Queen Ka'ahumanu Highway Widening, Phase 2
Kealakehe Parkway to Keahole Airport Access Road
Kailua-Kona, Big Island, Hawai'i

FINAL SECTION 4(f) EVALUATION

U.S. Department of Transportation
Federal Highway Administration

Hawai'i Department of Transportation
Highways Division

Mayela Sosa

15 May 2015

Mayela Sosa
Hawaii Division Administrator
Federal Highway Administration

Date of Approval

Queen Ka'ahumanu Highway Widening, Phase 2, Kealakehe - Keahole

Kailua-Kona, Big Island, Hawai'i

Federal Aid Project Number: NH-019-1(38)R

Final Section 4(f) Evaluation

State of Hawai'i

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May 2015

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May 2015

Prepared in Accordance with 23 CFR-Part 774

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1. Introduction and Regulatory Context

Section 4(f) of the Department of Transportation Act of 1966 (49 United States Code [U.S.C.] 303; 23 Code of Federal Regulations [C.F.R]. 774.3 (a) and (b)) mandates that “special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) prohibits the Federal Highway Administration (FHWA), and other agencies of the U.S. Department of Transportation, from approving the use of a publicly-owned park, recreation area, wildlife and waterfowl refuge, or historic site (whether publicly or privately owned) in a federal transportation program or project unless:

a) FHWA determines that:
    1. There is no prudent and feasible avoidance alternative to the use of land from the property, and
    2. The program or project includes all possible planning to minimize harm to the property resulting from such use.

Or:

b) FHWA determines that the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) would have a *de minimis* impact on the property.

As defined in 23 C.F.R. 774.17, the “use” of a protected Section 4(f) occurs when any of the conditions below are met:

- “When land [of the Section 4(f) property] is permanently incorporated into a transportation facility”;
- “When there is a temporary occupancy of land [of the Section 4(f) property] that is adverse in terms of the [Section 4(f)] statute’s preservation purpose as determined by the criteria in [23 C.F.R.] 774.13(d)”; or
- When there is constructive use of a Section 4(f) property as determined by the criteria in [23 C.F.R.] 774.15”.

The use of a Section 4(f) property except for a *de minimis* use for transportation purposes can only be permitted if there is no “feasible and prudent” alternative to such use and the action includes all possible planning to minimize harm to the property from such use. As defined in 23

C.F.R. 774.17, an alternative is not "feasible" if it cannot be built as a matter of sound engineering judgment.

As also defined in 23 C.F.R. 774.17, an alternative is not "prudent" if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
    - Severe social, economic, or environmental impacts,
    - Severe disruption to established communities,
    - Severe disproportionate impacts to minority or low income populations, or
    - Severe impacts to environmental resources protected by other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors [described above], that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

This Section 4(f) Evaluation was prepared because the Proposed Action would require the use of historic sites that qualify as Section 4(f) resources. The use would not be considered *de minimis* because the FHWA has rendered a finding of "adverse effect" for these sites in accordance with Section 106 of the National Historic Preservation Act (NHPA), as amended (49 U.S.C. 303(d)(2); 23 C.F.R. 774.3(b) and 774.17). This finding was originally rendered by the FHWA in conjunction with the 1999 Memorandum of Agreement (MOA), and the determination was concurred with again in an August 21, 2012, letter from the State Historic Preservation Officer (SHPO) (**Appendix A**). An MOA for the purpose of mitigating the impacts to the historic property, in accordance with 16 U.S.C. 470 (f), was executed in March 2015 in coordination with representatives from the State Historic Preservation Division (SHPD) along with consulting parties (listed in **Appendix D**) and the Advisory Council for Historic Preservation (ACHP).

This Section 4(f) Evaluation was prepared in accordance with 23 U.S.C. 138[1], 49 U.S.C. 303 and 23 C.F.R. 774 to satisfy Section 4(f) regulatory requirements. Additional guidance has been obtained from the following sources:

- Federal Highway Administration's (FHWA) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (1987);
- FHWA's revised *Section 4(f) Policy Paper* (2012).

[1] Section 303(c) of title 49, U.S.C., applies to all modal administrations of the U.S. Department of Transportation. The additional provisions of 23 U.S.C. § 138 apply solely to the Federal Highway Administration. There is no substantive difference between the two statutes.

2. The Proposed Action

The State of Hawaii, Department of Transportation (HDOT), with the FHWA, proposes widening the Queen Ka'ahumanu Highway (State Route 19) between Kealakehe Parkway and Keahole Airport Access Road from its current two-lane configuration to a four-lane facility. The purpose and need for the proposed action is to relieve existing congestion and accommodate future demand within the existing 300-foot right-of-way.

3. Project Background

The Queen Ka'ahumanu Highway, opened in 1970, runs along the west coast of the Island of Hawaii, extending from the primary population center of Kailua-Kona to the primary port of Kawaihae, for a total distance of approximately 33 miles. The current project segment extends from Kealakehe Parkway to the Keahole Airport Access Road, approximately 4.2 miles. (See **Figure 1** for a general project location map including the Area of Potential Effect (APE), and **Figure 2** for the general location of the existing highway within the right-of-way)

The original project limits, as defined in the environmental assessment prepared for the project under the National Environmental Policy Act (NEPA), included the seven-mile section between Palani Road and the Keahole Airport Access Road, but were divided into two construction phases due to funding limitations as follows:

a. Phase 1 between Palani Road and Kealakehe Parkway (Honokōhau Harbor Access Road) is already constructed (completed in 2009)
b. Phase 2 between Kealakehe Parkway and Keahole Airport Access Road, which is the subject of this individual Section 4(f) evaluation.

The scope of work planned for Phase 2 includes widening the existing highway from its current two-lane configuration to a divided four-lane facility with a landscaped median. Improvements include re-paving the existing highway, construction of two additional travel lanes; paved shoulders; drainage improvements; traffic signals at intersections; guardrails; landscape plantings; highway lighting; and relocation / installation of utilities. The recommended roadway typical section includes four 12-foot wide travel lanes, a variable width median, two 6-foot wide paved median shoulders, and two 10-foot wide paved outside shoulders (See **Figure 3** for typical widening cross-sections). The wide, landscaped median was included to accommodate future widening if, or when, the traffic volumes justify construction of a third travel lane in each direction.

The NEPA process for the original project (both Phase 1 and Phase 2) concluded in May 1996 with the determination of a Finding of No Significant Impact (FONSI).

The FEA included reference to a Programmatic Section 4(f) document that was also produced in 1996 based on a minor impact to historic sites.

The Section 106 process as required by the NHPA was concluded with a Memorandum of Agreement (MOA) signed in 1999 that was intended to address adverse effects of the highway project on historic properties within the highway right-of-way.

In 2010, after the design-build contract was awarded for construction of Phase 2 and during Section 106 consultation for the project design prior to construction, both the National Park Service (NPS) staff and members of the newly formed Native Hawaiian organization (NHO) named Makani Hou o Kaloko-Honokohau expressed a concern that the original Archaeological Inventory Survey (AIS) field investigation missed many historic properties fronting the Kaloko-Honokohau National Historical Park. At their collective request, additional property surveys were performed within the project limits during 2010 and 2011 by members of the original AIS consultant firm as well as staff from the NPS and members of the NHOs. The details for these additional surveys are in Section (5), but the key point is that these surveys identified nearly sixty (60) additional properties eligible for consideration under Section 4(f), for a total of seventy-six (76)[2].

As a result of the significant number of additional historic properties identified, the FHWA determined that a new, individual Section 4(f) evaluation was appropriate.

At the time of this decision, the design portion of the Design-Build contract for phase 2 from Kealakehe Parkway to Keahole Airport Access Road was complete awaiting notice to proceed (NTP) for construction. However, as part of the new Section 4(f) evaluation, the FHWA and the HDOT reviewed the existing design for possible options to narrow the roadway in order to avoid historic properties that preliminary analysis showed would likely be afforded protection under Section 4(f). This modified design, referred to in this document as the "re-design," included several design alterations to avoid as many Section 4(f) properties as possible.

There is more discussion regarding the number and type of historic properties in Section (5), but for a general overview, sixteen (16) of the seventy-six (76) identified historic properties appeared to require protection under Section 4(f) because they were identified as being eligible for the National Register of Historic Places (NRHP) under criteria typically considered eligible for protection (see Section (5) for a detailed discussion of these criteria). By altering the project design to reduce the median width and install retaining structures, HDOT and FHWA determined that fifteen (15) of the sixteen (16) Section 4(f) properties could be avoided. The property that could not be avoided under the redesign – Mamalahoa Trail (SIHP site #00002)– appears to require a use under Section 4(f).

[2] The July 2012 Archaeological Inventory Survey (AIS) individually identified and listed seventy-six (76) sites, however erroneously indicated seventy-five (75) sites in its summation. This mathematical error was repeated in SHPD's 2012 acceptance letter. The 2015 Section 106 Memorandum of Agreement provides a listing of the same sites listed in the 2012 AIS with the correct summation, which is seventy-six (76). The mathematical error does not have a bearing on the applicability of protection of the resource under Section 4(f) since each site was individually assessed.

Figure 1. Project Area of Potential Effect, Queen Ka‘ahumanu Highway, Phase 2

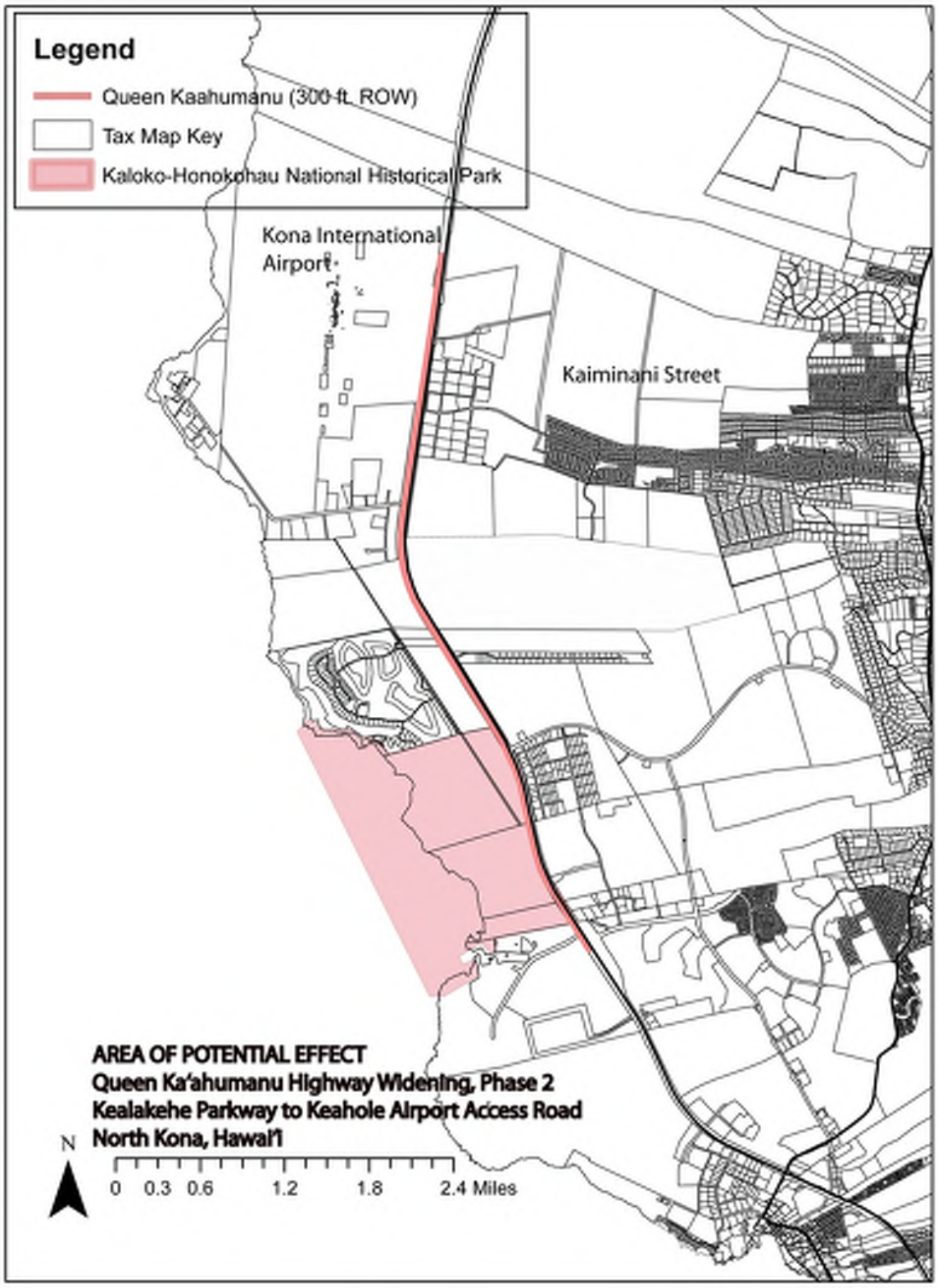


Figure 2. Existing Highway Cross-Section (Typical)

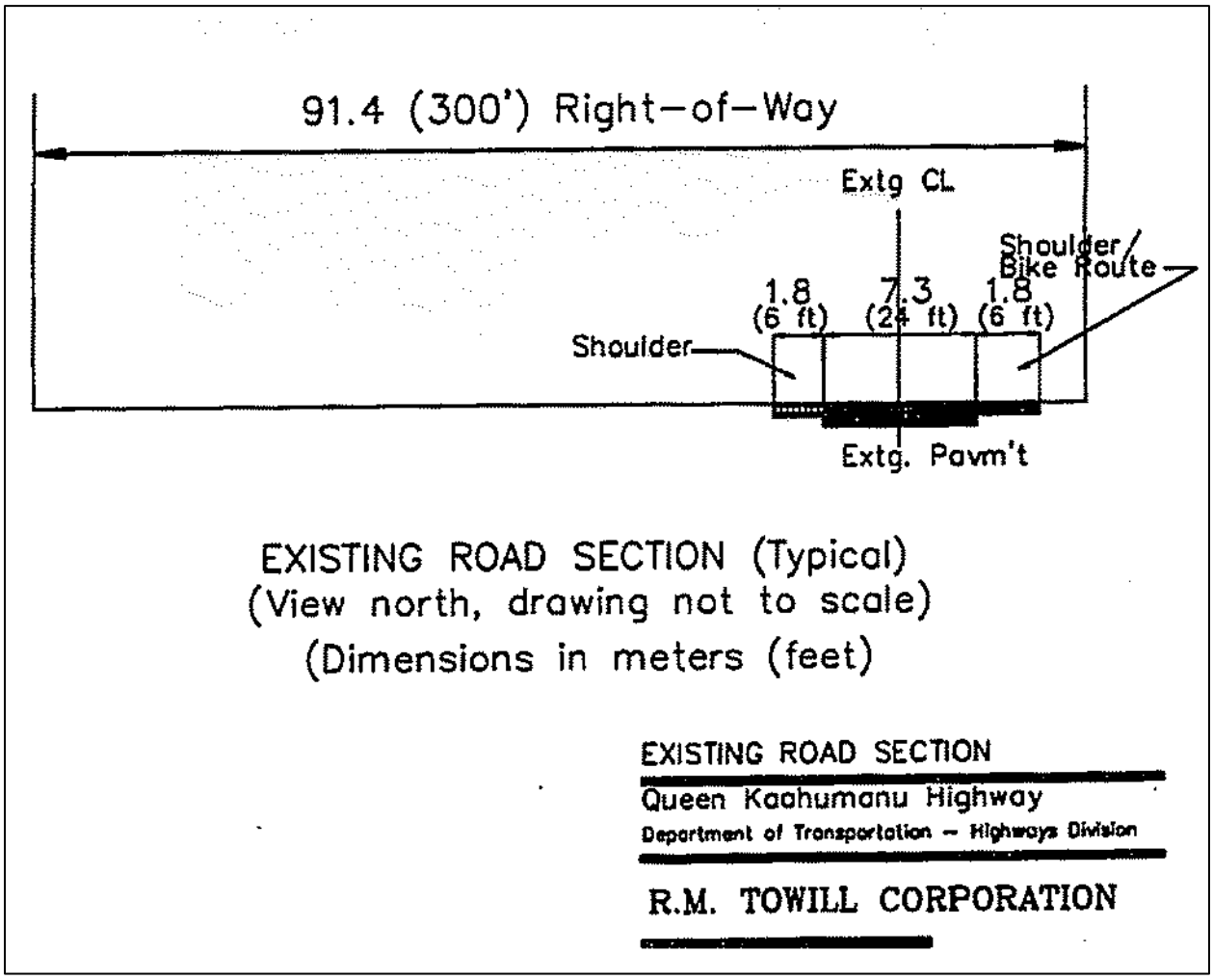
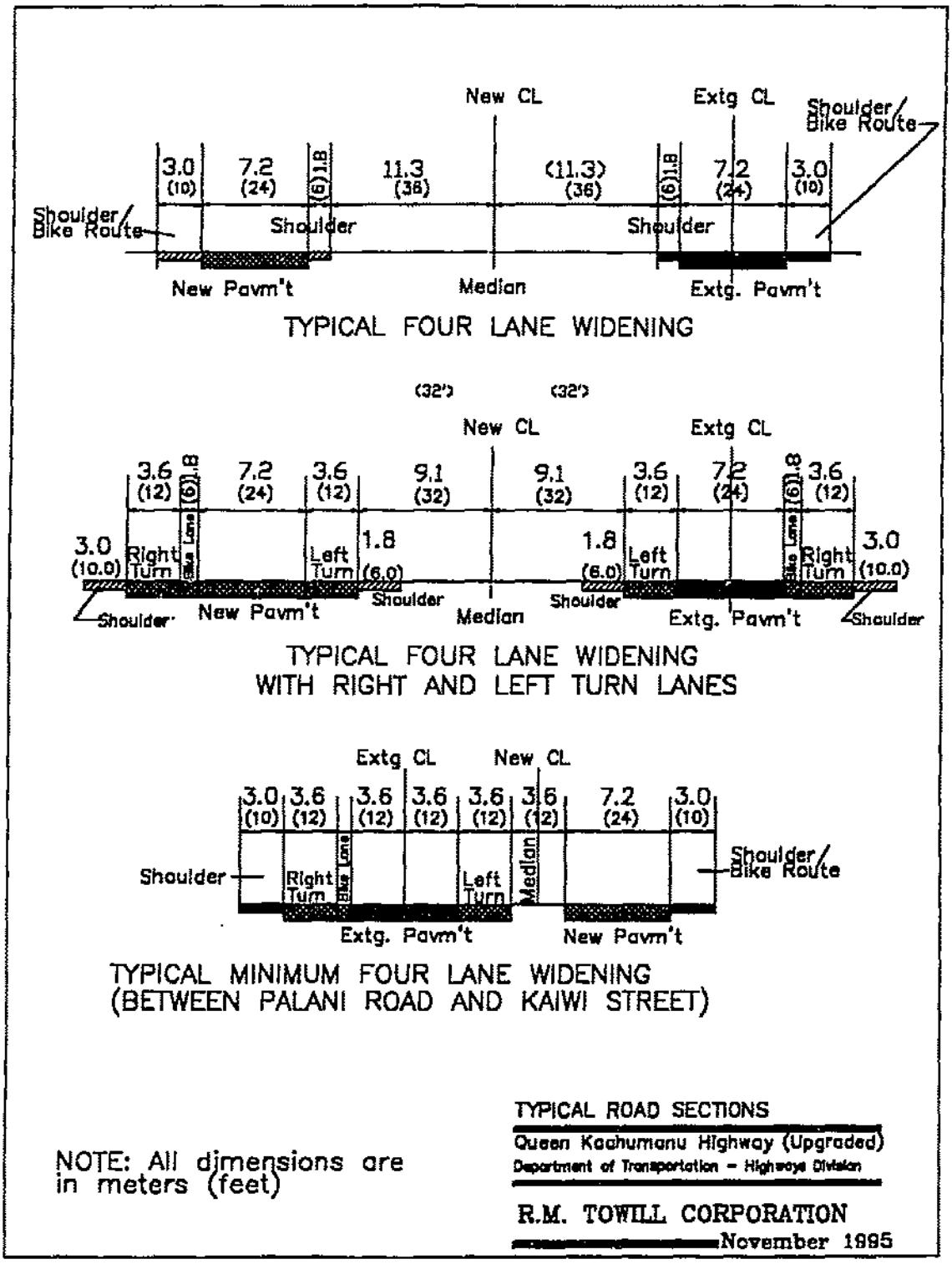


Figure 3. Typical Cross-Section (1996), Proposed Queen Ka'ahumanu Highway Widening



4. Native Hawaiian Terminology

In the Hawaiian language, the term **"mauka"** means in the direction of the mountains, or in general terms, uphill.

The term **"makai"** means in the direction of the sea, or generally downhill.

The origin of these two terms in the Hawaiian culture is based on the original Hawaiian community organizational structure, which was to divide the land into pie-shaped parcels called **"ahupua'a."** These **"ahupua'a"** or land divisions ran from the ocean to the mountains and were designed to allow its inhabitants to be self-sufficient with enough access to the sea to fish and enough access to the mountains to farm. As a result of this lifestyle, there was a great deal of foot traffic movement between the mountains and the sea. For this reason, the use of **"mauka"** and **"makai"** is more prevalent and more practical than the cardinal directions (i.e. North, South, East, and West).

Often, the term **"mauka-makai"** or **"mauka-makai connectivity"** is used to describe the importance of trails to Native Hawaiians since most trails were constructed to allow more efficient foot traffic between the mountains and the sea. Within the context of Section 4(f), the concern with **"mauka-makai connectivity"** would be with respect to transportation activities that sever or damage the continuity of these trails. Although modern transportation methods no longer require walking long distances using trails, Native Hawaiians still consider the trails important because of the ancestral ties to their **"kupuna"** or elders.

In addition, cultural practitioners often use these trails much like their ancestors did in order to preserve the ancient Hawaiian way of life. It is primarily for this reason that the connectivity of these trails is considered so important to Native Hawaiians.

The term **"Kamehameha"** is commonly used to refer to King Kamehameha the Great (1758-1819), the most famous Hawaiian King, who conquered and united the Hawaiian Islands in 1810.

The term **"pre-contact"** is generally used to refer to the time period before the Hawaiian Islands were first visited by British explorer Captain James Cook in 1778.

Much of the Hawaiian landscape includes exposed lava flows. The lava was generally grouped into one of two types.

"A'a" is a type of lava that is distinguished by its jagged, rough appearance.

"Pahoehoe" is a type of lava that is distinguished by its smooth, flowing appearance.

The term **"cultural descendant"** indicates someone whose heritage and lineage is tied to a known area of the Hawaiian Islands but not to specific individuals. The term **"lineal descendant"** indicates someone who can trace their lineage back to specific individuals.

5. Description of the Section 4(f) Resource

Section 4(f) offers protection to publicly owned parks, recreation areas, and wildlife and waterfowl refuges, as well as significant historic properties (whether publicly or privately owned). FHWA is responsible for identifying the Section 4(f) resources within a project area and for determining whether the project will result in a use of such resources (See Section 6).

Parks, Recreation Areas, Wildlife and Waterfowl Refuges

To be considered a Section 4(f) resource, any publicly owned land used as a park, recreation area or wildlife and waterfowl refuge must be officially designated as such by officials of a federal, state, or local government entity having jurisdiction over the land. In addition, one of the major purposes or functions of the property must be a park, recreation area, or a wildlife refuge. Incidental, secondary, occasional or dispersed park, recreation or refuge activities do not constitute a major purpose. Under certain circumstances (not present here), planned parks and recreation resources could also be considered as Section 4(f) resources.

There are no recreation areas, or wildlife and waterfowl refuges within the project limits. The only park within the project limits is the Kaloko-Honokohau National Historical Park. The park fronts the highway right-of-way on the makai side of the road for approximately one mile on the south end of the project (see wide pink shaded area at the bottom of **Figure 1**). Outdoor activities at the park include fishing and gathering of some ocean resources, viewing of a number of migratory bird species and sea turtles, and hiking on various trails. The current proposed project does not require the use of any property from the park, however, in reviewing the draft Section 4(f) evaluation, the National Park Service (NPS) expressed concern in a letter dated September 9, 2013 that excessive noise from the highway could impact cultural practices, the National Park's natural soundscape and wildlife (See **Appendix F**). Impacts of this nature are considered "constructive use", as described in Section 1. In response to the NPS' concern, a noise study was conducted in accordance with 23 CFR 774.15 to evaluate three locations identified by the NPS as noise-sensitive (See **Appendix F**). Based on analysis of the existing and future (Build and No Build) noise level measurements, a constructive use would not occur.

Historic Properties

Historic properties eligible for protection under Section 4(f) are those listed on, or eligible for listing on, the National Register of Historic Places (NRHP). The criteria for evaluating the significance of historic resources are set forth in 36 C.F.R. 60.4. These criteria are designated using a four-letter-code system (A-D), as presented below.

- **Criterion A***: Resource is associated with events that have made a significant contribution to the broad patterns of our history;*
- **Criterion B:** *Resource is associated with the lives of persons significant in our past;*

- **Criterion C:** *Resource embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic value; or represents a significant and distinguishable entity whose components may lack individual distinction; and*
- **Criterion D:** *Resource has yielded, or may be likely to yield information important in prehistory or history.*

Table 1 includes a significance criterion E as well. This criterion applies to the Hawaii State Register of Historic Places and has no applicability to the NRHP or to Section 4(f).

The historic properties within the project limits were identified during a field evaluation called an Archaeological Inventory Survey (AIS). The original AIS for the Queen Ka'ahumanu widening project was done in 1995 and included a review of the entire 300-foot wide highway right-of-way for the Queen Ka'ahumanu Highway. For purposes of the AIS and for Section 106 requirements, the entire 300-foot wide highway right-of-way is considered the Area of Potential Effect (APE) that defines the limits for both field and record reviews.

The 1995 AIS resulted in the identification of seventeen (17) historic properties – five (5) sites previously identified and twelve (12) sites newly discovered. It was this list of seventeen (17) historic properties that was the basis for the original Programmatic Section 4(f) document and the original Section 106 MOA.

Subsequent to completion of the original AIS, a new Native Hawaiian organization (NHO), named Makani Hou o Kaloko-Honokohau, was established in 2008 in the project vicinity. The new NHO included cultural and lineal descendants from the Kaloko-Honokohau area.

In 2010, after the design-build contract was awarded and during Section 106 consultation for the project design prior to construction, both the National Park Service (NPS) staff and the new NHO members expressed a belief that the original AIS field investigation missed many historic properties fronting the Kaloko-Honokohau National Historical Park. At their collective request, additional property surveys were performed within the project limits during 2010 and 2011 by members of the original AIS consultant firm as well as staff from the NPS and members of the NHOs. The result of these additional surveys was the addition of fifty-eight (58) newly discovered historic properties within the project APE.

Because of the number of newly identified historic properties, a revised AIS document was prepared that included a total of seventy-six (76) historic properties eligible for inclusion on the NRHP. The new AIS was reviewed by the NPS and by the NHOs, and was ultimately approved by the SHPD in August 2012 (see **Appendix A** for a list of sites).

Based on the newly approved AIS, a total of sixteen (16) of the seventy-six (76)[3] properties were identified as being eligible under significance criteria other than criterion D (See **Table 1** for a list of these sites and **Table 2** for the current disposition of these sites after the re-design

[3] See footnote 2.

effort).The significance criteria is important within the context of Section 4(f) because properties eligible under only criterion D are generally archaeological sites eligible chiefly because of "what can be learned by data recovery and which have minimal value for preservation in place" and, as such, are typically exceptions to Section 4(f) (see 23 C.F.R. 774.13 (b) (1)). By contrast, properties eligible under criteria A, B, or C are generally considered Section 4(f) properties (i.e. afforded protection under Section 4(f) and requiring appropriate justification before they may be "used").

As a result of the re-design undertaken by FHWA and HDOT, the project would require the use of only one of the sixteen (16) properties subject to protection under Section 4(f). Since fifteen (15) of the sixteen (16) Section 4(f) properties are being avoided by the re-design, no further discussion of these sites is necessary. An archaeological description of the 16 historic trails, excerpted from the 2012 AIS, is included as **Appendix A**.

Table 1. Section 4(f) Resources, Significance Criteria, and Features of Historic Trails in APE

SIHP ID No.[1]	*Site Type*	*Function of Site*	*Significance Criteria*[2]	*Number of Features*
00002	***Māmalahoa Trail***	***Transportation***	***A, B, C, D and E***	***1***
10714	*Trail (mauka-makai),*	*Transportation*	*A, C, D and E*	*3*
15324	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*2*
18099	*Trail (mauka-makai)*	*Transportation*	*A, C, D and E*	*1*
19946	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
19952	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
19953	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
19954	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
22418	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
22507	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
28774	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
28782	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
28784	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
28787	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
28791	*Trail (mauka-makai)*	*Transportation*	*C, D and E*	*1*
29272	*Trail (mauka/makai)*	*Transportation*	*C, D and E*	*2*

Bold, Underlined Sites are Those Proposed to be Used

[1] **SIHP = State [of Hawai'i] Inventory of Historic Places**

[2] **Significance Criteria:**

A *Associated with events that have made an important contribution to the broad patterns of our history;*

B *Associated with the lives of persons significant in our past;*

C *Embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, or possesses high artistic value; also, for the National Register language only, this criterion includes historic properties "that represent a significant and distinguishable entity whose components may lack individual distinction"*

D *Have yielded, or is likely to yield information important for research on prehistory or history;*

E *Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property, or due to associations with traditional beliefs, events or oral history accounts – these associations being important to the group's history and cultural identity.* ***This last criterion is included only in the Hawai'i Register language.***

Table 2. Summary of Impacts Based Upon Re-Design

SIHP ID Number	*Site Type*	*Project Effects on Resource After Re-Design*
00002	***Māmalahoa Trail***	***Reduced destruction of a portion of site***
10714	*Trail (mauka-makai)*	*Avoidance via median reduction*
15324	*Trail (mauka-makai)*	*Entire site avoided by construction*
18099	*Trail (mauka-makai)*	*Avoidance via median reduction*
19946	*Trail (mauka-makai)*	*Avoidance via median reduction*
19948	*Quarry site*	*Entire site avoided by construction*
19952	*Trail (mauka-makai)*	*Entire site avoided by construction*
19953	*Trail (mauka-makai)*	*Destruction of a portion of site*
19954	*Trail (mauka-makai)*	*Entire site avoided by construction*
22418	*Trail (mauka-makai)*	*Avoidance via median reduction*
22507	*Trail (mauka-makai)*	*Entire site avoided by construction*
28774	*Trail (mauka-makai)*	*Entire site avoided by construction*
28782	*Trail (mauka-makai)*	*Entire site avoided by construction*
28784	*Trail (mauka-makai)*	*Entire site avoided by construction*
28787	*Trail (mauka-makai)*	*Entire site avoided by construction*
28791	*Trail (mauka-makai)*	*Entire site avoided by construction*
29272	*Trail (mauka/makai)*	*Entire site avoided by construction*

Bold, Underlined Sites are Those Proposed to be Used

6. Impacts to the Section 4(f) Resource

The Section 4(f) resource proposed for use by the project is the Mamalahoa Trail (site #00002). Below is an excerpt from a NPS website explaining the trail systems in the project area:

> *"In Kaloko-Honokohau the residents built a system of mauka-makai trails to travel and communicate with extended family members and friends. Other routes traversed the coast laterally to transport food and other goods to neighboring ahupua'a. Several trails are found in the Kaloko-Honokohau area, mostly short footpaths comprising a local trail system, used both in the prehistoric and early historic (pre-1840) periods. Some prehistoric trails modified with curbs have been identified here, as well as new, probably post-1840, straight curbed trails. [78] Although a mauka -makai exchange system was used for many products, the produce of Kaloko and the other fishponds would not have been available for exchange and use by commoners. The public Mamalahoa Trail and the ancient coastal trail were two major routes around the island, leading south to Kailua-Kona and north to Keahole. In early times the coastal trail would have facilitated transportation of fish from this area to Kamakahonu — Kamehameha's court and primary political and economic center in Kailua — which probably consumed most of the products from the ponds in the area. The coastal trail ran right by 'Ai'opio Fishtrap."*
> http://www.cr.nps.gov/history/online_books/kona/history8i.htm

In the 2012 AIS, construction of the Mamalahoa Trail is dated to 1836-1855, and is considered to have been the major seaward road through the region up to 1888. It is associated with Kuakini (Governor of Hawaii from 1819-1844) who is associated with construction of the trail. The AIS further indicates that the trail has been breached in numerous places between Kailua-Kona and the Keahole Airport in modern times. The recommended treatment in the AIS is for preservation where possible and data recovery for portions of the trail that cannot be saved.

In the original 1999 MOA, the following stipulation was included:

> *"The HDOT shall not cumulatively affect more than 50 lineal feet of State Site 19953 and 200 lineal feet of the Mamalahoa Trail (State Site 00002), as discussed in the Environmental Assessment for Queen Kaahumanu Highway Widening, dated May 1996…" (underline added)*

Since this trail was severed during construction of the original two-lane Queen Ka'ahumanu Highway in 1970, it would not be possible to regain "mauka-makai connectivity" without elevating the highway, elevating the trail, lowering the trail under the highway, or allowing the trail to cross the highway at-grade.

The purpose of the re-design effort and this evaluation is to avoid further damage to the trail, and if further damage cannot be avoided, to minimize the harm to the integrity of this Section 4(f) resource.

As can be seen from **Figure 5** on page 27, cross-section at the site, the re-design impacts a small portion of the trail – estimated at 90 feet for the Mamalahoa Trail (site #00002). This estimated

impact resulting from the re-design is significantly less than stipulated in the 1999 MOA. The estimated area of impact for the site is identified in the photos below.

Under 23 C.F.R. 774.3 (c) (1) (ii), if there is no feasible and prudent avoidance alternative, then the Administration may only approve the alternative that causes the least overall harm in light of the statute's preservation purpose. The least overall harm determination includes balancing:

> *"The relative severity of the remaining harm, after mitigation, to the protected…attributes, or features that qualify each Section 4(f) property for protection."*

In 23 C.F.R. 774.17 (Section 4(f) Definitions), the definition of "Feasible and prudent avoidance alternative" includes the following language:

> *"In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute."*

The Mamalahoa Trail (site #00002) is considered a significant resource for the following reasons:

- Mamalahoa Trail, nicknamed the King's Trail, is associated with the royal ruling class of the ancient Hawaiian society
- Mamalahoa Trail is eligible under criteria A, B, C, and D
- Mamalahoa Trail maintains a high degree of integrity of design, materials, workmanship, and feeling (see photos below)
- Mamalahoa Trail has significant sections intact for several miles away from the project location

Photos of the Mamalahoa Trail (Site #00002)

The most recent significant impact to the integrity of the Mamalahoa Trail in the vicinity of the proposed project was the loss of the mauka-makai connectivity in 1970 when the trail was severed to allow construction of the original Queen Ka'ahumanu Highway. When the Kaloko-Honokohau National Historical Park visitor's center and parking area were constructed within

the last 10 years, the Queen Ka'ahumanu Highway was widened to allow room for a left-turn lane into and out of the park and a right-turn lane into the park by the HDOT under the 1999 MOA. In order to widen the pavement, a small amount of additional trail was removed to allow for construction of the widened pavement. The proposed action would remove another short section of the trail, but would do so in an area where the trail's integrity has already been diminished based on previous construction activities. In other words, the proposed use would not create a new discontinuity in the trail, but would expand an existing discontinuity.

The photo below shows the end of the Mamalahoa Trail on the makai side of the Queen Ka'ahumanu Highway in the area that is proposed for removal. (Note the significant difference in trail construction integrity between this photo and previous photos)

Mamalahoa Trail Adjacent to Existing Highway (Portion Proposed for Removal in Yellow)

7. Avoidance Alternatives

Consistent with the requirements of Section 4(f) and as per 23 C.F.R. 774.3, the property in question cannot be used for this project unless a determination is made that there is no feasible and prudent avoidance alternative, and that all possible planning has been done to minimize harm to the resource. The first step in this process is to determine whether a feasible and prudent avoidance alternative exists.

When the existing trail was severed during construction of the original Queen Ka'ahumanu Highway in 1970, a portion of the Mamalahoa Trail was removed as needed to allow for construction of the new roadway. When the Queen Ka'ahumanu Highway was widened to allow for dedicated turn lanes to access the Kaloko-Honokohau National Historical Park, a small amount of additional trail was removed in order to construct the widened pavement. As can be seen from the previous photos, the remaining Mamalahoa Trail "brackets" the highway on both the mauka and the makai sides.

Because there is no room to widen the highway without touching the Mamalahoa Trail, there is no avoidance alternative that exists based on widening the existing highway in its current location. Avoidance alternatives are limited to the no-build alternative, a completely new alternative off-site alignment, or a build alternative that stays within the footprint of the existing roadway. Each of these avoidance alternatives is considered below.

No-Build Alternative: The FEA stated that the original purpose and need for the project is to "relieve existing congestion and accommodate future demand within the existing 300-foot right-of-way." Traffic volumes along this corridor have been increasing rapidly along with the development of Kailua-Kona over the last 10-15 years. It is routine to see long lines of vehicles traveling through this section without enough of a gap for side road traffic to turn onto the highway. A no-build alternative, while avoiding further impact to these historic properties, would do nothing to address the purpose and need to relieve congestion and create additional future capacity. Because the no-build alternative does not address the primary purpose and need for the project, the no-build alternative is not considered prudent.

Alternate Off-Site Alignment (New Roadway): Since the purpose and need for the project is to relieve existing congestion and increase future capacity, the only way this would be possible without widening the Queen Ka'ahumanu Highway is if the additional demand and additional future capacity is re-directed onto a different roadway. This new roadway could either be an existing roadway to be improved, or it could be a completely new roadway. In order to build a completely new roadway outside of existing HDOT right-of-way, an Environmental Impact Statement would likely be required to determine possible alternate alignments and which alignments would have the least overall impact on the human environment. This would include studies pertaining to noise, water quality, cultural and historical significance, subsurface conditions, and a myriad of other considerations. An example of this type of project is the extension of Saddle Road between Mamalahoa Highway and the Queen Ka'ahumanu Highway currently under study. This study is intended to determine the possibility of extending Saddle

Road down to the Queen Ka'ahumanu Highway on a completely new roadway alignment. The study area is in the same general vicinity as the Queen Ka'ahumanu Widening project and is studying the possibility of constructing a new roadway over the same type of rough, steep exposed lava terrain as exists around the proposed project. One of the alternatives being considered in the Environmental Impact Statement is construction of an estimated 10 miles of new roadway. The HDOT is estimating the construction cost at $171 Million. Such an expenditure in both time and cost to generate an Environmental Impact Statement, purchase hundreds or even thousands of acres of new right-of-way, and spend tens of millions of dollars to construct a new roadway in order to avoid shortening one trail by ninety-feet could be considered a disproportionate effort in light of the level of impact to the Section 4(f) resource.

In addition, significant impediments to construction lie outside the limits of the Queen Ka'ahumanu right-of-way. An alignment could not be constructed makai of the existing highway without going through the Kaloko- Honokohau National Historical Park. There is also a dry land forest and a 30-acre cultural preserve mauka of the existing Queen Ka'ahumanu that contain significant cultural features and endangered plants, as well as significant residential development. There are already two roadways mauka of the existing Queen Ka'ahumanu Highway – the Ane Keohokalole Highway and the Mamalahoa Highway. With significant commercial, industrial, and residential development along both highway corridors, and the physical constraints of the Kaloko-Honokohau National Historical Park, the dry land forest, and the cultural preserve, it is unlikely that an alignment could be chosen that avoids all necessary constraints. As a result, consideration of an off-site new virgin roadway alignment is not considered prudent as the complications associated with it would compromise the current proposed action to a degree that it would be unreasonable to proceed with the project in light of its stated purpose and need.

Alternate Off-Site Alignment (Using an Existing Roadway): Rather than constructing a completely new roadway to relieve congestion and provide future capacity, this could also be accomplished by widening an existing roadway. In the district of Kona, there are only two roadways that traverse the same general corridor. These are the Mamalahoa Highway and the Ane Keohokalole Highway.

