment Project, Lahaina Bypass Section - Modified Corridor Alignment (Jensen 1991). We apologize for this delayed response.

The revised copy of this report has been found acceptable. The few minor editorial changes that were recommended in our January 29, 1992, letter have been made.

Please call Ms. Annie Griffin at 587-0013 if you have any questions.

Sincerely,

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

DON HIBBARD, Administrator  
State Historic Preservation Division

AG:aal

# **Appendix C-4**

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***Historic Preservation Review -  
Connector Roads, March 1994***





STATE OF HAWAII

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March 3, 1994

LOG NO: 10704  
DOCNO: 9402KD28

Mr. Alan T. Walker  
Projects Director  
Paul H. Rosendahl, Ph.D., Inc.  
305 Mohouli Street  
Hilo, Hawaii 96720

Dear Mr. Walker:

SUBJECT: Historic Preservation Review of an Archaeological Report,  
Lahaina Bypass Connector Roads,  
Hanakao'o and Paunau, Lahaina, Maui

Thank you for submitting the report entitled *Archaeological Inventory Survey, Lahaina Bypass Highway New Connector Roads Project Area, Lands of Hanakao'o and Paunau, Lahaina District, Island of Maui (Jensen 1994)*.

The report presents the findings of surface survey with limited subsurface testing along two proposed road corridors, 300 feet wide and 3,000 to 5,500 feet long. The roads are to connect a proposed bypass highway with the existing Honoapiilani Highway.

It appears that the corridors were adequately covered, and that if historic sites were present within the project area they would have been identified. No historic sites were identified during the survey.

We concur with the conclusion that historic sites are not present in the project area due to recent historic and modern land use (i.e., intensive sugar cane cultivation), rather than an absence of precontact and/or early historic period traditional land use. The background research presented in this report is excellent, and provides a sound basis for the above conclusion. The report is certainly a contribution to the prehistory of the Lahaina District, even though no sites were identified.

Mr. Alan Walker  
Page 2

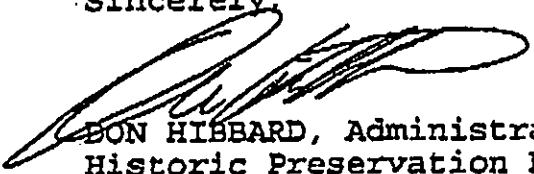
We have two minor comments:

Please provide a listing of the TMK parcels that are within the surveyed corridors. This information should be available from the client (Michael T, Munekiyo).

A brief discussion of Land Commission Awards is provided on page 9 of the report, however, there is no specific information regarding the presence or absence of LCA within the surveyed corridors. If LCA are present within the project area, the location and a description of the Awards should be included in the report.

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

Sincerely,



DON HIBBARD, Administrator  
Historic Preservation Division

KD:jen

# ***Appendix C-5***

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***Historic Preservation Review -  
Additional Field Survey,  
October 1994***

JOHN WAHEE  
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

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WATER AND LAND DEVELOPMENT

October 6, 1994

Dr. Paul H. Rosendahl  
Paul H. Rosendahl, Ph.D., Inc.  
305 Mohouli Street  
Hilo, Hawaii 96720

LOG NO: 12728 ✓  
DOC NO: 9409KD32

Dear Dr. Rosendahl:

**SUBJECT: Historic Preservation Review of an Archaeological  
Addendum Report - Modified Lahaina Bypass Corridor  
Pahoe and Polanui, Lahaina District, Island of Maui  
TMK: 4-7-01, 02**

Thank you for submitting a copy of the revised letter to Munekiyo & Arakawa (February 4, 1992) regarding additional field survey of the modified corridor alignment, Lahaina Bypass.

The addendum report is now acceptable and will be entered in the Maui research library as Report M-481.

Please contact Ms. Theresa K. Donham at 243-5169 if you have any questions.

Sincerely,

DON HIBBARD, Administrator  
State Historic Preservation Division

KD:jen

c: Glen Tadaki, Munekiyo & Arakawa, Inc.

# ***Appendix C-6***

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***Proposed Change in Form of  
Mitigation for Site 2847, April 1994***

**PHRI**

**Paul H. Rosendahl, Ph.D., Inc.**

*Archaeological • Historical • Cultural Resource Management Studies & Services*

305 Mohouli Street • Hilo, Hawaii 96720 • (808) 969-1763 • FAX (808) 961-6998  
P.O. Box 23305 • G. M. F., Guam 96921 • (671) 472-3117 • FAX (671) 472-3131

Letter 1487-042194

April 21, 1994

Dr. Don Hibbard, Administrator  
Department of Land and Natural Resources  
State Historic Preservation Division  
33 South King Street, 6th Floor  
Honolulu, Hawaii 96813

Attention: Dr. Ross Cordy

Subject: Proposed Change in Form of Mitigation for Site 2847  
Lahaina Bypass Highway Project  
Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia,  
Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko  
Lahaina District, Island of Maui

Dear Dr. Hibbard:

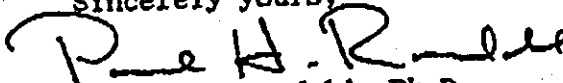
On behalf of Munekiyo & Arakawa, Inc., and their clients, Amfac/JMB Hawaii, Inc., and the State Department of Transportation (DOT), Paul H. Rosendahl, Ph.D., Inc. (PHRI) requests that the mitigation treatment for Site 2847 be changed from data recovery to preservation and avoidance.

Site 2847 was initially identified within the proposed Lahaina Bypass Highway during an inventory survey conducted by PHRI (Jensen 1991). The site was determined to be significant only for information content and was recommended for data recovery (Jensen 1991). The Department of Land and Natural Resources-State Historic Preservation Division/Historic Preservation Office (DLNR-SHPD/HPO) subsequently concurred with the significance evaluation and recommendation for Site 2847 presented in Jensen (1991) (letter of January 29, 1992 from Dr. Don Hibbard, Administrator, DLNR-SHPD/HPO, to Mr. Alan T. Walker, PHRI and letter of December 22, 1992 from Dr. Hibbard, DLNR-SHPD/HPO, to Ms. Chris Naito, PHRI).

Subsequently, the proposed Lahaina Bypass Highway corridor was realigned and it is now approximately 15.0 m (50 ft) west of Site 2847 (Attachment 1). It is recommended that orange protective fencing be placed between the site and the highway corridor, and that a formal archaeological monitoring plan be prepared to ensure that the project would have no adverse effect on Site 2847.

If the orange fencing is installed, and the monitoring plan is implemented, construction of the Lahaina Bypass Highway project would have no adverse effect on Site 2847. If you have any questions or comments, please contact me at our main Hilo office (808) 969-1763.

Sincerely yours,



Paul H. Rosendahl, Ph.D.  
President and Principal  
Archaeologist

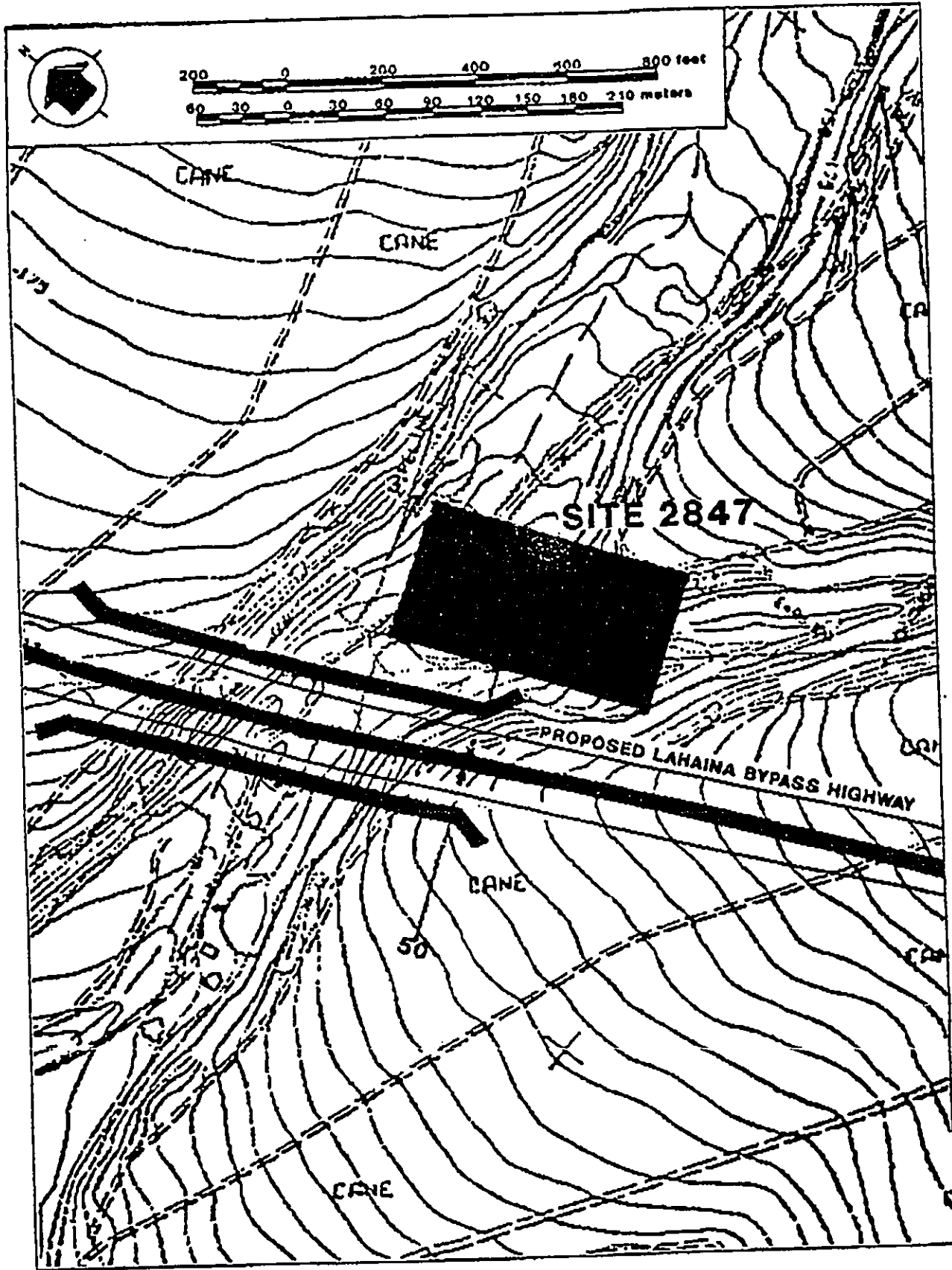
Attachments: 1. Site 2847 Location Map

Reference Cited

Jensen, P.M.

- 1991 Archaeological Inventory Survey, Honoapiilani Highway Realignment Project, Lahaina Bypass Section - Modified Corridor Alignment, Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia, Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko, Lahaina District, Island of Maui. PHRI Report 1064-022092. Prepared for Michael T. Munekiyo Consulting, Inc.

ATTACHMENT 1





# ***Appendix C-7***

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***Historic Preservation Response -  
Proposed Change in Form of  
Mitigation for Site 2847, June 1994***

JOHN WAIHEE  
GOVERNOR OF HAWAII



9-1487  
KETH AHUE, CHAIRPERSON  
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JOHN P. KEPPELER II  
DONA L. HANAIKE

STATE OF HAWAII

FILE

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

ACULTURE 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

June 2, 1994

Paul Rosendahl  
PHRI  
305 Mohouli Street  
Hilo, Hawaii 96720

LOG NO: 11460  
DOC NO: 9406RC04

Dear Dr. Rosendahl:

**SUBJECT: Proposed Change in Form of Mitigation for Site 2847 -- Data Recovery to Preservation: Lahaina Bypass Highway Project  
Honokowai & Others, Lahaina, Maui**

Thank you for your letter of April 21, 1994, proposing that site 2847 be preserved instead of data recovered. We have no objections to your proposal.

Sincerely yours,

Don Hibbard, Administrator  
State Historic Preservation Division

RC:jen

RECEIVED JUN - 7 1994

# ***Appendix C-8***

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***Archaeological Treatment Plan  
for No Adverse Effect, April 1994***



Paul H. Rosendahl, Ph.D., Inc.

Archaeological • Historical • Cultural Resource Management Studies & Services

305 Mohouli Street • Hilo, Hawaii 96720 • (808) 969-1763 • FAX (808) 961-6998  
P.O. Box 23305 • G. M. F., Guam 96921 • (671) 472-3117 • FAX (671) 472-3131

Report 1487-031894

April 22, 1994

Dr. Don Hibbard, Administrator  
Department of Land and Natural Resources  
State Historic Preservation Division  
33 South King Street, 6th Floor  
Honolulu, Hawaii 96813

Attention: Dr. Ross Cordy

Subject: Archaeological Treatment Plan  
for No Adverse Effect  
Lahaina Bypass Highway Project  
Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia,  
Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko  
Lahaina District, Island of Maui

Dear Dr. Hibbard:

At the request of Munekiyo & Arakawa, Inc., for their clients, Amfac/JMB Hawaii, Inc., and the State Department of Transportation (DOT), Paul H. Rosendahl, Ph.D., Inc. (PHRI) has prepared the following treatment plan to guide further archaeological work and ensure that the Lahaina Bypass Highway project would have no adverse effect on State Inventory of Historic Places (SIHP) Sites 50-50-03-2484, -2485, -2487, -2489, -2490, -2491, -2847, and Puukolii Cemetery.

The purpose of the treatment plan would be to accomplish, to the appropriate standards, all remaining archaeological data recovery work at Site 2484, and preservation through avoidance at Sites 2485, 2487, 2489, 2490, 2491, 2847, and Puukolii Cemetery as required by the Department of Land and Natural Resources-State Historic Preservation Division/Historic Preservation Office (DLNR-SHPD/HPO) and Section 106 of the National Historic Preservation Act of 1966 (as amended) in conjunction with development of the Lahaina Bypass Highway project in the Lahaina District, Island of Maui.

Previous archaeological work conducted by PHRI (Jensen 1991) identified two sites (Sites 2484 and 2847) within the proposed Lahaina Bypass Highway and two sites (Sites 2489 and 2490) immediately adjacent to, but outside of the area of potential effect. Four sites (Sites 2485, 2491, 2487, and Puukolii Cemetery) are situated in the general area, but outside of the area of potential effect (Attachments 1 and 2). Of the four sites within or adjacent the area of potential effect, Jensen (1991) recommended data recovery for two sites (Sites 2484 and 2847) and preservation was tentatively recommended for two sites (Sites 2489 and 2490) (Attachment 3). DLNR-SHPD/HPO concurred and stated that the project would have no adverse effect on the four sites if Sites 2484 and 2847

underwent data recovery and the preservation commitment for Sites 2489 and 2490 were finalized (letter of January 29, 1992 from Dr. Don Hibbard, Administrator, DLNR-SHPD/HPO, to Mr. Alan T. Walker, PHRI). DLNR-SHPD/HPO also subsequently approved the Jensen (1991) revised final report for the Lahaina Bypass Highway project area (letter of December 22, 1992 from Dr. Hibbard, DLNR-SHPD/HPO, to Ms. Chris Naito, PHRI).

Subsequently, the proposed Lahaina Bypass Highway corridor was realigned to avoid Site 2847 (Attachment 4) and it was proposed that the data recovery commitment for Site 2847 be modified to reflect preservation and avoidance (letter of April 21, 1994 from Dr. Paul H. Rosendahl, PHRI, to Dr. Hibbard, DLNR-SHPD/HPO). In all, seven sites would be preserved through avoidance (Sites 2485, 2487, 2489, 2490, 2491, 2847, and Puukolii Cemetery) and one site (Site 2484) would undergo data recovery.

Based on the National Register criteria for evaluation, as outlined in the Code of Federal Regulations (36 CFR Part 60), Site 2484 is significant for information content only (Criteria D) (Jensen 1991). Site 2484 is described in Jensen (1991:24) as:

"...a partial rock enclosure, or an L-shaped wall, located on the south-facing, gently sloping land above Kahoma Stream gulch...[e]xtending 23.4 m north-south, the primary segment of wall was constructed by stacking basalt boulders from 4-5 courses to achieve a maximum wall height of 0.75 m and a wall width which ranges from 0.80 to 1.10 m. The southern end of this segment of wall has largely collapsed, but a second intact wall segment proceeds westerly from this point for an additional 11.5 m. It could not be determined whether the remainder of an enclosure exists within this area, with the walls having collapsed or been bulldozed, or whether the L-shape of the existing feature represents the entire original configuration."

Because no portable remains or cultural deposits are identified at Site 2484, the primary purpose of the data recovery work would be to collect and contribute general archaeological information to the data base for this region of Maui. Therefore, the focus of the proposed data recovery work would be to conduct detailed recording and subsurface excavations at Site 2484, and to perform laboratory analysis (if any) appropriate to the nature and extent of the recovered portable remains. A total of 4.0 sq. meters in surface area would be excavated at Site 2484 (Attachment 5), and the site (including the immediate surrounding terrain) would be plan mapped in detail.

Detailed recording and excavations could be expected to contribute information on stratigraphic information and additional specifics concerning site function and construction methods. Laboratory data could include age determination analyses, artifact and ecofact analyses, and soil analyses depending on the specific contents of the site.

A formal monitoring plan for Site 2847 is also included here to provide guidance for all monitoring work within the area of potential effect. Sites 2485, 2487, 2489, 2490, 2491, and Puukolii Cemetery are outside the area of potential effect and will not require monitoring (see Attachments 1 through 3). The monitoring plan will help assure (a) preservation of Site 2847, as well as (b) proper identification, evaluation, and treatment of any potentially significant cultural resources that might be discovered during construction of the Lahaina Bypass Highway project. The basic objectives of the archaeological monitoring of construction activity would be the following:

1. To protect Sites 2847 scheduled for preservation;
2. To identify and evaluate the potential significance of any archaeological remains that might be revealed during the course of any construction activities;
3. To immediately notify DLNR-SHPD/HPO upon discovery of any potentially significant archaeological, historical, or cultural properties or objects, in order to (a) establish the significance of such properties or objects and (b) determine the nature and extent of any data recovery and/or preservation measures which might be warranted; and
4. To carry out an appropriate level of data recovery work -- consisting of detailed recording (including plan mapping and profiles, written descriptions, and photographs), collection of portable artifacts and appropriate samples of ecofactual remains and dating materials, and any needed mitigation excavations--in order to preserve the significant archaeological information contained within any identified remains.

At a pre-construction meeting, all subcontractors and government representatives will be briefed on (a) the locations of significant archaeological sites, (b) the significance of the orange fencing, (c) the laws protecting archaeological sites, and (d) the importance of confining all construction work to the highway corridor. Also, an archaeologist will inform all attendees on the procedures to follow should any new archaeological remains be identified during development work.

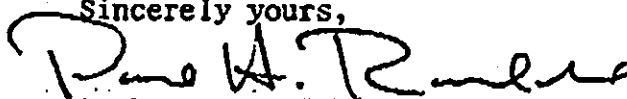
The archaeological monitoring crew would normally consist of one person who would be present on-site during initial grubbing and grading within the vicinity of Site 2847. In general, the archaeologist would monitor construction adjacent to Site 2847 in order to identify any possible cultural remains that might have been concealed during the initial inventory survey work. In the event that archaeological remains are identified during such monitoring, the archaeologist would record and collect the exposed data as expeditiously as possible. If significant remains were revealed and should the scale of work involved in the recording and data recovery be beyond the capacity of a single

archaeologist, and/or if construction activities involve multiple pieces of equipment at widely spaced site locations within the project area, additional archaeological field personnel would be provided as appropriate and necessary. To assure that Site 2847 is easily identified and protected, it is recommended that orange colored, plastic construction fencing be placed around the site.

The final report will present findings of the data recovery and monitoring work, as outlined in the draft guideline standards for Archaeological Data Recovery Studies and Reports prepared by DLNR-SHPD/HPO (Title 13, Subtitle 6, Chapters 146-153 - DLNR Rules Governing Procedures for Historic Preservation Review; third draft, November 1989). All materials recovered during the present project would be handled in compliance with Section 66.3(b) of the National Park Service's "Recovery of Scientific, Prehistoric, Historic, and Archaeological Data: Methods, Standards, and Reporting Requirements" which recommends that recovered materials "...should be maintained by a qualified institution or institutions as close as possible to their place of origin, and made available for future research" (36 CFR Part 66). The recovered material and copies of all records (including the final report) would be temporarily curated at the PHRI facilities in Hilo, Hawai'i. PHRI is qualified as an acceptable curation facility for archaeological materials (Attachment 6). The final report on the data recovery work would also be provided to, and archived by DLNR-SHPD/HPO. DLNR-SHPD/HPO would also be consulted with regard to the selection of a final curation location for the recovered materials, records, and final report.

In the opinion of PHRI, if data recovery at Site 2484 and the monitoring plan is implemented, construction of the Lahaina Bypass Highway project would have no adverse effect on the identified archaeological resources. If you have any questions or comments, please contact me at our main Hilo office (808) 969-1763.

Sincerely yours,



Paul H. Rosendahl, Ph.D.  
President and Principal  
Archaeologist

- Attachments:
1. Sites 2484 and 2487 Location Map
  2. Sites 2491 and Puukolii Cemetery Location Map
  3. Sites 2489 and 2490 Location Map
  4. Site 2847 Location Map
  5. Site 2484 Plan Map and Proposed Excavation Units
  6. Certification of Curation Facilities

1487-031894

5

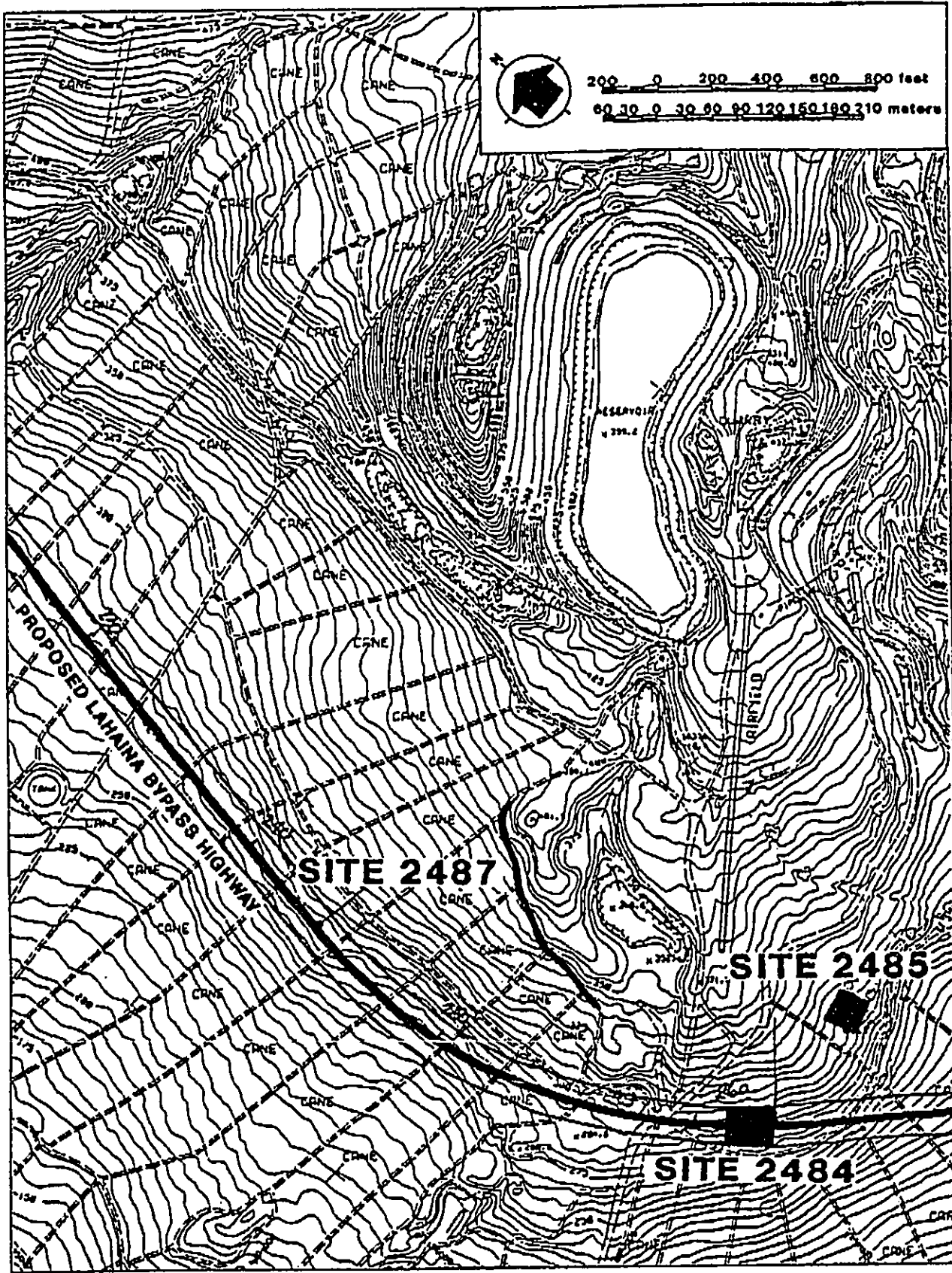
Reference Cited

Jensen, P.M.

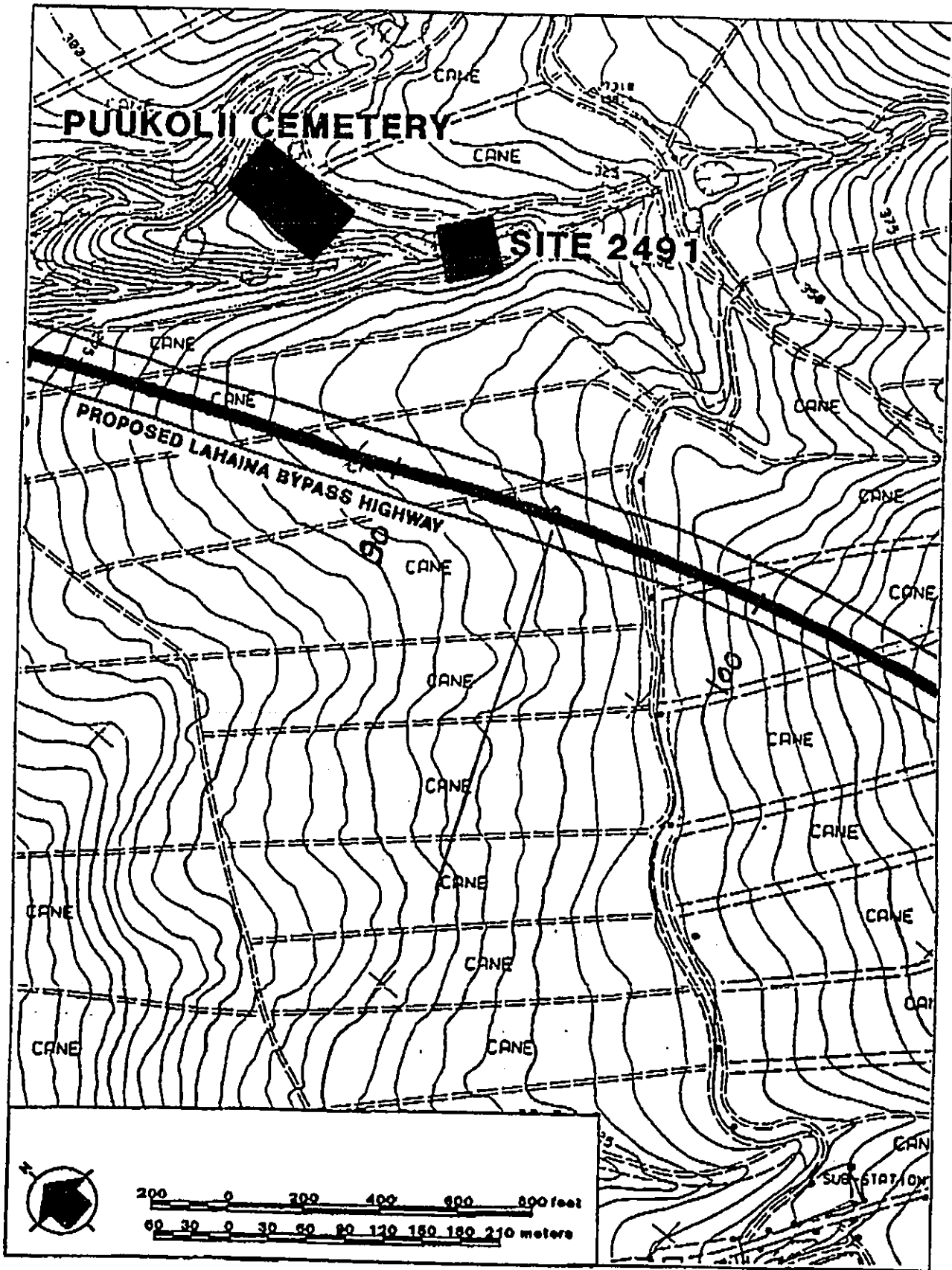
1991 Archaeological Inventory Survey, Honoapiilani Highway Realignment Project, Lahaina Bypass Section - Modified Corridor Alignment, Lands of Honokowai, Hanakao, Wahikuli, Panaewa, Kuia, Halakaa, Puehuhunui, Paho, Polanui, and Launiupoko, Lahaina District, Island of Maui. PHRI Report 1064-022092. Prepared for Michael T. Munekiyo Consulting, Inc.



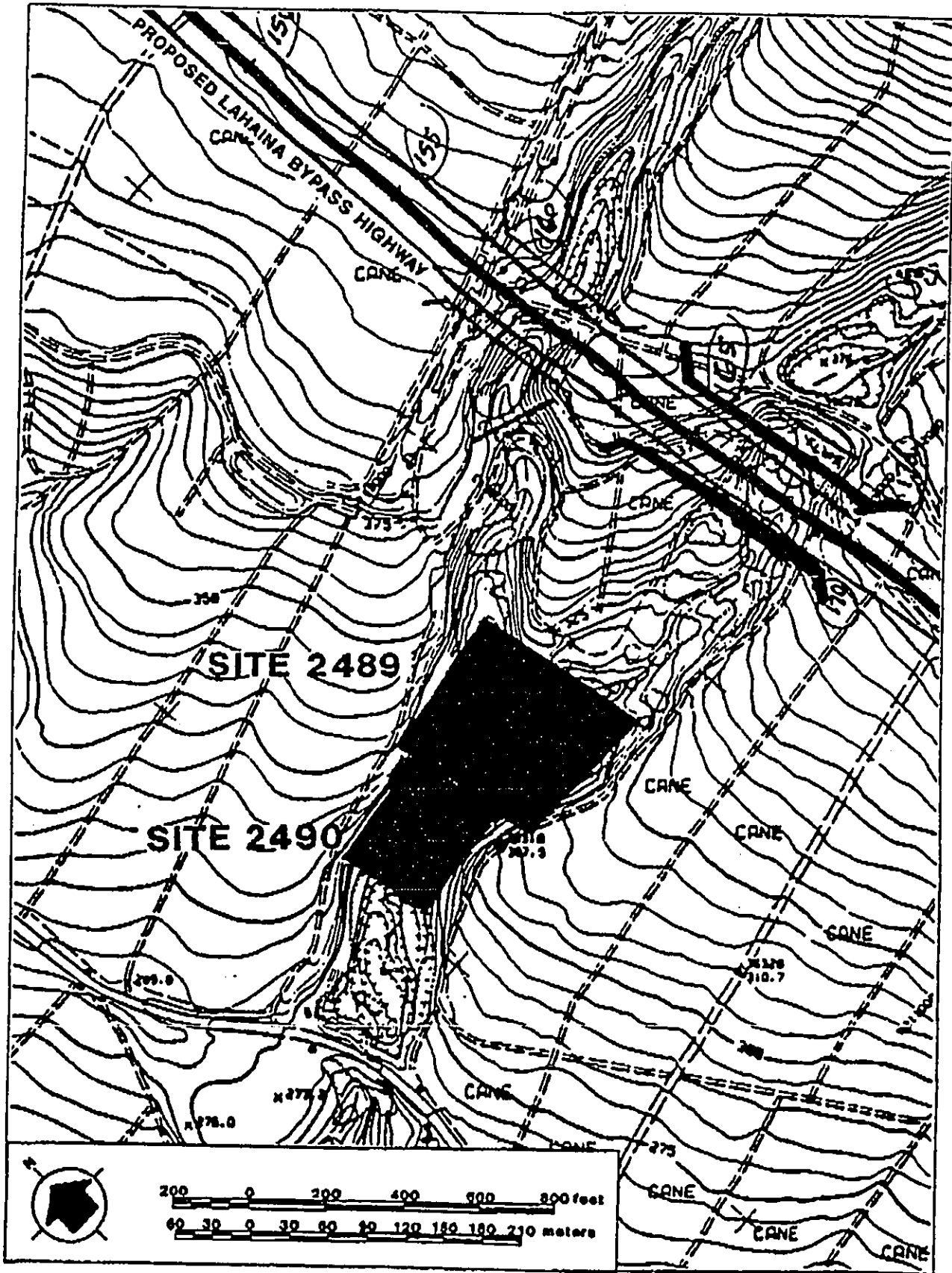
ATTACHMENT 1



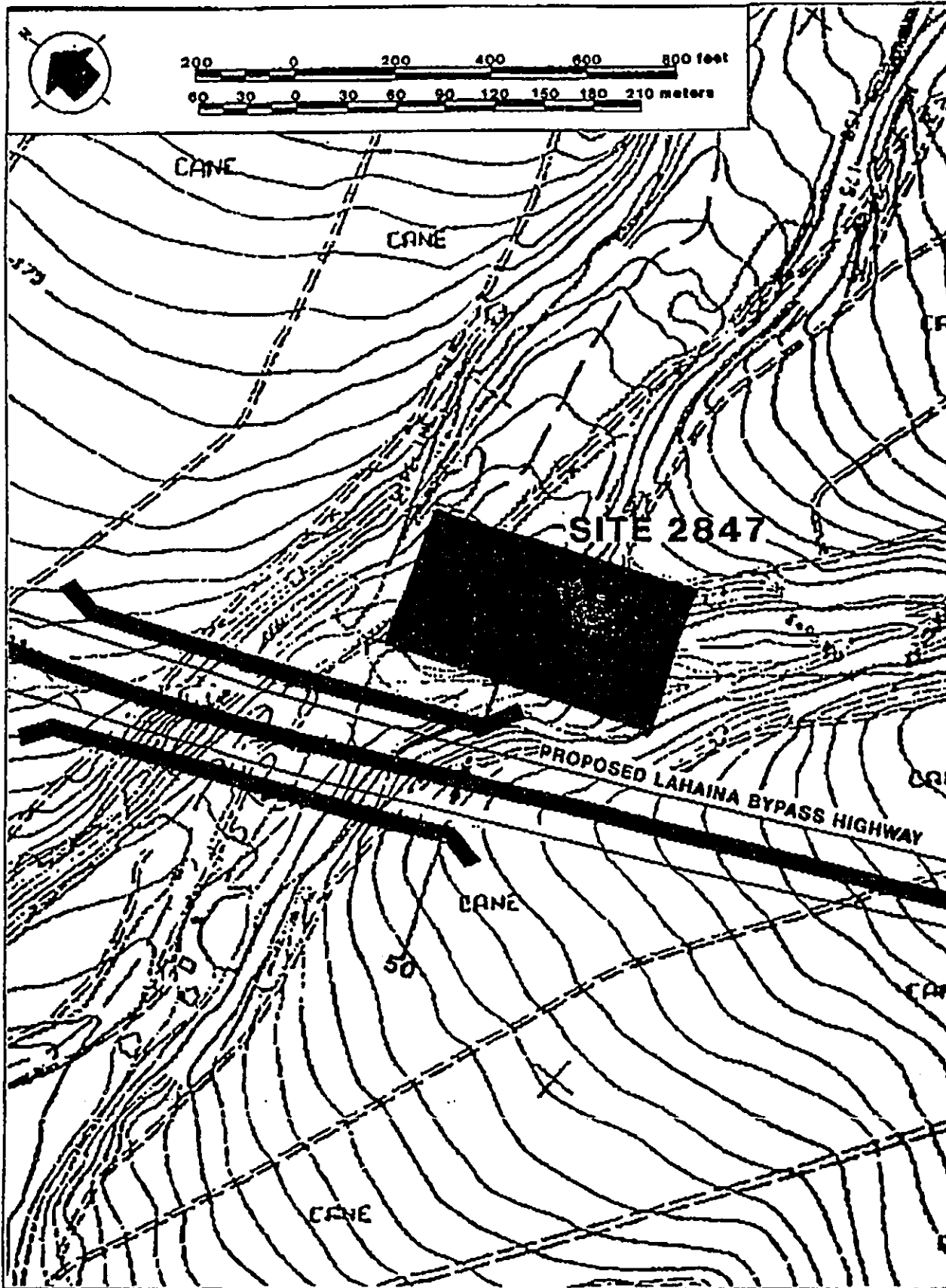
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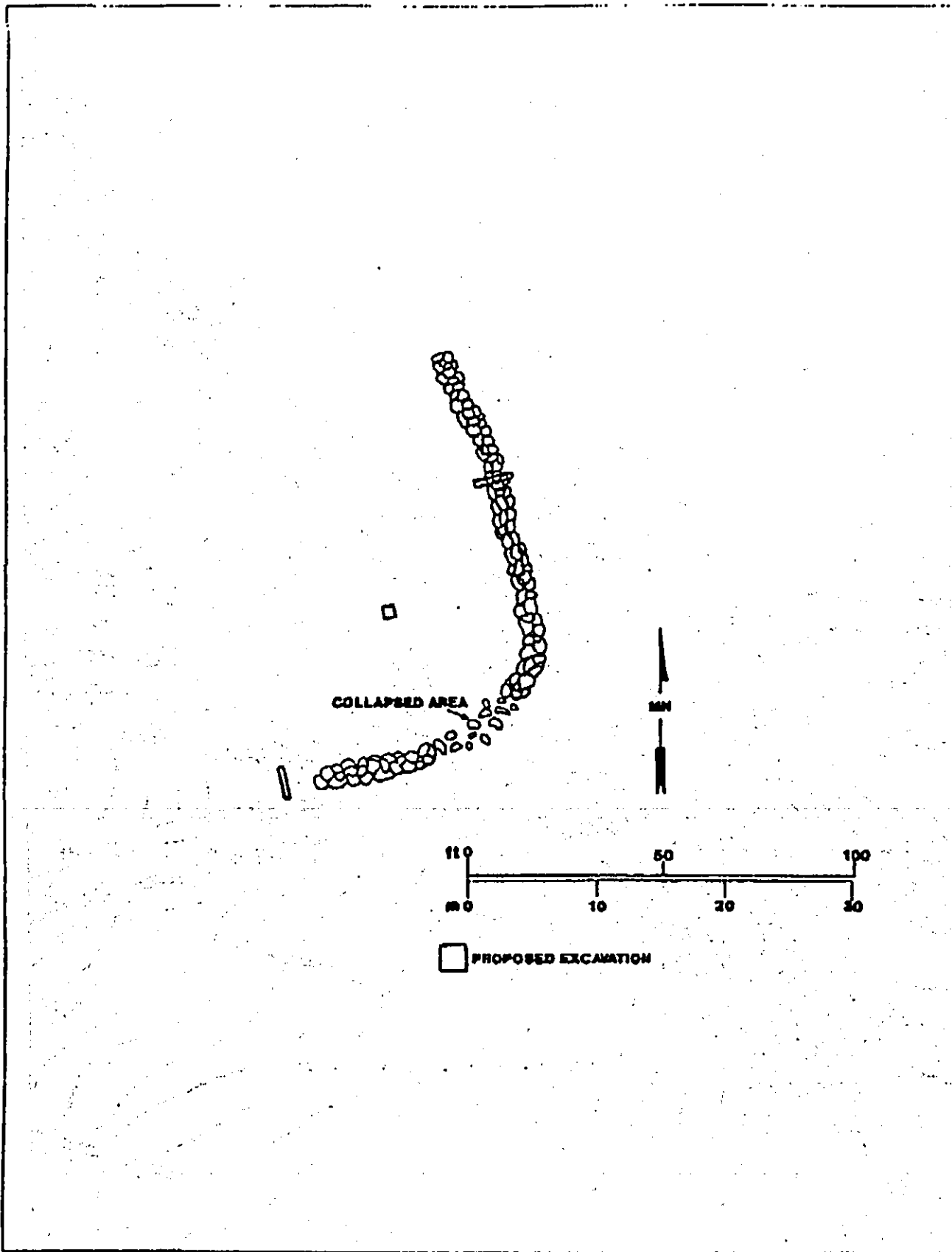
ATTACHMENT 3



ATTACHMENT 4



ATTACHMENT 5



Site 50-50-03-2454 Lehalna Bypass Highway Project

ATTACHMENT 6

WAMHEE  
DR OF HAWAII



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

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DIVISION

LAND MANAGEMENT

STATE PARKS

WATER AND LAND DEVELOPMENT

January 24, 1994

Dr. Paul Rosendahl  
PHRI  
305 Mohouli Street  
Hilo, Hawaii 96720

LOG NO: 10609  
DOC NO: 9401RC-0

Dear Dr. Rosendahl:

SUBJECT: Your Firm as a Curation Facility

Your firm requested a letter on this subject. Until State curation facilities are established on the outer islands, we find it acceptable that your firm can serve as a curation facility for archaeological items recovered on projects. This determination follows past practice.