The Mamalahoa Highway (route 190) traverses the same general corridor, but is located several miles mauka. This highway is older than the Queen Ka'ahumanu Highway, and has been used as a primary route between Hilo, Kailua-Kona, and Waimea. Queen Ka'ahumanu Highway was originally built to serve as a more direct route between Kailua-Kona and the port of Kawaihae. Relocating Queen Ka'ahumanu traffic onto the Mamalahoa Highway would require travel many extra miles and an increase in elevation out of direction. A rough analysis was done using Google Maps to determine the mileage and driving time out of direction for travel between Kailua-Kona and Kawaihae Harbor using the Queen Ka'ahumanu Highway and using the Mamalahoa Highway for a portion of the route. Based on the provided directions, the distance between Kailua-Kona and Kawaihae Harbor is 34.7 miles and would take approximately 50 minutes to traverse using the Queen Ka'ahumanu Highway – the most direct route. Using Mamalahoa Highway for a portion of this travel increases the travel distance to 49.4 miles and increases the travel time to 1 hour, 26 minutes. This equates to an increase in travel distance

of 42% and an increase in travel time of 72%. This level of inconvenience would render the project unable to meet the stated purpose of the project to relieve congestion and increase capacity.

The Mamalahoa Highway is a narrow, two-lane roadway built into the side of a mountain. Accommodating large traffic volumes would necessitate significant geometric improvements. Widening the steep, hillside terrain would be difficult and expensive, and would require residential displacements (note in photo below how close the houses are to the highway). Given the potential for hundreds of residential displacements and the average house costing nearly $500,000, right-of-way cost alone could easily approach $100 Million. As a result, use of the Mamalahoa Highway is not considered prudent as it would be an additional cost of extraordinary magnitude and would compromise the current proposed action to a degree that it would be unreasonable to proceed with the project in light of its stated purpose and need.

Photo of Mamalahoa Highway in Area Requiring Widening to Accommodate Future Capacity

The Ane Keohokalole Highway was originally considered as a possible “mid-level facility” alternative alignment in the 1996 FEA, but was dismissed in the FEA because “no time frame for construction has been put forward, and the responsibility for construction is uncertain. Therefore, this alternative was not deemed appropriate to alleviate the traffic projected.”

The term “mid-level facility” is intended to convey that the facility is midway in elevation between the Mamalahoa Highway (upper level road) and the Queen Ka’ahumanu Highway (lower level road). The diagram below gives a relative orientation of the project limits for the proposed Queen Ka’ahumanu Highway widening, the Ane Keohokalole Highway, and the Mamalahoa Highway.

Since the FEA was published in 1996, the 2009 American Recovery and Reinvestment Act (ARRA) made available the necessary funding for construction of the Ane Keohokalole Highway along a portion of the project corridor. This new highway was completed in 2012 and now serves as a mid-level facility. Since the FEA deemed the mid-level facility a possible option, but dismissed it because its construction timeframe was uncertain, it should be considered as a possible alignment for relieving congestion on the Queen Ka’ahumanu Highway and for providing additional future capacity.

What must be determined is whether construction of the Ane Keohokalole Highway would reduce congestion and increase future capacity enough to meet the purpose and need for the proposed undertaking, avoiding the need to widen the Queen Ka’ahumanu Highway.

There are differences in roadway classification between the Queen Ka’ahumanu Highway and the Ane Keohokalole Highway. Queen Ka’ahumanu Highway is classified as a “principal

arterial." A "principal arterial" is a high-capacity road whose primary function is to deliver traffic between urban centers in the most direct route possible and at the highest speed allowable in order to maintain a high level of service. For this reason, many arterials have restricted access.

Ane Keohokalole Highway is classified as a "major collector." A "major collector" is a low-to-moderate capacity road whose primary function is to move traffic from local streets towards arterial roads. Collector roads are designed to provide access to residential and commercial properties, and are generally posted at a lower speed limit due to the number of access points and the presence of pedestrians in larger numbers. Since the Ane Keohokalole Highway opened in June 2012, there has been no noticeable reduction in traffic congestion along the Queen Ka'ahumanu Highway as a result of opening the new highway.

Property along the Ane Keohokalole Highway has been under development since construction of the roadway began in 2010. Its purpose is to move commercial, residential and industrial access away from the Queen Ka'ahumanu Highway corridor. As a major collector with significant development, it is being constructed as a lower-speed facility with numerous driveways and business accesses. In the future, development will continue along Ane Keohokalole until it becomes a busy urban commercial corridor for the Kailua-Kona area. As this development continues, the ability for traffic to move efficiently through the corridor will be limited by the need to allow business access and by the need to accommodate pedestrians. For traffic wishing to travel along a high-speed principal arterial such as the Queen Ka'ahumanu Highway, the Ane Keohokalole represents a poor alternate route due to its slower speed and significant ingress and egress traffic from the numerous businesses along the route.

Consideration of an the Ane Keohokalole Highway as an alternative to widening the Queen Ka'ahumanu Highway is not considered prudent as the difference in roadway classifications would ensure that Ane Keohokalole becomes more congested as development continues, increasing the travel time through the corridor and ensuring that Queen Ka'ahumanu traffic is not encouraged to use the Ane Keohokalole Highway as an alternate route. This would effectively prevent the Ane Keohokalole Highway from meeting the purpose and need for the proposed project without widening of the Queen Ka'ahumanu Highway.

Build Alternative Within the Existing Roadway Footprint: An alternative way to avoid impacting historic properties while increasing the capacity of the existing Queen Ka'ahumanu Highway would be to construct the additional travel lanes within the footprint of the existing roadway. This could be accomplished in one of two ways. The existing roadway could be re-striped in order to accommodate four travel lanes or the two additional lanes could be constructed on top of the existing roadway (i.e. construct a structure to "stack" the new roadway on top of the existing roadway).

Given the width of the existing roadway in the vicinity of the Section 4(f) properties, the roadway could be re-striped to accommodate four travel lanes. This might be considered a viable avoidance alternative except that the area of the Section 4(f) property contains a signalized intersection. If the existing roadway were re-striped to accommodate four travel lanes (see diagram below), there would not be enough width to accommodate shoulders and

dedicated turn lanes necessary for the intersection to function properly. Given the high-speed nature of this arterial facility, the risk of rear-end collisions associated with left-turn traffic turning from the travel lanes rather than from dedicated left-turn lanes represents an unacceptable safety and operational problem, making this option not prudent.

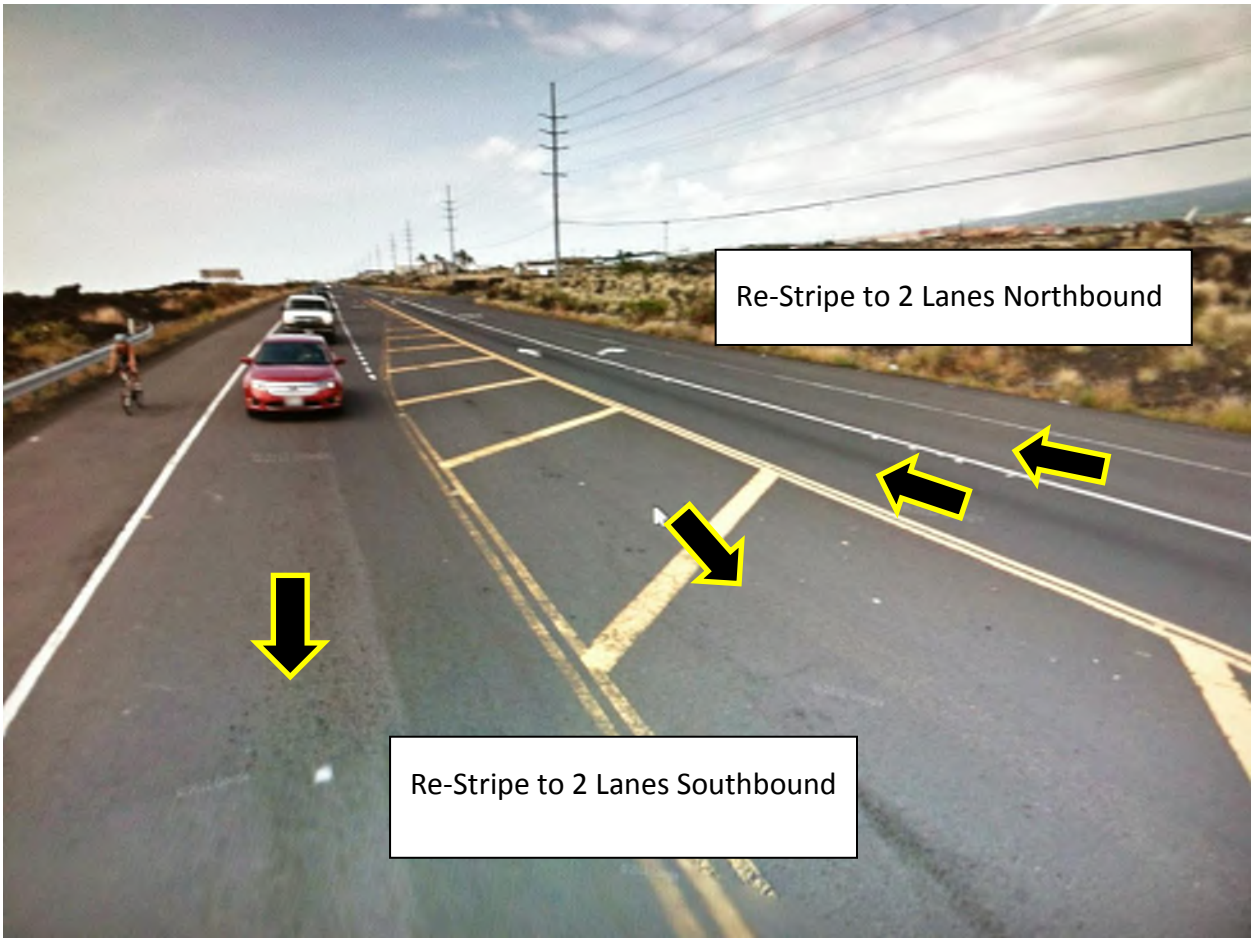


Photo of Queen Ka'ahumanu Highway in Vicinity of Section 4(f) Properties and Intersection

"Stacking" two new travel lanes on top of the existing highway represents an alternate way to avoid the Section 4(f) property. A preliminary review of this alternative suggests that a structure between 500-feet long and 1,000-feet long by 40-feet wide would need to be constructed in order to carry two lanes of traffic over the location of the Section 4(f) property and then return the traffic to the widened alignment. This would result in a structure with a surface area of between 20,000 and 40,000 square feet. Using a current scoping-level unit cost for Hawaii of between $700 - $800 per square foot of bridge deck surface area results in a range of preliminary cost between $14 Million and $32 Million. The entire construction cost for the proposed project is currently estimated at $60 Million, an increase in cost of 23% - 53%.

In addition, such a large structure constructed across the frontage of the Kaloko-Honokohau National Historical Park would inhibit mauka-makai views from the park and would be a significant visual detraction for visitors to the park. Although not a direct impact to Section 4(f)

properties, such a large overhead structure would be out-of-place in the cultural landscape of the Kaloko-Honokohau National Historical Park.

As a result of the cost impact to the project and the potential aesthetic impact to the National Historical Park, consideration of the use of a structure to avoid the Section 4(f) property is not considered prudent and represents a disproportionate financial and aesthetic impact relative to the proposed impact to the Section 4(f) resource.

Figure 4. Typical Cross-Sections (Before and After Conditions)

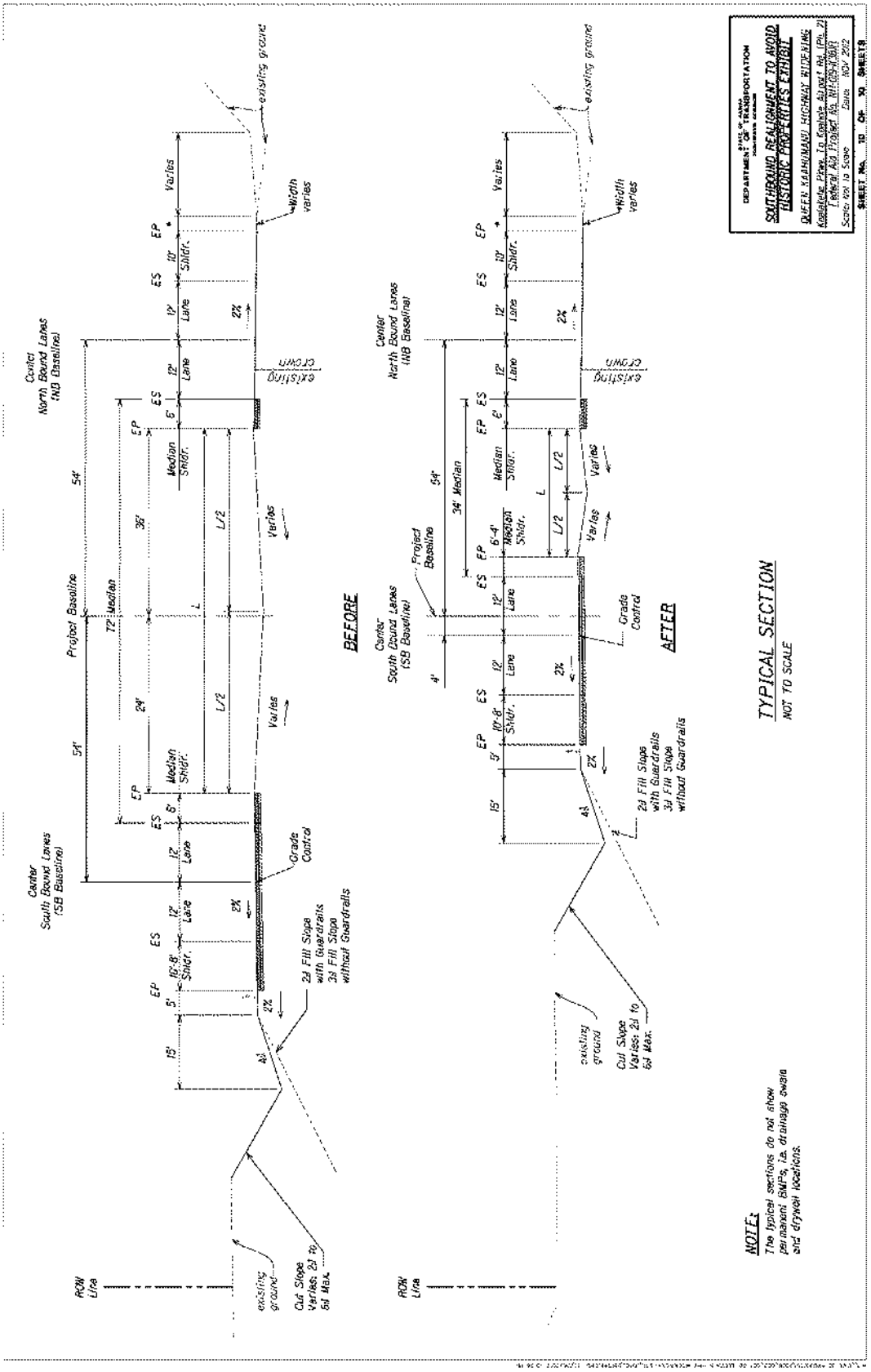


Figure 5. Cross-Section Showing Site #00002

8. Least Overall Harm Analysis

In cases where an evaluation concludes there is no feasible and prudent avoidance alternative, FHWA may approve only the alternative that causes the least overall harm to Section 4(f) resources. Least overall harm is determined by balancing the factors listed in 23 C.F.R. 774.3 (c) (1) (i) – (vii). These factors include:

- The ability to mitigate adverse impacts to the Section 4(f) property (including benefits);
- After mitigation, the relative severity of the remaining impact to resources not protected by Section 4(f), as well as the remaining impact to Section 4(f) property attributes that qualify the property for protection;
- Relative significance of each Section 4(f) property;
- Views of the official(s) with jurisdiction over each Section 4(f) property;
- The degree to which each alternative meets the purpose and need for the project; and
- The differences in cost among the alternatives.

Based on the preceding alternatives analysis, there are no feasible and prudent avoidance alternatives that meet the purpose and need for the project. Since there is only one remaining alternative that meets the project's purpose and need, this alternative represents the least overall harm to the Section 4(f) resource. The focus of the evaluation can now shift to measures to minimize harm.

9. Measures to Minimize Harm

In accordance with 23 C.F.R. 774.17, the Proposed Action must include all possible planning to minimize harm. This means that all reasonable measures to mitigate the adverse impacts must be incorporated into the Proposed Action. This consists of documenting the steps taken to ensure that no more of the Section 4(f) resource was used than is absolutely necessary to meet the project's purpose and need. As previously discussed in Sections (3) and (5), the project footprint was re-designed at the direction of the FHWA and the HDOT in an attempt to avoid all Section 4(f) properties. As a result of this re-design effort, fifteen (15) of the sixteen (16) identified Section 4(f) resources would be avoided by the Proposed Action.

For the remaining Section 4(f) resource, the considerations given to minimizing the harm and the issues driving those considerations are as follows:

A. Intersection Proximity. The primary controlling feature in the project area is the proximity of the Section 4(f) resource to a signalized intersection. The intersection features dedicated left-turn and right-turn lanes in both directions in addition to the four through lanes. Geometric standards and safety considerations require that tapers into and out of an intersection occur at a slow enough rate and with enough distance that traffic can safely navigate the lateral shift in the travel lanes without abrupt changes in speed. As mentioned in the section on avoidance alternatives, the existing pavement width is inadequate to allow dedicated turn lanes in addition to the through lanes. The intersection must contain the full width of all required through lanes and

turn lanes. Adequate room must be allowed for vehicles to safely decelerate in the turn lanes and enough room must be allowed for anticipated traffic queues in the turn lanes, beyond which the roadway can be tapered down as quickly as possible in order to narrow up the roadway width at the location of the Section 4(f) resources.

B. Modification Considerations to Lane and Shoulder Widths. During the evaluation of impacts to the Section 4(f) resource, it was noted that for every foot of roadway footprint reduced, the Section 4(f) resource impact would also be reduced. As a result, consideration was given to reducing the width of the travel lanes and the outside shoulders. Reduction of the travel lanes by one foot and the outside shoulders by two-feet in each direction would reduce the overall roadway width by eight feet. After review with the HDOT, a reduction in the travel lane width was not considered prudent because the action would reduce the operational efficiency of the highway as a high-speed arterial since there are no other sections within this corridor that contain narrow travel lanes. However, the narrowing of the outside shoulders from an original design width of ten (10) feet to a revised design width of eight (8) feet represents a prudent means of minimizing the impact to the Section 4(f) resource. Narrowing the shoulders to a width less than eight (8) feet represents an imprudent option due to a lack of sufficient width for motorists to safely park and exit the vehicle on the shoulder in case of emergencies and the significant number of bicyclists using the shoulder.

C. Use of Retaining Structures. At the location of the Section 4(f) resource, the geometric standards and taper rates control how quickly the roadway can taper and the narrowing of the outside shoulders limits the overall width of the roadway. The addition of vertical retaining structures (i.e. retaining walls) was considered to minimize the overall footprint of the roadway. The use of retaining walls would allow the new road surface to be connected to the existing ground surface without the need for a side slope that would cover more of the ground and impact more resources.

D. Final Design Modifications to Minimize Harm. The final design alternative that would minimize harm to the Section 4(f) resource to the greatest extent practical would be achieved by re-designing the roadway to narrow the median width in this area, increasing lateral taper rates to the steepest acceptable rates within highway geometric design standards, reducing the outside shoulder width from ten (10) feet to eight (8) feet, and constructing retaining walls to allow vertical slopes between the new roadway and the original ground. The following photo shows the current intersection design along with the relative impact to the Section 4(f) resource.

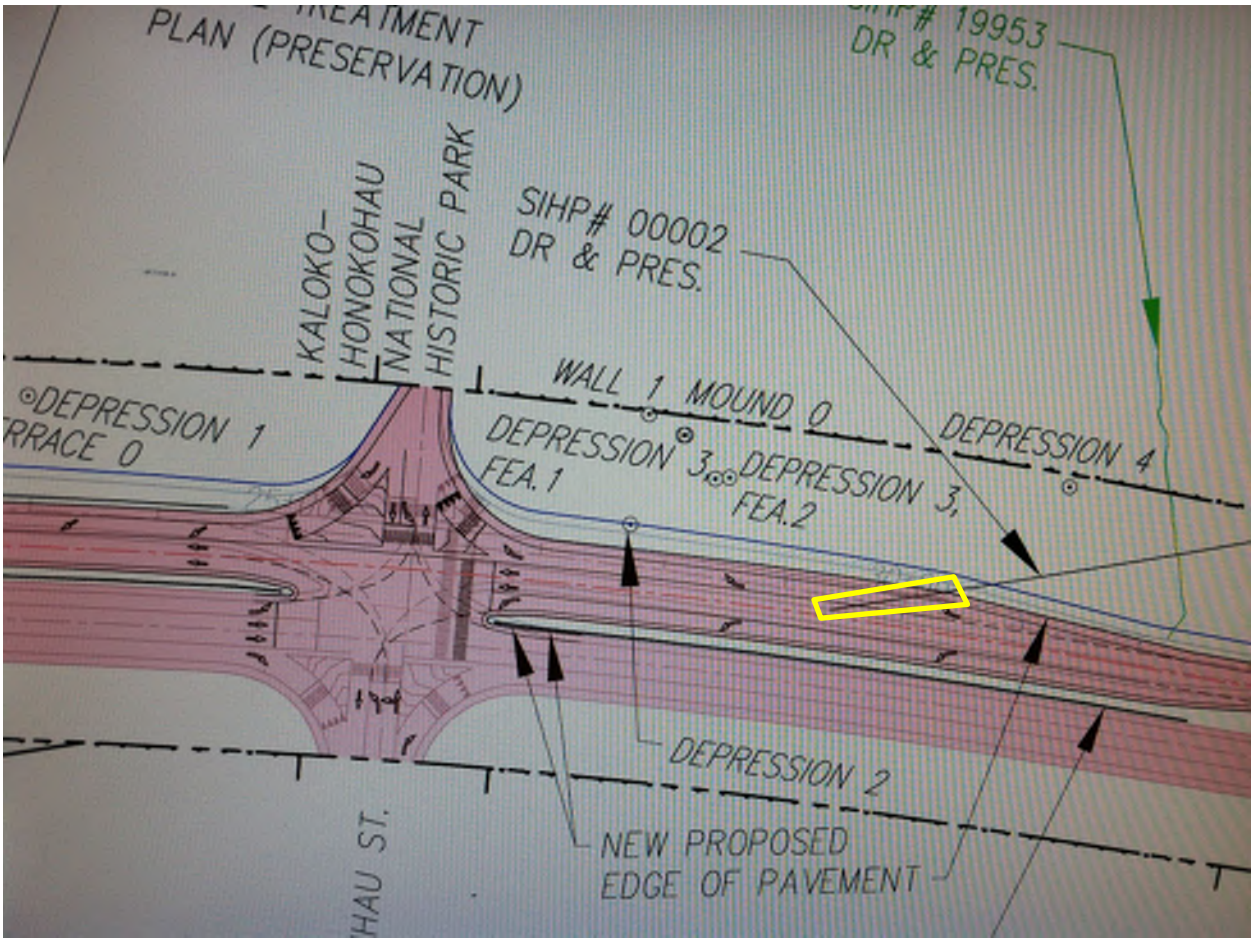


Photo of Current Intersection Design with Section 4(f) Impact Outlined in Yellow

10. Consultation and Coordination

Section 4(f) requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), if participating, is also needed.

The following consultation and coordination activities were conducted with the SHPO, State Historic Preservation Division (SHPD) and other Section 106 consulting parties, which included the State Office of Hawaiian Affairs (OHA), the Historic Hawaii Foundation (HHF), to assess the impacts and identify appropriate mitigations for the historic property. A summary of coordination activities and documents is provided in **Appendix D**.

On December 4, 2012, a meeting was held with interested parties from the HDOT, the FHWA, the NPS, several NHOs, the SHPD, and the ACHP to discuss the Section 4(f) properties, specifically the re-design efforts and its effect on historic trails and actions taken to minimize harm. **Appendix E** contains the meeting agenda, attendees and minutes. Prior to this meeting

in December, consultation was ongoing throughout the year under the auspices of Section 106, NHPA where the impact to historic properties was discussed and mitigation measures were reviewed.

FHWA requested concurrence of the applicability of Section 4(f) to the identified project historic resources via letter on February 19, 2013. The primary subject of this letter was to verify that all historic sites eligible for the NRHP only under criterion D would be considered exceptions to the requirements of Section 4(f). The SHPO requested clarification on a few issues in a response letter dated March 12, 2013. After further discussion with the SHPO's representative, the FHWA provided clarification in a final letter dated April 30, 2013. This information is attached in **Appendix C**.

In June 2013, draft copies of the Section 4(f) evaluation were sent to the Department of Interior (DOI), National Park Service (NPS), and ACHP for review and comment. A draft copy of the Section 4(f) evaluation was also sent to SHPD in February 2015. **Appendix F** contains a summary of comments received, as well as the comment and response letters.

11. Concluding Statement

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from the Mamalahoa Trail and the proposed action includes all possible planning to minimize harm to the Mamalahoa Trail resulting from such use.

12. References

- Archaeological Inventory Survey for the Proposed Queen Ka'ahumanu Highway Widening Phase 2 Project, Kalaoa, Kalaoa-'O'oma 2, Kohanaiki, Kaloko, Honokohau 1-2 and Kealakehe, North Kona District, Hawai'i Island, TMK: (3) 7-4-008, 7-3-009 & 7-3-043, Cultural Surveys Hawai'i, Inc., Approval Date: August 21, 2012.
- http://www.cr.nps.gov/history/online_books/kona/history8i.htm . A Cultural History of Three Traditional Hawaiian Sites on the West Coast of Hawai'i Island, Chapter VIII: Kaloko-Honokohau National Historical Park (G) (4).
- http://www.environment.fhwa.dot.gov/projdev/impTA6640.asp . - Federal Highway Administration's (FHWA) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents (T6640.8A)* (1987)
- http://www.environment.fhwa.dot.gov/4f/4fpolicy.asp - FHWA's *Section 4(f) Policy Paper* (2012)
- Final Environmental Assessment for Queen Ka'ahumanu Highway Widening, Kailua to Keahole, County of Hawaii, May 1996.
- Programmatic Section 4(f), Queen Ka'ahumanu Highway Widening, Kailua to Kona, February, 1996.

- Memorandum of Agreement, Queen Ka'ahumanu Highway Intersection Improvements for the Kaloko-Honokohau National Historical Park and the Queen Kaahumanu Highway Widening, Kailua to Keahole, 1999.
- Google Maps, ©2013, Directions between Kailua-Kona and Kawaihae Harbor.
- http://www.hawaii247.com/2012/06/24/ane-keohokalole-highway-opens/ - Hawaii 24/7 article by Aaron Stene, Ane Keohokalole Highway Opens, June 24, 2012.
- http://makanihou.info – Makani Hou O Kaloko-Honokohau website

Appendix A

Archaeological Inventory Survey for the Proposed Queen Kaahumanu Highway Widening Phase 2 Project, North Kona District, Hawai'i Island (State Historic Preservation Division (SHPD) Acceptance and Summary)

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 21, 2012

Chris Monahan, Ph.D.
Cultural Surveys Hawaii
PO Box 1114
Kailua, Hawaii 96734

LOG NO: 2012.1443
DOC NO: 1208MV01

Subject: **Chapter 6E-8 & National Historic Preservation Act Section 106 Review -**
Archaeological Inventory Survey, Proposed Queen Kaʻahumanu Highway Widening, Phase 2
Kalaoa, Oʻoma, Kohanaiki, Kaloko, Honokohau 1-2 and Kealakehe Ahupuaʻa
North Kona District, Island of Hawaiʻi
TMK: (3) 7-4-008, 7-3-009 & 7-3-043 (portion)

Thank you for submitting the report titled *Archaeological Inventory Survey for the Proposed Queen Kaʻahumanu Highway Widening Phase 2 Project Kalaoa, Oʻoma, Kohanaiki, Kaloko, Honokohau 1-2 and Kealakehe Ahupuaʻa, North Kona District, Island of Hawaiʻi TMK: (3) 7-4-008, 7-3-009 & 7-3-043* (C. Monahan, T, Yucha, and C. O'Hare), July 2012. This report was received by our office on July 20, 2012. The report presents the findings of multiple phases of archaeological survey work conducted along a 5.2 mile section of the proposed Queen Kaʻahumanu Highway Widening Project, Phase II. A previous draft of this archaeological inventory survey (AIS) report was reviewed by SHPD (*Log 2011.1140 Doc 1104TD12*). This previous draft was accepted under the condition that comments and concerns from other consulting parties, including the National Park Service (NPS) and native Hawaiian organizations (NHO), would be addressed. Because the concerns of the consulting parties were not adequately addressed, additional field work was undertaken In the project area and a revised draft report was submitted to our office for review. The results of all the field work in this project area to date are presented in this revised report. The survey identifies 75 historic properties in the proposed project area; twenty of the historic properties are previously described in existing archaeological reports. The remaining 55 historic properties are newly identified in this report. Of the 55 newly identified historic properties, 35 were recorded in the initial draft of this report (Monahan et. al. 2011), and the remaining 20 historic properties were recorded during the supplemental fieldwork involving consulting parties (NHO's NPS, and SHPD).

The changes that were made to this report are the result of the SHPD review of a previous draft (*Log 2012.1443, Doc. 1206MV26*). We believe the revisions and explanations have adequately addressed our concerns relating to inadequate levels of recording at multiple sites, the assessment of site functions, and treatment recommendations. We are pleased that the 'Big Cave' site (50-10-28-29725) has been identified and recoded in this AIS, and we are we are pleased that the FHWA will proceed with the proposed mitigation commitment of creating a Burial Treatment Plan to be presented to the Hawaii Island Burial Council, in consultation with the appropriate land owner.

All 75 historic properties identified during this survey are assessed as significant under the National Register of Historic places (NRHP) criterion D for their ability to yield information on historic and prehistory. As a result of consultation with Native Hawaiian organizations (NHOs), Criterion "e" of the Hawaii Register of Historic Places (HRHP) has been added to all 75 sites, because the NHOs believe these properties are of cultural value to the Native Hawaiian people. In addition, Sites 19954, 28774, 22507, 22418, 19953, 28782, 28784, 28787, 19952, 15324, 19946, 28791, and 29272 are assessed as significant under NRHP criteria C and D; and HRHP Criterion "e". Two trails, (Sites 18099 and 10714) are assessed as significant under NRHP criteria A, C, and D; and HRHP Criterion "e". Finally, the Mamalahoa Trail (Site 00002) is assessed as significant under NRHP criteria A, B, C, and D; and HRHP Criterion "e". We concur with the significance assessments presented in this report for all sites assessed as significant under NRHP criteria A, B, C, and D.

The application of HRHP significance Criterion "e" to all sites has been reviewed by the SHPD History and Culture Branch. The results of that review are as follows:

> The History and Culture Branch concurs with the Archaeological Inventory Survey that all 75 historic properties in the project area be assessed as significant under Criterion E, as having important value to the *native Hawaiian people…due to associations with cultural practices once carried out, or still carried out, at the property*, or due to associations with traditional beliefs, events, or oral history accounts-these associations being important to the group's *history and cultural identity*. Due to changes in Hawai'i that occurred subsequent to contact with the western world (1778), the unique cultural identity of the native Hawaiian people progressively eroded. Thus with respect to that cultural identity, aside from personal DNA that each native Hawaiian possesses, all that is left today are those physical manifestations (archaeological sites and features) that identifies and defines the native Hawaiian culture. From a cultural perspective then, all sites and features are significant to the native Hawaiian.
>
> The History and Culture Branch also concurs with the project effect and mitigation recommendations as discussed in Section 7, as well as summarized in Table 27 (Summary of Proposed Mitigation) and Table 28 (Project Effect and Mitigation Recommendations for Historic Properties in the Project Areas). The Branch would also like emphasize the importance of care and sensitivity as it relates to the proposed data recovery at those sites identified as possible burials.

This report meets the requirements of HAR §13-276 and *Secretary of the Interior's Standards for Documentation and Evaluation*, and is accepted by SHPD. Please send one hardcopy of the document, clearly marked **FINAL,** along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office.

Please contact Mike Vitousek at (808) 652-1510 or Michael.Vitousek@Hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Theresa K. Donham
Deputy State Historic Preservation Officer
Archaeology Branch Chief
Historic Preservation Division

cc: Hinano Rodrigues, Acting Branch Chief
History and Culture Branch
Historic Preservation Division

Table 28. Project Effect and Mitigation Recommendations for Historic Properties in the Project Area (South and North Segments)

Revised Dec. 12, 2012 Based on Revised Plan of December 4, 2012

Site # 1	Site Type	Function	Significance	Sec. 4f Property	Segment	Original Effect	Original Recommendation	Project Effects	Recommended Mitigation
00002	Māmalahoa Trail	Transportation	A, B, C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation
06432	Core-Filled Stone Wall	Ahupuaʻa Boundary	D and E		N	Destruction of a small portion of site	Minimize Destruction through Archaeological and Cultural Monitoring	Destruction of a small portion of site	Minimize Destruction through Archaeological and Cultural Monitoring
10154	Walled Enclosure	Indeterminate-Possible Habitation	D and E		N	Construction plans will be redesigned to avoid this entire site	Preservation	Construction plans will be redesigned to avoid this entire site	Preservation
10714	Trail System (*mauka-makai*), interpreted as part of the "Road to the Sea Trail" (3 Features)	Transportation	A, C, D and E	Y	S	Portions of all three features (Features A, B and C) will be destroyed by construction; portions of all three features (Features A, B and C) will not be physically impacted by construction	Data Recovery (Archival Research) & Preservation	Portions of all three features (Features A, B and C) will be destroyed by construction; portions of all three features (Features A, B and C) will not be physically impacted by construction	Data Recovery (Archival Research) & Preservation
15324	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
18099	Trail (*mauka-makai*) Trail to Honokohau	Transportation	A, C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
19943	Lava Tube	Temporary Habitation	D and E		N	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
19945	Petroglyphs (n=2) and Bashed/Pecked *Pāhoehoe* (n=7)	Symbolic Expression and Prospecting for Voids in Lava Flows	D and E		N	Features A & B (Petroglyphs): will not be physically impacted by construction Features C through I (Pecking Marks): Most will be destroyed by construction	Preservation of Features A and B (Petroglyphs) No Further Work for Features C-I (Pecking Marks on Lava)	Features A & B (Petroglyphs): will not be physically impacted by construction Features C through I (Pecking Marks): Most will be destroyed by construction	Preservation of Features A and B (Petroglyphs) No Further Work for Features C-I (Pecking Marks on Lava)
19946	Trail *(mauka-makai)*	Transportation	C, D and E	Y	S	Destruction of a portion of site	Avoidance During Construction (as may be possible)	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
19947	Stacked Rocks	Ahupuaʻa Boundary Markers	D and E		N	Destruction of entire site (total of 3 features, Features A-C)	Relocation of all three Features (A-C) to the west (within the ROW)	Entire site not impacted by construction	Relocation of all three Features (A-C) to the west (within the ROW)
19948	Complex	Agriculture and Quarrying	D and E		N	Features A & B: will be physically impacted by construction Features C-F: will not be physically impacted by construction Feature G: will be physically impacted by construction Feature H: will not be physically impacted by construction	Data Recovery (Excavation) for Features A, B and G Preservation for Features C, D, E, F and H	Entire site not impacted by construction	Data Recovery (Excavation) for Features A, B and G Preservation for Features C, D, E, F and H
19949	Enclosure	Indeterminate-Possible Windbreak / Temporary Shelter	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Data Recovery (Excavation)
19950	Modified Outcrop Complex	Agriculture	D and E		S	Entire site (Features A-E) will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
19951	Wall	Ranching / Boundary	D and E		S	East end of wall is at the edge of grading limits—construction plans will be redesigned to avoid the entire site	Preservation	Entire site not impacted by construction	Preservation
19952	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Entire site (in the ROW) will not be physically impacted by construction	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation

Site # 1	Site Type	Function	Significance	Sec. 4f Property	Segment	Original Effect	Original Recommendation	Project Effects	Recommended Mitigation
19953	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Descruction of a portion of site	Data Recovery (Archival Research) & Preservation
19954	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
22415	Platform	Burial	D and E		S	Entire site will not be physically impacted by construction	Burial Treatment Plan (Preservation)	Entire site not impacted by construction	Burial Treatment Plan (Preservation)
22417	Modified Lava Blister	Agriculture / Planting Pit	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Data Recovery (Excavation)
22418	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
22507	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
28774	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
28778	*Pāhoehoe* Excavation	Agriculture / Planting Pit	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Destruction of entire site	Data Recovery (excavation)
28780	*ʻAʻā* Excavation	Indeterminate, possible burial	D and E		S	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28781	Paved / Leveled Area	Indeterminate-Possible Agricultural Clearing	D and E		S	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28782	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Destruction of a portion of site	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
28783	Complex	Agriculture	D and E		S	Feature A: will not be physically impacted by construction Feature B: will be destroyed by construction Features C, D, E & F : will not be physically impacted by construction	Data Recovery (Excavation) for Feature B Preservation for Features A, C-F	Entire site not impacted by construction	Data Recovery (Excavation) for Feature B Preservation for Features A, C-F
28784	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Entire site (in the ROW) will not be physically impacted by construction	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
28785	Enclosure	Agriculture	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Destruction of entire site	Data Recovery (Excavation)
28786	Modified Depression	Agriculture	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Destruction of entire site	Data Recovery (Excavation)
28787	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Entire site (in the ROW) will not be physically impacted by construction	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
28788	Modified Outcrop Complex	Agriculture	D and E		S	Entire site (both Feature A and B) will not be physically impacted by construction	Preservation	Entire site (both Feature A and B) will not be physically impacted by construction	Preservation
28789	Mound Complex	Agriculture	D and E		S	Entire site (Features A-F) will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28790	*Pāhoehoe* Excavation	Quarrying	D and E		S	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28791	Trail (*mauka-makai*)	Transportation	C, D and E	Y	S	Entire site (in the ROW) will not be physically impacted by construction	Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
28792	Petroglyph	Symbolic Expression	D and E		S	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28794	Filled Crevice	Indeterminate-Possible Agricultural Clearing	D and E		N	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
28796	Stacked boulders	Marker	D and E		S	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28797	Mound Complex	Agriculture	D and E		N	Entire site (both Features A-B) will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation

Site # 1	Site Type	Function	Significance	Sec. 4f Property	Segment	Original Effect	Original Recommendation	Project Effects	Recommended Mitigation
28799	Excavated Pit Complex	Agriculture	D and E		N	Entire site (Features A-C) will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28800	*Pāhoehoe* Excavation	Quarrying	D and E		N	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Data Recovery (Excavation)
28801	Modified Outcrop Complex	Agriculture	D and E		N	Entire site (both Features A-B) will not be physically impacted by construction activities	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
28802	Complex	Temporary Habitation	D and E		N	Entire site (Features A-C) will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28803	Complex	Indeterminate-Possible Agricultural Clearing	D and E		N	Entire site (both Features A-B) will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
28804	Filled Crevice	Indeterminate-Possible Agricultural Clearing	D and E		N	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
28805	Modified Outcrop	Agriculture/Clearing	D and E		N	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
28806	Mound	Possible Marker	D and E		N	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28807	Filled Crevice	Indeterminate	D and E		N	East end of site will be destroyed by construction; entire site is within construction limits	Data Recovery (Excavation/Removal of Coral)	East end of site will be destroyed by construction; entire site is within construction limits	Data Recovery (Excavation/Removal of Coral)
28808	Mound Complex	Markers	D and E		N	Three (of total five) features (A, B and C) will not be physically impacted by construction; Features D and E will be physically impacted by construction	Features A-C: Preservation Features D and E: Relocation (to the west within the ROW)	Three (of total five) features (A, B and C) will not be physically impacted by construction; Features D and E will be physically impacted by construction	Features A-C: Preservation Features D and E: Relocation (to the west within the ROW)
28809	*Pāhoehoe* Excavation	Quarrying	D and E		N	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
28810	Lava Tube	Indeterminate / Possible Water Catchment	D and E		N	Entire site will not be physically impacted by construction	Preservation	Entire site not impacted by construction	Preservation
28811	*Pāhoehoe* Excavation	Quarrying	D and E		N	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Avoidance during construction
28812	Possible Filled Crevice	Indeterminate	D and E		N	Destruction of entire site	Data Recovery (Excavation/Removal of Rock)	Destruction of entire site	Data Recovery (Excavation/Removal of Rock)
28813	Modified Lava Blisters	Agriculture	D and E		N	Feature A: will not be physically impacted by construction Feature B-E: will be destroyed during construction	Feature A: Preservation Features B-E: Data Recovery (Excavation)	Feature A: will not be physically impacted by construction Feature B-E: will be destroyed during construction	Feature A: Preservation Features B-E: Data Recovery (Excavation)
28814	Lava Tube	Indeterminate / Possible Water Catchment	D and E		N	Destruction of entire site	Data Recovery (Excavation)	Destruction of entire site	Data Recovery (Excavation)
28815	*Pāhoehoe* Excavation	Quarrying	D and E		N	Destruction of entire site	Data Recovery (Excavation)	Destruction of entire site	Data Recovery (Excavation)
29272	Level Area in *ʻAʻā* with Trail (*mauka/makai*)	Possible Temporary Resting Spot / Work Area and Transportation	C, D and E	Y	N	Feature A (Level Area): will be destroyed by construction Feature B (Trail): will not be physically impacted by construction	Feature A: Data Recovery (Excavation) Feature B: Data Recovery (Archival Research) & Preservation	Entire site not impacted by construction	Data Recovery (Archival Research) & Preservation
29275 **	Lava Tube	Burial, Contemporary Habitation	D and E		N	Entire site will not be physically impacted by construction, in consultation with SHPD a BTP to be prepared	Burial Treatment Plan in progress, resolution contingent upon consent of landowner	Entire site will not be physically impacted by construction, in consultation with SHPD a BTP to be prepared	Burial Treatment Plan to be addressed by landowner
29332	Mound/Paved Area within Naturally-formed *Pāhoehoe* Depression	Indeterminate, possible burial	D and E		S	Entire site will not be impacted by construction	Data Recovery (as per SHPD letter of July 9, 2012)	Entire site not impacted by construction	Data Recovery (as per SHPD letter of July 9, 2012)

Site # 1	Site Type	Function	Significance	Sec. 4f Property	Segment	Original Effect	Original Recommendation	Project Effects	Recommended Mitigation
29333	Rock Stacking (Poss. *Ahu*)	Indeterminate	D and E		S	Destruction of entire site	Data Recovery (Dismantling)	Entire site not impacted by construction	Data Recovery (Dismantling)
29334	Rock Mound within Naturally-formed *Pāhoehoe* Depression	Indeterminate	D and E		S	Destruction of entire site	Data Recovery (Excavation/Dismantling)	Entire site not impacted by construction	Data Recovery (Excavation/Dismantling)
29335	Rock Wall Segment	Indeterminate	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Destruction of entire site	Data Recovery (Excavation)
29336	Rock Terrace	Indeterminate	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Avoidance during construction
29337	Excavated Pit	Indeterminate-Possible Quarry or Sweet Potato Planter	D and E		S	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance during construction
29338	Excavated Pit	Indeterminate-Possible Quarry or Sweet Potato Planter	D and E		S	Destruction of entire site	No Further Work	Destruction of entire site	No further work
29339	Rock Wall Segment	Indeterminate	D and E		S	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
29340	Rock Mound	Indeterminate, possible burial	D and E		S	Entire site will not be physically impacted by construction	Data Recovery (Excavation)	Entire site not impacted by construction	Data Recovery (Excavation)
29341	Excavated Pits	Indeterminate-Possible Quarry or Sweet Potato Planter	D and E		S	Entire site, both features (A and B), are approximately 10 feet west (*makai*) of grading limits, and will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
29342	Excavated Pit	Indeterminate-Possible Quarry for Rock to Repair Nearby Māmalahoa Trail	D and E		S	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
29343	Excavated Pit	Indeterminate-Possible Quarry or Sweet Potato Planter	D and E		S	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
29344	Excavated Pit	Indeterminate-Possible Quarry or Sweet Potato Planter or Bird Pit	D and E		S	Destruction of entire site	Data Recovery (Excavation)	Entire site not impacted by construction	Data Recovery (Excavation)
29345	Coral-filled *Pāhoehoe* Crevice	Indeterminate	D and E		N	Entire site will not be physically impacted by construction	Data Recovery (Excavation/Removal of Coral)	Entire site not impacted by construction	Data Recovery (Excavation/Removal of Coral)
29346	Mound	Indeterminate – Possible Marker or Quarrying	D and E		N	Destruction of entire site	Relocation to the west (within the ROW)	Destruction of entire site	Relocation to the west (within the ROW)
29347	Mound	Possible Marker or Quarrying	D and E		N	Entire site will not be physically impacted by construction	Avoidance During Construction	Entire site not impacted by construction	Avoidance During Construction
29348	Boulder (*Pāhoehoe* Basher) in Excavated Pit	Prospecting for Voids in Lava Flow	D and E		N	Entire site is immediately adjacent to grading limits	Collection and Curation the Portable Artifact (Boulder); No Further Work for the Excavated Pit	Avoidance during construction	Collection and Curation the Portable Artifact (Boulder); No Further Work for the Excavated Pit
29349	Boulder (*Pāhoehoe* Basher) and Associated Excavated Pit	Prospecting for Voids in Lava Flow	D and E		N	Feature A (Boulder): will not be physically impacted by construction Feature B (Excavated Pit): will be destroyed by construction	Collection and Curation the Portable Artifact (Boulder, Feature A); No Further Work for the Excavated Pit (Feature B)	Feature A (Boulder): will not be physically impacted by construction Feature B (Excavated Pit): will be destroyed by construction	Collection and Curation the Portable Artifact (Boulder, Feature A); No Further Work for the Excavated Pit (Feature B)

Explanation of mitigation terminology: (1) Avoidance During Construction = protection during all project-related construction activities with interim protection measures under the preservation plan and commitment by HDOT to conduct a new historic preservation review in the future should other construction projects be planned that may affect these sites; (2) Burial Treatment Plan (Preservation) = preparation of a BTP proposing preservation in place to be submitted to the SHPD/HIBC for review, comment and approval; (3)

Site # 1	Site Type	Function	Significance	Sec. 4f Property	Segment	Original Effect	Original Recommendation	Project Effects	Recommended Mitigation

Collect ion and Curation = portable artifact will be collected (removed) from its current location and curated according to the MOA; (4) Data Recovery (Archival Research) = for trail sites, data recovery consists of additional archival research that will place the project-area trail segments in a wider geographic context that accurately reflects their cultural and historical significance; (5) Data Recovery (Excavation) = data recovery consists of traditional archaeological excavation of soil-sediment for the purposes of recovering material evidence germane to the site/feature's function and/or age; in some cases, where there is little or no soil-sediment to excavate, data recovery consists of dismantling or removing rocks or coral in order to inspect what lies beneath; (6) No Further Work = no mitigation is proposed for these sites; (7) Preservation = protection during construction and permanent in-place, preservation in perpetuity; (8) Relocation = site will be carefully dismantled, moved west beyond the construction limits, and rebuilt within the ROW. In addition to these mitigation recommendations, Archaeological and Cultural Monitoring is recommended for all ground-disturbing activities in the project area (ROW). See text above for details.

* These two sites (SIHP #s 00002 and 19953) are special cases. Their treatment was codified in the original 1999 MOA. Construction plans will be designed to adhere to the 1999 MOA specifications.

** Site outside of highway ROW; BTP to be completed by landowner.

Appendix B

Trail Descriptions

5.2.19 SIHP # 50-10-27-00002

Temp. Site No.: n.a.
Site Type: Māmalahoa Trail (Road)
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Historic (constructed 1836-1855)
Overall Dimensions: Approximately 490 ft (149 m) (in ROW); entire site is miles long
Topography: Gently undulating *ʻaʻā* terrain (in the project area)
Elevation: 57-60 ft (17-18 m) AMSL (in the project area)
Description:

SIHP # 50-10-27-00002, the well-known Māmalahoa Trail or Road, extends for miles outside of, and north and south of, the project area (see Figure 18). In its 1995 report, CSH (Walsh and Hammatt 1995) describe this site in general and project-specific terms:

> Site 00002 is an historic cross-*ahupuaʻa* road commonly referred to as the Mamalahoa Trail. The construction of the road is dated to 1836-1855. It is considered to have been the major seaward road through the region between its construction and 1888, when use of the road became infrequent (Cordy 1991:403, 406). The road, in general, is described as a remarkably straight curb-lined path – typically 2.0 to 3.0 m. wide. In some areas the road surface is raised, with low points in the terrain filled in and leveled with stone.
>
> The trail has been used sporadically in late historic and modern times and some parts of the road show evidence of vehicular use. The road has been breached in numerous places between Kailua-Kona and the Keahole Airport in modern times. As a result, the trail exists as a series of discontinuous segments in varying conditions. (Walsh and Hammatt 1995:30)

The portion currently located within the project area was described by CSH in 1995 as follows:

> At Honokohau, Queen Kaahumanu Highway breaches the Mamalahoa Trail and two sections lie within the present project area. On the eastern side of the highway, one 30-40 foot (10 m.) section remains within the project area. It consists of a short ramp section below the present power line. The area surrounding this section has been cleared, presumably during the construction of the present highway. On the western side of the highway, an approximately 490 foot (149 m.) sections lies within the project area . . . This section begins 30 feet (9 m.) west of the present highway pavement edge and extends through the project area at 147 degrees T.N. [true north]. The road continues at the angle beyond the project area boundary and into the Kaloko-Honokohau National Park. This section does not appear to have been previously recorded. (Walsh and Hammatt 1995:32)

The site was revisited during the current archaeological inventory survey and found to be in the same general physical condition (Figure 81 to Figure 85); however, in its current

configuration, the Māmalahoa Trail is no longer within the project area on the east, or *mauka,* side.

This trail is subject to protection and preservation under the Highways Act of 1892 (HRS Chapter 264-1(b)) (Na Ala Hele 2008).

In recognition of its significance to Hawaiian history, Walsh and Hammatt (1995) recommended SIHP # -00002 eligible for the National and State Registers of Historic Places under criterion A (“reflects major trends or events in the history of the state or nation”), C (“excellent example of a site type/work of a master”), D (“information content”) and (Hawai‘i only) E (“has traditional cultural significance to an ethnic group”). The Māmalahoa Trail (SIHP -00002) should also be considered eligible under criterion B, which recognizes the historic property’s association with the lives of persons significant in our past, in this case, Kuakini (Governor of Hawai‘i from 1819-1844), who undertook a program of road building using prison labor (Kirch 1996).

The site was recommended for a combination of preservation and data recovery (for portions that could not be saved) by Walsh and Hammatt (1995). The Final Archaeological Treatment Plan (1999) called for “interim protection” and data recovery. Data recovery work at this site was conducted by CSH in 1999 (Hammatt et al. 1999).

That Hammatt et al. 1999 data recovery study presents many detailed cross, sections, and archival photographs of representative and distinctive portions of the Māmalahoa Trail and the reader is referred to that study. Distinctive curb sections of the Māmalahoa Trail present elsewhere are not present in the project area.

Figure 81. Photograph of SIHP # -00002, showing southeastern portion of the trail within the project area, view to northwest

Figure 82. Photograph of SIHP # -00002, showing central portion of the trail within the project area, view to northwest

Figure 83. Photograph of SIHP # -00002, showing northwestern portion of the trail within the project area, view to northwest. Service road is visible on the left, intersecting with SIHP # -00002

Figure 84. Photograph of SIHP # -00002, showing curbed portion of the trail beginning just outside of the project area, view to northwest

5.2.41 SIHP # 50-10-27-10714 (Feature A)

Temp. Site No.: T-091010-4 (Monahan et al. 2011)
Site Type: Trail—Part of the Trail System “Road to the Sea”
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Pre-Contact with continued use in Historic Era
Overall Dimensions: Approximately 56.6 m long in the project area
Topography: Undulating *pāhoehoe* flow, level to slightly-sloping
Elevation: 75 ft (23 m) AMSL (in the project area)
Description:

SIHP # 50-10-27-10714 (Feature A) is a trail located approximately 88 m northwest of the intersection of Hina Lani Street and the Queen Ka‘ahumanu Highway within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 20). The trail is roughly oriented E/W and measures 56.6 m long within the project area. Within the project area, the trail lacks any formal construction features such as stepping stones or curbing. The trail can be recognized within the project area by observing subtle wear-pattern / color variation on the lava flow (Figure 151 to Figure 153).

Other previous archaeological studies such as Renger (1970), Cordy et al. (1991), Wolforth et al. (2005) and Bell et al. (2009), as well as consultation with trails specialists with the NPS, suggest this trail portion is part of a more extensive trail complex known as the “Road to the Sea,” which generally follows the Kaloko/Kohanaiki *ahupua‘a* boundary and extends from the Kohanaiki Homesteads (*mauka*) to Kaloko Fishpond (at the coast). *Mauka* of the project area, this trail has been designated SIHP # -10714 (by Wolforth et al. 2005), and the portion within the current project area is herein designated Feature A (specific to the current project).

This trail also connects within the national park with other trails segments designated SIHP # -2233 (D13-81) and SIHP # -2183.

It is important to note that CSH has identified three portions of this “Road to the Sea Trail” within the project area. NPS trail specialists have suggested these three portions should all be considered part of SIHP # -10714, and CSH concurs with this recommendation. In the current report, these three trail portions are treated separately (although they are all given the same site number, with different feature numbers) in keeping with the south-to-north presentation and description of cultural resources.

This trail is subject to protection and preservation under the Highways Act of 1892 (HRS Chapter 264-1(b)) (Na Ala Hele 2008).

Previous significance evaluations for SIHP # -10714 by Wolforth et al. (2005) and Bell et al. (2009) have recommended this resource eligible for the Hawai‘i Register of Historic Places under Criteria D and E.

Figure 151. Photograph of SIHP # 10714 Feature A, view to southwest

Figure 152. Close-up of color variation and wear pattern on *pāhoehoe* surface of SIHP # -10741 Feature A

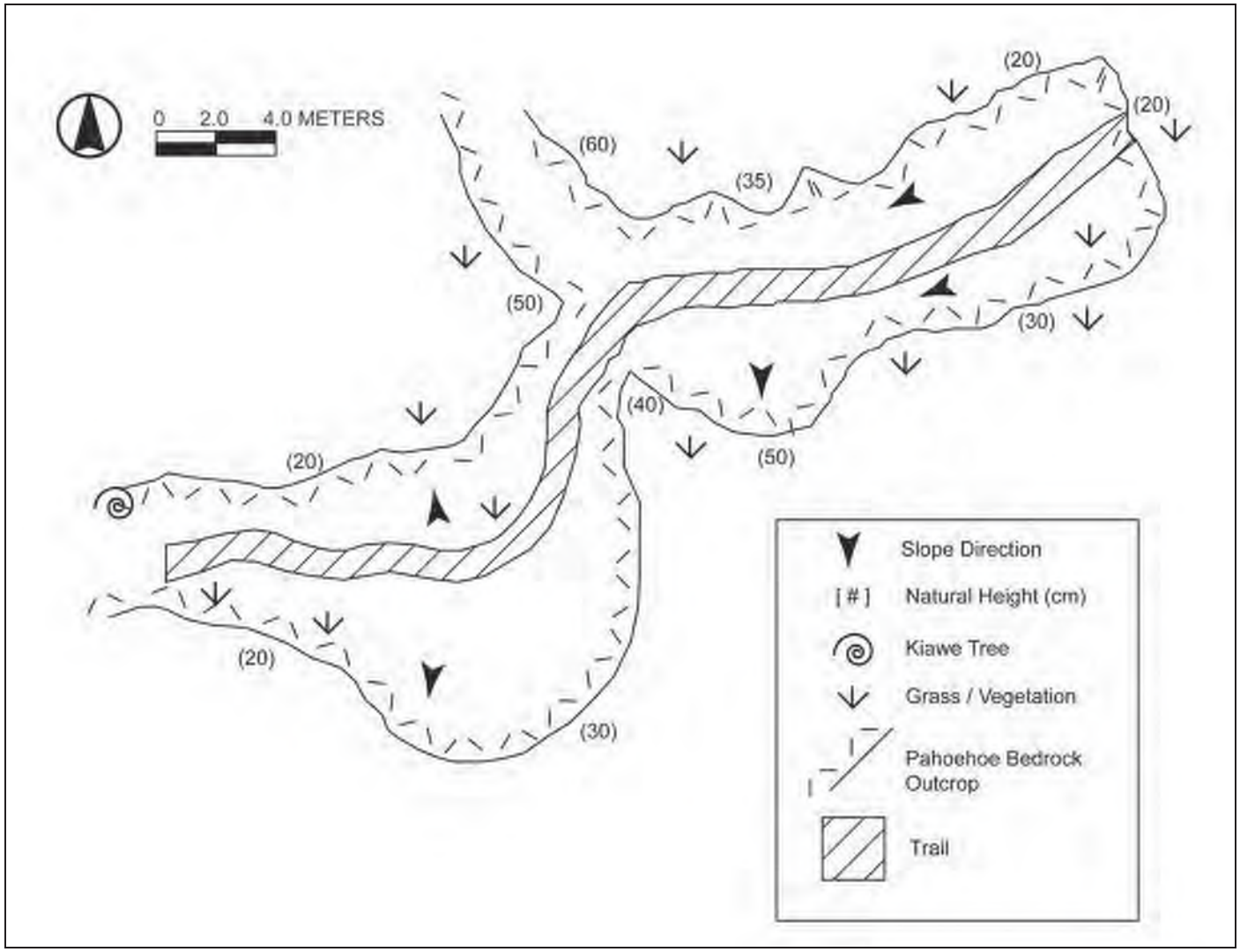


Figure 153. Plan view map of SIHP # -10714 Feature A

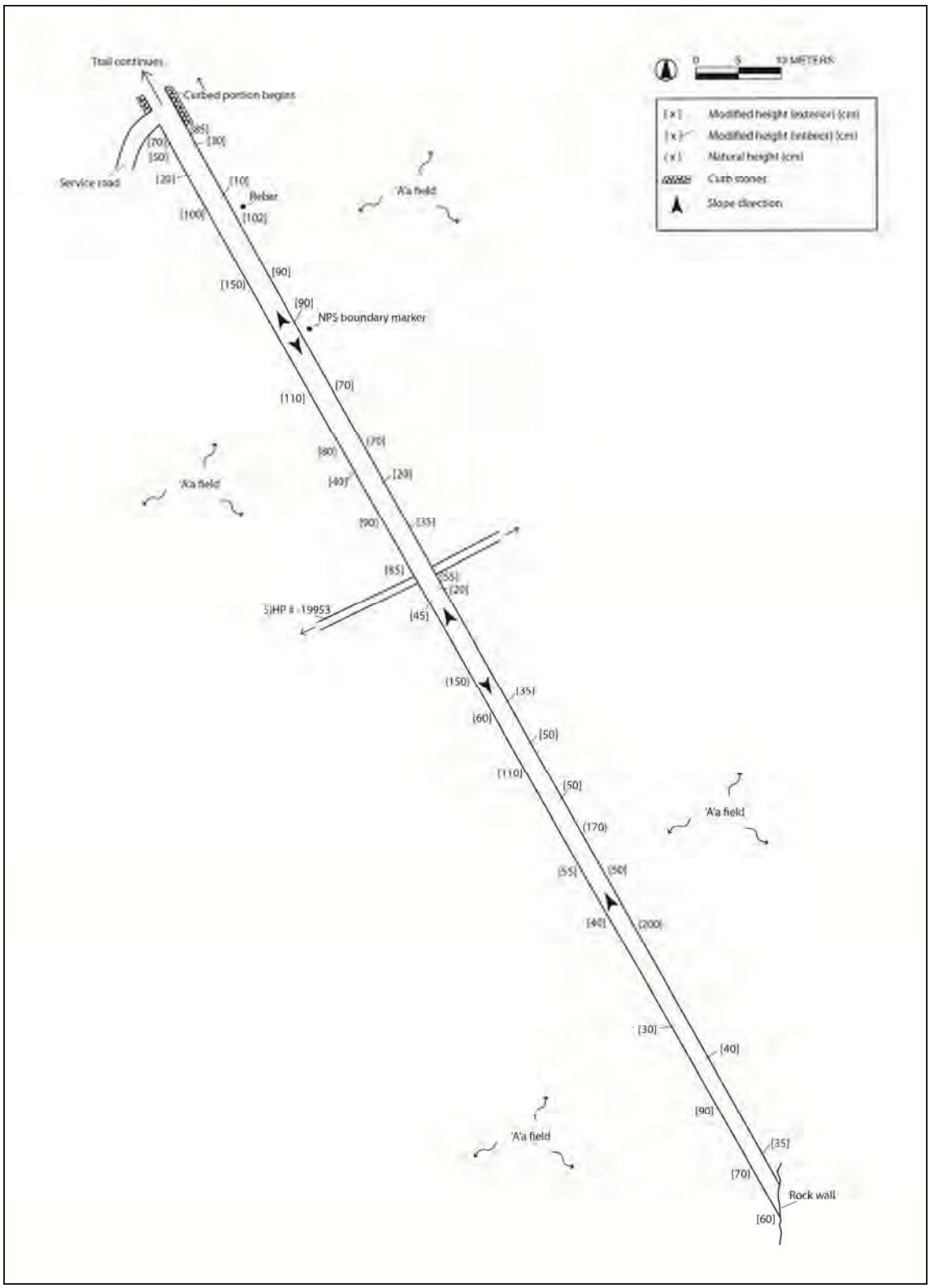


Figure 85. Plan view map of SIHP # -00002 [Note: Area of curbing on northwest portion of trail is just outside of the project area]

5.2.55 SIHP # 50-10-27-15324

Temp. Site No.: 6 (Walsh and Hammatt 1995); 92-1118-12 (PHRI)
Site Type: Trail (*mauka-makai*)
No. of Features: 2
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: See description below
Topography: Both *ʻaʻā* and *pāhoehoe* sections
Elevation: 60-65 ft (18-20 m) AMSL (in the ROW)
Description:

SIHP # 50-10-27-15324 was first formally described by PHRI, Inc. (see Figure 21). In 1995, CSH (Walsh and Hammatt 1995) described the site and noted the presence of PHRI's site tag. The site was revisited during the current archaeological inventory survey and found to be in the same physical condition (Figure 215, Figure 216). The trail was described by Walsh and Hammatt (1995:39) as follows:

> Site 15324 consists of two converging trail segments designated Features A and B . . . Both trail segments extend in a roughly *mauka-makai* direction, but angle toward each other and converge into one trail that continues inland. The point where the two trails meet is located at the edge of the bulldozed portion of the present highway right of way, 164 feet (50 m.) from the *makai* edge of the highway pavement. Both trail segments were observed to continue over 300 feet (91 m.) *makai.* On the *mauka* side of the highway, the trail was observed at the edge of the bulldozed portion of the powerline (the new right-of-way boundary) and continuing inland at 65 degrees T.N. [true north] for at least another 100 feet (30 m.).
>
> Both trail segments (Features A and B) average 0.6 wide and consist of a trodden surface that meanders over pahoehoe and aʻa lava surfaces. A few isolated stepping stones consisting of pahoehoe slabs were observed along Feature B. Both trail segments are well worn and clearly visible, especially on the aʻa lava surfaces. The portion of Feature A within the new right-of-way is approximately 40 feet (12 m.) long, and the portion of Feature B within the new right-of-way is 50 feet (15 m.) long.

Walsh and Hammatt (1995) recommended SIHP # -15324 eligible for the National and State Registers of Historic Places under criterion D for its information relevant to prehistory and history. The site was recommended for preservation "to the extent possible within the proposed highway widening plans" *and* "those portions of [the site] that cannot be avoided [should] be included in a program of data recovery" (Walsh and Hammatt 1995:57). The Final Archaeological Treatment Plan (1999), however, called for "interim protection" only for SIHP # -15324.

Figure 215. Detail of a portion of SIHP # -15324, view to east (note stepping stone under the north arrow)

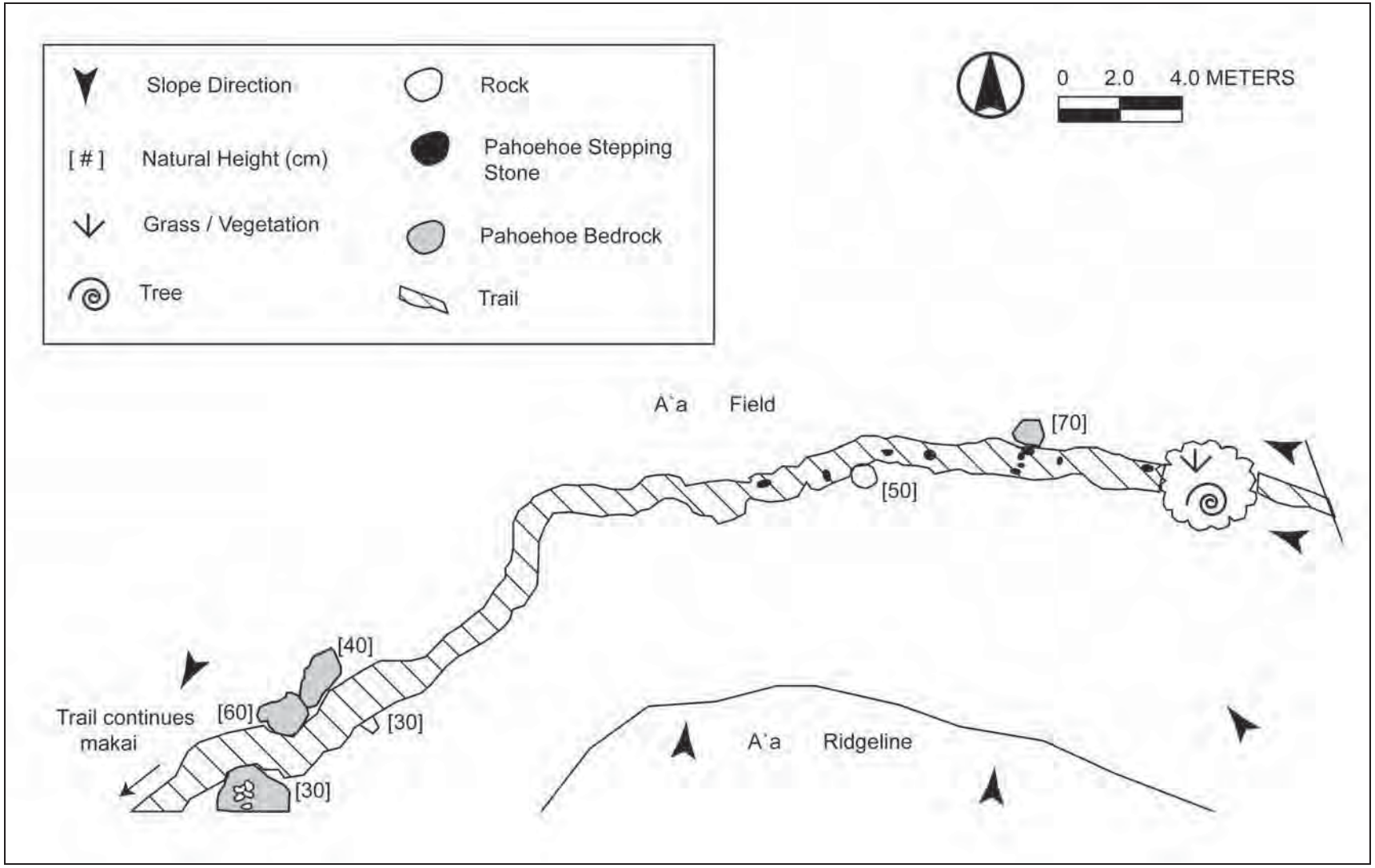


Figure 216. Plan view map of SIHP # -15324

5.2.7 SIHP # 50-10-27-18099 (Trail to Honokōhau)

Temp. Site No.: Trail 4 (Monahan et al. 2011), 157-6 (Nelson and Gmirkin 2001)
Site Type: Trail (Curbstone)
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate-Possibly Historic
Overall Dimensions: Minimally 3,066 m (10,120 ft) long (1.7 m N/S by 37.6 m E/W within the current project area)
Topography: Undulating *pāhoehoe* flow, level to moderately sloping
Elevation: 45 to 810 ft (14 to 247 m) AMSL (refers to entire trail including *mauka* portion)
Description:

SIHP # 50-10-27-18099, also known as the Trail to Honokōhau, is a trail that extends roughly E/W through the project area approximately 200 m south of the Kaloko-Honokōhau National Historical Park visitor center entrance (see Figure 18) within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (Figure 44 to Figure 48). The trail has been previously identified within Honokōhau Ahupua‘a on the *mauka* side of the existing highway during an archaeological inventory survey conducted by CSH in 1993 (Robins et al. 1993). Robins et al. (1993:23) describe SIHP # 18099 as follows:

> In accordance to Russell A. Apple’s classifications of Hawaiian land routes (Apple 1973), this type of curbstone trail is of the "AB" trail type. "AB" trails are generally defined as historic trails constructed for mule or horse travel over an existing prehistoric land route.
>
> Where the trail crosses *pāhoehoe* outcrop it is usually characterized by a pebble pavement bound by parallel cobble and boulder alignments. The trail has an average width of 3.3 m and, when traversing prominent depressions, is constructed to a maximum height of 1.0 m Along *‘a‘ā* outcrop, the trail is distinguished by a trodden surface presently obscured by a dense grass growth and inset boulder curbing.
>
> As was identified during the survey and on aerial photos, the trail begins at the south side of Aimakapa Pond (fishpond) along the coast of Honokōhau I Ahupua‘a and extends *mauka* across the *ahupua‘a*, intersecting the Māmalahoa Trail (SIHP # 50-10-27-2), and running parallel to a trodden *‘a‘ā* trail (SIHP # 50-10-27-18122). The most *mauka* portion of the trail, beginning at approximately 690 ft. a.m.s.l., has evolved during the historic era into a road likely associated with ranching or historic agriculture activities in this region.
>
> Midden was observed over portions of the trail.

The portion of SIHP # -18099 that extends through the present project area consists of intermittent portions of curbstone alignments over solid *pāhoehoe* bedrock. Bulldozer track marks were observed in the vicinity of the trail. No artifacts or midden were observed in the area.

In the *ahupua‘a* of Honokōhau I, SIHP # -18099 is being preserved on the *mauka* side of the existing highway by West Hawaii Business Park, LLC. This trail is subject to protection and preservation under the Highways Act of 1892 (HRS Chapter 264-1(b)) (Na Ala Hele 2008).

SIHP # -18099 has previously been recommended eligible for nomination to the State Register of Historic Places under Criteria A, C and D by CSH in two previous projects in Honokōhau I and II (Robins et al. 2000; Yucha and McDermott 2008).

Figure 44. SIHP # -18099 (within the project area) Section 1, view to east

Figure 45. SIHP # -18099 (within the project area) Section 2, view to east

Figure 46. SIHP # -18099 (within the project area) Section 3, view to east

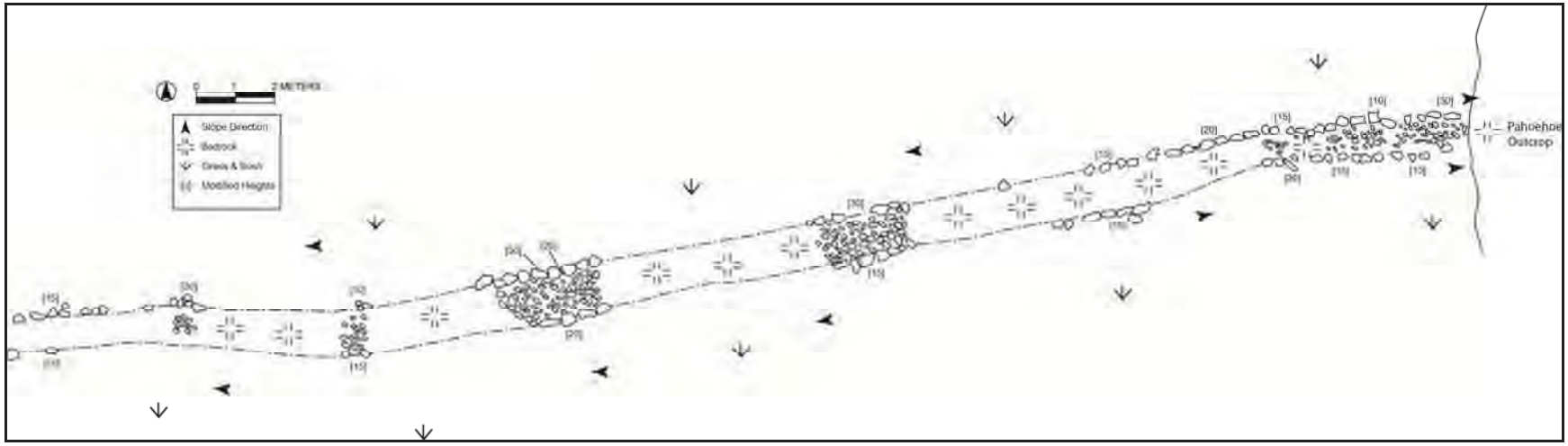


Figure 47. Plan view map of SIHP # -18099

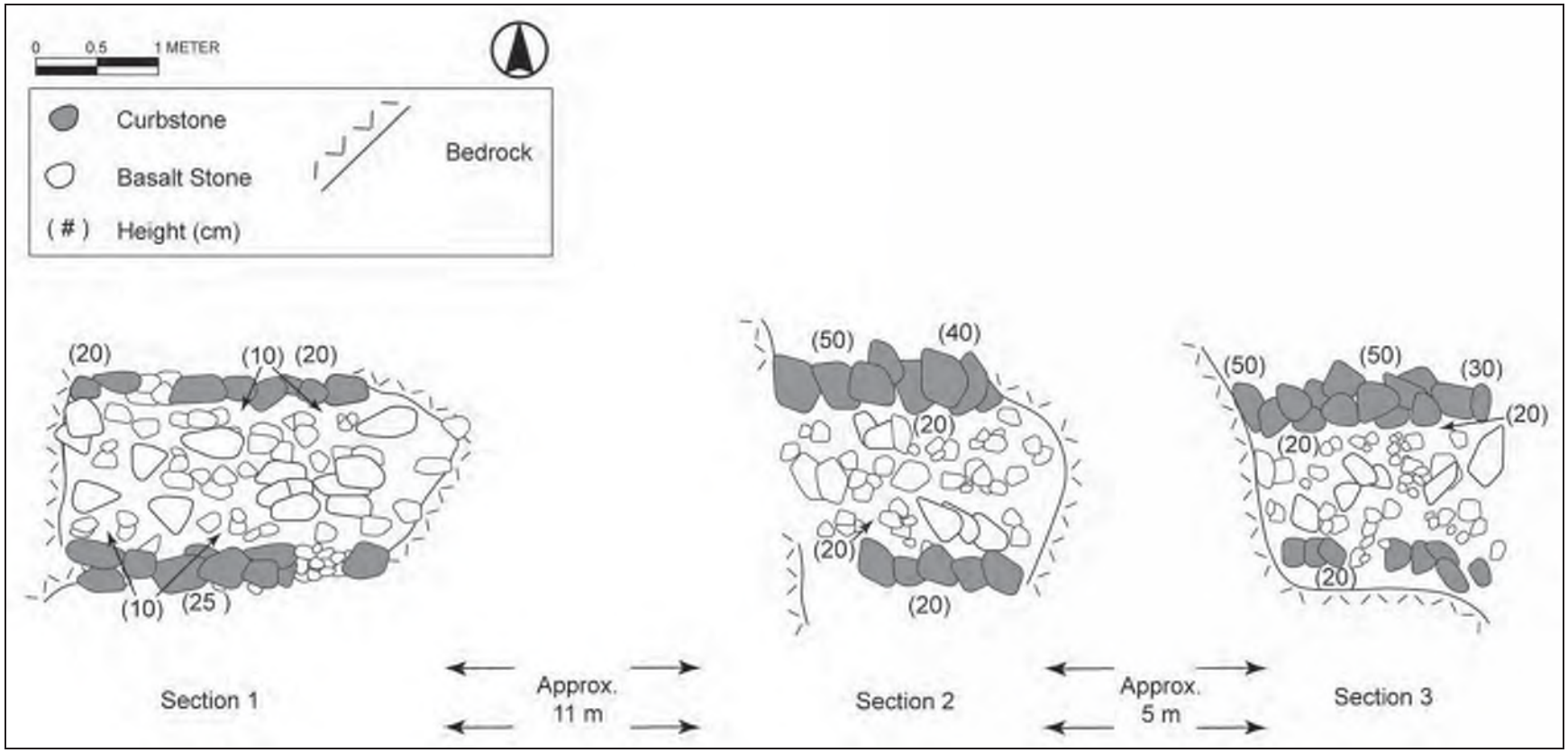


Figure 48. Plan view map of three sections of the portion of SIHP # -18099 located within the current project area

5.2.56 SIHP # 50-10-27-19946

Temp. Site No.: N/A
Site Type: Trail (*mauka-makai*)
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Post-Contact
Overall Dimensions: See description below
Topography: *‘a‘ā*
Elevation: 60-65 ft (18-20 m) AMSL (in the ROW)
Description:

State Site # 19946 is a trail (Figure 217 to Figure 221, and see Figure 21). The trail is located approximately 44 meters west of Queen Ka‘ahumanu Hwy. at the edge of the bulldozer push. Matsuyama Market and the Pine Trees Café complex are across the Highway; to the south east. The trail trends *mauka/makai* over a rough *‘a‘ā* flow and terminated at the edge of a *pāhoehoe* flow (next to a cairn) at its westernmost point; which is well outside the ROW. The trail terminates at is *mauka* end at a small pile of rubble at the edge of bulldozer push that was a result of the initial construction of Queen Ka‘ahumanu Highway. As a result of heavy use the trail has settled below the surrounding *‘a‘ā* flow, approx. 10-50 cm. The surface of the trail is fairly level and is comprised of small cobbles of *pāhoehoe* and *‘a‘ā.* The portion within the ROW measures approx. 13.10 m long *mauka/makai* and is approximately 1.25-1.50 m wide. The trail is well defined and in good condition. No cultural material was observed within the ROW, however out of the ROW to the west on a rise in the trail there are the remains of a donkey on the trail; the bones are very weathered and sun-bleached. The trail appears to be a historic horse/donkey trail due to its width and the lack of stepping stones (not to mention the donkey bones in the trail). However, it could have evolved from a traditional period foot trail.