Sincerely yours,

DON HIBBARD, Administrator  
State Historic Preservation Division

RC:jt

# ***Appendix C-9***

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***Historic Preservation Response -  
Archaeological Treatment Plan for  
No Adverse Effect, June 1994***

JOHN WAIHEE  
GOVERNOR OF HAWAII



PL  
94-1487  
Project

KETH AHUE, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER II  
DONA L. HANAIKE

STATE OF HAWAII

FILE

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 98813

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CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
DIVISION  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

June 2, 1994

Paul Rosendahl  
PHRI  
305 Mohouli Street  
Hilo, Hawaii 96720

LOG NO: 11459  
DOC NO: 9406RC05

Dear Dr. Rosendahl:

**SUBJECT: Archaeological Treatment Plan for No Adverse Effect – Lahaina Bypass  
Highway Project  
Honokowai & Others. Lahaina, Maui**

Thank you for your letter of April 22, 1994, submitting this plan. For the four sites in the project area, the plan proposes archaeological data recovery of site 2484 and preservation of the other three sites (2487, 2489, 2490). Site 2484 is a L-shaped enclosure, significant solely for its information content. We agree that the primary aim of mitigation at this site would be to recover primary data base information from this site.

We find this proposed treatment plan to be acceptable, and we agree it will have "no adverse effect" on the significant historic sites.

Sincerely yours,

Don Hibbard, Administrator  
State Historic Preservation Division

RC:jen

RECEIVED JUN - 7 1994



# **Appendix C-10**

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**State Historic Preservation  
Division Memorandum,  
August 1996**

BENJAMIN J. CAYTANO  
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

AUG 21 1996

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

DEPUTY  
GREAT COLOMA-AGARAN

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RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
DIVISION  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

REF: HP-JEN

MEMORANDUM

LOG NO: 17808 ✓  
DOC NO: 9608SC02

TO: Kazu Hayashida, Director  
Department of Transportation

FROM: Michael D. Wilson, Chairperson *Michael D. Wilson*  
Board of Land and Natural Resources

SUBJECT: Draft Supplemental Environmental Impact Statement (SEIS), Honoapiʻilani Highway (FAP Route 30), Puamana to Honokowai (Lahaina Bypass), Project No. 30AB-01-85

We have reviewed the Department of Interior correspondence concerning the subject SEIS and provide the following comments.

As noted in our review letter for the SEIS (Hibbard to Wong, May 21, 1996, DOC NO: 9603SC18), we have approved mitigation plans for the four historic sites within or immediately adjacent to the proposed road corridor. Implementation of these approved mitigation plans will ensure "no adverse effect" to the historic sites. All four historic sites are significant for their information content: SIHP Nos. 50-50-03-2484 (a wall segment); -2487 (an enclosure); -2489 (agricultural, habitation, and possible burial features); -2490 (habitation and agricultural features). Three of the sites are to be preserved in place (-2487, -2489, & -2490), and one site is to undergo data recovery (-2484). Data recovery is an appropriate mitigation for Site -2484, which is significant for information content only. In view of the fact that mitigation plans have been approved by the State Historic Preservation Division, thus ensuring "no adverse effect" to significant historic sites within or immediately adjacent to the proposed road corridor, we believe that a Memorandum of Agreement is not needed.

Should you have any questions, please feel free to call Sara Collins at 587-0013.

# ***Appendix D***

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***Traffic Noise Study Update  
for the Proposed Lahaina  
Bypass Highway, June 1995***

**TRAFFIC NOISE STUDY UPDATE  
FOR THE PROPOSED  
LAHAINA BYPASS HIGHWAY**

Prepared for:

**STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION**

**DRAFT**

Prepared by:

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

**JUNE 1995**

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DRAFT

## CHAPTER I. SUMMARY

This study is a continuation of the original evaluations of potential noise impacts associated with the various design alternatives of the Lahaina Bypass Highway project from Puamana Park to Honokowai, at Lahaina, Maui. The results of the original evaluations were reported in References 1 and 2, for the Widening Alternative, Realignment Alternatives A, B, and C, and for the extensions of the highway widening and realignment alternatives from Kaanapali Parkway to Honokowai. This current report evaluates the acoustical impacts associated with the Modified Bypass Alignment "B", which is similar to the original Alternative B but includes modifications to the original highway alignment of Alternative B.

The improvement alternative evaluated in this current study consisted of: modifications to the original alignment of Bypass Alignment "B"; additions of access points and connector roads, and the reconfiguration of the bypass highway crossing at Ikena Avenue. In addition to these modifications to the Bypass "B" alignment, the future year of the noise analysis was changed from CY 2007 to CY 2010.

This current report does not include the prior analysis of existing (or Base Year) noise levels, which were contained in the earlier reports (References 1 and 2). This report, however, does contain new measurements of existing background ambient and traffic noise levels in locations which may be affected by the proposed changes to the alignment of Bypass Alternative "B" at its northern and southern ends, as well as at the Ikena Avenue crossing. Additionally, an evaluation and discussion is presented in respect to the increases in traffic noise levels predicted along the bypass highway from the original study year of CY 2007 to the current study year of CY 2010.

As was concluded in the prior evaluations of Bypass Alignment "B", traffic noise mitigation measures will be required in the vicinity of the Ikena Avenue crossing. Because the originally

planned at grade intersection of the bypass highway with Lahainaluna Road will be replaced with a below grade crossing under Lahainaluna Road, the originally forecasted traffic noise levels along the bypass highway at Ikena Avenue were expected to increase due to the expected increases in average vehicle speeds from 40 to 50 miles per hour. Noise mitigation measures required along the Ikena Avenue crossing were analyzed.

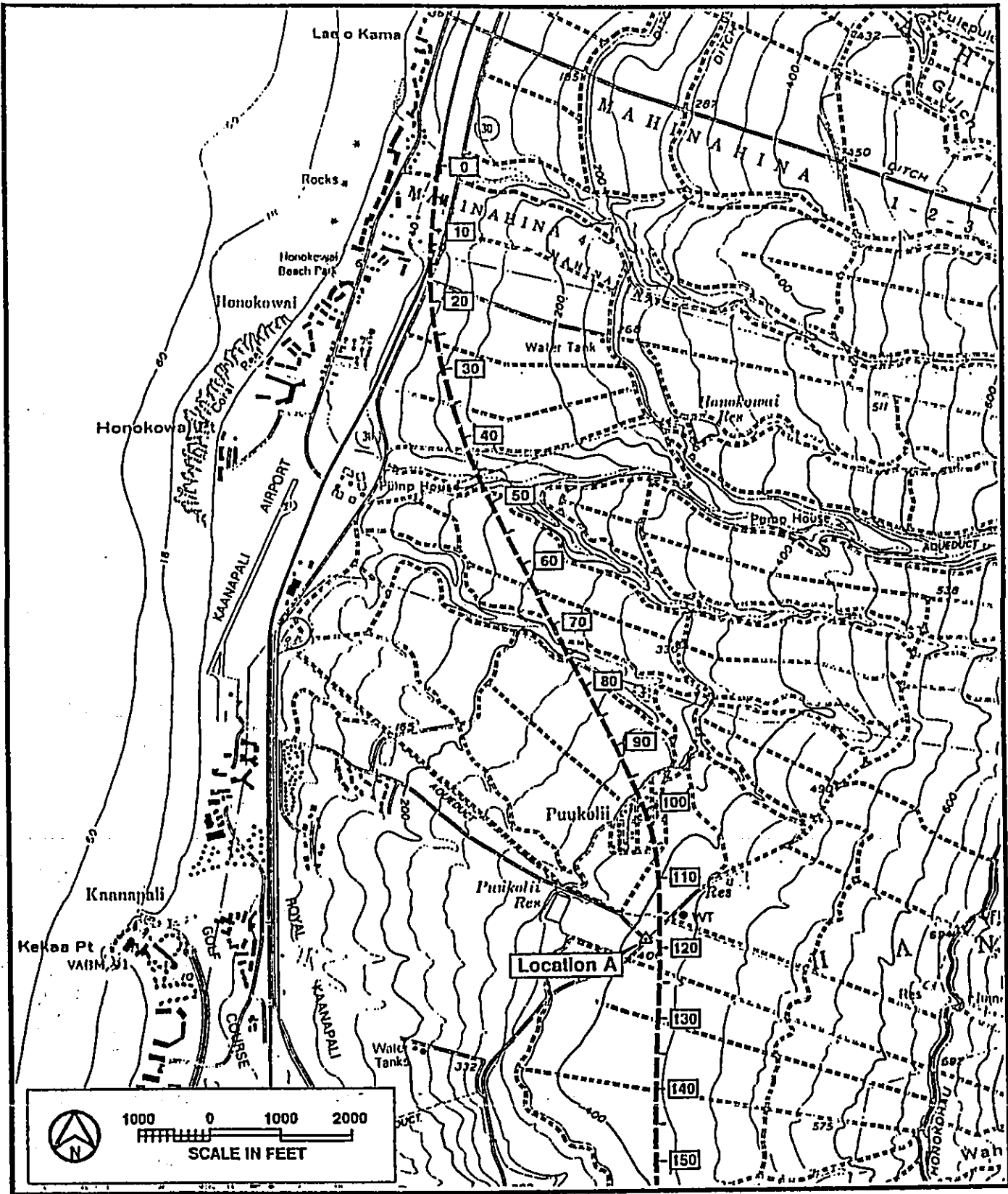
Unavoidable increases in background ambient noise levels at the quiet inland areas along the bypass alignment are expected to occur if the bypass is built. In essence, if a bypass highway is constructed as planned, a redistribution of future traffic noise will occur from the existing Honoapiilani Highway to locations inland (to the east). This redistribution, however, will minimize future traffic noise impacts along the existing highway corridor. Minimization of noise impacts on existing noise sensitive receptors along the modified bypass highway will be accomplished through the construction of sound attenuation barriers along Ikena Avenue. It is anticipated that potential noise impacts on future noise sensitive receptors along the modified bypass highway will be mitigated along the bypass highway through the use of sound barriers or other noise mitigation measures which are included within the individual project development plans.

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## CHAPTER II. GENERAL STUDY METHODOLOGY

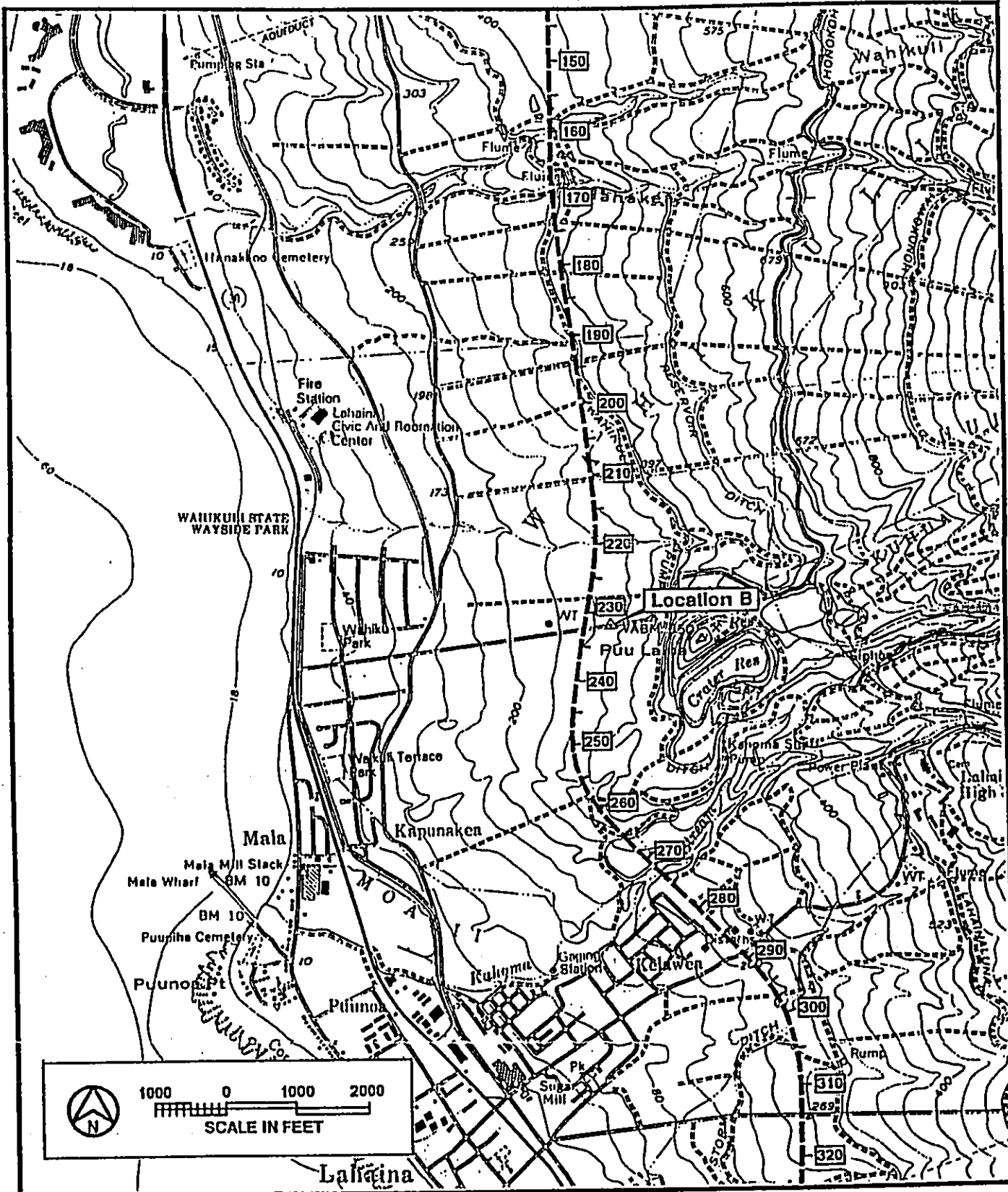
The general methodologies used in the two prior noise studies of the Honoapiilani Highway improvements from Puamana to Honokowai were also used in this current study. Evaluations of Base Year traffic noise contours, which were performed in the prior studies (References 1 and 2), were not included in this current study. Also, reevaluations of the other bypass highway alternatives and the Honoapiilani Highway Widening Alternative were not performed during this current study.

Existing background ambient and traffic noise levels were measured at three additional locations along the sections of the Modified Bypass Alignment "B" to provide a basis for describing the existing background ambient noise levels and for developing the project's traffic noise contributions along the modified bypass alignment. These measurement data were intended to supplement those previously obtained in conjunction with the earlier studies of the various Lahaina Bypass Highway alignments (References 1 and 2). These earlier noise measurements were performed during the month of August 1991. The background ambient noise measurements were obtained to identify possible noise impacts resulting from increases in ambient noise levels due to traffic noise from the Modified Bypass alignment. The August 1991 noise measurement locations (A thru C) are indicated in FIGURE 1, and the measurement results are included in TABLE 1. Additional background ambient noise measurements were obtained at 17 locations adjacent to existing residences along Ikena Avenue and the cul-de-sacs east (mauka) of the proposed bypass highway. These measurements were used to determine if future noise levels would "substantially exceed" existing noise levels and, therefore, require noise mitigation measures in accordance with FHWA and Hawaii State Department of Transportation (DOT) noise standards. The locations of these measurement sites and the results of the measurements are described in Chapter V of this report.



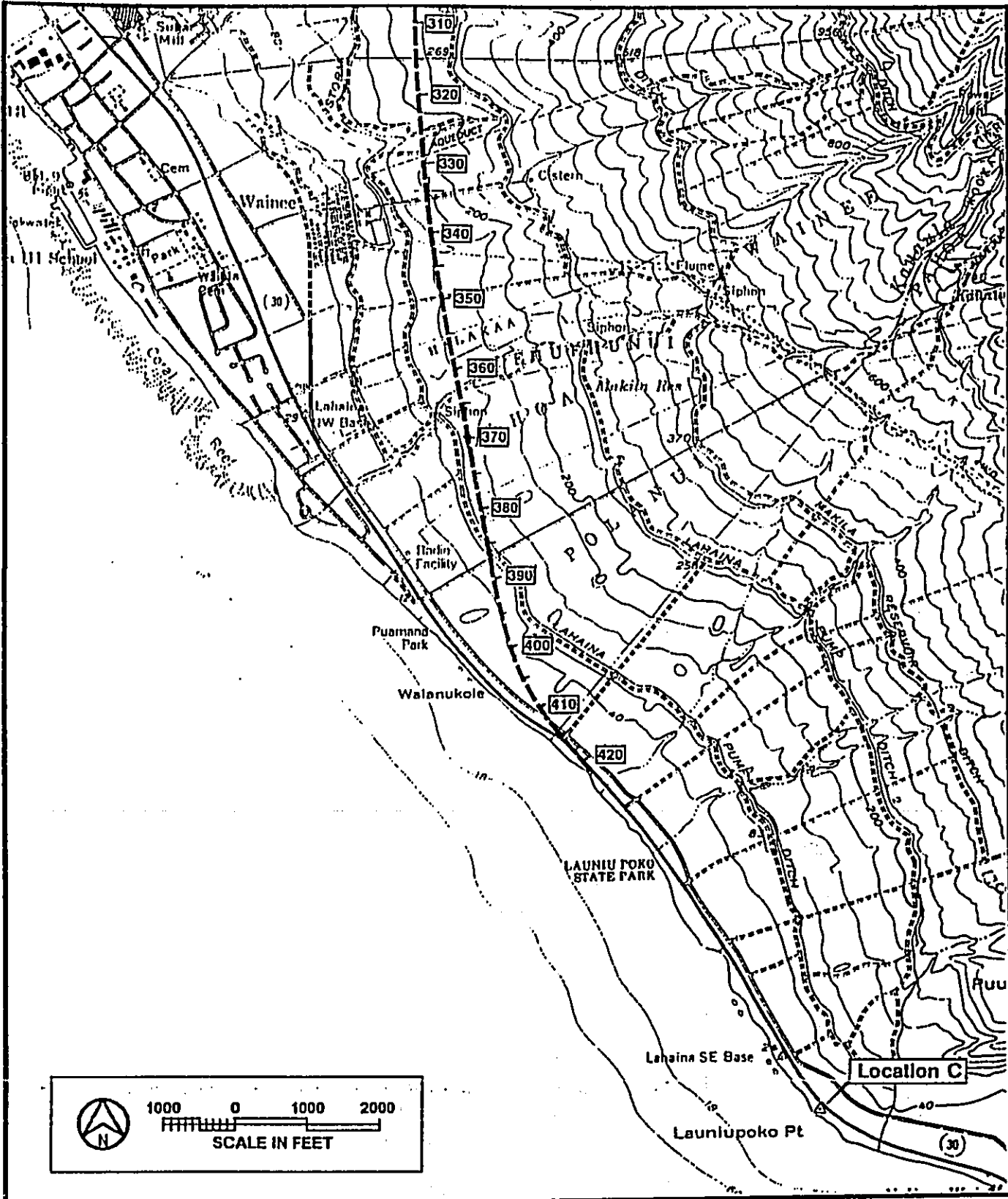
**MODIFIED BYPASS ALIGNMENT 'B' AND  
LOCATIONS OF NOISE MEASUREMENT SITES**

**FIGURE  
1**



**MODIFIED BYPASS ALIGNMENT 'B' AND LOCATIONS OF NOISE MEASUREMENT SITES (CONTINUED)**

**FIGURE 1 (CONTINUED)**



**MODIFIED BYPASS ALIGNMENT 'B' AND LOCATIONS OF NOISE MEASUREMENT SITES (CONTINUED)**

**FIGURE 1 (CONTINUED)**



TABLE 1

BACKGROUND AMBIENT AND TRAFFIC NOISE MEASUREMENT RESULTS

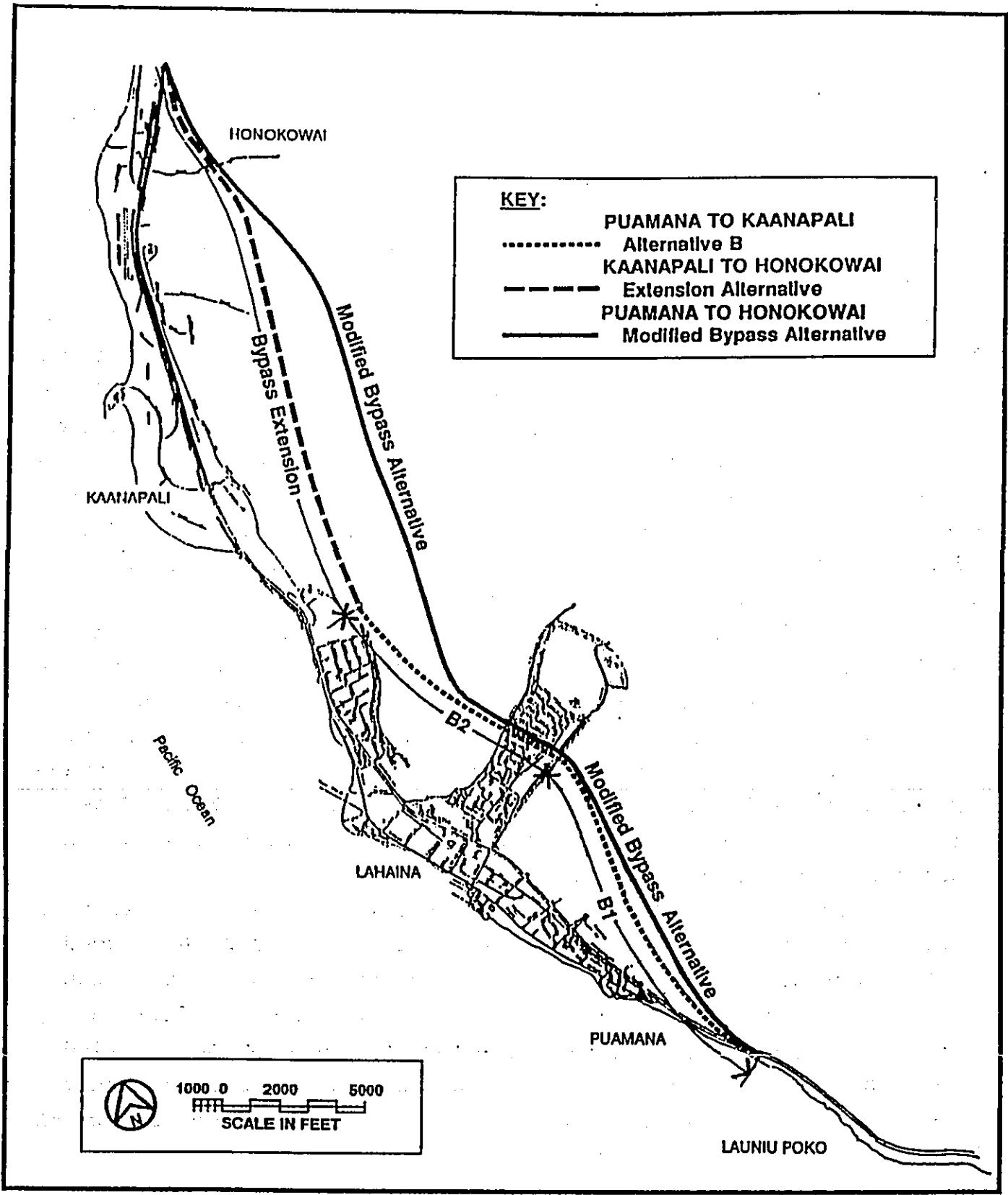
LOCATION	Time of Day		Ave. Speed		--Hourly Traffic Volume--			Measured	Predicted
	(HRS)	(MPH)	AUTO	M.TRUCK	H.TRUCK	Leg (dB)	Leg (dB)		
A. At intersection of Puukolii and Cane Haul Roads. (8/27/91)	1150	N/A	N/A	N/A	N/A	51.1	N/A		
	TO 1250								
B. 900 FT east of water tank on Wahikuli Road. (8/27/91)	1315	N/A	N/A	N/A	N/A	44.0	N/A		
	TO 1415								
C. 50 FT from the center--line of Honoapiilani Hwy. 0.5 mi. south of Launiupoko State Park. (8/27/91)	1600	47	1,622	61	22	68.4	68.5		
	TO 1700								

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The Federal Highway Administration (FHWA) Traffic Noise Prediction Model (Reference 3) was used as the primary method of calculating the existing and future traffic noise levels, with model parameters adjusted to reflect terrain, ground cover, and local shielding conditions. At the noise measurement location near Launiupoko State Park (Location 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 existing traffic volume were obtained during the measurement period and were used to generate the Equivalent Sound Level (Leq) predictions shown in the table. The agreement between measured and predicted traffic noise levels was considered to be good and sufficiently accurate to justify use of the highway noise model to formulate the traffic noise contours.

The original Bypass Alignment "B" with Extension to Honokowai is shown in relationship to the currently proposed Modified Bypass Alignment in FIGURE 2. The major modifications to the original alignment were: modification of the at-grade crossing of the bypass highway at Ikena Avenue and Lahainaluna Road to a below-grade crossing of the bypass highway under Lahainaluna Road; and displacement of the northern and central bypass sections toward the east (or mauka) from the original alignment.

Because of the change in future traffic forecast year from CY 2007, which was used in the original studies, to CY 2010 as used in the current noise study, a general comparison was made of the traffic volumes and noise levels for the two years. Additionally, traffic noise contours for CY 2010 conditions along the modified Bypass Highway alignment were developed during the current study for ground level receptors in the vicinity of those sections which have been modified from the original Alignment "B". Traffic mix by vehicle type were assumed to be identical to those previously assumed in References 1 and 2. The PM peak hour was used as the period of highest hourly traffic volumes based on the prior stud-



**RELATIONSHIP OF ORIGINAL BYPASS ALIGNMENT 'B'  
TO MODIFIED BYPASS ALIGNMENT**

**FIGURE  
2**

ies and the CY 2010 traffic assignments along the Modified Bypass (Reference 4). The Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to develop the traffic noise contours as required by Reference 5. Data from topographic maps of the area, as well as from the bypass highway's plans, profiles, and typical sections were used to determine terrain and local shielding effects during computations of the future noise contours.

Following development of the CY 2010 traffic noise contours along the Modified Bypass Highway, their relationships to existing the planned noise sensitive receptors and areas were evaluated. The existing noise sensitive receptors along the Ikena Avenue crossing and at Launiupoko State Park were included in the noise impact analysis. The potential noise sensitive receptors in the planned North Beach Mauka and Lahaina Master Planned Community developments were also included in the analysis. 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. The exterior criteria of 67 Leq(h) shown in TABLE 2 was applied to all existing dwellings and public parks along Honoapiilani Highway which are currently exposed to relatively high traffic noise levels. Along Ikena Avenue, where existing background ambient noise levels are low, the 67 Leq(h) FHWA standard and the State DOT's criteria of "greater than 15 dB increase above existing background noise levels" were used as noise abatement thresholds. In addition, the FHA/HUD noise standard of 65 Ldn was also used to evaluate potential noise impacts and noise mitigation measures along Ikena Avenue. At the planned development areas which are currently vacant, the locations of the 57, 67, and 72 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 Modified Bypass alignment and for providing adequate buffer space between the Modified Bypass and these land

TABLE 2

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

<u>ACTIVITY CATEGORY</u>	<u>LEQ (H)</u>	<u>DESCRIPTION OF ACTIVITY CATEGORY</u>
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary 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.

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uses. 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. Other possible noise mitigation measures as described in Reference 5 were previously examined for their applicability to this project in References 1 and 2, and were not examined during this current study.

The adequacy of the originally proposed sound barriers along Ikena Avenue was retested for the currently proposed Modified Bypass Alignment and for the CY 2010 traffic forecasts. Recommended changes to the original sound barriers were provided where applicable. These changes were necessary due to the higher average vehicle speeds anticipated along the Ikena Avenue crossing with the relocation of the access point from Lahainaluna Road to the planned Dickenson Intersection.

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CHAPTER III. CY 2007 TRAFFIC NOISE ENVIRONMENT AND IMPACTS  
ALONG BYPASS ALIGNMENT "B" AS ORIGINALLY PROPOSED

The Year 2007 was used in the previous studies to describe the future traffic noise levels among the various highway improvement alternatives, including Alternative B with Extension to Honokowai. The future traffic noise environment along the existing highway and alternate bypass alignments were described by computing the noise contours of Hourly Equivalent Sound Level [Leq(h)] for the CY 2007 time period. These sound level contours, expressed in decibels, represent the average level of traffic noise for a given hour of the day. The PM peak hour, which occurs between 3:30 to 4:30 PM, was used as the hour with the highest traffic noise levels.

TABLE 3 presents the traffic volume, speed, and mix assumptions which were originally used (see References 1 and 2) to generate the CY 2007 noise contours along the various segments of the Bypass Alternative "B" with Extension to Honokowai. Also shown in TABLE 3 are the calculated peak hour Leq(h)'s at a reference distance of 100 FT from the centerline of the various bypass segments under unobstructed, line-of-sight conditions. The CY 2007 setback distances from the original Bypass "B" highway segment centerlines to their associated 57, 67, and 72 Leq(h) contours were also calculated as shown in TABLE 4. The contour line setback distances do not take into account noise shielding effects or the additive contributions of traffic noise from intersecting street sections. The actual distances to the 57, 67, and 72 Leq(h) contour lines will generally be less than indicated in TABLE 4 when intervening structures or walls exist between the highway sections 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) affects caused by the intervening structures or walls.

The following general conclusions were previously made in re-

TABLE 3

COMPARISONS OF ORIGINAL AND UPDATED TRAFFIC NOISE LEVELS  
ALONG BYPASS ALTERNATIVE B WITH EXTENSION  
( PM PEAK HOUR AND 100 FT FROM ROADWAY CENTERLINES )

LOCATION	SPEED (MPH)	VPH	*** HOURLY LEQ IN dB ****			
			AUTO	MT	HT	ALL VEH.
<u>EIS CY 2007 PM PEAK HR. TRAFFIC:</u>						
Bypass Extension Section B3	50	1,663	62.0	55.4	59.8	64.6
Bypass Section B2	50	2,218	63.2	59.2	61.1	66.2
Bypass Section B1	50	1,275	60.8	56.1	60.2	64.2
Honoapillani Hwy (South End)	47	1,705	61.0	56.5	60.8	64.6
<u>SEIS CY 2010 PM PEAK HR. TRAFFIC:</u>						
Bypass Extension Section B3b	50	2,359	63.5	57.0	61.3	66.1
Bypass Extension Section B3a	50	2,623	64.0	57.4	61.8	66.6
Bypass Section B2b	50	2,887	64.3	60.3	62.2	67.4
Bypass Section B2a	50	1,703	62.0	58.0	59.9	65.1
Bypass Section B1	50	1,208	60.5	55.9	59.9	64.0
Honoapillani Hwy (South End)	47	2,396	62.5	58.0	62.2	66.1

Notes:

The following assumed traffic mixes of autos, medium trucks, and heavy vehicles were used for existing and future conditions:

- (a) Bypass Segment B1: 95.0% autos, 2.6% medium trucks, and 2.4% heavy trucks and buses.
- (b) Bypass Segment B2: 95.3% autos, 3.0% medium trucks, and 1.7% heavy trucks and buses.
- (c) Bypass Extension Segment B3: 96.6% autos, 1.7% medium trucks, and 1.7% heavy trucks and buses.
- (d) Honoapillani Highway (South End): 95.0% autos, 2.6% medium trucks, and 2.4% heavy trucks and buses.

Bypass sections indicated above are approximately related to highway station numbers (see FIGURES 1 or 3) as follows:

- a. Bypass Section B3b: Stations 0 thru 180;
- b. Bypass Section B3a: Stations 180 thru 210;
- c. Bypass Section B2b: Stations 210 thru 270;
- d. Bypass Section B2a: Stations 270 thru 300;
- e. Bypass Section B1: Stations 300 thru 424.

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TABLE 4

CY 2007 AND CY 2010 DISTANCES TO 57, 67, AND 72 Leq CONTOURS

<u>STREET SECTION</u>	<u>57 Leq SETBACK (FT)</u>		<u>67 Leq SETBACK (FT)</u>		<u>72 Leq SETBACK (FT)</u>	
	<u>CY 2007</u>	<u>CY 2010</u>	<u>CY 2007</u>	<u>CY 2010</u>	<u>CY 2007</u>	<u>CY 2010</u>
Bypass Extension Section B3b	322	406	69	88	32	41
Bypass Extension Section B3a	322	436	69	94	32	44
Bypass Section B2b	412	491	89	106	41	49
Bypass Section B2a	412	345	89	74	41	35
Bypass Section B1	303	292	65	63	30	29
Honoapiilani Hwy (South End)	322	404	69	87	32	40

Notes:

- (1) All setback distances are from the roadways' centerlines.
- (2) See TABLE 3 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.

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spect to the potential increases in traffic noise levels resulting from the original Realignment Alternative "B" with Extension to Honokowai:

A. Under the original alternative of construction of Bypass Alignment "B", traffic noise levels were not expected to exceed FHWA noise abatement criteria along the realignment from Puamana Park to Kaanapali, except possibly along the first row of existing residences at the Ikena Avenue crossing. At other noise sensitive locations along the bypass, traffic noise levels from the bypass were not expected to exceed 50 Leq. Traffic noise levels along the first row of existing residences mauka (east) of Ikena Avenue were predicted to be approximately 67 Leq. At those residences makai (west) of the avenue, traffic noise levels are predicted to be less due to noise shielding effects from the highway cut along Ikena Avenue.

B. Under the alternative which included the construction of the extension of Alignment "B" from Kaanapali Parkway to Honokowai, traffic noise levels were not expected to exceed FHWA noise abatement criteria along the bypass extension from Kaanapali to Honokowai. Noise impacts along the bypass extension were expected to be minimal due to the undeveloped character of the bypass extension corridor.

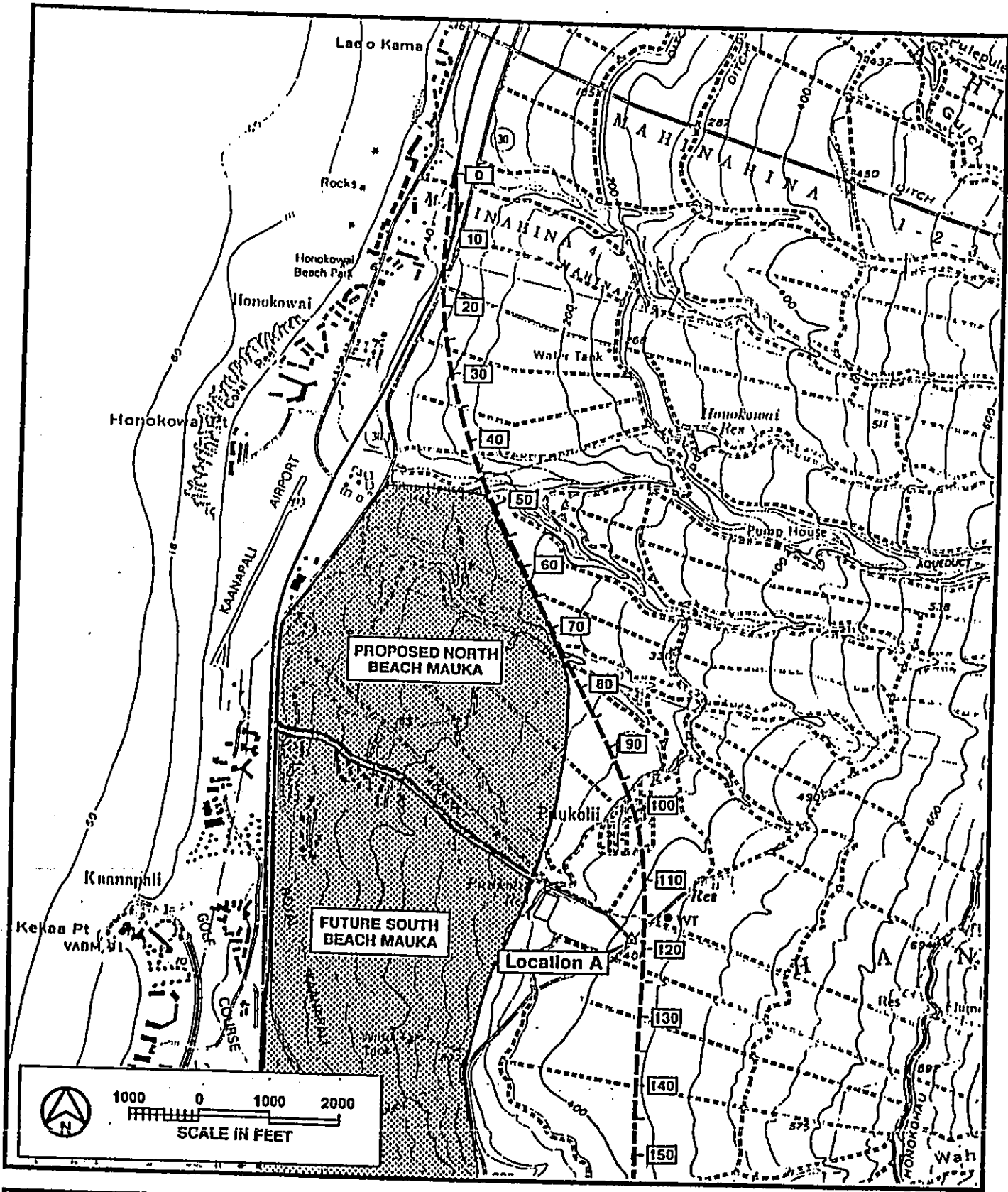
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CHAPTER IV. CY 2010 TRAFFIC NOISE ENVIRONMENT ALONG MODIFIED  
BYPASS ALIGNMENT "B" FROM PUAMANA PARK TO HONOKOWAI

Predictions of CY 2010 traffic noise levels were made using the traffic volume assignments of Reference 4. FIGURE 3 depicts the Modified Bypass Alignment "B" in relationship to existing and planned noise sensitive developments. The CY 2010 projections of traffic volumes along the modified bypass highway are shown in TABLE 3 for the PM peak hour of traffic. As indicated in TABLE 3, between CY 2007 and CY 2010, traffic volumes along the bypass highway will increase by approximately 30 to 58 percent. The increases in traffic noise levels associated with this level of increase in traffic volume along the bypass highway are approximately 1.1 to 2.0 dB (Leq), which are not considered to be significant. Similar conclusions can be developed for the section of Honoapiilani Highway which is south of the modified bypass highway.

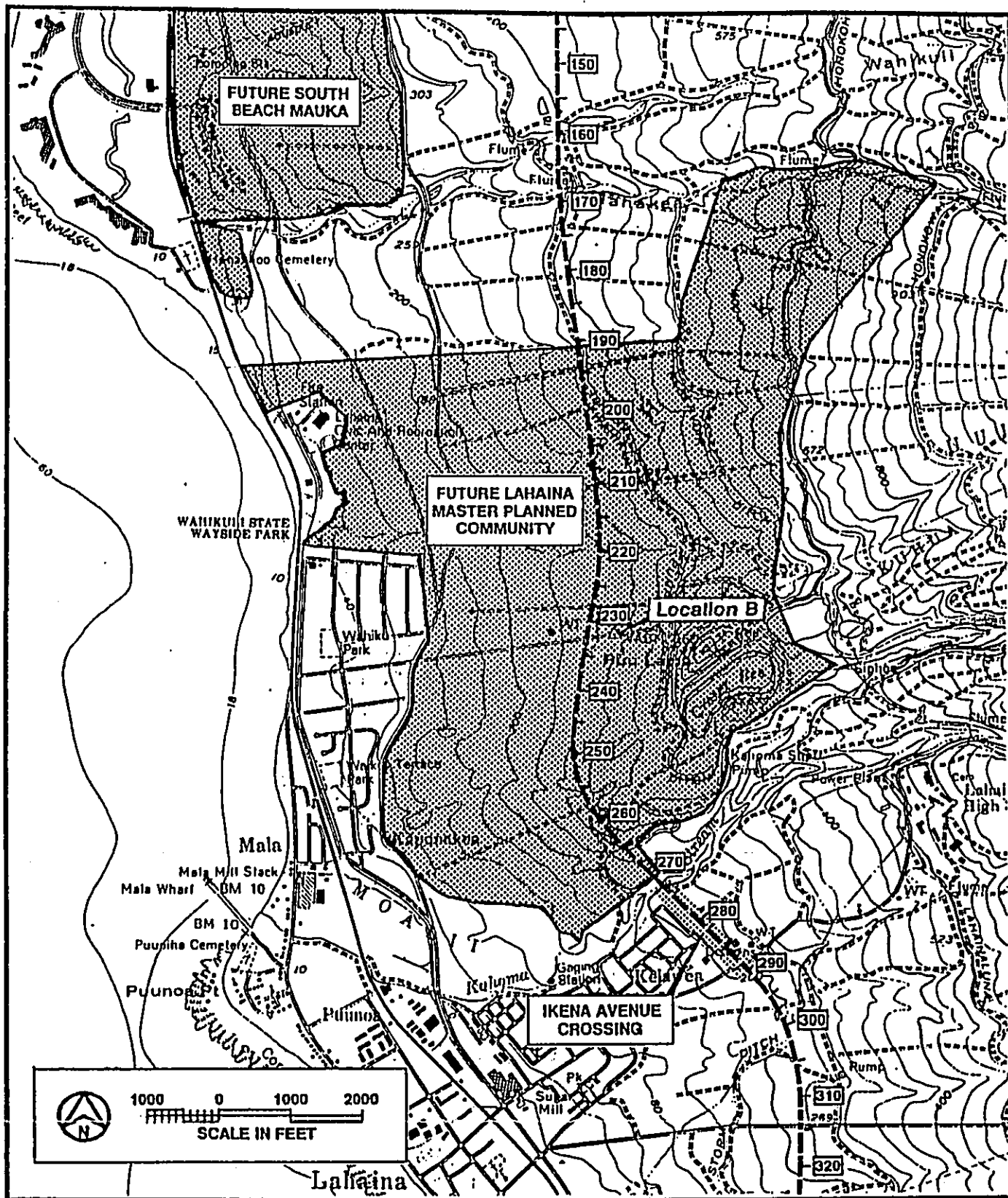
TABLE 4 summarizes the predicted setback distances to the 57, 67, and 72 Leq traffic noise contour lines along the bypass highway and Honoapiilani Highway south of the bypass. The setback distances in TABLE 4 do not include the beneficial effects of noise shielding from terrain features and highway cuts, or the detrimental effects of additive contributions of noise from intersecting streets. As indicated in TABLE 4, moderately large setback distances to the 67 Leq contour of 63 to 106 FT from the centerline of the highways' Rights-of-Way are predicted in CY 2010.

FIGURES 4 thru 38 depict the future traffic noise levels vs. distance curves along the Modified Bypass Alignment "B" on the makai (west) and mauka (east) sides of the highway centerline. The figures are keyed to the bypass highway station numbers, which are located as shown in FIGURES 1 and 3. These curves were constructed using 1" = 1,000' scale topographic maps, the bypass highway plans and profiles, and the typical highway cross-sections for the proposed four-lane bypass highway with 150' wide Right-of-



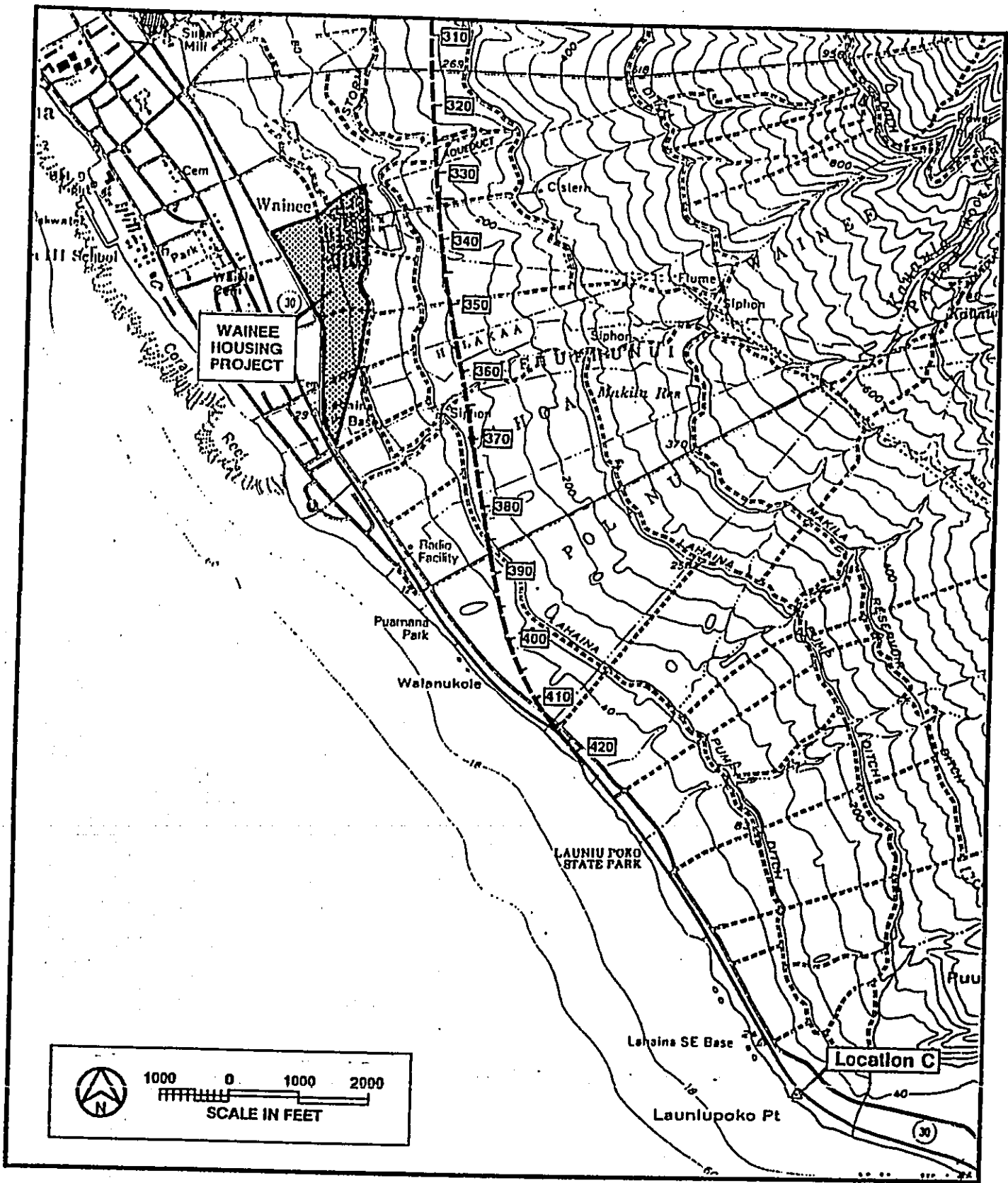
**MODIFIED BYPASS ALIGNMENT 'B'  
AND LOCATIONS OF EXISTING AND  
PROPOSED NOISE SENSITIVE LAND USES**

**FIGURE  
3**



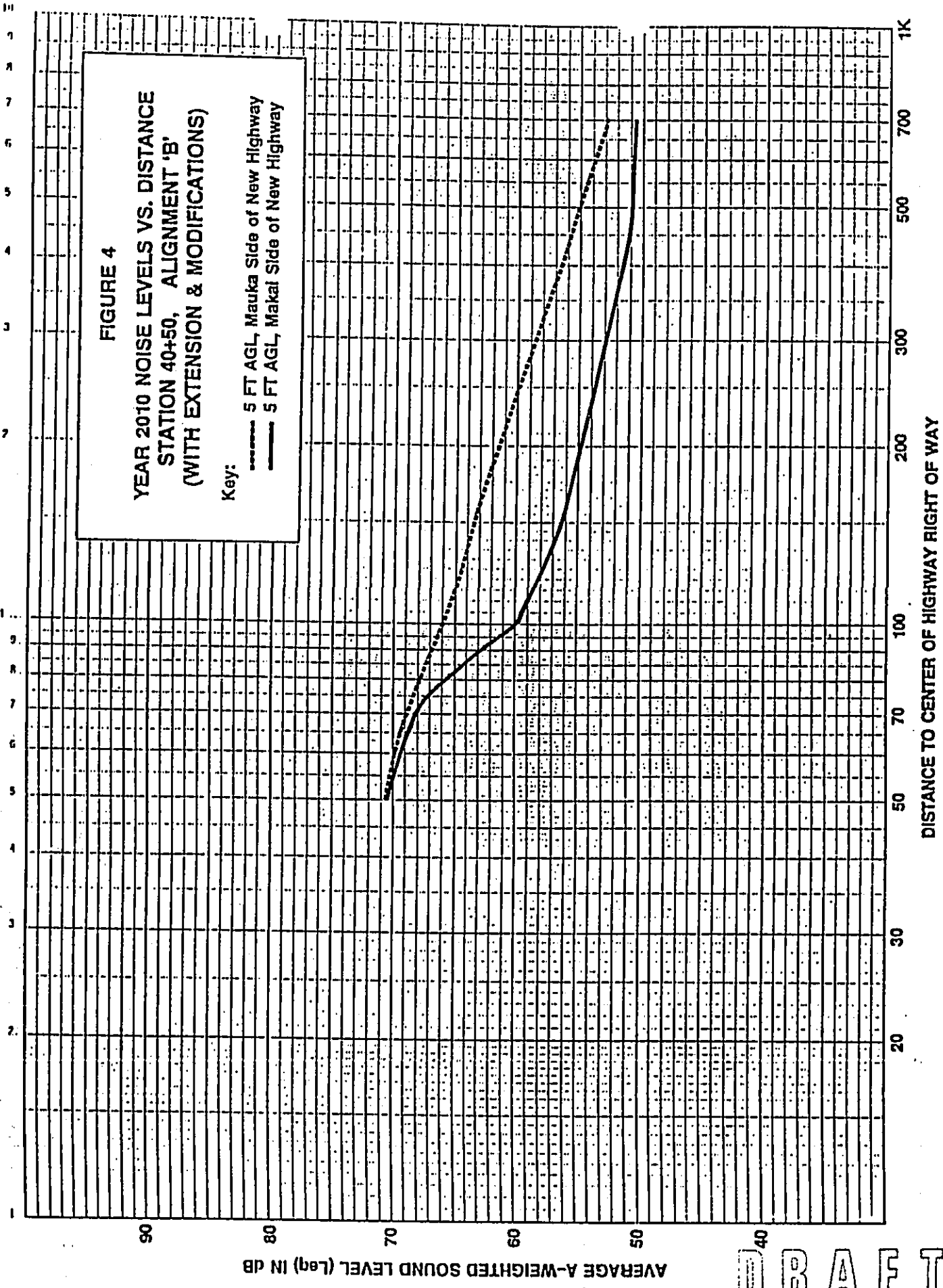
**MODIFIED BYPASS ALIGNMENT 'B' AND LOCATIONS OF EXISTING AND PROPOSED NOISE SENSITIVE LAND USES (CONTINUED)**

**FIGURE 3 (CONTINUED)**



**MODIFIED BYPASS ALIGNMENT 'B' AND LOCATIONS OF EXISTING AND PROPOSED NOISE SENSITIVE LAND USES (CONTINUED)**

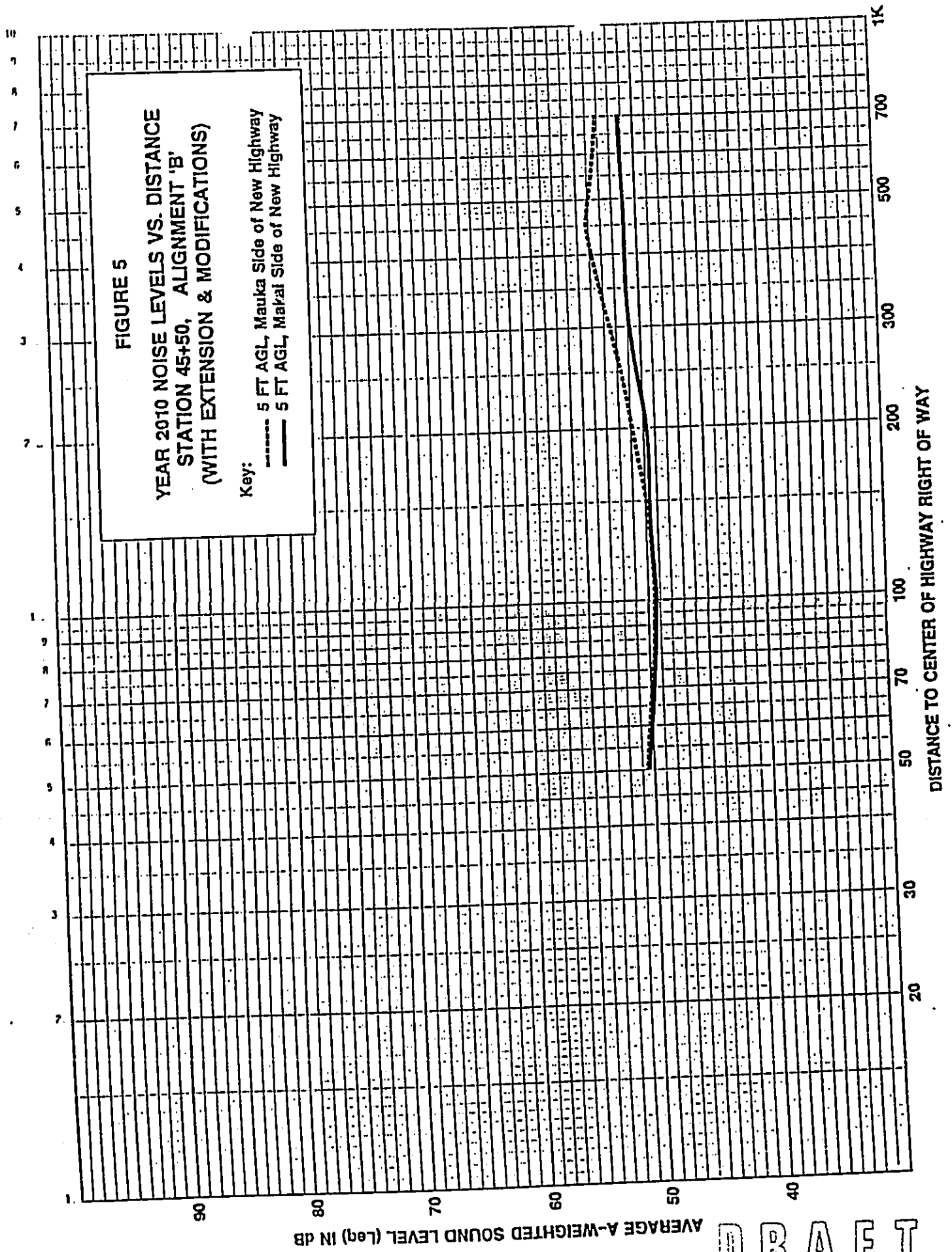
**FIGURE 3 (CONTINUED)**



AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

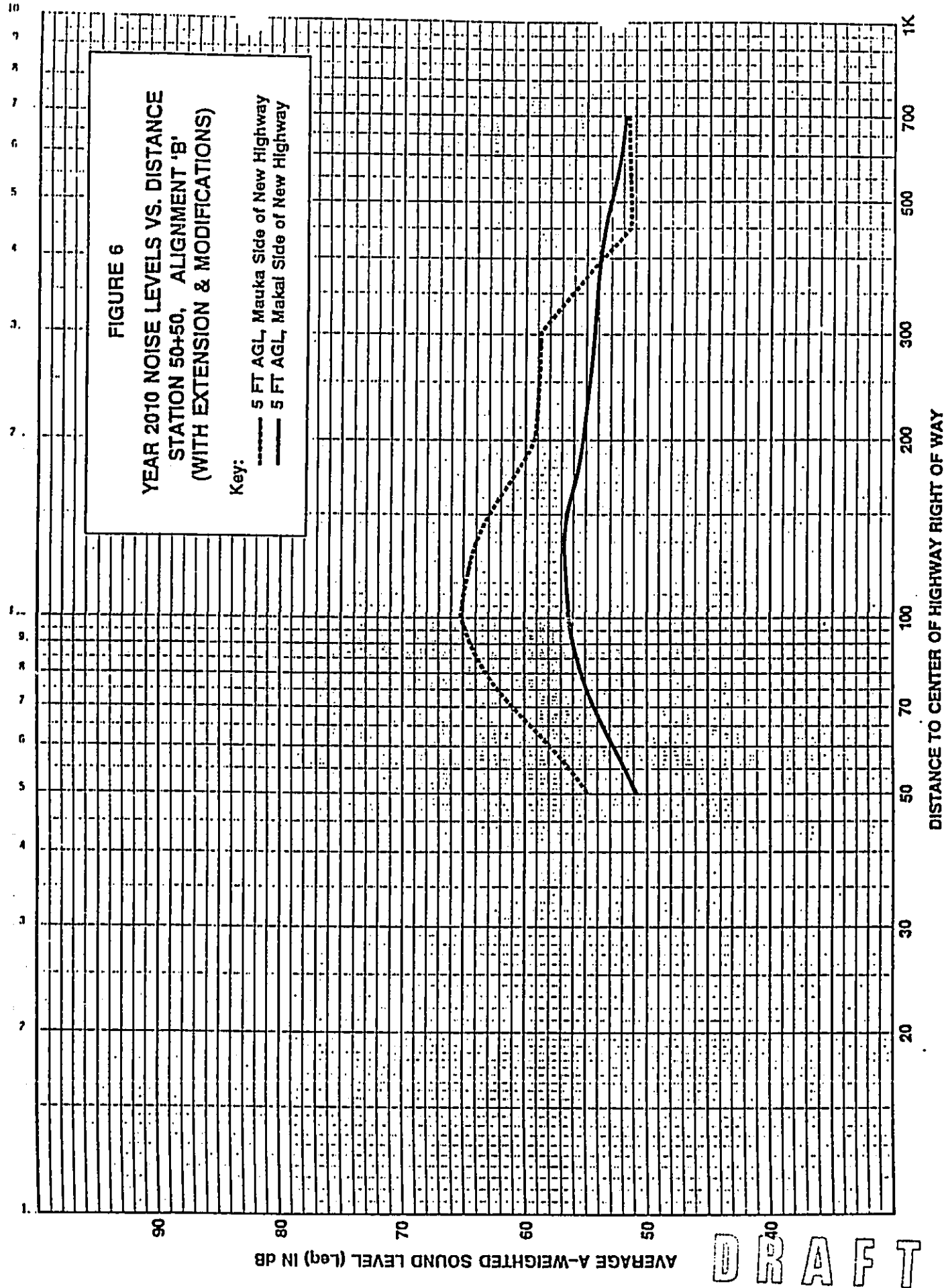
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AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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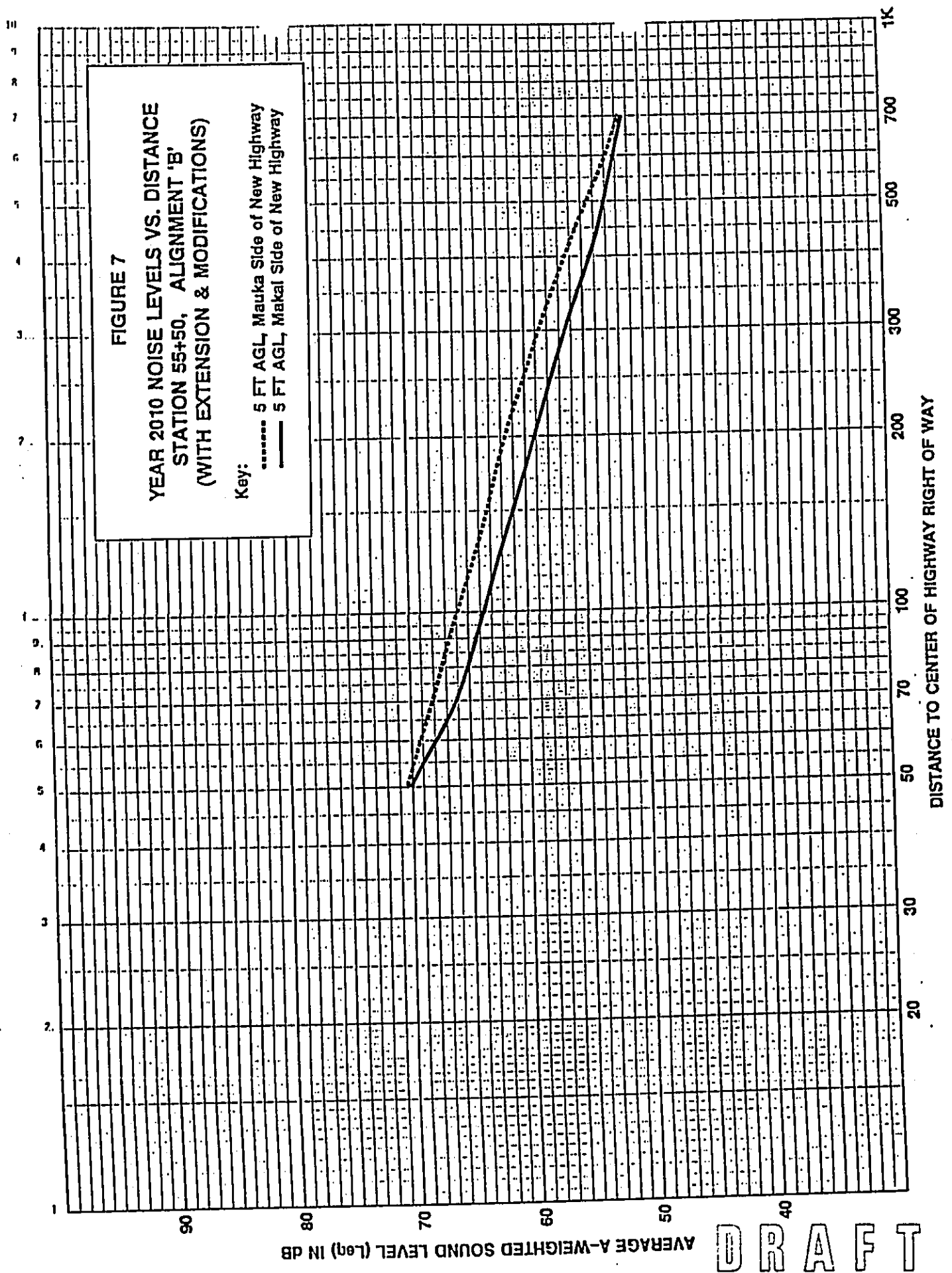


AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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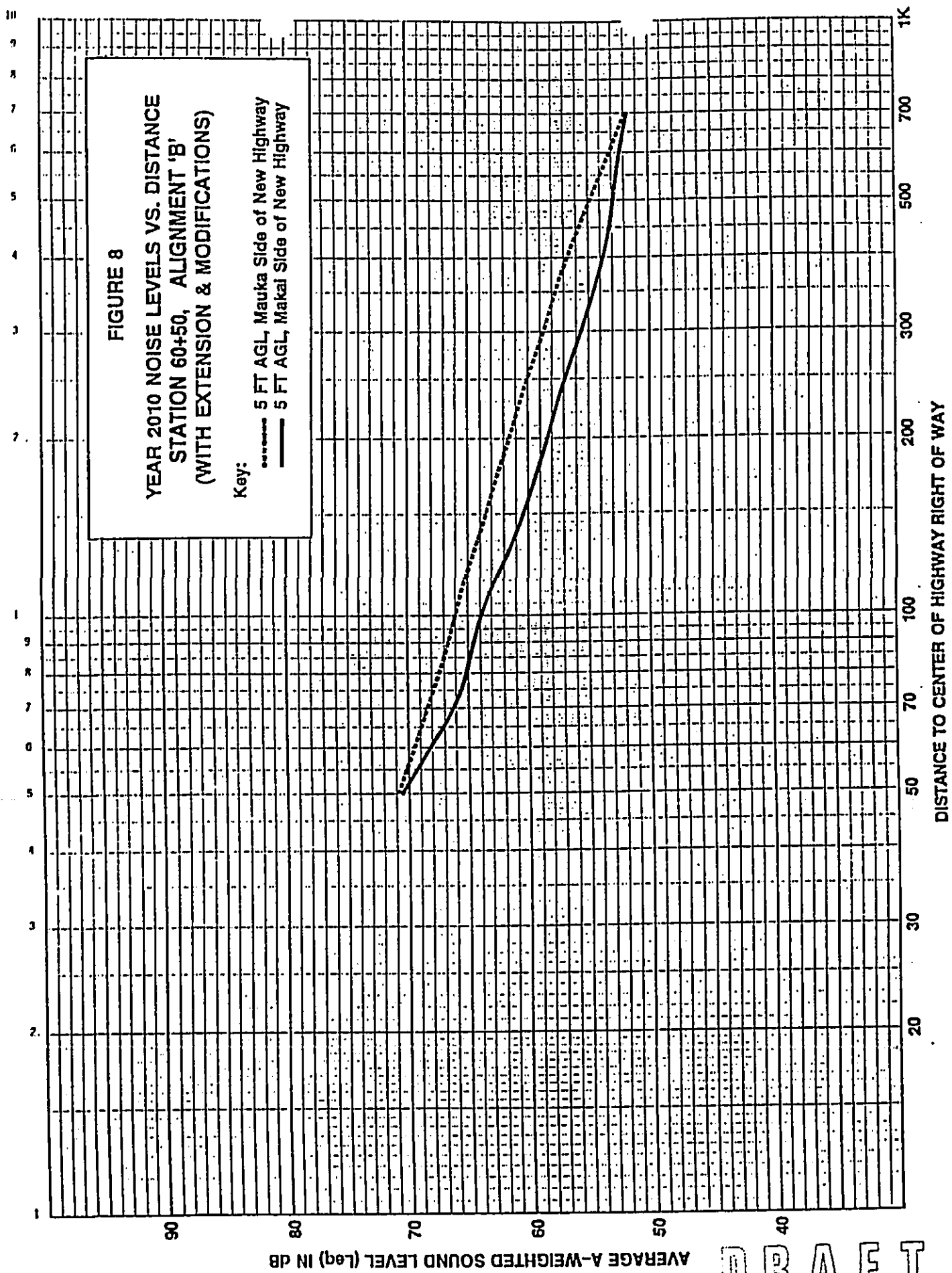
DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

100 90 80 70 60 50 40 30 20 10 0



AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

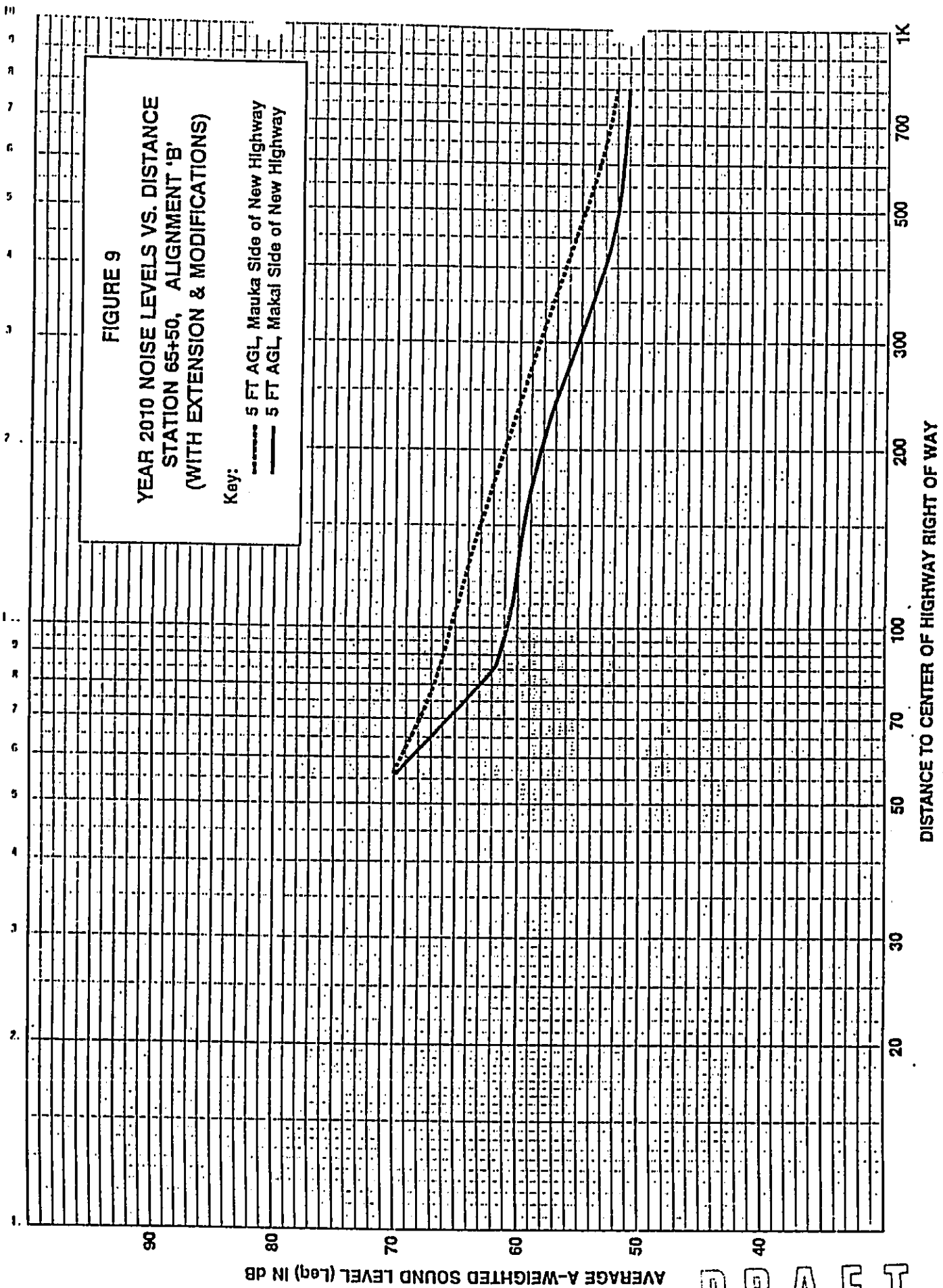
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AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

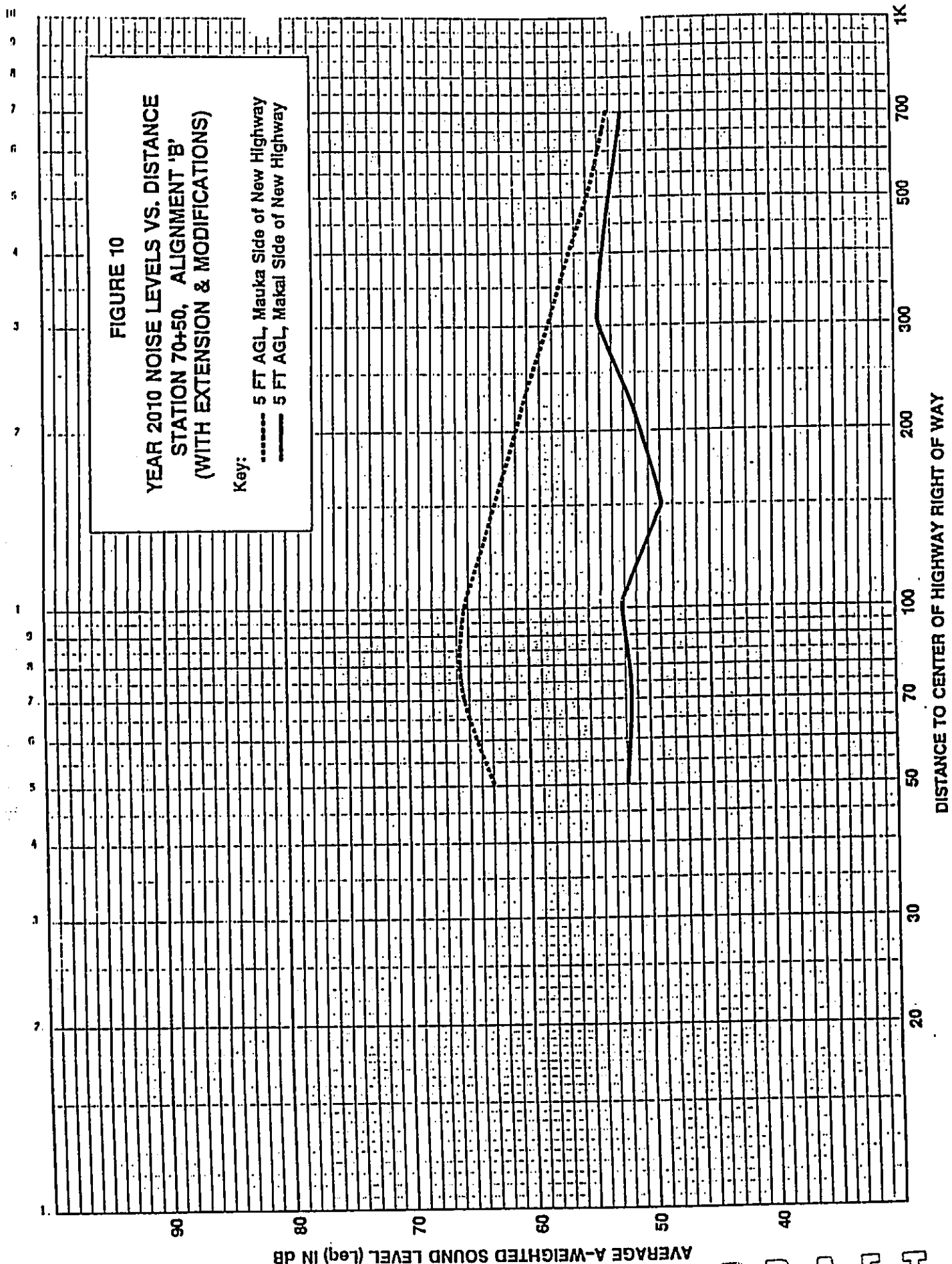
DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