Figure 217. Photograph of SIHP # -19946, view to west

Figure 218. Photograph of SIHP # -19446, view to east

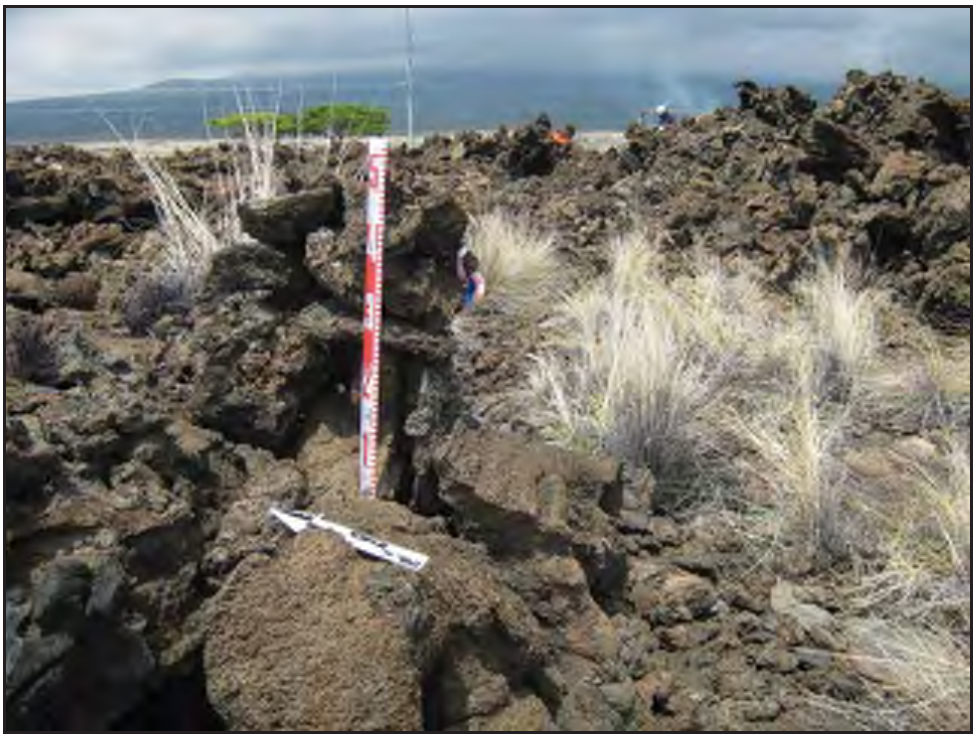


Figure 219. Photograph of cairn at the makai portion of SIHP # -19446

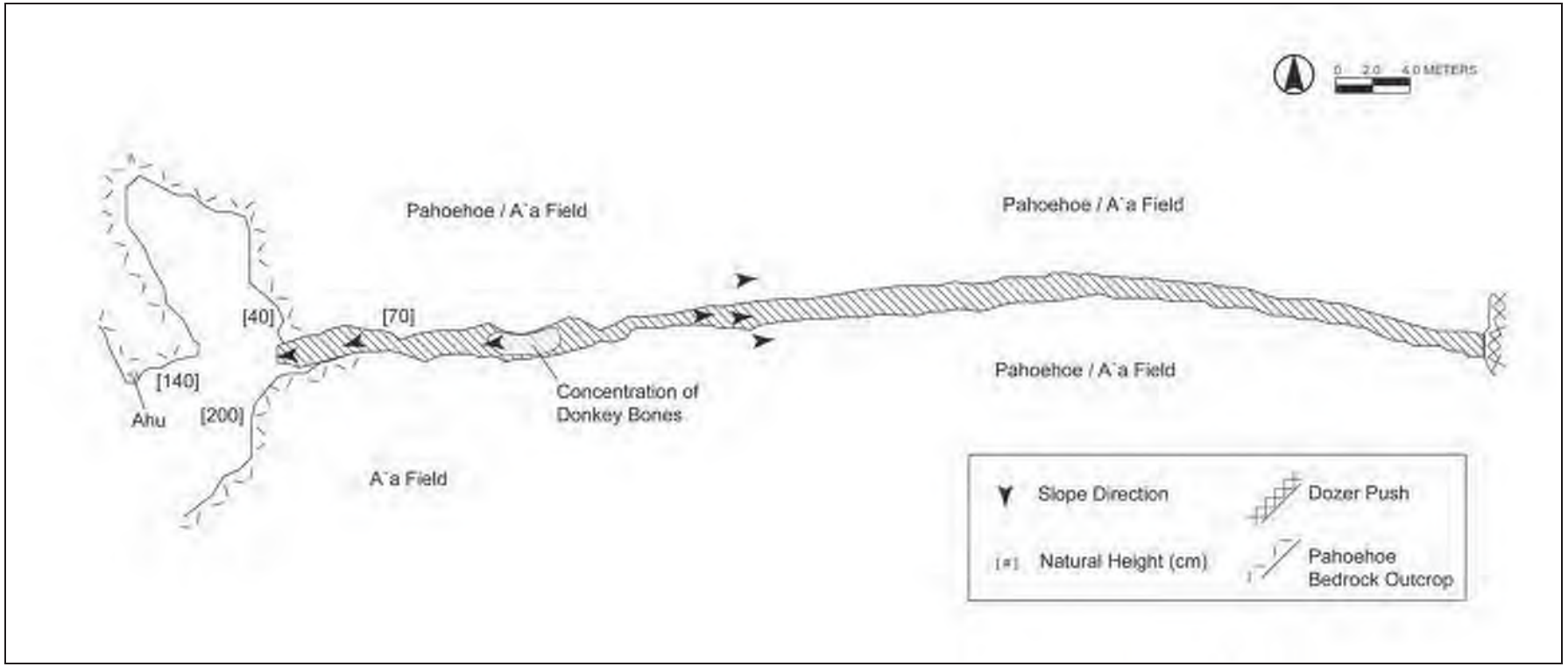


Figure 220. Plan view map of SIHP # -19446

5.2.31 SIHP # 50-10-27-19952

Temp. Site No.: 13 (Walsh and Hammatt 1995)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 70 ft long (in the ROW)
Topography: *‘A‘ā* finger transitioning into *pāhoehoe* flow
Elevation: 75 ft (23 m) AMSL
Description:

SIHP # 50-10-27-19952 was first formally described by CSH in 1995 (Walsh and Hammatt 1995) (see Figure 20). The site was revisited during the current archaeological inventory survey and found to be in the same physical condition (Figure 123 to Figure 124). The intact *mauka* end of the trail (before it is truncated by previous ground disturbance associated with the previous highway construction) is located approximately 38 m from the edge of the existing highway. The trail was described by Walsh and Hammatt (1995:51, 54) as follows:

> Site 19952 consists of a *mauka-makai* oriented trail segment . . . The trail is discernible as a trodden surface roughly 1.0 m. wide extending over the finger of an a‘a flow. The trail becomes increasingly faint as it continues *makai* over pahoehoe lava terrain. Some remnant curbstones were observed along the trail where it crosses the a‘a.
>
> The trail begins approximately 125 feet (38 m.) *makai* of the highway pavement edge (the extent of bulldozing for the construction of the present highway), and can be followed *makai* for roughly 200 feet (61 m.), beyond which becomes increasingly difficult to discern. The condition of the trail is poor and it appears to have been at least partially disturbed by modern construction activities.

Walsh and Hammatt (1995) recommended SIHP # -19952 eligible for the National and State Registers of Historic Places under criterion D for its information relevant to prehistory and history. The site was recommended for data recovery by Walsh and Hammatt (1995); however, the Final Archaeological Treatment Plan (1999) called for “interim protection” only with no data recovery.

Figure 123. Photograph of SIHP # -19952, view to west

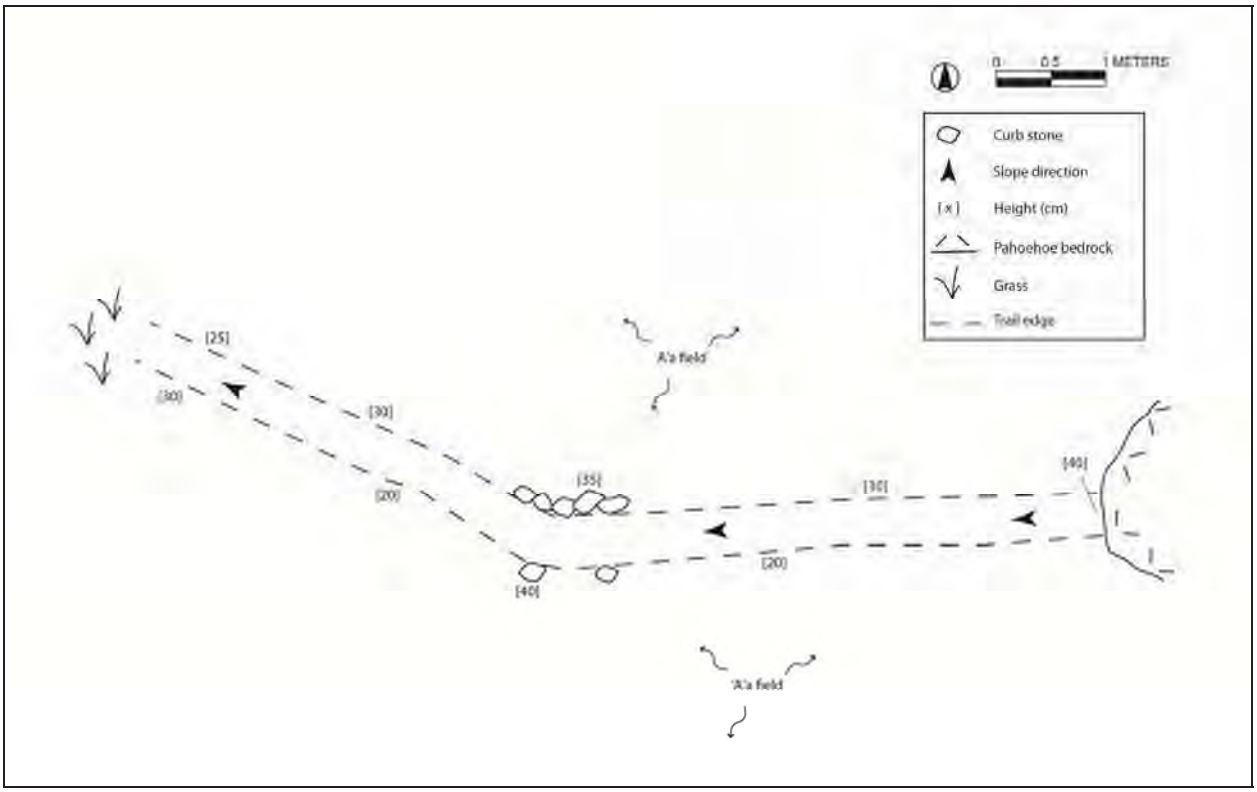


Figure 124. Plan view map of SIHP # -19952

5.2.20 SIHP # 50-10-27-19953

Temp. Site No.: 14 (Walsh and Hammatt 1995)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Pre-Contact or early historic
Overall Dimensions: Approximately 30.5 m (150 ft) long (in the ROW)
Topography: Gently sloping *‘a‘ā* terrain
Elevation: 57-60 ft (17-18 m) AMSL
Description:

SIHP # 50-10-27-19953 was first formally described by CSH in 1995 (Walsh and Hammatt 1995) (see Figure 18). The site was revisited during the current archaeological inventory survey and found to be in the same physical condition (Figure 86 to Figure 90). A water-worn cobble and surveyor's pin described in CSH's 1995 report were observed during the current study. The overall length of the trail, and its *mauka* terminus (i.e., starting approximately 16 m from the existing highway pavement edge), has not changed since 1995. The trail was described by Walsh and Hammatt (1995:54) as follows:

> Site 19953 consists of a slightly meandering, but generally *mauka-makai* oriented trail . . . The trail consists of a partially cleared and trodden surface over A‘a lava terrain. The trail measures 0.5 to 0.6 m. wide. It begins 53 feet (16 m.) from the highway pavement edge and continues *makai* for at least 200 feet (61 m.) beyond the project area boundary. A roughly 20 foot (6 m.) section of the trail has been destroyed where it intersects with the Mamalahoa Trail at approximately 150 feet (46 m.) from the highway pavement edge.
>
> The trail is in fair to good condition and has previously been identified and flagged, probably by National Park archaeologists who, we have been informed, have done some surveying in the area and have identified several inland-heading trails. The site has not been previously recorded however, and a state site number had not been previously assigned (personal communication with National Park archaeologist Catherine Glidden 6/27/95).

The SHPD has pointed out (letter of July 9, 2012) that "this trail predates the Māmalahoa Trail. Therefore it is likely that this trail is pre-contact/early historic age.

Walsh and Hammatt (1995) recommended SIHP # -19953 eligible for the National and State Registers of Historic Places under criterion D for its information relevant to prehistory and history. The site was recommended for data recovery by Walsh and Hammatt (1995); however, the Final Archaeological Treatment Plan (1999) called for data recovery of the portion of the trail that could not be saved (due to project-related construction) *and* "interim protection" of the remainder of the non-data recovery portion of the trail in the ROW. In 1999, CSH (Hammatt et al. 1999) conducted data recovery of a portion of SIHP # 50-10-27-19953.

Figure 86. Photograph of the eastern portion of SIHP # -19953 at the intersection with the Māmalahoa Trail (SIHP # -00002), view to east

Figure 87. Photograph showing the eastern terminus of SIHP # -19953, view to east

Figure 88. Photograph of western portion of SIHP # - 19953, showing the upright water-worn cobble located just outside (*makai*) of the project area (in lower right corner), view to east

Figure 89. Photograph of western portion of SIHP # -19953 within the project area, view to west

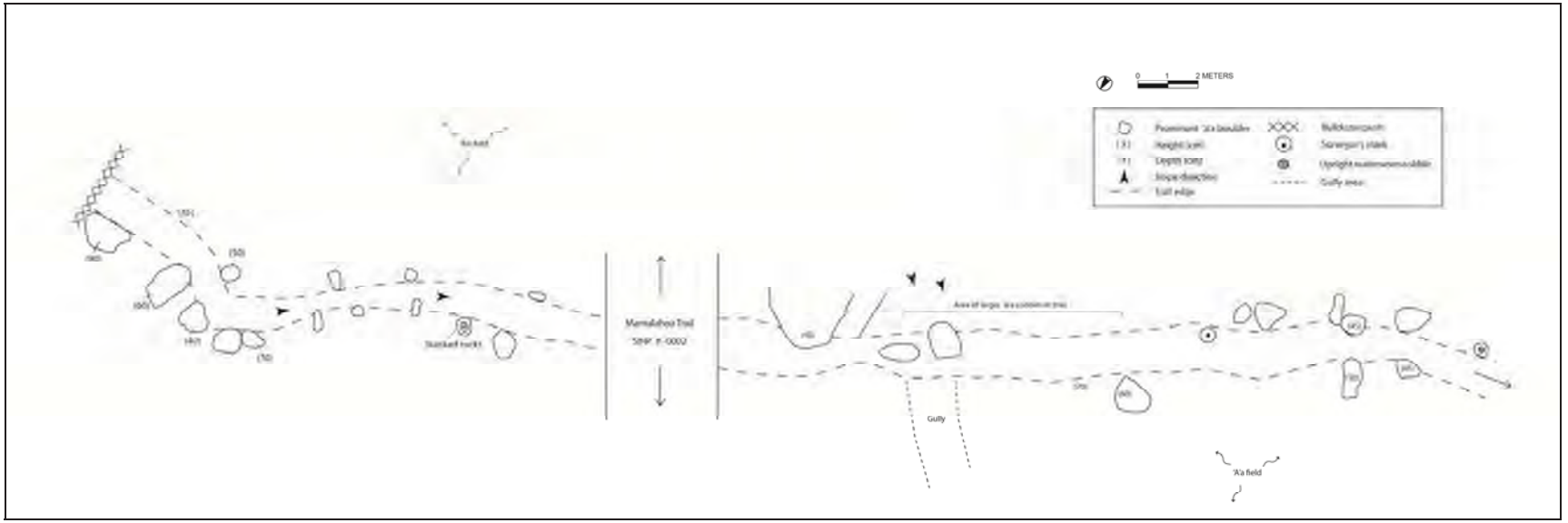


Figure 90. Plan view map of SIHP # -19953

5.2 Site Descriptions

5.2.1 SIHP # 50-10-27-19954

Temp. Site No.: 15 (Walsh and Hammatt 1995)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 30.5 m (100 ft) long (in the ROW)
Topography: Trail meanders through *‘a‘ā* along the edge of a *pāhoehoe* flow
Elevation: 42 ft (13 m) AMSL
Description:

SIHP # 50-10-27-19954 was first formally described by CSH in 1995 (Walsh and Hammatt 1995) (see Figure 17). The site was revisited during the current archaeological inventory survey and found to be in the same physical condition (Figure 28 to Figure 30). The overall length of the trail, and its *mauka* terminus (i.e., starting approximately 28 m from the existing highway pavement edge), has not changed since 1995. The trail was described by Walsh and Hammatt (1995:54) as follows:

> Site 19954 consists of a *mauka-makai* oriented trail . . . The trail begins 93 feet (28m.) from the present highway pavement edge (extent of bulldozed portion of old right-of-way) and meanders through the A`a along the edge of a pahoehoe outcrop, then up and over an outcrop and continues *makai* beyond the project area boundary into the National Park. Some portions of the trail contain pahoehoe slabs placed as stepping stones, and it appears that the slabs were taken from the adjacent pahoehoe outcrop. The trail measures 0.4 to 0.5 m. wide. The trail is in fair to good condition and has previously been identified and flagged, probably by National Park archaeologists who, we have been informed, have done some surveying in the area and have identified several inland-heading trails. The site has not been previously recorded however, and a state site number had not been previously assigned (personal communication with National Park archaeologist Catherine Glidden 6/27/95).

Walsh and Hammatt (1995) recommended SIHP # -19954 eligible for the National and State Registers of Historic Places under criterion D for its information relevant to prehistory and history. The site was recommended for data recovery by Walsh and Hammatt (1995); however, the Final Archaeological Treatment Plan (1999) called for “interim protection” only with no data recovery.

Figure 28. Photograph of SIHP # -19954, showing pahoehoe stepping stones, view to northeast (scale is 2 m long)

Figure 29. Detail (section) of SIHP # -19954 showing stepping stones, view to southwest

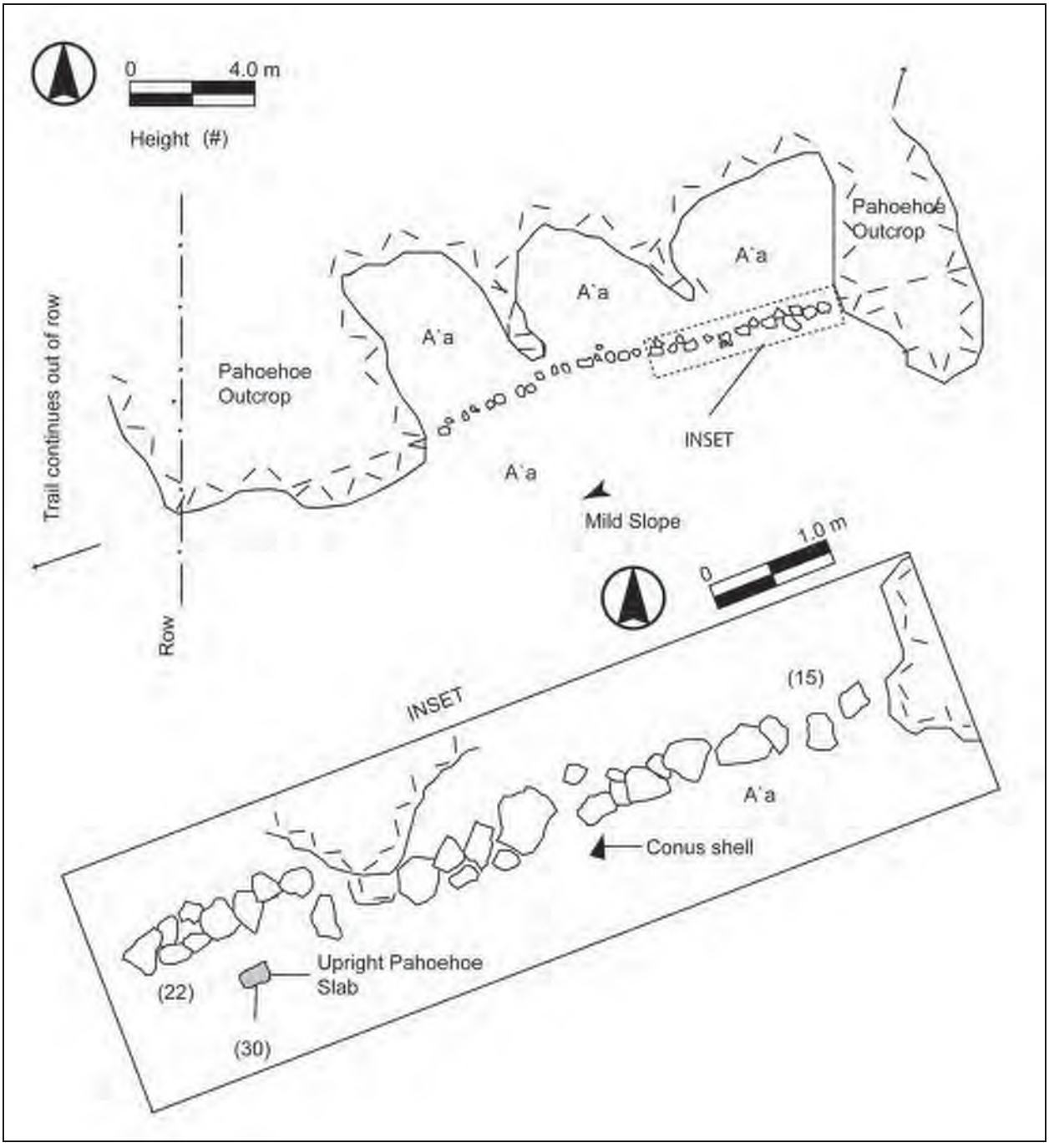


Figure 30. Plan view map SIHP # -19954, showing trail segment within project area and close-up inset of stepping stones

5.2.8 SIHP # 50-10-27-22418

Temp. Site No.: Trail 3 (Monahan et al. 2011), 157-6A (Nelson and Gmirkin 2001)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 22.6 m long (in the ROW)
Topography: Undulating *pāhoehoe* flow, level to moderately sloping
Elevation: 36 ft (11 m) AMSL
Description:

SIHP # 50-10-27-22418 is a trail located approximately 200 m southeast of the Kaloko-Honokōhau National Historical Park visitor center entrance within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 18). The trail is roughly oriented E/W and measures 22.6 m long within the project area (Figure 49 and Figure 50). Within the project area, the trail lacks any formal construction features such as stepping stones or curbing. The trail can be recognized within the project area by observing subtle wear-pattern / color variation on the lava flow. NPS staff has pointed out that trails such as this one, even though lacking formal attributes within the subject project area, may exhibit formal features elsewhere (i.e., outside of the project area).

Nelson and Gmirkin (2001:21) previously identified this trail, designated it SIHP # -22418, and pointed out that it parallels and crosses/merges with SIHP # -18099 outside of the current project area, in keeping with other historic trails in the region.

Figure 49. Photograph of SIHP # -22418, showing trail traversing *pāhoehoe* outcrop, visible as subtle wear-pattern and color variation, view to east

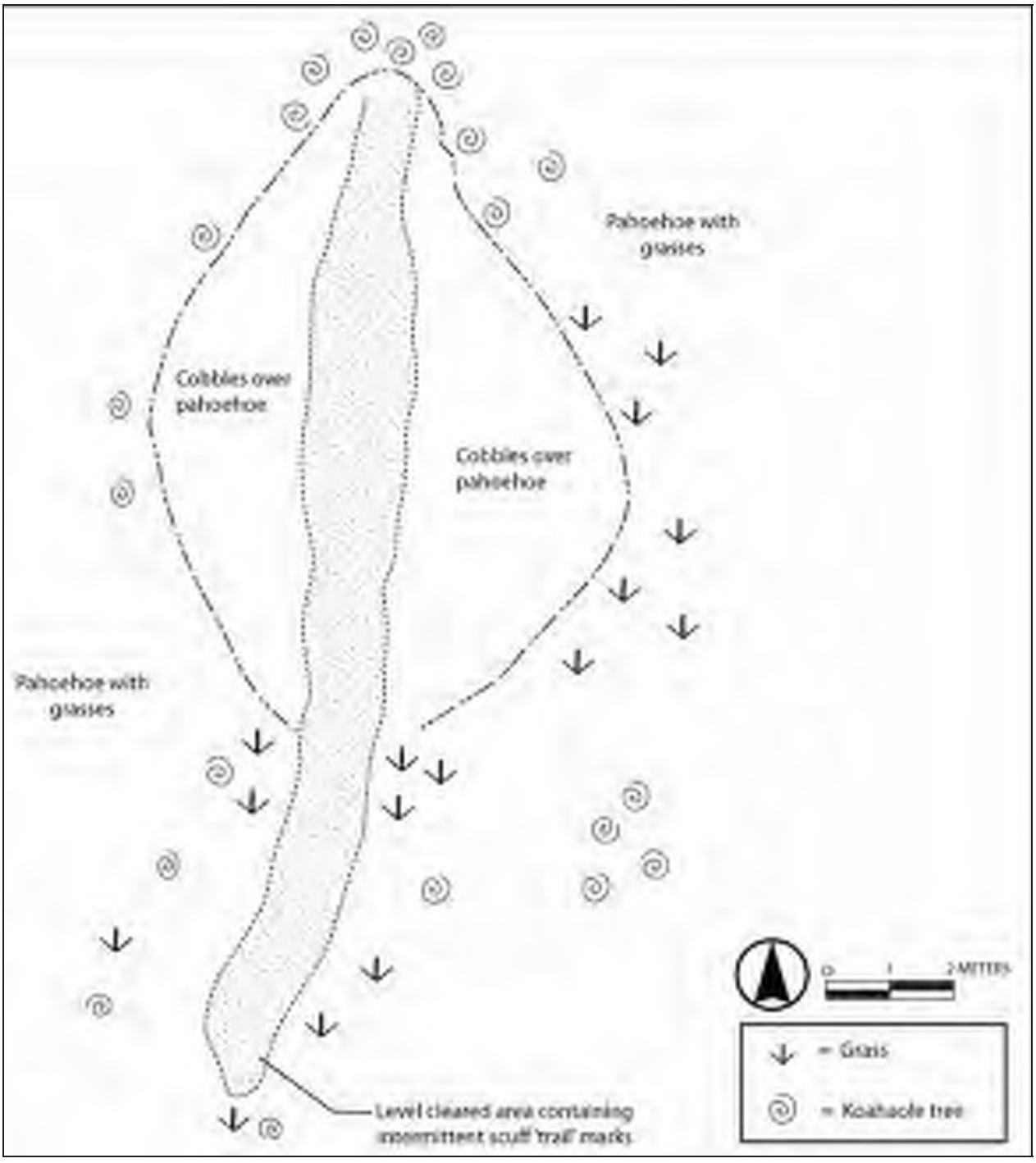


Figure 50. Plan view map of SIHP # -22418

5.2.5 SIHP # 50-10-27-22507

Temp. Site No.: Trail 2 (Monahan et al. 2011), 157-16 (Nelson and Gmirkin 2001)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 16.1 m long (in the ROW)
Topography: Undulating *pāhoehoe* flow, level to moderately sloping
Elevation: 36 ft (11 m) AMSL
Description:

SIHP # 50-10-27-22507 is a trail located approximately 325 m southeast of the Kaloko-Honokōhau National Historical Park visitor center entrance within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 18). The trail is roughly oriented E/W and measures 16.1 m long (Figure 39). The trail terminates to the west along the edge of a modern gravel road. The trail can be recognized within the project area by observing subtle wear-pattern / color variation on the lava flow (Figure 38). NPS staff has pointed out that trails such as this one, even though lacking formal attributes within the subject project area, may exhibit formal features elsewhere (i.e., outside of the project area).

Figure 38. Photograph of SIPH # -22507, showing trail traversing pahoehoe outcrop, visible as subtle wear-pattern and color variation, view to west

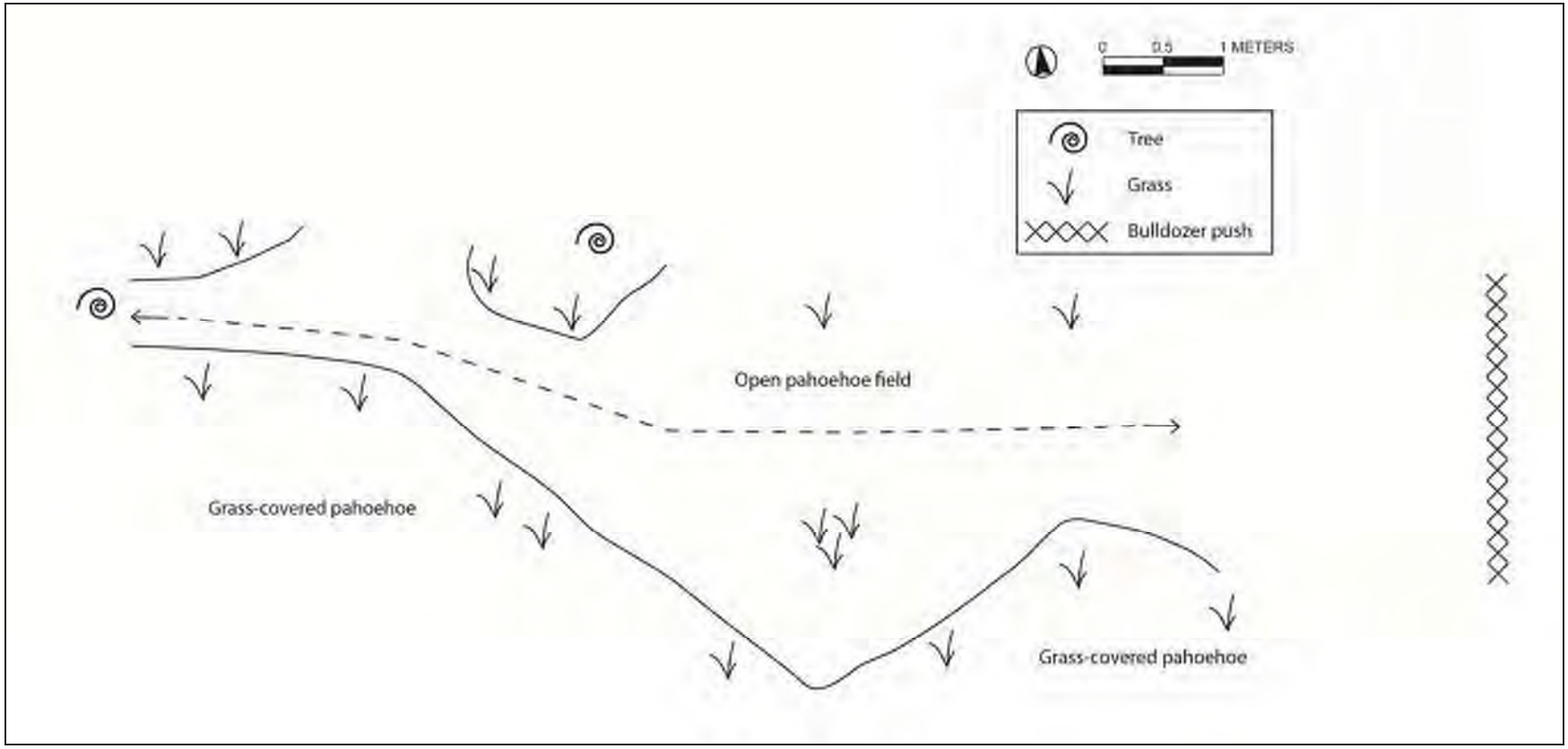


Figure 39. Plan view map of SIHP # -22507

5.2.4 SIHP # 50-10-27-28774

Temp. Site No.: Trail 1 (Monahan et al. 2011)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 40.9 m long (in the ROW)
Topography: Undulating *pāhoehoe* flow, level to moderately sloping
Elevation: 45 ft (14 m) AMSL
Description:

SIHP # 50-10-27-28774 is a trail located approximately 515 m southeast of the Kaloko-Honokōhau National Historical Park visitor center entrance within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 17). The trail extends along the northeastern edge of an area of modern disturbance. The trail measures 40.9 m long in the ROW. This trail is one of several that were pointed out to CSH by NPS staff. The trail can be recognized within the project area by observing subtle wear-pattern / color variation on the lava flow (Figure 36, Figure 37). NPS staff has pointed out that trails such as this one, even though lacking formal attributes within the subject project area, may exhibit formal features elsewhere (i.e., outside of the project area).

In a letter dated April 25, 2012, in reference to the recent supplemental archaeological survey work in the south segment of the current project area (cf. Monahan and Yucha 2012), NPS archaeologists stated that another undocumented *mauka/makai* trail was located in this general area. On May 1, 2012, CSH archaeologist Oli Bautista and NPS archaeologist Tyler Paikuli-Campbell traced this trail out, starting from within the national park to the west (*makai*) of the ROW; the trail was recorded using a survey-grade GPS device. In the field, moving in an easterly (*mauka*) direction, the trail was found to terminate in a disturbed area before reaching the ROW boundary. Therefore, according to the survey-grade GPS, the trail segment was not located in the current project area. When the data was processed in the laboratory the following day, it became clear that the newly-traced trail segment is very close to the previously-identified SIHP # -28774. It is possible that the trail segment mapped on May 1, 2012, and found to be outside of the current project area, represents another portion of this same trail.

In follow-up field work on July 9 2012 the trail area was relocated but, as was the case for the NPS, the trail could not be followed with certainty in the project area. Discolored *pāhoehoe* was found in several directions. It may be the trail was always quite braided and ill-defined in this area. Thus no plan view was generated (the SHPD review of July 9 2012 specifies “a plan view map is not necessary”) as we could not follow this trail with any certainty.

Figure 36. Photograph of SIHP # -28774, showing trail traversing pahoehoe outcrop, visible as subtle wear-pattern and color variation, view to east

Figure 37. Close-up of SIHP # -28774, showing subtle wear-pattern and color variation, view to east

5.2.24 SIHP # 50-10-27-28782

Temp. Site No.: Trail 6 (Monahan et al. 2011)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: 42.4 m long E/W by 0.5 to 0.75 m wide N/S within the ROW
Topography: *ʻAʻā* flow and adjacent *ʻaʻā* tumulus, level to moderately-sloping
Elevation: 79 ft (24 m) AMSL
Description:

SIHP # 50-10-27-28782 is a trail which extends roughly E/W through the project area approximately 424 m north of the Kaloko-Honokōhau National Historical Park visitor center entrance (see Figure 19) within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (Figure 101 to Figure 104). The trail consists of a partially cleared, well-trodden *ʻaʻā* pebble and cobble surface located along the north side of the base of an *ʻaʻā* tumulus. A concentration of weathered coral pebbles and cobbles was observed along the edge of the trail beneath several large *ʻaʻā* boulders. The coral concentration may have served as a trail marker. No artifacts or midden were observed in the area. Unlike most other trails in the project area, this one is clearly observable and relatively well-defined.

Figure 101. Photograph of central portion of SIHP # -28782, showing ‘a‘ā ridge on right, view to east

Figure 102. Detail of concentration of coral observed along the edge of SIHP # -28782, view to southeast

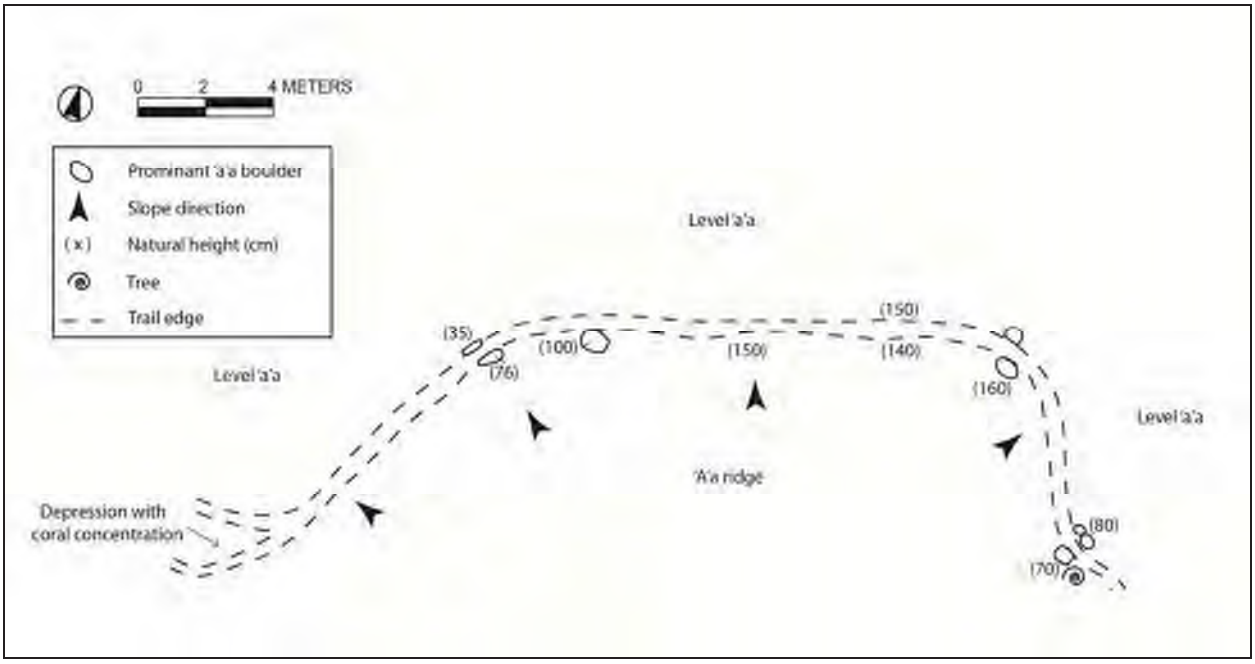


Figure 103. Plan view map of SIHP # -28782

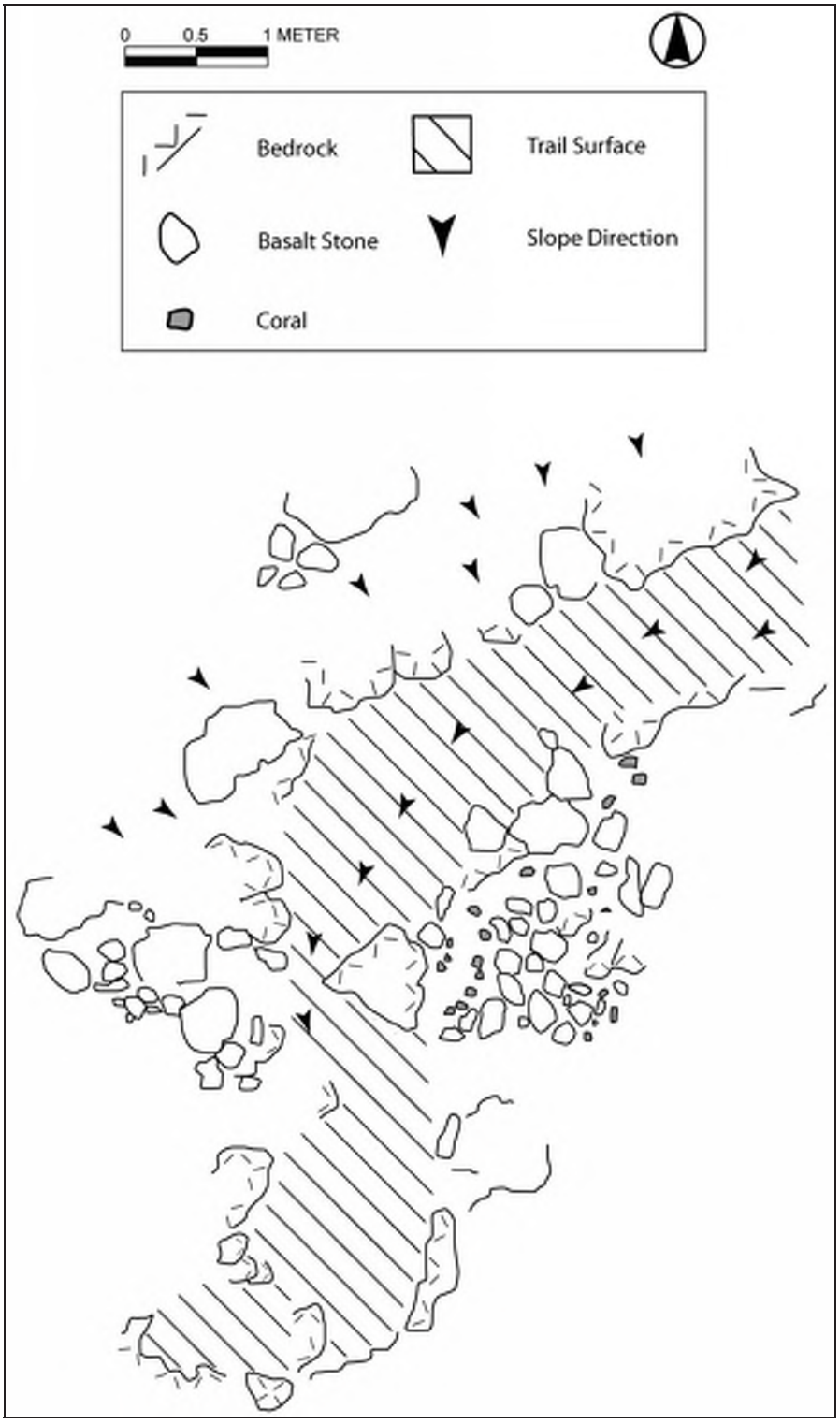


Figure 104. Plan view map of a portion of SIHP # -28782, showing the coral concentration observed along the edge of the trail

5.2.26 SIHP # 50-10-27-28784

Temp. Site No.: Trail 7 (Monahan et al. 2011)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 25.2 m long
Topography: Undulating *ʻaʻā* flow, level to slightly-sloping
Elevation: 75 ft (23 m) AMSL
Description:

SIHP # 50-10-27-28784 is a trail located approximately 280 m south of Kaloko Road within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 19). The trail is oriented E/W and measures 25.2 m long. A faint vehicular road within the *ʻaʻā* mostly obscures the trail within the project area, however, just at the boundary of the right-of-way of the project area and extending *makai* the trail is quite visible and consists of subtle wear-pattern / color variation on the *ʻaʻā* lava flow and interspersed with small flat pahoehoe cobbles (Figure 111 to Figure 113).