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AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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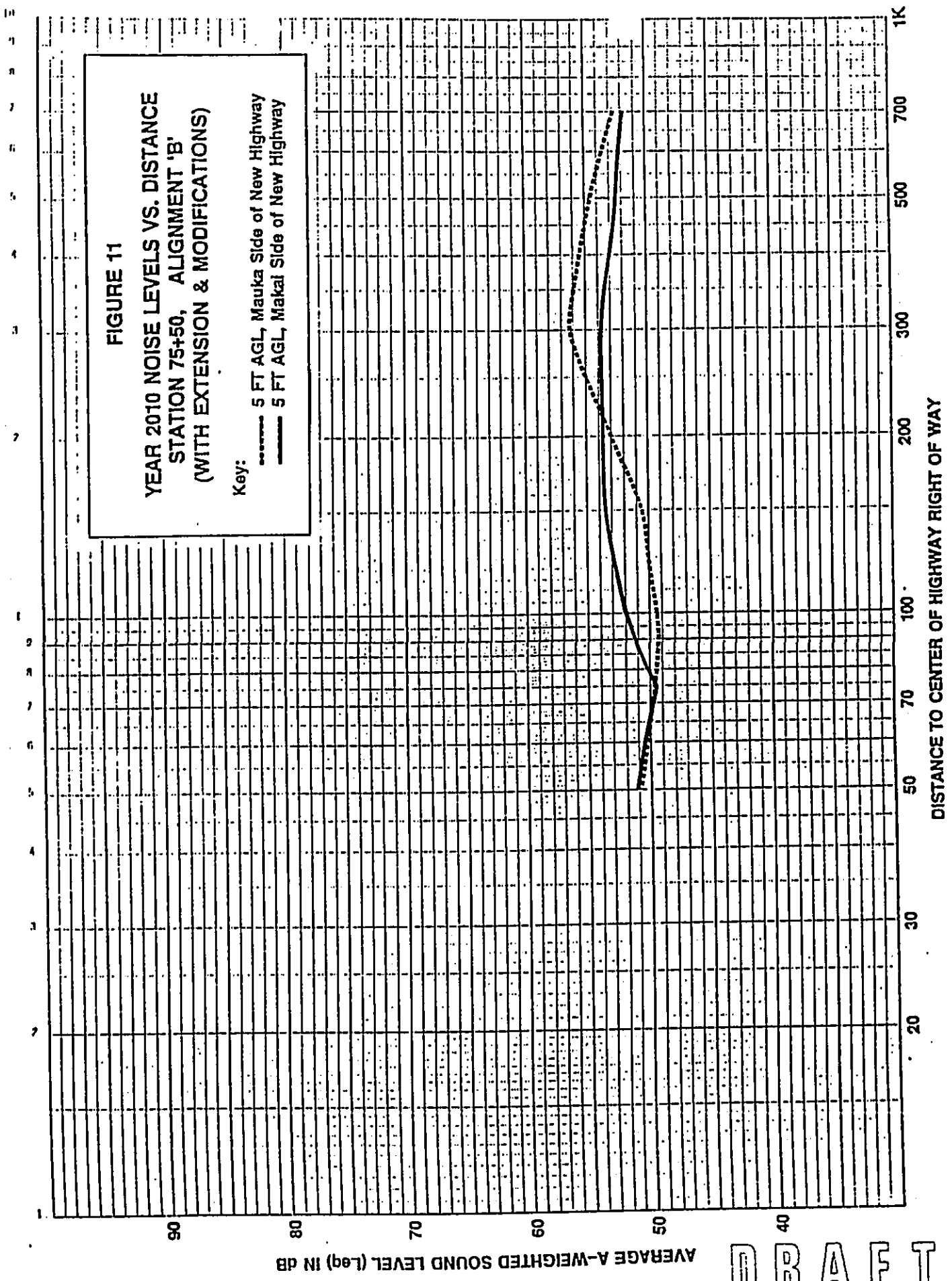
AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

DRAFT

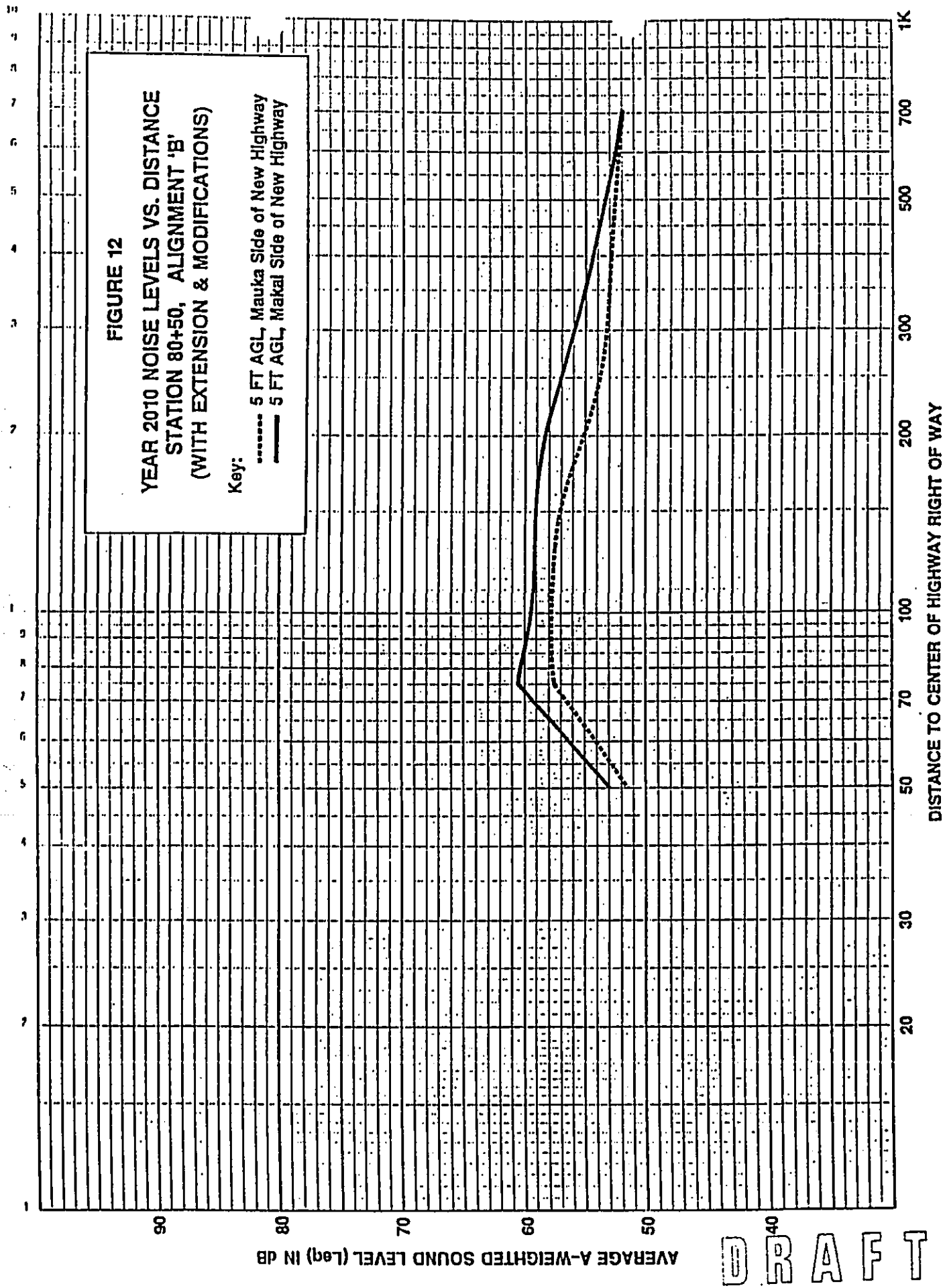
**FIGURE 11**  
**YEAR 2010 NOISE LEVELS VS. DISTANCE**  
**STATION 75+50, ALIGNMENT 'B'**  
**(WITH EXTENSION & MODIFICATIONS)**

**Key:**  
 - - - - - 5 FT AGL, Mauka Side of New Highway  
 ———— 5 FT AGL, Makai Side of New Highway



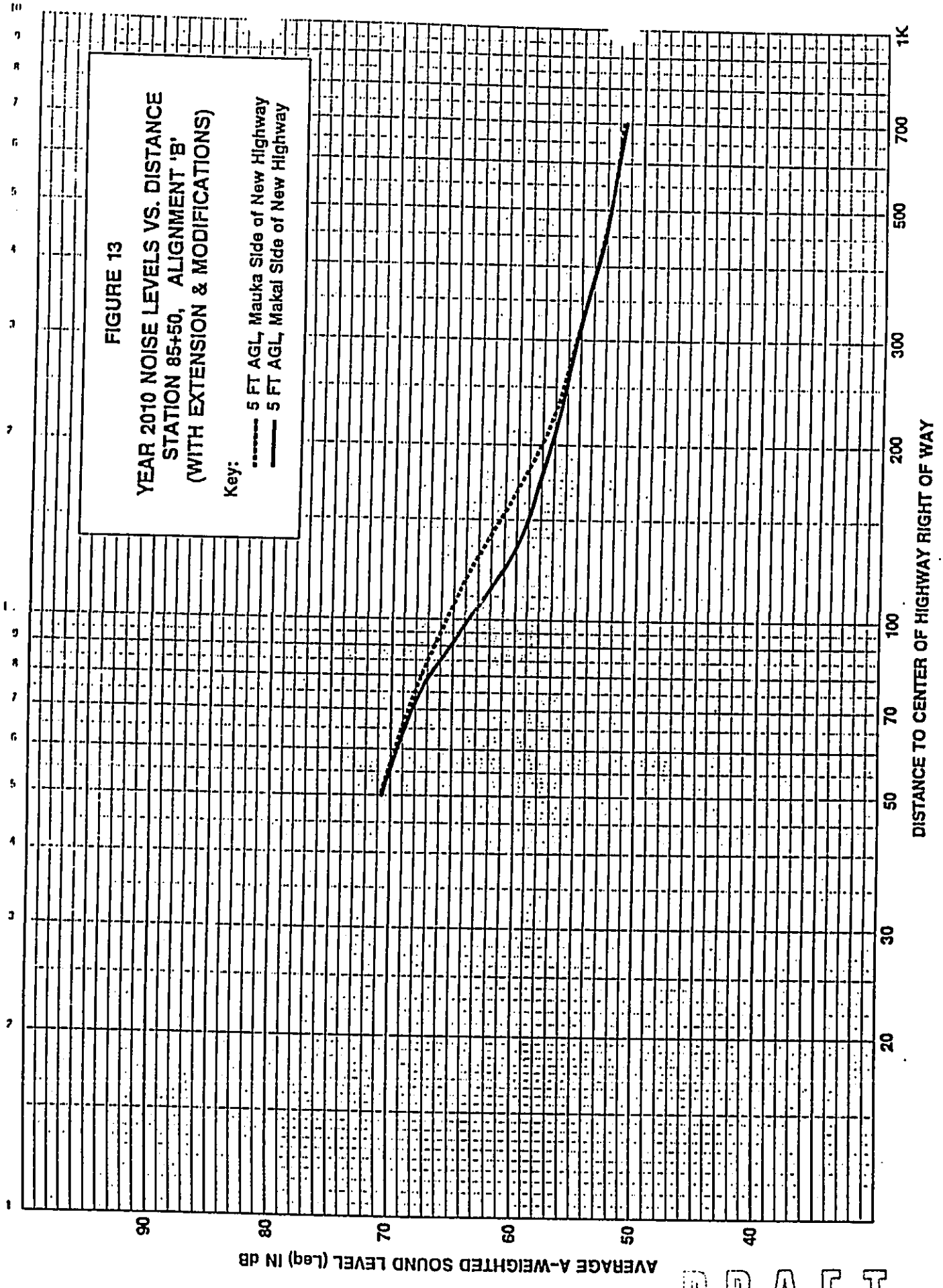
AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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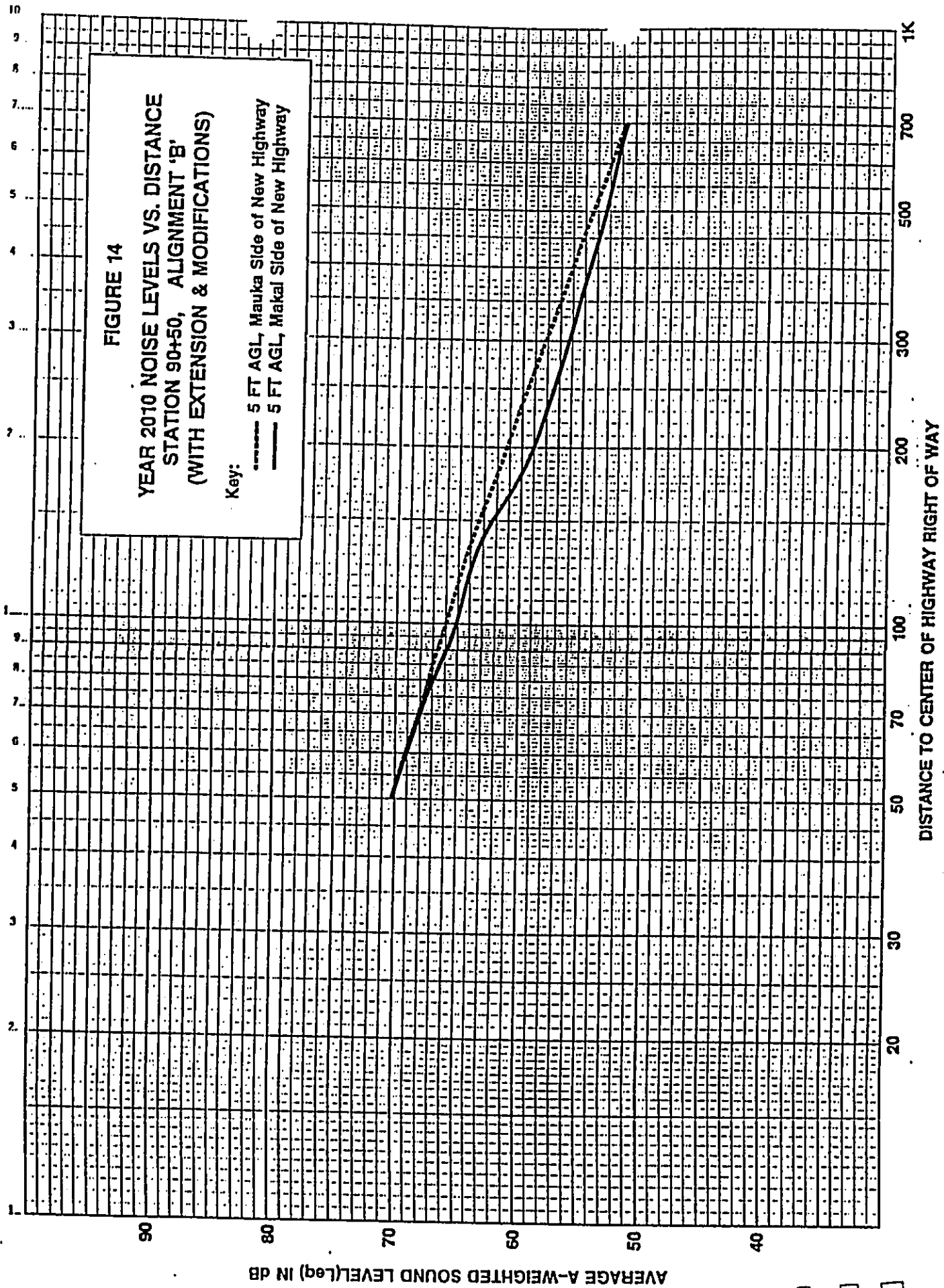


AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

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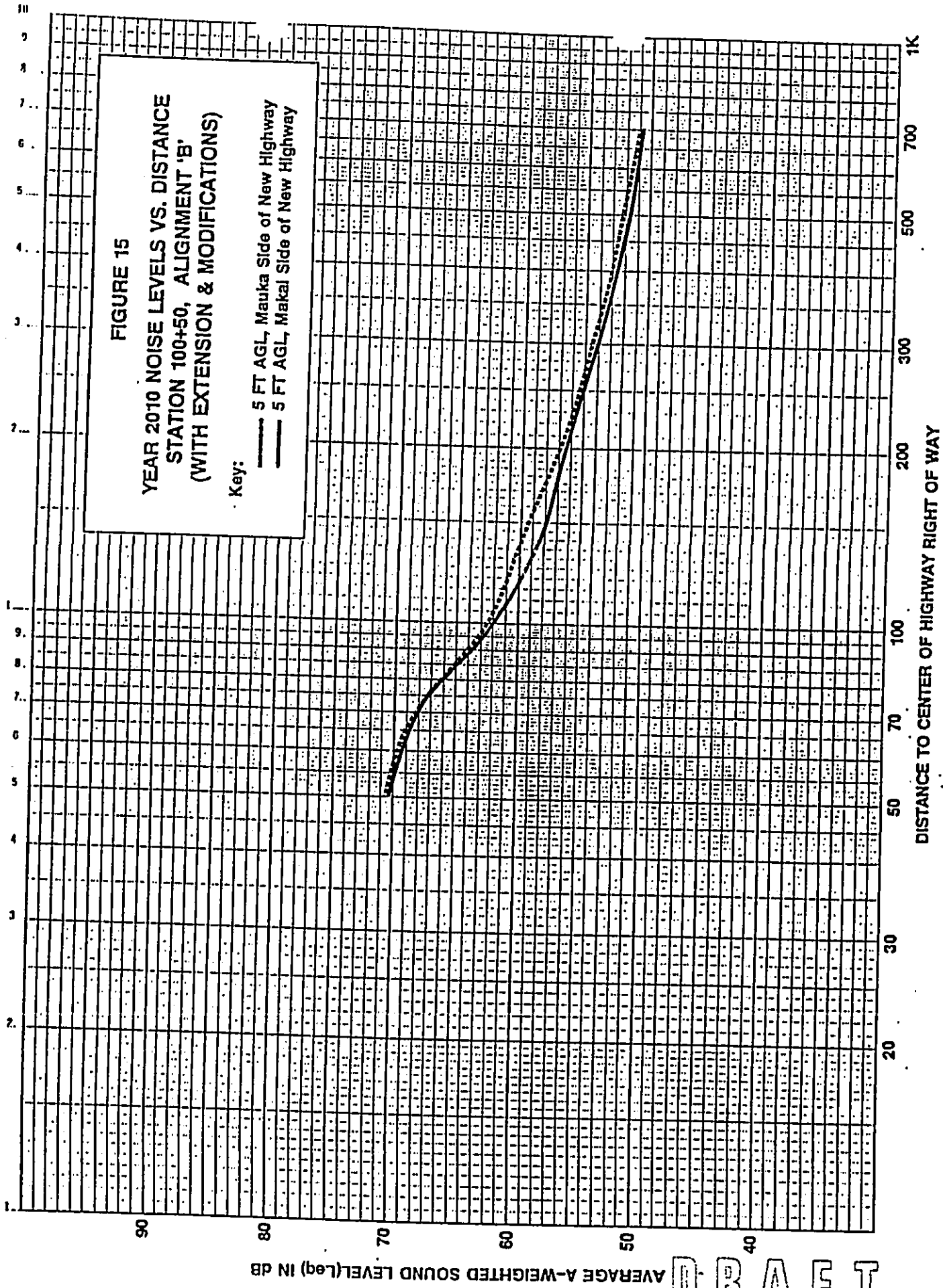


AVERAGE A-WEIGHTED SOUND LEVEL(Leq) IN DB

DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

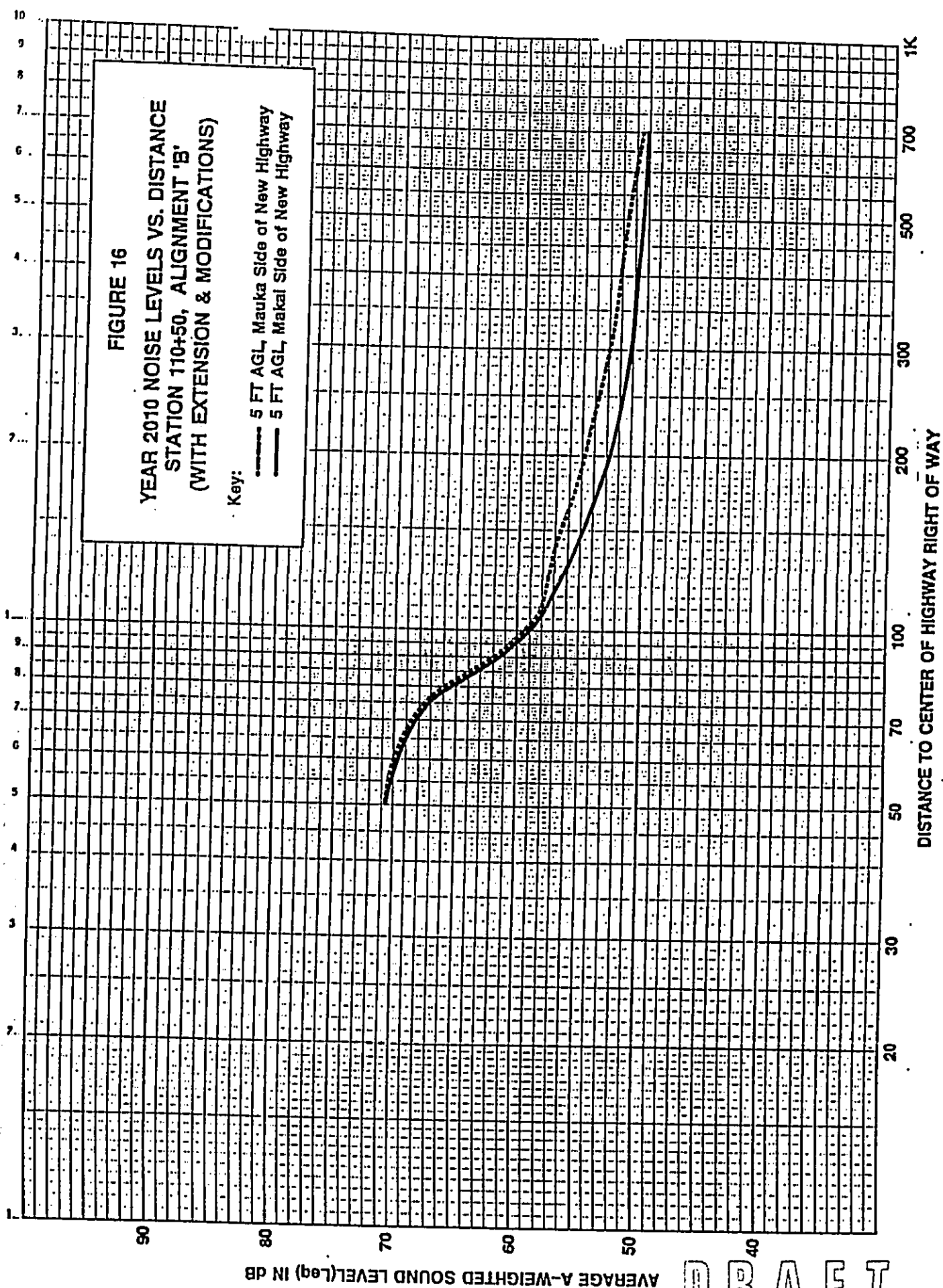
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10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



AVERAGE A-WEIGHTED SOUND LEVEL( $L_{eq}$ ) IN DB

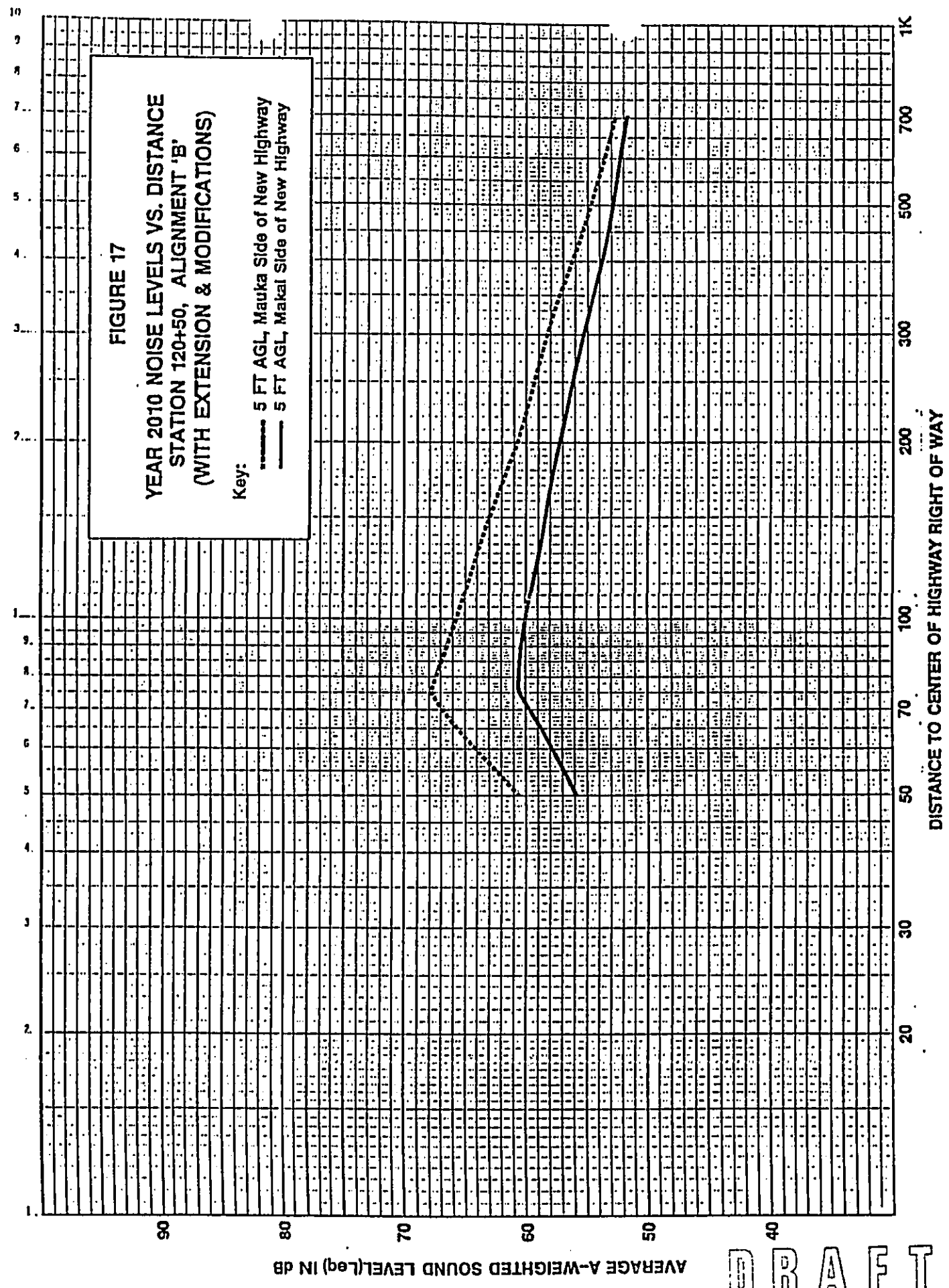
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AVERAGE A-WEIGHTED SOUND LEVEL (eq) IN DB

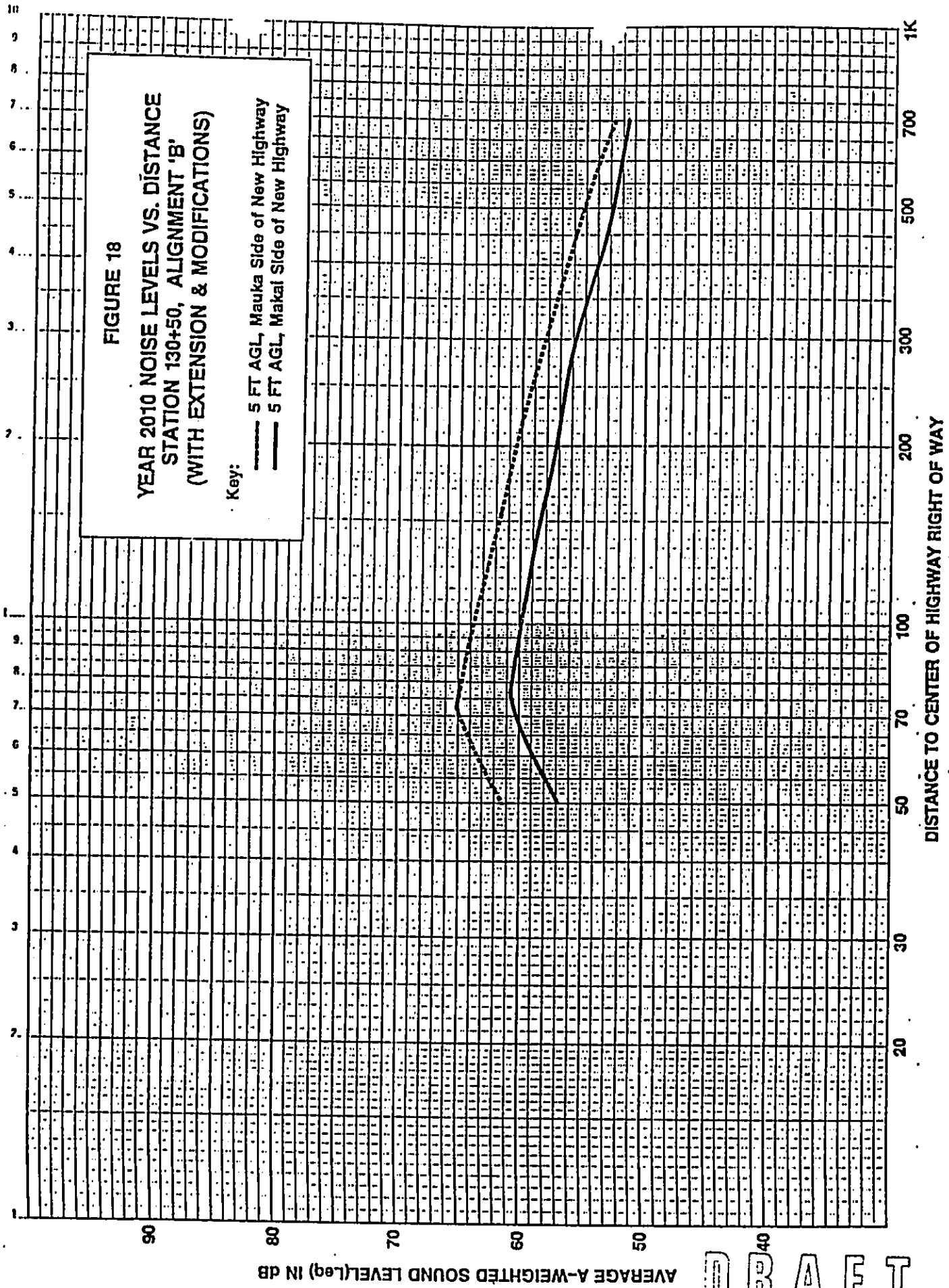
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12 10 9 8 7 6 5 4 3 2 1



AVERAGE A-WEIGHTED SOUND LEVEL(Leq) IN DB

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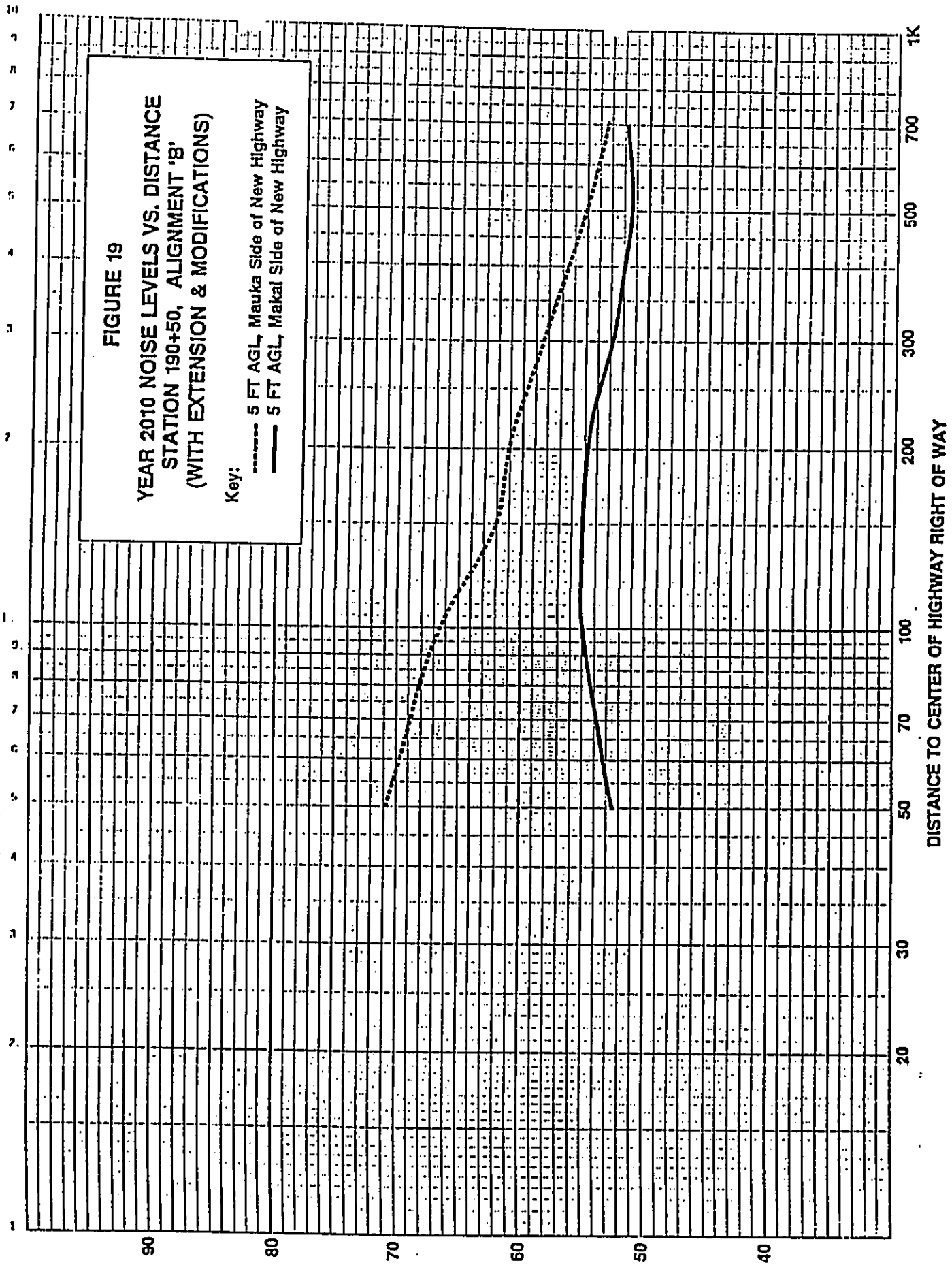
AVERAGE A-WEIGHTED SOUND LEVEL(eq) IN DB

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DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

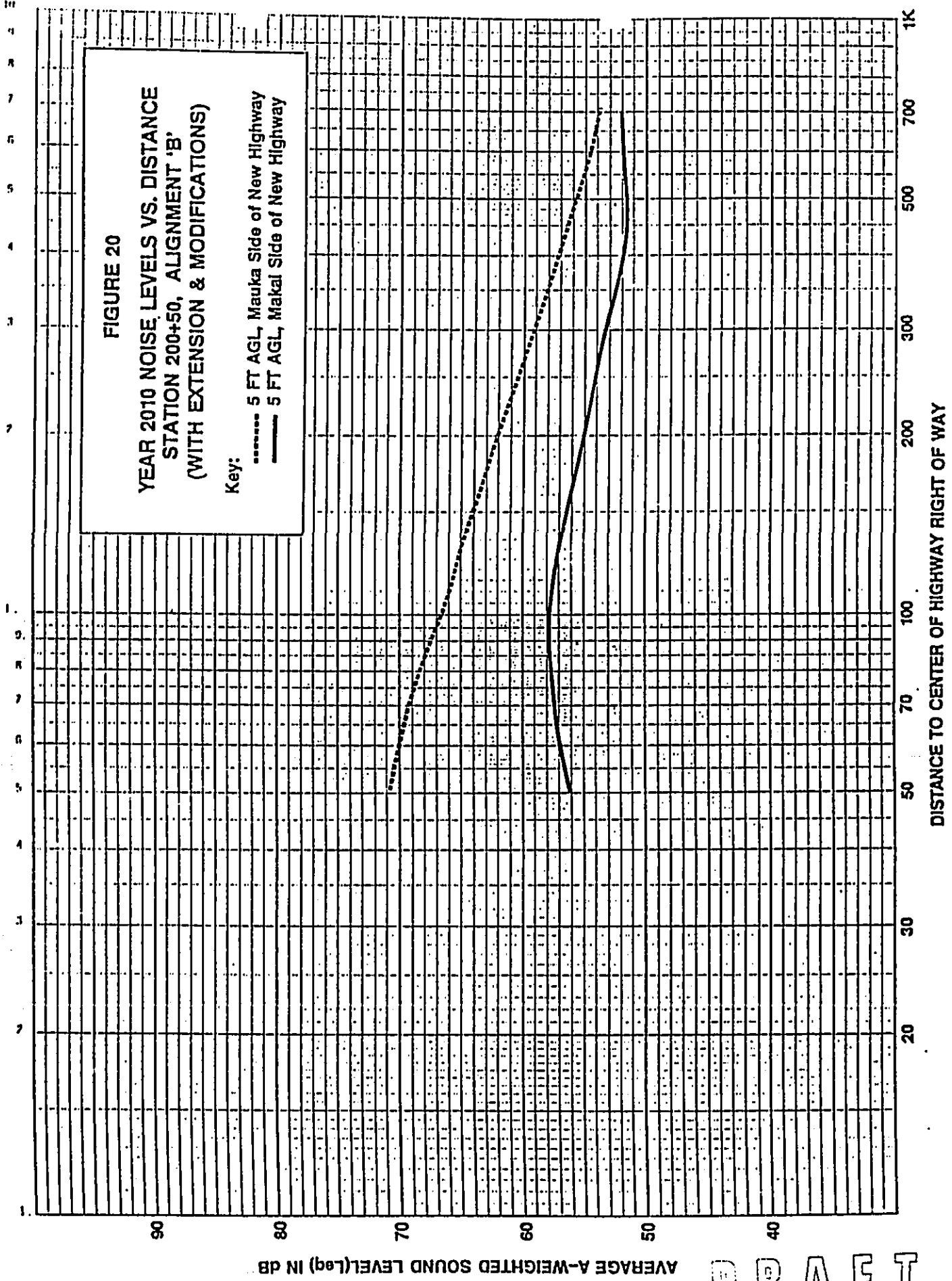
**FIGURE 19**  
**YEAR 2010 NOISE LEVELS VS. DISTANCE**  
**STATION 190+50, ALIGNMENT 'B'**  
**(WITH EXTENSION & MODIFICATIONS)**