Figure 111. Photograph of SIHP # -28784, showing trail just outside the boundary of the project area, with pahoehoe slabs, view to west

Figure 112. Photograph of vehicular road at the eastern terminus of SIHP # -28784, view to east

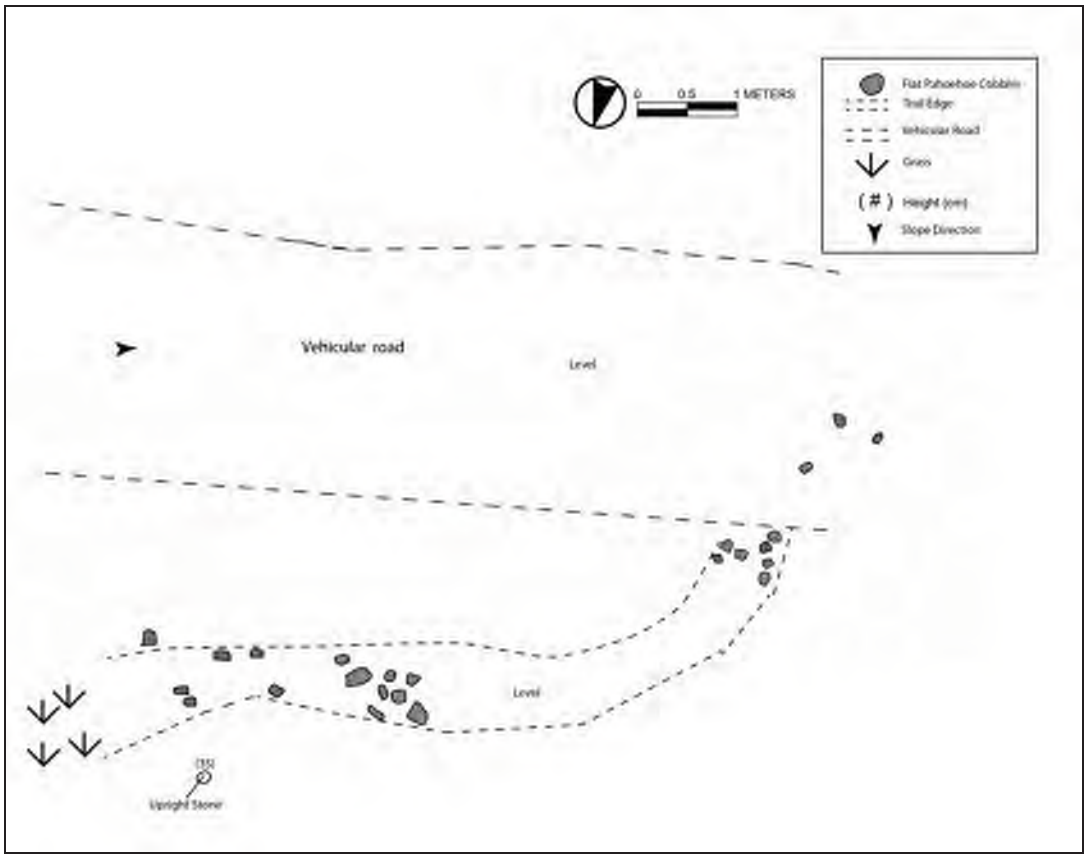


Figure 113. Plan view map of SIHP # -28784

5.2.30 SIHP # 50-10-27-28787

Temp. Site No.: Trail 8 (Monahan et al. 2011)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 8.0 m long (in the ROW)
Topography: Undulating *ʻaʻā* flow
Elevation: 75 ft (23 m) AMSL
Description:

SIHP # 50-10-27-28787 is a trail that is located approximately 40 m south of Kaloko Road within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 19). The trail is roughly oriented NW/SE and measures 8.0 m long (Figure 121 to Figure 122). The trail can be recognized within the project area by observing subtle wear-pattern / color variation on the lava flow. NPS staff has pointed out that trails such as this one, even though lacking formal attributes within the subject project area, may exhibit formal features elsewhere (i.e., outside of the project area).

Figure 121. Photograph of SIHP # -28787, view to northwest

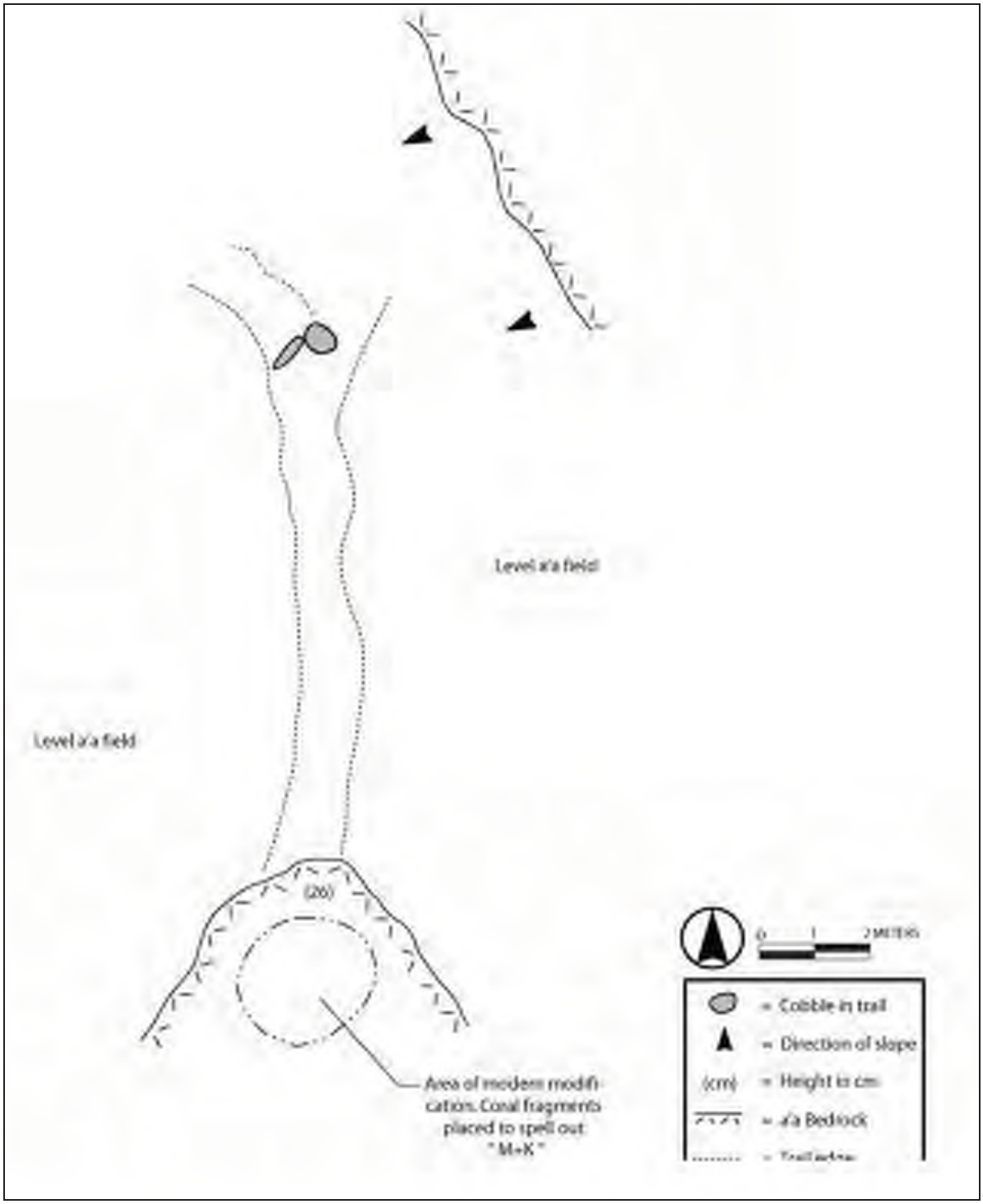


Figure 122. Plan view map of SIHP # -28787

5.2.38 SIHP # 50-10-27-28791

Temp. Site No.: Trail 11 (Monahan et al. 2011)
Site Type: Trail
No. of Features: 1
Functional Interpretation: Transportation
Probable Age: Indeterminate
Overall Dimensions: Approximately 9.2 m long
Topography: Undulating *pāhoehoe* flow, level to slightly-sloping
Elevation: 75 ft (23 m) AMSL
Description:

SIHP # 50-10-27-28791 is a trail located approximately 150 m southwest of the intersection of Hina Lani Street and the Queen Ka‘ahumanu Highway within the portion of the project area that is adjacent to the Kaloko-Honokōhau National Historical Park (see Figure 20). The trail is roughly-oriented NE/SW and measures 9.2 m long. The trail can be recognized within the project area by observing subtle wear-pattern / color variation on the lava flow (Figure 145, Figure 145). NPS staff has pointed out that trails such as this one, even though lacking formal attributes within the subject project area, may exhibit formal features elsewhere (i.e., outside of the project area).

The trail designated SIHP # -28791 is directly associated with a petroglyph designated SIHP # -28792 (see Figure 20).

Figure 145. Photograph of SIHP # -28791

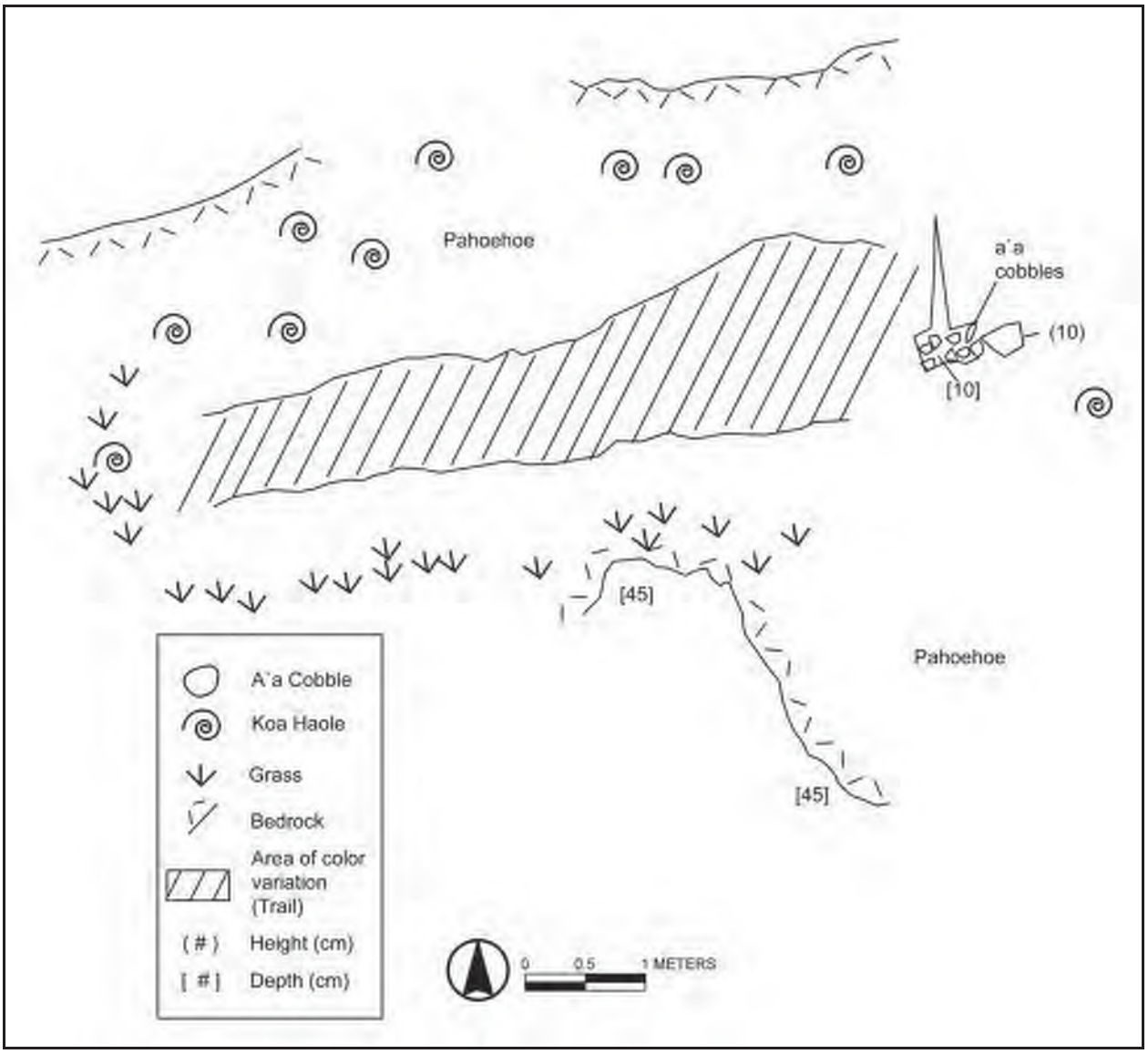


Figure 146. Plan view map of SIHP # -28791

5.2.67 SIHP # 50-10-27-29272

Temp. Site Designation: Coral Frags (Harp 2011)
Site Type: Level Area (Feature A) with *Mauka/Makai* Trail (Feature B)
No. of Features: 2
Functional Interpretation: Possible Resting Place (Fea. A) / Transportation (Fea. B)
Probable Age: Indeterminate
Overall Dimensions: 6.5 m E/W by 5.5 m N/S (level area)
Topography: Undulating *pāhoehoe* terrain sloping gently *makai*
Elevation: 114 ft (36 m) AMSL
Description:

SIHP # 50-10-27-29272 consists of a level area (Feature A) of somewhat rounded but "fresh" looking basalt cobbles and small boulders with some rounded coral pieces (mostly less than 5 cm in size) in a low area at the edge of a *pāhoehoe* outcrop (Figure 251, Figure 252). Pieces of shell (cowrie and *ʻopihi*) are also present on the surface of the level area. Some 1970s-era bottles and beverage cans and other trash are scattered around the site area, as well as a single, rusted horseshoe. The western side of the feature has a clear but informal edge about 30 cm high. Grasses surround the site. The site location is depicted in Figure 25. This site was pointed out to CSH by Isaac Harp, and was inspected and assessed as part of the supplemental survey of the north segment of the current project area (Monahan and Wilkinson 2012).

While working with CSH archaeologists, Isaac Harp identified a relatively faint trail oriented *mauka* to *makai* leading into the site area from the west (Figure 253). CSH archaeologists were skeptical about this trail, which they considered to be relatively difficult to observe in the field; nonetheless, GPS coordinates for the trail were obtained in order to map its location (see Figure 25). It is important to note that, subsequent to CSH's fieldwork with Isaac Harp, the SHPD informed CSH that a more formal section of this trail had been identified by another firm (Dr. Robert Rechtman) in an adjacent project area to the west. The site number obtained by Rechtman for this trail has been used for the current project area, but the report is still in draft form and is not available for citation at this time.

In order to explore the possible function and age of the site more fully, two test units were excavated within the main level area (Feature A). Test unit 1 (TU-1) was relatively shallow and was sterile (Figure 254). Test unit 2 (TU-2) contained a small amount of midden (Figure 255, Figure 256). A third excavation, test unit 3 (TU-3), was placed in a nearby area of the site thought to be possibly a "filled in" area by Isaac Harp (Figure 257). This test unit was sterile.

This site appears to be a constructed ramp to allow for travel across uneven terrain with a primary function of transportation. It may also have been used as a small resting place (the level area designated Feature A) associated with a *mauka/makai* trail (Feature B). The age of the site is currently indeterminate.

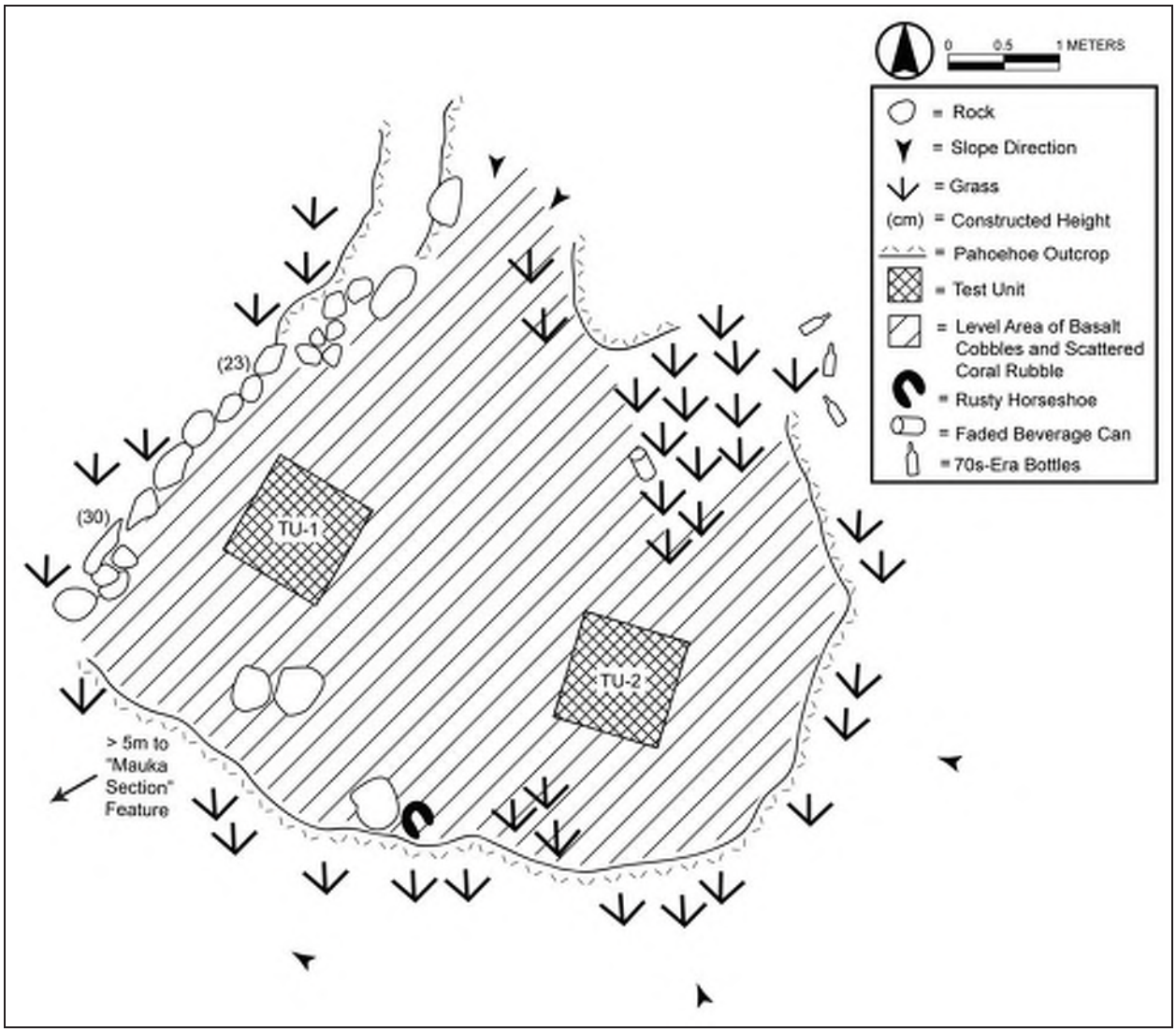


Figure 251. Plan view sketch map of SIHP # -29272 Feature A

Figure 252. Level area of cobbles with coral (SIHP # - 29272 Feature A);-, view to northwest

Figure 253. Section of trail (SIHP # -29272 Feature B) identified by Isaac Harp leading to Feature A, view to west

Figure 254. Post-excavation of TU-1 at SIHP # -29272 Feature A, view to east

Figure 255. Post-excavation of TU-2 at SIHP # -29272 Feature A, view to southeast

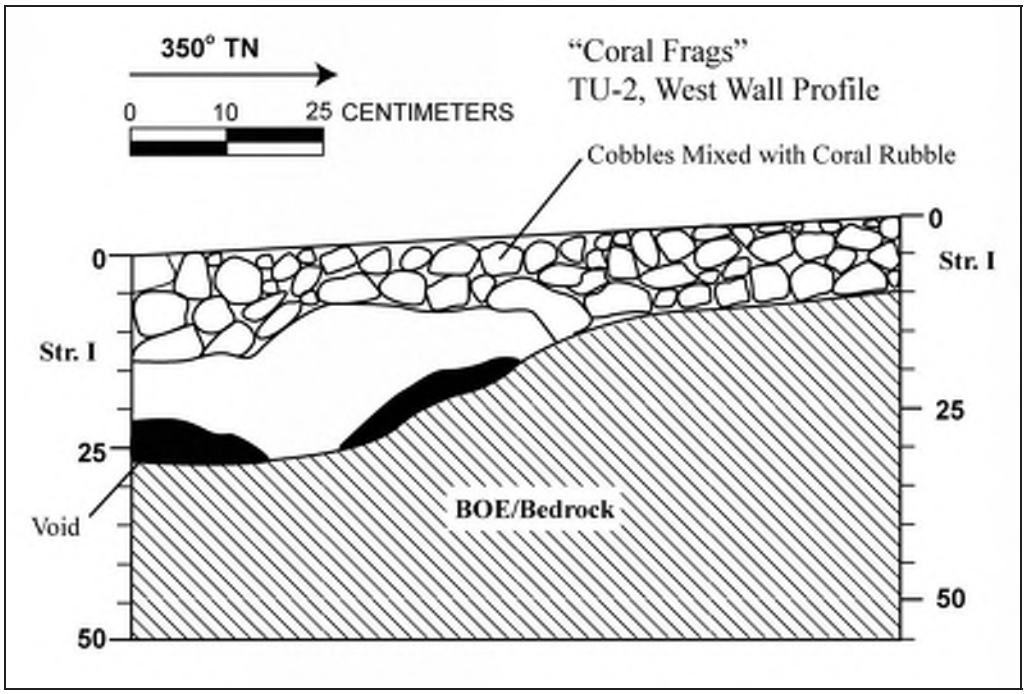


Figure 256. Stratigraphic profile of TU-2 (SIHP # -29272 Feature A)

Figure 257. Post-excavation of TU-3, view to east

Appendix C

Section 4(f) Applicability to Sites Letter and SHPD Response

U.S.Department of Transportation
Federal Highway Administration

Hawaii Federal-Aid Division

300 Ala Moana Blvd, Rm 3-306
Box 50206
Honolulu, Hawaii 96850
Phone: (808) 541-2700
Fax: (808) 541-2704

February 19, 2013

In Reply Refer To: HDA-HI

Mr. William J.Aila, Jr.
Chairperson and State Historic Preservation Officer
Hawaii Department of Land and Natural Resources
601 Kamokila Boulevard, Suite 555
Kapolei, HI 96707

Subject: Final Determination of Applicability of Section 4(f) to Historic Sites
Queen Kaahumanu Highway Widening, Phase 2
Kealakehe Parkway to Keahole Airport Road
Federal-aid Project No. NH-019-1(38)R

Dear Mr. Aila:

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303 / 23 CFR 774.3 (a) and (b)) mandates that "special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." The Federal Highway Administration (FHWA) is in the process of revising the Section 4(f) evaluation for the subject project. Part of the evaluation process is to determine which historic properties are afforded protection under Section 4(f). The purpose of this letter is to identify which historic sites will be afforded protection under Section 4(f), which sites will be exempted from such protection, and which sites will be avoided.

To be afforded protection under Section 4(f), a historic property must be on, or eligible for inclusion on, the National Register of Historic Places (NRHP). Of the 75 historic properties identified in the most recent Archaeological Inventory Survey (AIS) approved by the State Historic Preservation Division (SHPD), all meet the criteria for inclusion on the NRHP. This is documented on page v of the AIS Management Summary. The sites are considered eligible based upon four (4) significance criteria – A, B, C and D, generally defined as:

- Criteria A – Associated with events that have made an important contribution to the broad patterns of our society
- Criteria B – Associated with the lives of persons significant in our past
- Criteria C – Embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, or possesses high artistic value; also, this criteria includes historic properties that represent a significant and distinguishable entity whose components may lack individual distinction
- Criteria D – Likely to yield information important for research on prehistory or history

Individual sites can be eligible under multiple significance criteria, and each individual property must be reviewed with respect to the aspects of integrity that make it eligible for listing on the NRHP.

Once a site is identified as eligible for listing on the NRHP and it cannot be avoided by the project, it is presumed to be afforded protection under Section 4(f), unless one of several conditions for an exception exists. These exceptions include, but are not limited to:

1. Restoration, rehabilitation, or maintenance of a site when such activity will not adversely affect the historic qualities that make it eligible for listing.
2. Archaeological sites when it is deemed important primarily for what can be learned by data recovery and the site has minimal value for preservation in place.
3. If the designation or determination making a property eligible for protection is made after the property is acquired.
4. Temporary occupancies so minimal as to not constitute a "use" in the meaning of Section 4(f).
5. Park road or parkway projects under 23 USC 204.
6. Certain trails, paths, bikeways, and sidewalks in specific circumstances.
7. Transportation enhancement projects and mitigation activities in specific circumstances.

In each of the above cases, one of the key requirements is that the "official(s) with jurisdiction" over the Section 4(f) resource must not object to the exception determination. In the case of the subject project, the State Historic Preservation Officer is the official with jurisdiction over the Section 4(f) resources in question. FHWA is consulting with you as the official with jurisdiction and we want to ensure that you have no objections to our final determination.

Although there is no definitive written guidance on when properties are considered exceptions under Section 4(f), FHWA headquarters has provided guidance that properties eligible only under Criteria D are generally considered archaeological sites, generally do not require preservation in place, and are therefore generally considered exceptions to being afforded protection under Section 4(f) as per 23 CFR 774.13(b) (1). This is general guidance that must be considered on a case-by-case basis for each individual site on each project.

We have reviewed each historic property in the AIS, including specific site information and significance criteria along with the current proposed design impacts, and have made the following final determination regarding which historic properties will be afforded protection under Section 4(f) and which properties will be exempted from such protection:

- *(Site numbers and significance criteria from Table 28 of the AIS)*

- The following sites *will be avoided by construction of the project and, as a result, do not require consideration* in the Section 4(f) process:

    1. Site #10154 (Criteria D)
    2. Site #10714 (Criteria A, C & D)
    3. Site #15324 (Criteria C & D)
    4. Site #18099 (Criteria A, C & D)

5. Site #19943 (Criteria D)
6. Site #19946 (Criteria C & D)
7. Site #19947 (Criteria D)
8. Site #19948 (Criteria D)
9. Site #19949 (Criteria D)
10. Site #19950 (Criteria D)
11. Site #19951 (Criteria D)
12. Site #19952 (Criteria C & D)
13. Site #19954 (Criteria C & D)
14. Site #22415 (Criteria D)
15. Site #22417 (Criteria D)
16. Site #22418 (Criteria C & D)
17. Site #22507 (Criteria C & D)
18. Site #28774 (Criteria C & D)
19. Site #28778 (Criteria D)
20. Site #28780 (Criteria D)
21. Site #28781 (Criteria D)
22. Site #28782 (Criteria C & D)
23. Site #28783 (Criteria D)
24. Site #28784 (Criteria C & D)
25. Site #28787 (Criteria C & D)
26. Site #28788 (Criteria D)
27. Site #28789 (Criteria D)
28. Site #28790 (Criteria D)
29. Site #28791 (Criteria C & D)
30. Site #28792 (Criteria D)
31. Site #28794 (Criteria D)
32. Site #28796 (Criteria D) – This site is not one of the 75 identified in the AIS
33. Site #28797 (Criteria D)
34. Site #28799 (Criteria D)
35. Site #28800 (Criteria D)
36. Site #28801 (Criteria D)
37. Site #28802 (Criteria D)
38. Site #28803 (Criteria D)
39. Site #28804 (Criteria D)
40. Site #28805 (Criteria D)
41. Site #28806 (Criteria D)
42. Site #28807 (Criteria D)
43. Site #28809 (Criteria D)
44. Site #28810 (Criteria D)
45. Site #28811 (Criteria D)
46. Site #29272 (Criteria C & D)
47. Site #29275 (Criteria D)
48. Site #29332 (Criteria D)
49. Site #29333 (Criteria D)
50. Site #29334 (Criteria D)
51. Site #29335 (Criteria D)

52. Site #29336 (Criteria D)
53. Site #29337 (Criteria D)
54. Site #29338 (Criteria D)
55. Site #29339 (Criteria D)
56. Site #29340 (Criteria D)
57. Site #29341 (Criteria D)
58. Site #29342 (Criteria D)
59. Site #29343 (Criteria D)
60. Site #29344 (Criteria D)
61. Site #29345 (Criteria D)
62. Site #29347 (Criteria D)
63. Site #29348 (Criteria D)

- The following sites *will be afforded protection and will require a Section 4(f) approval* as per 23 CFR 774.3 (a)(1) and (a)(2) if the project requires the "use" of the property and the property cannot be avoided:

    1. Site #00002 (Criteria A, B, C & D)
    2. Site #19953 (Criteria C & D)

- The following sites *will not be afforded protection under Section 4(f) and will be considered exceptions* according to 23 CFR 774.13(b)(1). These sites will not require a Section 4(f) approval because they are considered archaeological sites, important chiefly because of the data they contain, and possessing minimal value for preservation in place:

    1. Site #06432 (Criteria D)
    2. Site #19945 (Criteria D)
    3. Site #28785 (Criteria D)
    4. Site #28786 (Criteria D)
    5. Site #28808 (Criteria D)
    6. Site #28812 (Criteria D)
    7. Site #28813 (Criteria D)
    8. Site #28814 (Criteria D)
    9. Site #28815 (Criteria D)
    10. Site #29346 (Criteria D)
    11. Site #29349 (Criteria D)

Based on this determination, only two (2) of the seventy-six (76) ** historic sites will be considered in the Section 4(f) evaluation – **Site #28796 was reviewed although it was not one of the seventy-five (75) sites identified in the AIS. Seventy-four (74) of the sites will not be considered in the Section 4(f) evaluation - eleven (11) sites will be considered exceptions and sixty-three (63) sites are being avoided by construction.

Your response will help complete the record necessary to finalize the Section 4(f) evaluation. If we do not receive any response within 30 days, we will assume that you concur with our final determination and we will move forward with finalizing the Section 4(f) evaluation.

Thank you for your assistance in this matter. If there are questions or if additional information is needed, please contact me by phone at (808) 541-2314 or by e-mail at roy.siegel@dot.gov .

Sincerely,

Roy Siegel, P.E.
Transportation Engineer

cc: Ms. Theresa Dunham (SHPD Hawaii Island)
Mr. Michael Vitousek (SHPD Hawaii Island)
Mr. Henry Kennedy (HDOT Kapolei)

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 12, 2013

Roy Siegel
Federal Highway Administration
300 Ala Moana Blvd., Room 3-306
Box 50206
Honolulu, HI 96850

LOG NO: 2013.1931
DOC NO: 1303MV03
Archaeology

Subject: **Determination of Applicability of Section 4(f) to Historic Sites -**
Queen Ka'ahumanu Highway Widening, Phase 2; Federal-aid Project No. NH-019-1(38)R
Kalaoa, O'oma, Kohanaiki, Kaloko, Honokohau 1-2 and Kealakehe Ahupua'a
North Kona District, Island of Hawai'i
TMK: (3) 7-4-008, 7-3-009 & 7-3-043 (portion)

Thank you for submitting the subject letter that was received by our office on February 19, 2013. The purpose of this letter is to determine which historic sites within the Queen Ka'ahumanu Highway widening project area will be afforded protection under Section 4(f) of the Department of Transportation Act of 1966, which sites will be exempted from such protection, and which sites will be avoided. A review of our records indicates that an archaeological inventory survey (AIS) prepared by C. Monahan, T, Yucha, and C. O'Hare (July, 2012) recorded 75 historic properties in the proposed project area and all 75 historic properties have been determined eligible for inclusion on the National Register of Historic Places (NRHP) and, therefore, must be evaluated under 4(f). According to your letter, 63 of the 75 historic properties identified in the project area will be avoided by construction activities and, as a result, do not require consideration under 4(f). These sites include the following properties listed on the State Inventory of Historic Properties (SIHP) that are identified with the prefix 50-10-27: -10154, -10714, -15324, -18099, -19943, -19946 through -19952, -19954, - 22415, -22417, -22418, -22507, -28774, -28778, -28780 through -28784, -28787 through -28794, -28796, -28797, -28799, -28800 through -28807, -28809 through -28811, -29272, -29275, -29332 through -29345, -29347, and -29348. Two historic properties, the Mamalahoa Trail (SIHP -0002) and an additional trail alignment (SIHP -19953) will be afforded protection under 4(f) and will a Section 4(f) approval if the project requires the 'use' of the property and the property cannot be avoided. SHPD concurs with the applicability of 4(f) protection for these two sites.

In addition, your letter indicates that 11 properties will be considered exempt from 4(f) because they are archaeological sites that have been deemed important primarily for what can be learned by data recovery. SHPD concurs with this exemption for 7 of the 11 sites identified in your letter. These seven sites include the following properties listed on the State Inventory of Historic Properties (SIHP) that are identified with the prefix 50-10-27: an agricultural site -28785, a modified depression -28786, a filled crevice -28812, and a lava tube -28814, a pahoehoe excavation -28815 and an isolated waterworn hammer stone boulder, a mound -29346 and excavated pit -29349. These seven archaeological sites will be mitigated through a program of data recovery or have had enough information recorded in the AIS as to merit no further archaeological work. Three of these 11 sites (SIHP 50-10-27-19945, -28808 and -28813) need further clarification, as the C. Monahan, T, Yucha, and C. O'Hare AIS report (July, 2012) indicates that some of the features of these sites will be preserved, and other features will impacted by project activities. Specifically: SIHP 50-10-27-19945 is a petroglyph site where features A and B will be preserved and features C through I will be impacted, SIHP -28808 is a complex of mounds where features A, B, and C will be preserved, and features D and E will be relocated out of the area of ground disturbance, and SIHP -28813 is an agricultural complex where feature A will be preserved and features B through E will be subjected to data recovery.

We believe that the features of these sites should be dealt with on an individual basis, and the features that are marked for preservation in the AIS should be described in the section of sites that will be "avoided by construction of the project and, as a result, do not require consideration."

Finally, we believe that the remaining site does not fit with exemption condition 2 (as indicated in this letter) for archaeological sites that have been deemed important primarily for what can be learned by data recovery. This site does not contain archaeological deposits with the potential to yield information, and is not recommended for data recovery in the AIS. Specifically, SIHP -06432 is an ahupua'a boundary wall that delineates the land divisions of Kalaoa and O'oma. This wall is not significant for the information contained within it, but rather for its cultural significance to Native Hawaiians and its physical position on the landscape. The wall will be directly impacted by project activities. This impact has been minimized through efforts to redesign the highway, and mitigated through careful dismantling by archaeological and cultural monitors and not data recovery. Therefore, we believe that this wall should be afforded protection under 4(f) or exempted from 4(f) based a different exemption condition. We believe that condition 7 (transportation enhancement projects and mitigation activities in specific circumstances) may apply to this site in this specific circumstance, as impacts will be minimized through redesign, and mitigated through careful dismantling by archaeological and cultural monitors.

Please consider our recommendations and if appropriate, provide a revised determination of applicability of section 4(f) to our office. Please contact Mike Vitousek at (808) 652-1510 or Michael.Vitousek@Hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Theresa K. Donham
Deputy State Historic Preservation Officer
Historic Preservation Division

cc: Kauanoe Hoomanawanui

U.S. Department of Transportation
Federal Highway Administration

Hawaii Federal-Aid Division

May 15, 2013

300 Ala Moana Blvd, Rm 3-306
Box 50206
Honolulu, Hawaii 96850
Phone: (808) 541-2700
Fax: (808) 541-2704

In Reply Refer To:
HDA-HI

Mr. William J. Aila, Jr.
Chairperson and State Historic Preservation Officer
Hawaii Department of Land and Natural Resources
601 Kamokila Boulevard, Suite 555
Kapolei, HI 96707

Subject: Clarification Regarding Applicability of Section 4(f) to Historic Sites
Queen Kaahumanu Highway Widening, Phase 2
Kealakehe Parkway to Keahole Airport Road
Federal-aid Project No. NH-019-1(38)R

Dear Mr. Aila:

As the State Historic Preservation Officer (SHPO), you received a letter from the Federal Highway Administration (FHWA) dated February 19, 2013 regarding the applicability of Section 4(f) of the United States Department of Transportation Act of 1966 (49 USC 303 / 23 CFR 774.3 (a) and (b)) to historic sites impacted by the Queen Ka'ahumanu Widening, Phase 2 project. In that letter, the FHWA determined that only two (2) of the seventy-six (76) historic sites required consideration under Section 4(f). Of the remaining seventy-four (74) historic sites, sixty-three (63) sites are being avoided by construction, and eleven (11) sites are being considered exceptions under 23 CFR 774.13 (b)(1).

Your response to this letter, dated March 12, 2013, requested clarification on several sites and the following is in response to your request for clarification:

Site #19945

- Original letter referred to this entire site as an exception to Section 4(f).
- The SHPO response letter requested further clarification as the site has multiple features, and some features are being impacted and some features are being avoided.
- *Clarification*:
    - Features "A" & "B" will not be disturbed by construction.
    - Features "C" through "I" will be removed by construction, but these features are considered exceptions to Section 4(f) due to the nature of the features as being chiefly important for what can be learned through data recovery and having minimal value for preservation in place.

Site #28808

- Original letter referred to this entire site as an exception to Section 4(f).
- The SHPO response letter requested further clarification as the site has multiple features, and some features are being impacted and some features are being avoided.
- *Clarification*:
  - Features "A", "B", & "C" will not be disturbed by construction.
  - Features "D" & "E" will be removed and relocated during construction, but these features are considered exceptions to Section 4(f) due to the nature of the features as being chiefly important for what can be learned through data recovery and having minimal value for preservation in place.

Site #28813

- Original letter referred to this entire site as an exception to Section 4(f).
- The SHPO response letter requested further clarification as the site has multiple features, and some features are being impacted and some features are being avoided.
- *Clarification*:
  - Feature "A" will not be disturbed by construction.
  - Features "B" through "E" will be removed by construction, but these features are being considered exceptions to Section 4(f) due to the nature of the features as being chiefly important for what can be learned through data recovery and having minimal value for preservation in place.

Site #06432

- Original letter referred to this entire site as an exception to Section 4(f).
- The SHPO response letter requested clarification since the basis for the exception to Section 4(f) is that the site is important chiefly because of what can be learned by data recovery, and there is minimal value for preservation in place. The response letter expressed a concern that this site, an ahupua'a boundary wall, is important because of its location on the ground and its cultural significance. There was a question as to whether a different Section 4(f) exception criterion might apply to this site. Finally, the Archaeological Inventory Survey (AIS) did not call out data recovery for this site.
- *Clarification*:
  - After discussions between the FHWA staff and State Historic Preservation Division (SHPD) staff, there is no objection to removing a portion of the ahupua'a boundary wall in order to allow construction of the roadway widening.
  - It is the intent of the project to salvage the rocks removed from the ahupua'a wall for further use, either to be reconstructed as a section of wall for public display or to be used in a cultural education setting to teach the art of dry stone masonry.
  - The notation of the original location and re-use of the ahupua'a boundary wall stones removed from the site is a form of data recovery. The site is important primarily for the recovery, and there is minimal value for preserving the wall in-place.
  - The AIS will be amended for this site to include data recovery, as well as to describe the nature of the data recovery associated with the re-used ahupua'a boundary wall stones.

- Based on this clarification, this site is being considered an exception to Section 4(f) based on its primary value being in the data recovery associated with the site, and the site possesses minimal value for preservation in place.

As the official with jurisdiction over these Section 4(f) sites, I want to ensure that you have been consulted, and that you have no objections to our final determination in our original letter given the clarification and planned modification to the AIS included in this letter.

Your response will help complete the record necessary to finalize the Section 4(f) evaluation and it is our understanding that with the provided clarification and planned modification to the AIS, the SHPD staff is in agreement with our final determination of eligibility for Section 4(f) protection. Your prompt response to validate this concurrence would be greatly appreciated as we are currently trying to finalize the Section 4(f) evaluation. If we do not receive any response by May 31, 2013, we will assume that you agree with your staff's verbal concurrence and we will move forward with finalizing the Section 4(f) evaluation.

Thank you for your assistance in this matter. If there are questions or if additional information is needed, please contact me by phone at (808) 541-2314 or by e-mail at roy.siegel@dot.gov .