**Key:**  
 - - - - - 5 FT AGL, Mauka Side of New Highway  
 ——— 5 FT AGL, Makai Side of New Highway



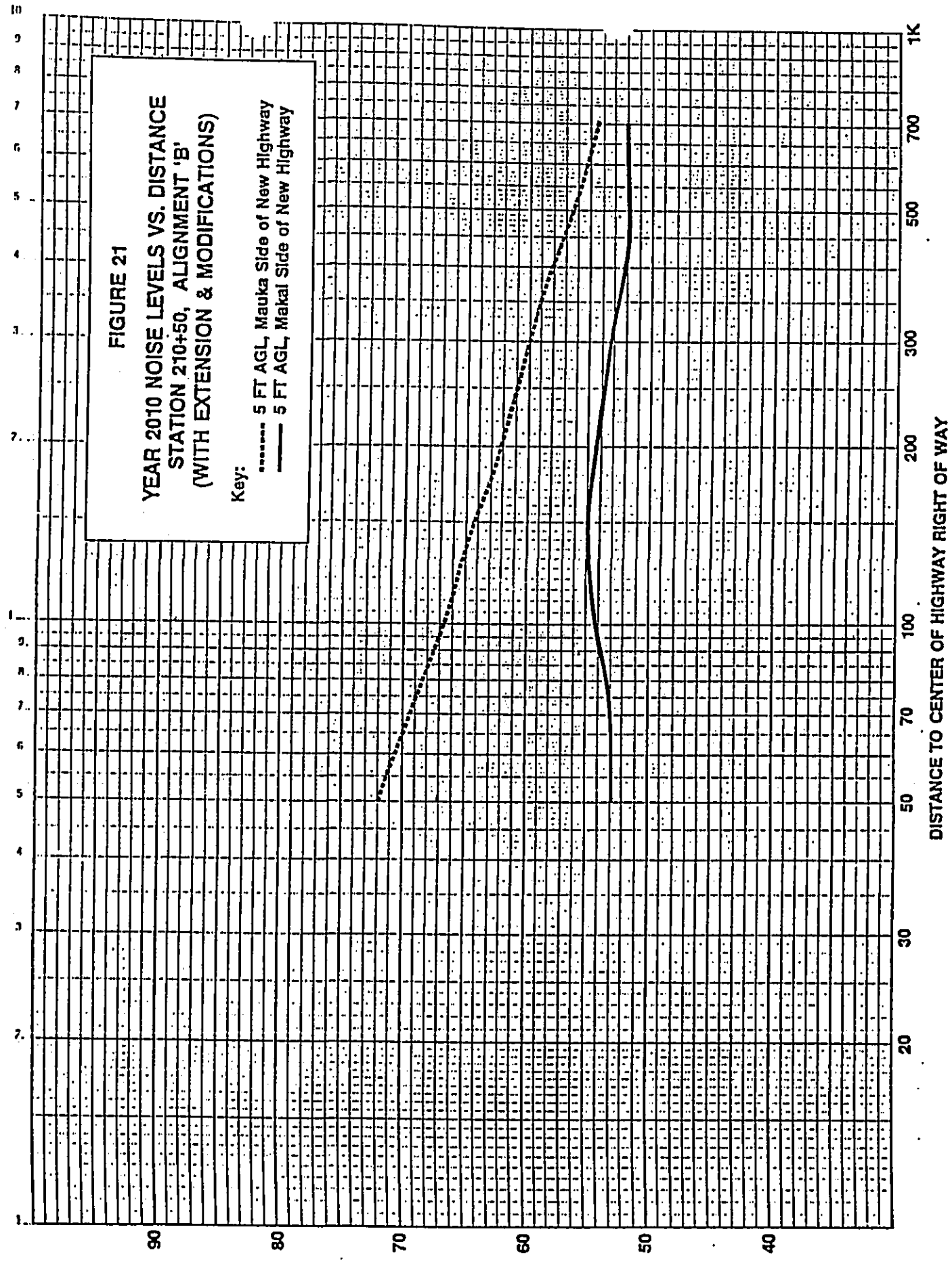
AVERAGE A-WEIGHTED SOUND LEVEL(Leq) IN DB

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AVERAGE A-WEIGHTED SOUND LEVEL(Leq) IN DB

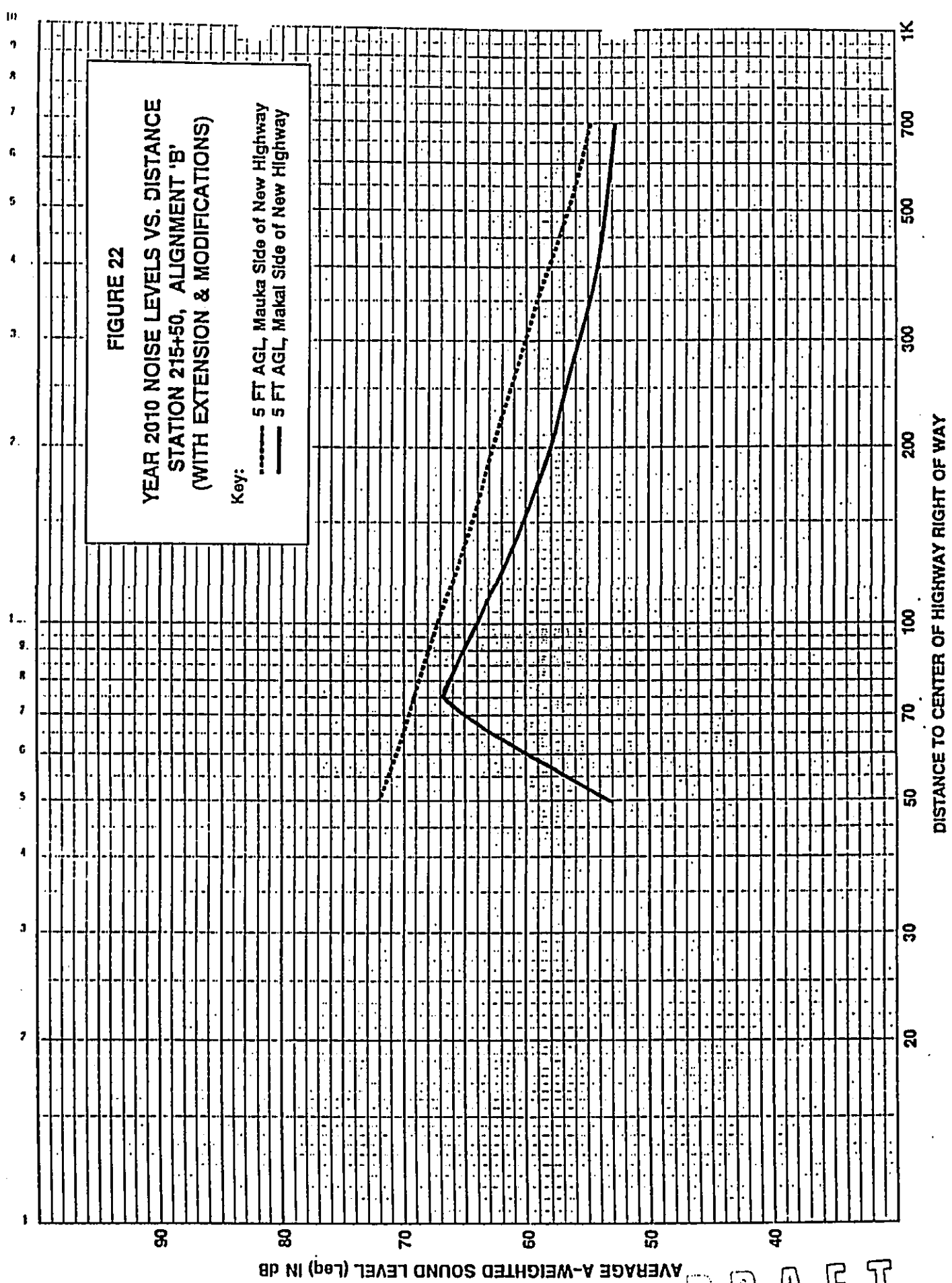
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AVERAGE A-WEIGHTED SOUND LEVEL(eq) IN DB

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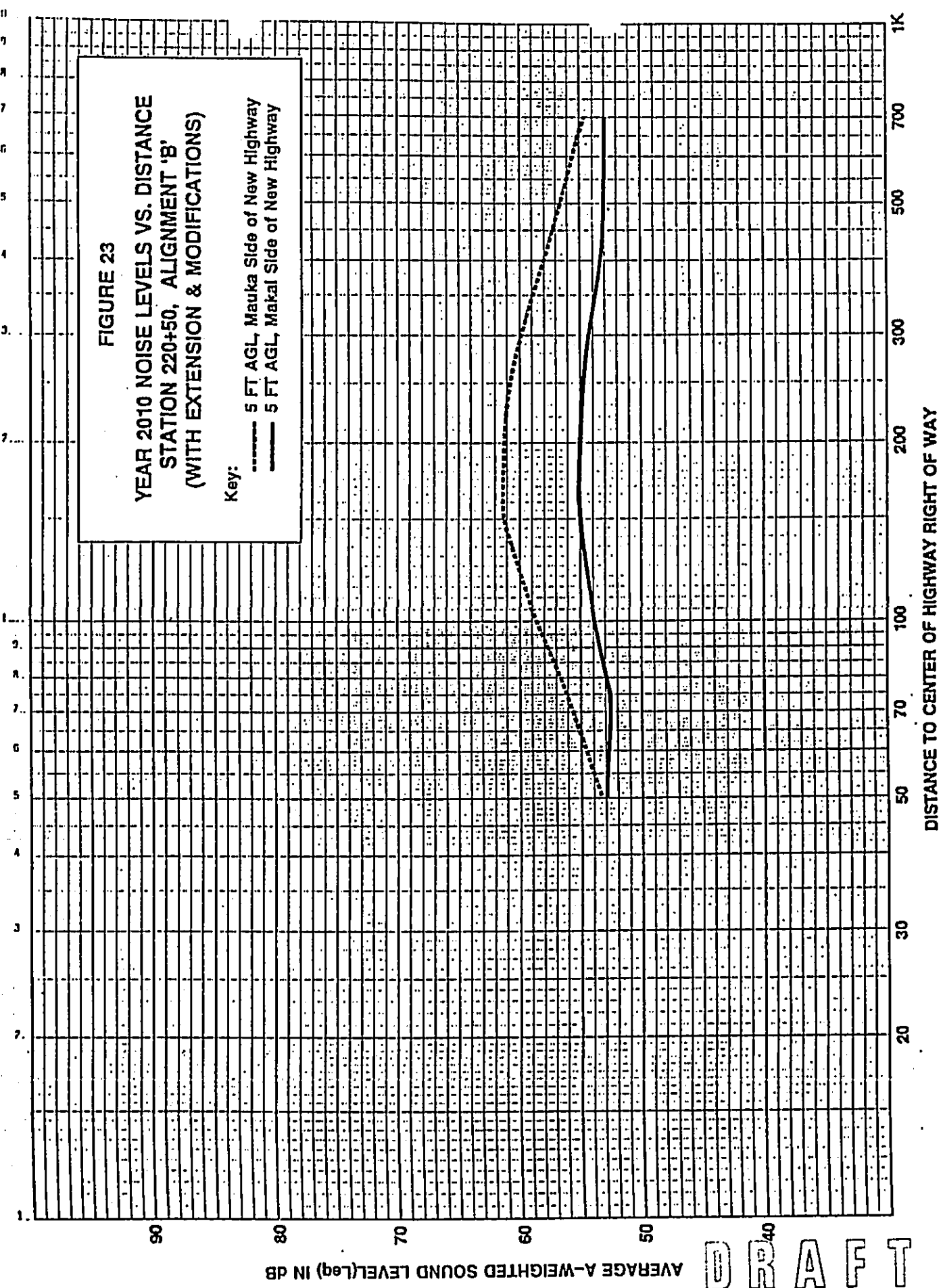
AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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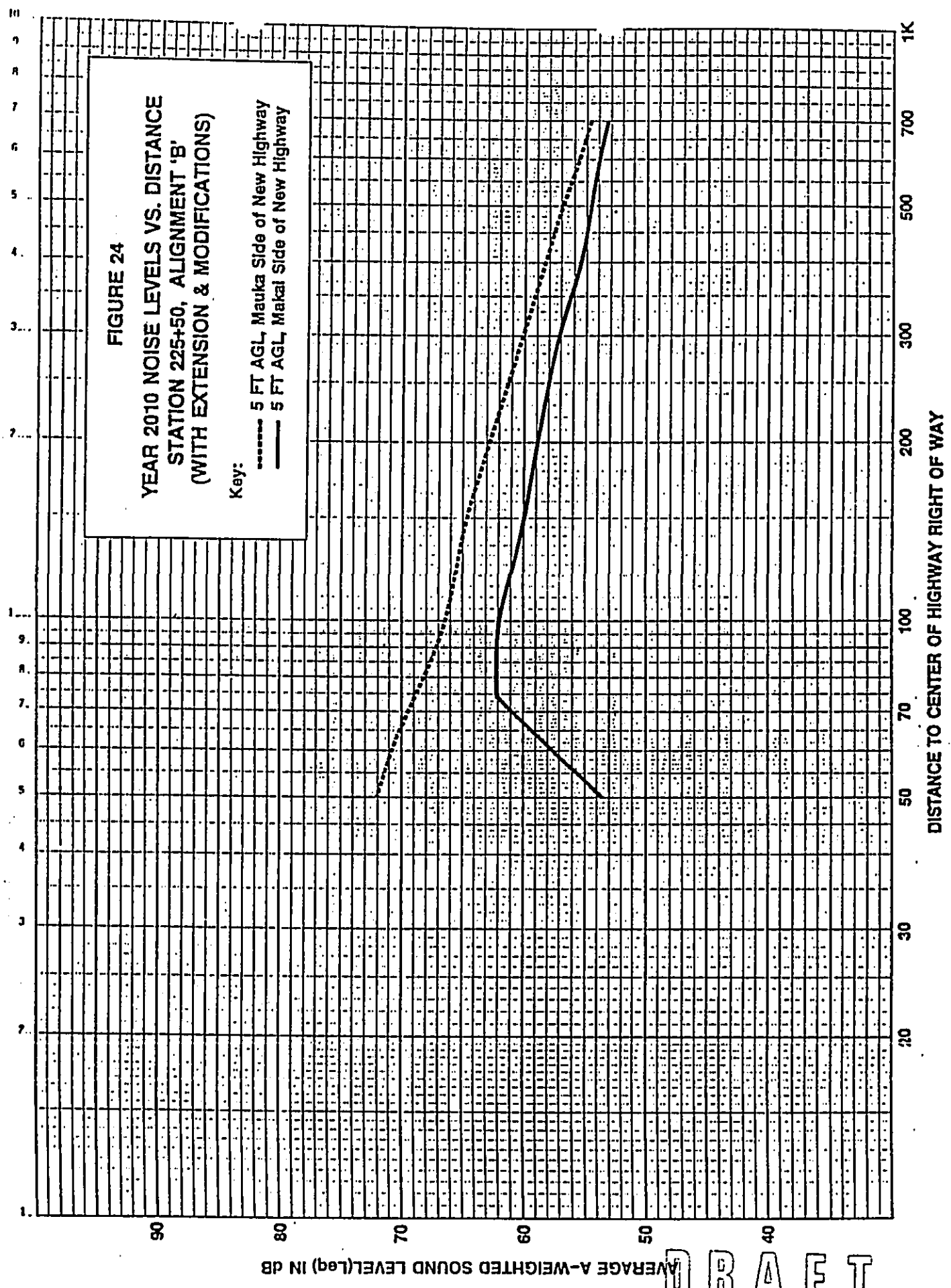
**FIGURE 23**  
**YEAR 2010 NOISE LEVELS VS. DISTANCE**  
**STATION 220+50, ALIGNMENT 'B'**  
**(WITH EXTENSION & MODIFICATIONS)**

**Key:**  
----- 5 FT AGL, Mauka Side of New Highway  
————— 5 FT AGL, Makai Side of New Highway

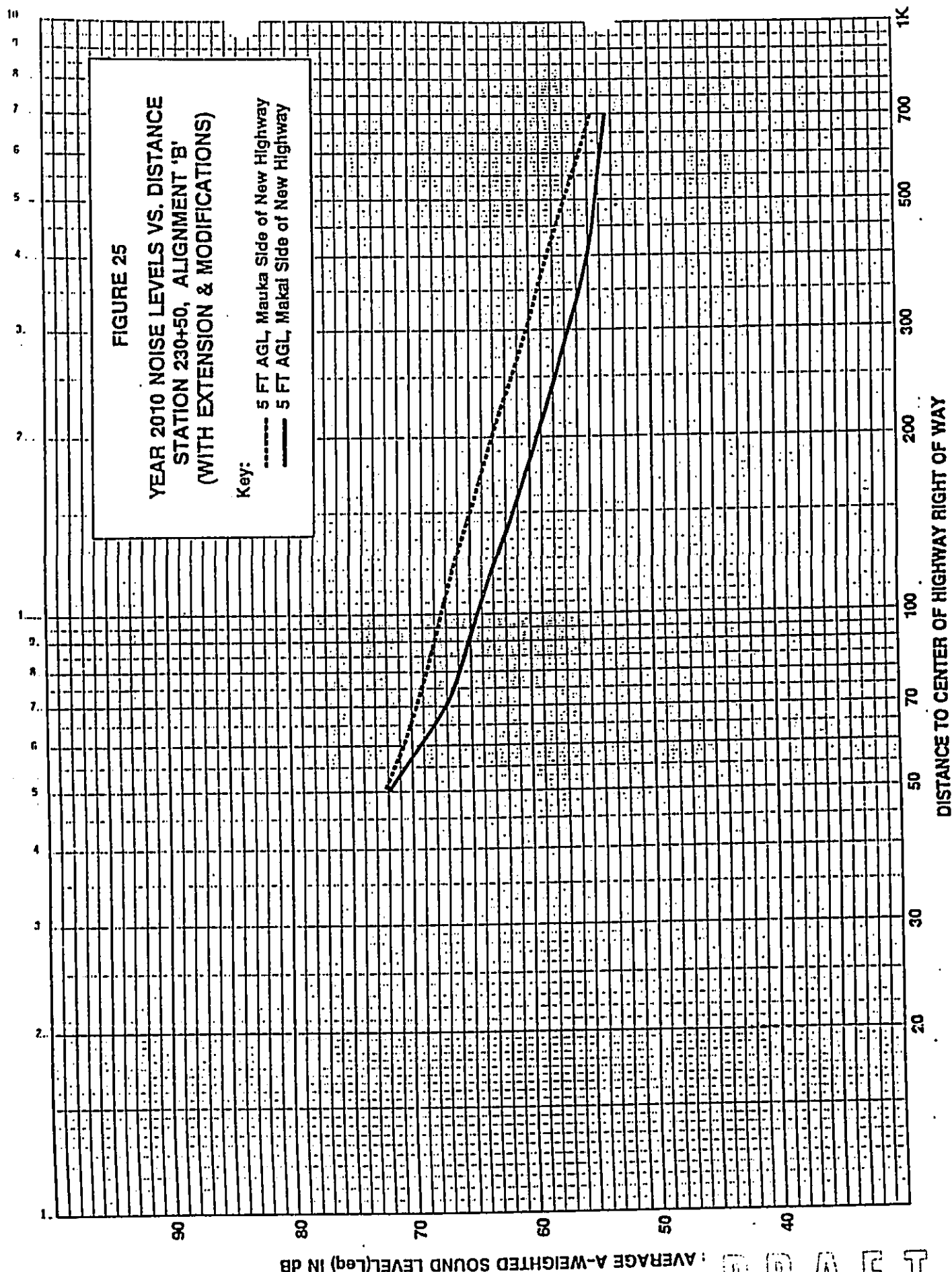


AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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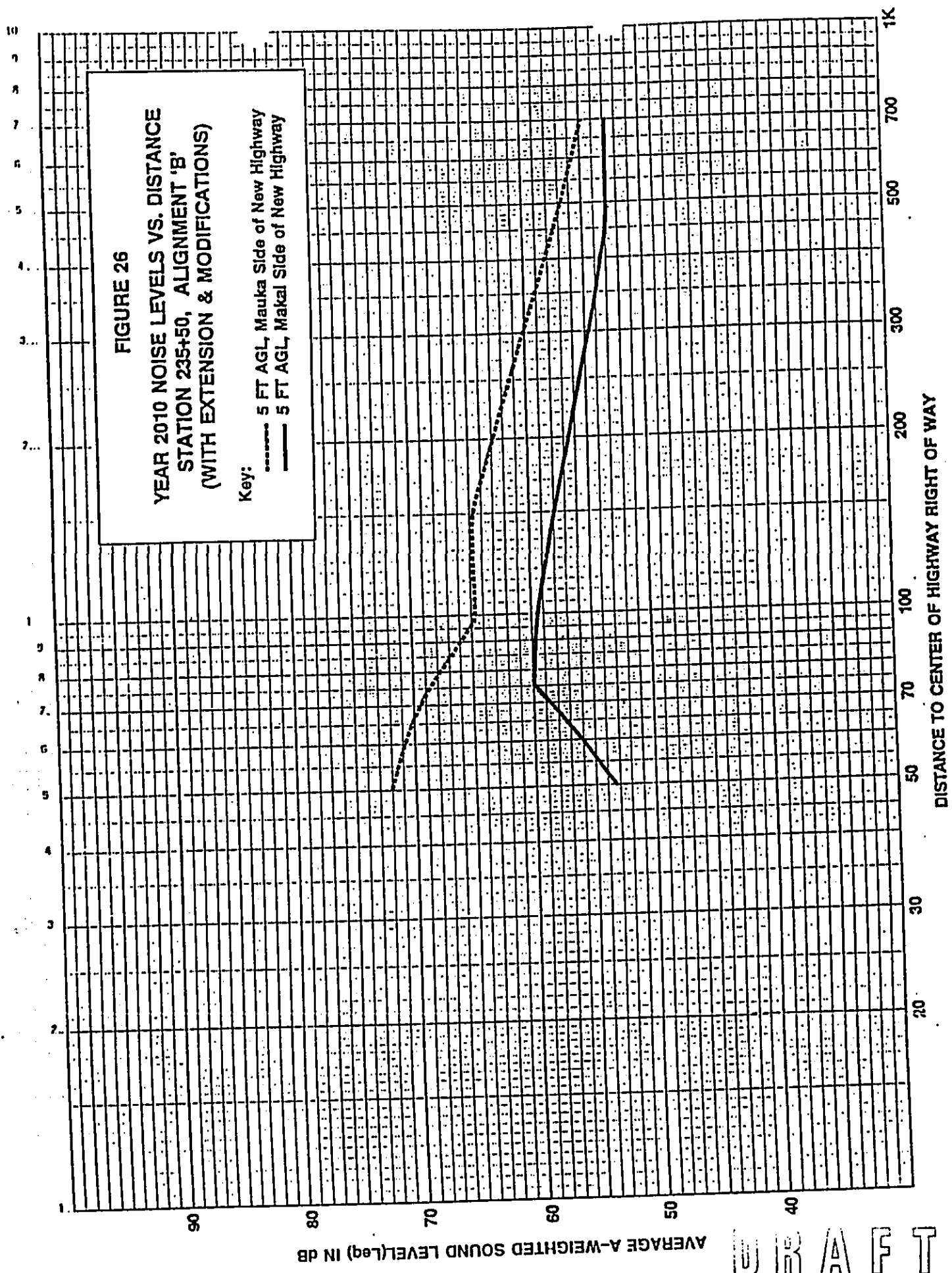


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AVERAGE A-WEIGHTED SOUND LEVEL(Leq) IN DB

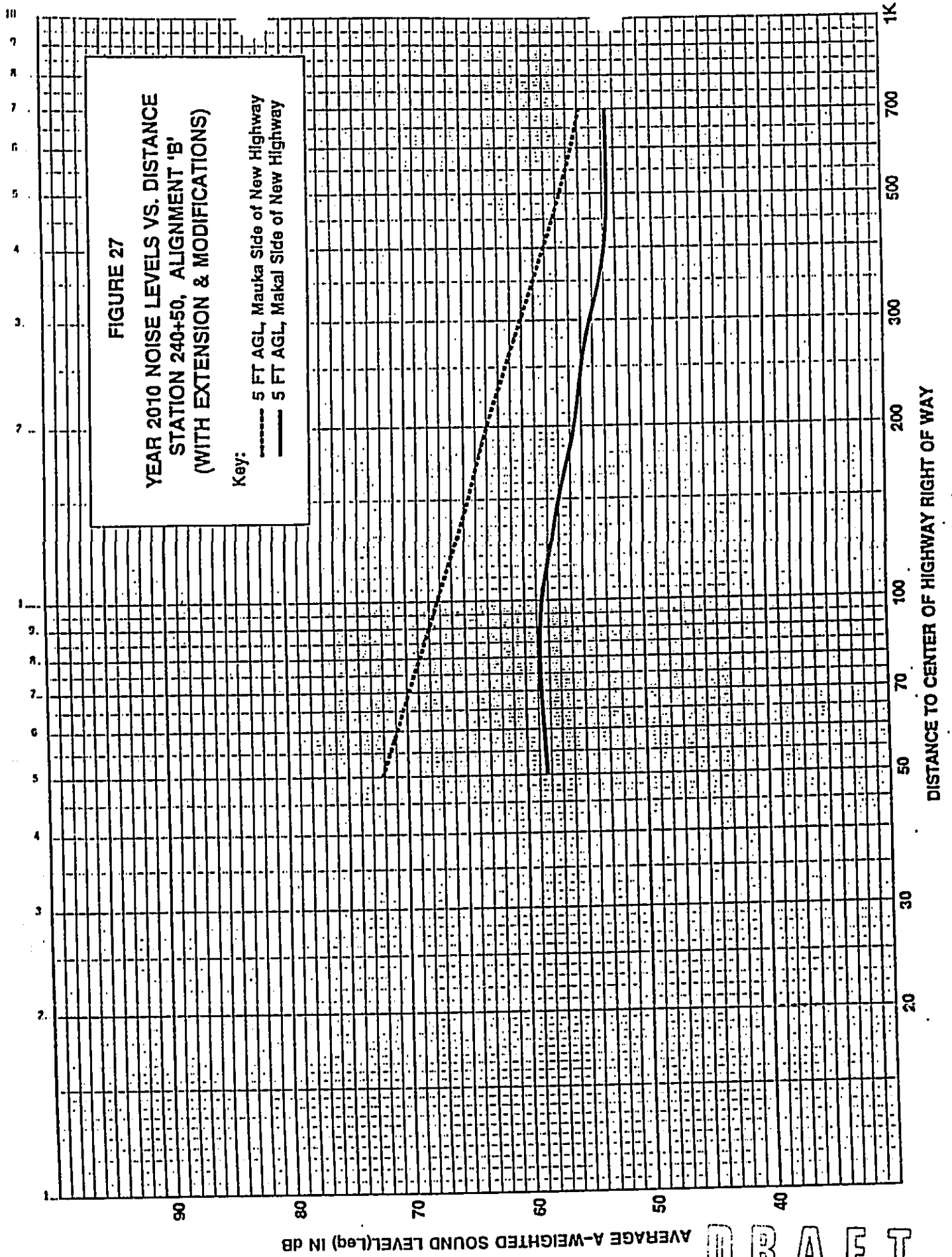
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AVERAGE A-WEIGHTED SOUND LEVEL(Leq) IN DB

DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

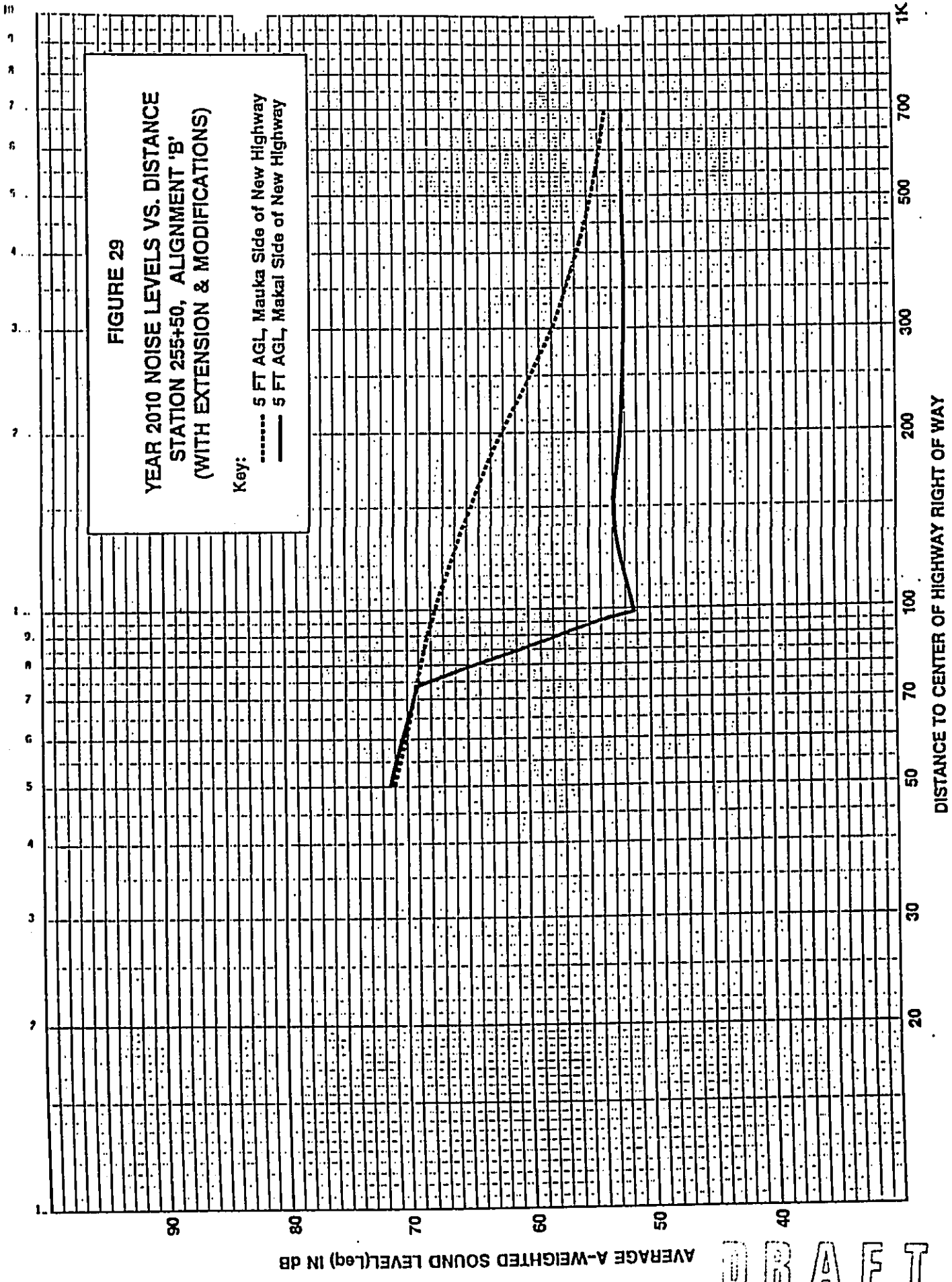
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AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

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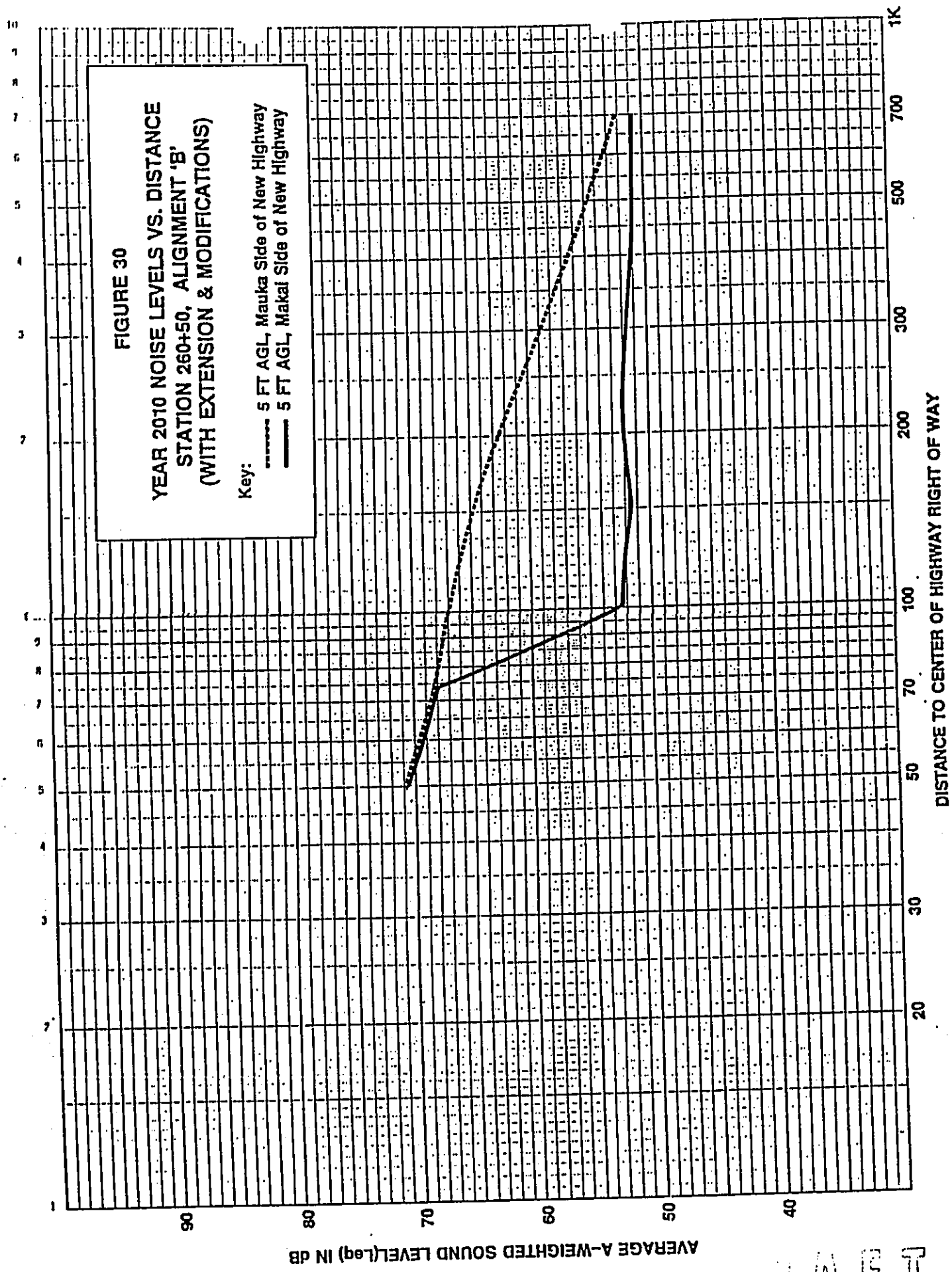




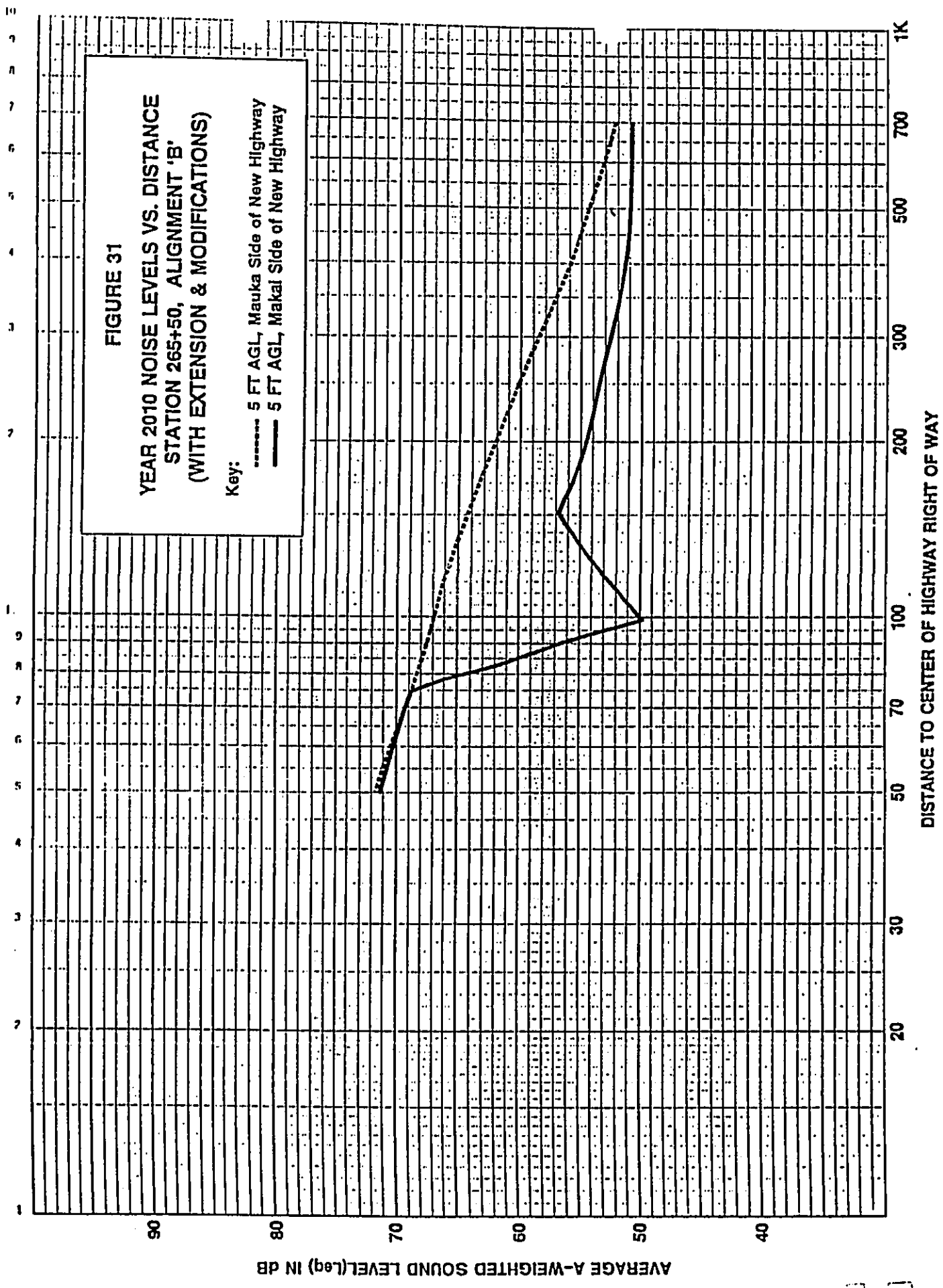
AVERAGE A-WEIGHTED SOUND LEVEL (eq) IN DB