Sincerely,

Meera J. Otaw

for Roy Siegel, P.E.
Transportation Engineer

cc: Ms. Theresa Donham (SHPD Hawaii Island)
Mr. Michael Vitousek (SHPD Hawaii Island)
Mr. Henry Kennedy (HDOT Kapolei)

Appendix D

Consultation Summary

CONSULTATION SUMMARY
April 10, 2013

Contents

1. BACKGROUND

The Queen Kaʻahumanu Highway widening project began in May 1996 with the completion of an Environmental Assessment (EA) by the Hawaiʻi Department of Transportation (HDOT) that envisioned the highway being widened from Palani Road to the Keāhole Airport Access Road from its current two-lane configuration to a four-lane facility with a median divider. The project was divided into two phase as follows:
Phase 1 (2005-2006) (between Palani Road to Kealakehe Parkway-Honokōhau Harbor Access Road).
Phase II - July 2010 – Contractor selected and given Notice to Proceed for work between Kealakehe Parkway and the Keāhole Airport Access Road. The work for this phase of work to be divided into two segments.

2. CHRONOLOGY OF ARCHAEOLOGY DISCOVERY

A. ENVIRONMENTAL ASSESSMENT
   1) 1996 Final EA with AIS by CSH
   2) 2006-7 EA reaffirmation
   3) 2013 EA re-evaluation confirming FONSI

b. Oct 1999 Data Recovery Report Submitted

c. Section 4(f)
   1) Document – Issued as part of the environmental documents
   2) Issue: Feb. 6, 2006, two historic properties identified
   3) Response: May 2012 – 4f to be considered for new sites designated for preservation that will be impacted and are designated for preservation.
   4) Section 4(f) re-evaluation conducted to confirm previously identified 4(f) properties.

d. PHASE 1
   1) July/August 2010. Department of Environmental Management (DEM, County of Hawaiʻi) wanted to list Department of Health's (DOH) revolving account to pay for sewer work because of "green" work. In order to use the funds, DOH requested re-evaluation of EA since a number of years had passed since it was completed.
   2) HDOT posted an advertisement in the local newspapers to solicit comments April 11 2008.
   3) National Park Service responded to ad with a letter stating additional sites are in the park vicinity that are missing from the EA May 7, 2008

e. AIS ACTIONS
   1) Cultural Surveys Hawaiʻi (CHS) engaged by GBI-SSFM to conduct an AIS between Aug. 2010 to Oct. 2010.

2) Draft report released Nov. 2010 for review as a Supplemental AIS (44 site-features identified during AIS.)
3) Jan-2011, the SAIS and previous AIS (1995) combined into a single study (Total of 55 new sites identified.)
4) Feb-2011 Revised AIS released for internal review
5) Mar-2011 Revised AIS released for internal review
6) May-2011 Final AIS Submitted to SHPD for approval
7) Oct 2011 DRPP for North Segment Submitted to SHPD for approval
8) Oct 26 2011 SHPD approval of DRPP
9) November 2011 – Revised AIS submitted based on comment received
10) January 2012 Supplemental AIS Draft North Segment for internal review.
11) April 13 2012 AIS South Segment
12) April 11 2012 Table of Findings for AIS – All Sites
13) Adverse Effect Letter Issued May 9+ 2012
14) May 2012 Revised AIS submitted to SHPD for approval, 74 sites
15) July 2012 Revised AIS
16) August 2012 Revised AIS Sent to SHPD for Approval, 75 sites
17) August 24 2012 DRPP submitted to SHPD for Approval
18) August 24 2012 AMP submitted to SHPD for Approval
19) August 21, 2012 SHPD Approval of AIS

3. SECTION 106 NHO CONSULTATION

A. Persons, organizations and agencies consulted:

Office of Hawaiian Affairs (OHA), Hawai‘i Island Burial Council (HIBC), Kona Hawaiian Civic Club, Hui Malama I Na Kupuna o Hawai‘i Nei, Edith Kanakaole Foundation, and Makani Hou o Kaloko Honokohau. Additional representatives: Royal Order of Kamehameha, Villages of Laiopua Master Association, Nakoa Foundation.

B. CHRONOLOGY OF NHO SECTION 106 CONSULTATION

a. Pre-2011 Action – consultation during the preparation of environmental assessment. Participation confirmed in meeting minutes and correspondence in EA.
b. Aug 2, 2011 – Initial correspondence with Messrs.' Harp and Cachola (email)

C. Sept 2011 – Follow up correspondence to gather the NHOs feedback on impacts to historic and/or cultural resources within the project corridor (email preferred by NHOs instead of phoncon)
D. Oct 2011 – Initial Meeting with NHOs in Kona. NHOs express a need to conduct an independent site survey to ensure that no historic properties were missed. (Completed on Jan 2012)
E. Nov 2011 – The NHOs conduct their independent site survey. Representatives from HDOT and FHWA attend also.
F. Dec 2011 – Consultation meeting with NHOs in Kona (NHOs did not attend…cited short notice and unavailability of key members)
G. Jan 2012 – Site Evaluation of NHOs discovered sites (site visit)
H. Jan 2012 Pre-Meeting with NHO
I. Two meetings in February (17 and 29), 2012.
J. Site evaluation of NHO discovered sites – Feb 2012
K. Consultation meeting with NHO Feb 17 and Feb 29 – archaeology and draft MOA
L. Consultation meeting March 22, 2012 – Discussion of arch. findings and significance
M. Consultation Meeting April 18, 2012 – Discussion of arch. findings and significance
N. Section 106 Training – May 2-4, 2012 (Hilo, tuition paid, plus travel expenses)
O. Consultation Meeting May 14-16, 2012, Mitigation recommendations

P. AIS Review Consult 30-day letter – May 17, 2012
Q. Consultation meeting May 25
R. Consultation meeting June 15 2012 Mitigation recommendations
S. Consultation meeting August 2, 2012 – mitigation recommendations (final)
T. Consultation meeting December 4, 2012 – mitigation recommendations
U. Consultation meeting January 31, 2013 – mitigation recommendations
V. Consultation meeting March 28, 2013 – mitigation recommendations

SUMMARY OF NHO CONCERNS AND RESPONSE

Item	Subject	NPS Request/Concern	Response
1.	Final Environmental Assessment	Request that HDOT reconsider the preferred alternative in light of current conditions of impact sites. NHOs recommend that HDOT revise the selected alternative to a four-lane, undivided highway.	HDOT will not entertain revisiting the FEA on the basis that the EA addressed the alternatives such as: a. Location of Transmission Poles. We needed to keep away from the polelines so that we do not undermine the foundation of the poles. The minimum distance varied from 10 feet to 15 feet. b. Location of Drainage Structure. There are several drainage structures along the highway that are used to collect and direct rain runoff from the highway as well as from mauka lands. Each of these drainage structures (headwall, drain inlets, culvert pipes, and box culverts) will all require reconstruction if impacted and this is not a trivial undertaking. Further, if the drainage structure encroached into private property, an easement at minimum, or land acquisition will be required. c. New Pavement and Shoulder. Moving the roadway mauka will also require reconstruction of the new travelway and shoulder on the mauka side. d. Moving mauka does not necessarily guarantee that no new historic features will be

			found.
2	Mamalahoa Trail	NHOs expressed opposition to any further adverse impact to the Mamalahoa Trail.	Allowable disturbance to the Mamalahoa Trail is addressed within the original Section 106 MOA.
3	Section 106 MOA	The NHOs requested that they be added as a signatory to the amended MOA.	Will include Makani Hou as a consulted party to the amended MOA Correspondence Aug. 10 2012 from Isaac Harp indicating that NHOs will not sign the MOA
4	Burial Treatment Plan (BTP) for Site 22415	The NHOs requested to review the Burial Treatment Plan.	A copy of the BTP dated December 2011was furnished to NHOs for review. New-revised plan submitted to HIBC June 2012. HIBC meeting June 21, 2012. Response to comments included. BTP approved by HIBC. BTP for O'oma site held in abeyance at request of owner.
5	Archaeological Inventory Survey	NHOs express their intention to conduct an independent site survey of the North Segment to ensure that no historic properties have been missed.	A site visit for the North Segment was conducted in November 2011. Evaluation report completed week of Jan 23, followed by NHO review; supplemental AIS prepared for review. Revised AIS submitted May 2012. Revised AIS submitted July 2012. SHPD approval Aug. 21 2012
6	Section 106	NHOs express their opinion that FHWA and HDOT violated 36 CFR 800 by failing to conduct Section 106 Consultation prior to the construction of Phase 1.	FHWA and HDOT responded that Section 106 consultation was conducted and the executed MOA (1999) is evidence of this. Further discussion pending with NHOs.
7	4(f) Evaluation	NHOs express their skepticism that HDOT has conducted the 4(f) Evaluation properly based on their observation that other historic properties that had been identified were not preserved or protected from construction.	Notwithstanding Phase 1 (north) considerations, re-design undertaken to minimize impacts to 4(f) properties.
8	Section 106 for Phase 2 (south)		Discussion on-going – mitigation proposal discussed at August 2, 2012 meeting. HDOT undertaking redesign of south segment.
9	MOA amendment		Revised final draft being undertaken for review and comment.
10	Cultural Monitor(s)	Selected before data recovery starts. Note: previous DR work stopped for lack of monitor.	1. Notice published in paper June 2012 2. Short list prepared June

			2012 3. Interview July 2012 4. Final selection August 2012
11	NHO request to FHWA	Native Hawaiian Legal Corp. Aug. 10 2012 "Queen Ka'ahumanu Highway Widening Project: Legal Obligations" to 1) "produce a supplemental environmental assessment and 2) new section 4(f) evaluation."	Response provided at Dec. 4, 2012 meeting

DOCUMENTS TO NHOs

Date	Title	Note
Feb 1996	Section 4f Evaluation	
July 1996	FEA	Includes AIS
Apr 1999	Final Archaeological Treatment Plan	
March 2007	MOA	
May 2011	AIS	
July 2011	Arch Mon. Plan	
Oct 2011	DRPP	Approved by SHPD
Oct 2011	BTP – Draft	
Nov 2011	CIA	
Nov 2011	Draft MOA	
Feb 2012	AIS North Segment	
Apr 2012	AIS South Segment	
May 2012	AIS (combined north and south segment)	
July 2012	FINAL AIS	August 2012
August 6	Final draft MOA for review and comment	

4. CHRONOLOGY OF NPS SECTION 106 CONSULTATION

Nov (Dec) 2011 - DOTA meeting with NPS
Jan. 10, 2011 – Meeting with NPS (in Kona)
Feb. 1, 2011 – Meeting with NPS (phoncon)
Feb. 15, 2011 – Meeting with NPS (phoncon)
March 8, 2011 – Memo to NPS outlining issues
Apr-4, 1011 – Public Information Meeting
Jun 17, 2011 – Meeting with NPS (phoncon)
Jun 22, 2011 – Meeting with NPS (phoncon)
Jun 29, 2011 – Meeting with NPS (phoncon)
July 14, 2011 – Meeting with NPS (phoncon)
May 17, 2012 – AIS 30-day response

NPS CONCERNS AND PROPOSED MITIGATION

Item	Subject	NPS Request/Concern	Mitigation
1.	Burial along highway ROW	Request to be consulted on the burial treatment	Draft plan sent to NPS for review and comment – preserve in place
2	Ground water contamination	1. Concern that runoff from the highway will impact water quality in the Park. 2. Runoff from the roadway will enter the water column via proposed drywells	1. Drywell equipped with oil and sediment filters to be installed within the median fronting the Park 2. Drywells to be included along the inbound and outbound travelways to collect oil and sediments from entering the ground water
3	Pedestrian Access (long-term) a pedestrian-bike tunnel that is ADA accessible	NPS concerned that in the long-term when the highway is upgraded, no consideration will be made for a 'safe' method of crossing. Requested that a study be conducted to include community involvement.	1. Pedestrian crosswalks included in the current design 2. HDOT proposes to conduct the feasibility study for pedestrian tunnel along with community design charette when a project to improve the highway is authorized
4	Highway Lighting	NPS expressed concern that lighting along the highway may impact the environment at the Park and asked to review plans and specifications for lighting and requested reduction of intensity of lighting on the approaches to the intersections	1. NPS provided with lighting specifications 2. Reduce intensity on the approached to the intersections
5	Landscaping	Request review of landscaping plans fronting the Park	NPS provided copy of plans for review and comment on landscaping fronting the NPS property
6	Visual Impacts	NPS concerned that at the highway moves closer to the Park, there will be visual impacts	HDOT has proposed landscaping and even a low wall along the highway
7	Noise Study	NPS concerned about the potential impact from highway noise on the park	HDOT to conduct noise impact study

5. DOCUMENT LOG

No.	Title	Date	Note
1	Draft SAIS		To SHPD – not submitted
2	Final SAIS	Nov. 2010	To SHPD for Approval; SHPD comment 12-23-2010
3	Revised AIS	May 2012	Phase 1 and 2; Submitted to SHPD for approval
4	Revised AIS	July 2012	To SHPD for approval Aug 21 2012
5	Data Recovery and Preservation Plan	Oct. 2012	To SHPD for Approval. Approved Oct. 6, 2012. Superceded by revised DRPP August 2012
6	Archaeological Monitoring Plan	July 2011	To SHPD for Approval. Superceded by revised AMP – August 2012
7	Burial Treatment Plan Honokōhau	June 2012	TO SHPD, HIBC Mtg June 21, 2012, Revision pending Aug 2012; HIBC Mtg in Sept. 2012) for approval
8	BTP for O'oma		Submittal to SHPD – August 2012 withdrawn at request of land owner.
9	MOA (Last draft December 2012)	Dec. 2012	Revised MOA pending – April 2013
10	Mitigation Evaluation	August 2, 2012	Consultation meeting August 2 and Dec. 2012
11	Archaeological Inventory Survey	July 2012	SHPD Approval August 21 2012
12	Final Draft MOA	August 6 2012	Pending review by State AG
13	Revised AMP	August 2012	Approved by SHPD Oct 2012
14	Revised DRPP	August 2012	Approval by SHPD Oct. 2012
15	Final MOA	March 2015	

Appendix E

Meeting Notes from December 4, 2012 Consultation Meeting

Queen Kaahumanu Highway Widening, Phase 2

Section 106 Consultation Meeting – South Segment Redesign

Tuesday, December 4, 2012 (1:00 PM)
West Hawaii Civic Center
Kona, Hawaii

DRAFT AGENDA

I.	Pule	(Fred Cachola, Makani Hou)
II.	Housekeeping	(FHWA)
III.	Introductions	(FHWA)
IV.	Opening Remarks a. reason for redesign b. goals of meeting c. FHWA availability for consultation	(Alvin Takeshita, HDOT)
V.	Design Revisions a. purpose b. changes c. impacts	(Austen Drake, SSFM)
VI.	Section 4(f) Discussion	(FHWA)
VII.	MOA Revisions a. updates b. impacts to other stipulations	(FHWA)
VIII.	Break/ NHO Caucus	
IX.	Open Discussion – facilitated by FHWA	
X.	Next Steps a. deadline for comments b. completion of MOA c. data recovery fieldwork d. begin Construction	(FHWA)
XI.	Closing Remarks a. impacts to project b. summary	(Alvin Takeshita, HDOT)

DRAFT

SECTION 106 CONSULTATIONS

Queen Kaahumanu Highway Widening, Phase 2

County of Hawai'i Civic Center

December 4 2012

Attending:
Historic Hawaii Foundation - Kirsten Faulkner (via telephone)
ACHP - Carol Legard (via telephone)
FHWA - Maryann Naber (Federal Preservation Officer – via telephone); Brett Gainer (Legal Counsel – via telephone); Pat Phung, Abe Wong, Roy Siegel
SSFM - Austin Drake
GBI - Steve Bartholomew
SHPD - Mike Vitousek, Nicole Lui
HDOT - Alvin Takeshita, Sal Panem, Henry Kennedy, Robert Taira
Native Hawaiian Legal Corp. - Ashley Obrey
NPS - Aric Arakaki, Kathy Billings, Jeff Zimpfer
Makani Hou - Isaac "Paka" Harp, Fred Cachola
Kona Hawaiian Civic Club - Maurice Kahawaii, Phil Fernandez, Charles Flaherty, Teresa Nakama
RMTC - Stacy Armstrong, Chester Koga

1. Meeting convened by Pat Phung at 1 p.m.

2. Pat provided an overview of the agenda and requested for changes. None proposed.

3. Alvin provided the opening remarks for the meeting and expressed HDOT appreciation and thank you for the participation; he further noted that the purpose of the re-design came about because of comments received on the proposed plans. He further noted that this was a collaboration process and that HDOT wants to meet the needs of the community and persons present because traffic is a concern and HDOT wants to help. Alvin noted that if there are sensitive material to discuss, FHWA is willing to meet in private, if necessary.

4. Plan Review – Austen Drake (SSFM), Austin provide detailed descriptions of the changes proposed for the north and south segments of the project. Austin provided exhibits in plan and cross sections of the historic properties that were impacted by the original design and the results of the proposed changes. He noted that the changes resulted in the protection of 14 of 16 sites along the highway alignment.

   Fred: What were the reasons for the re-design?

Roy: The root of the changes had to do with the challenges we had with getting agreement on the MOA, concern expressed by Carol and ACHP, as well as the letter we received from Ashley on your behalf. We discussed this with the FHWA and HDOT and decided it was in the best interest of the project to look at a re-design to avoid as many historic sites as possible. That's when Austen came into the picture.

Paka: When did the re-design process start?

Pat: The re-design process was started in October. This was an effort to do prudent planning with an opportunity to provide 6-lanes (15-20 years from now); We had to sacrifice certain objectives by doing the re-design but wanted to try to find a balance; we wanted HDOT to reconsider the design and asked if we can move the highway to save more sites, and safety was a concern.

Fred: Happy to see the re-design and re-thinking that occurred at your level. We've been waiting for many months. Thank you.

Austin: Change in the typical sections showing on page 10 of 10; wide median is safer and provide pedestrian shelter. And shoulders for the bicyclers; The after section – shrunk the median, went from 72 feet to 34 feet and no median such as at Hinalani, shoulder went from 10 ft. to 8 ft.; Phase 1 has 72' wide medians.

Fred: Area to take was 90 acres, what is it now with the change?

Austin: Sorry, we don't have that right now.

Charles: Does the change take into account the frontage road and the adjacent sites.

Alvin: There's no formal frontage road proposal at this time.

Charles: The Kona Community Development Plan (adopted in 2008 as ordinance) shows new roads plus the frontage road. An EA was done and received a FONSI. Our community is concerned that plans have been made to develop this area and would like to make sure all plans are considered.

Alvin: Frontage road will hopefully be developed by the County. The mission of HDOT to maintain the function of the highway (provide goods and services from Kawaihae Harbor to Kona).

Austin: Review of plans and sections showing dark blue lines were the original design outer pavement limits; Shaded area is the realigned southbound lanes; Station 5+61+/- - typical representation showing where the archaeological sites are and how we tried to avoid them; Sta 18+92+/- - this area is in a huge fill area. As you can see, a very tall retaining wall is required.

Fred: Significant sites, e.g. Trail to Honokohau, established in Act of 1892 as now belonging to the State. Was there any consideration to provide alternatives for non-vehicular routes on what was a major route?

Charles: Since Act of 1892 applies here, what about maintenance and enhancement of use?

Fred: The trail goes into the NPS, the trail should be considered for an underpass.

Aric: NPS has been advocating a mauka-makai (M-M) connection.

Mike V: How does stipulation 3f (MOA) fit in with these concerns?

Henry: HDOT looked at M-M access, such as drainage culverts, however, HDOT said no because of potential liability. A study will be done when the at-grade crossing is outlived.

Aric: Other jurisdictions use the drainage culverts.

Pat: Comments acknowledged.

Paka: What is the plan for full build out? Makes more sense to provide the culvert now instead of at-grade crossing.

Alvin: For safety concerns, it is not a good idea to provide a drainage culvert for a pedestrian crossing, mainly because of its function.

MaryAnn: We prefer not to sever non-motorized trails. What are the current conditions?

Aric: Objective is to maintain access.

Austin: At the Hinalani Street intersection, Sheet 5, the median was eliminated because of the required double left turn, also there will be a loss of the u-turn because there is not enough space to support a double left by large trucks; further we will not have a pedestrian refuge; Station (STA) 72+09 on the makai side is a retaining wall and a 4 ft. buffer

Mike V: If you have a mauka/makai pedestrian crossing, how will pedestrians be accommodated so that there is not a drop off?

Teresa: Any lava tubes in the area? No data at present.

Charles: Note that Kohanaiki had number of caves.

Fred: Note there were 14 trails in the area, and the trails are important, look at the mauka-makai connectivity. Safety is a big concern.

Paka: How far is it from the crosswalk to the trail? E.g. at 19954 will take 2000 ft. of walking, note that the mauka landowners has set aside land and wants to turn over to the NPS; when will Hinalani be widened?

Paka: Can you give us the distances from the trails to the crosswalks?

Austen: Over 1000 feet to the intersection for the first trail.

Paka: Need to walk over 0.5 miles from the trail to the intersection. We are asking for one of the 14 trails to have an underpass crossing.

Fred: Stanford Carr is currently planning 5000 homes and will preserve the trail on the mauka side. There are 14 trails in the area.

Carol: Impressed on the work done to date, note that the trails are already being impacted by the existing highway.

Teresa: The plans do not show all the improvements to the airport. What happened to area beyond Hinalani? Any lava tubes found in Phase 1?

RT: During phase 1, nothing was encountered.

Teresa: At Ka'iminani there is a lava tube near the intersection, want sub surface data and has petroglyphs; unique site.

Roy: Direction to Austen was to focus on the re-design for the south side only.

Charles: West Hawaii campus impacting caves and burials.

MaryAnn: Appreciate the time taken and the points expressed, thank you for comments.

Brett: Helpful to hear comments.

5. SECTION 4(F) DISCUSSION

Roy noted that a Section 4(f) re-evaluation is taking place to evaluate the impacts and proposed mitigation to the 4(f) properties encountered. The work done on the re-design is reflective of the efforts being taken to avoid the 4(f) properties. Net result was the avoidance and protection of 14 of 16 4(f) properties.

Paka: Note that the BTP was approved and will the re-design change the plans?

Roy: Will take a second look; at best there may be no need for the retaining wall.

Mike V.: The BTP will be reviewed by SHPD, and will take a look at the impact of the proposed re-design.

Roy: There will be more retaining walls along the highway as a result of the protection measures taken. As a result, it is unlikely that a retaining wall at the BTP site would draw unusual attention.

Fred: The second BTP to address a site out of the APE is commendable.

Roy: Owner decided not to move forward at this time.

Kathy: Request the revised DRPP to be provided to NPS for our review. Some sites will not be affected now and NPS would like to look at the wall design for visual impacts.

Chester: An addendum to the inventory survey will be done.

Mike: That's fine.

Fred: In the MOA, we noted on the MOA, there are 75 historic properties. We don't know how many would have been affected adversely under the old design. 19 for Preservation; and 40 Data Recovery and/or preservation; 16 for relocation, avoidance, and no further work. What is the new numbers? How many sites will be saved? Want to know the full impact.

Roy: We will have a final status after this meeting.

Teresa: Why can't we use plain English? Preserve vs. destroyed, relocation, etc.

Pat: We can do that.

Paka: Can you provide the rest of the set to the airport?

6. MOA REVISIONS

Pat: The MOA will contain a discussion of the actions taken to avoid and protect the Section 4(f) properties. All present will have an opportunity to comment. Once the comment period has ended, the revised MOA will be sent out for signature.

Roy: Fred and Ashley requested we relook the 4(f) determination. FHWA did so with ACHP, MaryAnn, Brett, and HDOT; placed sites in 2 categories based on criteria for eligibility –preservation in place (criteria "A" "B" or "C") or archaeological resource (criteria "D"); re-design requested to avoid 4(f) sites (i.e. preservation in place criteria sites).

Fred: Glad the sites are identified as 4(f) properties.

Roy: There are 2 sites that cannot be avoided - Mamalahoa Trail and 19953, but actions will be taken to minimize harm; will be doing work to minimize harm.

Pat: MOA revisions and update, the impacts under the stipulation will not change. We will not revisit the stipulations; will modify some of it as some have become past tense.

Fred: Guidance on the revisions is requested. The NHO recommendations were declined. The MOA has specific mitigations proposed and we brought up others that were worthy, but were not included.

Pat: Mitigation should be based on the re-design. If you want to re-submit, it's up to you.

Paka: A little early to finalize the MOA because not all information is available.

Pat: We would like you to provide comments in 2 weeks.

Paka: I object to the 2 weeks; don't want a deadline. We need information such as the impact to each site, the whole project area, sites destroyed on the north segment, why the entire site not considered.

Roy: The whole area was not included because, upon initial evaluation the north segment did not impact any 4(f) properties, and as previously noted, we are preserving as many sites as possible, keeping cost to a minimum and keeping the project moving. This is our attempt at achieving balance.

Fred: 2 weeks is unreasonable. We need to have all the information. What is reasonable? We had to wait for 8 weeks to get a response from FHWA to the letter sent by Native Hawaiian Legal Corp.

Phil: I agree with Fred. 2 weeks is too short. We have a lot of homework with the Board and members to work through and will need to meet with Fred and Paka.

Pat: Based on your input on the MOA and re-design, we need to move ahead.

FC: Need time to meet with constituency.

MaryAnn: How long will the 4(f) re-evaluation take?

Charles: Any studies done on sub-surface?

Steve: No.

Pat: 4(f) to be done by early January and final by mid-February and the MOA to be done at the same time. You can have 30 days. We are looking at mid-February time frame for the 4(f) evaluation as well as the MOA signatures.

Carol: Can we update table 27 as a quick start?

Roy: Are there things that FHWA can do? To answer Fred's question as to whether the stipulations in the MOA are still open for discussion, this meeting would not be in "good faith" if we weren't willing to consider all comments related to the MOA, including the stipulation measures.

Paka: Give the north segment the same treatment, minimize the footprint. Why not list all sites? Appreciate the re-design effort. Hope you would consider it for the north side. Would appreciate minimizing the footprint altogether. I asked that all the sites be included in the AIS – experts should look at it

Fred: I'm glad there are no reporters here. We want to finish this project and do it pono. I previously requested a joint press release. Could set a precedence.

7. NEXT STEPS

NHO to let us know on the deadline acceptability of the 30-day review window.

What about relation, what's happening, e.g. the sites

Data recovery, status of work?

Construction start – Alvin noted that it is yet to be determined, pending the outcome of the discussions.

Fred: what about the media – what about a joint press release, the public should know.

Roy: We want to start a portion sooner e.g. north, while the south is being re-designed. Everyone needs to consider that one of the reasons that the north segment wasn't re-designed is that in addition to saving cost, it would allow construction to begin sooner given that the design is already complete and there are no 4(f) sites that require shifting the highway to avoid.

Paka: We can consider.

END AT 3 PM

Queen Kaahumanu Highway Widening, Phase 2
Section 106 Consultation Meeting – South Segment Redesign
Tuesday, December 4, 2012 (1:00 PM)
West Hawaii Civic Center
Kona, Hawai'i

DRAFT AGENDA

I. Pule (Fred Cachola, Makani Hou)

II. Housekeeping (FHWA)

III. Introductions (FHWA)

IV. Opening Remarks (Alvin Takeshita, HDOT)
- a. reason for redesign
- b. goals of meeting
- c. FHWA availability for consultation

V. Design Revisions (Austen Drake, SSFM)
- a. purpose
- b. changes
- c. impacts

VI. Section 4(f) Discussion (FHWA)

VII. MOA Revisions (FHWA)
- a. updates
- b. impacts to other stipulations

VIII. Break/ NHO Caucus

IX. Open Discussion – facilitated by FHWA

X. Next Steps (FHWA)
- a. deadline for comments
- b. completion of MOA
- c. data recovery fieldwork
- d. begin Construction

XI. Closing Remarks (Alvin Takeshita, HDOT)
- a. impacts to project
- b. summary

Appendix F

Section 4(f) Summary, Comment and Response Letters; Constructive Use Noise Impact Analysis

Queen Kaahumanu Highway Widening, Phase2
Summary of Comments and Responses to the
Draft Individual Section 4(f) Evaluation

The Draft Individual Section 4(f) Evaluation for the Queen Kaahumanu Highway Widening, Phase 2 was sent to the Department of Interior, which includes the National Park Service (NPS) and U.S. Fish and Wildlife Service (Service), and ACHP for review in June 2013. The Draft Individual Section 4(f) Evaluation was also circulated to the State Historic Preservation Officer (SHPO) in February 2015 for review. The table below provides a summary of the substantive comments that were received along with the responses. Copies of the comment and response letters are provided at the end of this Appendix.

Comment and Response Summary

Agency	Comment	Response
National Park Service	**Page 6, Figure 1.** Area of Potential Effect (APE). The APE for this proposed project includes the legislative boundary of Kaloko-Honokōhau NHP, which is not shown in this figure. Missing are the private, county, and state coastal lands in the Kohanaiki ahupua'a north to Wawahiwaa Point and in the Kealakehe ahupua'a south to Noio Point. Please see the attached boundary map. We provided the ArcGIS shapefiles for the National Park boundary via email on September 6, 2011 (Ms. Kathy Billings, NPS to Mr. Chester Koga, RM Towill; Mr. John Nickelson, Federal Highway Administration (FHWA); and Mr. Henry Kennedy, Hawai'i Department of Transportation (HDOT). Additionally, the figure does not show the APE on the mauka (east) side of the highway fronting the National Park.	The APE map will be revised to include the park boundary which extends over the ocean (makai) and the Hawai'i Department of Transportation (HDOT) right-of-way limits for Queen Ka'ahumanu Highway (mauka).
	Page 11, Paragraph 3. Makani Hou o Kaloko-Honokōhau was formed in 2008.	The year that Makani Hou o Kaloko-Honokōhau was formed in the document is incorrect and will be revised to 2008.
	Page 11, Paragraph 4. The date in the first sentence in this paragraph is incorrect. Please replace "2010" with "2008" in the first sentence. In a May 7, 2008 letter from then park Superintendent Geraldine Bell to Mr. Henry Kennedy of HDOT regarding a variety of NPS concerns with the HDOT Reaffirmation of its 1996 Finding of No Significant Impacts for the Queen Ka'ahumanu Highway Widening, Phase 2, the NPS provided the HDOT with a detailed table describing 20 archeological sites that had been missed in the 1995 Archeological Inventory Survey.	The date of 2010 will be revised to 2008.

Agency	Comment	Response
	Page 16 paragraph 1 and Page 17 Paragraph 1. The text should be clarified to reflect that the work on the Kaloko-Honokōhau NHP intersection and turn lane was completed under the Federal Highway Administration, Advisory Council on Historic Preservation, and Hawai'i State Historic Preservation Officer 1996 Memorandum of Agreement for the Queen Ka'ahumanu Highway Widening, Kailua to Ke'āhole and Queen Ka'ahumanu Highway Intersection Improvements for the Kaloko-Honokōhau National Historical Park projects.	The text will be revised to say "When the Kaloko-Honokōhau National Historical Park visitor's center and parking area were constructed within the last 10 years, the Queen Ka'ahumanu Highway was widened to allow for a left-turn lane into and out of the park and a right-turn into the park by HDOT under the 1999 MOA."
	Preservation of serenity and quiet is essential to the integrity, historical significance and character of Kaloko-Honokōhau NHP. Excessive noise from the highway could impact cultural practices, the National Park/NHL's natural soundscape, and wildlife habitat. The Section 4(f) analysis should include an analysis of noise impacts to the National Park/NHL and demonstrate if there is (or is not) a constructive use of the Park as defined in 23 CFR 774.17. Although Page 2 of the draft includes the definitions of when a "use" of a protected Section 4(f) property occurs, including a constructive use, the analysis does not address these impacts. Therefore, as currently drafted, the 4(f) document is incomplete.	FHWA and HDOT conducted a noise study (see letter enclosure) to assess any potential impacts to the Kaloko-Honokōhau National Historical Park (Kaloko-Honokōhau NHP) in accordance with 23 CFR 772 and the HDOT Highway Noise Policy and Abatement Guidelines and per 23 CFR 774.15 to determine whether there is a constructive use. Noise measurements were taken at three (3) locations specified by the NPS within the Kaloko-Honokōhau NHP that included the a) visitor center, b) cultural resource center and c) a location along an historic trail mid-way between the highway and shoreline. The existing noise environment was measured 24-hours a day for 27 consecutive days in February and March 2014. Models of the future noise environment with and without the project were prepared using the FHWA Traffic Noise Model (TNM). The results are provided in the table within the response letter. Since the NPS expressed in the September 10, 2013 letter that "Preservation of serenity and quiet is essential to the integrity, historical significance and character of Kaloko-Honokōhau NHP," this assertion would place the Park into the "Activity Category A" where noise levels should not exceed 57 dBA in accordance with Noise Abatement Criteria guidelines (NAC) (23 CFR 772). It should be noted however, that Section 4(f) resources are typically represented by the NAC guidelines as falling within "Activity Category C" where levels should not exceed 67 dBA. Based on the finding of existing measured noise levels, there is no exceedance of both the Category A and C noise levels. In the Future scenarios, shown in the table below, without the project, there is an increase in noise level at the visitor center

Agency	Comment	Response
		of 2.4 dBA. The other two measured sites also show an increase in noise levels in the 2.5-2.6 dBA range. With the project, the noise level at the visitor center during the PM peak increases by 2.8 dBA. The other two sites show an increase from 2.6-2.7 dBA. Based on the measurements and predictive model, the noise levels will not exceed the 3 dBA level prescribed in 23 CFR 774.15 (f)(3) where it is determined that a constructive use has not occurred. Consequently, no further action is required
	One option to comply with the requirements of 4(f) would be design the project to mitigate noise impacts from the highway by implementing quiet pavement technology. Therefore, the NPS recommended that the HDOT install quiet pavement next to the park as part of its Section 106 mitigation in lieu of conducting the noise study that HDOT has committed to in the current draft Section 106 MOA. We understand from recent correspondence that FHWA and HDOT feel that installing quiet pavement technology is too costly, although no cost specifics were provided. In light of this, the NPS is requesting that the language of the provision in the MOA dealing with noise impacts be changed as shown on the enclosure to this letter to ensure timely completion of the study and to ensure that any required mitigation be approved by the NPS. Such an approach does not comply with the requirements of 4(f) (as designing the project to mitigate noise impacts might), but it may be the most practical solution to moving the project forward and protecting the resources at Kaloko-Honokōhau NHP. If quiet pavement is selected as the mitigation, the NPS would like to work collaboratively with the Department of Transportation, Federal Highway Administration. The NPS currently has an interagency agreement with the Department of Transportation's John A. Volpe Center and has funding to conduct acoustical studies. NPS would like to use its research funds and relationship with the Volpe Center to conduct studies of the benefits of quiet pavement to park soundscapes at Kaloko-Honokōhau NHP in conjunction with the Queen Kaʻahumanu Highway Widening.	The National Park Service suggested the use of quiet pavement technology in lieu of conducting a noise study, but has stated in correspondence its understanding that the FHWA and the HDOT consider this technology too costly. There are several other important factors that we would need to consider in using this type of technology: 1. The FHWA does not currently recognize pavement type as a factor in reducing traffic noise and therefore, does not allow it as a noise abatement method. 2. Based on a conversation with the Hawaii Asphalt Paving Industry (HAPI), the paving industry in Hawaii does not currently have the technology to produce rubberized asphalt binder and does not have plans to do so in the near future. 3. The HDOT has not executed this technology on any of its major highways. Thus, the performance and maintenance for local aggregates and binders are unknown at this point in time. Typically, for new technologies, the HDOT would have to prototype this technology before implementation on a major thoroughfare.

Agency	Comment	Response
U.S. Fish and Wildlife Service (Service)	The Service recommends that surveys for listed species be conducted by experienced biologists for the entire proposed area of potential effect. These surveys need to include other species as well because Blackburn's sphinx moths also occur on common native and non-native plants depending on life stage. For example, adult moths feed on nectar from native plants, including beach morning glory (Ipmooea pes-caprae), ilie (Plumbago zeylanica), and maiapilo (Cappar sandwichiana), while larvae feed on non-native tree tobacco (Nicotiana glauca) and native aiea (Nothocestrum breviflorum). The Service also recommends that FHWA consult with the Service pursuant to Section 7 of the ESA given the occurrence of listed species and proposed critical habitat within the proposed area of potential effect. Surface and groundwater resources downslope of the project footprint within the project's area of potential effect, may be impacted and include coastal wetlands, anchialine pools, and near-shore marine habitats that support federally listed species (threatened and endangered) and candidates for listing. ESA consultation with the Service may also include technical assistance and recommendations of measures to avoid and minimize harm to trust resources on the subject Section 4(f) lands within and in proximity to the proposed critical habitat at Kaloko-Honokōhau National Historical Park.	FHWA consulted with the Service to discuss the Service's comments. As a result, the Service documented the resolution of the project's informal Endangered Species Act (ESA) consultation in a November 26, 2013 letter. Pursuant to Section 7 of the ESA, the Service provided concurrence that the proposed project may affect, but is not likely to adversely affect listed species or designated critical habitat protected by the ESA, including proposed habitat delineated by Lowland Dry Units 35 and 36. The Service has indicated that no further action is required.
Department of Land and Natural Resources, State Historic Preservation Division	The State Historic Preservation Officer (SHPO) accepts the 4(f) evaluation report as adequate.	

U.S. Department of Transportation
Federal Highway Administration

Hawaii Federal-Aid Division

June 20, 2013

300 Ala Moana Blvd, Rm 3-306
Box 50206
Honolulu, Hawaii 96850
Phone: (808) 541-2700
Fax: (808) 541-2704

In Reply Refer To:
HDA-HI

Shawn K. Alam, Ph.D.
Office of Environmental Policy and Compliance, Office of the Secretary
MS 2462-MIB, U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Subject: Queen Ka'ahumanu Highway Widening, Phase 2
Kealakehe Parkway – Keahole Airport Access Road
Federal-aid Project No. NH-019-1(38) R
Draft Section 4(f) Evaluation for Review

Dear Dr. Alam:

The Federal Highway Administration (FHWA), in conjunction with the Hawaii State Department of Transportation (HDOT), is proposing to construct the Queen Ka'ahumanu Highway Widening, Phase 2, from Kealakehe Parkway to the Keahole Airport from its current two-lane configuration to a divided, four-lane highway. Phase 1 of the same project was completed in 2009; however, while preparing for Phase 2 construction, additional historic resources were identified. As a result, the FHWA and the HDOT consulted under Section 106 of the National Historic Preservation Act.

To accommodate the widening, the proposed project will impact historic properties. As a result of Section 106 consultation with the Hawaii State Historic Preservation Office (SHPO), Native Hawaiian organizations (NHO), the Office of Hawaiian Affairs (OHA), the National Park Service (NPS), and the Historic Hawaii Foundation (HHF), the FHWA has determined that the proposed project would have an adverse effect on historic resources. Working closely with the SHPO and consulted parties to mitigate the adverse effect, an updated Memorandum of Agreement (MOA) is currently being prepared to amend the original MOA created in 1999.

A Section 4(f) evaluation has also been prepared, in accordance with 23 CFR Section 774, to document the project's consideration of alternatives to avoid or minimize the adverse effect on the historic resources. Since the undertaking would result in an adverse effect, a *de minimis* impact finding would not be appropriate. We respectfully request your review of the enclosed Section 4(f) evaluation prepared pursuant to 23 CFR 774.5. If your agency has any comments, please provide them within 45 days of receipt of this letter.

Should you have any questions or need additional information, please do not hesitate to contact me at (808) 541-2314 or via email at roy.siegel@dot.gov.

Sincerely yours,

for Wayne Kamesaki

Roy Siegel, P.E.
Transportation Engineer

Enclosures
By Federal Express

cc: Henry Kennedy, HDOT w/o enclosures
Chester Koga, RM Towill w/o enclosures
Patricia Sanderson Port, National Park Service w/o enclosures
William J. Aila, DLNR w/o enclosures

From: Otani, Meesa (FHWA)
To: fredcachola@aol.com; phil@philfernandez.com; imua-hawaii@hawaii.rr.com; ashley.obrey@nhlchi.org; Aric_Arakaki@nps.gov; Jeff_Zimpfer@NPS.gov; keolal@oha.org; mkahawaii@hawaii.rr.com; teresamlee51@gmail.com; clegard@achp.gov; Kiersten@historichawaii.org; Tammy_Duchesne@nps.gov; oneheart@aloha.net; stacya@rmtowill.com; Karen.Chun@hawaii.gov; Alvin.Takeshita@hawaii.gov; Sterling.Chow@hawaii.gov; Robert.Taira@hawaii.gov; Jadine.Urasaki@hawaii.gov; Marshall.Ando@hawaii.gov; adrake@ssfm.com; chesterk@rmtowill.com; Sal.Panem@hawaii.gov; Sosa, Mayela (FHWA); Wong, Abraham (FHWA); Siegel, Roy (FHWA); Phung, Pat (FHWA); Naber, MaryAnn (FHWA); Gainer, Brett (FHWA)
Subject: QK2 - Response to Mitigation Proposals and Distribution of MOA for Review
Date: Tuesday, July 02, 2013 1:00:40 PM

You have received 10 secure files from meesa.otani@dot.gov.
Use the secure links below to download.

On behalf of Roy Siegel of the Federal Highway Administration, we are transmitting the files in a different format to see if everyone can open the files this way. Please let me or Roy know if you cannot and we can transmit differently.

Thank you!
Meesa Otani

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Draft Individual Section 4(f) 6-13-2013.pdf
4,079.87 KB, Fingerprint: 938eb56242d143658c473623fb3f0155 (What is this?)

NH-019-1(38)R DOI Review Section 4(f) Transmittal Letter Jun 20 2013 Reduced Size for E-Mail.pdf
47.22 KB, Fingerprint: 7c49e35918fd421a4ed2979ec89be377 (What is this?)

Section 4(f) Appendix A SHPD Acceptance 8-21-2012 AIS Reduced Size for E-Mail.pdf
322.39 KB, Fingerprint: 0d874e951f5375be6ceb2fa69d9875f8 (What is this?)

Section 4(f) Appendix B Trails Description Reduced Size for E-Mail.pdf
3,861.00 KB, Fingerprint: 7291bd8131e4de841fc5be216cfa57f8 (What is this?)

Section 4(f) Appendix C X-sections all sites v2 Reduced Size for E-Mail.pdf
948.96 KB, Fingerprint: d529df41525d8410689129e6be27747b (What is this?)

Section 4(f) Appendix D Plan View of Arch Sites ALL.pdf
1,412.79 KB, Fingerprint: fdc53283b751cb88ed242b2246107897 (What is this?)

Section 4(f) Appendix E Ltrs to SHPD and Response Reduced Size for E-Mail.pdf
473.20 KB, Fingerprint: 104048f5e617d264759812c9d43179b4 (What is this?)

Section 4(f) Appendix F CONSULTATION SUMMARY Chronology Log Reduced Size for E-Mail.pdf
248.03 KB, Fingerprint: 6dff1d683c65c7bbf41b0546ef414a57 (What is this?)

Section 4(f) Appendix G Queen K NHO Mtg 12 04 12 Proposed Agenda and minutes.pdf
351.40 KB, Fingerprint: c1a3420841bc41bd30a3e21d6ccfa16c (What is this?)

Section 4(f) Cover Page.pdf
489.33 KB, Fingerprint: 13a99069d04c831a3ed6fa2f626686a5 (What is this?)

United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
300 Ala Moana Blvd., Box 50165
Room 6-226
Honolulu, Hawaii 96850

IN REPLY REFER TO
L7621 (KAHO)

September 10, 2013

Mr. Roy Siegel, Transportation Engineer
Federal Highway Administration - Hawaii Division
300 Ala Moana Boulevard, Room 3-306
Box 50206
Honolulu, Hawaii 96850

Re: Comments Regarding Queen Ka'ahumanu Highway Widening Project – Phase 2 – 4(f) Evaluation and Draft Memorandum of Agreement (ER 13/0454)

Dear Mr. Siegel:

Transmitted herewith are comments from the National Park Service and also the U.S. Fish and Wildlife Service regarding the above-referenced project.

Thank you for the opportunity to comment on Draft Section 4(f) Evaluation for the Queen Kaahumanu Highway Widening, Phase 2 project. This highway project is adjacent to Kaloko-Honokōhau National Historical Park (NHP) and the Honokohau Settlement National Historical Landmark (NHL) and could directly impact the NHP/NHL, its resources and its visitors. The National Park Service (NPS) is tasked with preserving the natural and cultural resources and values of the national park for the enjoyment, education, and inspiration of this and future generations. We have the following comments on the Draft Section 4(f) Evaluation document.

Page 6, Figure 1. Area of Potential Effect (APE). The APE for this proposed project includes the legislative boundary of Kaloko-Honokohau NHP, which is not shown in this figure. Missing are the private, county, and state coastal lands in the Kohanaiki ahupuaa north to Wawahiwaa Point and in the Kealakehe ahupuaa south to Noio Point. Please see the attached boundary map. We provided the ArcGIS shapefiles for the National Park boundary via email on September 6, 2011 (Ms. Kathy Billings, NPS to Mr. Chester Koga, RM Towill; Mr. John Nickelson, Federal Highway Administration; and Mr. Henry Kennedy, Hawaii Department of Transportation (HDOT)). Additionally, the figure does not show the APE on the mauka (east) side of the highway fronting the National Park.

Page 11, Paragraph 3. Makani Hou o Kaloko Honokohau was formed in 2008.

Page 11, Paragraph 4. The date in the first sentence in this paragraph is incorrect. Please replace "2010" with "2008" in the first sentence. In a May 7, 2008 letter from then park Superintendent
Geraldine Bell to Mr. Henry Kennedy of HDOT regarding a variety of NPS concerns with the HDOT Reaffirmation of its 1996 Finding of No Significant Impacts for the Queen Kaahumanu Highway Widening, Phase 2, the NPS provided the HDOT with a detailed table describing 20 archeological sites that had been missed in the 1995 Archeological Inventory Survey.

Page 16 paragraph 1 and Page 17 Paragraph 1. The text should be clarified to reflect that the work on the Kaloko-Honokohau NHP intersection and turn lane was completed under the Federal Highway Administration, Advisory Council on Historic Preservation, and Hawaii State Historic Preservation Officer 1996 Memorandum of Agreement for the Queen Kaahumanu Highway Widening, Kailua to Keahole and Queen Kaahumanu Highway Intersection Improvements for the Kaloko-Honokohau National Historical Park projects.

Preservation of serenity and quiet is essential to the integrity, historical significance and character of Kaloko-Honokōhau NHP Excessive noise from the highway could impact cultural practices, the National Park/NHL's natural soundscape, and wildlife habitat. The Section 4(f) analysis should include an analysis of noise impacts to the National Park/NHL and demonstrate if there is (or is not) a constructive use of the Park as defined in 23 CFR 774.17. Although Page 2 of the draft includes the definitions of when a "use" of a protected Section 4(f) property occurs, including a constructive use, the analysis does not address these impacts. Therefore, as currently drafted, the 4(f) document is incomplete.

One option to comply with the requirements of 4(f) would be design the project to mitigate noise impacts from the highway by implementing quiet pavement technology. Therefore, the NPS recommended that the HDOT install quiet pavement next to the park as part of its Section 106 mitigation in lieu of conducting the noise study that HDOT has committed to in the current draft Section 106 MOA. We understand from recent correspondence that FHWA and HDOT feel that installing quiet pavement technology is too costly, although no cost specifics were provided. In light of this, the NPS is requesting that the language of the provision in the MOA dealing with noise impacts be changed as shown on the enclosure to this letter to ensure timely completion of the study and to ensure that any required mitigation be approved by the NPS. Such an approach does not comply with the requirements of 4(f) (as designing the project to mitigate noise impacts might), but it may be the most practical solution to moving the project forward and protecting the resources at Kaloko-Honokōhau NHP.

If quiet pavement is selected as the mitigation, the NPS would like to work collaboratively with the Department of Transportation, Federal Highway Administration. The NPS currently has an interagency agreement with the Department of Transportation's John A. Volpe Center and has funding to conduct acoustical studies. NPS would like to use its research funds and relationship

with the Volpe Center to conduct studies of the benefits of quiet pavement to park soundscapes at Kaloko-Honokōhau NHP in conjunction with the Queen Kaahumanu Highway Widening.

We appreciate the opportunity to comment and look forward to working with you to resolve our concerns. Please contact Tammy Duchesne, Superintendent at Kaloko-Honokohau National Historical Park at tammy_duchesne@nps.gov or Vicki McCusker, Overflights Program Manager, Natural Sound & Night Skies Division, at vicki_mccusker@nps.gov.

Sincerely,

M. Melia Lane-Kamahele
Manager – Pacific Islands Office

Enclosures:
1. MOA Proposed Revised Language
2. Comments from U.S. Fish & Wildlife Service

Ecc: patricia_port@ios.doi.gov
Tammy_duchesne@nps.gov

Enclosure 1 – MOA - Proposed Revised Language

C. The HDOT shall determine traffic noise impacts from Queen Ka'ahumanu Highway on the Honokōhau Settlement National Historic Landmark and the Kaloko-Honokōhau National Historical Park. The study shall include field measurements, using an ANSI Type 1 integrating sound level meter, before highway construction and within ninety (90) days of the opening of the newly constructed roadway to public use. The analysis shall also include design year traffic noise impacts according to the requirements of 23 CFR 772 by using an FHWA approved environmental noise mapping tool such as the FHWA Traffic Noise Model (TNM) that can account for topography, ground characteristics, and atmospheric absorption according to ISO 9613. For this study, baseline ambient noise measurements shall be made at sensitive locations for a minimum duration to achieve 25 days of good data. Noise impacts shall be assessed at the Hale Ho'okipa Visitor Contact Station, the Cultural Center site, and at three additional sites in visitor/practitioner use areas to be chosen by NPS officials. If traffic noise exceeds the noise abatement criteria (NAC) specified in 23 CFR 772 for Activity Category A (lands on which serenity and quiet are of extraordinary significance), highway noise mitigation measures options shall be evaluated by HDOT in consultation with the NPS officials. HDOT shall implement the noise mitigation measures approved by the NPS.

Enclosure 2 – U.S. Fish and Wildlife Service Comments

Newton, Jess <jess_newton@fws.gov>
to me, Tim, Chelsie, Paula
07-25-13

Aloha Melia,
This email contains USFWS comments for inclusion in the cooperative all-DOI comment letter pursuant to Section 4(f) of the Department Transportation Act; specifically for the proposed widening of Queen Kaahumanu Highway, Hawaii Island. Thank you for coordinating the comment letter and please let us know if you need any additional information.

Best Regards,
Jess Newton

---------- Forwarded message ----------
From: **Langer, Tim** <tim_langer@fws.gov>
Date: Thu, Jul 25, 2013 at 10:28 AM
Subject: TA due today
To: Jess Newton <jess_newton@fws.gov>

Dear Jess,

Our response is due today via email to Melia_Lane-Kamahele@nps.gov

Please cc: me for my admin. records. Thank you! Tim.

p.s. The hard copy folder with project information is on your desk.

In Reply Refer To:
2013-TA-0346

Melia Lane-Kamahele
National Park Service
Pacific West Region (PWR-H)
Honolulu, Hawaii

Dear Ms. Melia Lane-Kamahele:

This response is provided for inclusion within the Department of the Interior's technical assistance submitted pursuant to Section 4(f) of the Department of Transportation Act of 1996 [49 U.S.C. 303] and the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat. 852]. The draft Section 4(f) involves the proposed widening of Queen Kaahumanu Highway (Phase 2) from Kealakehe Parkway to the Keahole Airport, Kailua-Kona, Hawaii. The United States Fish and Wildlife Service (Service) is responding under the following authorities mandating that the Service review and provide recommendations to conserve trust resources: the Fish and Wildlife Coordination Act of 1934 [16 U.S.C. 661 et seq.; 48 Stat. 401], as amended; the Federal Clean Water Act [33 U.S.C. 1251 *et seq.*; 62 stat. 1155], as amended; the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], as amended (ESA); and the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as amended.

The proposed action is to widen the existing highway from its current two-lane configuration to a divided four-lane facility with a landscaped median. Improvements include re-paving the existing highway, construction of two additional travel lanes, paved shoulders, and drainage improvements, traffic signals at intersections, installation of guardrails, landscaped plantings, highway lighting, and relocation or installation of utilities. The lead Federal agency for the proposed action (Applicant) is the Federal Highway Administration (FHA), in conjunction with the Hawaii State Department of Transportation.

The purpose of the proposed action is to relieve existing congestion on Queen Kaahumanu Highway and to accommodate future demand within the existing 300-foot right-of-way. The proposed action includes numerous activities that may result in both direct and indirect impacts to fish and wildlife resources on Hawaii Island. Impacts are anticipated from project construction, future development in the area as a result of the widened highway, increased roadway drainage, and other hydrologic modifications.

Listed Species

Within the designated area of potential effect for this project, there may be 14 endangered species including eight animal species: the Blackburn's sphinx moth (*Manduca blackburni*), green sea turtle (*Chelonia mydas*), Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian gallinule (*Gallinula chloropus sandvicensis*), Hawaiian hoary bat (*Lasiurus cinereus semotus*), Hawaiian stilt (*Himantopus mexicanus knudseni*), and hawksbill sea turtle (*Eretmochelys imbricata*); and six plant species: *Bidens micrantha* ssp.*ctenophylla*, *Caesalpinia kavaiensis, Cyperus fauriei*, *Neraudia ovata*, *Nothocestrum breviflorum*, and *Pleomele hawaiiensis*. Two candidate species that may also be present are the orange-black megalagrion damselfly (*Megalagrion xanthomelas*) and anchialine pool shrimp (*Metabetaeus lohena*) (USFWS 2012).

Critical Habitat

In addition to the presence of listed species, portions of the west side of the proposed project construction area may fall within Lowland Dry Unit 36 of federally proposed critical habitat for *Bidens micrantha* ssp. *ctenophylla*, *Isodendrion pyrifolium*, and *Mezoneuron kavaiense*(USFWS 2012). Additional information is required from the applicant to identify the exact location of the proposed right-of-way for the section abutting the Kaloko-Honokohau National Historical Park to determine the amount of critical habitat that may be impacted by the proposed action.

Conclusion

The Service recommends that surveys for listed species be conducted by experienced biologists for the entire proposed area of potential effect. These surveys need to include other species as well because Blackburn's sphinx moths also occur on common native and non-native plants depending on life stage. For example, adult moths feed on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*), while larvae feed on non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nothocestrum breviflorum*).

The Service also recommends that FHA consult with the Service pursuant to Section 7 of the ESA given the occurrence of listed species and proposed critical habitat within the proposed area of potential effect. Surface and groundwater resources downslope of the project footprint, but within the project's area of potential effect, may be impacted and include coastal wetlands, anchialine pools, and near-shore marine habitats that support federally listed species (threatened and endangered) and candidates for listing. ESA consultation with the Service may also include technical assistance and recommendations of measures to avoid and minimize harm to trust resources on the subject Section 4(f) lands within and in proximity to the proposed critical habitat at Kaloko-Honokohau National Historical Park.

Thank you for the opportunity to comment! Please contact biologists Chelsie Javar (phone: 808-792-9400, email: chelsie_javar@fws.gov) or Dr. Tim Langer (phone: 808-792-9462, email: tim_langer@fws.gov) for further guidance.

Reference:

[USFWS] United States Fish and Wildlife Service. 2012. Endangered and threatened wildlife and plants; listing 15 species on Hawaii Island as endangered and designating critical habitat for three species; proposed rule. Federal Register 77 (201): 63,928-64,018.

U.S.Department
of Transportation
Federal Highway Administration

Hawaii Federal-Aid Division

300 Ala Moana Blvd, Rm 3-306
Box 50206
Honolulu, Hawaii 96850
Phone: (808) 541-2700
Fax: (808) 541-2704

January 30, 2014

In Reply Refer To:
HDA-HI

M. Melia Lane-Kamahele
Manager – Pacific Islands Office
U.S. Department of the Interior, National Park Service
300 Ala Moana Blvd., Box 50165
Honolulu, HI 96850

Subject: Section 4(f) Evaluation and Draft Memorandum of Agreement (MOA)
Queen Ka'ahumanu Highway Widening, Phase 2
Kealakehe Parkway – Keahole Airport Access Road
Federal-aid Project No. NH-019-1(38) R

Dear Ms. Lane-Kamahele:

Thank you for your letter dated September 10, 2013, regarding the Draft Section 4(f) Evaluation for the Queen Ka'ahumanu Highway Widening, Phase 2, from Kealakehe Parkway to the Keahole Airport project. We apologize for the delay in responding to the comments.

We have the following responses to your comments regarding the Draft Section 4(f) Evaluation document:

Page 6, Figure 1. Area of Potential Effect (APE). The APE map will be revised to include the park boundary which extends over the ocean (makai) and the Hawaii Department of Transportation (HDOT) right-of-way limits for Queen Ka'ahumanu Highway (mauka).

Page 11, Paragraph 3. The year that Makani Hou o Kaloko Honokohau was formed in the document is incorrect and will be revised to 2008.

Page 11, Paragraph 4. The date of 2010 will be revised to 2008.

Page 16, Paragraph 1 and Page 17, Paragraph 1. The text will be revised to say "When the Kaloko-Honokohau National Historical Park visitor's center and parking area were constructed within the last 10 years, the Queen Ka'ahumanu Highway was widened to allow for a left-turn lane into and out of the park and a right-turn into the park by the HDOT under the 1999 MOA." As discussed during the teleconference on November 25, 2013, between the Federal Highway Administration (FHWA) and the National Park Service, the FHWA and the HDOT will be conducting a noise study to assess any potential impacts to the Kaloko-Honokohau National Historical Park in accordance with 23 CFR 772 and the HDOT Highway Noise Policy and

Abatement Guidelines. The noise study will also be used in determining if there is a constructive use per 23 CFR 774.15.

The National Park Service suggested the use of quiet pavement technology in lieu of conducting a noise study, but has stated in correspondence its understanding that the FHWA and the HDOT consider this technology too costly. There are also several other important factors that we would need to consider in using this type of technology:

1. The FHWA does not currently recognize pavement type as a factor in reducing traffic noise and therefore, does not allow it as a noise abatement method.
2. Based on a conversation with the Hawaii Asphalt Paving Industry (HAPI), the paving industry in Hawaii does not currently have the technology to produce rubberized asphalt binder and does not have plans to do so in the near future.
3. The HDOT has not executed this technology on any of its major highways. Thus, the performance and maintenance for local aggregates and binders are unknown at this point in time. Typically, for new technologies, the HDOT would have to prototype this technology before implementation on a major thoroughfare.

If there are any questions or if additional information is needed, please contact me by phone at (808) 541-2316 or by email at meesa.otani@dot.gov.

Sincerely yours,

Meesa J. Ota

Meesa Otani
Environmental Engineer

cc: Henry Kennedy (HDOT), Sterling Chow (HDOT), Chester Koga (R.M. Towill Corporation)

U.S. Department of Transportation
Federal Highway Administration

Hawaii Federal-Aid Division

300 Ala Moana Blvd, Rm 3-306
Box 50206
Honolulu, Hawaii 96850
Phone: (808) 541-2700
Fax: (808) 541-2704

April 15, 2015

In Reply Refer To:
HDA-HI

Ms. M. Melia Lane-Kamahele
Manager – Pacific Islands Office
United States Department of the Interior, National Park Service
300 Ala Moana Blvd, Rm. 6-226 (Box 50165)
Honolulu, HI 96850

Subject: Section 4(f) Evaluation
Queen Ka'ahumanu Highway Widening, Phase 2
Kealakehe Parkway to Keahole Airport Access Road
Federal-aid Project No. NH-019-1(038)R

Dear Ms. Lane-Kamahele:

Thank you for your letter dated September 10, 2013, regarding the Draft Section 4(f) Evaluation for the Queen Ka'ahumanu Highway Widening, Phase 2, Kealakehe Parkway to Keahole Airport Access Road project. We apologize for the delay in responding. As a follow up to our response dated January 30, 2014, we offer the following response in regard to the noise study conducted to determine if there is a constructive use under Section 4(f) per 23 CFR 774.15:

Page 16, Paragraph 1 and Page 17, Paragraph 1. The Federal Highway Administration (FHWA) and the Hawaii Department of Transportation (HDOT) conducted a noise study (enclosed) to assess any potential impacts to the Kaloko-Honokohau National Historical Park in accordance with 23 CFR 772 and the HDOT Highway Noise Policy and Abatement Guidelines and per 23 CFR 774.15 to determine whether there is a constructive use.

Noise measurements were taken at three (3) locations specified by the National Park Service (NPS) within the Kaloko-Honokōhau National Historical Park that included the a) visitor center, b) cultural resource center and c) a location along an historic trail mid-way between the highway and shoreline. The existing noise environment was measured 24-hours a day for 27 consecutive days in February and March 2014. Models of the future noise environment with and without the project were prepared using the FHWA Traffic Noise Model (TNM). The results are provided in the table below.

Since the NPS expressed in the September 10, 2013, letter that "Preservation of serenity and quiet is essential to the integrity, historical significance and character of Kaloko-Honokōhau NHP," this assertion would place the Park into the "Activity Category A" where noise levels should not exceed 57 dBA in accordance with Noise Abatement Criteria guidelines (NAC) (23 CFR 772). It should be noted however, that Section 4(f) resources are typically represented by

the NAC guidelines as falling within "Activity Category C" where levels should not exceed 67 dBA. Based on the finding of existing measured noise levels, there is no exceedance of both the Category A and C noise levels. In the Future scenarios, shown in the table below, without the project, there is an increase in noise level at the visitor center of 2.4 dBA. The other two measured sites also show an increase in noise levels in the 2.5-2.6 dBA range. With the project, the noise level at the visitor center during the PM peak increases by 2.8 dBA. The other two sites show an increase from 2.6-2.7 dBA.

Based on the measurements and predictive model, the noise levels will not exceed the 3 dBA level prescribed in 23 CFR 774.15 (f)(3) where it is determined that a constructive use has not occurred. Consequently, no further action is required.

Summary of Existing and Future Traffic Noise Projections (dBA)

Row ID	Noise Receptor	Hale Ho'okipa Visitor Center		Ala Hue Hue Trail		Na Leo Kahiko Cultural Center	
		AM	PM	AM	PM	AM	PM
(x)	Existing (2014)	54.1	54.8	47.8	48.3	43.5	44.1
(y)	Future No Build (2035)	56.5	57.4	50.2	50.9	45.9	46.6
(z)	Future Build (2035)	56.8	57.6	50.3	51.0	46.0	46.7
(y-x)	Future increase without project	2.4	2.6	2.4	2.6	2.4	2.5
(z-x)	Future increase with project	2.7	2.8	2.5	2.7	2.5	2.6
(z-y)	**Future increase due to project**	**0.3**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**
	Distance to future highway EOP	805 feet		1,905 feet		3,605 feet	

Source: DLAA, 2014

If there are any questions or if additional information is needed, please contact me by phone at (808) 541-2316 or by email at meesa.otani@dot.gov.

Sincerely yours,

Meesa J. Otani

Meesa Otani
Environmental Engineer

Enclosure

cc: Henry Kennedy (HDOT), Sterling Chow (HDOT), Chester Koga (R.M. Towill Corporation), Rachel Adams (Parsons Brinckerhoff)

Environmental Noise Study
Queen Kaahumanu Highway Widening Phase 2
in the vicinity of Kaloko-Honokohau National Historic Park
North Kona, Island of Hawaii, Hawaii

February 2015

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1.0 EXECUTIVE SUMMARY

1.1 The Queen Kaahumanu Highway Widening Project includes design and construction services to widen Queen Kaahumanu from the existing two lanes into a four lane divided highway. The project corridor is approximately 4.5 miles long and is located in the North Kona District of the County of Hawaii. Phase 2 begins at approximately 1150 feet south of Kealakehe Parkway and extends to approximately 1700 feet north of Keahole Airport Road. This noise study focuses on the traffic noise impacts from the highway widening project to the Kaloko-Honokohau National Historical Park.

1.2 While various local and federal agencies have established guidelines and standards for assessing environmental noise impacts, this noise study was initiated to address FHWA 23 CFR 774 requirements and help to determine if a constructive use of a Section 4(f) property occurs.

1.3 The project area is currently exposed to varying daytime ambient noise levels, depending on the proximity to Queen Kaahumanu Highway. The trails that intersect the highway, e.g., Kings Trail, Ala Hue Hue, and Ala Kahako, are exposed to noise levels around 65 dBA at a distance of 150 feet from the highway. However, many of the noise sensitive sites within the park are sufficiently far from the highway that traffic noise is not a dominant noise source. The ambient noise environment at these sites is highly dependent on natural noise sources such as wind, surf, birds, and insects. Noises specific to the park such as park ranger ATVs, cultural activities at the Hale Hookipa Visitor Center or the Na Leo Kahiko Cultural Center, and hikers are also audible throughout the park. Generally, the site is very quiet where the noise levels range from 35 to 59 dBA.

1.4 Atmospheric conditions specific to the island of Hawaii shift daytime on-shore wind patterns to higher speed off shore wind at night. Because of these atmospheric conditions, man-made noises from Queen Kaahumanu Highway, the light industrial area, and the quarry are audible at off peak hours and nighttime hours as far away as 2000 feet from the highway. Aircraft flyovers were also audible due to the proximity of the site to the airport.

1.5 Existing and future noise levels were predicted using the Federal Highway Administration Traffic Noise Model (TNM 2.5) using the procedures outlined in the FHWA and HDOT Noise Policy and Abatement Guidelines. Traffic noise was calculated at three noise sensitive receptor locations, Hale Hookipa Visitor Center, Ala Hue Hue Trail, and Na Leo Kahiko Cultural Center. Future traffic noise levels at all three locations are expected to be below the FHWA Noise Abatement Criteria of 67 dBA. Furthermore, the increase in traffic noise due to the widening of Queen Kaahumanu Highway is less than 1 dB at all receiver locations.

2.0 PROJECT OVERVIEW

The Queen Kaahumanu Highway Widening Project includes design and construction services to widen Queen Kaahumanu from the existing two (2) lanes into a four (4) lane divided highway. Other work consists of, but is not limited to the design and construction of: new pavements and pavement markings; the drainage systems; sidewalks; the traffic signal systems and traffic signs; guardrails and landscape plantings; the highway lighting plus the relocation and installation of utilities.

The project corridor is approximately 4.5 miles long and is located in the North Kona District of the County of Hawaii. Phase 2 begins at approximately 1150 feet south of Kealakehe Parkway and extends to approximately 1700 feet north of Keahole Airport Road. However, this noise study focuses on the traffic noise impacts from the highway widening project to the Kaloko-Honokohau National Historical Park. While various local and federal agencies have established guidelines and standards for assessing environmental noise impacts, this noise study was initiated to address FHWA 23 CFR 774 requirements and help to determine if a constructive use of a Section 4(f) property occurs.

3.0 NOISE STANDARDS

While various local and federal agencies have established guidelines and standards for assessing environmental noise impacts, this noise study was initiated to determine whether a constructive use occurs within the Kaloko-Honokohau National Historical Park as a result of the proposed project, as defined by the FHWA regulation 23 CFR 774 [Reference 1]. A constructive use may occur when a transportation project does not physically incorporate land, but substantially impairs the historic features of a Section 4(f) property that qualify the resource for protection (23 CFR 774.15). Applicable regulations governing Section 4(f) resources and environmental noise impacts are as described in Section 3.1 below. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

3.1 23 CFR 774

Per 23 CFR 774.15(a), “A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished.”

23 CFR 774.15(f)(3) defines certain situation in which a “constructive use” does not occur, specifically when projected traffic noise levels are in exceedance of the FHWA noise abatement criteria due to existing high noise levels, but the increase in the projected noise levels if the project were constructed (i.e., “Build” condition) is 3 dBA or less when compared to projected noise levels if the project were not constructed (i.e., “No Build” condition). Refer to Section 3.2 and Figure 1 below for further explanation of the noise abatement criteria as it relates to the Kaloko-Honokohau National Historical Park.

3.2 23 CFR 772

The FHWA regulation 23 CFR 772 contains highway traffic noise abatement criteria (NAC) for seven land use activity categories and assigns corresponding maximum hourly equivalent sound levels for traffic noise exposure [Reference 2, 3]. The NAC for all seven categories are listed in Figure 1. The Kaloko-Honokohau National Historical Park would fall under Category C, defined for parks, trails, recreation areas, or Section 4(f) sites, and has a corresponding maximum exterior hourly equivalent sound level ($L_{eq(h)}$) of 67dBA.

4.0 EXISTING ACOUSTICAL ENVIRONMENT

Two types of noise measurements were conducted to assess the existing acoustical environment in the vicinity of the project location. The first noise measurement type consisted of continuous long-term ambient noise level measurements. The second type of noise measurement was short-term and included traffic counts. The purpose of the short-term noise measurements and corresponding traffic counts is to calibrate a traffic noise prediction model. Guidelines and recommended procedures from the FHWA [Reference 4] for instrumentation selection, site selection, and measurement procedures were followed when conducting the field measurements.

The methodology, location, and results for each of the measurements are described below and the measurement locations are illustrated in Figure 2. Photographs of the measurements locations are provided in Appendix B.

4.1 Long Term Noise Measurements

Continuous long-term ambient noise level measurements were conducted to assess the existing acoustical environment of Kaloko-Honokohau National Historic Park. Long-term measurements (taken continuously over the course of multiple days) offer a baseline for establishing existing ambient noise levels in the area and are used for estimating future noise levels by adding the ambient levels to other noise levels generated from the proposed project.

4.1.1 Long-Term Noise Measurement Procedure

Long term noise level measurements were conducted in three locations within the boundaries of the Kaloko-Honokohau National Historic Park. The measurement period was from January 15, 2014 to February 10, 2015. In accordance with National Park Services protocol, continuous, 1 second equivalent sound levels ($L_{eq(s)}$) were recorded for approximately 27 days at each location. Hourly equivalent sound levels ($L_{eq(h)}$) were also recorded. The measurements were taken using three Larson-Davis, Model 831, Type 1 integrating sound level meters together with Larson-Davis, Model 377B20 Type 1 Microphones. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. This equipment satisfies the ANSI S1.4-1983 specification and has been certified by the manufacturer within the recommended 2-year calibration period. In addition to sound levels, wind speed and direction data and sound recordings were collected for the entire period. The microphones and anemometers were mounted on tripods, approximately 6 feet above grade. Windscreens covered the microphones during the entire measurement period. The sound level meters and recorders were secured in weather-resistant cases.

4.1.2 Long-Term Noise Measurement Locations

Location A: The sound level meter was located near the Hale Hookipa Visitor Center, approximately 900 feet west of the center line of Queen Kaahumanu Highway. Dominant noise sources included vehicular traffic from the highway. Secondary noise sources included aircraft flyovers, birds, and wind.

Location B: The sound level meter was located near the center of the park adjacent to the Ala Hue Hue Trail. This location was just over 2000 feet west of the highway.

Location C: The sound level meter was located near the Na Leo Kahiko Cultural Center at the north end of the project site, approximately 3700 feet west of the highway.

4.1.3 Long-Term Noise Measurement Results

The measured hourly equivalent sound levels ($L_{eq(h)}$) and 90 percent exceedance level ($L_{90(h)}$) are graphically presented in Figures 3, 4 and 5 for each location. The graphs show the period from January 15, 2014 to January 21, 2014 which is a representative week during the total measurement period of 27 days.

The ambient noise environment at the Kaloko-Honokohau National Historic Park is relatively dynamic and highly dependent on environmental noise sources such as wind, surf, birds, and insects. Atmospheric conditions specific to the island of Hawaii shift daytime on-shore wind patterns to higher speed off shore wind at night. This creates a counterintuitive phenomenon where noise levels increase throughout the night and drop off in the morning.

Because of these atmospheric conditions, man-made noises from Queen Kaahumanu Highway, the light industrial area, and the quarry were audible at off peak hours and as far away as Location B (over 2000 feet from the highway). Aircraft flyovers were audible throughout the site due to the close proximity to Kona International Airport. Noises specific to the site such as park ranger ATVs, cultural activities at the Hale Hookipa Visitor Center or the Cultural Center, minor construction at the Kaloko fishpond, and trail users were audible at all measurement locations but did not significantly contribute to the hourly averaged sound levels.

Generally, the site is very quiet where the noise levels range from 35 to 59 dBA. The day-night level (L_{dn}) which was averaged over the entire measurement period was generally 55 dBA throughout the site. The range of $L_{eq(h)}$ during the day (7:00 AM to 10:00 PM) and during the night (10:00 PM to 7:00 AM) and average L_{dn} is summarized for each location in Table 1 below.

Table 1. Summary of Noise Measurement Results (dBA)

	Daytime	**Nighttime**	**Average**
Measurement Location	**$L_{eq(h)}$ Range**	**$L_{eq(h)}$ Range**	**L_{dn}**
A – Hale Hookipa Visitor Center	35-57	39-54	55
B – Ala Hue Hue Trail	35-57	38-56	55
C – Na Leo Kahiko Cultural Center	35-59	38-56	54

4.2 Short Term Noise Measurements

An approximate 30-minute equivalent sound level was measured at one location (D) during the AM and PM peak traffic hours. The sound level meter was located on the east side of Queen Kaahumanu Highway near the Allied Quarry Road intersection, approximately 80 feet from the center line. Vehicular traffic counts and traffic mix were documented during the measurement period. The noise measurements were taken using a Larson-Davis Laboratories, Model 831, Type-1 integrating sound level meter together with a Larson-Davis, Model 377B20 Type 1 Microphone. This equipment satisfies the ANSI S1.4-1983 specification and has been certified by the manufacturer within the recommended 2-year calibration period. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period. As with the long term measurements, the microphone and sound level meter were mounted on a tripod and a windscreen covered the microphone.

5.0 POTENTIAL NOISE IMPACTS

5.1 Highway Traffic Noise Analysis

5.1.1 Traffic Noise Model Overview

Existing and future (2035) noise levels were predicted using the Federal Highway Administration Traffic Noise Model (TNM) [Reference 5]. Typical input parameters include traffic volumes and speeds, conceptual alignment design, receptor locations, and terrain features. Peak hour traffic volumes and posted roadway speeds were provided by the Traffic Consultant [Reference 6] and are summarized in Appendix C. The alignment design was provided for the existing Queen Kaahumanu highway and the proposed widened highway. Traffic was modeled on the centerlines of the existing northbound and southbound travel lanes for the existing condition. For the future condition, lane by lane volume data was not available from the Traffic Consultant. Therefore, the center of the two northbound travel lanes and the center of the two southbound travel lanes were used to model traffic. Roadway shoulders and medians were not modeled.

For the purposes of this noise analysis, the terrain was assumed to be gently sloping with no significant shielding features so topographical contours were not included in the model, which would be considered a worst-case condition. In addition, the terrain surrounding the project corridor was assumed to be hard (i.e., acoustically reflective) since much of the land is lava rock with minimal vegetative ground cover. An average pavement type was used, per FHWA requirements for highway noise analysis. Sound levels predicted at the receptor locations were calculated at approximately 5 feet above ground to represent the areas where frequent human activity occurs.

A base model of the existing roadway conditions was developed using the existing roadway alignments for Queen Kaahumanu Highway and the traffic volumes and mix data that was collected at measurement location D (described in Section 4.2 above). The TNM model predicted sound levels at the short term measurement location D and these levels were compared to the measurement results. This comparison allows for the TNM model to be “validated”, thus verifying the accuracy of noise model. A difference of 3 decibels or less between the monitored and modeled level is considered acceptable. It was found that the difference between the model and the noise measurements was less than 3 dB, so the model was considered valid.

Following the validation of the existing conditions noise model, the same methodology was applied in the development of TNM models for the existing (2014) condition, the future (2035) “No Build” condition and the future (2035) “Build” condition. These conditions were modeled for peak hour AM and PM traffic using the volumes provided by the Traffic Consultant.

5.1.2 Noise Receptor Locations

A majority of the noise sensitive sites within Kaloko-Honokohau National Historic Park are located a substantial distance (more than 400 feet) from the roadway. These sites include the Hale Hookipa Visitor Center, Na Leo Kahiko Cultural Center, fishponds, wetlands, beaches, Heiau, restrooms, shoreline trails, etc. Due to uncertainties in the TNM prediction software regarding terrain, it is impractical to model traffic noise at large distances from the roadway. In fact, TNM results have not been sufficiently validated for distances greater than 600 feet for soft ground and 900 feet for hard ground. In addition, the model does not have provisions for dealing with the effects of meteorology. With increasing distances, meteorological conditions have an increasing effect on noise levels due to atmospheric refraction.

Wind can have a significant effect at 200 to 400 feet, and the effects of temperature gradients can be dominant at greater distances. The TNM prediction model is accurate only for neutral atmospheric conditions, i.e. no wind and no temperature gradients.

Despite the limitations of the TNM model at large distances from the roadway, the intent of this analysis is to identify potentially impacted receptors within the park, per FHWA Noise Analysis and Abatement Guidelines [Reference 3]. Therefore, traffic noise was calculated using the methodology described above at the three receptor locations identified in Section 4.1.2, the Hale Hookipa Visitor Center, Ala Hue Hue Trail, and the Na Leo Kahiko Cultural Center. These receptor locations were selected at the direction of the National Park Service staff.

5.1.3 Traffic Noise Analysis Results and Conclusions

The predicted traffic noise levels at the three noise receptor locations are presented in Table 2 below. The future change in noise level both with and without the project and the change in noise level due to the project are also shown below. The noise levels are expressed in A-weighted decibels (dBA).

Table 2. Summary of Existing and Future Traffic Noise Projections (dBA)

Row ID	Noise Receptor	(A) Hale Hookipa Visitor Center		(B) Ala Hue Hue Trail		(C) Na Leo Kahiko Cultural Center	
		AM	**PM**	**AM**	**PM**	**AM**	**PM**
(x)	Existing (2014)	54.1	54.8	47.8	48.3	43.5	44.1
(y)	Future No Build (2035)	56.5	57.4	50.2	50.9	45.9	46.6
(z)	Future Build (2035)	56.8	57.6	50.3	51.0	46.0	46.7
(y-x)	Future increase without project	2.4	2.6	2.4	2.6	2.4	2.5
(z-x)	Future increase with project	2.7	2.8	2.5	2.7	2.5	2.6
(z-y)	**Future increase due to project**	**0.3**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**
	Distance to future highway EOP	805 feet		1905 feet		3605 feet	

Based on the results of the traffic noise analysis, traffic noise levels at all three receptor locations are expected to be below the FHWA noise abatement criteria for Category C land uses. Category C, defined for parks, picnic areas, recreation areas, trails, trail crossings, and Section 4(f) sites, has a corresponding maximum exterior hourly equivalent sound level ($L_{eq(h)}$) of 67dBA.

Traffic noise levels are expected to increase in the future by 2.5 dB even without the project due to the projected regional growth and traffic demand on Queen Kaahumanu Highway. This demand is expected regardless of whether the highway is widened. Therefore, the increase in projected traffic noise levels *due to the project* (i.e., comparison of the build condition to no build condition) is less than 1 dB at all three noise receptor locations. A 3 dB change or less in noise level is not considered to be significant.

REFERENCES

1. *Department of Transportation, Federal Highway Administration Title 23, Part 774 – Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f))*, Revised at 73 FR 13395, March 12, 2008.

2. *Department of Transportation, Federal Highway Administration Title 23, Part 772 - Procedures for Abatement of Highway Traffic Noise*, 75 FR 39834, July 13, 2010.

3. *Highway Traffic Noise: Analysis and Abatement Guidance*, U.S. Department of Transportation, Federal Highways Administration, December 2011.

4. *Measurement of Highway-Related Noise*, U.S. Department of Transportation, Federal Highways Administration, May 1996.