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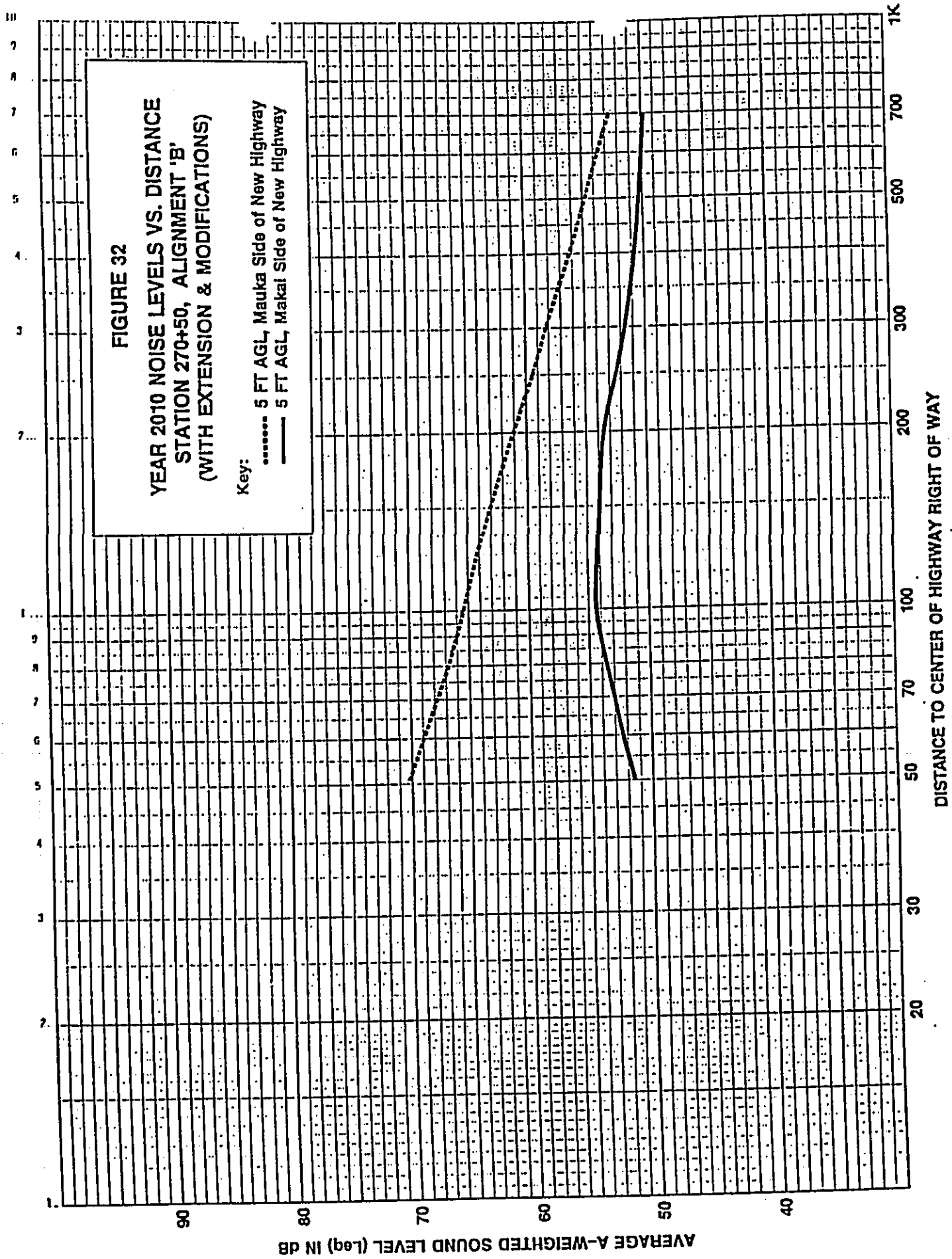




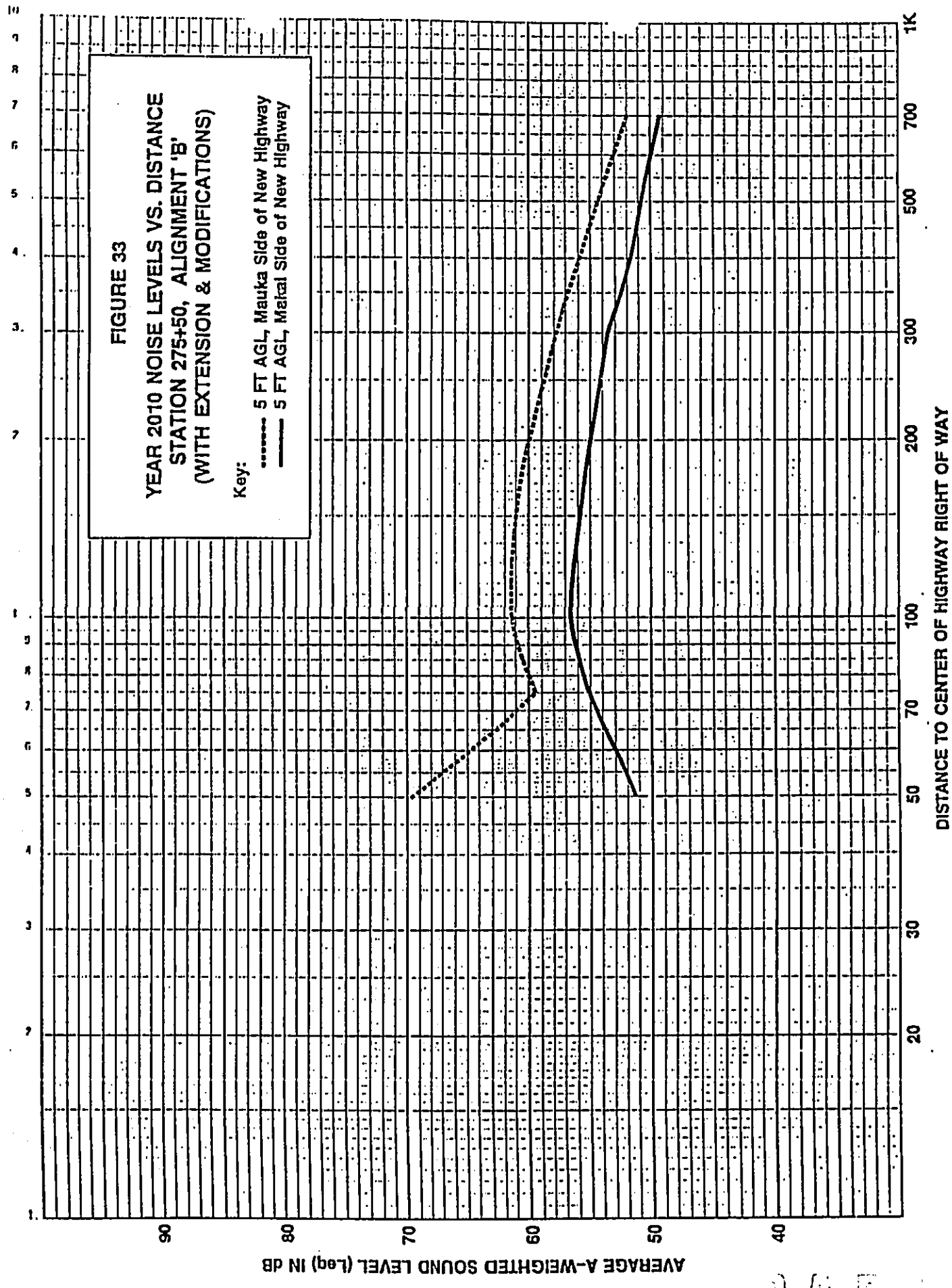
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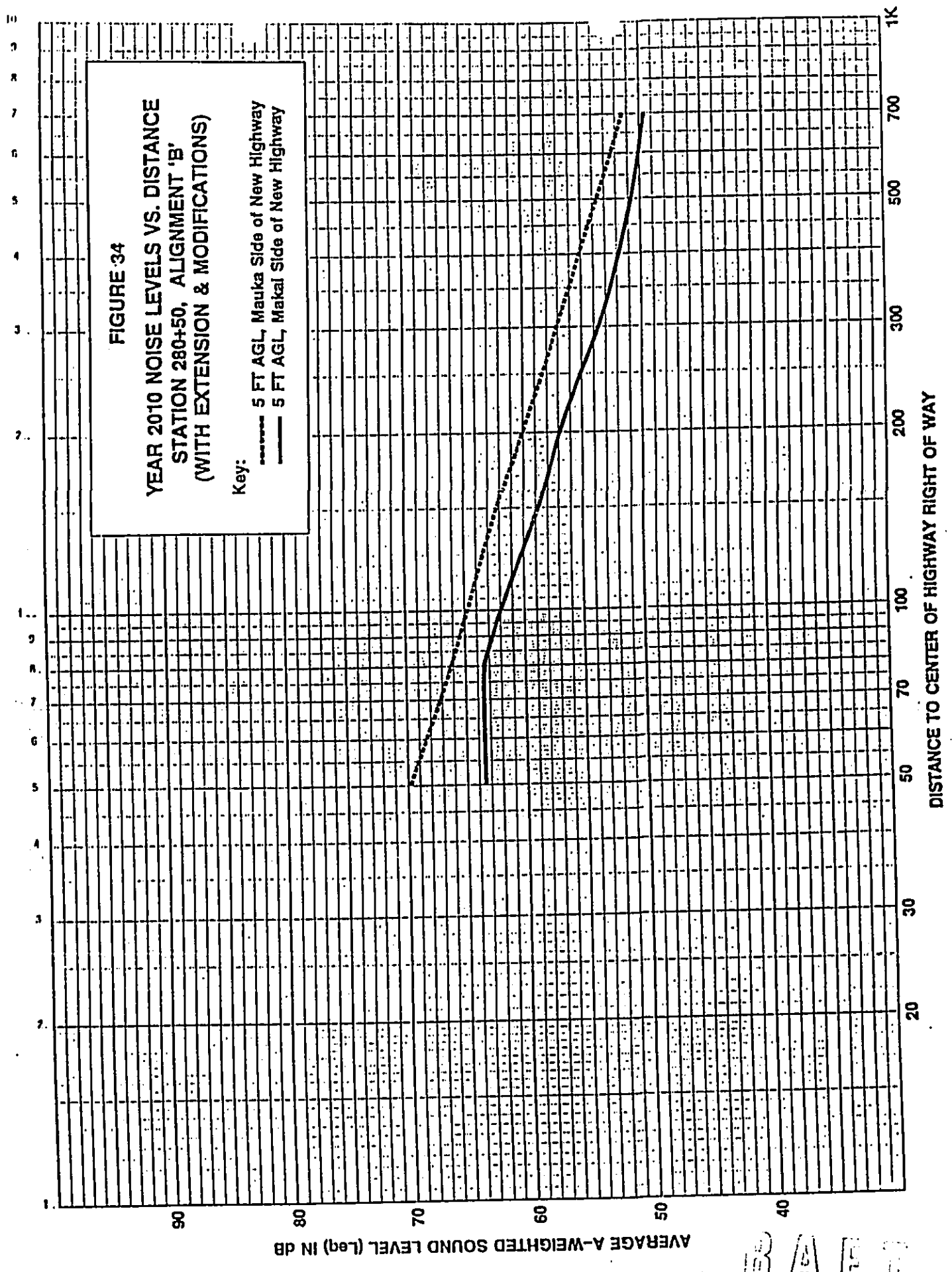
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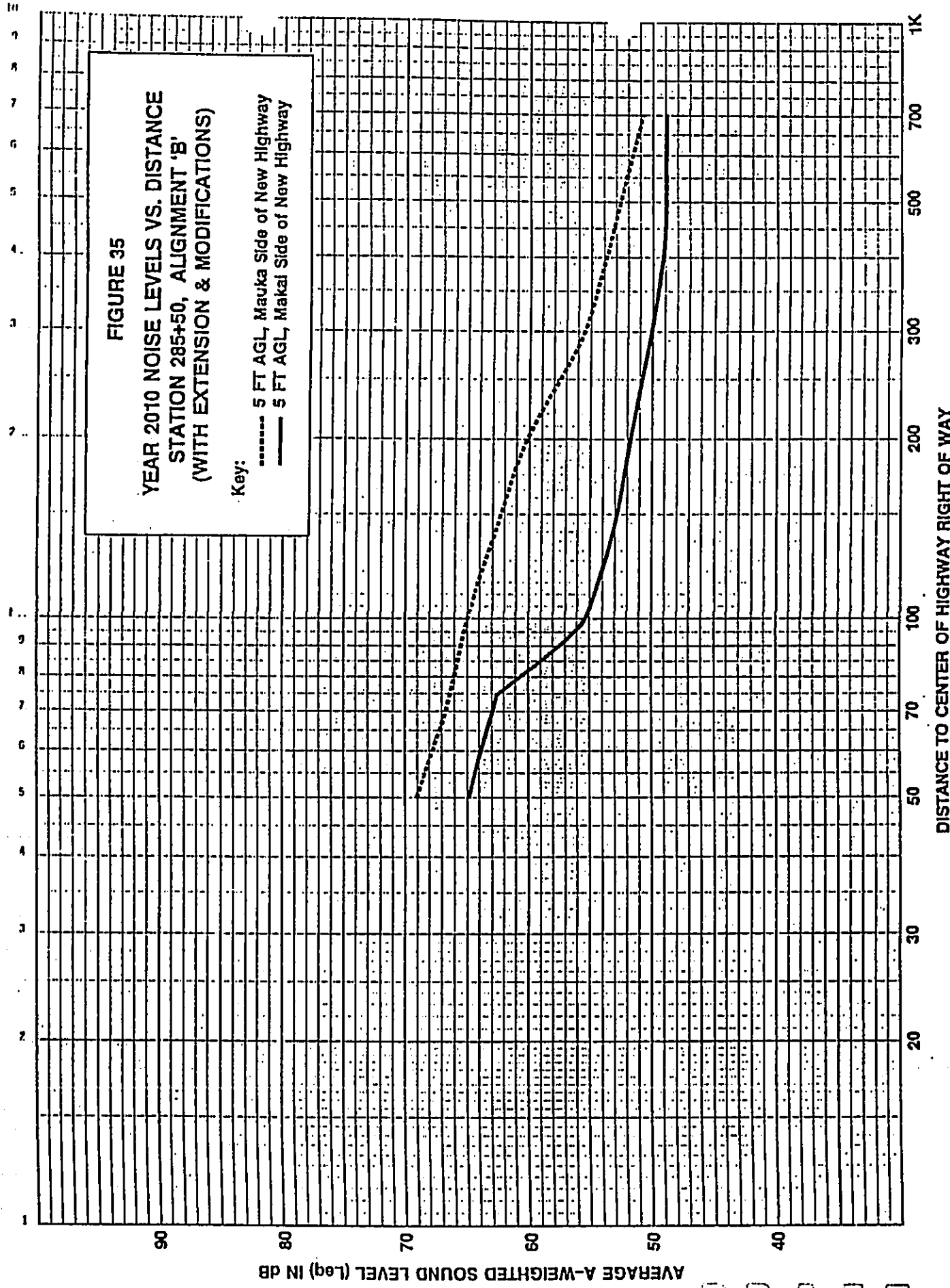
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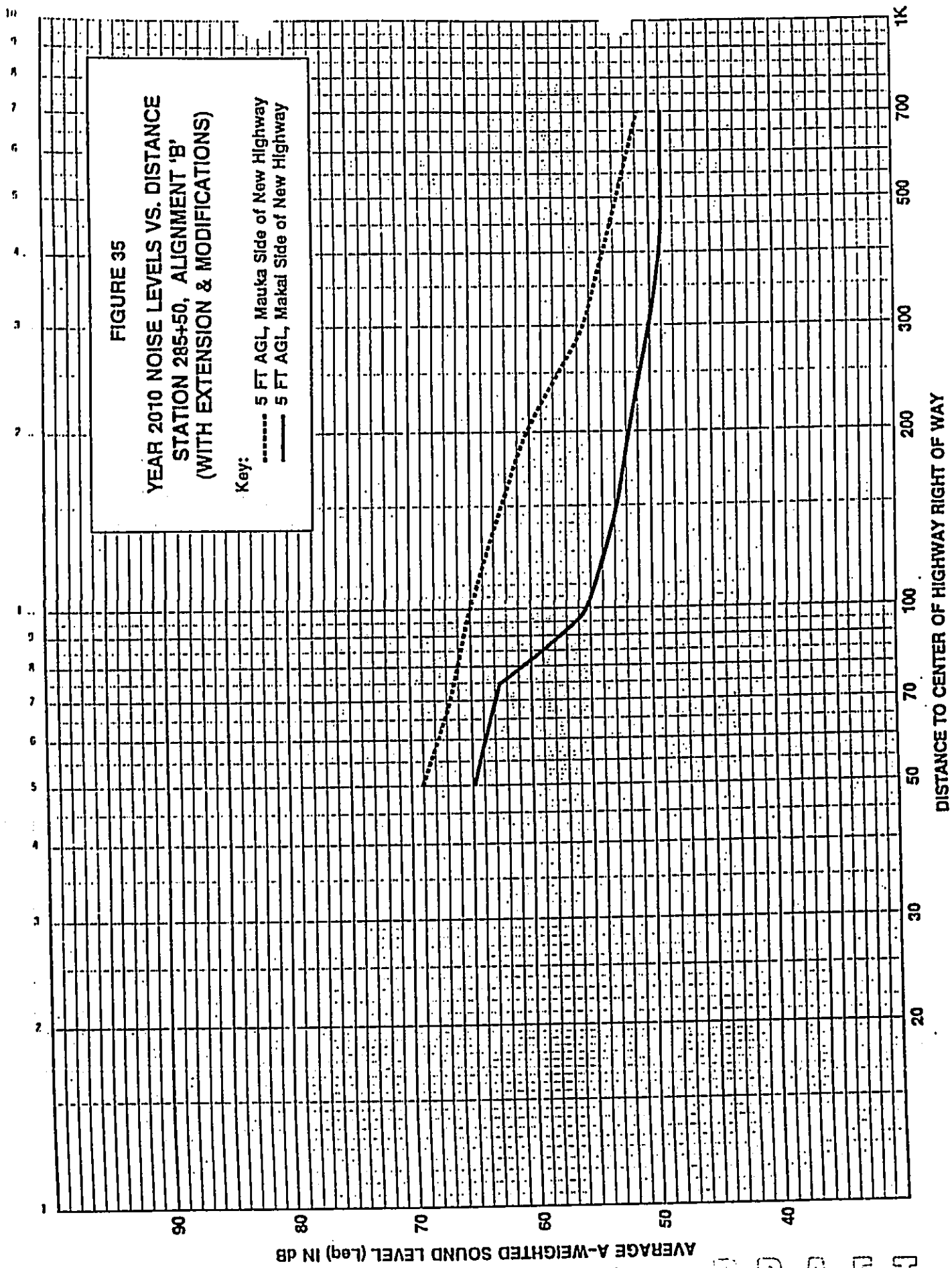
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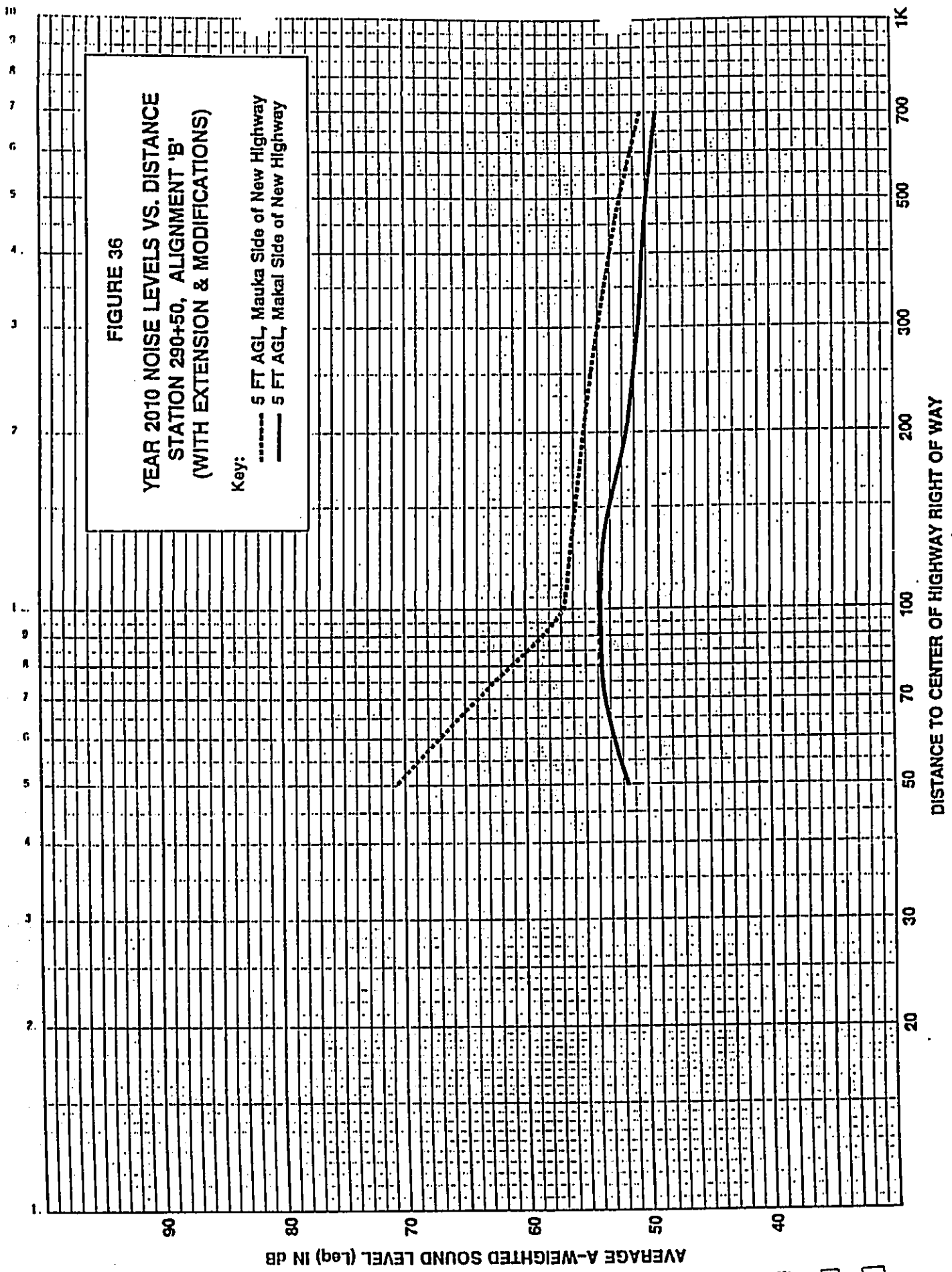
AVERAGE A-WEIGHTED SOUND LEVEL (Leq) IN DB

DISTANCE TO CENTER OF HIGHWAY RIGHT OF WAY

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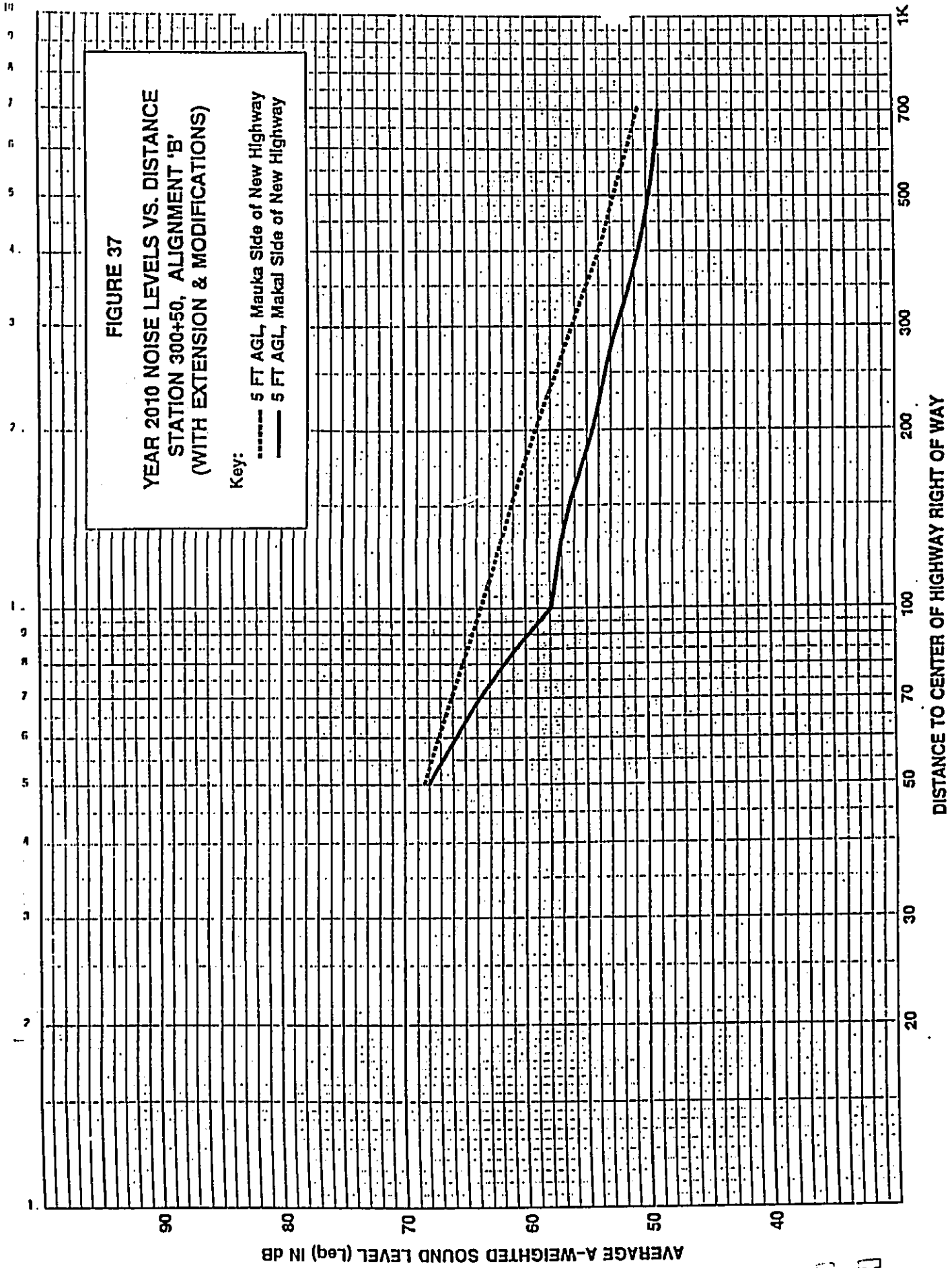
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Way. The relative locations of noise sensitive land uses to the highway centerlines and corresponding noise levels were used to isolate areas of potential noise impacts from the bypass highway.

The hourly variations in traffic noise along the modified bypass highway are expected to be similar to the present hourly variations along the existing Honoapiilani Highway (see FIGURE 39). The existing levels of background ambient noise along the proposed bypass alignment will increase significantly. Background ambient noise levels measured in the vicinity of the proposed bypass highway at Locations "A" and "B" (see FIGURE 1) were relatively low at 51 Leq and 44 Leq respectively. Histograms of the background ambient noise levels which were obtained at these two locations are shown in FIGURES 40 and 41. Noise levels along the Rights-of-Way of the modified bypass highway are predicted to be in the order of 68 to 69 Leq, which are significantly greater than the existing background ambient noise levels. The increases in existing background ambient noise levels along the proposed bypass highway are expected to be irreversible.

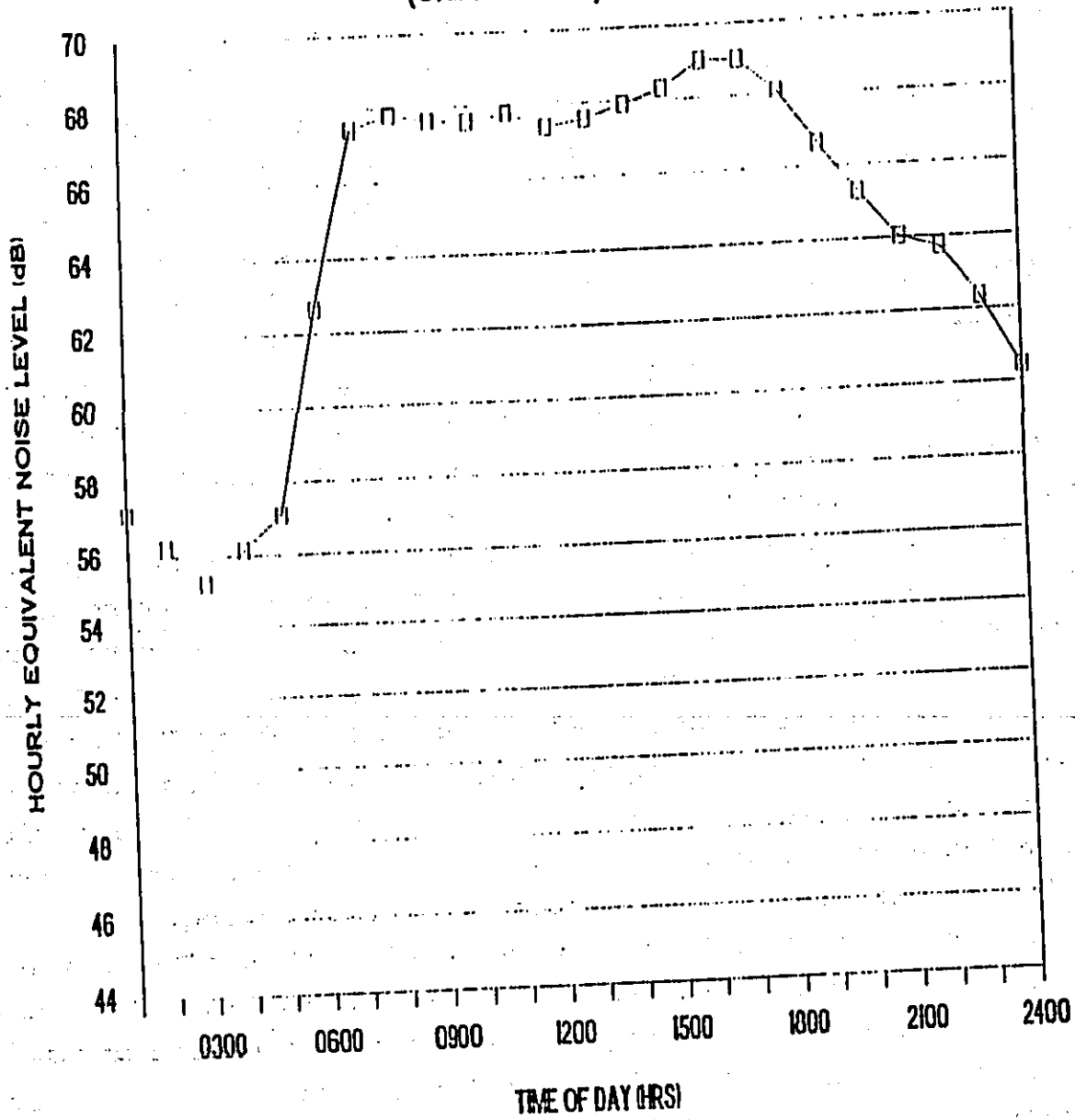
The following general conclusions can be made in respect to the potential increases in traffic noise levels resulting from the modified Realignment Alternative "B" with Extension to Honokowai:

A. Traffic noise levels will probably exceed the FHWA criteria of 67 Leq(h) along some sections of the highway Rights-of-Way which cross through the proposed North Beach Mauka and Lahaina Master Planned Community projects. At noise sensitive locations within the South Beach Mauka project, traffic noise levels from the bypass highway are not expected to exceed 57 Leq.

B. Traffic noise levels in the yards of the first row of existing residences mauka (east) of Ikena Avenue were predicted to be approximately 63 to 67 Leq(h). At those residences makai (west) of the avenue, traffic noise levels are predicted to be slightly less at 55 to 67 Leq(h) due to noise shielding effects from the highway cut along Ikena Avenue and due to partial shielding of the elevated highway sections. These CY 2010 traffic

FIGURE 39

HOURLY VARIATIONS OF TRAFFIC NOISE AT 50 FT  
SETBACK DISTANCE FROM THE CENTERLINE OF  
HONOAPIILANI HIGHWAY AT LAUNIUPOKO BRIDGE  
(5/20-21/91)



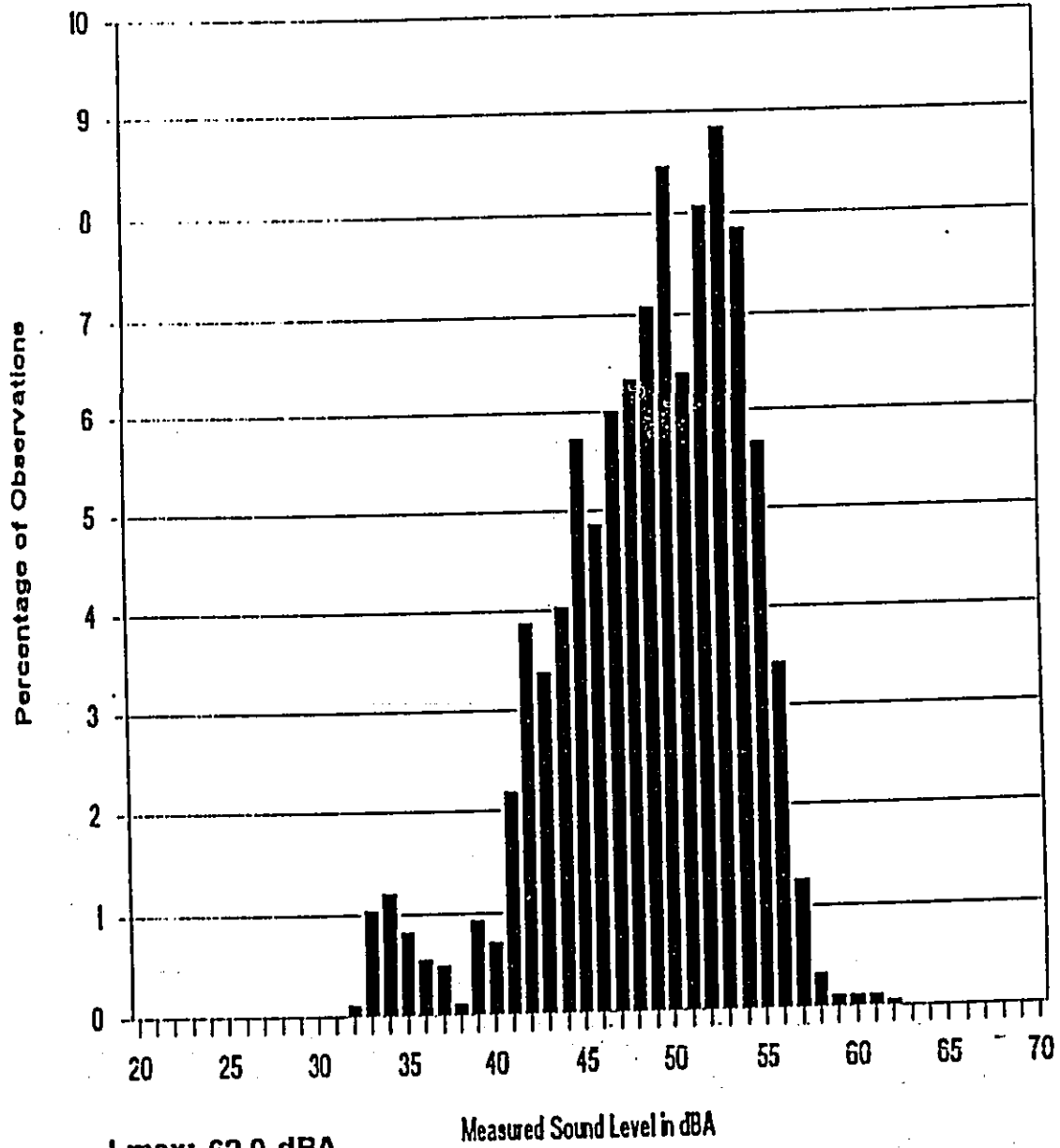
(1) 50 FT from Roadway Centerline (69.4 Ldn)

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**FIGURE 40**  
**BACKGROUND NOISE LEVELS**  
**AT MONITORING LOCATION 'A'**  
**(1150 HRS TO 1250 HRS)**

DATE: August 27, 1991

METER RESPONSE: Slow



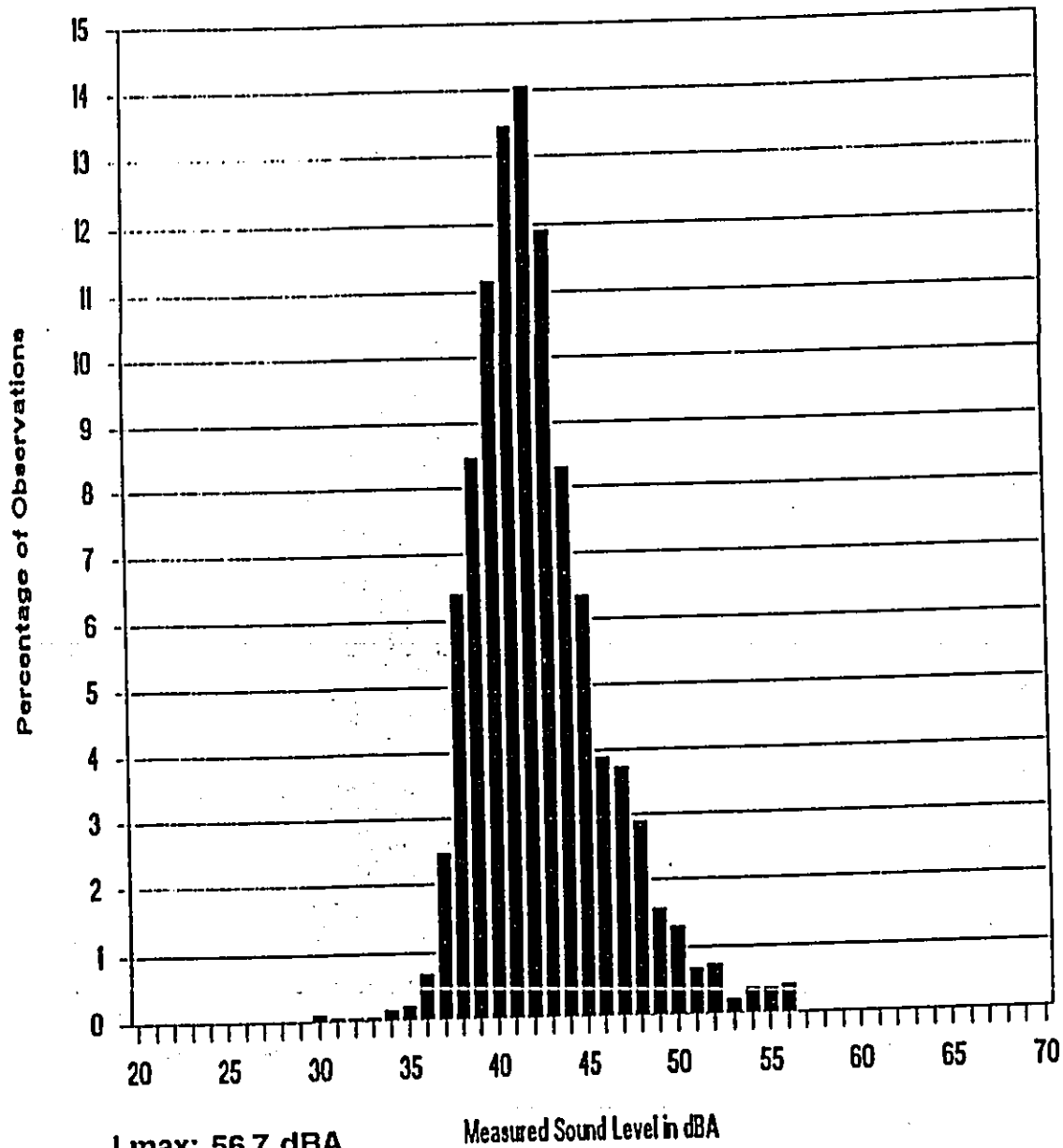
Lmax: 62.0 dBA  
 L10: 55.0 dBA  
 Leq: 51.1 dBA  
 Lmin: 32.9 dBA

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**FIGURE 41**  
**BACKGROUND NOISE LEVELS**  
**AT MONITORING LOCATION 'B'**  
**(1315 HRS TO 1415 HRS)**

DATE: August 27, 1991

METER RESPONSE: Slow



Lmax: 56.7 dBA  
 L10: 47.0 dBA  
 Leq: 44.0 dBA  
 Lmin: 30.0 dBA

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noise levels are higher than those originally predicted along Ikena Avenue due to the higher average speed (50 mph vs. 40 mph) assumed along the modified bypass highway crossing which eliminated the previously planned access to Lahainaluna Road.

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**CHAPTER V. FUTURE TRAFFIC NOISE IMPACTS AND RECOMMENDED  
NOISE MITIGATION MEASURES**

The potential noise impacts associated with the various alternative improvements to Honoapiilani Highway (including the highway widening alternative) from Puamana to Honokowai were previously analyzed in References 1 and 2. Because the lands alongside the Rights-of-Way of the existing Honoapiilani Highway are more widely developed with noise sensitive uses than are the lands along the proposed bypass highway, the number of impacted properties were expected to be significantly greater under the highway widening alternative than under any of the bypass alignment alternatives. For the original Bypass Alignment "B", with extension to Honokowai, the primary area of potential adverse noise impacts resulting from the construction of the bypass highway was along the Ikena Avenue crossing. For the currently proposed Modified Bypass Alignment "B", the existing residences along Ikena Avenue remain as the primary area of potential adverse noise impacts from the construction of the bypass highway.

In addition, the future noise sensitive land uses which are planned along the modified bypass highway represent areas of potential adverse noise impacts if adequate noise mitigation measures are not incorporated into the planning of these projects. It is anticipated that the modified bypass highway will be completed prior to the development of the lands 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 the modified bypass highway as required. The predictions of highway noise levels vs. distance from the centerline of the bypass highway (FIGURES 4 thru 38) may be used to assist the developers in providing the necessary setbacks to the bypass highway.

A detailed examination of the noise mitigation measures which would be required to comply with FHWA, Hawaii State Department of



Transportation, Highways Division (DOT), and FHA/HUD standards was performed along the proposed Ikena Avenue crossing of the bypass highway. This examination was based on preliminary plans and profiles of the Lahaina Bypass Road which were available in April 1995. Detailed cross-sections were not available in the April 1995 plan set.

By FHWA standards (Reference 5), noise mitigation measures are normally required if 67 Leq is exceeded at residences along Ikena Avenue as a result of traffic noise following project completion, or if the future traffic noise levels will "substantially exceed" existing background ambient noise levels at these residences. FHWA does not define the increases, in decibels, which would require noise mitigation by the "substantially exceed" standard, and has required that State highway agencies provide this definition. The State DOT has recently provided an interim definition of "substantial increase" as that which is greater than 15 dB (Reference 7), which was extracted from Definition #3 in Table 6 of Reference 8. By this Definition #3, an increase of zero to 5 dB is associated with "No Impact," an increase of 5 to 10 dB is associated with "Minor Impact," an increase of 10 to 15 dB is associated with "Moderate Impact," and an increase greater than 15 dB is associated with "Serious Impact (Substantial Increase)." The State DOT has reaffirmed that noise level increases of 15 dB or less need not be mitigated (Reference 9) for this project.

In order to determine the minimum noise mitigation measures which would be required along Ikena Avenue so as to not exceed the 67 Leq or "substantially exceed 15 dB" standards, existing background ambient noise measurements were obtained in May 1995 at the first rows of existing residences which would front the future highway Right-of-Ways. The results of these existing background ambient noise measurements are shown in TABLE 5, with the locations of the measurements indicated as circled numbers in FIGURE 42. Based on the measurement results of TABLE 5, it was concluded that existing background ambient noise levels at front row resi-

TABLE 5

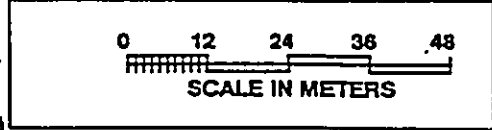
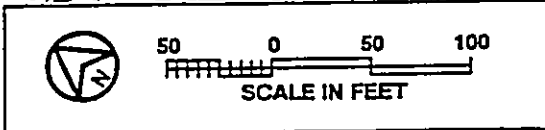
EXISTING BACKGROUND AMBIENT NOISE MEASUREMENT  
RESULTS NEAR IKENA AVENUE CROSSING

LOCATION	DATE	TIME OF DAY (HRS)			LOCATION #1 THRU #16 DATA			LOCATION "A" DATA		
		Lmax (dB)	Leq (dB)	Lmin (dB)	Lmax (dB)	Leq (dB)	Lmin (dB)	Lmax (dB)	Leq (dB)	Lmin (dB)
1	5/23/95	1028-1040	71.1	52.7	33.2	69.3	50.5	36.0		
2	5/23/95	1046-1101	77.1	51.4	35.5	70.5	52.0	37.4		
3	5/23/95	1103-1118	70.6	47.6	34.3	73.2	53.5	35.3		
4	5/23/95	1120-1135	57.9	42.6	32.2	69.8	52.8	36.5		
5	5/23/95	1142-1157	62.7	42.6	32.0	73.8	54.9	35.1		
6	5/23/95	1159-1214	63.4	46.5	32.1	73.2	53.8	34.7		
7	5/23/95	1216-1231	63.1	43.3	33.2	69.0	52.1	35.8		
8	5/23/95	1233-1248	71.4	46.9	32.2	65.8	50.3	34.8		
9	5/23/95	1250-1305	62.1	43.9	34.4	64.4	50.4	36.7		
10	5/24/95	0805-0820	68.9	48.3	33.3	63.8	50.6	36.3		
11	5/24/95	0823-0838	70.9	51.4	32.7	68.8	52.5	34.7		
12	5/24/95	0840-0855	75.8	58.1	33.3	67.0	52.6	36.3		
13	5/24/95	0854-1010	77.8	58.3	36.3	73.5	52.7	37.4		
14	5/24/95	0914-0929	74.8	59.6	39.2	67.2	53.3	36.5		
15	5/24/95	0931-0946	75.9	59.8	34.9	68.4	52.9	35.4		
16	5/24/95	0700-0800	66.9	41.9	29.6	69.4	55.0	36.0		
16	5/24/95	1600-1700	59.3	41.2	30.6	N/A	N/A	N/A		

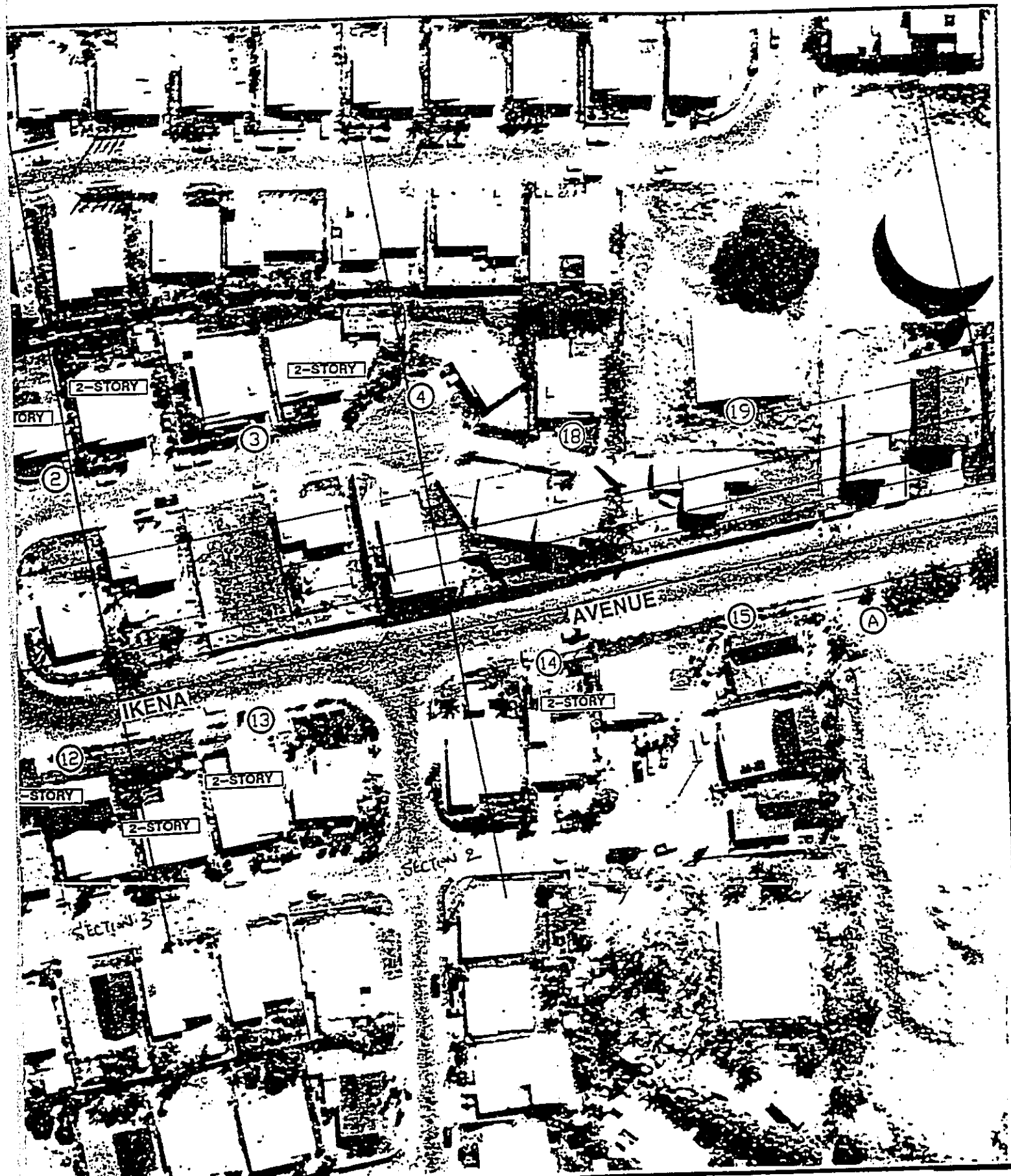
Notes:

1. Lmax = Maximum Sound Level.
2. Leq = Equivalent (or Average) Sound Level.
3. Lmin = Minimum Sound Level.

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LOCATIONS OF EXISTING NOISE MEASUREMENTS  
AT IKENA AVENUE CROSSING

FIGURE  
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dences which may be adversely impacted by future traffic noise from the bypass highway range from 42 to 55 Leq during the daytime period. Therefore, in order for future traffic noise levels to exceed the 15 dB State DOT standard, future traffic noise levels would need to be greater than at least 57 Leq at the quietest residences.

TABLES 6A thru 6D compare the existing and future traffic noise levels at the noise sensitive receptor locations shown in FIGURE 42 for various combinations of sound attenuation walls. The future traffic noise levels were predicted in the middle of the yards between the future Right-of-Ways and the residences for receptor heights of 5 FT above ground level. Although the future traffic noise levels are based on PM peak hour values, the midday off-peak noise levels are anticipated to be no less than 1 dB below the peak hour values (see FIGURE 39). As indicated in TABLES 6A thru 6D, future traffic noise levels without noise mitigation measures are not expected to exceed the FHWA standard of 67 Leq, but are expected to exceed to FHA/HUD standard of 65 Ldn at some residences fronting the west (makai) Right-of-Way. The increases in future traffic noise levels are expected to exceed the State DOT "15 dB" standard at some of the quieter locations along the northern section of Ikena Avenue and along the two cul-de-sacs east (mauka) of Ikena Avenue.

The locations and heights of sound attenuation walls along Ikena Avenue required to meet the State DOT "15 dB" standard, are shown in FIGURE 43. In addition, a 6 FT height wall section is shown along the south section of the makai Right-of-Way to reduce traffic noise levels below the FHA/HUD 65 Ldn standard. These recommended mitigation measures are similar to those developed during the earlier evaluations of potential noise impacts along Ikena Avenue, and differ in the adjustments to the wall heights and locations which were necessary due to the forecasted changes in highway noise levels along the modified bypass highway, as well as the application of the State DOT "15 dB" standard. It

TABLE 6A

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS  
ALONG MAKAI SIDE OF IKENA AVENUE CROSSING  
(3 FT CRASH BARRIER AND 5 FT RECEPTOR)

RECEPTOR LOCATIONS	SETBACK DIST FROM R/W	EXISTING Leq	CY 2010 PM PEAK HOUR (Leq)			
			W/O BAR/ (CHANGE)	6 FT WALL W/O C.B./ (CHANGE)	6 FT WALL WITH 3 FT C.B./ (CHANGE)	8 FT WALL WITH 3 FT C.B./ (CHANGE)
5	10 FT	42.6	55.0/(12.4)	55.0/(12.4)	59.0/(10.4)	59.0/(10.4)
6	22 FT	42.1	59.2/(17.1)*	59.2/(17.1)*	56.5/(14.4)	56.5/(14.4)
7	15 FT	43.3	61.2/(17.9)*	61.2/(17.9)*	59.1/(15.8)*	59.1/(15.8)*
8	22 FT	42.2	64.4/(22.2)*	64.2/(22.0)*	59.9/(17.7)*	59.8/(17.6)*
9	20 FT	43.9	65.9/(22.0)**	60.8/(16.9)*	59.1/(15.2)*	57.4/(13.5)
12	21 FT	55.0 <sup>(3)</sup>	66.3/(11.3)**	60.8/(5.8)	60.8/(5.8)	57.9/(2.9)
13	6 FT	55.0 <sup>(3)</sup>	66.9/(11.9)**	57.9/(2.9)	57.9/(2.9)	54.6/(-0.4)
14	24 FT	55.0 <sup>(3)</sup>	64.5/(9.5)	55.8/(0.8)	55.8/(0.8)	59.9/(-1.1)
15	5 FT	55.0 <sup>(3)</sup>	66.9/(11.9)**	54.7/(-0.3)	54.7/(-0.3)	52.3/(-2.7)

Notes:

1. Crash Barrier (C.B.) and Right-of-Way (R/W) wall locations as shown in FIGURE 43.
2. Existing fences assumed to remain in place where new soundwalls are not constructed along makai R/W.
3. Adjusted by -3 dB due to noise measurement location.
4. \* Denotes exceedance of State DOT 15 dB Standard.
5. \*\* Denotes exceedance of FHWA/HUD 65 Ldn Standard for Residences.

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TABLE 6B

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS  
ALONG MAKAI SIDE OF IKENA AVENUE CROSSING  
(4 FT CRASH BARRIER AND 5 FT RECEPTOR)

RECEPTOR LOCATIONS	SETBACK DIST FROM RW	EXISTING Leq	W/O BAR/ (CHANGE)		FUTURE PM PEAK HOUR (Leq)		FUTURE PM PEAK HOUR (Leq)	
			6 FT WALL W/O C.B./ (CHANGE)	8 FT WALL W/O C.B./ (CHANGE)	6 FT WALL WITH 4 FT C.B./ (CHANGE)	8 FT WALL WITH 4 FT C.B./ (CHANGE)		
5	10 FT	42.6	55.0/(12.4)	55.0/(12.4)	52.6/(10.0)	52.6/(10.0)	52.6/(10.0)	
6	22 FT	42.1	59.2/(17.1)*	59.2/(17.1)*	55.5/(13.4)	55.5/(13.4)	55.5/(13.4)	
7	15 FT	43.3	61.2/(17.9)*	61.2/(17.9)*	57.8/(14.5)	57.8/(14.5)	57.8/(14.5)	
8	22 FT	42.2	64.4/(22.2)*	64.2/(22.0)*	59.0/(16.8)*	58.8/(16.6)*	58.8/(16.6)*	
9	20 FT	43.9	65.9/(22.0)**	60.8/(16.9)*	59.1/(15.2)*	57.3/(13.4)	57.3/(13.4)	
12	21 FT	55.0 <sup>(3)</sup>	66.3/(11.3)**	60.8/(5.8)	60.8/(5.8)	57.9/(2.9)	57.9/(2.9)	
13	6 FT	55.0 <sup>(3)</sup>	66.9/(11.9)**	57.9/(2.9)	57.9/(2.9)	54.6/(-0.4)	54.6/(-0.4)	
14	24 FT	55.0 <sup>(3)</sup>	64.5/(9.5)	55.8/(0.8)	55.8/(0.8)	53.9/(-1.1)	53.9/(-1.1)	
15	5 FT	55.0 <sup>(3)</sup>	66.9/(11.9)**	54.7/(-0.3)	54.7/(-0.3)	52.3/(-2.7)	52.3/(-2.7)	

Notes:

1. Crash Barrier (C.B.) and Right-of-Way (RW) wall locations as shown in FIGURE 43.
2. Existing fences assumed to remain in place where new soundwalls are not constructed along makai RW.
3. Adjusted by -3 dB due to noise measurement location.
4. \* Denotes exceedance of State DOT "15 dB" Standard.
5. \*\* Denotes exceedance of FHWA/HUD 65 Ldn Standard for Residences.

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TABLE 6C

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS  
ALONG MAKAI SIDE OF IKENA AVENUE CROSSING  
(5 FT CRASH BARRIER AND 5 FT RECEPTOR)

RECEPTOR LOCATION	SETBACK DIST FROM R/W	EXISTING Leq	W/O BAR/ (CHANGE)		FUTURE PM PEAK HOUR (Leq)	
			6 FT WALL W/O C.B./ (CHANGE)	6 FT WALL WITH 5 FT C.B./ (CHANGE)	6 FT WALL W/O C.B./ (CHANGE)	6 FT WALL WITH 5 FT C.B./ (CHANGE)
5	10 FT	42.6	55.0/(12.4)	55.0/(12.4)	51.9/(9.3)	51.9/(9.3)
6	22 FT	42.1	59.2/(17.1)	59.2/(17.1)*	54.7/(12.6)	54.7/(12.6)
7	15 FT	43.3	61.2/(17.9)*	61.2/(17.9)*	56.9/(13.6)	56.9/(13.6)
8	22 FT	42.2	64.4/(22.2)*	64.2/(22.0)*	58.0/(15.8)*	57.8/(15.6)*
9	20 FT	43.9	65.9/(22.0)**	60.8/(16.9)*	59.0/(15.1)*	57.1/(13.2)
12	21 FT	55.0 <sup>(3)</sup>	66.3/(11.3)**	60.8/(5.8)	60.8/(5.8)	57.9/(2.9)
13	6 FT	55.0 <sup>(3)</sup>	66.9/(11.9)**	57.9/(2.9)	57.9/(2.9)	54.6/(-0.4)
14	24 FT	55.0 <sup>(3)</sup>	64.5/(9.5)	55.8/(0.8)	55.8/(0.8)	53.9/(-1.1)
15	5 FT	55.0 <sup>(3)</sup>	66.9/(11.9)**	54.7/(-0.3)	54.7/(-0.3)	52.3/(-2.7)

Notes:

1. Crash Barrier (C.B.) and Right-of-Way (R/W) wall locations as shown in FIGURE 43.
2. Existing fences assumed to remain in place where new soundwalls are not constructed along makai R/W.
3. Adjusted by -3 dB due to noise measurement location.
4. \* Denotes exceedance of State DOT \*15 dB\* Standard.
5. \*\* Denotes exceedance of FHA/HUD 65 Ldn Standard for Residences.

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TABLE 6D

SUMMARY OF EXISTING AND PREDICTED TRAFFIC NOISE LEVELS  
ALONG MAUKA SIDE OF IKENA AVENUE CROSSING  
(5 FT RECEPTOR)

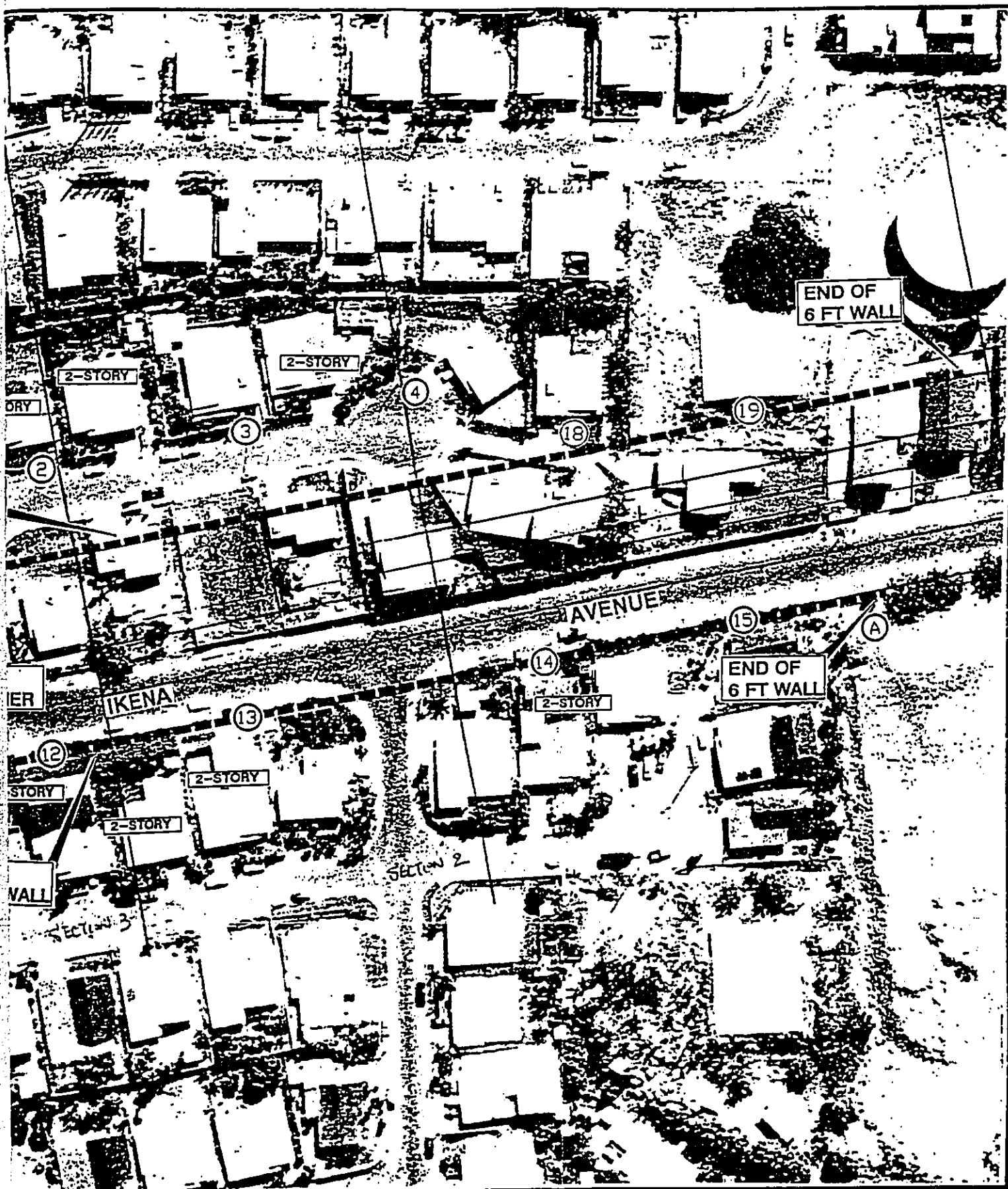
RECEPTOR LOCATIONS	SETBACK DIST FROM R/W	EXISTING Leq	----- CY 2010 PM PEAK HOUR (Leq) -----		
			W/O BAR./ (CHANGE)	6FT WALL (CHANGE)	8FT WALL (CHANGE)
1	56 FT	43.0	63.1/(20.1)*	60.3/(17.3)*	59.4/(16.4)*
2	40 FT	46.0	64.1/(18.1)*	58.7/(12.7)	56.7/(10.7)
3	40 FT	44.0	63.3/(19.3)*	57.6/(13.6)	55.8/(11.8)
4	20 FT	42.6	65.0/(22.4)*	55.8/(13.2)	53.8/(11.2)
10	45 FT	43.0	64.3/(21.3)*	59.1/(16.1)*	57.5/(14.5)
11	45 FT	43.0	64.4/(21.4)*	59.3/(16.3)*	58.0/(15.0)
17	20 FT	44.0	65.9/(21.9)**	57.5/(13.5)	55.8/(11.8)
18	10 FT	44.0	66.1/(22.1)**	54.8/(10.8)	52.8/(8.8)
19	2 FT	44.0	66.7/(22.7)**	55.4/(11.4)	51.9/(7.9)

**Notes:**

1. Right-of-Way (R/W) wall location as shown in FIGURE 43.
2. \* Denotes exceedance of State DOT "15 dB" Standard.
3. \*\* Denotes exceedance of State "15 dB" and FHA/HUD 65 Ldn Standard.

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RECOMMENDED SOUND WALLS AT IKENA AVENUE CROSSING FOR MODIFIED BYPASS ALTERNATIVE 'B'

FIGURE

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should be noted that the mitigation measures shown in FIGURE 43 will not reduce traffic noise levels at second floor receptor locations of the 2-story homes shown in FIGURE 43. For these second floor rooms which front the future bypass highway, closure and air conditioning is the recommended noise mitigation measure.

Because existing background ambient noise levels are very low (40 to 50 Leq) at inland residential areas which are removed from the existing highway, and because a new bypass must cross or pass near these quiet residential areas, unavoidable increases in background ambient noise levels are expected to occur if the modified bypass is built. In essence, if a bypass is constructed, a redistribution of future traffic and traffic noise will occur from the existing highway to locations inland (to the east). An example of this is the reduction in traffic noise levels at Launiupoko and Puamana Parks due to the mauka realignment of Honoapiilani Highway at the south end of the modified bypass alignment. This redistribution, however, will minimize future traffic noise impacts along the existing highway corridor. Minimization of noise impacts on existing noise sensitive receptors along the modified bypass highway will be accomplished through the inclusion of sound attenuation barriers along the Ikena Avenue crossing. It is anticipated that potential noise impacts on future noise sensitive receptors along the modified bypass highway will be mitigated through the inclusion of sound walls or other noise mitigation measures within the individual project development plans.

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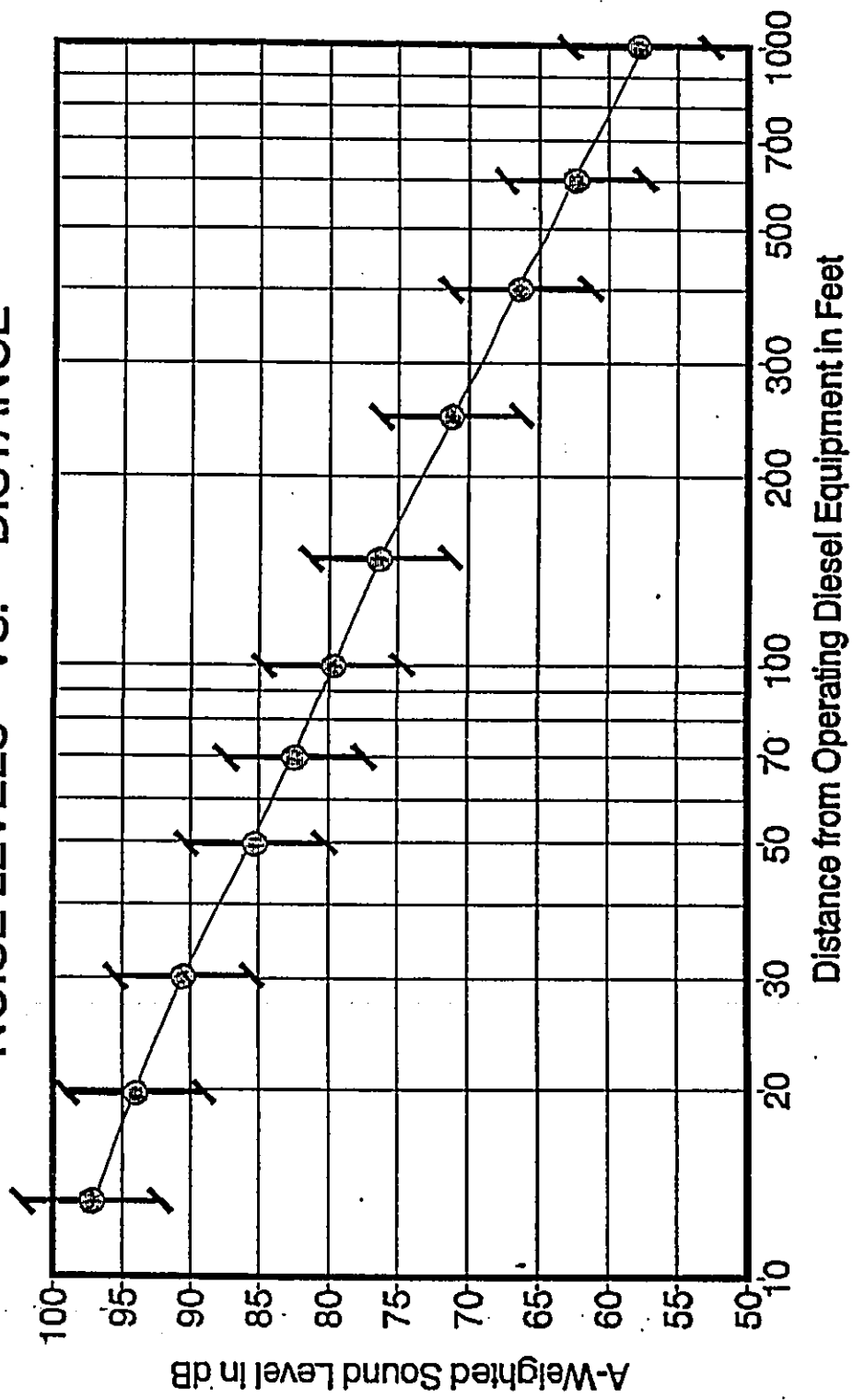
## CHAPTER VI. CONSTRUCTION NOISE IMPACTS

Short-term noise impacts associated with new construction activities along the modified bypass alignment 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 sites, particularly along Ikena Avenue and along the connector roads with the existing Honoapiilani Highway. 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 44. The impulsive noise levels of impact pile drivers are approximately 15 dB higher than the levels shown in FIGURE 44, while the intermittent noise levels of vibratory pile drivers are at the upper end of the noise level ranges depicted in the figure. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and due to the administrative controls available for its regulation. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

Construction noise levels at existing structures can intermittently exceed 90 dB when work is being performed at close distances in front of these structures. Along the major portion of the bypass alignment, distances between the construction sites and receptors are expected to be greater than 100 FT, and construction noise levels should generally be below 80 dB or inaudible. The State Department of Health currently regulates noise from construction activities on Oahu under a permit system (Reference 10).

ANTICIPATED RANGE OF CONSTRUCTION  
NOISE LEVELS VS. DISTANCE



CONSTRUCTION NOISE LEVELS VS. DISTANCE

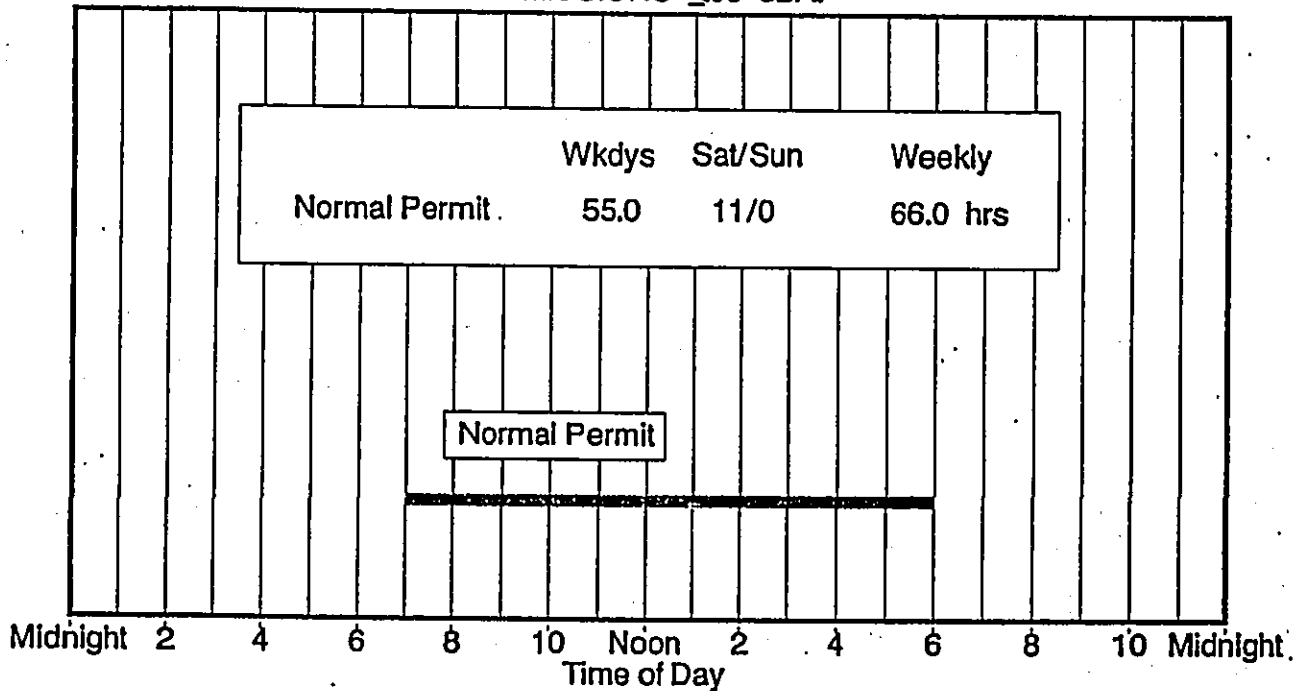
FIGURE  
44

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 minimize construction noise impacts on noise sensitive receptors along the modified bypass highway and its connector roads, 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.

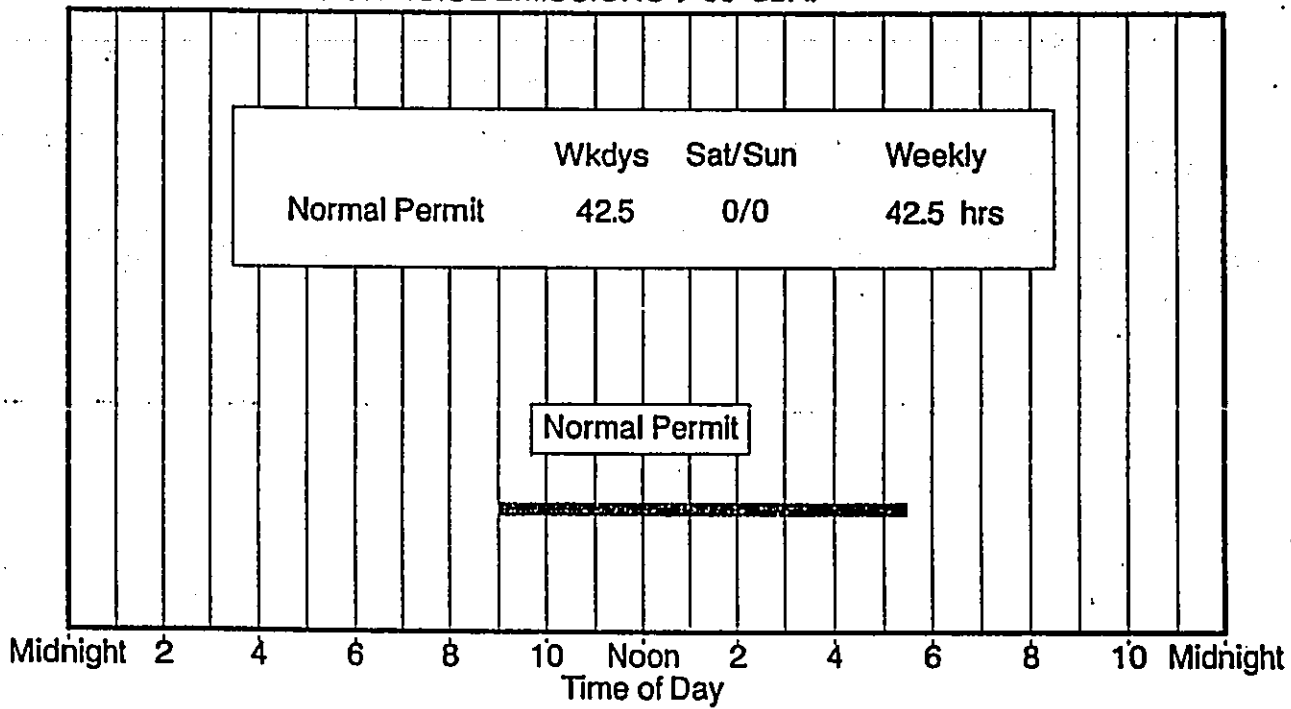
**DRAFT**

**TABLE 7**  
**AVAILABLE WORK HOURS UNDER DOH**  
**PERMIT PROCEDURES FOR CONSTRUCTION NOISE**

a. DOH PERMIT FOR NOISE EMISSIONS  $\leq 95$  dBA.



b. DOH PERMIT FOR NOISE EMISSIONS  $> 95$  dBA.





#### APPENDIX A. REFERENCES

(1) Y. Ebisu & Associates; "Traffic Noise Study for the Proposed Improvements to Honoapiilani Highway, Puamana to Kaanapali;" January 1987.

(2) Y. Ebisu & Associates; "Addendum to Traffic Noise Study for the Proposed Improvements to Honoapiilani Highway, Puamana to Kaanapali with Extension of Project from Kaanapali to Honokowai, and with Realignment Alternative C;" March 1988.

(3) Barry, T. and J. Reagan, "FHWA Highway Traffic Noise Prediction Model"; FHWA-RD-77-108, Federal Highway Administration; Washington, D.C.; December 1978.

(4) CY 2007 and CY 2010 traffic forecasts along the Modified Bypass Highway; Transmittals from Michael T. Munekiyo Consulting dated June 7, 1991, and from Austin Tsutsumi & Associates, Inc. dated October 7 and 17, 1991.

(5) Federal Highway Administration; "Procedures for Abatement of Highway Traffic Noise and Construction Noise;" 23 CFR Chapter I, Subchapter J, Part 772; July 8, 1982.

(6) May 20-21, 1991 24-Hour Traffic Counts; Station 11-1, Honoapiilani Highway at Launiupoko Bridge; Hawaii State Department of Transportation.

(7) February 1, 1995 Letter from Ron Tsuzuki, State DOT to AMFAC/JMB Hawaii, Inc.; HWY-PA 2.4400.

(8) Federal Highway Administration; "Highway Traffic Noise In the United States - Problem and Response;" August 1990.

(9) Discussions with project, State DOT, and FHWA personnel during meeting on June 26, 1995.

(10) "Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu"; Hawaii State Department of Health; November 6, 1981.