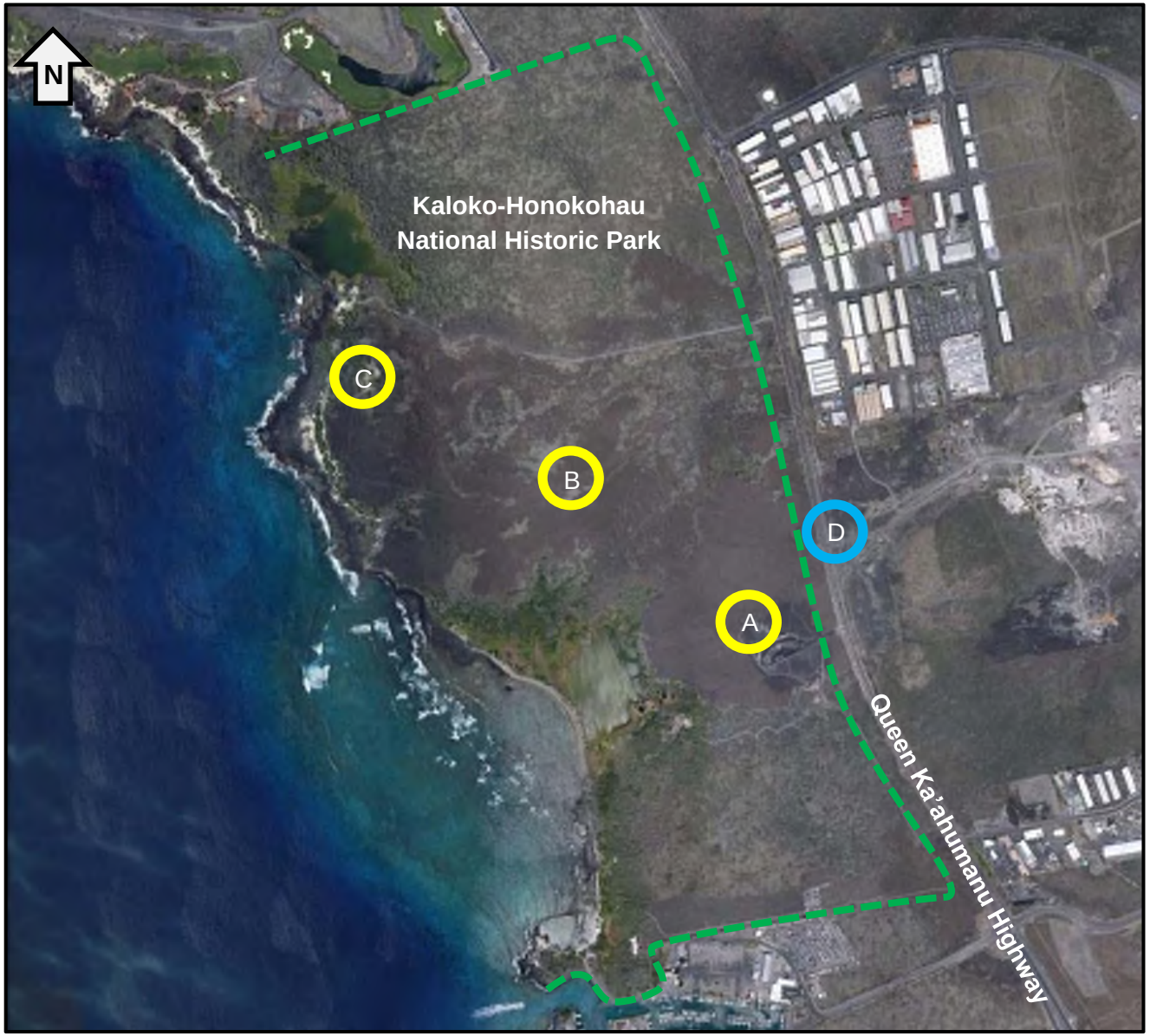
5. *Federal Highway Administrations Traffic Noise Model*, Version 2.5, U.S. Department of Transportation, February 2004.

6. *Traffic Study - Queen Kaahumanu Highway Widening Kealakehe Parkway to Keahole Airport Road,* Parsons Brinkerhoff, August 2014

FEDERAL HIGHWAY ADMINISTRATION NOISE ABATEMENT CRITERIA FOR HIGHWAY NOISE

ACTIVITY CATEGORY	ACTIVITY CATEGORY DESCRIPTION	HOURLY EQUIVALENT SOUND LEVEL L_{eq}
A	LANDS ON WHICH SERENITY AND QUIET ARE OF EXTRAORDINARY SIGNIFICANCE AND SERVE AN IMPORTANT PUBLIC NEED AND WHERE THE PRESERVATION OF THOSE QUALITIES IS ESSENTIAL IF THE AREA IS TO CONTINUE TO SERVE ITS INTENDED PURPOSE.	57 dBA (EXTERIOR)
B	RESIDENTIAL	67 dBA (EXTERIOR)
C	ACTIVE SPORT AREAS, AMPHITHEATERS, AUDITORIUMS, CAMPGROUNDS, CEMETERIES, DAY CARE CENTERS, HOSPITALS, LIBRARIES, MEDICAL FACILITIES, PARKS, PICNIC AREAS, PLACES OF WORSHIP, PLAYGROUNDS, PUBLIC MEETING ROOMS, PUBLIC OR NONPROFIT INSTITUTIONAL STRUCTURES, RADIO STUDIOS, RECORDING STUDIOS, RECREATION AREAS, SECTION 4(F) SITES, SCHOOLS, TELEVISION STUDIOS, TRAILS, AND TRAIL CROSSINGS	67 dBA (EXTERIOR)
D	AUDITORIUMS, DAY CARE CENTERS, HOSPITALS, LIBRARIES, MEDICAL FACILITIES, PLACES OF WORSHIP, PUBLIC MEETING ROOMS, PUBLIC OR NONPROFIT INSTITUTIONAL STRUCTURES, RADIO STUDIOS, RECORDING STUDIOS, SCHOOLS, AND TELEVISION STUDIOS .	52 dBA (INTERIOR)
E	HOTELS, MOTELS, OFFICES, RESTAURANTS/BARS, AND OTHER DEVELOPED LANDS, PROPERTIES OR ACTIVITIES NOT INCLUDED IN A-D OR F.	72 dBA (EXTERIOR)
F	AGRICULTURE, AIRPORTS, BUS YARDS, EMERGENCY SERVICES, INDUSTRIAL, LOGGING, MAINTENANCE FACILITIES, MANUFACTURING, MINING, RAIL YARDS, RETAIL FACILITIES, SHIPYARDS, UTILITIES (WATER RESOURCES, WATER TREATMENT, ELECTRICAL), AND WAREHOUSING	N/A
G	UNDEVELOPED LANDS THAT ARE NOT PREMITTED	N/A

Park Boundary and Noise Measurement Locations



Legend

Short Term Noise Measurement Location

Long Term Noise Measurement Location

Park Boundary

A Hale Ho'okipa Visitor Center
(800 ft west of Queen Ka'ahumanu Hwy)

B Ala Hu'e Hu'e Trail
(2000 ft west of Queen Ka'ahumanu Hwy)

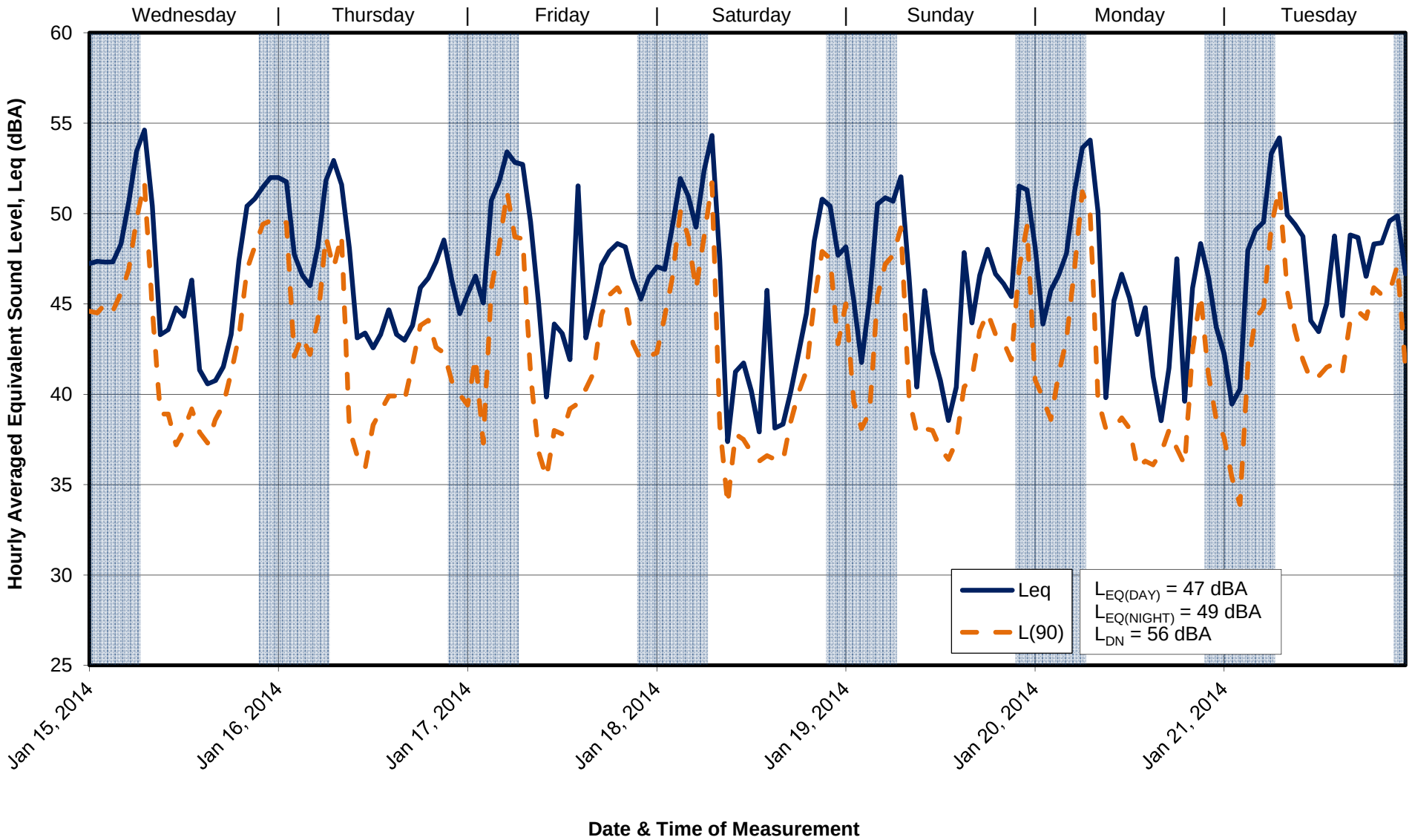
C Na Leo Kahiko Cultural Center
(500 ft east of shoreline)

D 80 ft east of Queen Ka'ahumanu Hwy

D. L. ADAMS ASSOCIATES
acoustics | performing arts | technology

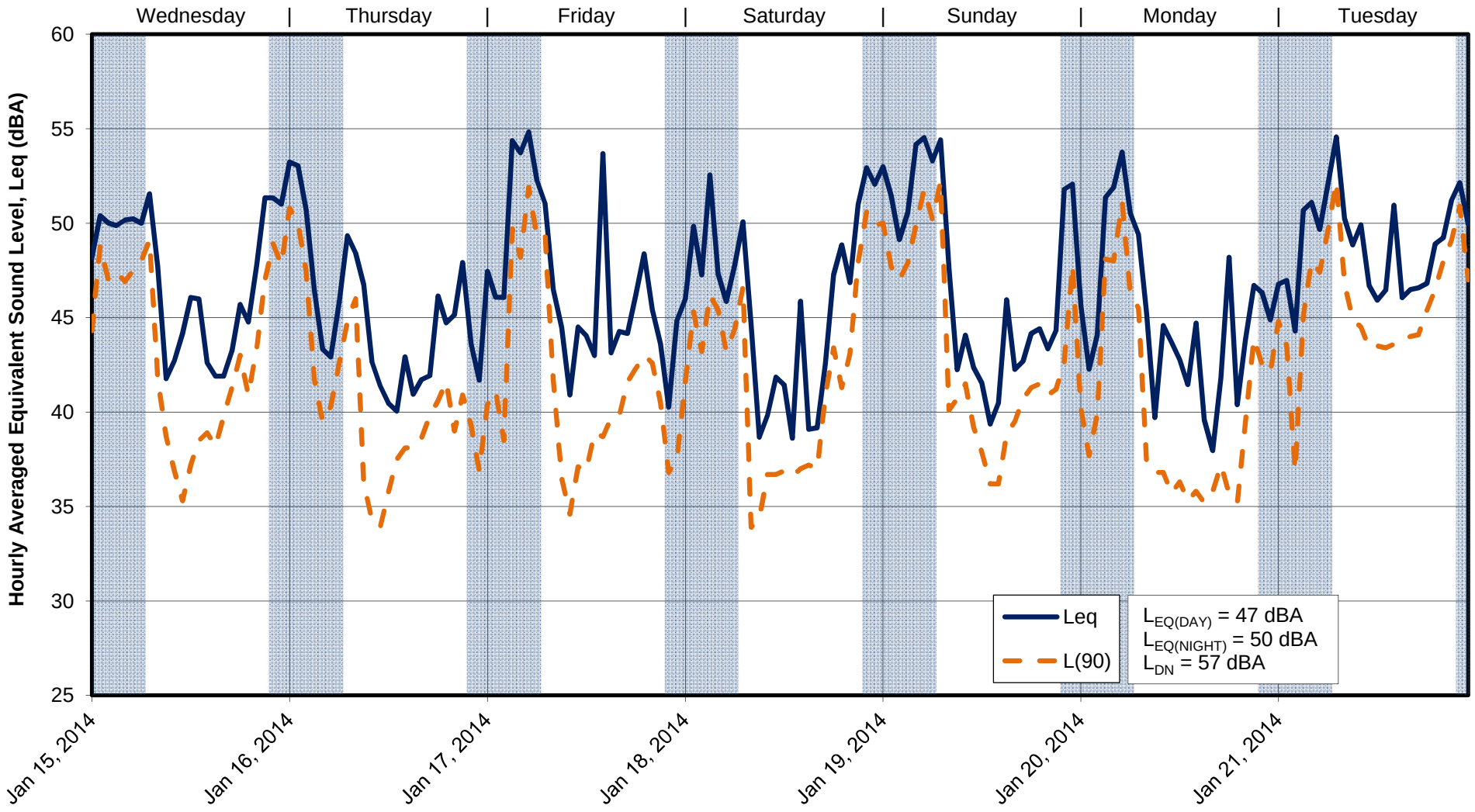
PROJECT:		
Queen Ka'ahumanu Highway Widening Phase 2		
PROJECT NO: 14-04	DATE: February 2015	FIGURE: 2

Long Term Noise Measurement Data - Location A



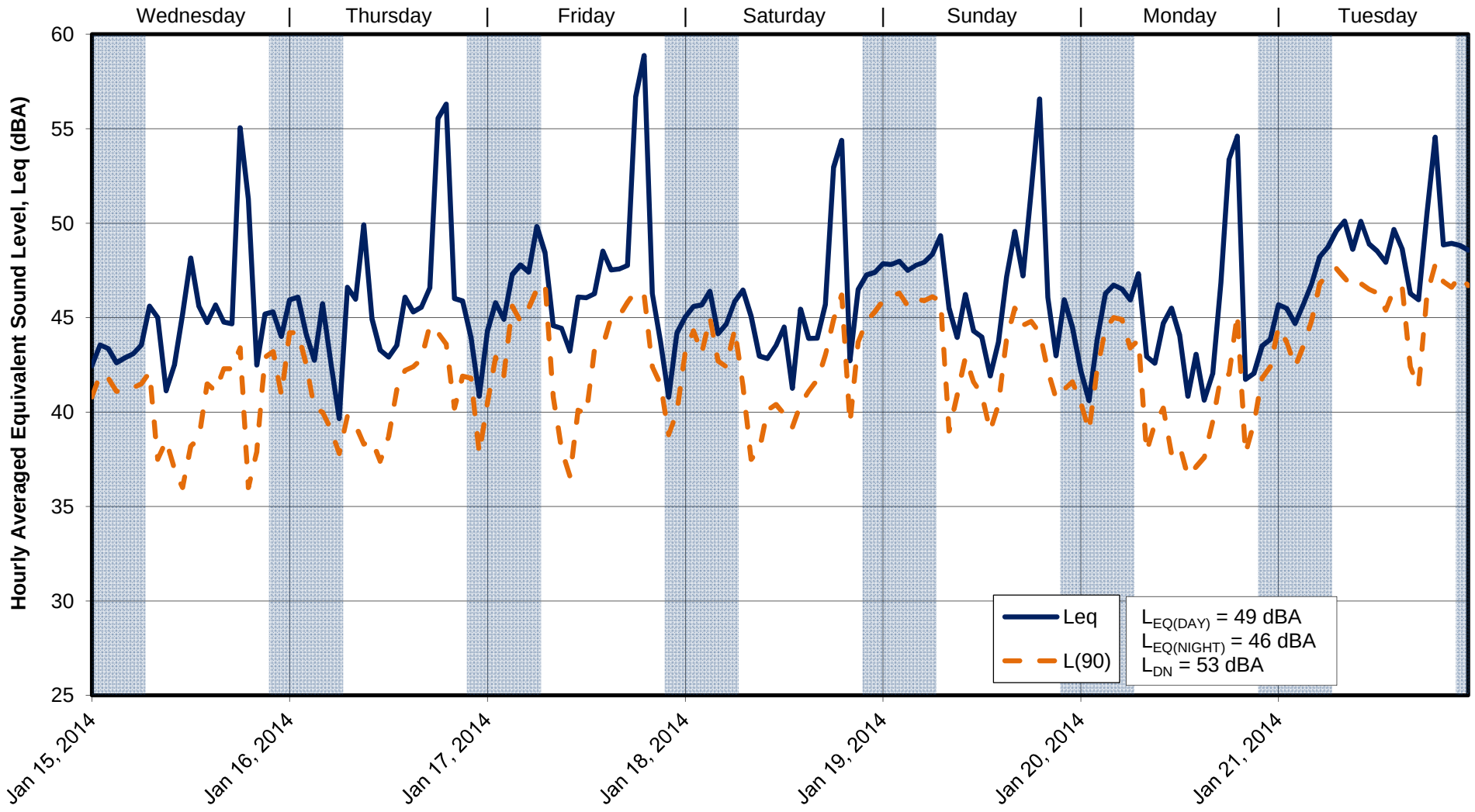
D. L. ADAMS ASSOCIATES acoustics | performing arts | technology	PROJECT: Queen Ka'ahumanu Highway Widening, Phase 2		
	PROJECT NO: 14-04	DATE: February 2015	FIGURE: 3

Long Term Noise Measurement Data - Location B



D. L. ADAMS ASSOCIATES acoustics | performing arts | technology	PROJECT: Queen Ka'ahumanu Highway Widening, Phase 2		
	PROJECT NO: 14-04	DATE: February 2015	FIGURE: 4

Long Term Noise Measurement Data - Location C



D. L. ADAMS ASSOCIATES acoustics | performing arts | technology	PROJECT: Queen Ka'ahumanu Highway Widening, Phase 2		
	PROJECT NO: 14-04	DATE: February 2015	FIGURE: 5

APPENDIX A

Acoustic Terminology

Acoustic Terminology

Sound Pressure Level

Sound, or noise, is the term given to variations in air pressure that are capable of being detected by the human ear. Small fluctuations in atmospheric pressure (sound pressure) constitute the physical property measured with a sound pressure level meter. Because the human ear can detect variations in atmospheric pressure over such a large range of magnitudes, sound pressure is expressed on a logarithmic scale in units called decibels (dB). Noise is defined as Aunwanted@ sound.

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

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

where P is the sound pressure fluctuation (above or below atmospheric pressure) and P_{ref} is the reference pressure, 20 µPa, which is approximately the lowest sound pressure that can be detected by the human ear. For example:

If P = 20 µPa, then SPL = 0 dB
If P = 200 µPa, then SPL = 20 dB
If P = 2000 µPa, then SPL = 40 dB

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

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 6 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

Studies have shown conclusively that at equal sound pressure levels, people are generally more sensitive to certain higher frequency sounds (such as made by speech, horns, and whistles) than most lower frequency sounds (such as made by motors and engines)[1] at the same level. To address this preferential response to frequency, the A-weighted scale was developed. The A-weighted scale adjusts the sound level in each frequency band in much the same manner that the human auditory system does. Thus the A-weighted sound level (read as "dBA") becomes a single number that defines the level of a sound and has some correlation with the sensitivity of the human ear to that sound. Different sounds with the same A-weighted sound level are perceived as being equally loud. The A-weighted noise level is commonly used today in environmental noise analysis and in noise regulations. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

[1] D.W. Robinson and R.S. Dadson, AA Re-Determination of the Equal-Loudness Relations for Pure Tones,@ *British Journal of Applied Physics*, vol. 7, pp. 166 - 181, 1956. (Adopted by the International Standards Organization as Recommendation R-226.

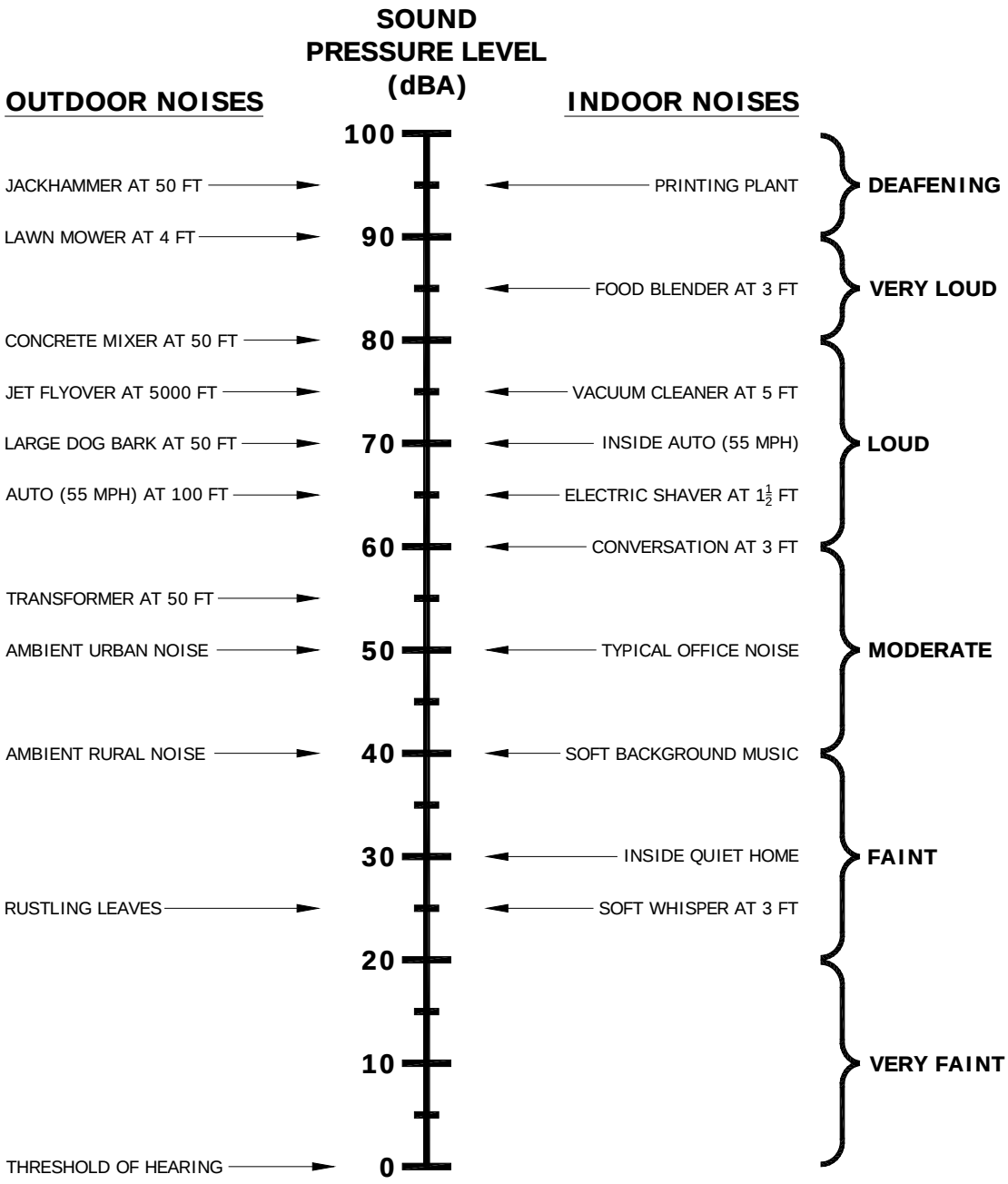


Figure A-1. Common Outdoor/Indoor Sound Levels

Equivalent Sound Level

The Equivalent Sound Level (L_{eq}) is a type of average which represents the steady level that, integrated over a time period, would produce the same energy as the actual signal. The actual *instantaneous* noise levels typically fluctuate above and below the measured L_{eq} during the measurement period. The A-weighted L_{eq} is a common index for measuring environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

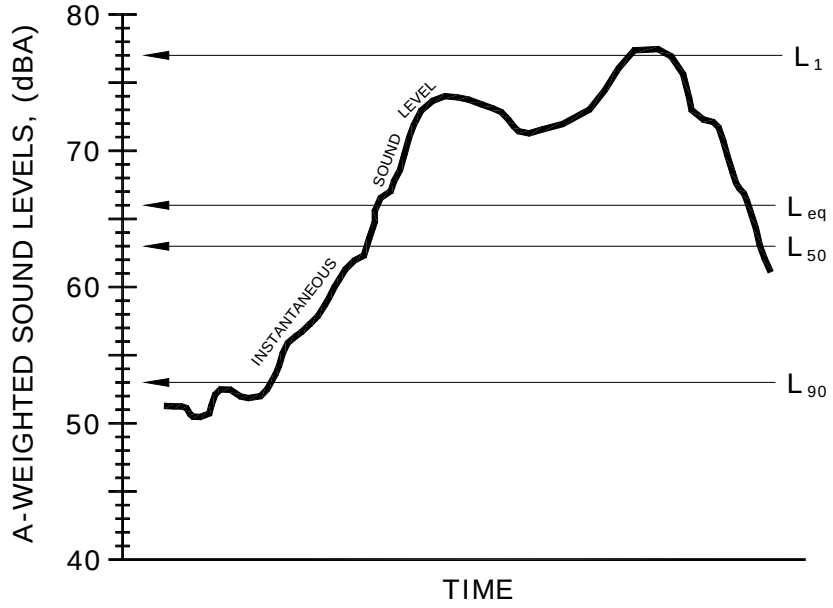


Figure A-2. Example Graph of Equivalent and Statistical Sound Levels

Statistical Sound Level

The sound levels of long-term noise producing activities such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels has been developed. It is known as the Exceedence Level, L_n. The L_n represents the sound level that is exceeded for n% of the measurement time period. For example, L_{10} = 60 dBA indicates that for the duration of the measurement period, the sound level exceeded 60 dBA 10% of the time. Typically, in noise regulations and standards, the specified time period is one hour. Commonly used Exceedence Levels include L_{01}, L_{10}, L_{50}, and L_{90}, which are widely used to assess community and environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

Day-Night Equivalent Sound Level

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

APPENDIX B

Photographs at Project Site

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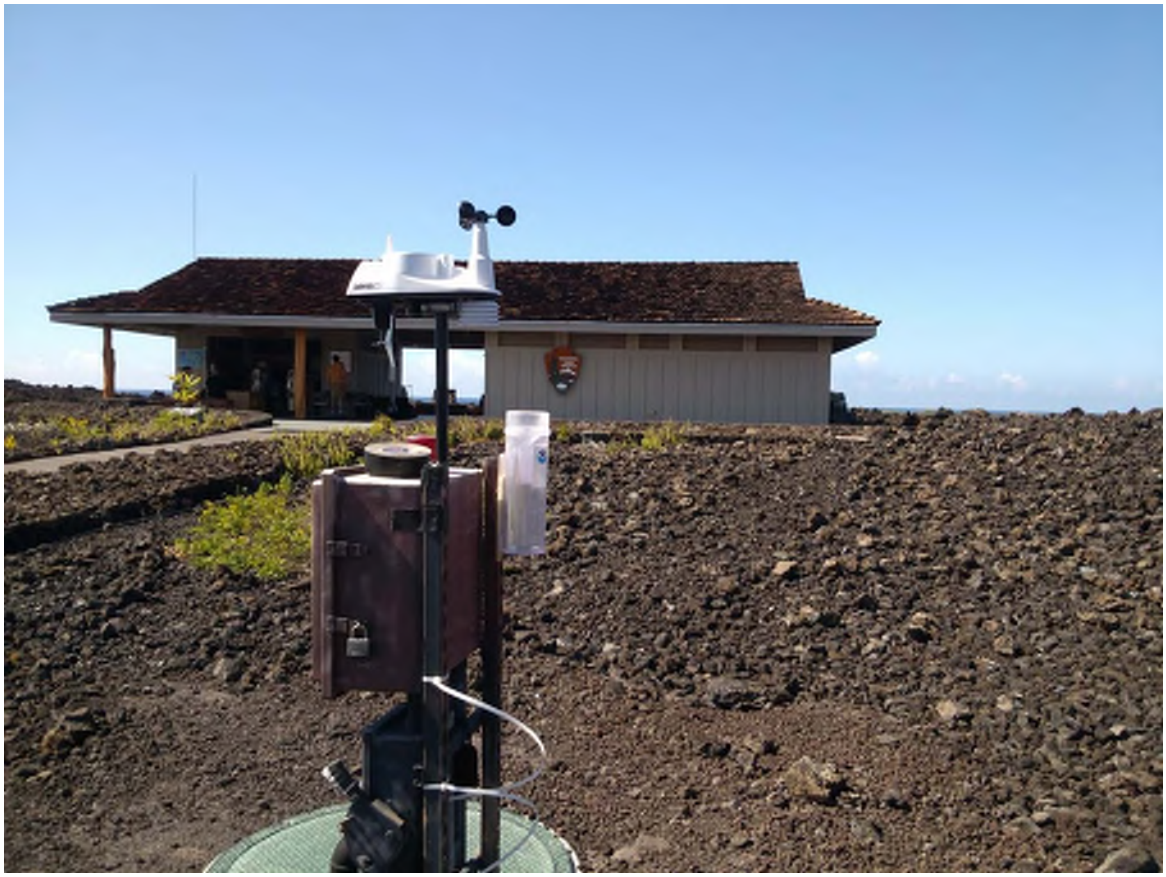
Location A

Microphone, anemometer, and weather statin mounted approximately 5' above grade. Equipment was located near the Hale Ho'okipa Visitors Center, approximately 800 feet west of Queen Ka'ahumanu Highway.

The building in the photographs is the Hale Ho'okipa Visitors Center.



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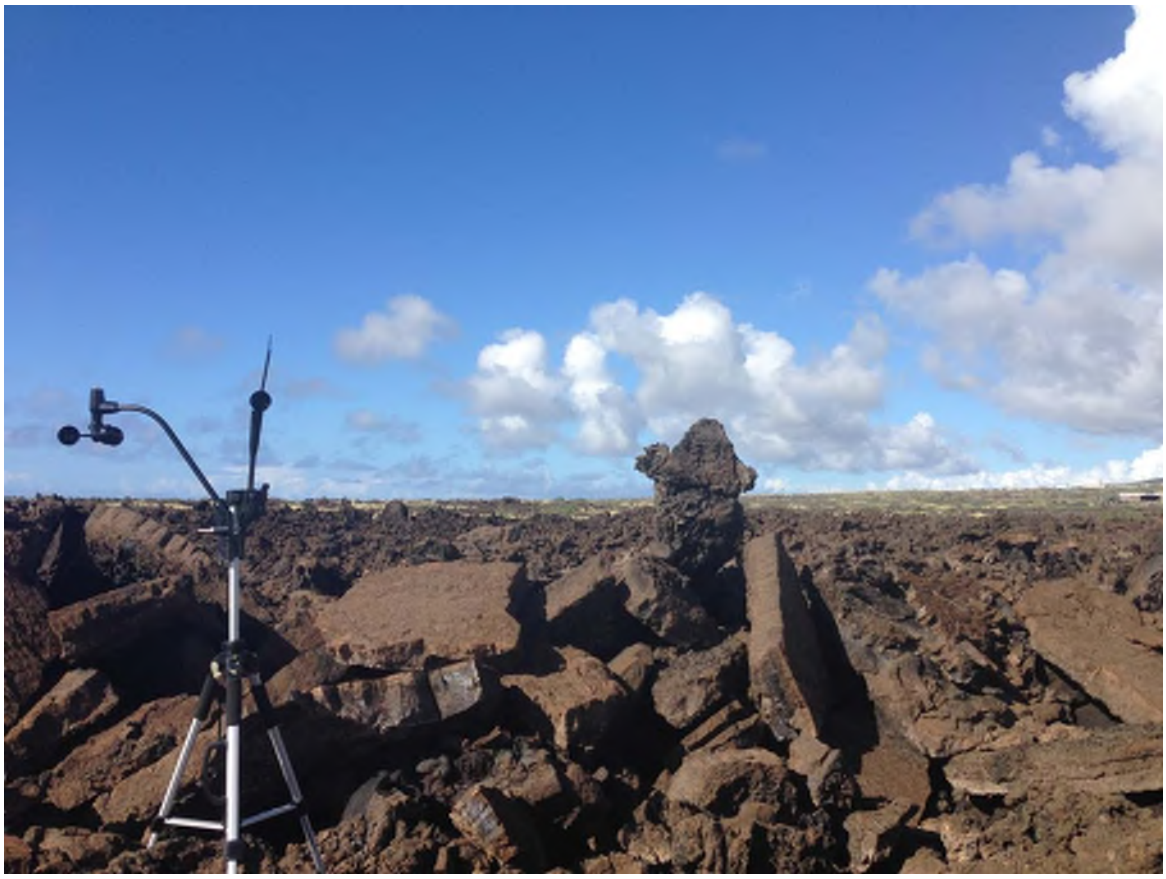
Location B

Microphone and anemometer mounted on tripods approximately 5' above grade. Equipment was located near the Ala Hu'e Hu'e trail, approximately 2000 feet west of Queen Ka'ahumanu Highway.



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Location C

Microphone and anemometer mounted approximately 5’ above grade. Equipment was located near the Na Leo Kahiko Cultural Center, approximately 500 feet east of the shoreline.

The building in the photograph is the Na Leo Kahiko Cultural Center.

Location D

Short term measurement location, approximately 80 feet east of the centerline of Queen Ka’ahumanu Highway.

Appendix C: Summary of Traffic Noise Model Speed and Traffic Volume Data[1]

Road	Segment	Speed (mph)[2]	Existing (20114)		Future (2035) No Build		Future (2035) Build	
			AM	PM	AM	PM	AM	PM
Queen Ka'ahumanu Highway	Kealakehe Pkwy to Honokohau St	45	1883	2444	2788	4663	2826	4643
	Honokohau St to Kaloko-Honokohau NHP Access Rd		1902	2428	2833	4465	2771	4445
	Kaloko-Honokohau NHP Access Rd to Allied Quarry Rd		1912	2416	3117	4246	3136	4236
	Allied Quarry Rd to Hina Lani St		1823	2351				

Notes:

1. The traffic volumes shown in the table were calculated based on data provided by the Traffic Consultant [Reference 9]. The values represent the peak hour traffic volume for existing and future conditions. The forecasted volumes for the future (2035) are based on projected regional growth in the area and will remain the same regardless of the highway improvements.
2. Posted speed is currently 45 mph, however, the average operating speed from the Traffic Consultant's field data was, on average, 36 mph. Projected speed limits for the future conditions are, on average, 15 mph and 31 mph for the no build and build conditions, respectively. Per FHWA guidance, the posted speed was used in the TNM model since the actual operating speed was not higher.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

In Reply Refer To:
2014-I-0076

NOV 2 6 2013

Pat V. Phung, P.E.
Lead Civil Engineer
Federal Highways Administration
Hawaii Federal-Aid Division
PJKK Federal Building, Box 50206
300 Ala Moana Blvd, Room 3-306
Honolulu, Hawaii 96850

Subject: Informal Consultation for the Proposed Phase 2 Widening Project of Queen Kaahumanu Highway, Kailua-Kona, Hawaii

Dear Mr. Phung:

The U.S. Fish and Wildlife Service (Service) received your verbal request on November 26, 2013, for concurrence with a may affect, not likely to adversely affect biological determination for the proposed phase 2 widening project of Queen Kaahumanu Highway, Kailua-Kona, Hawaii. You and Ms. Meesa Otani met with me and biologists Chelsie Javar-Salas and Dr. Tim Langer in our Honolulu office. We discussed comments your office received from the Department of Interior dated September 10, 2013, regarding the Draft Section 4(f) Evaluation for this project. This proposed project is adjacent to Kaloko-Honokohau National Historical Park, which is occupied by listed plant and animal species and also encloses land proposed as critical habitat by the Service. This response is in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

The purpose of the proposed action is to relieve existing congestion on Queen Kaahumanu Highway and to accommodate future demand by widening the existing highway from its current two-lane configuration to a divided four-lane facility with a landscaped median. Proposed improvements include re-paving the existing highway, construction of two additional travel lanes, paved shoulders, and drainage improvements, traffic signals at intersections, installation of guardrails, landscaped plantings, highway lighting, and relocation or installation of utilities. The proposed project will be contained within the existing 300-foot right-of-way. Lead Federal agency for the proposed action is the Federal Highway Administration (FHA), in conjunction with the Hawaii State Department of Transportation (HDOT). The Service has an existing letter from FHA authorizing HDOT to serve as their non-federal representative for ESA consultations.

Two Lowland Dry Units of federally proposed critical habitat for *Bidens micrantha* ssp. *ctenophylla*, *Isodendrion pyrifolium*, and *Mezoneuron kavaiense* abut the existing Queen Kaahumanu Highway right-of-way and may be affected by this project. Lowland Dry Unit 36 is in Kaloko-Honokohau National Historical Park, while Lowland Dry Unit 35 is in the Kealakehe area. A Geographic Information Systems (GIS) shapefile of the proposed road alignment provided by the project engineer showed overlap of this proposed project with Lowland Dry Unit 35. However, in our discussion this morning, you stated that there is no overlap of the proposed project footprint with proposed critical habitat and attributed the perception of a conflict to inaccuracy of shapefiles when converted from Computer-Aided Design (CAD) files. You also assured us that HDOT shall be responsible for ensuring that no work associated with this project occurs within proposed critical habitat units 35 and 36. After incorporating this assurance into your project description for ESA consultation with the Service, you requested concurrence from our office on behalf of HDOT and FHA.

Conclusion

We concur that the proposed project may affect, but is not likely to adversely affect, listed species or designated critical habitat protected by the ESA, including proposed critical habitat delineated by Lowland Dry Units 35 and 36. Unless the project description changes, new information reveals that the proposed project may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to section 7 of the ESA is necessary.

If you have any questions or concerns regarding this consultation, please contact Dr. Tim Langer, Fish and Wildlife Biologist (phone: 808-792-9462, email: tim_langer@fws.gov).

Sincerely,

Tim Langer

FOR Loyal Mehrhoff
Field Supervisor

cc:
Ms. Meesa Otani, Federal Highways Administration, Hawaii Federal-Aid Division
Ms. Chelsie Javar-Salas, United States Fish and Wildlife Service

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

April 18, 2015

Meesa Otani
Federal Highway Administration
300 Ala Moana Blvd., Room 3-306
Box 50206
Honolulu, HI 96850

LOG NO: 2015.00806
DOC NO: 1504MV02
Archaeology

Dear Ms. Otani:

SUBJECT: **Draft Section 4(f) Evaluation Report - Queen Kaʻahumanu Highway Widening, Phase 2**
Federal-aid Project No. NH-019-1(38)R
Kalaoa, Oʻoma, Kohanaiki, Kaloko, Honokohau 1-2 and Kealakehe Ahupuaʻa
North Kona District, Island of Hawaiʻi
TMK: (3) 7-3-009, 7-3-043 por., 7-4-008

Thank you for submitting the draft section 4(f) evaluation report for the Queen Kaʻahumanu Highway Widening that was received by our office on February 27, 2015. This 4(f) evaluation was prepared because the proposed action would require the use of historic sites, the Mamalahoa trail (SIHP 0002) and an additional trail alignment (SIHP 19953), that qualify as section 4(f) resources. The State Historic Preservation Division (SHPD) previously concurred with the FHWA determination that these historic properties are eligible for consideration under 4(f) (Log No. 2013.1931, Doc. No. 1303MV03). The current evaluation discusses the effort that was undertaken to thoroughly consider any feasible and prudent alternatives that would avoid impact on these historic properties. The evaluation describes the redesign of the Kaʻahumanu Highway Widening project that was carried out in order to avoid and minimize impacts to these and 15 other historic properties that would have been potentially eligible for 4(f). The evaluation report also discusses the avoidance alternatives that were considered, the least overall harm analysis that was conducted, measures taken to minimize harm, and the consultation efforts that went into the evaluation.

The State Historic Preservation Officer (SHPO) accepts the 4(f) evaluation report as adequate.

Please contact Mike Vitousek at (808) 652-1510 or at Michael.Vitousek@Hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: henry.kennedy@hawaii.gov