DRAFT

# ***Appendix D-1***

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***Traffic Noise Study Update  
for the Kaanapali Connector  
and the Lahainaluna Road -  
Bypass Access, December 1993***

DEC 27 1993

**Y. Ebisu & Associates**

Acoustical and Electronic Engineers

1126 12th Avenue  
Room 305  
Honolulu, Hawaii 96816  
(808) 735-1634

YEA Job #29-050A  
December 23, 1993

Mr. Don Fujimoto  
c/o Michael T. Munekiyo Consulting  
1823 Wells Street  
Wailuku, Hawaii 96793

Subject: Evaluation of Potential Noise Impacts Associated with the  
Kaanapali Connector and Lahainaluna Road-Bypass Access;  
Lahaina Bypass Corridor Supplemental EIS, Honoapiilani  
Highway - Puamana to Honokawai

Dear Mr. Fujimoto:

The following are my findings and recommendations resulting  
from the subject evaluations:

a. Kaanapali Connector Road: The forecasted traffic volumes  
along this connector road (see ENCLOSURE 1) in the Year 2010 was  
853 vehicles per hour during the PM Peak Hour based on the traffic  
study results. Assuming an average speed of 50 miles per hour,  
and a mix of 95% automobiles, 2.6% medium trucks, and 2.4% heavy  
trucks, predicted peak hour traffic noise levels along this con-  
nector road were as follows: 72 Leq, 67 Leq, and 57 Leq at 22, 47,  
and 218 foot distances from the roadway's centerline, respective-  
ly. Because noise sensitive receptors are not located within 218  
feet from the connector road's centerline, adverse noise impacts  
are not expected along the Kaanapali Connector Road, and noise  
mitigation measures are not required.

b. Lahainaluna Road-Bypass Access: A short connector road  
between the Bypass Highway and Lahainaluna Road is expected to be  
in-place prior to the construction of the final connector road to  
Dickenson Street.

Existing traffic noise  
levels along Lahainaluna Road were measured in March 1986 and  
December 1993 at Locations J, L, M, and N where shown in ENCLOSURE  
1. The results of the traffic noise measurements and their com-  
parisons with the Federal Highway Administration (FHWA) Highway  
Noise Model are shown in ENCLOSURE 2. Existing traffic noise  
levels during the PM Peak Hour are approximately 65 Leq at 50 feet  
from the centerline of Lahainaluna Road. At the present time, the  
67 Leq FHWA noise abatement criteria may be exceeded at some of  
the homes along Lahainaluna Road.

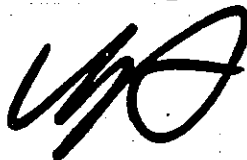
Mr. Don Fujimoto

December 23, 1993  
Page 2

Traffic volumes during the PM Peak Hour on the Lahainaluna Road-Bypass Access are not expected to exceed 670 vehicles per hour in the Year 2010. Assuming an average speed of 30 miles per hour, and a mix of 95% automobiles, 2.6% medium trucks, and 2.4% heavy trucks, predicted peak hour traffic noise levels along this connector road are not expected to exceed 57 Leq at 68 feet from the roadway's centerline. Because noise sensitive receptors are not located within 68 feet from the access road's centerline, adverse noise impacts are not expected along the Lahainaluna Road-Bypass Access, and noise mitigation measures are not required.

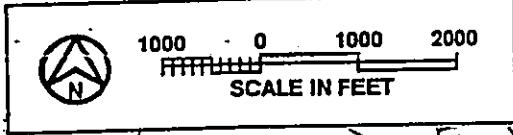
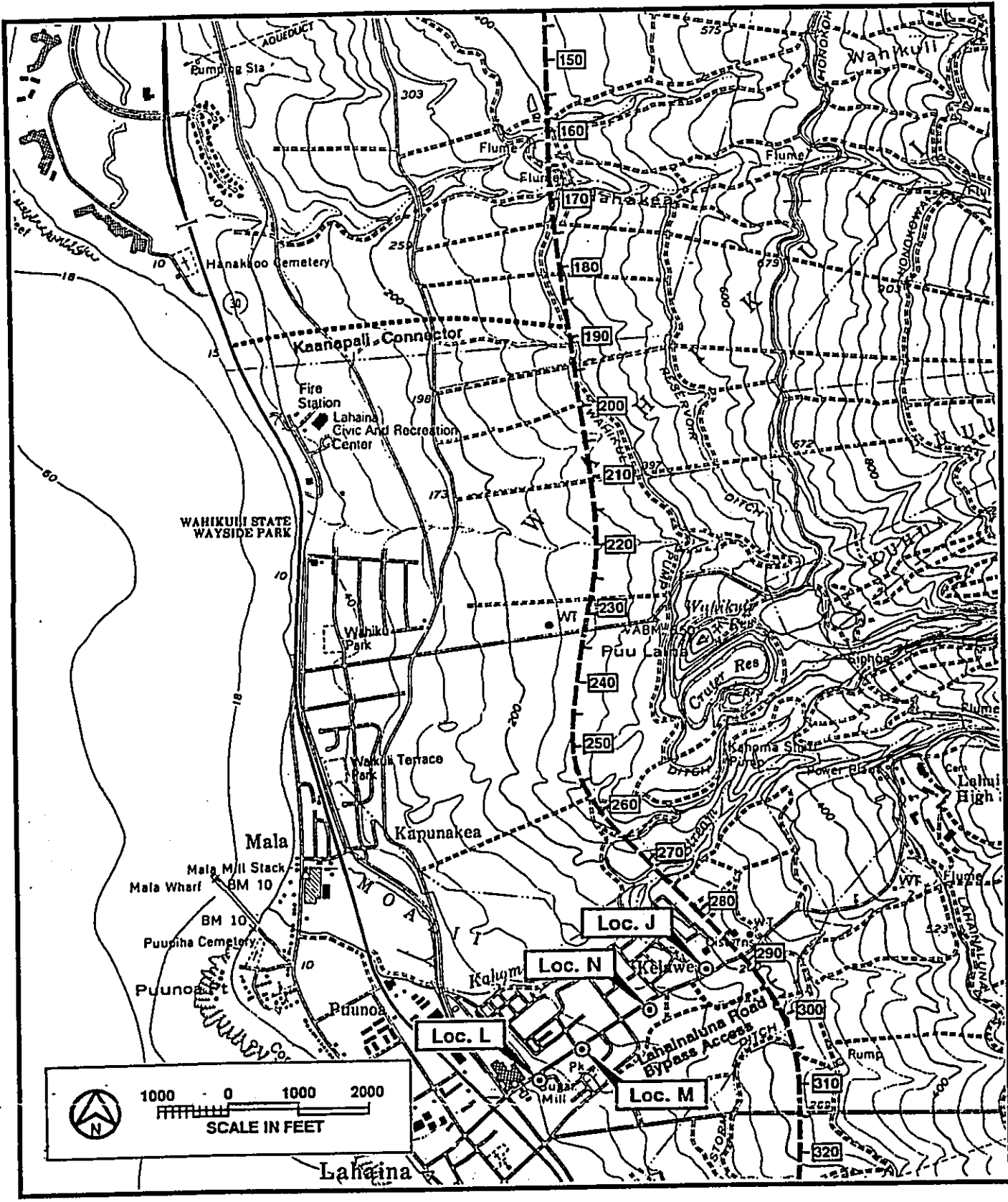
Added traffic along the makai (west) sections of Lahainaluna Road during the PM Peak Hour was assumed to be low as a result of the construction of the access road. Also, traffic volumes along the mauka sections of Lahainaluna Road were not expected to increase significantly as a result of the construction of the access road. Future Bypass Highway traffic going to and originating from the mauka sections of Lahainaluna Road were not expected to increase as a result of the new Lahainaluna Road-Bypass Access, but were expected to use the new access to the Bypass Highway. This would tend to reduce their future trips along the makai sections of Lahainaluna Road. For these reasons, increased traffic noise levels or adverse traffic noise impacts associated with the new access road were not anticipated.

Sincerely,



Yoichi Ebisu, P.E.

encl.



LOCATION OF KAAPALI CONNECTOR AND LAHAINALUNA ROAD-BYPASS ACCESS

ENCLOSURE 1

## ENCLOSURE 2

### NOISE MEASUREMENT RESULTS

<u>LOCATION</u>	<u>Time of Day</u> <u>(HRS)</u>	<u>Ave. Speed</u> <u>(MPH)</u>	<u>--Hourly Traffic Volume--</u>		<u>Measured</u> <u>Leq (dB)</u>	<u>Predicted</u> <u>Leq (dB)</u>
			<u>AUTO</u>	<u>M.TRUCK</u> <u>H.TRUCK</u>		
J. 66 FT from the center- line of Lahainaluna Rd. (March, 1986)	1122 TO 1222	35	222	6 0	54.7	54.7
L. 50 FT from the center- line of Lahainaluna Rd. (12/17/93)	1144 TO 1244	35	545	18 2	61.2	61.2
M. 30 FT from the center- line of Lahainaluna Rd. (12/17/93)	1302 TO 1402	35	474	6 18	64.6	63.8
N. 30 FT from the center- line of Lahainaluna Rd. (12/17/93)	1500 TO 1600	35	754	17 14	63.8	64.4

# **Appendix E**

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**U.S. Fish and Wildlife  
Service Letter, August 1988**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

300 ALA MOANA BOULEVARD  
P.O. BOX 50167  
HONOLULU, HAWAII 96850

AUG 16 1988

Mr. T. Harano  
Chief, Highways Division  
Hawaii Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Re: Honoapiilani Highway, Puamana to Honokowai  
Project Nos. 30AB-01-85 and 30AB-01-87

Dear Mr. Harano:

This responds to your August 3, 1988 request for list of endangered or threatened species of plants or animals which may be found in the vicinity of, or may be affected by, the referenced projects on Maui.

Although the endangered plant Gouania hillebrandii is known to exist east of the Alternative C section of highway that passes mauka of Lahaina, the proposed path will pass well makai of the plants habitat; the project will have no impact on the species. No other species of endangered or threatened plants or animals would be expected to be found in the vicinity of the project.

Thank you for allowing us to comment on the project.

Sincerely yours,

William Kramer  
Acting Field Supervisor,  
Environmental Services  
Pacific Islands Office

cc: Chief, SE-FWE, FWS, Region 1, Portland, OR (Attn: Swanson)





# **Appendix E-1**

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***U.S. Fish and Wildlife  
Service Letter, July 1995***



IN REPLY REFER TO.

## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
PACIFIC ISLANDS ECOREGION  
300 ALA MOANA BOULEVARD  
ROOM 6307, P.O. BOX 50167  
HONOLULU, HAWAII 96850  
Telephone: (808) 541-2749  
Fax: (808) 541-2756

In Reply Refer To: DLB

JUL 19 1995

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

Dear Mr. Hayashida:

The U.S. Fish and Wildlife Service (Service) has received a letter dated July 11, 1995, from Mr. Glenn Tadaki of Munekiyo & Arakawa, Inc. requesting information on the presence of federally listed, proposed, and candidate endangered and threatened species within the area of the Honoapiilani Highway (Route 30) from Puamana to Honokowai on the island of Maui. It is our understanding that Mr. Tadaki is requesting this information on your behalf to be included in the Supplemental Environmental Impact Statement (EIS) currently being prepared for proposed improvements to the highway.

The Service has reviewed the maps provided with the request and pertinent information in our files, including maps prepared by the Hawaii Heritage Program of the Nature Conservancy. To the best of our knowledge, there are no federally protected species that occur within any of the alternative project sites. The federally endangered plants *Gouania hillebrandii* and *Spermolepis hawaiiensis* are located east of the proposed Lahainaluna Road-Bypass Access that passes mauka of Lahaina. In addition, the Hawaiian hoary bat or 'ope'ape'a (*Lasiurus cinereus semotus*), which is also listed as a federally endangered species, has been sighted along the shoreline off Puunoa Point. However, we do not anticipate any adverse effects to these species to result from the proposed highway improvements.

The Service appreciates your concern for endangered species and looks forward to reviewing the Supplemental EIS. If you have any questions, please contact our Branch Chief for Interagency Cooperation, Ms. Margo Stahl, or Fish and Wildlife Biologist Diane Bowen at 808/541-2749.

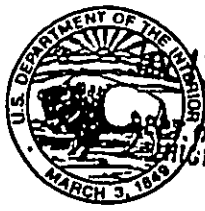
Sincerely,

Brooks Harper  
Field Supervisor  
Ecological Services

# **Appendix E-2**

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**U.S. Fish and Wildlife Service  
Letter, January 1998**



RECEIVED  
JAN 13 2 15 PM '98  
DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

United States Department of the Interior  
FISH AND WILDLIFE SERVICE  
PACIFIC ISLANDS Ecoregion  
300 ALA MOANA BOULEVARD, ROOM 3-122  
BOX 50088  
HONOLULU, HAWAII 96850  
PHONE: (808) 541-3441 FAX: (808) 541-3470

DIRECTOR'S OFFICE  
DEPT. OF  
TRANSPORTATION  
JAN 13 10 03 AM '98

JAN 12 1998

In Reply Refer To: LLLW

Mr. Kazu Hayashida  
Director of Transportation  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

This letter is in response to your December 19, 1997, request to have the U.S. Fish and Wildlife Service Pacific Islands Office (Service) review your modifications to the Honoapiilani Highway and the Lahaina Bypass (HWY-PA 2.7482) project for threatened and endangered species concerns. The Service received your request on December 23, 1997, and has reviewed information in our files including maps prepared by the Nature Conservancy's Hawaii Natural Heritage Program. To the best of our knowledge, there are no listed or proposed species that occur within the identified boundaries of the proposed modifications to the project.

The Service appreciates the opportunity to provide this information. If you have questions regarding these comments, please contact the Interagency Consultation Program Lead, Margo Stahl, or Fish and Wildlife Biologist Lorena Wada by telephone at 808/541-3441 or by facsimile transmission at 808/541-3470.

Sincerely,

for/ Brooks Harper  
Field Supervisor  
Ecological Services

HIGHWAY PLANNING  
DIVISION  
JAN 14 11 05 AM '98  
U.S. DEPARTMENT OF  
TRANSPORTATION

# ***Appendix F***

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***Air Quality Study, January 1994***



**B. D. NEAL & ASSOCIATES**  
*Applied Meteorology • Air Quality • Computer Science*

January 20, 1994

Michael T. Munekiyo Consulting  
2035 Main Street  
Wailuku, Maui, Hawaii 96793

Subject: Lahaina Bypass Project  
Supplemental EIS  
Estimated Air Quality Impacts (Revised)

Dear Mr. Munekiyo:

In response to your request, we have examined the potential impacts on air quality that could result from construction and use of the proposed Lahaina Bypass roadway on Maui. Background information and estimated short- and long-term impacts of the project along with recommended mitigation measures are summarized below.

Project Description and Background

During the past several years, West Maui has experienced rapid development. Growth in the region is expected to continue for the next several years causing increased traffic congestion in the area. At present, the only major arterial roadway available to traffic traveling to, from or through the West Maui area is Honoapiilani Highway (FAP 30). During the mid- and late-1980's, the State Highways Department of Transportation (DOT) studied several highway improvement alternatives and the required federal Environmental Impact Statement (EIS) was prepared. Potential air quality impacts resulting from each of the various improvement scenarios were examined and discussed in the EIS. Subsequent to the preparation of the EIS, the corridor alignment of the project was modified to include another alternative which was not considered in the EIS. This necessitated the preparation of a Supplemental EIS.

The new alternative, now designated as the Modified Bypass Corridor, provides for a roadway dividing from Honoapiilani Highway near Launiupoko Point and running mauka to Honokowai where it would rejoin Honoapiilani Highway. Ultimately (by the

year 2010), this new roadway would provide two lanes of travel in each direction with a 30-foot median and a minimum 150-foot right-of-way. The purpose of this study was to assess the potential air quality impacts of the Modified Bypass alignment and report the results for inclusion in the Supplemental EIS.

#### Short-Term Impacts of Project

Short-term direct and indirect impacts on air quality from the project will remain the same as for the alternatives previously considered and are generic to nearly any type of project involving construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from demolition work and from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project area and from a temporary increase in local traffic caused by commuting construction workers.

Fugitive dust emissions may arise from the demolition and removal of any existing structures within the roadway right-of-way and from the grading and dirt-moving activities associated with site preparation once the area is cleared. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The U.S. EPA has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions in the project area would likely be somewhere near this level. In any case, State of Hawaii Air Pollution Control Regulations prohibit visible emissions of fugitive dust from construction activities at the property line. Thus, an effective dust control plan for the project construction phase is essential.

Adequate fugitive dust control of active construction areas can usually be accomplished by the establishment of a frequent watering program. In sensitive or dust-prone areas, limiting the area that can be disturbed at any given time and/or using wind screens may also be required. Wind erosion of inactive areas can be controlled by mulching or by the use of chemical soil stabilizers. Haul trucks tracking dirt onto paved streets from unpaved areas is oftentimes a significant source of dust in construction areas. Some means to alleviate this problem, such as tire washing or road cleaning, may be appropriate. Control regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting wind-erodible materials. Establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Indirectly, slow-moving construction vehicles on roadways leading to and from the project site could obstruct the normal flow of traffic to such an extent that overall vehicular emissions are increased, but this impact can be mitigated by moving heavy construction equipment during periods of low traffic volume. Likewise, the schedules of commuting construction workers can be adjusted to avoid peak hours in the project vicinity. Thus, most potential short-term air quality impacts from project construction can be mitigated.

#### Long-Term Impacts of Project

After construction, long-term impacts on air quality from the exhausts of motor vehicles using the proposed roadway could potentially occur. Carbon monoxide emissions, the most abundant air pollution component present in automotive exhaust gases, are



the primary concern. To assess the long-term impact of carbon monoxide emissions from vehicles using the proposed roadway, an emission burden analysis was prepared. An emission burden analysis attempts to quantify emissions occurring within a specified highway corridor. Emission estimates are calculated based on corridor length, average daily traffic volumes, average travel speed, and U.S. EPA emission factors. The length of the highway corridor is approximately 6.5 miles. Average daily traffic volumes and average travel speeds as reported by the project traffic consultant were:

Year	Honoapiilani Highway		Lahaina Bypass	
	Ave. Daily Traffic Volume	Average Travel Speed (mph)	Ave. Daily Traffic Volume	Average Travel Speed (mph)
1993	38,000	30	-	-
2010 w/o Project	50,000	18	-	-
2010 w/ Project	25,000	32	25,000	43

Average daily traffic volumes indicated above are the approximate values reported near the midpoint of the highway corridor. The average travel speeds shown are the means of the northbound and southbound values for the afternoon peak hour.

U.S. EPA emission factors based on the above average travel speeds were obtained using the computer model MOBILE5A. Aside from vehicle speed, several other key inputs are required by the model. One of the other key inputs is vehicle mix. Based on recent vehicle registration figures, the present and projected vehicle mix in the project area is estimated to be 91.9% light-duty gasoline-powered vehicles, 5% light-duty gasoline-powered trucks and vans, 0.5% heavy-duty gasoline-powered vehicles, 0.6% light-duty diesel-powered vehicles, 1% heavy-duty diesel-powered trucks and buses, and 1% motorcycles. Other key inputs to the MOBILE5A emission model are the cold- and hot-start fractions. Motor vehicles operating in a cold- or hot-start mode emit excess air pollution. Typically, motor vehicles reach stabilized

operating temperatures after about 4 miles of driving. For traffic operating within the project area, it was assumed that about 21 percent of all vehicles would be operating in the cold-start mode and that about 27 percent would be operating in the hot-start mode. These are typical default (national average) values. Average annual ambient temperature, also a MOBILE5A input, was assumed to be 75 degrees F. This is based on several years of temperature data for Kahului Airport.

The resulting emission factors generated by MOBILE5A in terms of grams per vehicle mile of carbon monoxide were as follows:

	Carbon Monoxide Emission Factor (grams per vehicle mile)		
	1993	2010 w/o Project	2010 w/ Project
Honoapiilani Highway	20.8	29.7	15.4
Lahaina Bypass	-	-	10.3

For a given vehicle speed, emission factors are generally lower for future years due to the effects of older, more-polluting vehicles leaving the state's roadways. However, because emission factors are inversely proportional to vehicle speed, the estimated emission factor for Honoapiilani Highway in the year 2010 without the project is substantially higher than the 1993 emission factor. This is due to the projected lower travel speeds for this scenario. With the project in the year 2010, improved travel speeds and better-controlled emissions combine to yield a significantly lower emission factor for traffic on Honoapiilani Highway. As indicated above, travel speeds on Lahaina Bypass would be higher than for Honoapiilani Highway; thus a lower emission factor is applicable for traffic on the Lahaina Bypass.

Based on the calculated emission factors and the current and projected traffic volumes both for Honoapiilani Highway and for the proposed Lahaina Bypass, annual emissions of carbon monoxide were estimated for each of the three scenarios studied. The final results of this analysis are given below:

	Carbon Monoxide Emissions (tons per year)		
	1993	2010 w/o Project	2010 w/ Project
Honoapiilani Highway	2100	3900	1000
Lahaina Bypass	-	-	700
Total	2100	3900	1700

Without the project in the year 2010, carbon monoxide emissions from traffic traveling on Honoapiilani Highway would be approximately double the 1993 levels. With the project, the combined emissions from traffic traveling on both Honoapiilani Highway and the proposed Lahaina Bypass would be about 20 percent less than current levels.

#### Conclusions and Recommendations

Any project alternative will likely cause short-term impacts on air quality due to fugitive dust emissions. An effective dust control plan should be implemented including at a minimum frequent watering of active work areas and mulching or landscaping of inactive areas that will not be paved soon after grading.

Based on the results of the emission burden analysis, the bypass alternative would likely have a net beneficial effect on long-term air quality in the project area. Area-wide emissions of carbon monoxide with the project in the year 2010 would likely be lower compared to 1993 emissions and substantially lower compared to the 2010 do-nothing scenario. In addition to lowering total emissions for the highway corridor, the bypass alternative would serve to dilute both traffic and air pollution by moving traffic along two routes instead of one. It would also likely reduce the potential for human exposure by routing a portion of the traffic through less populated mauka areas. Other alternatives providing only one highway corridor, such as the widening of Honoapiilani Highway or a do-nothing scenario, would almost undoubtedly result in greater impacts on air quality in the area.

Mr. M.T. Munekiyo  
Lahaina Bypass Supplemental EIS

January 20, 1994  
Page 7

Please call me if you have any questions concerning the information presented herein or if you wish to discuss this subject further.

Very truly yours,

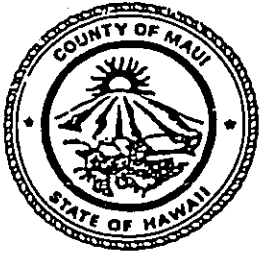
*Barry D. Neal*

Barry D. Neal  
Certified Consulting  
Meteorologist

# ***Appendix G***

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***Department of Parks and  
Recreation Letter, July 1995***



DEPARTMENT OF  
PARKS AND RECREATION  
COUNTY OF MAUI

1580-C KAAHUMANU AVENUE  
WAILUKU, HAWAII 96793

LINDA CROCKETT LINGLE  
Mayor

CHARMAINE TAVARES  
Director

LEE DODSON  
Deputy Director

PLANNING & DEVELOPMENT  
(808) 243-7931

July 13, 1995

Kazu Hayashida, Director  
Department of Transportation  
569 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Attention: Mr. Kenneth Au

SUBJECT: LAHAINA BYPASS-SEIS

Dear Mr. Hayashida:

It is our understanding that the State Department of Transportation is proposing to modify the scope of the original project to include the extension and realignment of the Bypass, as well as the development of connector roads and a grade-separated overpass at Ikena Avenue (Bypass) and Lahainaluna Road. In order to accommodate the proposed grade-separated condition at Lahainaluna Road, it is our understanding that the Ikena Avenue (Bypass) profile will be lowered resulting in a depressed, or cut condition.

As such, the proposed project would affect the use of Kelaweia Mauka Park (TMK (2)4-5-34:47) in terms of parking and safety requirements, pedestrian and park maintenance access, and water service. Toward mitigating impacts upon the park, we respectfully request your consideration of the following measures which we feel should be addressed.

1. Parking Requirements

With regard to parking, the proposed Bypass alignment would eliminate existing on-street parking along Ikena Avenue. Parking along Lahainaluna Road is not available nor recommended due to higher traffic volume and speeds. The provision of an off-street parking lot on the undeveloped makai portion of the park parcel would replace the loss of existing on-street parking along Ikena Avenue. The parking lot should be designed to accommodate up to twelve (12) vehicles. Also, pedestrian access from the proposed parking lot to the park should be developed.

2. Perimeter Fencing

In terms of safety, a high fence along the park's roadway frontages would be desirable to keep objects (e.g., baseballs, soccer balls, frisbees) from flying onto the adjoining roadways and posing a safety hazard.

Kazu Hayashida, Director  
Department of Transportation  
Page 2  
July 13, 1995

3. Water Service

The park site is currently served by a 1-1/2 inch water meter and draws its waters from an 8-inch mainline in Lahainaluna Road. Should the proposed Lahainaluna Road overpass affect the park's water services, the relocation of the waterline would be required.

4. Pedestrian Access

As a result of the proposed Bypass alignment, existing Kaakolu Street would be closed and would no longer provide access onto Ikena Avenue. Due to this proposed closure, a pedestrian access easement along the mauka boundary of an abandoned, adjoining reservoir lot (TMK (2)4-5-31: 1) owned by the State of Hawaii, and currently utilized by the County Board of Water Supply, would facilitate park access for residents located makai of Ikena Avenue in proximity of the park.

5. Maintenance Access

Currently, access for park maintenance purposes is provided via Ikena Avenue. The proposed Bypass alignment would eliminate this access and would require us to develop another maintenance access. In addition to the steep grade transition from the park's playing field to street level, an access along Lahainaluna Road is not considered practicable due to higher traffic volume and speeds as previously indicated. Therefore, we are requesting that a maintenance access be provided from the previously recommended off-street parking lot up to the playing field. The provision of the parking lot and maintenance access would complement and facilitate park maintenance operations.

A commitment to implement the foregoing recommendations would adequately address the Department of Parks and Recreation's concerns relating to the development of the project as well as mitigate our concerns relating to any adverse impacts to the park. Your favorable consideration of our recommendations will be appreciated.

Sincerely,

DEPARTMENT OF PARKS AND RECREATION



Charmaine Tavares  
Director

CT:PIM:mlf

bc: Mr. Glen Tadaki, Munekiyo & Arakawa

# ***Appendix G-1***

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***Department of Transportation  
Letter, February 1996***



BENJAMIN J. CAYETANO  
GOVERNOR



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

FEB 27 1996

KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
JERRY M. MATSUDA  
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-PA  
2.9140

FEB 27 1996

Mr. Henry Oliva  
Director  
Department of Parks and Recreation  
County of Maui  
1580-C Kaahumanu Avenue  
Wailuku, Hawaii 96793

Dear Mr. Oliva:

Subject: Honoapiilani Highway, Puamana to Honokowai  
(Lahaina Bypass)

Thank you for your July 13, 1995 letter. After careful consideration and in keeping with the Department's policy of commitment to the public's good, every effort will be made to accommodate the Kelawea Mauka Park (TMK (2)4-5-34: 47) and the changes imposed by our proposed highway.

1. Parking Requirements. We agree and during the design phase will include plans for a parking lot to be built concurrent with the bypass.
2. Perimeter Fencing. A fence along Ikena Avenue and Lahainaluna Road appears justified.
3. Water Service. Should the Lahainaluna Road overpass affect the park's water service, the Department will relocate the waterline as necessary.
4. Pedestrian Access. The State Department of Transportation will work with the Department of Land and Natural Resources during the final design stage to acquire an easement as requested. The easement will be reflected in the final rights-of-way plans.
5. Maintenance Access. See response to item #4.

Mr. Henry Oliva  
Page 2  
FEB 27 1996

HWY-PA 2.9140

If we may be of further assistance please contact us.

Very truly yours,



KAZU HAYASHIDA  
Director of Transportation

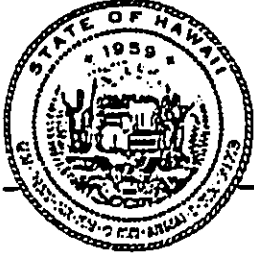
✓bc: Munekiyo & Arakawa, Inc.

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# ***Appendix H***

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***Office of Planning Letter,  
February 1999***



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

MAK U 1 1999

BENJAMIN J. CAYE  
GOV  
SELJIF  
DIRI

BRADLEY J. MOS  
DEPUTY DIRI  
David W. Blane  
DIRECTOR, OFFICE OF PLA

**OFFICE OF PLANNING**

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

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

Ref. No. P-7956

February 25, 1999

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

Dear Mr. Munekiyo:

**Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for the Lahaina Bypass Road / Honoapiilani Highway (FAP Route 30), Launiupoko to Honokowai, Maui**

The proposal by the State Department of Transportation to construct the Lahaina Bypass from Launiupoko to Honokowai, Maui, with Federal funds from the Federal Highway Administration has been reviewed for consistency with Hawaii's CZM Program. We concur with your determination that the use of federal funds is consistent based on the following conditions.


1. To minimize polluted runoff during construction, mitigation measures are proposed to include sedimentation basins, filter fabric barriers, retention basins, erosion control fabric, hydromulching, and barriers between the streams and work areas. In addition, construction will occur during dry periods and excess materials will be removed from construction areas.
2. Additional CZM consistency review will be necessary in conjunction with the U.S. Army Corps of Engineers permits for the drainage-way crossings. Specific permit issues will be evaluated at that time when the culvert details are available.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for

Mr. Michael Munekiyo  
Page 2  
February 25, 1999

your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,



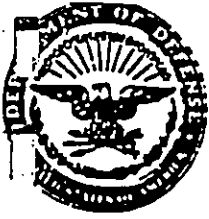
David W. Blane  
Director  
Office of Planning

cc: State Department of Transportation  
U.S. Army Corps of Engineers, Operations Branch  
U.S. Fish and Wildlife Service, Pacific Islands Ecoregion  
Department of Health, Clean Water Branch  
Department of Land & Natural Resources,  
Planning & Technical Services Branch  
Commission on Water Resource Management  
Planning Department, County of Maui

# ***Appendix I***

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***U.S. Department of the Army  
Letter, September 1995***



DEPARTMENT OF THE ARMY  
U. S. ARMY ENGINEER DISTRICT, HONOLULU  
FT. SHAFTER, HAWAII 96813-5440

RECEIVED  
SEP 27 1 31 PM '95  
SEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

REPLY TO  
ATTENTION OF

September 21, 1995

Operations Division

Mr. Hugh Ono  
Administrator, Highways Division  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

RECEIVED  
SEP 28 10 06 AM '95  
U.S. ARMY ENGINEER DISTRICT  
HONOLULU  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

Dear Mr. Ono:

This is in response to your letter of September 14, 1995, regarding the proposed Honoapiilani Highway project (file number PO 95-058).

As Captain Walt Michel of my staff discussed with Mr. Glenn Tadaki, Munekiyo and Arakawa, Inc., on July 24, 1995 and August 18, 1995, the plans submitted to date are preliminary. Per the above discussions, it was our understanding that you would be providing a Department of the Army application and final plans for the footings and box culvert. As also discussed, from the preliminary plans it appears as if your proposed project could be covered by a nationwide permit for road crossings. I have attached the special conditions of the nationwide for your use. In order to qualify for the nationwide, the footings must be limited to less than 1/3 acre in waters of the U.S.

It is also important that you coordinate this project with the Corps' Planning Division, since the project is near and may affect the Corps' Kahoma Stream flood control project.

If you have any questions, please call Ms. Terrell Kelley at (808) 438-9258, extension 13.

Sincerely,

  
James L. Bersson, P.E.  
Chief, Operations Division

Attachment  
PLANNING BRANCH  
HIGHWAYS DIVISION

OCT 2 1 08 PM '95

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION

# **Appendix I-1**

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**U.S. Department of the Army  
Letter, May 12, 1999**





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

May 12, 1999

REPLY TO  
ATTENTION OF

Regulatory Branch

Mr. Kazu Hayashida  
Director of Transportation  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:

This letter is written in response to your December 19, 1997 letter regarding the proposed project, Honoapiilani Highway (FAP Route 30), Launiupoko to Honokowai (Lahaina Bypass), Maui, Hawaii. As you may recall your letter included modifications to extend the Bypass to Launiupoko and would involve the installation of pre-cast box culverts at two (2) intermittent drainageways along the Launiupoko Extension.

It appears that the proposed road extension to Launiupoko will qualify under Nationwide permit #14, Road Crossing. A site visit must be conducted before a more definite determination can be made.

File Number 990000305 is assigned to this project. Please refer to this number in any future correspondence with our office.

If you have any questions or need additional information, please call Mr. Brian Chung of my staff at (808) 438-9258, extension 12.

Sincerely,

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

Copy Furnished:

✓ Munekiyo, Arakawa and Hiraga, Inc.,  
305 High Street, Suite 104, Wailuku,  
Hawaii 96793

**END**

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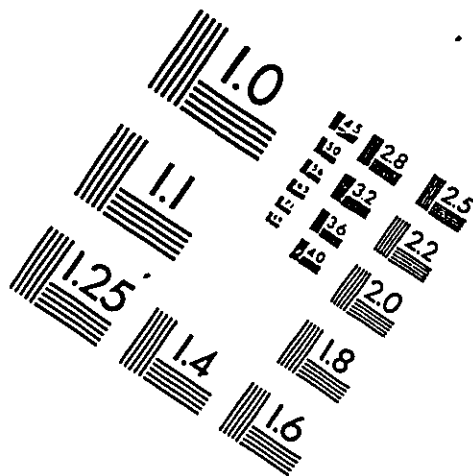
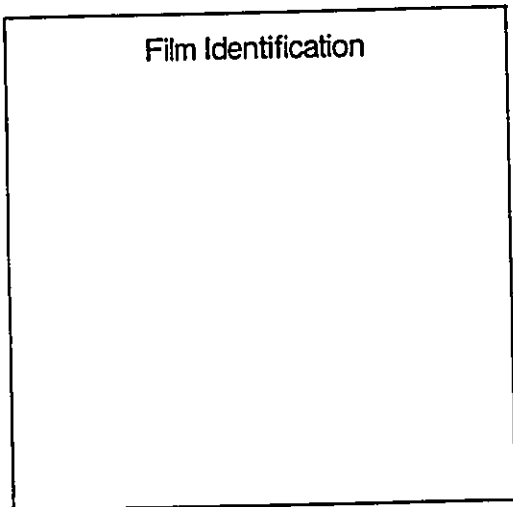
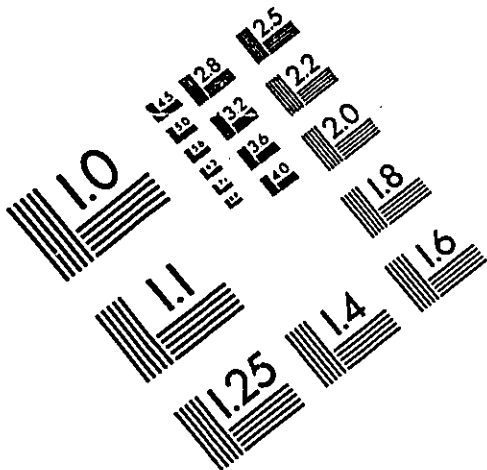
CERTIFICATION

I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF  
FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.

2007  
DATE

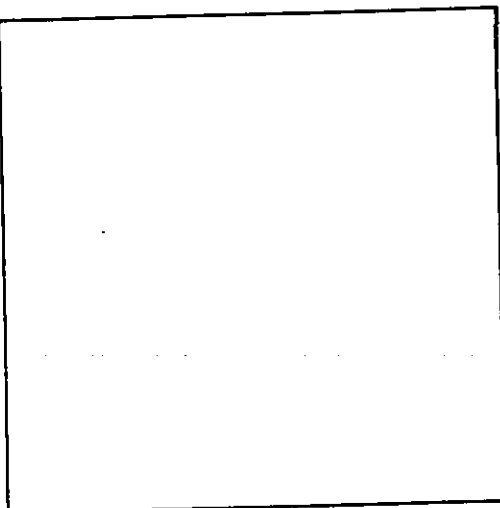
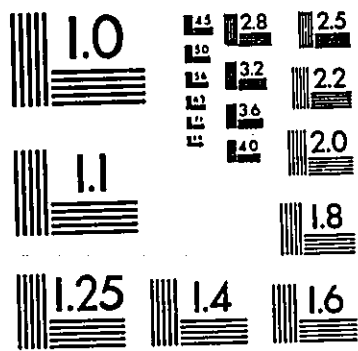
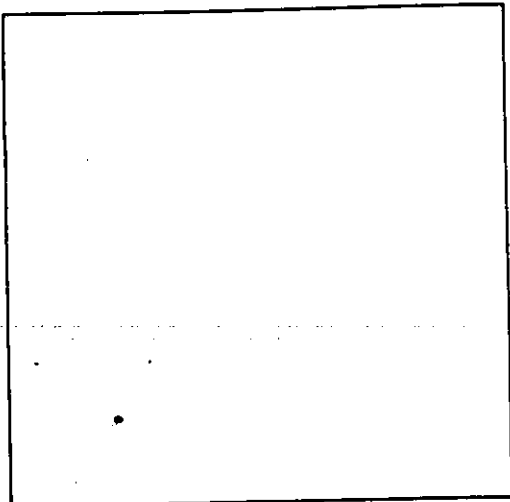
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SIGNATURE OF OPERATOR

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A & P International  
715/262-5788 • Fax 715/262-3823  
577 Locust Street • Prescott, WI 54021  
Web Site <http://www.zimc.com/apintl>

PRECISION<sup>SM</sup> RESOLUTION TARGETS

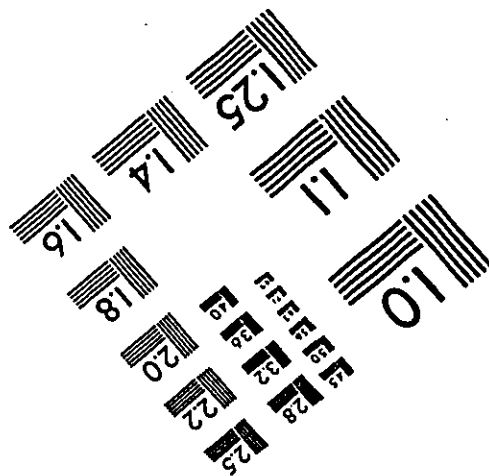
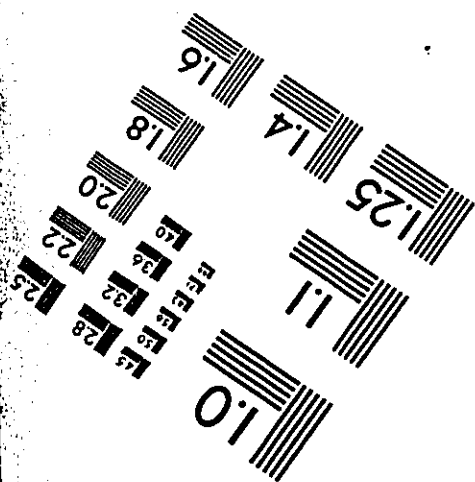


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